

# Ngenea Hub

Ngenea Hub is a centralized control system designed to manage the movement of data across diverse storage environments. It simplifies the synchronization of files, migration to more efficient storage, and ensures data is moved according to business needs.

## Features

- **Web-Based Interface:** A user-friendly dashboard that allows easy management of data across different storage systems, monitors synchronization, and sets migration policies without requiring technical expertise.
- **CLI and API:** Command-line tools and APIs provide advanced users the flexibility to automate tasks and integrate them into larger systems, offering greater control and customization of workflows.
- **Pixstor Integration:** Enables users to create Spaces for datasets across multiple Pixstor environments, managing synchronization, data manipulation through workflows, and system settings from a unified interface.

## Uses

- **Data Synchronization:** Effortlessly synchronize files across multiple storage environments, ensuring data consistency and accessibility.
- **Data Migration:** Migrate data to more cost-effective storage resources, including cloud, object storage, NAS, and tape resources, based on usage and value.
- **Business-Driven Data Movement:** Automatically move data into the most suitable storage resource, ensuring efficient allocation and reducing operational costs based on business needs.
- **Centralized Control:** Streamline system settings and manage all Pixstor environments from one administrative interface, enhancing operational efficiency and control.

## Ngenea Hub 2

Ngenea Hub 2 expands on the original Hub by giving you even more control, especially if you're managing multiple Pixstor systems. It helps you create "Spaces"—logical groupings of datasets—so you can organize your data more effectively. With Ngenea Hub 2, you can synchronize data across different locations and automatically migrate it to the most cost-efficient storage, ensuring that your storage solution always aligns with your business goals.

## What is the Role of the Ngenea Worker?

The Ngenea Worker is the engine that orchestrates the actual movement and synchronization of data behind the scenes. It carries out tasks like migrating data

between storage tiers and ensuring that files are synchronized between Pixstor and other storage systems, including cloud platforms. By automating these tasks, Ngenea Worker saves time and ensures that your data is always in the right place, ready for when you need it.

## How can I Interact with Ngenea Hub and Manage Data Easily?

You can use the **Web UI** or **ngclient**, a command-line tool designed to make managing data migrations simple and efficient. With either, you can:

- **Migrate**: Move data between storage locations, such as from your local system to cloud storage.
- **Recall**: Retrieve data from a lower-cost storage tier back to high-speed storage when needed.
- **Send**: Transfer data to other endpoints like cloud platforms or long-term archives.
- **Send**: Transfer data to other Hub sites.

To keep everything secure, token-based authentication is used, ensuring that only authorized users can execute data management tasks.

## What does Ngenea Hub Orchestrate?

### **Ngenea HSM**

Ngenea HSM (Hierarchical Storage Management) is an important feature that helps you manage where your data is stored. Not all data is the same—some is accessed frequently, and some is rarely used. Ngenea HSM moves less critical data to more cost-effective storage options, like cloud storage or archives, freeing up your high-performance storage for the data you need most.

It integrates with popular cloud storage platforms like Amazon S3, Google Cloud, and Microsoft Azure, as well as on-premises systems, so you can easily manage your data across different environments.

### **Pixstor**

Pixstor is a powerful and flexible storage platform designed to manage large amounts of data in high-demand environments. It offers fast, reliable, and scalable storage that adapts to your needs, whether you're working on-premises, in the cloud, or both. With Pixstor, you get a comprehensive solution to organize and control your data effectively.

### **How does Pixstor work?**

Pixstor is built on two key components:

- **Infrastructure Management with Saltstack**: Saltstack is an advanced tool that automates and simplifies complex tasks like setting up servers, updating

software, and scaling resources. It helps keep your storage environment running smoothly and efficiently, without requiring much manual effort.

- **Configuration CLI (Command Line Interface):** The Pixstor CLI is a tool that allows administrators to manage everything from setting up storage pools to controlling access and monitoring the health of the system. It also supports automation, so routine tasks can be integrated into your workflows easily. This means you can manage your storage with minimal hassle and greater precision.

## Ngenea Hub Architecture Configurations

Ngenea Hub can be configured in different architectural setups, depending on the infrastructure and deployment environment. Each setup influences how Ngenea Hub and Workers interact with Pixstor nodes and other system components.

**Pixstor-Centric Architecture:** In this setup, the Ngenea Hub is hosted on a Pixstor Management Node. However, for most environments, the Worker is typically run on separate Ngenea nodes, rather than on the management node itself. This ensures better scalability and performance.

This configuration is ideal for environments where Pixstor serves as the primary storage infrastructure, and high-performance data access is required directly from the storage nodes.

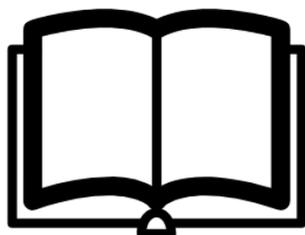
**Independent Hub Architecture:** In this architecture, the Ngenea Hub is installed on a separate node running Enterprise Linux 8/9 (EL8/EL9), independent of the Pixstor storage system. Workers are deployed exclusively on the Pixstor nodes to handle the actual data processing tasks, allowing for separation between control and execution layers.

This configuration is suitable for organizations preferring to decouple the management layer from the processing layer, especially in cloud or hybrid environments.

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### Pick your area of interest:

Please refer to the provided links below, which will direct you to both the Administration and User Guides for Pixstor-Centric Architecture.



[User Guide](#)



[Administration Guide](#)

# Release Notes

## 2.9.1

### What you need to know

- Resolves an issue whereby upgrades from versions prior to 2.8.0 causes pre-upgrade schedules running workflows with snapdiff, such as sync, to reprocess all data. New schedules post-upgrade are unaffected.

### What's Fixed

- Consult the changelog for individual fixes

## 2.9.0

### Whats new

- Iris enablement of spaces
- Iris Single Sign On (SSO)
- External service support for Postgres, RabbitMQ and Redis
- Ngenea Core 1.32 support

### What you need to know

- The configuration value LDAP\_MIRROR\_GROUPS is no longer json loaded, please consult the [LDAP documentation for more details](#).
- The configuration value "celery\_broker" will be automatically replaced with BROKER\_PROVIDER and RESULTS\_PROVIDER on first hub startup.
- Any configuration file older than version 2.9.0 will be backed up with this upgrade
- SSO and LDAP cannot be enabled simultaneously, please consult the [LDAP](#) and [Single Sign-On](#) documentation for more details.
- SSO is not enabled by default and must be configured and enabled, details for this process are in the [Single Sign-On documentation](#).

### What's Fixed

- Consult the changelog for individual fixes

## 2.8.1

### What you need to know

- Ngenea targets are no longer renamed on update, the new format is only applied to new targets
- Ngenea Core 1.32 support has been added to targets

## What's Fixed

- Consult the Changelog for individual fixes

## 2.8.0

### What's new

- Iris beta (feature flagged)
- Initial release of Programming Guide, with improved, user-friendly REST API documentation

### What you need to know

- API only workflows can now be selected when editing the Space Schedules and Schedule settings
- Hub containers now auto-restart when encountering an issue which causes container shutdown

## What's Fixed

- Consult the Changelog for individual fixes

## 2.7.0

### What's new

- Spaces can now be viewed in table layout
- Schedules are now specified relative to the site timezones rather than UTC+0
- Site workflow batch size options to control workflow task processing performance
- Policies support more file systems than mmfs1
- Global settings now provides Timeout controls for Hub behaviours
- API performance can be scaled with the new GUNICORN\_THREADS setting

### What you need to know

- Where NAS user(s) and group(s) exist prior to additional sites being joined, automatic creation of existing NAS users and groups as part of setup on the new Site may fail if the Site is still undergoing joining. Should this occur, re-submit the failed 'Creating NAS group' and/or 'Creating NAS user' job after a few minutes.

## What's Fixed

- Consult the Changelog for individual fixes

# User Guide

## Overview

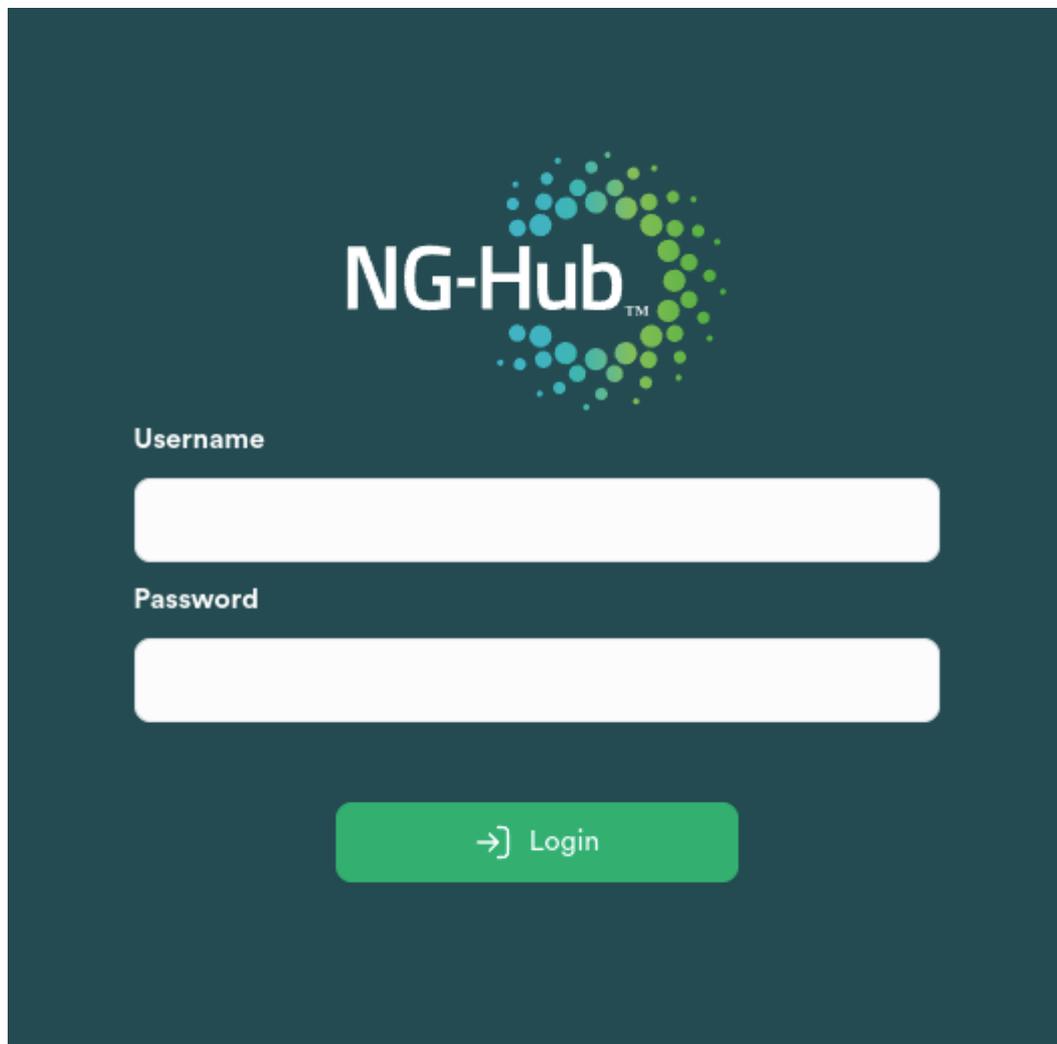
Ngenea Hub provides a management and control interface for data and systems across a global pixstor estate.

Using Ngenea Hub, users can create Spaces for datasets across multiple pixstors, enable data synchronisation, perform data manipulation through workflows and control system settings for all pixstors from one administrative interface.

## Accessing Hub

To login to Hub enter the URL of the hub into the browser address bar. E.G. <https://myhub>

On successful connection to the Hub a login page is presented.



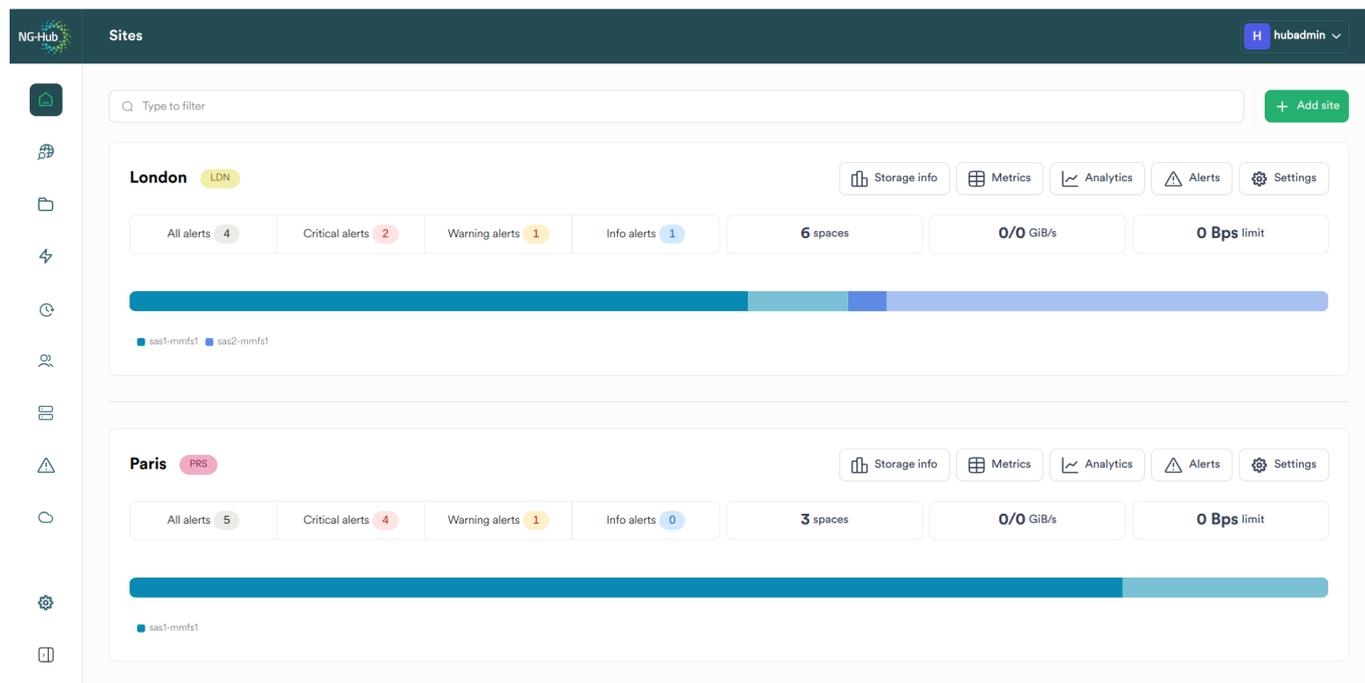
Enter your Username and Password to authenticate with Hub and login.

## Logging Out Of Hub

After successful login, from the User Profile control in the top right of the screen select the Log out option.

## The Main Screen

The main Hub screen is comprised of several areas.



## Menu Bar

The menu bar is positioned on the far left of the Hub screen.

## Menu Buttons

The menu buttons perform the following functions when clicked:

Home



Navigates to the page first presented after Login

Spaces



Navigates to the Spaces screen

Jobs



Navigates to the Jobs screen

Groups & Users



Navigates to the Groups & Users screen

## Sites



Navigates to the Sites screen

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## Alerts



Navigates to the Global Alerts screen

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## Targets



Navigates to the Targets screen

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## Global Settings



Navigates to the Global Settings screen

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## Enlarge/Reduce



Clicking the toggle widens the menu bar to show:

- Menu button descriptions

- Hub version

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Clicking the toggle button again shrinks the menu bar.

## Page Location

The page location is positioned to the top of the Hub screen.

## Main page content

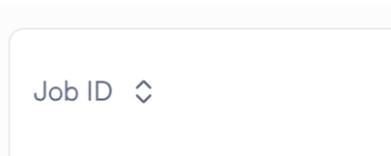
The main page content is positioned to the center of the Hub screen.

## Tables

Most tables offer the following common functions:

## Sorting Values In a Column

When it is possible to sort the values in a column, a control button is provided for you near the name of the column:



Job ID ↕

Indicates that the values in this column are sortable

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Date created ▾

Indicates that the values in this column are sorted in descending order

Date created ▲

Indicates that the values in this column are sorted in ascending order

If the values in a column are not sortable, then no control button is provided:

Progress

Indicates that the values in this column are not sortable

## Pagination

Tables do not show all of the items. The User interface offers controls to see more results when these controls are used.

Items per page: 20 ▾

The users are able to view 20, 50 or 100 items on the current page.

1 2 3 4 ... 117

The users can change the current page by clicking to a page number.

Previous

Next

The users are able to switch to previous or next page.

## Reordering Columns

Table columns can be reordered:

Progress

State ▾

Click to show table actions

25%

The users are able to open the table controls menu by clicking this

Progress

State ▲

Reorder table

25%

The users are able to open the table controls menu by clicking this

The table field organizer is presented for table customization:

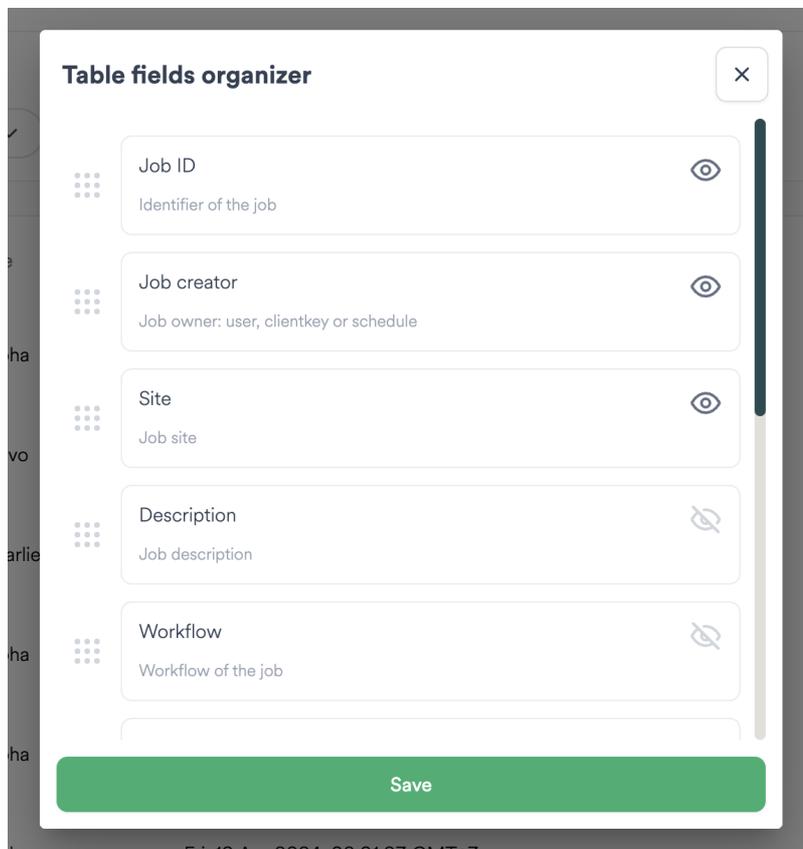
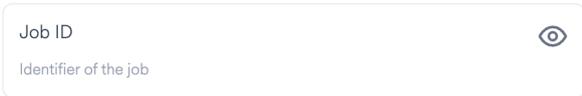
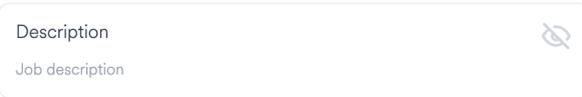


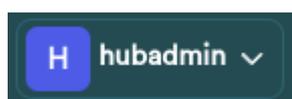
Table fields can be organized using the following controls:

	By clicking and dragging this button, users are able to change the appearance order of the columns.
	When a table column is visible, it is represented as open eye icon and clicking it will hide the column.
	When a table column is hidden, it is represented as closed eye icon and clicking it will show the column.

## User Profile

The User Profile control is positioned to the top right of the Hub screen.

The User Profile control displays the name of the user logged into Hub using the current browser session.



Use this control to Log out of Hub and update your User settings.

## User Profile

Selecting the Profile option from the drop down menu presents the User settings dialog of the logged in user.

Clicking the Save button at the bottom of the User settings dialog saves any changes made.

**User settings** ×

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**hubadmin**

**Basic information**

**Password**

Leave empty to keep the password unchanged.

**First name**

**Last name**

**Email**

---

**API Keys**

**Save**

## Password

Enter a new Password to change your Password.

## First name

Enter a new first name to change your First name.

## Last name

Enter a new Last name to change your Last name.

## Email

Enter a new valid email address to change your email address.

## Groups

A list of groups your user account belongs to is displayed.

## API Keys

Provides the capability to add and remove API keys.

An API key is typically used for by 3rd party software to connect to Hub to perform automation.

## Adding an API Key

+ Add API key

To add a new API key, click the Add API key button.

Enter a name for the API Key .

Name

MyAPIKey



**Tip:** It is not possible to change the name of an API key once the key has been created.

Add additional API keys as required.

Upon pressing Save the API Key dialog is raised displaying the API Keys created.

API keys created

These are the created API keys. You won't be able to display them again. Please copy them before you close this window.



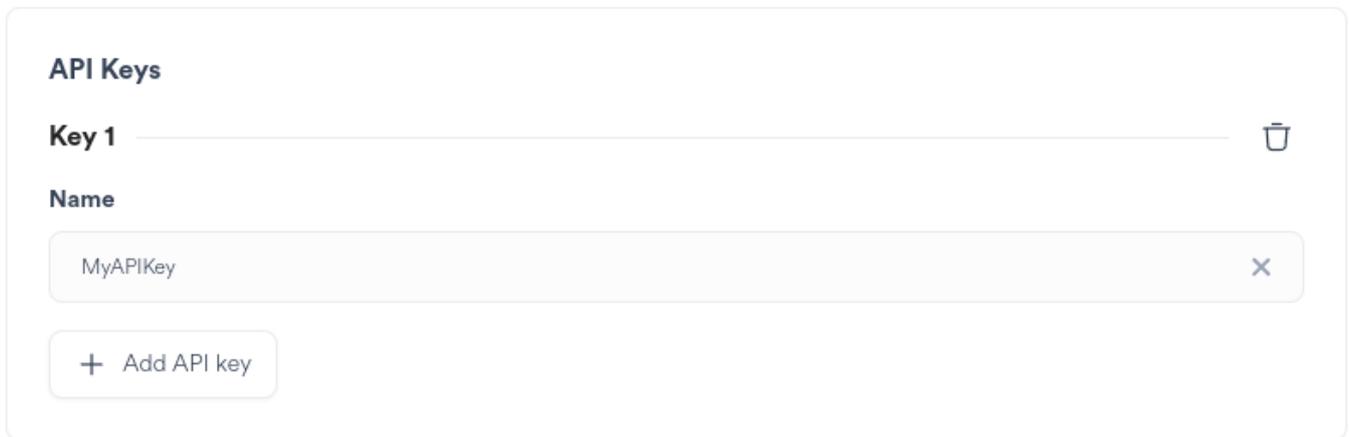
```
⊟ "root" : [ 1 item
  ⊟ 0 : { 2 items
    "name" : "MyAPIKey"
    "key" : "9tbdetnY.jGbTyHBg8f5SHKQHQxwU7VFSLwBTWn7H"
  }
]
```

Close

Ensure to save the generated keys safely as once the API Key dialog is closed the keys cannot be viewed again.

## Removing an API key

Created API Keys are listed



API Keys

Key 1 

Name

MyAPIKey 

+ Add API key



To remove an API key, click the dustbin icon next to the API Key.

**Tip:** Deleted API Keys are non-recoverable. If an API Key has been inadvertently removed, do not press the Save button, instead click off the User settings dialog to the main area of the screen.

Clicking the Save button at the bottom of the User settings dialog saves any changes made.

## Search

Hub provides the ability to Search for assets across all Hub managed Sites.

Where proxies are enabled for Search supported asset types, thumbnails and proxies are displayed.

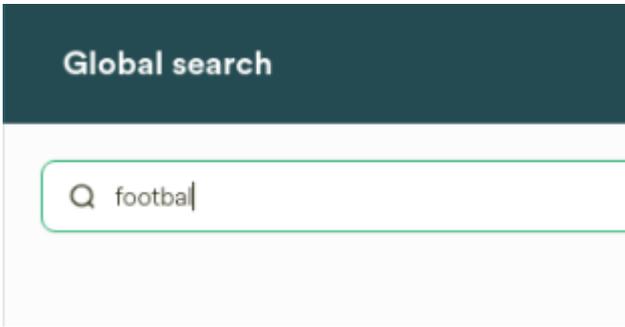
Asset locations, Spaces, metadata and Tags are searchable providing rich criteria to locate assets.

Located assets can be processed using the Jobs Panel to perform Workflow actions.

## Searching

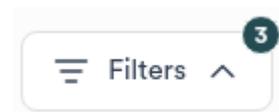
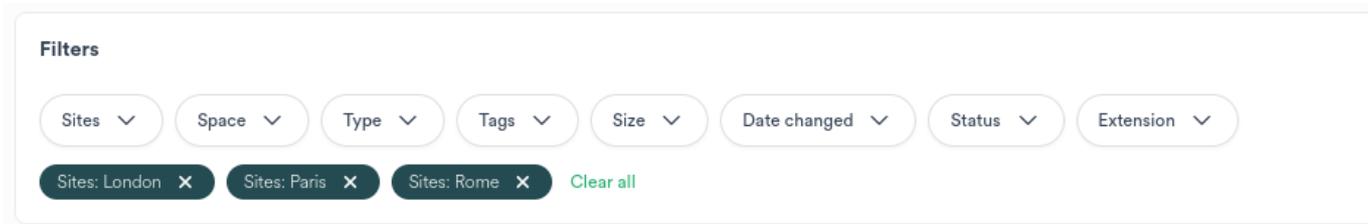
Enter a term in the Search bar to start a Search. E.G.: *football*.

Terms are automatically wildcarded to enable wide Searching. E.G.: *\*football\**.



## Filters

Search provides several high level filters each of which apply additional criteria to narrow the Search to return only the required assets.



Click the filter button to display the available filters. The number of applied filters is displayed on the filter button.

## Sidebar



Clicking the toggle displays the side bar to show:

- Item Info
- Tags
- Metadata

Clicking the toggle button again hides the side bar.



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**Item info**

Name	football hd001.png
Path	/mmfs1/data/datasync/footbal...
Size	3.2 MB

---

**Tags**

Empty (add tags)

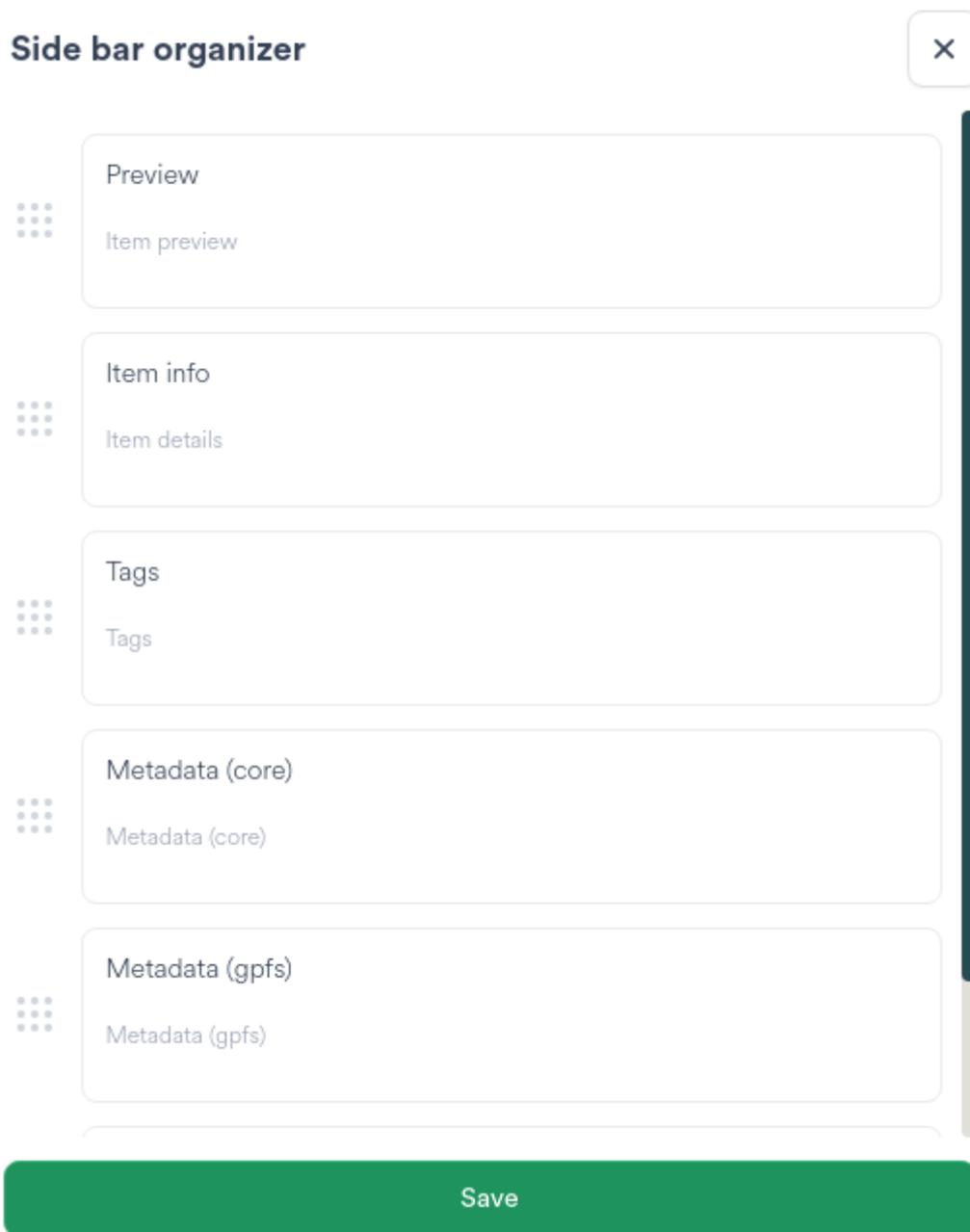
---

**Metadata (core)**

accesstime	24.01.2024, 10:25 GMT
blocksize	8388608
changetime	24.01.2024, 10:25 GMT
deviceid	250609814
directory	/mmfs1/data/datasync/footbal...

## Reordering

Re-arrange items in top to bottom order by dragging vertically up or down.



Click Save to store the sequence which is reflected in the Job side bar.

## Results

Search matches assets to the Search input returning collated results to screen.

Searches are processed asynchronously, therefore some results may take longer to return to screen than others.

Where a Site is unavailable or takes too long to return results, information messages appear at the top of the screen allowing for deselection of the Site or Site(s).

Q \*football\* Filters

342 results

football 2 instances

- 
 football hd000.png  
 24.01.2024, 10:25 GMT | 3.2 MB  
ROM / Space: datasync / football / png
- 
 football hd001.png  
 24.01.2024, 10:25 GMT | 3.2 MB  
ROM / Space: datasync / football / png
- 
 football hd002.png  
 24.01.2024, 10:25 GMT | 3.2 MB  
ROM / Space: datasync / football / png
- 
 football hd003.png  
 24.01.2024, 10:25 GMT | 3.2 MB  
ROM / Space: datasync / football / png
- 
 football hd004.png  
 24.01.2024, 10:25 GMT | 3.2 MB  
PAR / Space: datasync / football / png
- 
 football hd005.png  
 24.01.2024, 10:25 GMT | 3.2 MB

## Result Card

Returned assets appear as a Result Card.



football hd015.png  
 24.01.2024, 10:25 GMT | 3.2 MB  
PAR / Space: datasync / football / png

Where multiple instances of the same asset are present on more than one Site, the results are collated.

2 instances ▼

Open the instances drop down to display all the assets from all Sites

The Result Card displays:

Item	Description
Thumbnail	The generated thumbnail or a default icon where no thumbnail exists
Name	The name of the asset
Date and Size	The date and time of last modification, the size of the file on the pixstor file system
Site chip	The site on which the asset is found

Item	Description
Space Location	The location of the asset in the Space
	The filebrowser navigation button

## Tags

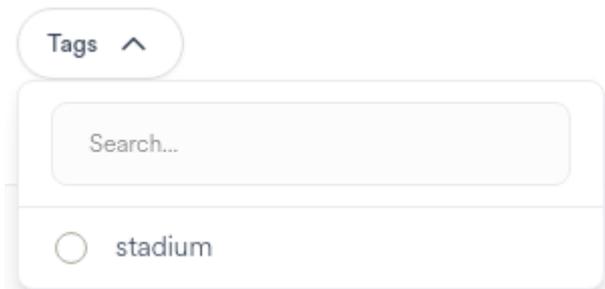
Search provides the ability to Tag assets.

Apply Search Tags to assets in order to collate assets into collections or curate as required.

**Tip:** Applied Tags are added to Site Search services asynchronously. Dependent on workload there may be a small delay between the addition of the Tag in the UI and the ability to Search for the asset by the Tag.

## Searching By Tag

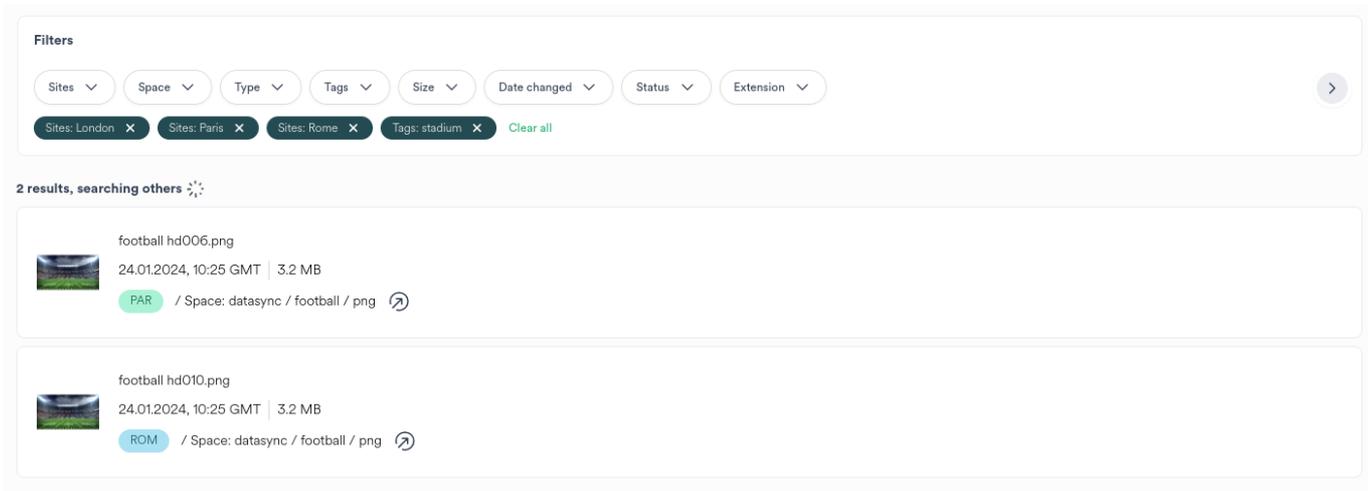
- To Search for an asset by Tag, open the Search filter bar and select the Tag from the drop down menu
- Entering text into the Tag filter matches available Tags to provide a shorter selection list



Applied Tags are denoted with a chip below the filter bar. Click the x to remove the Tag from the filter.

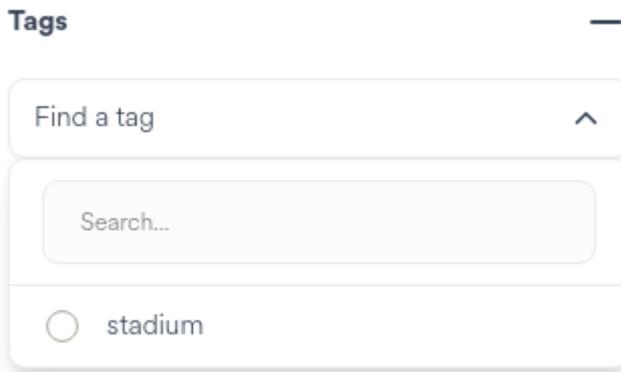


Example of Searching for assets where the Tag *stadium* is applied:

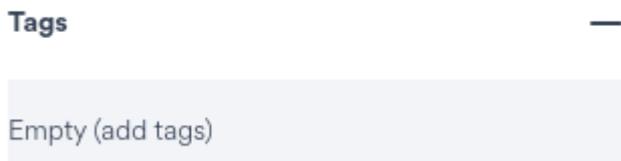


## Tagging An Asset

To add a Tag to an asset, open the side bar and locate the Tags section in the bar.



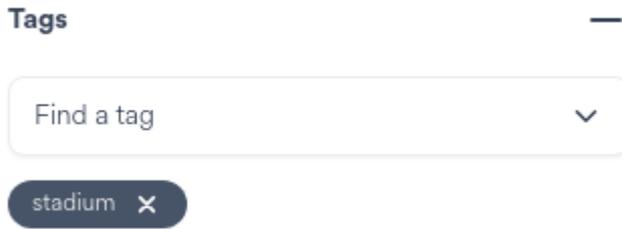
Where no Tags are set on the asset, a prompt to add Tags is shown. Click the entry box to start.



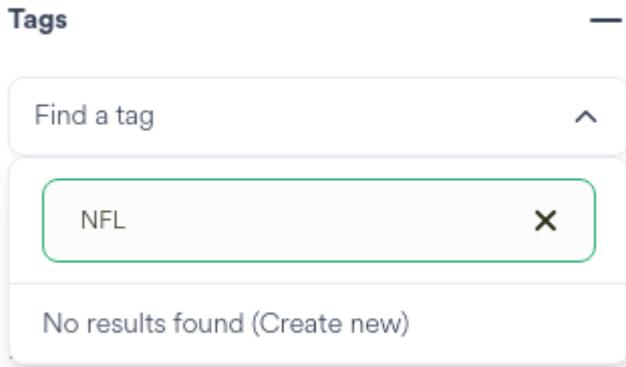
To apply an existing Tag to the asset, select the Tag.



Applied Tags are denoted with a chip below the filter bar. Click the x to remove the Tag from the filter.



If no Tags exist, enter a Tag (case sensitive) in the Tag entry box and press Enter to create and apply the new Tag.



## Actions

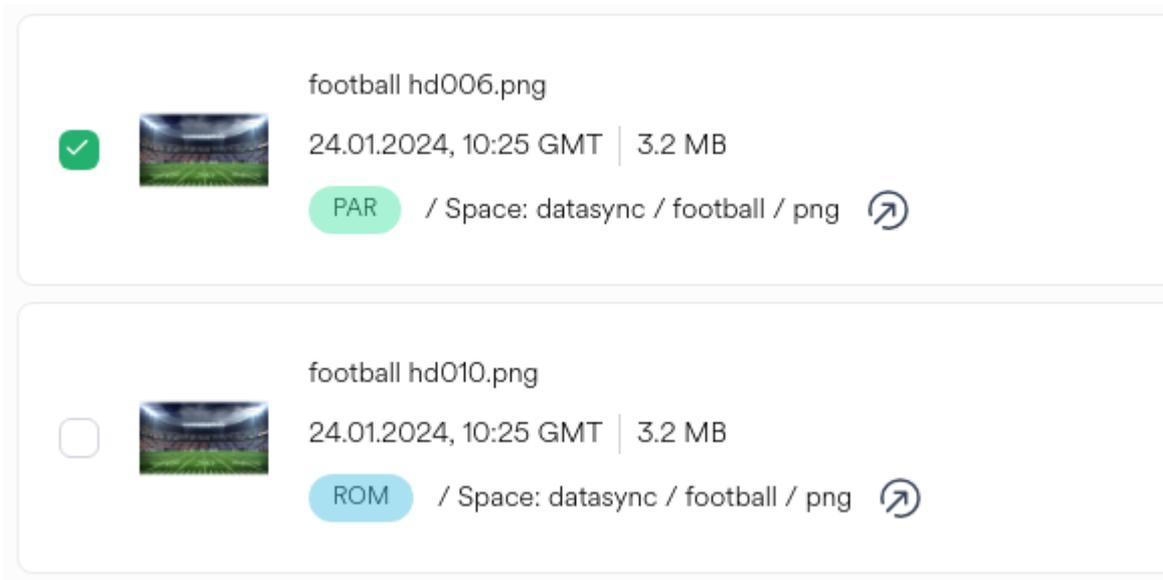
Post Search, assets can be actioned by Workflows using the Job Panel.

To enable asset selection first select an individual Space from the Search filters.



Selecting an individual Space enables asset selection.

- Click the checkbox to the left of an asset to add the asset to the Job Panel selection list



Assets in the Job Panel are processed per Space, per Site. Selecting assets from additional Sites raises a confirmation dialog.

- Choose whether to retain the assets from the current Site or to clear all the current selections in order to add new selections from other Site(s)

### Different sources



You have files selected from a different source site/space in the selection list. You can either clear all selections, or go back to source site/space to continue adding from the same source.

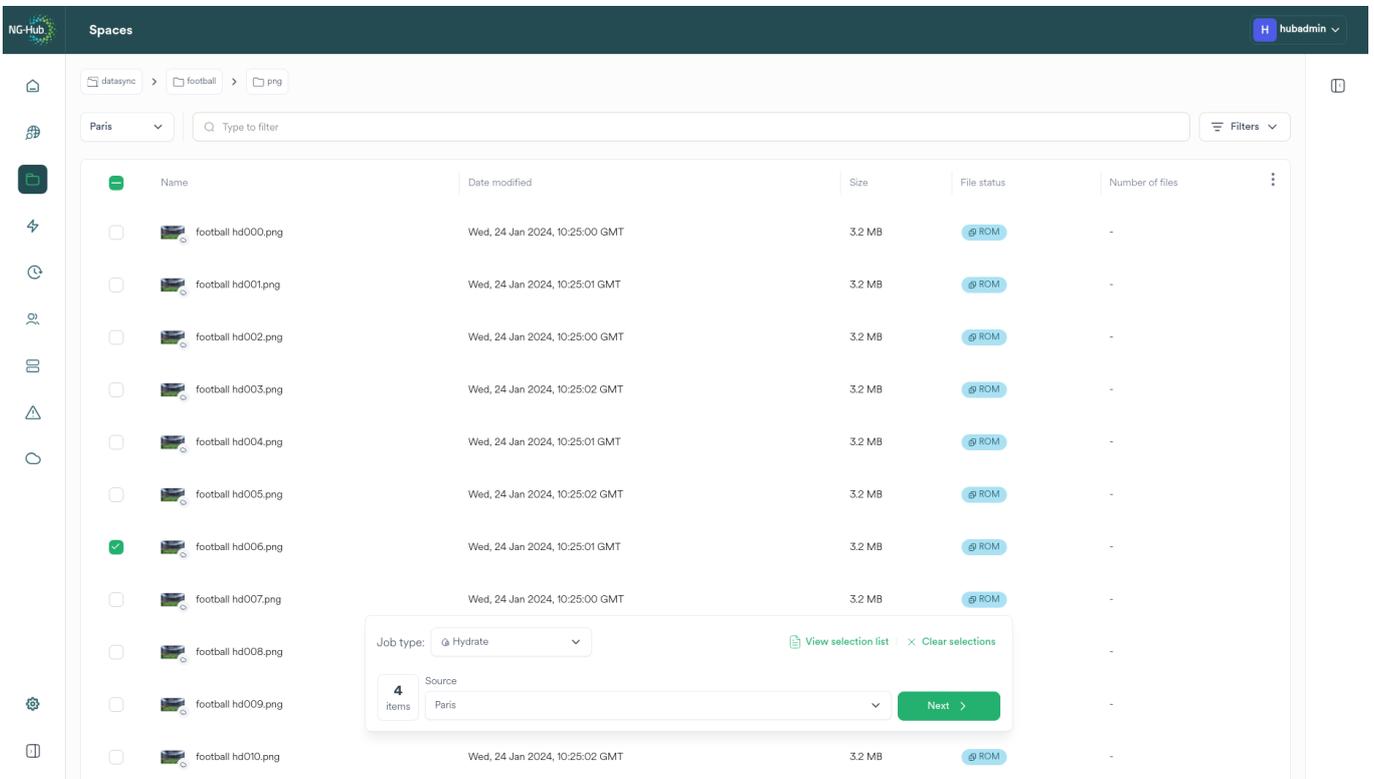
Clear selections
Go back

When the Job Panel selection contains selected items, navigating to the Space on the selected Site retains the selections in the Job Panel selection list.



Click the filebrowser navigation button on the Space card to navigate to the selected Space, filtered by Site. Any assets already selected remain in the Job Panel selection list.

Example of asset selections after navigating to the Space on the Site with assets selected from the Search results:



## Spaces

A Space is an area of storage present on or across one or more pixstor which comprises the following capabilities:

- name
- location
- size
- data protection
- performance
- file share

## Viewing Spaces

To view available spaces, click the Spaces menu button.



Navigates to the Spaces screen

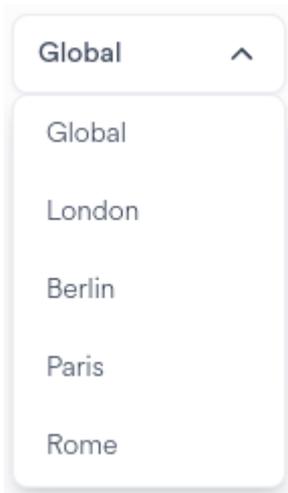
The ability to view spaces is restricted by group membership.

- Administrators can view and administrate all Spaces across all Sites
- Users can view and use all Spaces across all Sites
- Restricted users can view and use a defined subset of Spaces on associated Sites

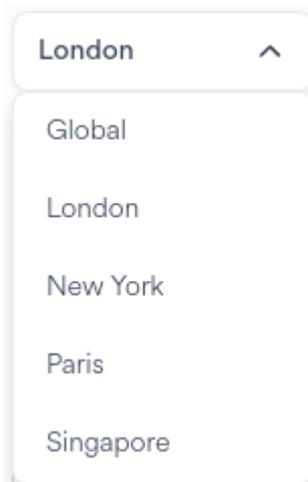
Hub provides two views of Spaces - Global and Local.

- Global displays all Spaces on all Sites
- Local displays the Spaces on a specific site

The default view of Spaces is Global.



To switch to a site-centric view, select the specific site from the Spaces drop-down menu.

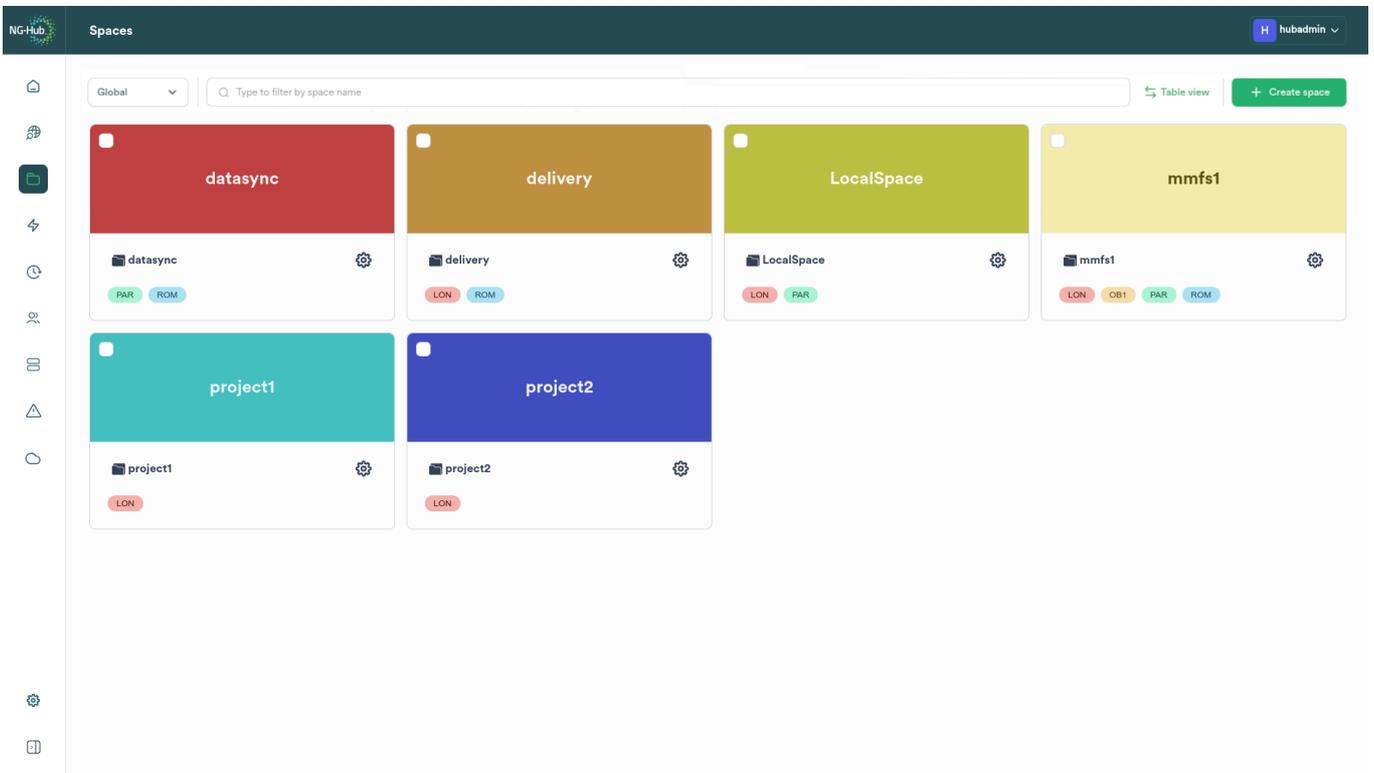


To switch to Global view, select Global from the Spaces drop-down menu.

## Global View

Global view displays all Spaces on all Sites.

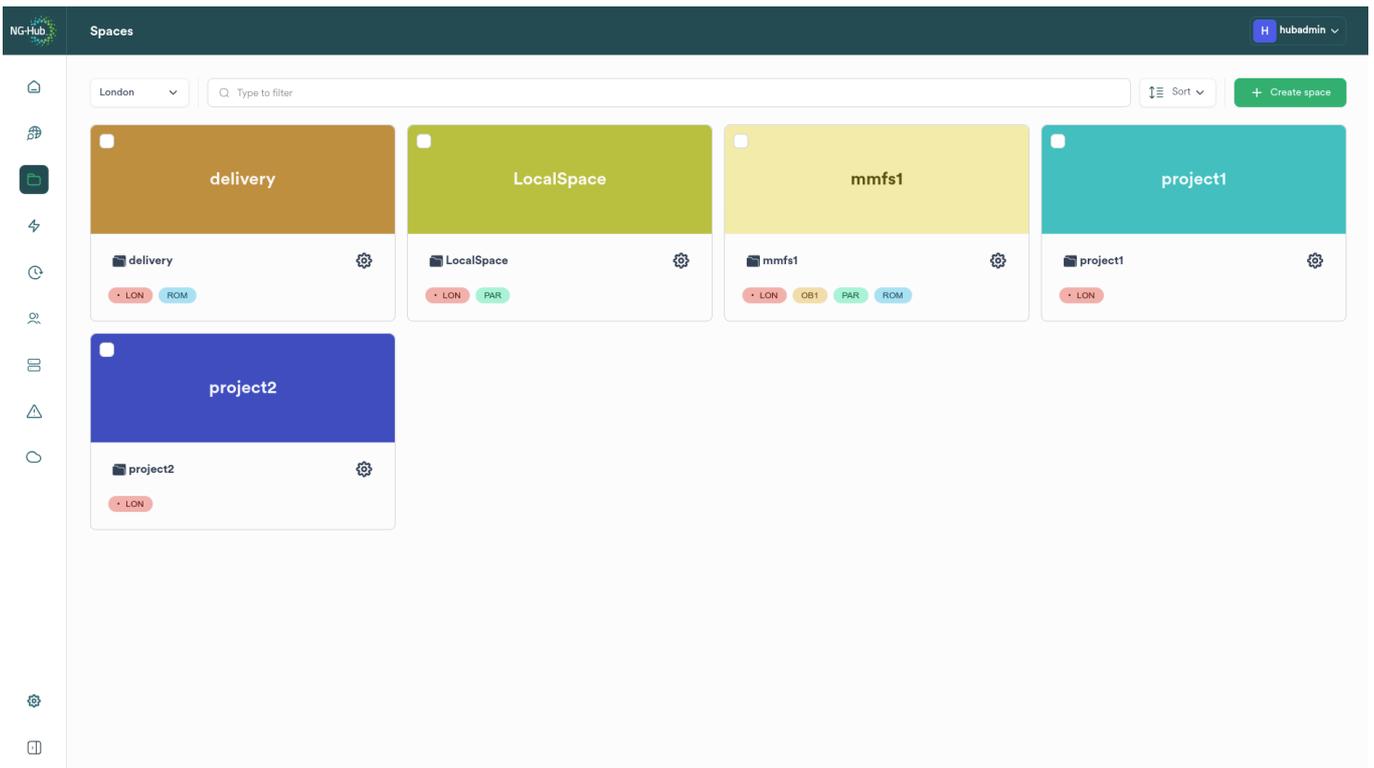
The example below displays all the Spaces across all Sites.



## Local View

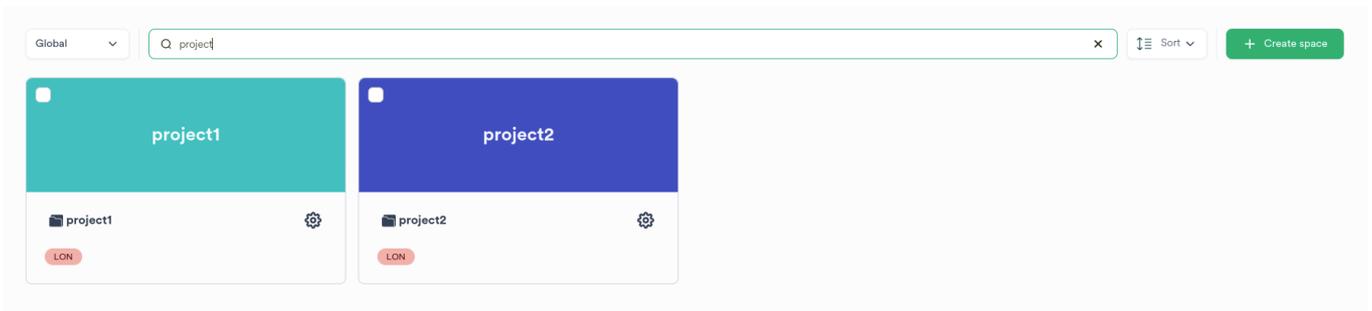
Local view displays the Spaces on a specific Site.

The example below displays less Spaces than Global as the site is participating in fewer Spaces.



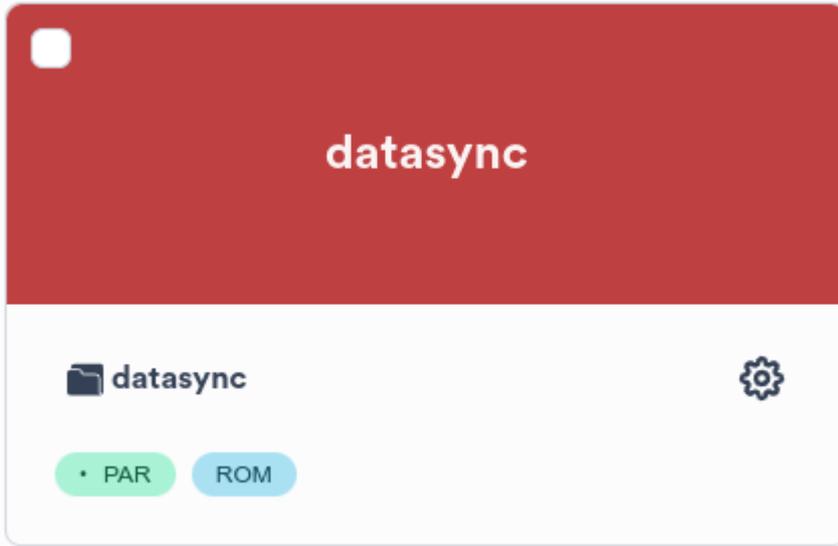
## Filtering the Space View

To display Spaces matching keywords, enter the keywords in the filter bar.

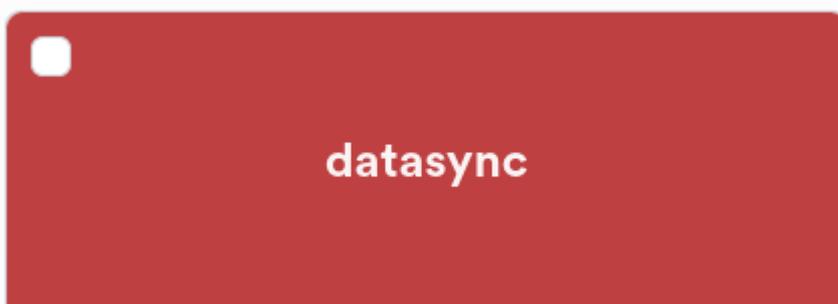


## The Space Card

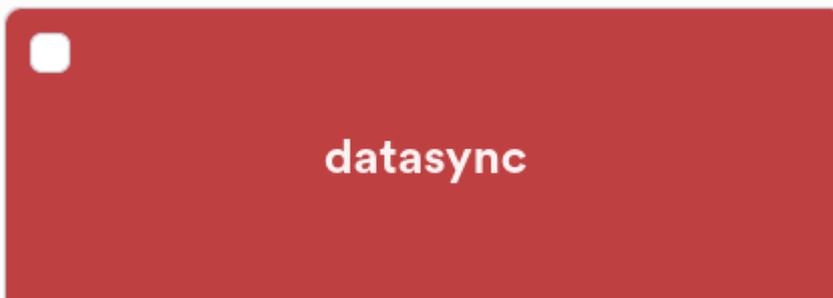
A Space is displayed as a card in the Space view.



A Space Card comprises:



## Space Card Header



Denotes the name of the Space.

Click the Header to view the Space File Browser.

## Space Name



Denotes the name of the Space.

Click the Space Name to view the Space File Browser.

For more information on the Space File Browser, see [Browsing Spaces](#)

## Space Site Chips

Site Chips denote the sites on which a Space is present.

Click a Site Chip to change the view to the Local View of the [Space File Browser](#) for a specific Site.

LON NYC PAR SG

In Global view all sites are listed in alphabetical order.

In Local View, the selected site is identified with a dot.

• SG LON NYC PAR

All other sites are listed in alphabetical order after the local site.

## Space Selector Checkbox



Selecting the Space Selector Checkbox raises the Job Creator Panel to perform data operations on the entire Space.

**Tip:** To perform more granular operations on data inside the Space, refer to [Selecting files and folders](#)

The Job Creator Panel allows data operations on the Space as a whole.

Workflow: Hydrate View selection list Clear selections

1 items Source: london Queue: default Next >

For further information refer to [Using the Job Creator Panel](#).

## Space Settings



Clicking the Settings button on the Space card raises the Settings dialog for the Space.

## Basic Space options

## datasync

Delete space 

## Job schedules

## Basic Space options

## Shares

## Space backup

## Size

## Size

120

✕

TB ▾

## Space colour



Choose a colour to identify the space

## Snapshot config

Pick how long you want to store the snapshots for and how often you want snapshots to be taken

## Use snapshots



Configure frequency, time &amp; storage duration for snapshots

## Job schedules



Name

Controls



schedule-datasync



Edit



Delete

Save

**Important:** Adding or Configuring a Space can only be performed by a Hub Administrator or User with Space Administration rights granted through group management.

## Job Schedules

**Important:** In the schedule settings, hidden workflows types are also available for selection in the Workflow drop down menu. These are workflows defined with `visible:false`.



Workflow configuration

## archive-to-gcs

Delete schedule

Managed paths

### Workflow configuration

#### Basic workflow settings

##### Workflow

Archive to GCS

##### Source

London

##### Queue

highpriority

### Managed paths

Name	
delivery	

Save

## Table View

Hub provides an alternative table layout for Spaces.

Table layouts can be preferable for viewing many Spaces or extended high level Space information.

Space ^	Sites	Created ↕	Mountpoint ↕	Controls
<input type="checkbox"/> datasync	<span>STA</span> <span>STB</span>	Tue, 17 Jun 2025, 17:42:15 (GMT+01:00)	/mmfs1/data/datasync	Settings  Delete
<input type="checkbox"/> delivery	<span>STA</span> <span>STB</span>	Fri, 20 Jun 2025, 10:13:52 (GMT+01:00)	/mmfs1/data/delivery	Settings  Delete
<input type="checkbox"/> LocalSpace	<span>STA</span> <span>STB</span>	Wed, 18 Jun 2025, 12:10:52 (GMT+01:00)	/mmfs1/data/LocalSpace	Settings  Delete
<input type="checkbox"/> mmfs1	<span>STA</span> <span>STB</span>	Tue, 17 Jun 2025, 16:53:12 (GMT+01:00)	/mmfs1	Settings

Table view

Clicking the Table view button to switch to Table Layout

Cards view

Click the Cards view button to switch to Cards Layout

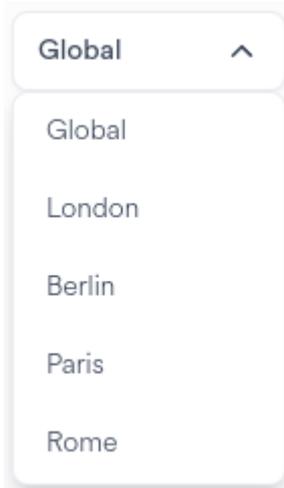
## Browsing Spaces

The Spaces File Browser displays the file and folder contents of a Space across multiple or specific sites including additional contextual information such as file counts, size, metadata and status.

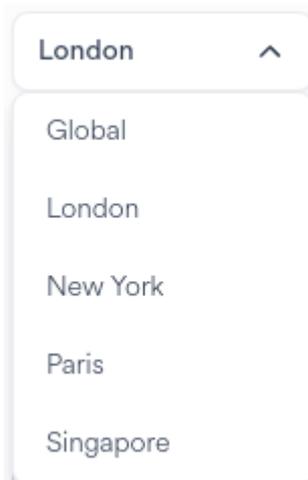
The Space File Browser provides two views of Spaces file and folder content - Global and Local.

- Global displays the file and folder content for a Space across all Spaces on all associated Sites
- Local displays the file and folder content for a Space on a specific Site

The default view of the Spaces File Browser is Global.



To switch to a site-centric view, select the specific site from the Spaces drop-down menu.

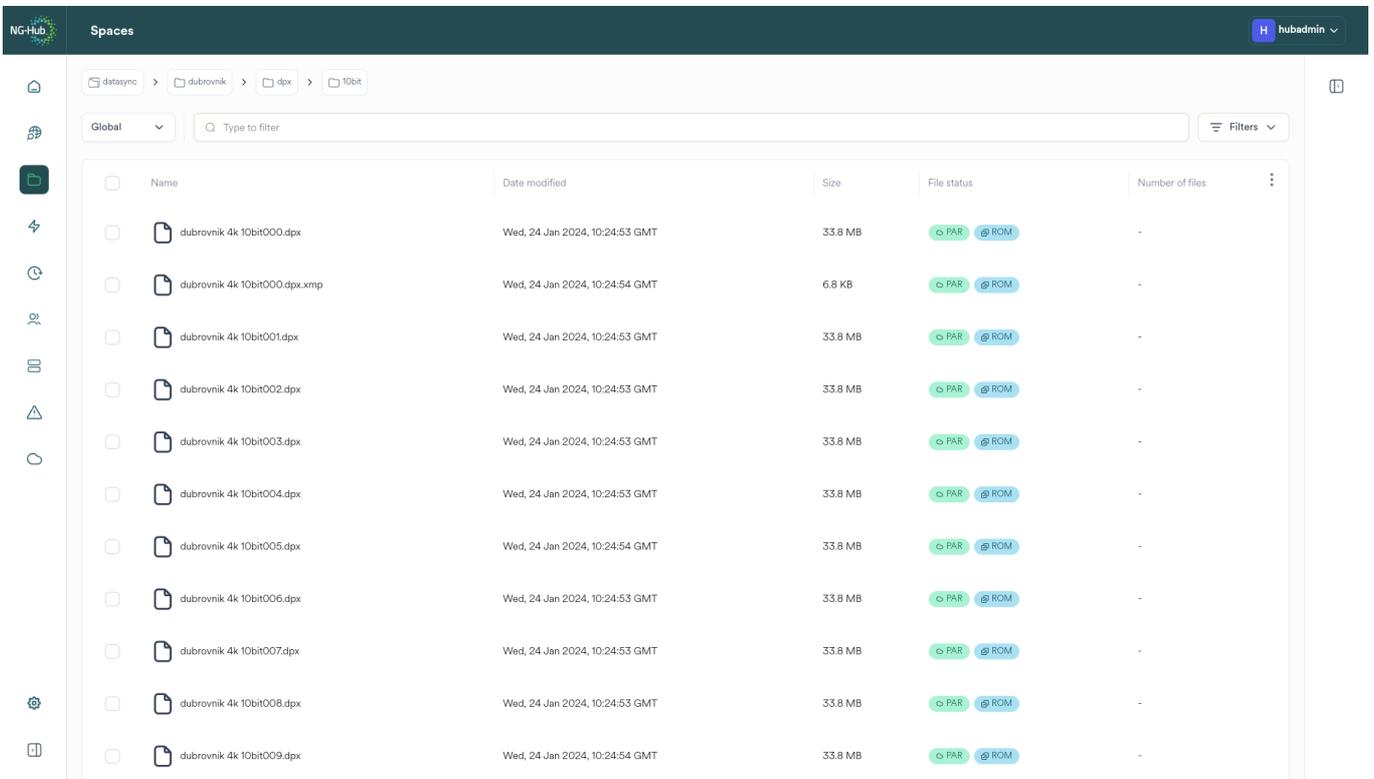


To switch to Global view, select Global from the Spaces drop-down menu.

## Spaces File Browser Global View

Global view displays the file and folder content for a Space across all Spaces on all associated Sites

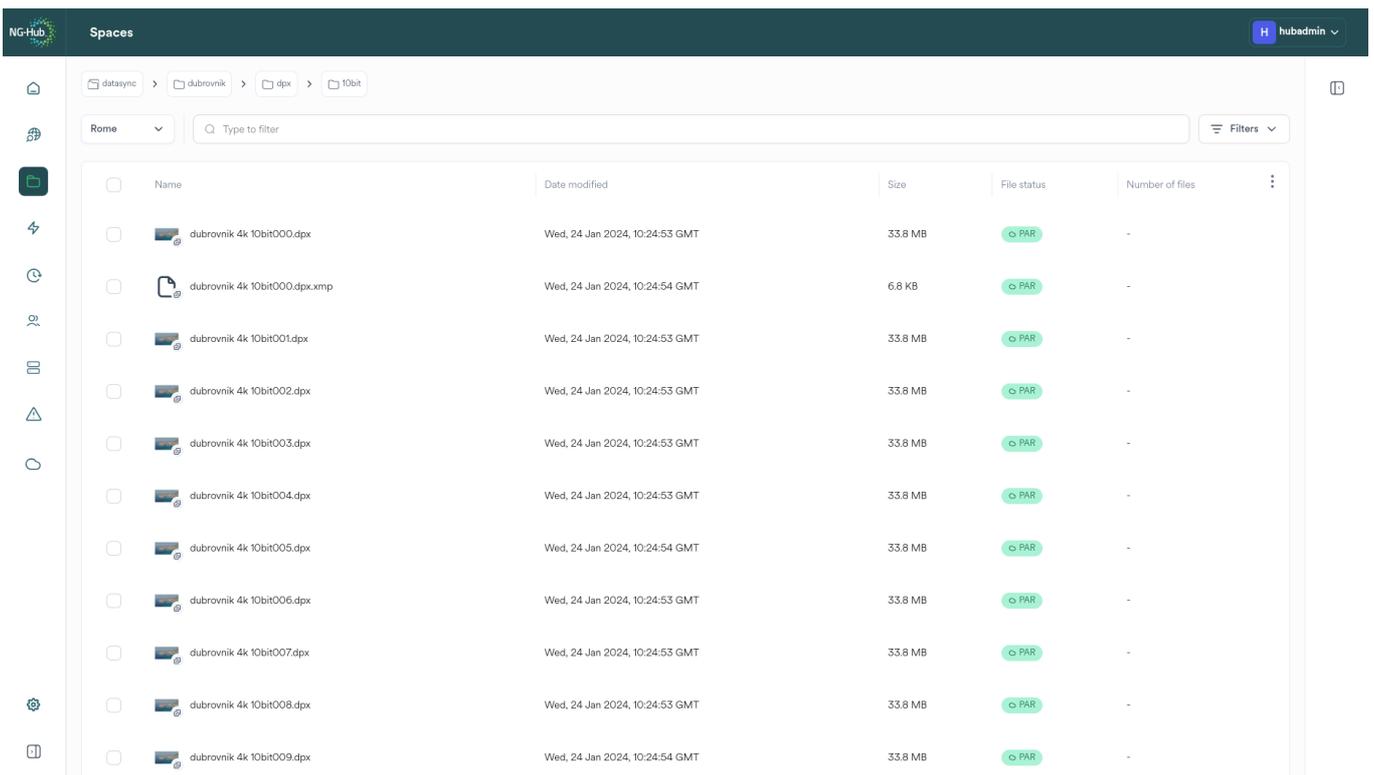
The example below displays the file and folder content for the Spaces across all Sites.



## Spaces File Browser Local View

Local view displays the file and folder content for a Space on a specific Site

The example below displays the file and folder content for a Spaces across all Sites with a site-centric view.

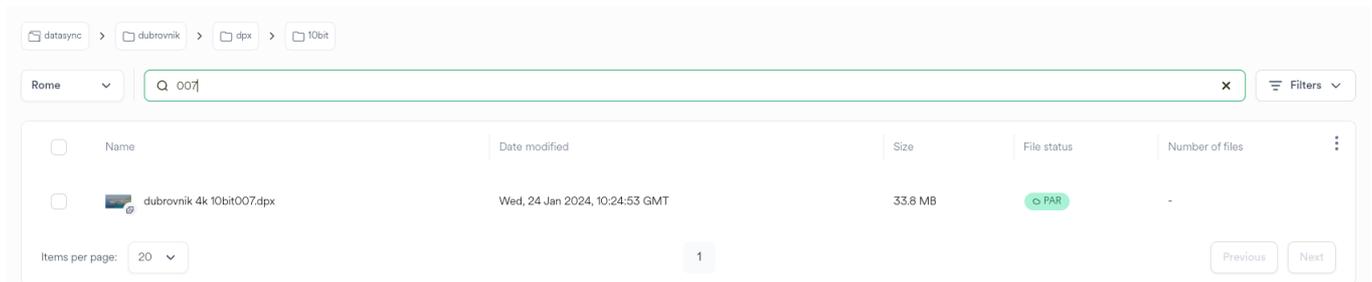


## The Space File Browser Screen

The Spaces File Browser screen is comprised of several areas.

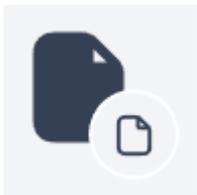
## Filtering the Space File Browser

To display files or folders matching keywords, enter the keywords in the filter bar.

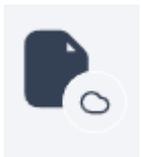


## Space File Browser Icon Statuses

In Local View the Spaces File Browser displays additional information to designate the status of the file on the Site's pixstor file system.



Spaces File Browser Local View displays the default file icon if the file or folder is unmanaged. An unmanaged file has not yet been processed by Ngenea operations.



Spaces File Browser Local View displays the cloud icon if the file or folder is Pre-Staged. A pre-staged file is present on the Site's pixstor file system and has an identical copy in the Ngenea target (E.G. AWS cloud bucket).



Spaces File Browser Local View displays the cloud icon if the file or folder is dehydrated. A dehydrated file has only metadata present on the Site's pixstor file system and has a fully hydrated identical copy in the Ngenea target (E.G. AWS cloud bucket).

## Space File Browser File Statuses

Site Chips denote the sites on which a Space file or folder is present and their status.

In Global view all sites are listed in alphabetical order.

In Local View, the selected site is identified with a dot.

All other sites are listed in alphabetical order after the local site.



Spaces File Browser Local View displays the default file icon if the file or folder is unmanaged. An unmanaged file has not yet been processed by Ngenea operations.



Spaces File Browser Local View displays the cloud icon if the file or folder is pre-staged. A pre-staged file is present on the Site's pixstor file system and has an identical copy in the Ngenea target (E.G. AWS cloud bucket).



Spaces File Browser Local View displays the cloud icon if the file or folder is dehydrated. A dehydrated file has only metadata present on the Site's pixstor file system and has a fully hydrated identical copy in the Ngenea target (E.G. AWS cloud bucket).



Spaces File Browser Local View the file or folder displays a greyed out site with a circled dash where the file is not present on the associated site.

## Space File Browser File Attributes

The Space File Browser displays information regarding the files and folders within the Space, globally on all Sites or local to a Site.

Option	Description
Name	The file or directory name
Date Modified	The date and time of last modification
Size	The size of the file on the pixstor file system
File Status	The file status per-site
Number of Files	If the item is a directory, displays the total file count within the directory tree thereunder

## Viewing File or Folder Metadata

### Metadata Panel

Click a file or directory name to view the associated metadata:



---

**Item info**

Name dubrovnik 4k 10bit000.dpx

Type file

Path /mmfs1/data/datasync/dubrov...

Site names Rome

Size 33.8 MB

Date changed 24.01.2024, 10:24 GMT

Date accessed 24.01.2024, 10:24 GMT

Date modified 24.01.2024, 10:24 GMT

---

**Hydration status**

Rome Premigrated

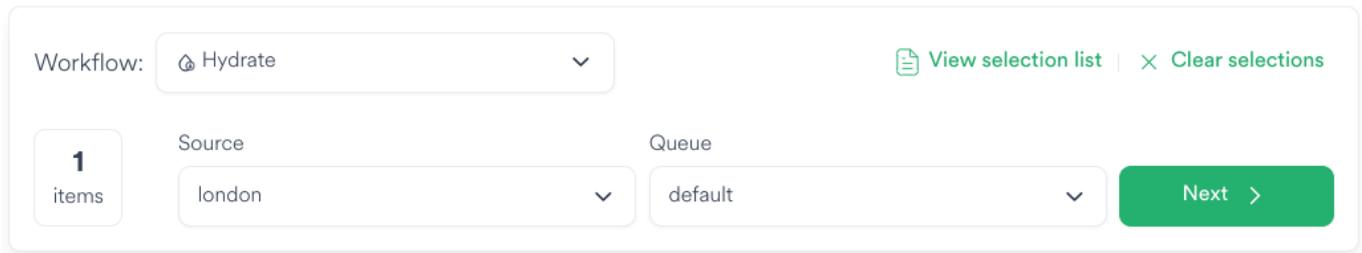
Paris Migrated

The metadata panel provides extended metadata, including a summary of the file status on each site participating within a Space.

Where an asset has been ingested via Search thumbnails are displayed for supported file types.

## Using the Job Creator Panel

Explain panel areas, buttons and operations



The screenshot shows the Job Creator Panel interface. At the top left, there is a 'Workflow:' dropdown menu set to 'Hydrate'. To the right of this are two links: 'View selection list' and 'Clear selections'. Below the workflow menu, there is a box on the left showing '1 items'. To the right of this are two dropdown menus: 'Source' set to 'london' and 'Queue' set to 'default'. On the far right is a green 'Next >' button.

## Selecting files and directories

Selecting an individual file or directory populates the selection list with the item. Selecting a directory populates all items within the chosen directory tree.

Selections of the entire Space or a directory are each counted as 1 item.

Select the 'select all' checkbox next to the Name field in order to select the entire Space.

<input type="checkbox"/>	Name
<input checked="" type="checkbox"/>	 001.file
<input checked="" type="checkbox"/>	 002.file
<input checked="" type="checkbox"/>	 003.file

As selections are added or removed, the selected item count is updated:

**5**  
items

 [View selection list](#)

Click the View Selection List button to show the files and directories selected to be processed by the chosen workflow

 [Clear selections](#)

Click the Clear selections to remove all files and directories currently selected from the selection list

[Next >](#)

Click the Next button to enact the Job

## Sites and queues

Source

london

Select the site where the job will run.

Queue

default

Select the queue the job will be assigned to.

If the workflow runs across multiple sites, such as “Send to Site”, select a source site and queue, and a destination site and queue.

Workflow:  Send to Site (hydrated)

 [View selection list](#) |  [Clear selections](#)

**1**  
items

Source

London

Queue

highpriority

Destination

Paris

Queue

default

 Submit



## Workflow fields

Jobs with Workflows which require additional user decisions prior to enacting the Job raise the Configure workflow fields dialog:

## Configure workflow fields



### Sync Policy

Newest



### Snapdiff rotate on error

Always rotate on error



### Sync dirs acl

Sync folder ACL changes



 Send

After entering the field information [if required], select the button at the bottom of the dialog to submit the Job.

 Send

Click the button at the bottom of the dialog to submit the Job immediately. The button label is changed dependent on the workflow chosen.

## Scheduling a workflow

To Schedule the Job to run later, click the Schedule button.



Click the Schedule button to Schedule the Job for later

The Schedule button raises the Schedule Job dialog.

## Schedule job



### Schedule name

myschedulename



### Frequency

Periodically

At specific time of a day

Every

Mon

Tue

Wed

Thu

Fri

Sat

Sun

Interval

1



mins



Schedule "Hydrate"

- Enter the name of the Schedule
- Select the desired Schedule settings
- Click the Schedule button to create the Schedule

See [Schedules](#) for more details for schedule workflows.

## Job Types (Workflows)

Workflow: Hydrate



View selection list

Clear selections

1

items

Source

london



Queue

default



Next >

## Default Workflows

### Dehydrate

The Dehydrate workflow transfers the file metadata and data to an Ngenea target (E.G. an AWS cloud bucket). After dehydration the file appears to be normally present alike any other file on the pixstor file system, but consumes no space. Reading the file automatically hydrates the file with data content allowing the user to read the file as normal.

### Pre-Stage

The Pre-Stage workflow transfers the file metadata and data to an Ngenea target (E.G. an AWS cloud bucket). After migration the file on Ngenea target is an identical instance of the file on the pixstor file system. The file on the pixstor file system is not dehydrated. Reading the file allows the user to read the file as normal. Pre-Staging can reduce the total time to Dehydrate the same data in future.

### Hydrate

The Hydrate workflow retrieves the file data from an Ngenea target (E.G. an AWS cloud bucket). After successful transfer the metadata and data content of the file is present on the destination site. Reading the file allows the user to read the file as normal.

### Sync Space to Site

The Sync Space to Site uses file system snapshots to discover changes between the last file system snapshot and when the workflow was run. Changes are applied by sending newly created or recently modified files and directories, including deleting or moving files or directories in place on the target site as necessary to match the source site.

### Send to Site (hydrated)

The Send to Site (hydrated) workflow transfers data from a source site to a destination site. After successful transfer the metadata and data content of the file is present on the destination site. Reading the file allows the user to read the file as normal.

### Send to Site (dehydrated)

The Send to Site (dehydrated) workflow transfers data from a source site to a destination site. After successful transfer the metadata of the file is present on the destination site. To a user the file appears to be normally present alike any other file on the pixstor file system. Reading the file automatically hydrates the file with data content allowing the user to read the file as normal.

## Additional Custom Workflows

Hub can support additional Custom Workflows providing custom operations to data through multiple task steps. Custom workflows are configured and provisioned by a Hub Administrator using the Hub CLI. When provisioned Hub Custom Workflows will appear in the list of workflows available for users to use with their data.

## Managing Spaces

### Create a Space Wizard

Click the Create Space button to display a dialog to configure the selected space.



**Important:** This function can only be performed by a Hub Administrator

### Navigating the Wizard



Click the close button to exit the wizard. Changes are not saved.



Click the Next button to advance to the next page of the wizard. The Next button is disabled until all required page elements are completed.



Click the Go Back button to return to the previous wizard page.



Click the Finish & Create button to apply the changes displayed on the wizard summary page.

### Basic Space Options

Spaces are created on pixstor file systems at `/mmfs1/data/[Space]` or at an alternative custom location.

Spaces can be restricted to a limited amount of data.

Spaces are defined to a specific file system.

**Name & Size**

**Name**

Name is required

**Size**

 TB ▾

**Filesystem**

 ▾

**Space colour**



Choose a colour to identify the space

- Enter a name of the Space. The name is case-sensitive.
- Choose the data limit for the Space or unrestricted (Size = 0)
- Select the file system the Space will reside on across all pixstors
- Select a colour for the Space Card

Snapshots create safety copies of data on the pixstor file system.

Snapshots are not backups and should not be used as protection against media failures

## Snapshot config

Enable automatic snapshots



### Frequency

daily



### Time

00

:

47

Snapshots are taken in the local time of each Site hosting the Space.

### Snapshot retention

1 week



- Choose whether snapshots are required for the Space
- Choose the frequency of the snapshot
- If the frequency is daily or longer, select the time of day on the Site to snapshot the Space
- Snapshots are scheduled and taken based on the local timezone of each Site where the Space is hosted
- Choose how long to retain the snapshots

## Select the Sites to create this Space on

A Space can exist across multiple Sites.

By default data does not move across multiple Sites. Scheduled workflows must be set up to enable cross-site data movement.

Hub provides the ability to synchronise a Space with two Sites - a bi-directional sync.

<input type="checkbox"/>	Name	Tier	Free/Total	
<input checked="" type="checkbox"/>	London	nmve	73 / 240 TB	
<input type="checkbox"/>	ob1	Select an option	No data available	
<input checked="" type="checkbox"/>	Paris	nearline	49.4 TB / 50 TB	
<input checked="" type="checkbox"/>	Rome	nmve	216 TB / 1.43 PB	

Items per page: 20

- Select the Sites on which to create the Space
- Select the pixstor file system tier on which to host the files for the Space. The tier is limited to those available for the file system selected in the prior wizard screen.

If two Sites are selected the Wizard will prompt to setup a bi-directional sync.

**Location**

**Use default location**

Create the space at /mmfs1/data/myspace

- To select an alternative custom location, deactivate the Use default location slider

[Pick location on filesystem ↗](#)

Click the Pick location on filesystem button to open the location selector

## Select location



mmfs1



data

London



Type to filter

Name	Size	Number of files	Date created	
delivery	512 B	-	Tue, 23 Jan 2024, 15:50:49 GMT	
LocalSpace	512 B	-	Wed, 24 Jan 2024, 15:18:54 GMT	
project1	4.8 GB	504	Tue, 23 Jan 2024, 15:50:49 GMT	
project2	5.5 GB	281	Thu, 29 Feb 2024, 22:00:49 GMT	

Items per page:

20



1

Previous

Next

Confirm

- Select a Site to browse. Parent directories not present on another Site will be added when a Space is created.
- Navigate to the directory under which to create the Space
- Click the Confirm button to return to the Space creation wizard

The chosen location is displayed and will be used for all Sites on which the Space is created.

## Set up bi-directional sync

If two Sites are selected on the prior wizard page, Hub prompts to setup a bi-directional sync.

Only one bi-directional sync can run at a time.

This page can be skipped if no synchronisation is required.

**Source**

London  highpriority

**Destination**

Paris  default

- Select the source Site to launch the first sync from
- Select the other Site as the destination site
- Select the Queue(s) to assign bi-directional sync to

## Schedule

Determine the required frequency of the synchronisation.

**Schedule**

**Frequency**

Periodically

At specific time of a day

---

**Every**  Mon  Tue  Wed  Thu  Fri  Sat  Sun

**Interval** 6  × hours

Choosing Periodically will ensure that the schedule will run on the next interval set.

E.G:

- 1 hour: The synchronisation will run on the next hour (12.00, 13.00)
- 15 mins: The synchronisation will run on the next 15 minute interval past the hour (15, 30, 45, 00)

**Schedule name**

sch1
✕

**Status**

Enabled

**Frequency**

Periodically

At specific time of a day

---

**Every**

Mon

Tue

Wed

Thu

Fri

Sat

Sun

**At**

05 ▾

:

00 ▾

Time selection is in the timezone of Site **siteA** (Europe/London).  
The schedule will run **every Monday, Wednesday, Friday at 05:00** in your timezone (Europe/London).

Choosing At Specific Time of A Day allows the Policy to be scheduled once per chosen day at a specific time of day.

**Hint:** The schedule time is set in the Site's local timezone, but will be stored in the UTC timezone.

## Ngenea bucket

Select a pre-defined Bucket or choose to *Add a new Bucket* to associate with the Space.

## Ngenea bucket

Setup a relationship between an Ngenea bucket and the Space

### Bucket selection

#### Bucket

Choose a bucket

team group A

team group B

<Add new Ngenea bucket>

- Select a pre-defined bucket for this Space
- Choose to add a new bucket for the Space

## Adding a New Bucket

Adding a new Bucket raises the *Add new Ngenea Bucket* dialog.

See [Ngenea](#) for more details.

### Bucket settings

#### Name & type

Cloud storage configuration

Advanced configuration

## Add new Ngenea bucket

### Name & type

#### Bucket name

Type the bucket name

Name is required.

#### Bucket label (optional)

Type the bucket label

#### Storage target type

S3

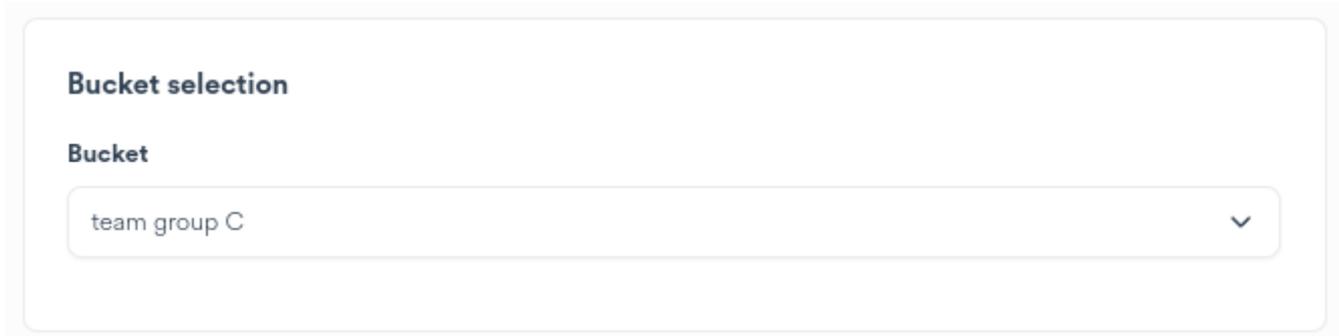
Learn about [StorageTarget](#)

### Cloud storage configuration

Save

## Selecting a Pre-defined Bucket

Selecting a pre-defined Bucket displays the chosen Bucket in the Bucket drop down.



The image shows a user interface for selecting a bucket. It features a section titled "Bucket selection" with a label "Bucket" above a dropdown menu. The dropdown menu is open, showing the selected option "team group C" and a downward-pointing chevron icon on the right side.

## External target details

After either adding a new Bucket, or selecting a pre-defined Bucket the External target details are generated for the Space to review and configure as required.

## External target details

### File match

/(mmfs1/data/delivery/.+)



Regex filter to match files for migration to target. Learn more about [LocalFileRegex](#)

### Ngenea Target reference

delivery



Reference key for the Ngenea Target

### Available on sites:

qatest-jtucker-260docs-siteA, qatest-jtucker-260docs-siteB

## Advanced configuration

### Delete on recall



Delete files from the external storage on recall

Learn more about [DeleteOnRecall](#)

### Key setup

+ Add new key

- Review the external target details and configure as required

See [Ngenea](#) for more details

## Shares

Prior to Space creation Shares can be assigned.

See [Shares](#) for more details

## Spaces backup

### Space backup

Configure backups of this space

#### Site(s) to backup

Select sites



#### Global exclusion rules

#### Exclude filetypes

Type the file extension and hit Return key

- Select the Sites which will perform backups for this space
- Define file extensions which must be excluded from backups across all Sites.  
E.G. \*.tmp

Choosing Site(s) to backup presents further backup options.

For more information refer to [Backups](#).

**Important:** Multiple Sites are not permitted to backup to the same Ngenea Target.

## Updating a Space

Settings can be modified as required.



Clicking the Settings button on the Space card raises the Settings dialog for the Space.

**Important:** Adding or Configuring a Space can only be performed by a Hub Administrator or User with Space Administration rights granted through group management.

## Schedules

Click the [Job Schedules](#) menu item on the Space settings dialog.

## Space settings

Basic Space options

**Job schedules**

Ngenea bucket

Shares

Space backup

Q Type to filter

<input type="checkbox"/>	Name	Workflow	Schedule	Paths	Controls
<input type="checkbox"/>	schedule-datasync	Bi-directional Space S...	every 1 hours	1 path	

The Schedules for the Space are viewable.

### Editing a Schedule



Edit

Click the Edit button for the Schedule to be modified

Clicking the Edit button raises the Update job schedule dialog.

## Update job schedule



### Recurring job name

schedule-datasync



### Frequency

Mins or Hours

Daily or Weekly

### Interval

2



mins



### Queue

site1



highpriority



Save

- Modify the desired Schedule settings
- Click the Save button to store the modified Schedule settings

Clicking the Save button at the bottom of the Space settings dialog saves any changes made.

## Deleting a Schedule



Delete

Click the Delete button for the Schedule to be deleted

**Tip:** Deleted Schedules are non-recoverable. If a Schedule has been inadvertently removed, do not press the Save button, instead click off the Space settings dialog to the main area of the screen.

Clicking the Save button at the bottom of the Space settings dialog saves any changes made.

## Deleting a Space



Clicking the Settings button on the Space card raises the Settings dialog for the Space.

### Space settings



#### Basic Space options

myproject

Delete space

Job schedules

#### Basic Space options

Shares

Space backup

#### Size

#### Size

120



TB

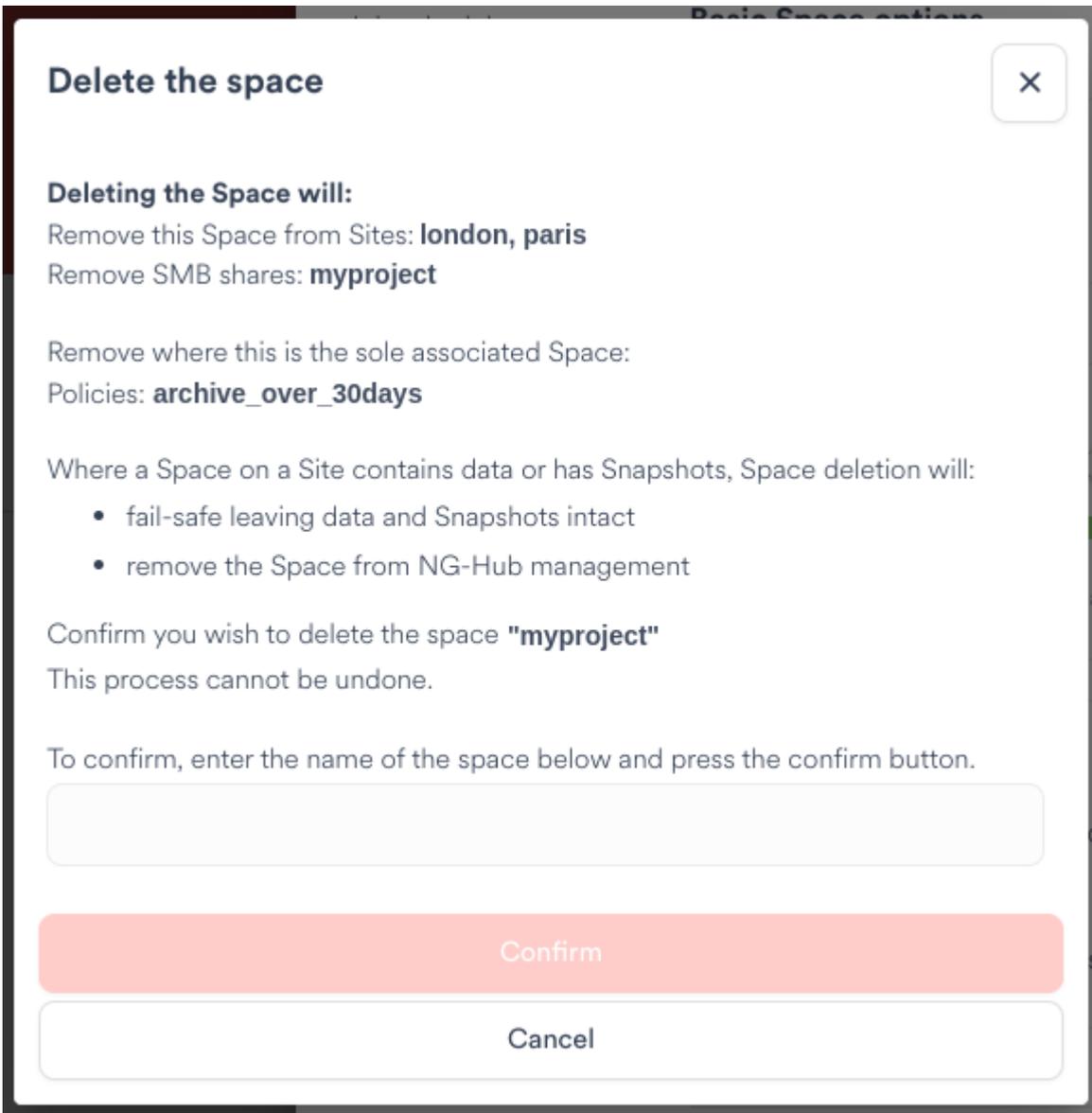
#### Space colour



Choose a colour to identify the space

Delete space

Clicking the Delete Space button raises a confirmation dialog



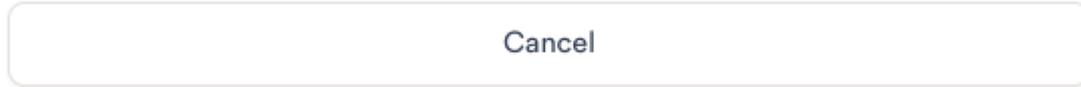
The delete confirmation dialog describes what will happen when the space is deleted, including what associated objects will also be removed.

Type the name of the space into the text input to activate the Confirm button.

Confirm you wish to delete the space **"myproject"**

This process cannot be undone.

To confirm, enter the name of the space below and press the confirm button.



Click the Cancel button to close the confirmation dialog. The space will not be deleted.



Click the Confirm button to delete the space.

## Shares

Prior to Space creation Shares can be assigned.

Shares are created across all Sites where the Space is provisioned.

As the Space is not yet created any Share created is assigned to the whole Space. To create Shares within the Space, edit the Space after creation and add the required Shares.



To create shares for directories within a Space can be created via the Edit Space button after successful Space creation. Shares are created identically across all Sites participating in a Space.

**Share 1** 🗑️

**Name of share**

myproject ✕

 SMB ⚙️ Advanced settings >

 NFS

**Shared location**

Entire space

---

**Share 2** 🗑️

**Description of share**

myproject access for compute ✕

 SMB

 NFS ⚙️ Advanced settings >

**Shared location**

Entire space

+ Add share

- Select either protocol type to create a Share

SMB protocol creates a Share with the name provided.

NFS protocol creates a Share at the Space location on the pixstor file system. Set a suitable description of the share.

- Optionally choose to modify the Share configuration in the Advanced settings.

## SMB Advanced

### Extended SMB options

Modifying the extended SMB options controls the Share capabilities:

Read only

---

Enable multi-threaded reads

---

Enable multi-threaded writes

---

Locking for root share

---

HSM Support

---

Guest OK

Select the available extended SMB options as appropriate:

Option	Description
Read only	If enabled then users of the Share may not create or modify files in the Space.
Enable multi-threaded writes	Enable asynchronous reads and writes
Locking for root share	Enforce file locking
HSM support	Support Ngenea operations to data within the Space
Guest OK	Access will be permitted as the default guest user

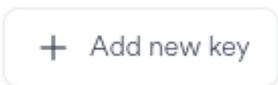
### SMB Custom Options

On occasion Administrators may find it necessary to further tailor SMB Shares in order to provide additional capabilities E.G. compatibility or performance tunings.

Pixstor supports additional SAMBA Custom Options per-share. Custom Options defined for a Space's Share are applied across all Sites where the Space is provisioned.

**Important:** SMB Custom Options are applied verbatim to the underlying SAMBA configuration. Incorrect entries can result in service outage.

Add a new Custom Option as follows:



Click the Add new key to define a new custom option

 **Keyword**  
.....

Enter the name of the custom option setting in the Keyword field

String  
Numeric  
Boolean

Select the type of custom option from the drop down menu. Choose or enter the value for the custom option.

Example of added Custom Options:

 **fullaudit**   
.....

String  success 

---

 **level2 oplocks**   
.....

Boolean  False 

 Add new key

To modify an existing custom option change the keyword, type or values as appropriate.

To delete a custom option select the bin icon next to the item.



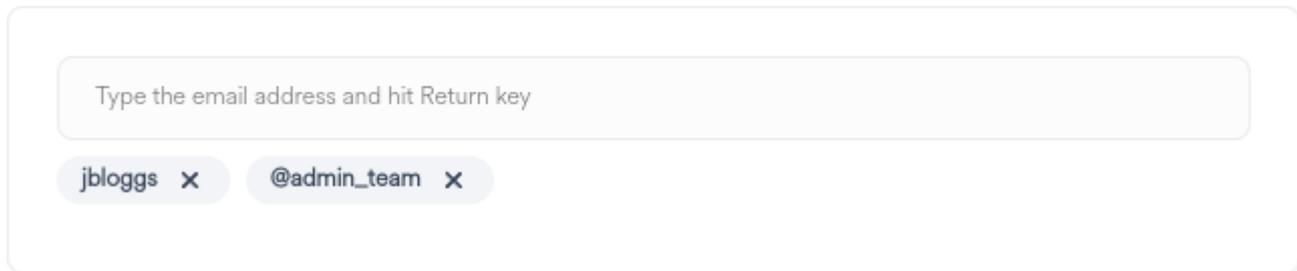
Click the delete button to remove a custom option

## Admin Users

Granted full permission to data in the Space to a specific set of users or groups:

## Admin users

Users (username) or groups (@groupname) which will always have full control of all files.



Type the email address and hit Return key

jbloggs x @admin\_team x

- Add users by username
- Add groups by prefixing the group name with an @ character

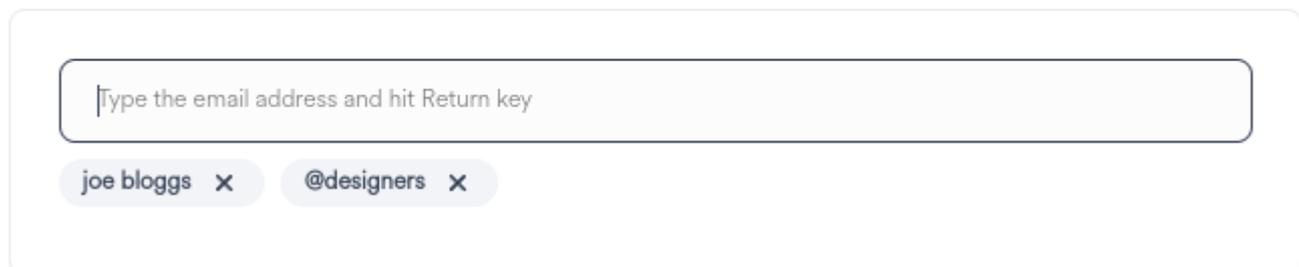
**Hint:** For users or groups containing spaces or symbols, etc. use quotes. E.G. @"Domain Admins"

## Allowed Users

Restrict the access to the share to a specific set of users or groups:

### Allowed users

Users (username) or groups (@groupname) which are permitted to connect to the SMB share.



Type the email address and hit Return key

joe bloggs x @designers x

- Add users by username
- Add groups by prefixing the group name with an @ character

**Hint:** For users or groups containing spaces or symbols, etc. use quotes. E.G. @"Domain Admins"

## Force permissions

In some scenarios it may be desirable to force the file and directory permissions to specific values in order to create a consistent known permission model. Typically this is observed where systems are not connected to Identity Management services such as Active Directory, LDAP or similar.

## Enable force permissions



Type	Read	Write	Execute	
User	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Group	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

- Set the permission overrides as required

## Host access control

pixstor provides the ability to limit connectivity to specific network clients.

1. If no allow or deny options are defined pixstor will allow connections from any system.
2. If only a hosts allow option is defined for a share, only the network clients listed will be allowed to use the share. All others will be denied.
3. If only a hosts deny option is defined for a share, any network client which is not listed will be able to use the share.
4. If both a hosts allow and hosts deny option are defined, a network client must appear in the hosts allow and not appear in the hosts deny to access the share.

## Hosts allow

### Hosts to allow

- Add the required hosts by specifying the IP address

+ Add host

Click the Add host button to add additional hosts



Click the delete button to remove a host

## Hosts deny

### Hosts to deny

126.211.200.89



86.22.11.72



+ Add host

- Add the required hosts by specifying the IP address

+ Add host

Click the Add host button to add additional hosts



Click the delete button to remove a host

## NFS Advanced

### Extended NFS options

Modifying the extended NFS options controls the Share capabilities:

## NFS Advanced settings



### Extended NFS options

### Extended NFS options

ID mapping

Additional NFS share options

NFS network restrictions

Read only

Asynchronous

Write delay

Secure ports

Subtree check

ID mapping

Save

Select the available extended SMB options as appropriate:

Option	Description
Read only	If enabled then users of the Share may not create or modify files in the Space.
Asynchronous	Enable asynchronous reads and writes
Write delay	Reply to I/O requests only after the changes have been committed to stable storage at a cost of performance reduction.
Secure ports	Requires that NFS requests originate from a TCP/IP port from 1-1024
Subtree check	Check the accessed file is in the appropriate filesystem and also within the Share

## ID Mapping

### All Squash

All Squash maps all User IDs (UIDs) and group IDs (GIDs) to the anonymous user. This is useful for NFS-exported public FTP directories, news spool directories

All squash (map all uids and gids)

**User ID**

**Group ID**

## Root Squash

Root squash allows the root user on the client to both access and create files on the NFS server as root. This is conceptually equivalent to the Administrator in Windows.

Root Squash is needed if you are hosting root filesystems on the NFS server (E.G. for diskless clients). You should not use `no_root_squash` unless you are aware of the underlying implications.

Root squash (map requests from uid/gid 0 only)

**User ID**

**Group ID**

## No Squash

No Squash allows the root user on the NFS client host to access the NFS-mounted directory with the same rights and privileges that the superuser would normally have.

No squash (no uid/gid mapping)

## NFS network restrictions

pixstor provides the ability to limit connectivity to specific network clients.

Available to all clients

- Select the Available to all clients option for no restrictions

## Restrict to hosts

### Restrict to hosts

Type in IP address or hostname



+ Add host

- Add required hosts to restrict by specifying the IP address or the FQDN hostname

## Restrict to network range

### Restrict to network range

Range 1



IP address

CIDR

10.176.34.0



24



Range 2



IP address

CIDR

179.63.16.8



32



+ Add IP range

- Add the required IP address or network range and specify a valid CIDR mask to apply the restriction

+ Add IP range

Click the Add IP range button to add additional restrictions



Click the delete button to remove a host

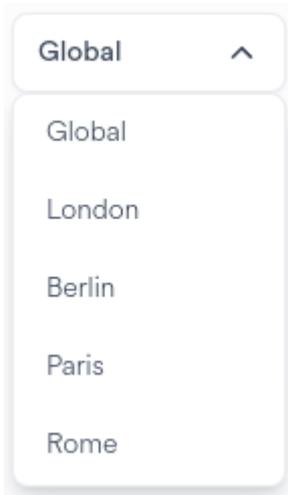
## Jobs

A job comprises one or more tasks, each of which perform an action.

Tasks can be data orientated (E.G. hydrate, dehydrate, SendToSite) or can be management or configuration tasks of pixstor sites and/or services.

## Viewing Jobs

To view Jobs executed on a specific Site, select the Site from the Sites drop down menu or choose Global to display all Jobs from all Sites.



Click and select the site to show the jobs from the selected site.

After selection the Jobs from the selected Site are displayed including high level information for each Job.

Click a Job ID to view in depth information for the job.

The screenshot shows the 'Jobs' page in the NG+Hub interface. At the top, there is a 'Global' dropdown menu and a search bar labeled 'Filter jobs by Id'. Below this is a table with columns for Job ID, Job creator, Description, Workflow, Date created, Progress, and State. The table contains 14 rows of job entries, most of which are in a 'Success' state with a progress bar. One job (ID 29635) is in a 'Pending' state.

Job ID	Job creator	Description	Workflow	Date created	Progress	State
29644	System	Populating/updating settings from site london	-	Fri, 22 Mar 2024, 13:59:46 GMT	✓	Success
29643	System	Populating/updating settings from site rome	-	Fri, 22 Mar 2024, 13:59:33 GMT	✓	Success
29642	System	Populating/updating settings from site paris	-	Fri, 22 Mar 2024, 13:58:40 GMT	✓	Success
29641	System	Applying settings to site 'rome'	-	Fri, 22 Mar 2024, 13:50:53 GMT	✓	Success
29640	System	Applying settings to site 'paris'	-	Fri, 22 Mar 2024, 13:50:40 GMT	✓	Success
29639	System	Applying settings to site 'london'	-	Fri, 22 Mar 2024, 13:50:28 GMT	✓	Success
29638	System	Populating/updating settings from site rome	-	Fri, 22 Mar 2024, 13:50:11 GMT	✓	Success
29637	System	Populating/updating settings from site paris	-	Fri, 22 Mar 2024, 13:50:07 GMT	✓	Success
29636	System	Populating/updating settings from site london	-	Fri, 22 Mar 2024, 13:50:04 GMT	✓	Success
29635	System	Checking space quota for 'mmfs1' on site 'obt'	-	Fri, 22 Mar 2024, 13:39:57 GMT	—	Pending
29634	System	Checking space quota for 'mmfs1, project1, delivery, project2, localspace' on site 'london'	-	Fri, 22 Mar 2024, 13:39:57 GMT	✓	Success
29633	System	Checking space quota for 'mmfs1, datasync, delivery' on site 'rome'	-	Fri, 22 Mar 2024, 13:39:57 GMT	✓	Success

## Filtering the Jobs View

To display a specific Job ID, enter the ID in the filter bar.

Global  Filters <sup>1</sup>

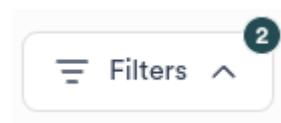
**Filters**

Hide noop  Date created  State  Queue  Workflow  Job creator

Workflow: Bi-directional Sp...  Clear all

Job ID	Job creator	Site	Description	Workflow	Date created	Progress	Queue	State
87468	schedule-sync-test	London	Bi-directional space sync of '/mmfs1/data/sync-...	Bi-directional space sync	Thu, 22 Aug 2024, 17:14:00 GMT+1	✓	-	Success
87467	schedule-sync-test	London	Bi-directional space sync of '/mmfs1/data/sync-...	Bi-directional space sync	Thu, 22 Aug 2024, 17:13:00 GMT+1	✓	-	Success

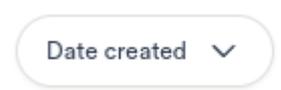
Jobs for a site can be additionally filtered through selection of various criteria.



Click the filter button to display the available filters. The number of applied filters is displayed on the Jobs filter button.



Select the Hide noop filter option to hide any job which did not perform any action as the job determined that no actions were required.



Click the Date Created button to filter for any job which was created between two date ranges.

Clicking the Date Created button raises the date selection dialog. Choose the criteria required and click the Save button to apply the date range.

**Choose a date range** ✕

Today

Yesterday

This Week

Last Week

This Month

Last Month

days up to today

days starting today

Mar 5, 2024 Mar 16, 2024

◀ March 2024 ▶

Mar 2024							Apr 2024						
Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
25	26	27	28	29	1	2	31	1	2	3	4	5	6
3	4	5	6	7	8	9	7	8	9	10	11	12	13
10	11	12	13	14	15	16	14	15	16	17	18	19	20
17	18	19	20	21	22	23	21	22	23	24	25	26	27
24	25	26	27	28	29	30	28	29	30	1	2	3	4
31	1	2	3	4	5	6							

Save

State ▾

Click the Job State button to display jobs matching the status. Available statuses are:

Status	Description
New	A job has been created
Pending	The job is waiting to run
Started	The job is running
Succeeded	The job finished successfully
Error	The job finished with one or more error conditions
Failure	The job finished with one or more failure conditions
Skipped	The job was skipped as the work assigned to the job was not required to be undertaken - no change would have occurred if the job had run.
Cancelled	The job was cancelled
Dequeuing	The job is in the process of removing tasks from the queue - Dequeuing is the process which occurs before the job is in state Cancelled.
Pausing	The job is in the process of Pausing
Unknown	The job experienced a result which could not be matched to a Status

Queue ▾

Click the Queue button to filter for jobs matching the Queue.

Workflow ▾

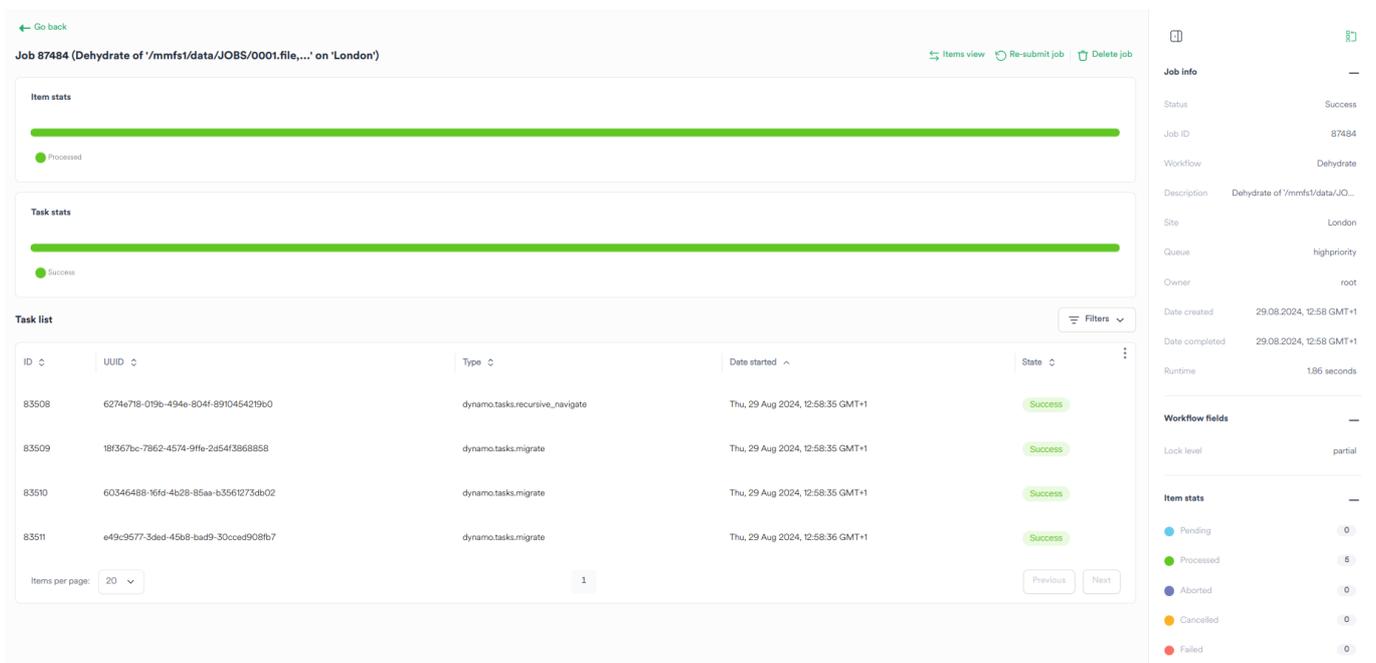
Click the Workflow button to filter for jobs matching the Workflow. Available workflows are:

Type	Description
Bi-Directional Sync	Data synchronisation between two sites
Delete File	Deletion of a designated data
Dehydrate	Dehydration of data
Pre-Stage	Staging of data to an Ngenea target. Subsequent dehydrations save time as there is no requirement to stage data prior to dehydration.
Hydrate	Hydration of data
Reverse Stub	Creation of dehydrated files not prior existing which reference data in an Ngenea target
Send	Deliver data from a source to a destination site

Type	Description
Send to Site (hydrated)	Deliver data from a source to destination site as hydrated files
Send to Site (dehydrated)	Deliver data from a source to destination site as dehydrated files
Sync Space to Site	Synchronising data from a source to a destination site
Transparent Recall	User or application initiated hydration of data on reading
	Click the Job creator button and select the name of one or more creator(s) to view jobs by the selected creator(s)

## Viewing a Job

Clicking a Job ID in the main Job screen displays the in depth information for the job.



The Job View comprises:

## Task stats

The total count of types operation result per task is represented by the horizontal bar segments.

Hovering over the bar provides the count of each task status for the tasks processed.



## File/Item stats

The total count of types operation result per item is represented by the horizontal bar segments.

Items may be files, directories or Objects.



Hovering over the bar provides the count of each type processed.

Bi-Directional Sync and Site Sync workflows only provide File stats.



## The Job Side bar

### Enlarge/Reduce



Clicking the toggle displays the Job Side bar to show:

- Job info
- Task stats
- File Stats (Item stats)

Clicking the toggle button again hides the Job Side bar.

### Reordering

Re-arrange items in top to bottom order by dragging vertically up or down.

## Side bar organizer



Job info

Job details



Task stats

Job task statistics



File stats

Job file statistics

Save

## Job Controls

Jobs provide the following controls where supported by the Workflow:

 Pause job

If supported by the Workflow, click the Pause job button to pause the Job. Tasks which are not running will be paused.

 Resume job

If supported by the Workflow, click the Resume job button to resume a paused Job.

 Cancel job

Click the Cancel Job button to dequeue any upcoming tasks and no longer proceed with the job.

 Re-submit job

Click the Re-submit job button to launch an identical Job on the Job queue

 Delete job

Click the Delete Job button to remove the records of the Job and associated tasks from the Hub database

When job cancellation is initiated, the job is not terminated instantly. Instead, a dequeuing process begins to gracefully shut down the tasks. The job's state is immediately updated to Dequeuing, signifying that the system has received the request. All future tasks associated with that job are then removed from the queue. Any tasks that are currently running will be allowed to complete their execution, which means the final cancellation will take time. This design prevents a cancelled

job from blocking other jobs and ensures the system's overall efficiency is maintained.

## Job Info Summary

Provides an overview of high level information of the Job.

Job info	
Status	Success
Job ID	87468
Workflow	Bi-directional space sync
Description	Bi-directional space sync of '/...
Site	London
Queue	highpriority
Owner	schedule-datasync
Date created	22.08.2024, 17:14 GMT+1
Date completed	22.08.2024, 17:14 GMT+1
Runtime	15.9 seconds

## Job Workflow Fields

Provides a listing of any workflow fields the job was executed with.

## Workflow fields

Hydrate

Destinationsite

paris

Sync preference

newest

Snapdiff rotate on error

## Job Info Task Stats

Jobs undertake tasks to process one or more actions, files, directories or objects as defined by the Workflow.

The Task stats displays the total count of types operation result per task.

## Task stats

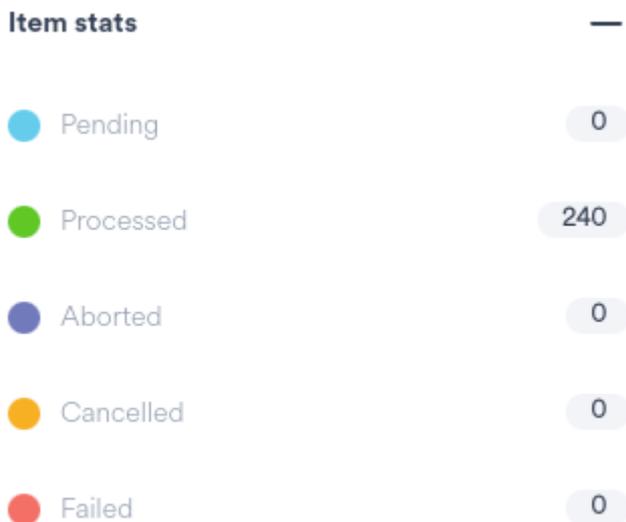
Success	7
Skipped	0
Aborted	0
Cancelled	0
Failure	0
Started	0
Pending	0
Unknown	0

## Item stats

The total count of types operation result per item is represented by the horizontal bar segments.

Items may be files, directories or Objects.

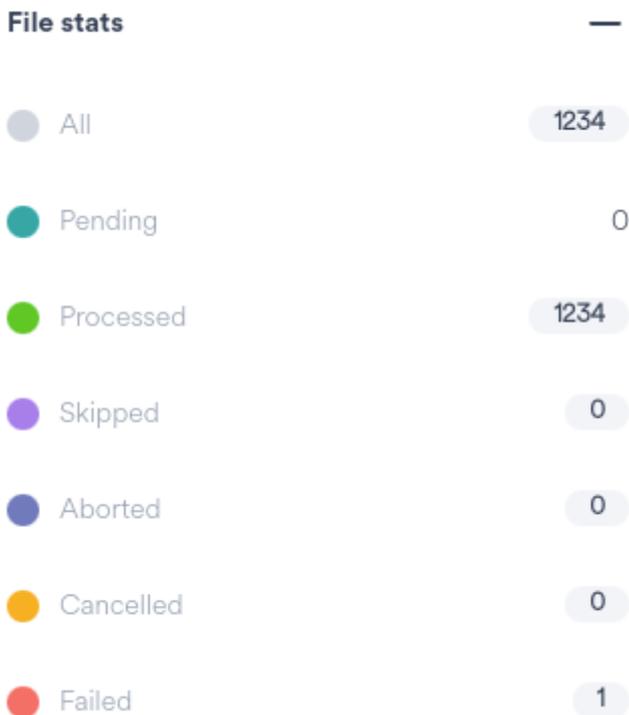
Hovering over the bar provides the count of each operation type for the files processed.



### File stats

Bi-Directional Sync and Site Sync workflows only provide File stats.

The File stats displays the total count of types operation result per file or directory.



## The Job Task List

The Job details page is viewed with a `task-based view` or with a `item-based view`.

Switching between views can be done by clicking **Tasks view** or **Items view** on the top right corner of Job Tasks page.



## Tasks View

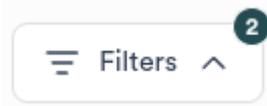
The Task view displays all tasks comprising a job, their ID, type, start time and status.

Task list Filters ▾

ID ↕	Type ↕	Date started ^	State ↕
c9db871a-154c-467e-9136-fb56cc8677f0	dynamo.tasks.recursive_action	Thu, 17 Aug 2023, 12:16:03 GMT+1	Success
f2e1e161-816f-403f-84ff-fb789498db7d	dynamo.tasks.reverse_stub	Thu, 17 Aug 2023, 12:16:08 GMT+1	Success
99d4e4c4-c84a-4121-90ef-4cd58bb75fe1	dynamo.tasks.migrate	Thu, 17 Aug 2023, 12:16:08 GMT+1	Success
c9b294c6-5a0b-4ebf-8fcc-f695b4cb0913	dynamo.tasks.remove_location_xattrs_for_moved	Thu, 17 Aug 2023, 12:16:08 GMT+1	Success
flb5c1b1-2bcd-426b-93ed-69131757b355	dynamo.tasks.recursive_action	Thu, 17 Aug 2023, 12:16:08 GMT+1	Success

## Filtering the Job Task List

Tasks for a job can be additionally filtered through selection of various criteria.



Click the filter button to display the available filters. The number of applied filters is displayed on the Task list filter button.



Click the State button to display jobs matching the status. Available statuses are:

Status	Description
New	A task has been created
Pending	The task is waiting to run
Started	The task is running
Succeeded	The task finished successfully
Error	The task finished with one or more error conditions
Failure	The task finished with one or more failure conditions
Skipped	The task was skipped as the work assigned to the job was not required to be undertaken - no change would have occurred if the job had run.

Status	Description
Cancelled	The task was cancelled
Dequeuing	The job has been manually cancelled via request and is in the process of removing tasks from the queue
Aborted	Whilst running, the task was unable to proceed correctly and aborted the in progress action
Paused	The task is paused
Pausing	The task is in the process of pausing
Unknown	The task experienced a result which could not be matched to a Status

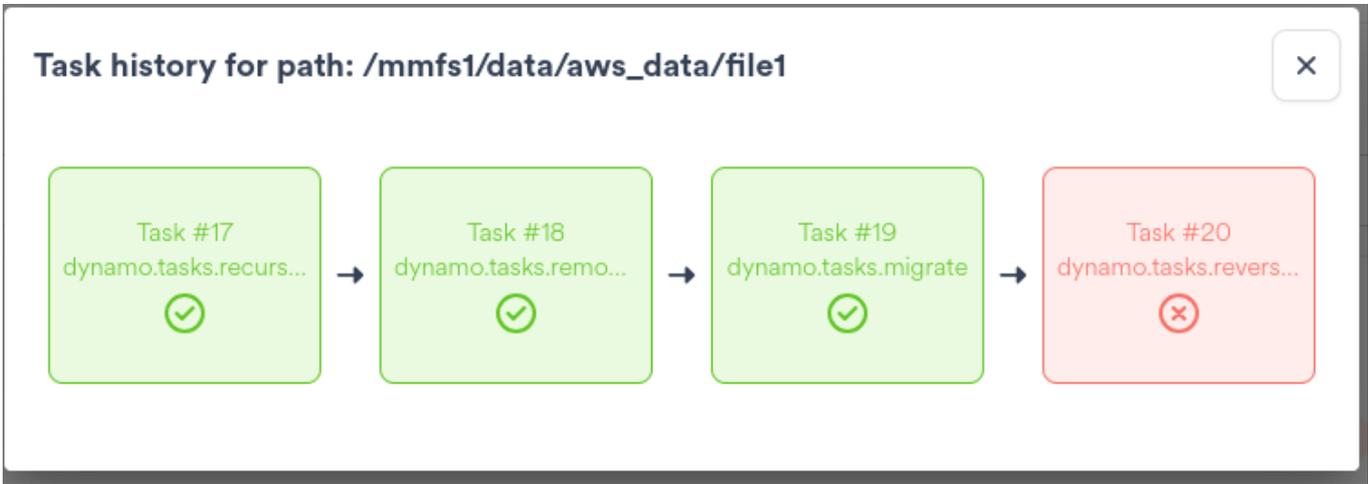
Click the Task type button to filter for a specific task type which comprises the Job. The task types are dynamic therefore the displayed types may differ per job type.



## Items View

The Item view displays the object paths for all tasks across the job. When the Failed items tab is selected, the error message is displayed for failed items.

Clicking on a path displays the task history across the job.



Clicking on each task in task history displays the task details for the chosen task ID.

Output for task #18

```

{
  "root": {
    "url": "http://10.201.2.211:8000/api/tasks/18/"
    "id": 18
    "task_id": "20f366b8-9ddf-400a-a720-35be4f27d065"
    "tasktype": "dynamo.tasks.remove_location_xattrs_for_moved"
    "state": "SUCCESS"
    "started": "2024-04-19T13:29:26.603025Z"
    "completed": "2024-04-19T13:29:26.655133Z"
    "runtime": 0.052108
    "job": 9
    "site": "site1"
    "paths": "http://10.201.2.211:8000/api/tasks/18/files/"
  },
  "result": {
    "log": []
  }
}
  
```

### Filtering the Items List

To search for a specified item, enter the path in the filter bar. It will only search paths based on the state of the active tab out of the Queued/Failed/Completed options.

Completed items

Q Type to filter by path

Path	Message
/mmfs1/data/aws_data/file2	-
/mmfs1/data/aws_data/file1	-
/mmfs1/data/aws_data/file3	-

Items per page: 20 | Page 1 | Previous | Next

### Task information Dialog

Clicking a task ID in the Job Task List displays the information for the chosen task.

Task: c9db871a-154c-467e-9136-fb56cc8677f0



```
"root" : { 18 items
  "url" : "http://hub:8000/api/tasks/c9db871a-154c-467e-9136-fb56cc8677f0/"
  "taskid" : "c9db871a-154c-467e-9136-fb56cc8677f0"
  "tasktype" : "dynamo.tasks.recursive_action"
  "state" : "SUCCESS"
  "started" : "2023-08-17T11:16:03.726630Z"
  "completed" : "2023-08-17T11:16:07.809412Z"
  "runtime" : 4.082782
  "numfiles" : 10
  "numprocessedfiles" : 0
  "numskippedfiles" : 0
  "numabortedfiles" : 0
  "numcancelledfiles" : 0
  "numfailedfiles" : 0
```

Dependent on the number of operations and the quantity of inputs to the task, the information displayed can range from short to extensive.

Optionally select an action button to more easily view the Task Information.



Click the Full Screen button to display the Task Information in a larger view



Click the Copy button to copy the Task Information output to the clipboard.



Click the Download button to download the Task Information locally



Click the Close button to close the Task Information dialog

## Settings Task Jobs

All settings tasks are shown as submitted by System. This includes tasks triggered automatically in the background (like for shares and spaces), where the system doesn't have information about the user who started the action.

## Schedules

Hub can regularly perform the same action to a Space via Job Schedules.

Spaces which are deployed with Bi-Directional Sync automatically have a Schedule added.

Schedules can be added to the entirety of a Space. It is also possible to schedule more granular activities within a Space for some workflow types, E.G. regular Hydration of an individual file or directory.

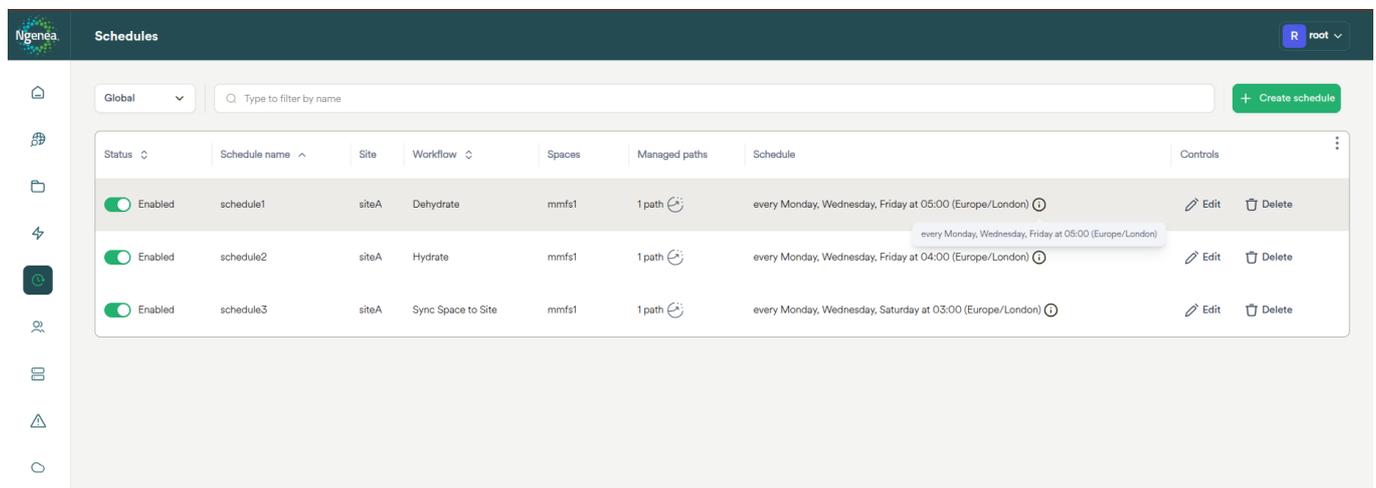
Policy-based Tiering has different configuration options to other workflow types. See the [Policies](#) page for more details.

## Viewing Schedules

To view available Schedules, click the Schedules menu button.

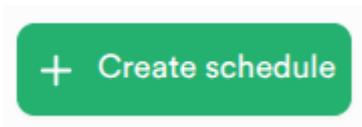


Navigates to the Schedules screen



## Adding a Schedule

Click the Create Schedule button to display a dialog to configure a Schedule.



**Important:** This function can only be performed by a Hub Administrator

## Creating a Schedule Wizard

### Navigating the Wizard



Click the close button to exit the wizard. Changes are not saved.



Click the Next button to advance to the next page of the wizard. The Next button is disabled until all required page elements are completed.



Click the Go Back button to return to the previous wizard page.



Click the Finish & Create button to apply the changes displayed on the wizard summary page.

## Workflow

### Basic workflow settings

#### Workflow

Dehydrate ▼

#### Source

New York ▼

#### Queue

default ▼

- Set the desired workflow type
- Select the Site and Queue the workflow will run on

### Configure workflow fields

#### Filesystem locking level for ngenea operations

Partial ▼

- Configure workflow-specific fields (if applicable)

## Managed paths

Select paths which the schedule should manage

## Managed paths

Choose the paths managed by the schedule

### Selections

/mmfs1/data/delivery

Q Type to filter

Name

-  delivery
-  jobs
-  LocalSpace
-  mmfs1
-  project1

Initially, a list of spaces is displayed.

## Managed paths

Choose the paths managed by the schedule

[← View all spaces](#)

 datasync

paris

Q Type to filter

<input type="checkbox"/>	Name	Size	
<input type="checkbox"/>	 dubrovnik	11.1 GB	
<input type="checkbox"/>	 football	5.4 GB	

Click a space name to view and select space contents.

## Schedule settings

Choose the schedule settings for the workflow

**Schedule name**

**Status**

Enabled

**Frequency**

Periodically

At specific time of a day

---

**Every**  Mon  Tue  Wed  Thu  Fri  Sat  Sun

**Interval**

Give the Schedule a descriptive name

Determine the required frequency of the Scheduled run.

Choosing Periodically will ensure that the Schedule will run on the next interval set.

E.G:

- 1 hour: The Schedule will run on the next hour (12.00, 13.00)
- 15 mins: The Schedule will run on the next 15 minute interval past the hour (15, 30, 45, 00)

**Schedule name**

sch1
✕

**Status**

Enabled

**Frequency**

Periodically

At specific time of a day

---

**Every**  Mon  Tue  Wed  Thu  Fri  Sat  Sun

**At**  :

Time selection is in the timezone of Site **siteA** (Europe/London).  
The schedule will run **every Monday, Wednesday, Friday at 05:00** in your timezone (Europe/London).

Choosing At Specific Time of A Day allows the Schedule to run once per chosen day at a specific time of day.

**Hint:** The schedule time is set in the Site's local timezone, but will be stored in the UTC timezone.

The schedule may be disabled at the point of creation by switching the Enabled toggle to Disabled.

## Summary

Upon completing the wizard steps a summary is presented:

## Summary

Review the schedule definition below.

### Workflow

Dehydrate

← Go back and edit

### Managed paths

1 path 

← Go back and edit

### Schedule settings

every 1 mins

← Go back and edit

### Schedule name

dehydrate-videos

← Go back and edit

**Finish & Create** >

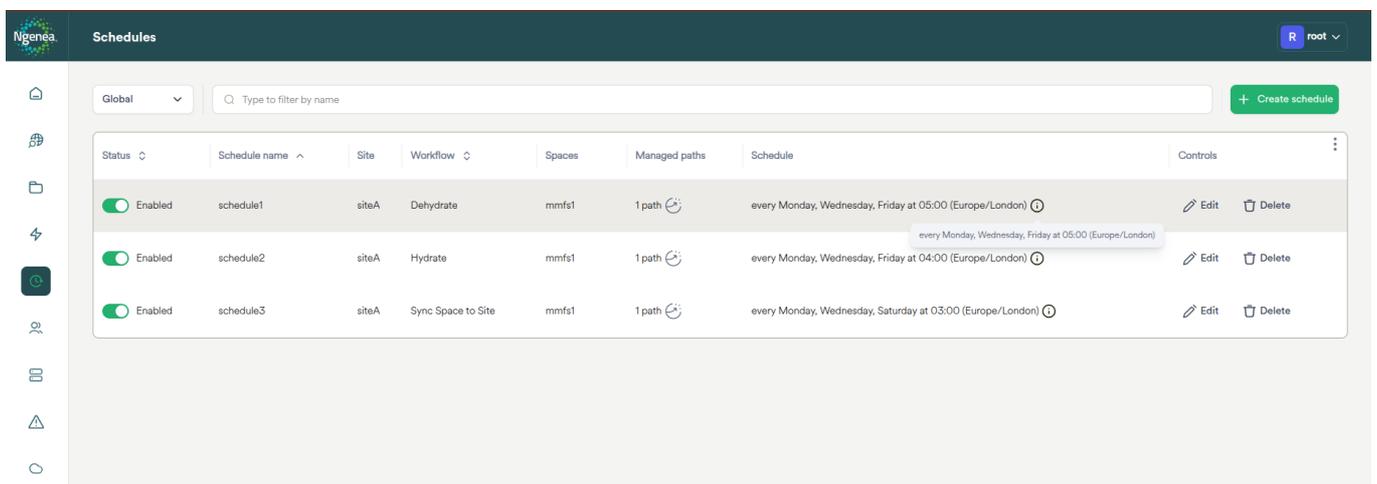
Click the Finish & Create button to apply the changes displayed on the wizard summary page.

Alternatively **Go back** and change the proposed configuration as required or **close** the wizard to cancel the creation of the Schedule.

## Editing a Schedule

**Important:** This function can only be performed by a Hub Administrator.

Clicking the Schedules button in the main menu bar displays the list of schedules:



Status	Schedule name	Site	Workflow	Spaces	Managed paths	Schedule	Controls
Enabled	schedule1	siteA	Dehydrate	mmfs1	1 path 	every Monday, Wednesday, Friday at 05:00 (Europe/London) 	 Edit  Delete
Enabled	schedule2	siteA	Hydrate	mmfs1	1 path 	every Monday, Wednesday, Friday at 04:00 (Europe/London) 	 Edit  Delete
Enabled	schedule3	siteA	Sync Space to Site	mmfs1	1 path 	every Monday, Wednesday, Saturday at 03:00 (Europe/London) 	 Edit  Delete

- Modify the Schedule settings as required. Refer to [Adding a Schedule](#) for settings guidance.

**Important:** In the schedule settings, hidden workflows types are also available for selection in the Workflow drop down menu. These are workflows defined with `visible:false`.

### Schedule settings



Workflow configuration

#### archive-to-gcs

Delete schedule 

Managed paths

#### Workflow configuration

Schedule settings

##### Basic workflow settings

###### Workflow

 Archive to GCS 

###### Source

London 

###### Queue

highpriority 

#### Managed paths

Q Type to filter

Name

  delivery 

Save

## Deleting a Schedule

**Important:** This function can only be performed by a Hub Administrator.

Clicking the Schedules button in the main menu bar displays the list of Schedules:

Ngenea Schedules R root

Global  + Create schedule

Status	Schedule name	Site	Workflow	Spaces	Managed paths	Schedule	Controls
Enabled	schedule1	siteA	Dehydrate	mmfs1	1 path	every Monday, Wednesday, Friday at 05:00 (Europe/London)	
Enabled	schedule2	siteA	Hydrate	mmfs1	1 path	every Monday, Wednesday, Friday at 04:00 (Europe/London)	
Enabled	schedule3	siteA	Sync Space to Site	mmfs1	1 path	every Monday, Wednesday, Saturday at 03:00 (Europe/London)	



Click the delete icon on the required Schedule row to delete

A confirmation dialog is raised:

### Delete schedule: archive-to-gcs



Do you wish to delete 'archive-to-gcs'?

Yes

No

- Click Yes to delete the Schedule. This action is irreversible.
- Alternately click no, or close the confirmation dialog.

## Disabling a Schedule

**Important:** This function can only be performed by a Hub Administrator.



Click the Enabled toggle to disable the schedule

When a schedule is disabled it will not run.

Click the toggle again to re-enable the schedule.

## Policies

Hub provides the capability to perform actions to data via Policies.

Policies comprise criteria, conditions and triggers which are applied to data within one or more Spaces residing on a Site.

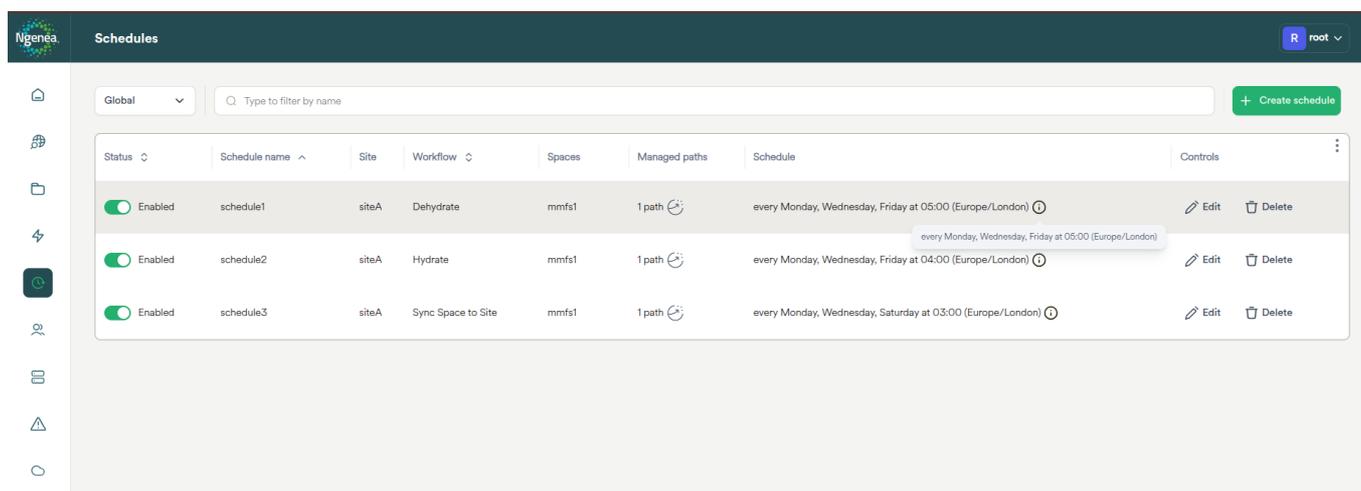
## Viewing Policies

To view available Policies, click the Schedules menu button.



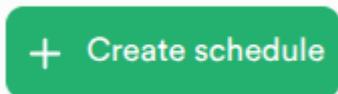
Navigates to the Schedules screen

Policies are displayed alongside other workflow schedules. Policies have workflow type *Policy-based Tiering*



## Adding a Policy

Click the Create Schedule button to display a dialog to configure a Schedule.



**Important:** This function can only be performed by a Hub Administrator

## Creating a Schedule Wizard

### Navigating the Wizard



Click the close button to exit the wizard. Changes are not saved.



Click the Next button to advance to the next page of the wizard. The Next button is disabled until all required page elements are completed.

← Go back

Click the Go Back button to return to the previous wizard page.

Finish & Create >

Click the Finish & Create button to apply the changes displayed on the wizard summary page.

## Workflow

### Workflow configuration

Configure the workflow to be executed by the schedule

#### Basic workflow settings

##### Workflow

Policy-based Tiering

##### Policy name

Enter a name for this policy

Policy name is required

#### Help tip

**Use policies to:** Tier data down to slower performance tiers or to promote data up to higher performance tiers. Free space on a site's PixStore file system by migrating data to an Ngenea target. Policies can be automatically enacted on a schedule or run as required manually. Use one or more conditions to select distinct data to process.

- Set the Workflow type to “Policy-based Tiering”

## Name

- Provide a descriptive name for the Policy

## Scope

The same Policy can run against one or more Spaces concurrently for a Site.

Policies are specific to a Site.

## Scope

Spaces to include when applying the policy

### Select site

London

### Select spaces

<input type="checkbox"/>	Name ^	Used space	Free space	Total space	
<input type="checkbox"/>	 LocalSpace	0 B	0 B	0 B	
<input type="checkbox"/>	 delivery	0 B	0 B	0 B	
<input type="checkbox"/>	 mmfs1	0 B	0 B	0 B	
<input checked="" type="checkbox"/>	 project1	0 B	0 B	0 B	
<input checked="" type="checkbox"/>	 project2	0 B	0 B	0 B	

Items per page: 20

- Select the Space or Spaces to run the Policy against on the Site.

## Pool triggers

Setup a pool trigger to define the flow of data.

Examples of supported data flows are:

Pool to Pool

Data in pool `nvme` is tiered to pool `nearline` according to the Policy conditions.

**Pool trigger**

**Storage pool 1** 🗑️

nmve ▼

Maximum utilisation 0 %

↓

**Storage pool 2** 🗑️

nearline ▼

Maximum utilisation 0 %

Add another pool to this hierarchy +

### Pool with Utilisation Limit

Data in pool `nmve` is tiered to pool `nearline` according to the Policy conditions.

Assuming a full `nmve` pool, data over which matches Policy conditions and is filling the pool over the 40% maximum utilisation is targeted for tiering to pool `nearline`. Data will be tiered until `nearline` reaches 80% utilisation or the `nmve` reaches 40% utilisation. If neither can be achieved, a best fit results.

**Storage pool 1** 🗑️

nmve ▼

Maximum utilisation 40 %

↓

**Storage pool 2** 🗑️

nearline ▼

Maximum utilisation 80 %

**Hint:** Ngenea source/destinations are only supported with *one* additional pool. Specifying more than two pools, including Ngenea will result in no data orchestration to/from Ngenea Targets.

### Pool to Ngenea

Data in pool `nvme` is dehydrated to an Ngenea Target according to the Policy conditions.

**Pool trigger**

**Storage pool 1** 🗑️

nvme ▼

Maximum utilisation  %

↓

**Storage pool 2** 🗑️

Ngenea ▼

When total pool storage usage exceeds  %

Migrate files until storage usage falls to  %

Pre-emptively pre-migrate an extra  %

[Add another pool to this hierarchy +](#)

### Ngenea to Pool

Data in an Ngenea Target is rehydrated to pool `nvme` according to the Policy conditions.

**Pool trigger**

**Storage pool 1** 🗑️

Ngenea ▼

When total pool storage usage exceeds  %

    ↳ Migrate files until storage usage falls to  %

Pre-emptively pre-migrate an extra  %

**Storage pool 2** 🗑️

nmve ▼

Maximum utilisation  %

Add another pool to this hierarchy +

## Ngenea Watermarks

Utilise Ngenea watermarks to provide finite control over data states during Policy processing.

The following example provides (assuming 93% utilisation):

- Data will only be de-hydrated when the Storage Pool 1 (E.G. `nvme` in the above example) is utilised over 90%
- 13% of data residing on the pool will be de-hydrated, reducing utilisation to 80%
- A further 10% of data residing on the pool will be Pre-Staged, ensuring that future de-hydrations process the first 10% of data faster as the data is already present in the Ngenea Target

Ngenea ▼

When total pool storage usage exceeds  ✕ %

    ↳ Migrate files until storage usage falls to  ✕ %

Pre-emptively pre-migrate an extra  ✕ %

## Processing order

Select the processing order of the data.

### Processing order

Biggest Files First

## Conditions

For more finite control of the data targeted, add a Condition group.

+ Add condition group

Click the Add condition group button to add a Condition group

- Specify the criteria for the condition group as necessary
- It is not required to specify all selections of the Condition group

### Condition groups

 Oldest images  
.....



#### Selection by date

Include ▾

All files accessed at a time older than ▾

365



days ▾

#### Selection by filetype

Include ▾

Type a filetype and hit Return key

\*.png ×

\*.jpg ×

#### Selection by size

Include ▾

Files less than ▾

20



Byte ▾

— Minimize

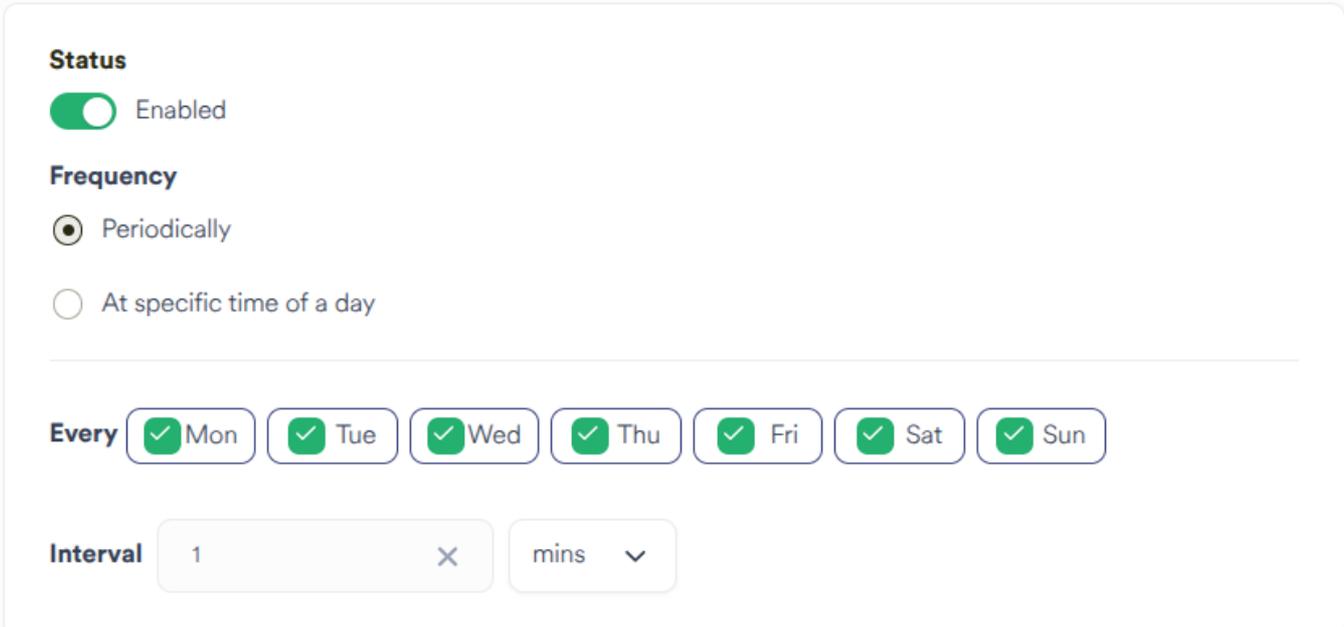
Perform optional actions:

 <b>Condition group</b> .....	Click the Condition Group Edit button to name the Condition group
	Click the delete icon to remove the Condition group
	Click the Add condition group button to add further Condition groups

## Automation

To setup a regular scheduled Policy run, enable the Automate Schedule slider.

Determine the required frequency of the Policy run.



**Status**  
 Enabled

**Frequency**  
 Periodically  
 At specific time of a day

Every  Mon  Tue  Wed  Thu  Fri  Sat  Sun

Interval   mins

Choosing Periodically will ensure that the Policy will run on the next interval set.

E.G:

- 1 hour: The Policy will run on the next hour (12.00, 13.00)
- 15 mins: The Policy will run on the next 15 minute interval past the hour (15, 30, 45, 00)

**Schedule name**

sch1 ✕

**Status**

Enabled

**Frequency**

Periodically

At specific time of a day

---

**Every**  Mon  Tue  Wed  Thu  Fri  Sat  Sun

**At** 05 ▾ : 00 ▾

Time selection is in the timezone of Site **siteA** (Europe/London).  
 The schedule will run **every Monday, Wednesday, Friday at 05:00** in your timezone (Europe/London).

Choosing At Specific Time of A Day allows the Policy to be scheduled once per chosen day at a specific time of day.

**Hint:** The schedule time is set in the Site’s local timezone, but will be stored in the UTC timezone.

The schedule may be disabled at the point of creation by switching the Enabled toggle to Disabled.

Choose the number of Threads to assign to the policy run.

**Performance**

Choose the number of policy threads to use. More threads deliver faster processing, but take care to balance the total workload of all policies running on the site versus the available resources.

**Threads Level**

4 ✕

**Hint:** Best practice is to start small and increase after assessing the impact of the policy to the Site.

## Summary

Upon completing the wizard steps a summary is presented:

### Summary

Review the policy definition below.

<b>Policy name</b> migrate_images	↩ Go back and edit
<b>Policy type</b> ↔ Migrate	↩ Go back and edit
<b>Scope</b>  	↩ Go back and edit
<b>Threads level</b> 4	↩ Go back and edit
<b>Migration hierarchy</b>  → 	↩ Go back and edit
<b>Processing order &amp; conditions</b> Biggest files first - 1 condition	↩ Go back and edit

**Finish & Create** >

Click the Finish & Create button to apply the changes displayed on the wizard summary page.

Alternatively **Go back** and change the proposed configuration as required or **close** the wizard to cancel the creation of the Policy.

## Editing a Policy

**Important:** This function can only be performed by a Hub Administrator.

Clicking the Schedules button in the main menu bar displays the list of schedules:

Status	Schedule name	Site	Workflow	Spaces	Managed paths	Schedule	Controls
Enabled	schedule1	siteA	Dehydrate	mmfs1	1 path	every Monday, Wednesday, Friday at 05:00 (Europe/London)	Edit Delete
Enabled	schedule2	siteA	Hydrate	mmfs1	1 path	every Monday, Wednesday, Friday at 04:00 (Europe/London)	Edit Delete
Enabled	schedule3	siteA	Sync Space to Site	mmfs1	1 path	every Monday, Wednesday, Saturday at 03:00 (Europe/London)	Edit Delete



Click the edit icon on the required Policy row to edit the Policy

- Modify the Policy settings as required. Refer to [Adding a Policy](#) for settings guidance.

### Schedule settings

**Workflow configuration**

Scope

Pool triggers

Conditions

Schedule settings

## project\_to\_cloud

Delete schedule

**Workflow configuration**

**Basic workflow settings**

**Workflow**

Policy-based Tiering

**Policy name**

project\_to\_cloud

---

**Scope**

**Select site**

London

**Select spaces**

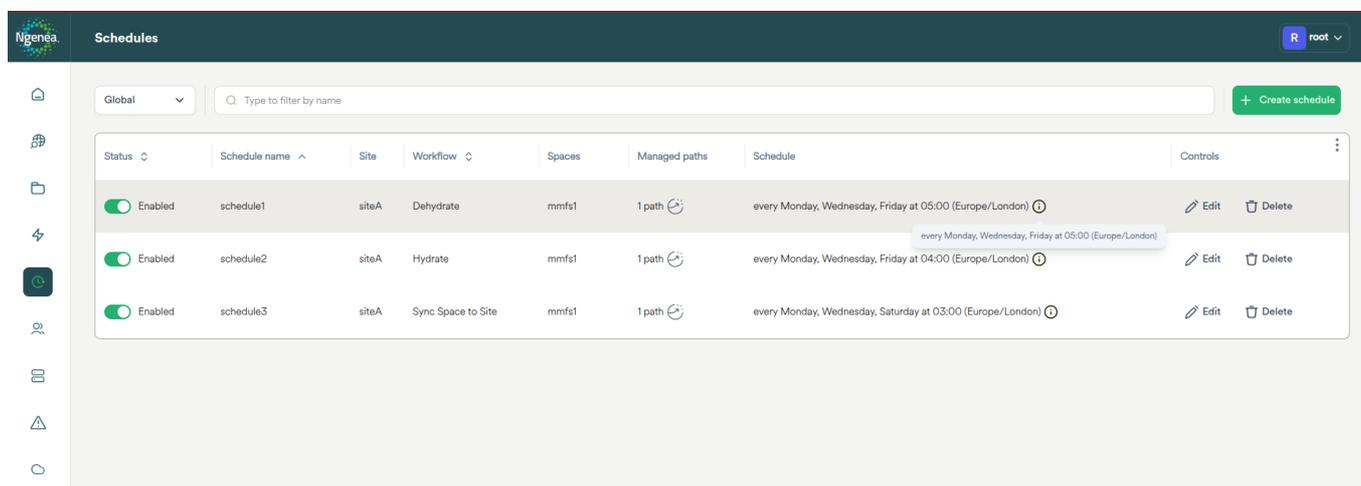
<input type="checkbox"/>	Name	Used space	Free space	Total space

Save

## Deleting a Policy

**Important:** This function can only be performed by a Hub Administrator.

Clicking the Schedules button in the main menu bar displays the list of Schedules:



Delete

Click the delete icon on the required Schedule row to delete the Policy

A confirmation dialog is raised:



- Click Yes to delete the Policy. This action is irreversible.
- Alternately click no, or close the confirmation dialog.

## Running a Policy

Policies are run either on a Schedule, as specified in the Wizard on creation or in the Schedule settings.

Alternatively, policies can be run on demand by clicking the Run button in the relevant row of the Action column on the Schedules page.

### Important:

- Policies cannot be cancelled from the Hub UI once started
- Progress feedback is not visible in the UI
- Ensure the Policy is appropriate prior to running or scheduling



Run

Click the Run button to manually start the Policy run

A confirmation dialog is raised:

## Run policy



Do you wish to run policy 'migrate-nearline'?

Yes

No

- Click Yes to run the Policy.
- Alternately click no, or close the confirmation dialog.

Running Policies are shown on the Jobs page, subject to the above constraints. I.E. no controls are available for Polices on the Jobs page.

Policies provide specific Policy information when the Job is selected in the Jobs Page.

Policy info	
Policy name	migrate_images
Policy type	Migration
Site	London
Status	Enabled
Date created	06.06.2024, 22:42 GMT+1
Threads	4
Spaces	2
Conditions	1
Triggers	2
Filesystem	mmfs1
Order	Biggest files first

Refer to `doc:jobs` for further Jobs guidance.

## Cancelling a Policy

Presently there is no capability to cancel a running Policy via the Hub UI.

Running policies can be terminated by issuing a `kill -9` to the `mmapplypolicy` process running on the relevant Ngenea node on the Site.

Upon terminating the running policy via the CLI, the Hub job will also terminate. The resultant Job state is (correctly) Failure - as the running policy was forcibly terminated.

## Groups & Users

Hub provides management of Groups and Users internally.

Users may be authenticated by external directory services such as LDAP or Active Directory.

Two default groups are provided:

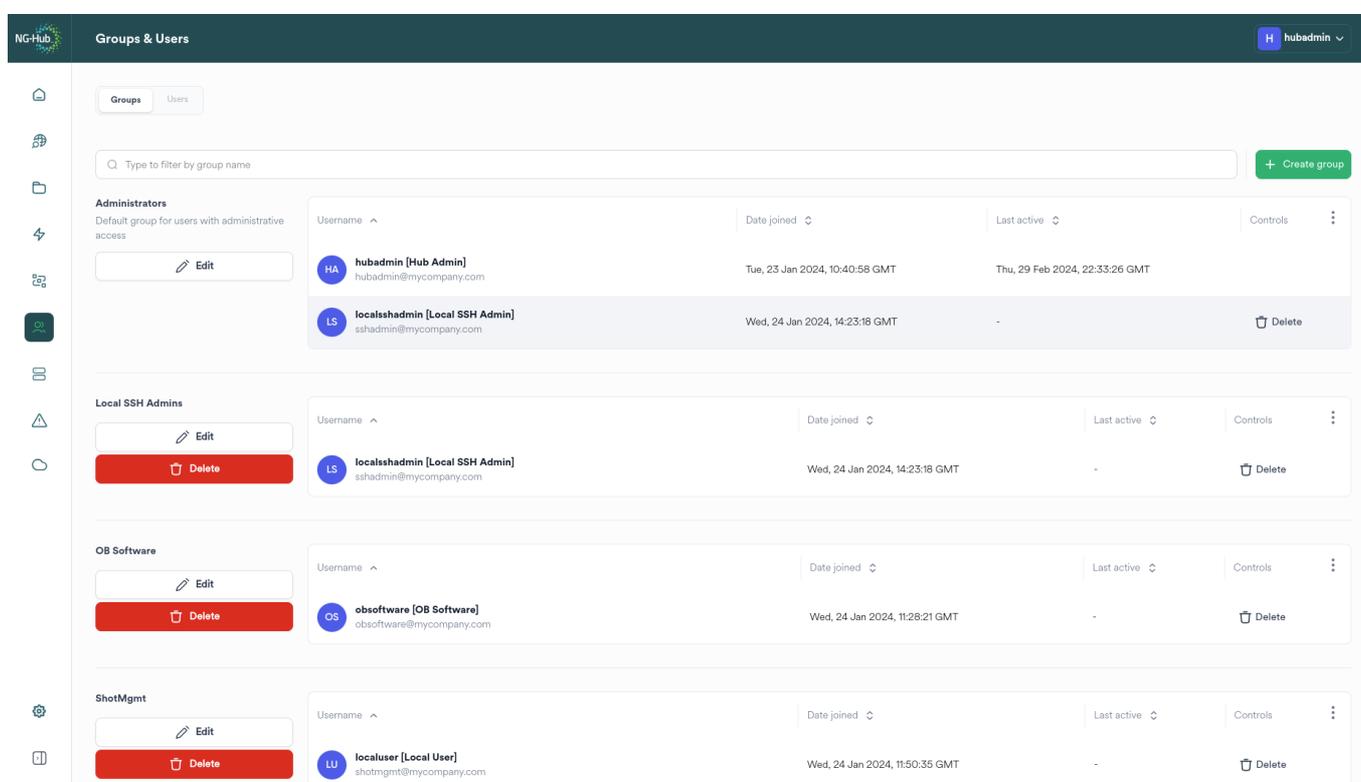
- Members of Administrators can configure and manage all Sites and Spaces
- Members of Users have read-only access to all Spaces

Additional groups can be deployed to provide restricted access for users to Sites and Spaces.

## Viewing Groups

To view the available Groups managed in Hub, select the Group tab.

**Important:** Group management can only be performed by a Hub Administrator.



The screenshot shows the 'Groups & Users' management interface. It features a search bar at the top with the text 'Type to filter by group name' and a '+ Create group' button. Below the search bar, there are four group entries, each with an 'Edit' button and a 'Delete' button. The groups are:

Group Name	Username	Date joined	Last active	Controls
Administrators	hubadmin [Hub Admin] hubadmin@mycompany.com	Tue, 23 Jan 2024, 10:40:58 GMT	Thu, 29 Feb 2024, 22:33:26 GMT	...
Local SSH Admins	localsshadmin [Local SSH Admin] sshadmin@mycompany.com	Wed, 24 Jan 2024, 14:23:18 GMT	-	Delete
OB Software	obsoftware [OB Software] obsoftware@mycompany.com	Wed, 24 Jan 2024, 11:28:21 GMT	-	Delete
ShotMgmt	localuser [Local User] shotmgmt@mycompany.com	Wed, 24 Jan 2024, 11:50:35 GMT	-	Delete

The Groups tab provides the following actions:

- Group creation
- Group deletion
- Group member management

## Filtering the Groups View

To display Groups matching keywords, enter the keywords in the filter bar.

Q admin x + Create group

**Administrators**  
Default group for users with administrative access

✎ Edit

Username ^	Date joined ↕	Last active ↕	Controls
<span style="background-color: #28a745; color: white; border-radius: 50%; padding: 2px 5px; display: inline-block; text-align: center; width: 15px; height: 15px; line-height: 15px;">H</span> <b>hubadmin</b>	Fri, 30 Aug 2024, 10:56:01 GMT+1	Mon, 02 Sep 2024, 13:35:09 GMT+1	
<span style="background-color: #28a745; color: white; border-radius: 50%; padding: 2px 5px; display: inline-block; text-align: center; width: 15px; height: 15px; line-height: 15px;">LS</span> <b>localsshadmin [Local SSH Admin]</b> sshadmin@mycompany.com	Mon, 02 Sep 2024, 14:34:23 GMT+1	-	<span style="color: #6c757d; font-size: 0.8em;">🗑 Delete</span>
<span style="background-color: #28a745; color: white; border-radius: 50%; padding: 2px 5px; display: inline-block; text-align: center; width: 15px; height: 15px; line-height: 15px;">R</span> <b>root</b>	Fri, 10 Feb 2023, 15:06:31 GMT+1	Thu, 29 Aug 2024, 15:20:52 GMT+1	<span style="color: #6c757d; font-size: 0.8em;">🗑 Delete</span>

---

**LocalSSHAdmins**  
Local SSH Admins

✎ Edit 🗑 Delete

Username ^	Date joined ↕	Last active ↕	Controls
<span style="background-color: #28a745; color: white; border-radius: 50%; padding: 2px 5px; display: inline-block; text-align: center; width: 15px; height: 15px; line-height: 15px;">LS</span> <b>localsshadmin [Local SSH Admin]</b> sshadmin@mycompany.com	Mon, 02 Sep 2024, 14:34:23 GMT+1	-	<span style="color: #6c757d; font-size: 0.8em;">🗑 Delete</span>

## Group Members

The Groups View will only display up to four members per group.

[View all members](#) ↻

Click the View all members button to view all the members of the group

Clicking the View all members button raises the Group Membership dialog.

**vfx\_grading members** x

Q Type to filter by username

- LS

**localsshadmin [Local SSH Admin]**

sshadmin@mycompany.com

x Remove
- LU

**localuser [Local User]**

shotmgmt@mycompany.com

x Remove
- OS

**obsoftware [OB Software]**

obsoftware@mycompany.com

x Remove
- RO

**readonly [Read Only]**

myuser@mycompany.com

x Remove
- R2

**resolve2 [resolve 2]**

resolve2@mycompany.com

x Remove

Save

To filter for a User within the list of group members enter a keyword in the Filter for...

🔍 Type to filter by username

✕ Remove

Click the Remove button to remove a User from the Group

**Tip:** If a User has been inadvertently removed, do not press the Save button, instead click off the Group members dialog to the main area of the screen.

Clicking the Save button at the bottom of the Group members dialog saves any changes made.

## Creating Groups

Click the Create Group button to display a dialog to configure a new group.

+ Create group

**Important:** This function can only be performed by a Hub Administrator

## Basic Group Options

### Basic settings

#### Group name

Type the name of the group

#### Description

Type a description for the group

#### Users

Select users

- Enter a name for the group. The name is case-sensitive and may not contain whitespace
- Enter a human-readable description for the group.

Select zero or more users to assign to the group

## Users

Select users ^

Search...

hubadmin

localsshadmin

- Click a username to select it
- Click the username again to deselect it

## Group Space Options

Select which Spaces can be viewed and administered by users in this group.

**Spaces**

**Administrated Spaces**

1 Space selected v

jobs x

**User Spaces**

Select Spaces v

- Administered Spaces can be viewed and browsed, and can have their settings changed
- User Spaces can be viewed and browsed, but cannot have their settings changed

To filter for a Space within the list of spaces enter a keyword to filter for

**Spaces**

**Administrated Spaces**

Select Spaces ^

job x

jobs

Selected spaces are shown as chips. Clicking the 'X' on a chip deselects the space.

## Writable Iris Spaces

### Writable Iris Spaces

1 Space selected 

Project1 

Spaces which are selected as “Writable Iris Spaces” can be written in Iris. Any space which isn’t selected is read-only in Iris.

## Management Settings

Select whether users in the group have the right to administer Ngenea Hub

**Management**

**Administer Sites/Hub** 

Whether this group has rights to administer sites and the Hub

This includes the right to:

- Configure site settings
- Manage and run policies
- Manage Groups and Users
- View Alerts
- Manage, browse, and import from Targets
- Manage Global Settings

## NAS Group Settings

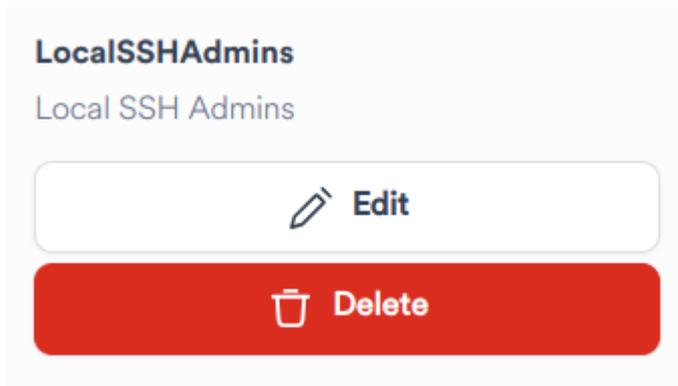
Select whether the group should be created as a local NAS group.

**NAS Group Settings**

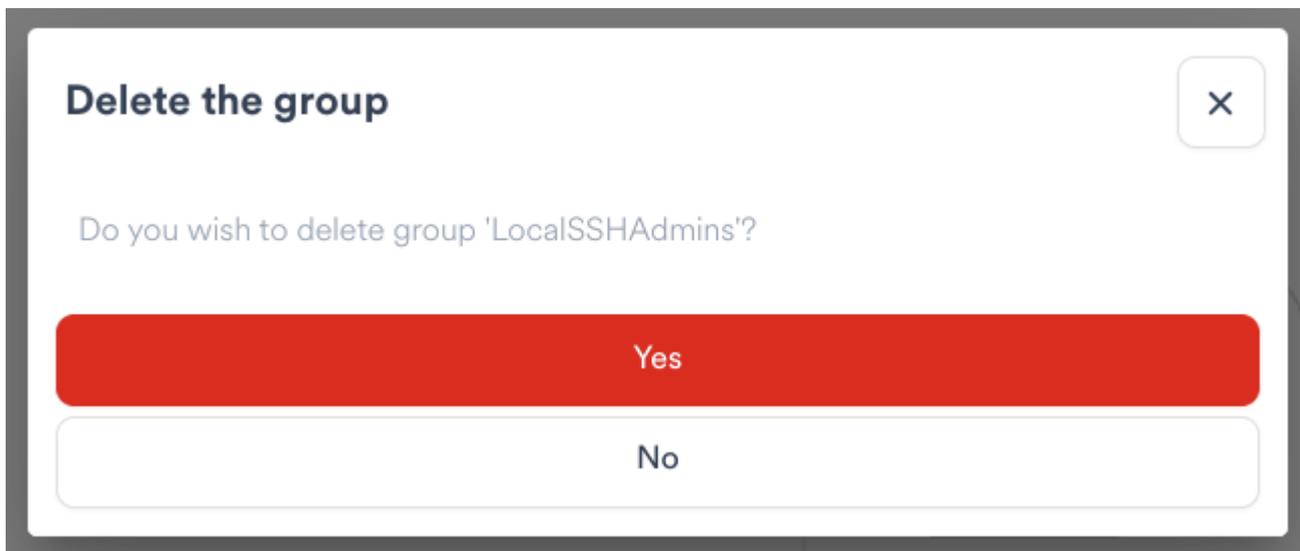
Also create this group on all pixstors 

This will create a unix group on PixStor for all sites.

## Deleting Groups



A confirmation dialog will be displayed



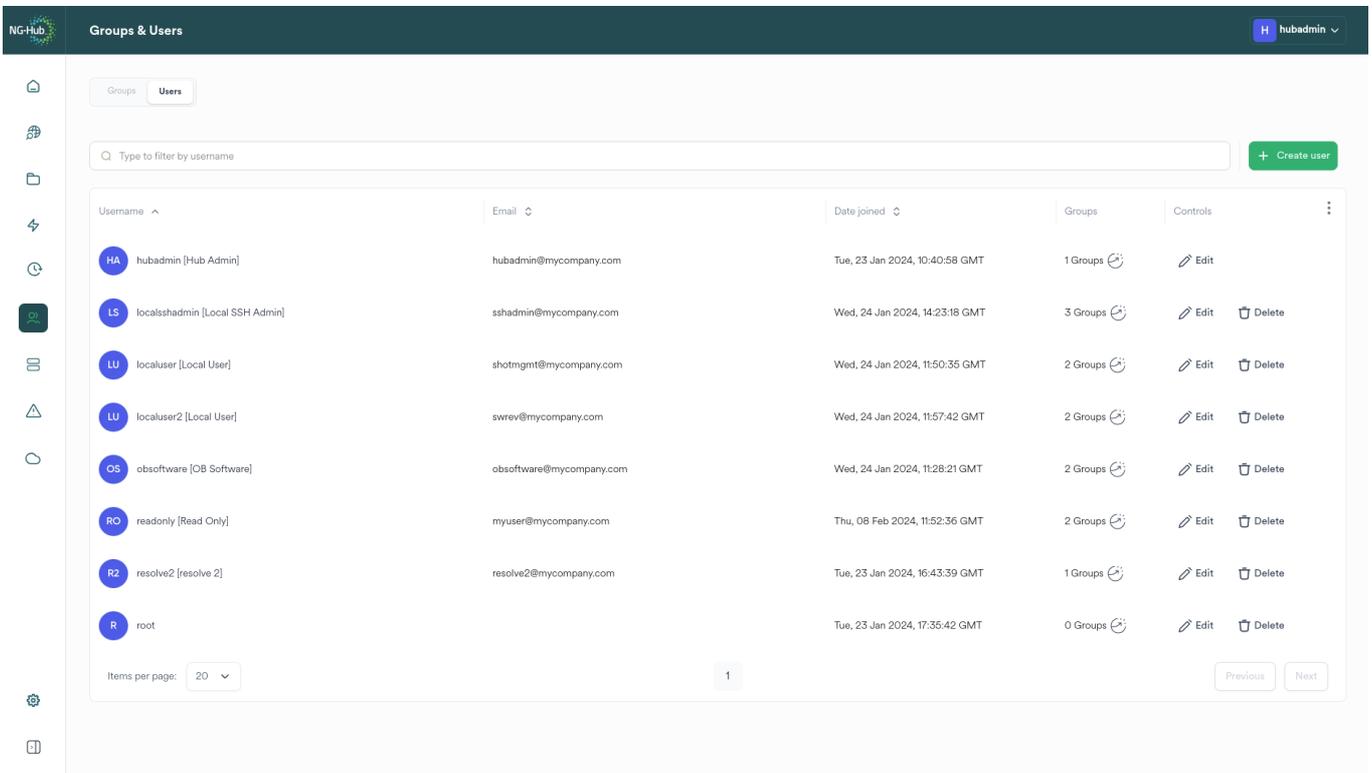
- Click “No” to close the confirmation dialog. The group will not be deleted.
- Click “Yes” to confirm and remove the group.

The default groups `Administrators` and `Users` cannot be deleted.

## Viewing Users

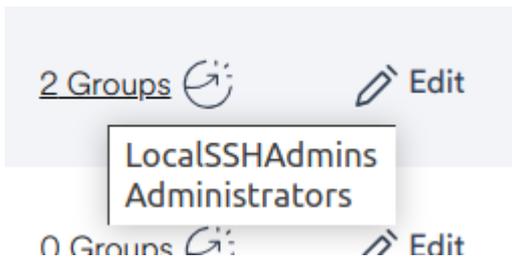
To view the available Users managed in Hub, select the Users tab.

**Important:** User management can only be performed by a Hub Administrator.



The Users tab provides the following actions:

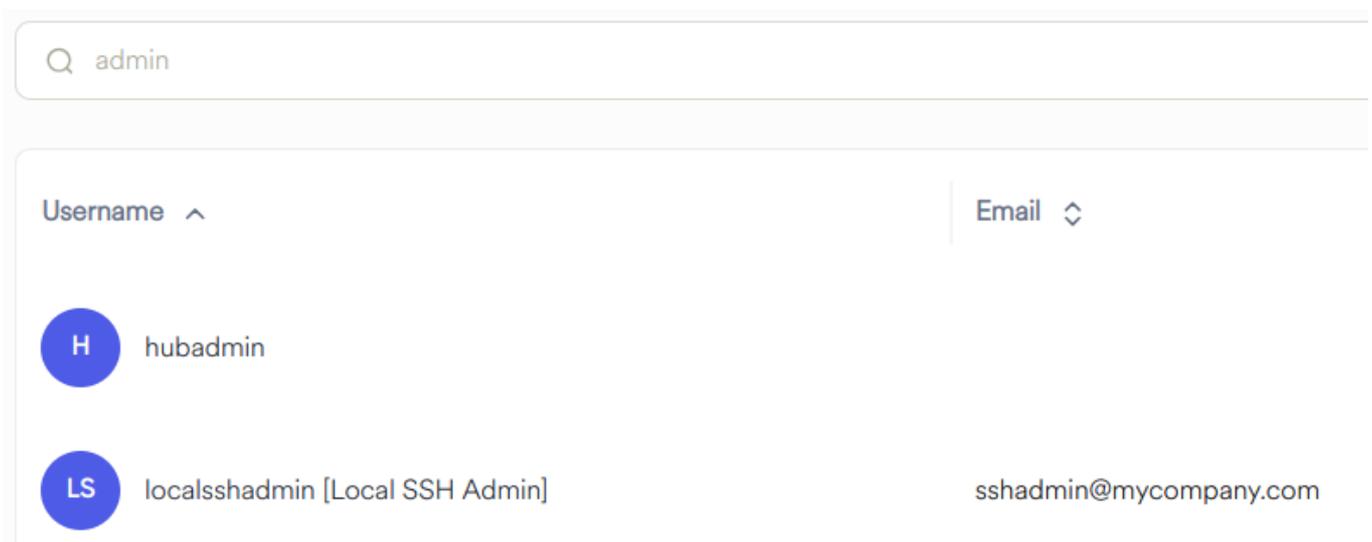
- User creation
- User deletion
- Group member management



Hover over the Groups column to see what groups a user belongs to

### Filtering the Users View

To display Users matching keywords, enter the keywords in the filter bar.



## Creating Users

Click the Create User button to display a dialog to configure a new user.

A green rectangular button with rounded corners, containing a white plus sign followed by the text "Create user" in white.

**Important:** This function can only be performed by a Hub Administrator

## Basic User Options

### User details

Configure the basic user information

#### Basic information

##### Username

##### Password

##### First name

##### Last name

##### Email

##### Groups



- Enter a name for the user. The name is case-sensitive and may not contain whitespace
- Enter a password
- Enter First and Last name for the user
- Enter an email address for the user

The password must meet all the requirements which are listed below the password box

### Password

 ✕

Password must be at least 8 characters long.  
Password must contain at least one digit.  
Password must contain at least one special character: ? - + # etc..  
Password must contain at least one uppercase letter.

Select zero or more groups to assign the user to

### Groups

- Administrators
- Hub2 Group With Spaces
- mynasgroup
- NGHUB-DEV-Administrators
- space-admin
- Users

- Click a group name to select it
- Click the group name again to deselect it

## NAS User Settings

Select whether the user should be created as a local NAS user.

### NAS User Settings

Also create this user on all pixstors

Grant administrative command line access to all sites

#### Primary Group

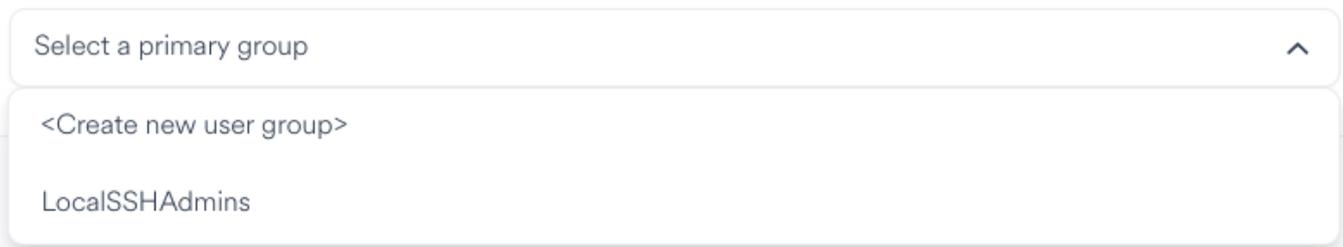
▼

This will create a unix user on PixStor for all sites.

Select whether to grant command line access to the user. This means the user can connect to PixStor nodes via SSH.

Select the Primary Group for the user.

#### Primary Group



Select a primary group

<Create new user group>

LocalSSHAdmins

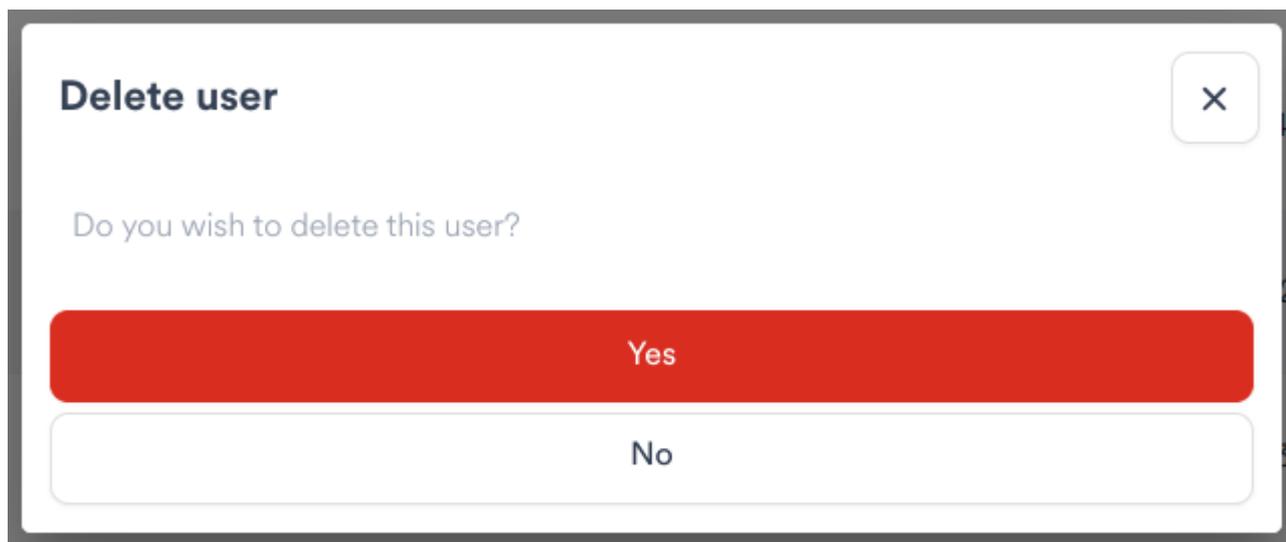
The dropdown will list any existing NAS groups. Alternatively, “Create a new user group” will create a new NAS-enabled Hub group with the same name as this user.

## Deleting Users

To delete a user, click the delete “bin” icon in the row of that user.



A confirmation dialog will be displayed



**Delete user** [X]

Do you wish to delete this user?

Yes

No

- Click “No” to close the confirmation dialog. The user will not be deleted.
- Click “Yes” to confirm and remove the user.

You cannot delete the user you are currently logged in with.

## Restricting Users from Spaces

All users in the group Users have read-only access to all Spaces.

Should it be required to restrict a user from accessing specific spaces Spaces this can be achieved by:

1. Creating a new user group
2. Ensuring that only the specific spaces are assigned to the group
3. Add specific users to the group
4. Ensure the specific users are removed from the group Users

**Caution:** Adding a Space to a group’s Administered Spaces and Used spaces will allow assigned Users to change the settings for a Space. If administrative operations are not required, do not assign Spaces to Administered Spaces - create an additional group to allow specific users to administrate specific spaces.

## Sites

A site is a physical or cloud based pixstor server managed by Hub.

The screenshot shows the NG-Hub Sites management interface. At the top, there is a search bar with the text "Type to filter" and a green "+ Add site" button. Below the search bar, there are two site cards. The first card is for "London" (LDN) and the second is for "Paris" (PRS). Each card displays a summary of alerts (All alerts, Critical alerts, Warning alerts, Info alerts), the number of spaces, storage usage (0/0 GiB/s), and a Bps limit (0 Bps limit). Below the summary, there is a horizontal bar chart showing storage usage for different spaces. The London site has two spaces: sas1-mmfs1 and sas2-mmfs1. The Paris site has one space: sas1-mmfs1. The interface also includes a sidebar with navigation icons and a top navigation bar with the NG-Hub logo and the user "hubadmin".

## Filtering Sites

To filter for a site within the list of sites enter a keyword in the Search for...

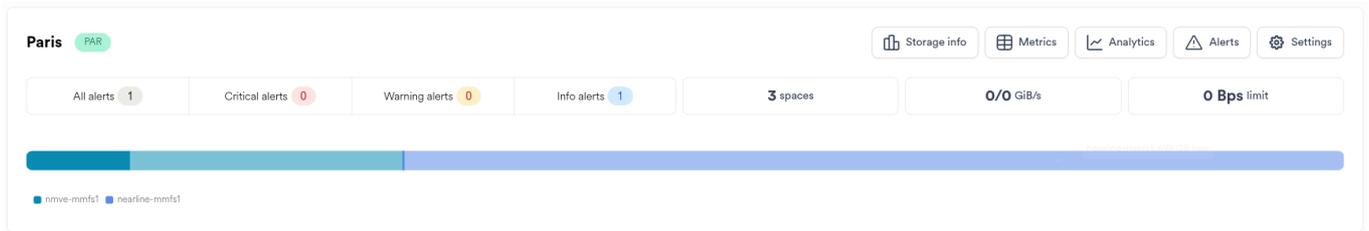
The displayed sites is limited to the sites which match the keyword(s).

The screenshot shows the NG-Hub Sites management interface with the search bar containing the keyword "lon". The search results show only the "London" (LON) site. The site card displays a summary of alerts (All alerts: 2, Critical alerts: 1, Warning alerts: 0, Info alerts: 1), the number of spaces (5 spaces), storage usage (0/0 GiB/s), and a Bps limit (0 Bps limit). Below the summary, there is a horizontal bar chart showing storage usage for different spaces: nmve-mmfs1 and nearline-mmfs1. The interface also includes a sidebar with navigation icons and a top navigation bar with the NG-Hub logo and the user "hubadmin".

## The Site Card

Each site is displayed as a site card.

A Site is displayed as a card in the Sites view.



A Site Card comprises:

### Site Name

**London** LON

Displays the designated friendly name of the site with the Ngenea site chip

### Site Summary

The site summary displays high level totals for the number of files and folders present, the Ngenea hydrated and dehydrated states and the number of Spaces the site hosts.



### Alert Types

Numbered filter buttons display the count of each type of Alert for the Site.

Select a button to open the Alerts for the Site, filtered for the specific Alert type.

**All alerts** 6

Click the All alerts button to view all alerts

Critical alerts 3

Click the Critical alerts button to filter for all Critical alerts

Warning alerts 0

Click the Warning alerts button to filter for all Warning alerts

Info alerts 3

Click the Info alerts button to filter for all Info alerts

### Storage Info

 Storage info

Click the Storage info button to open the Storage Info browser for the Site.

## Site Metrics



Click the Metrics button to open the pixstor nexus site metrics in a new browser tab.

## Site Analytics



Click the Analytics button to open the pixstor nexus site analytics in a new browser tab.

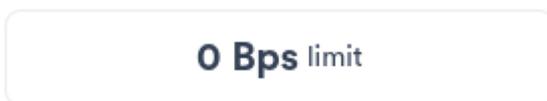
## Site Alerts



Click the Alerts button to open the Alerts for the Site.

## Bandwidth Control

The bandwidth of a site can be limited to a defined value via the UI. The current value is observed on the bandwidth limit button.



Click the bandwidth limit button to display the bandwidth control dialog.

The bandwidth control dialog allows limiting the bandwidth of a site to a defined value. Enter the limit in Megabits per second (Mbps) and press Save to apply the limit.

### Limit traffic for Paris



#### Bandwidth in Mbps

A text input field containing the number "10000" and a close button with an "X" icon.

Save

**Hint:** If the bandwidth for a site has been inadvertently set do not press the Save button, instead click off the Bandwidth limit dialog to the main area of the screen.

**Important:** This function can only be performed by a Hub Administrator.

## Settings

**Important:** This function can only be performed by a Hub Administrator.

Site settings



Name

London

Site: london

Network settings

Name

Backup

Email SMTP settings

Identity management

**Site name & shortcode**

London  LON

**Type of site**

On premise  Cloud

**Public URL**

https://10.60.0.167

**Site colour**

Choose a colour to identify the site

Network settings

**NAS Interfaces**

**Group**

**Range 1**

IP range start	IP range end	CIDR	Gateway
10.70.0.167 <input type="text"/>	10.70.0.170 <input type="text"/>	24 <input type="text"/>	10.70.0.1 <input type="text"/>

Save

- Modify the *Site* settings as required. Refer to [Adding a Site](#) for settings guidance.

## Pool Space

One or more pixstor storage pools which comprise the pixstor file system are represented.

Hovering over the pool percentage bar provides the remaining capacity for the pool.



## Adding a Site

### Add Site Wizard

Hub allows remote configuration of all participating pixstor sites.

New sites are automatically joined to Hub awaiting optional configuration via the Site Wizard.

### Navigating the Wizard



Click the close button to exit the wizard. Changes are not saved.



Click the Next button to advance to the next page of the wizard. The Next button is disabled until all required page elements are completed.



Click the Go Back button to return to the previous wizard page.



Click the Finish & Create button to apply the changes displayed on the wizard summary page.

### Add Site



Click the Add site button to display a dialog to configure the selected site.

**Important:** This function can only be performed by a Hub Administrator.

Pick site to configure

Sites which have been automatically registered to Hub but not yet configured are shown:

## Pick site to configure

Q Type to filter...

Site ID: london

Configure this new site >

Site ID: new\_york

Configure this new site >

Site ID: paris

Configure this new site >

Site ID: singapore

Configure this new site >

- Select a site to configure

Configure this new site >

Click the Configure this new site button to proceed

## Site Name

### Name

#### Site name & shortcode

London

x

LON

x

#### Type of site

On premise  Cloud

#### Public URL

https://10.60.0.167

x

#### Site colour



Choose a colour to identify the site

- Provide a friendly name for the Site
- Provide a 3 character short code for the site. The shortcode is displayed as the label on the Site's chip. E.G. LDN for London

- Specify whether the site is on-premise or a pixstor cloud deployment. Each site type provides different Network Setting options.
- Provide the URL IP or FQDN which refers to the pixstor management node of the Site
- Select a colour for the Site chip

### Network Settings (On premise)

- Add the required IP address or network range and specify a valid CIDR mask to apply the restriction
- Specify a gateway, if required
- Select the server(s) and interface(s) of the server where the IP range will be configured

+ Add IP range

Click the Add IP range button to add additional restrictions

+ Create another group

Click Create another group to add additional IP range to interface mapping groups



Click the delete button to remove an IP range or Interface group

### Network Settings (Cloud & General)

pixstor cloud systems use predefined network architectures.

Unlike on-premise pixstor systems there is no requirement to create IP ranges or interface groups. IP addressing is externally managed by the cloud / virtual environment.

Both on-premise and cloud systems share common network configuration for DNS, Timezone and NTP.

The screenshot displays a configuration interface with four distinct sections, each enclosed in a light gray rounded rectangle. The first section, titled 'DNS Servers', contains a single button with a plus sign and the text 'Add DNS server'. The second section, titled 'DNS search domains', also contains a single button with a plus sign and the text 'Add DNS search domains'. The third section, titled 'Timezone', features a dropdown menu with 'Europe/London' selected and a downward-pointing chevron icon on the right. The fourth section, titled 'NTP Servers', includes a text input field with the placeholder text 'Type in NTP' and a trash can icon to its right, and a button with a plus sign and the text 'Add NTP server' below it.

- Specify the IP address or FQDN hostname of one or more DNS servers
- Specify one or more DNS search domains
- Specify the Timezone in which the server resides, or will participate in
- Specify the IP address or FQDN hostname of one or more DNS servers

**Hint:** If the pixstor site will be joined to an external Identify Mapping service such as Active Directory or LDAP, best practice is to ensure that the DNS and NTP servers match those of the service, or point at the service hosted DNS and NTP if it provides such capabilities. Should the pixstor become out of time sync with the Identify Mapping service login failures can occur.

Backup

pixstor provides the capability to backup data within a Space on a per-Site basis to specific Ngenea Targets.

Hub enables configuration to be set for the Ngenea Backup service running on pixstor sites.

If the Site is enabled to participate in backups, each Space requires additional configuration to enable the per-Space backup.

For more information refer to [Backups](#).

**Enable backup**

Do you want this site to participate in backups?

---

**Frequency**

Periodically

At specific time of a day

---

**Every**  Mon  Tue  Wed  Thu  Fri  Sat  Sun

**At**  :

Time selection is in the timezone of Site **Bravo** (Europe/London).  
The schedule will run **every Tuesday, Wednesday, Thursday, Sunday at 16:06** in your timezone (Europe/London).

Determine the required frequency of the backup.

**Schedule**

**Frequency**

Periodically

At specific time of a day

---

**Every**  Mon  Tue  Wed  Thu  Fri  Sat  Sun

**Interval**

Choosing Periodically will ensure that the schedule will run on the next interval set.

E.G:

- 1 hour: The backup will run on the next hour (12.00, 13.00)
- 15 mins: The backup will run on the next 15 minute interval past the hour (15, 30, 45, 00)

The screenshot shows a configuration window for a backup schedule. At the top, the 'Schedule name' field contains 'sch1'. Below this, the 'Status' is set to 'Enabled' with a green toggle switch. Under 'Frequency', the option 'At specific time of a day' is selected with a radio button. The 'Every' section shows checkboxes for days of the week: Mon (checked), Tue, Wed (checked), Thu, Fri (checked), Sat, and Sun. The 'At' section shows the time set to 05:00. A note at the bottom states: 'Time selection is in the timezone of Site siteA (Europe/London). The schedule will run every Monday, Wednesday, Friday at 05:00 in your timezone (Europe/London).'

Choosing At Specific Time of A Day allows the Policy to be scheduled once per chosen day at a specific time of day.

**Hint:** The schedule time is set in the Site's local timezone, but will be stored in the UTC timezone.

Optional tuning can be set for the backup operation in the Advanced Configuration.

Refer to the Ngenea Backup documentation prior to applying any parameters.

### Advanced configuration

Leave fields blank to use defaults

#### Number of threads

#### Hashing threshold (MB)

#### Timeout (seconds)

#### Connection timeout (seconds)

#### Number of connection retries

## Email SMTP Settings

pixstor provides the capability to notify an inbox if service issues arise.

## Email SMTP settings

Configure the email SMTP settings

**Server**

**Port**

**Username**

**Password**

**Alert recipients**

Add the emails to send notifications about this site.

- Specify the SMTP configuration of an email server to which to send notification emails
- Specify one or more valid email addresses to receive the notification emails

**Mode**

## Identity Management

- Specify the Identity Management mode as appropriate:

Mode	Description
Active Directory	pixstor uses RFC2307 compliant identity mapping with Active Directory
Standalone	pixstor generates local UIDs and GIDs mapped to Active Directory SIDs

**Domain details**

**Domain name**

 ✕

**Machine account name**

 ✕

**ID mapping range**

 ✕  ✕

---

**Domain Servers**

Use DNS to determine AD servers

- Specify the Domain to join
- Specify the Machine account name
- Specify the ID range to map to
- Specify whether to use DNS to locate an Active Directory Domain Controller or alternatively specify an IP address or hostname

**Domain join username**

 ✕

**Domain join password**

 ✕

- Specify a valid username and password with domain join capability

## Workflow

### Workflow

**File batch size**

**File batch GB**

**GPFS Inode scan bucket**

**GPFS Inode scan threads**

### File Batching

Whichever limit results in a smaller batch size applied. For examples given 100 files of 500MB each, a File batch GB of 1 and a File Batch Size of 10 will result in 50 batches of 2 files each (1GB total per batch), because 1GB (2 files) is smaller than 10 files (5GB).

File batch settings apply to all workflows run on a Site.

Alternatively enable Dynamic File Batching.

For more information refer to the Administration Guide.

- Specify the File batch size

**Hint:** Default = 40. Increasing this value reduces the number of tasks processed in a job. Reduction of tasks in a job, for the majority of workflows, reduces the total time for the job to run due to decreasing the total task processing overhead. It is extremely recommended to start with small values and increase based on observation of system load and resources and adding too many files to collate into a single task can cause the task payload to be rejected by Hub due to the size of the payload.

- Specify the File batch GB

**Hint:** Default = 1. Increasing this value causes more files to be added to a task upto the total file size specified, after which subsequent files are added to the next task, and so on.

## GPFS Inode Scanning

- Specify the GPFS Inode Scan bucket

**Hint:** Default = auto-generated per scan. The number of bucketed groups of collated inodes to be processed by the parallel scanner. An optimal value is the total number of files to be scanned divided by one million so each bucketed inode group has approximately one million files.

- Specify the GPFS Inode scan threads

**Hint:** Default = 2. The number of inode scan threads. Setting this value to the number of CPU cores can provide optimal performance with non-contending workloads. It is extremely recommended to start with small values and increase based on observation of system load and resources.

## Summary

Upon completing the wizard steps a summary is presented:

**Summary**  
Here are the summary of your selections

- You have named the site as **london** [Go back and edit](#)
- You added **1 NAS group** [Go back and edit](#)
- You have added **1 DNS server** [Go back and edit](#)
- You have added **1 NTP server** [Go back and edit](#)
- You want to send notifications to **2 emails** [Go back and edit](#)
- You configured **1 domain** [Go back and edit](#)

**Finish & Create** >

Click the Finish & Create button to apply the changes displayed on the wizard summary page.

Alternatively **Go back** and change the proposed configuration as required or **close** the wizard to cancel the creation of the Ngenea target.

## Alerts

Hub provides a view of alerts across all Sites.

- Only active alerts are displayed
- Muted alerts are not displayed



Click the alerts button to navigate to the Global Alerts screen

The screenshot shows the NG-Hub Alerts interface. At the top, there are filters for 'All alerts' (6), 'Critical alerts' (3), 'Warning alerts' (0), and 'Info alerts' (3). Below this is a search bar and a dropdown menu set to 'Global'. The main area contains a table of alerts:

Alerting since	Alert name	Site	Node	Severity	Summary
Fri, 01 Mar 2024, 10:40:37 GMT	PixStorPoolData	London	hw-dev-pixit-01	Critical	PixStor pool data capacity alert
Thu, 22 Feb 2024, 10:52:21 GMT	ServiceFailed	London	hw-dev-pixit-01	Info	NetworkManager-wait-online.service has failed to ...
Tue, 13 Feb 2024, 16:39:31 GMT	ServiceFailed	Paris	hw-dev-pixit-02	Info	NetworkManager-wait-online.service has failed to ...
Tue, 13 Feb 2024, 16:39:21 GMT	ServiceFailed	Rome	hw-dev-pixit-03	Info	NetworkManager-wait-online.service has failed to ...
Tue, 30 Jan 2024, 09:48:08 GMT	SiteHealth	ob1	-	Critical	All workers are offline
Tue, 30 Jan 2024, 09:48:08 GMT	WorkerHealth	ob1	devpx6-jtucker-2lga-demo-77-1	Critical	Worker on devpx6-jtucker-2lga-demo-77-1 is offline

At the bottom of the table, there is a pagination control showing 'Items per page: 20' and a page number '1' with 'Previous' and 'Next' buttons.

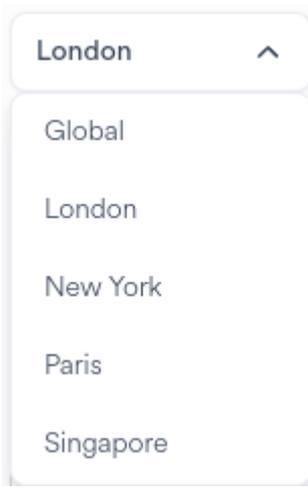
Hub provides two views of Alerts - Global and Local.

- Global displays all Alerts on all Sites
- Local displays the Alerts on a specific Site

The default view of Alerts is Global.

The screenshot shows a dropdown menu for the Alerts view. The 'Global' option is selected and highlighted. Below it are the following site options: London, Berlin, Paris, and Rome.

To switch to a site-centric view, select the specific site from the Alerts drop-down menu.



To switch to Global view, select Global from the Alerts drop-down menu.

Choosing a specific Site displays Alerts only from the chosen Site:

Alerting since	Alert name	Site	Node	Severity	Summary
Fri, 01 Mar 2024, 10:40:37 GMT	PixStorPoolData	London	hw-dev-pixit-01	Critical	PixStor pool data capacity alert
Thu, 22 Feb 2024, 10:52:21 GMT	ServiceFailed	London	hw-dev-pixit-01	Info	NetworkManager-wait-online.service has failed to ...

## Alert Types

Above the Alert table, numbered filter buttons display the count of each type of Alert.

Select a button to filter for the specific Alert type.

- All alerts** 6 Click the All alerts button to view all alerts
- Critical alerts** 3 Click the Critical alerts button to filter for all Critical alerts
- Warning alerts** 0 Click the Warning alerts button to filter for all Warning alerts
- Info alerts** 3 Click the Info alerts button to filter for all Info alerts

## Categories

To filter for an Alert category, enter text into the filter bar.

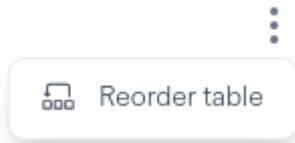
Alerts are filtered where the Alert name matches the text in whole or part.

Alerting since	Alert name	Site	Node	Severity	Summary
Tue, 30 Jan 2024, 09:48:08 GMT	SiteHealth	ob1	-	Critical	All workers are offline
Tue, 30 Jan 2024, 09:48:08 GMT	WorkerHealth	ob1	devpx6-jtucker-2lga-demo-77-1	Critical	Worker on devpx6-jtucker-2lga-demo-77-1 is offline

Items per page: 20 | 1 | Previous | Next

## Reordering

The alerts table columns can be reorganised for user preference.



Click the vertical dots on the right hand side of the table and select the Reorder table button to open the table organizer

Re-arrange items in top to bottom order by dragging vertically up or down.

### Side bar organizer ×

Job info

Job details

Task stats

Job task statistics

File stats

Job file statistics

Save

## Ngenea

Ngenea 2.6+ introduces changes to how Ngenea Targets are managed. Buckets [new feature] and Targets work together to provide easy, granular mapping between Spaces and Buckets.

Ngenea provides the capability to off-site data, import data, or send data between pixstor sites.

## Concepts

- A Bucket provides the storage for off-PixStor data. This may be an AWS S3, GCS, Azure Blob, POSIX or Blackpearl DS3 protocol. For versions prior to 2.6, these were previously the types of Ngenea Target.
- A Target is the mapping for how data is transferred to and from a Bucket for a Space. For versions prior to 2.6 this was available as part of the Ngenea Target setup.

## Viewing Buckets

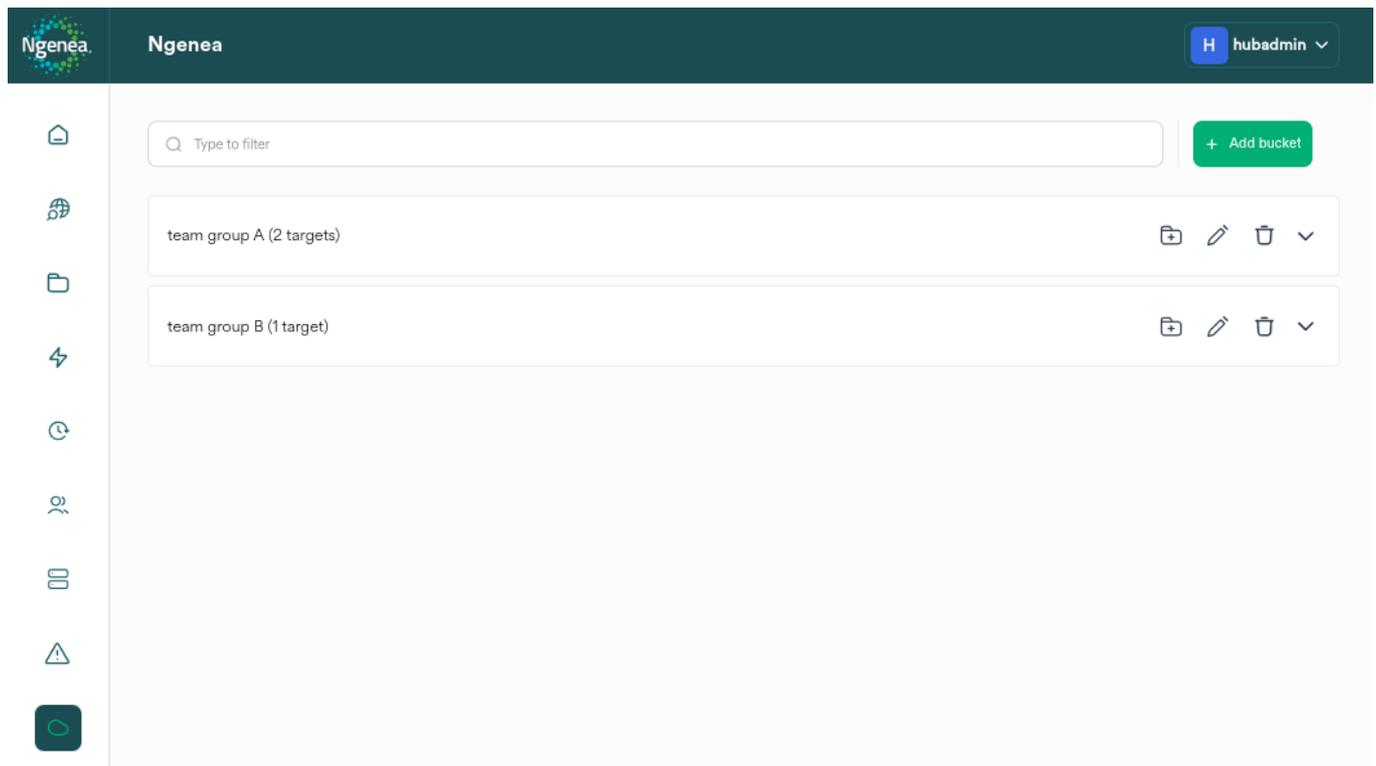
A bucket is area of storage off-PixStor which comprises the following capabilities:

- Type
- location
- Credentials
- Bucket specific settings



Click the Ngenea button to navigate to the Ngenea screen

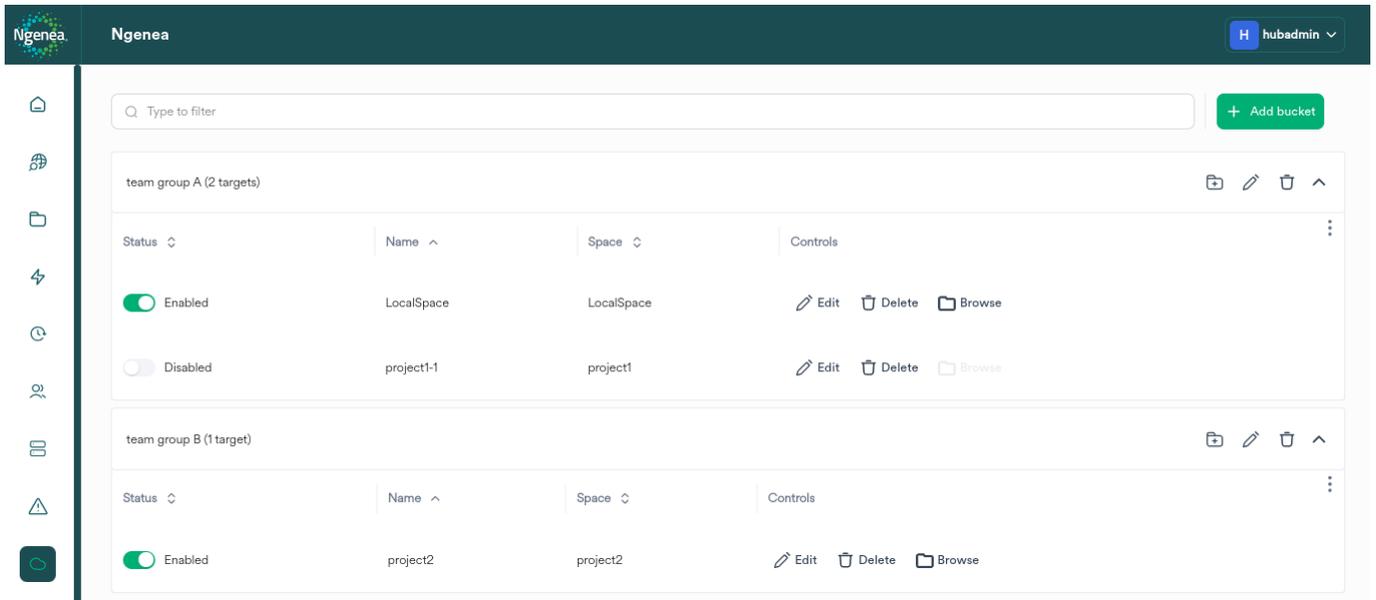
Clicking the Ngenea button in the main menu bar displays the list of Ngenea Buckets:



## Viewing Targets

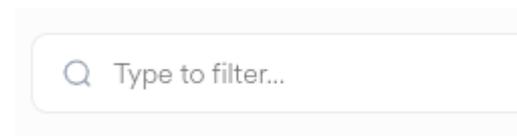
A Target is the mapping for how data is transferred to and from a Bucket for a Space.

Click the drop down button of a Bucket to view the associated Targets



The screenshot shows the Ngenea interface with a search bar at the top. Below the search bar, there are two team groups. The first team group, 'team group A (2 targets)', contains two buckets: 'LocalSpace' (Enabled) and 'project1-1' (Disabled). The second team group, 'team group B (1 target)', contains one bucket: 'project2' (Enabled). Each bucket has an 'Edit' button, a 'Delete' button, and a 'Browse' button.

## Filtering Buckets



The filter bar is a search input field with a magnifying glass icon on the left and the placeholder text 'Type to filter...'.

To filter the list of Ngenea Buckets, type the Bucket name or part of a Bucket name in the filter bar.

## Bucket Wizard

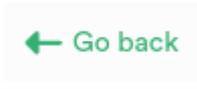
### Navigating the Wizard



Click the close button to exit the wizard. Changes are not saved.



Click the Next button to advance to the next page of the wizard. The Next button is disabled until all required page elements are completed.



Click the Go Back button to return to the previous wizard page.



Click the Finish & Create button to apply the changes displayed on the wizard summary page.

## Adding a Bucket

Alternatively, a bucket for a Space can be created during the Space Creation Wizard. See [Managing Spaces](#)

**Important:** This function can only be performed by a Hub Administrator.

+ Add bucket

Click the Add Ngenea Bucket button to start the Ngenea Bucket Wizard

## Type & reference

Ngenea supports the following storage target types:

Bucket Type	Description
S3	AWS S3 and S3 compatible buckets
Microsoft Azure	Azure Blob Storage
SpectraLogic BlackPearl	Spectralogic DS3 buckets
Google Object Storage	Google Cloud Storage
POSIX file system mount	Locally mounted targets, such as NFS

Select the required Bucket type from the drop down menu.

### Name & type

Configure bucket basic settings

#### Bucket name

Type the bucket name

Name is required.

#### Bucket label (optional)

Type the bucket label

#### Storage target type

S3

Learn about [StorageTarget](#)

Enter the name of the Ngenea Bucket name.

E.G.:

- mybucketname

Provide an optional friendly name as a Bucket label. If specified, users will see the Bucket label when referring to the Bucket in the Hub UI.

E.G.:

‘mybucketname data’

Depending on the Bucket type selected, a type-specific configuration page will be shown after selecting *Next*.

### Cloud storage configuration

Configure cloud storage-specific settings

**Access key ID**  
Type the access key ID  
[Learn about AccessKeyId](#)

**Secret access key**  
Type the secret access key  
[Learn about SecretAccessKey](#)

**Region**  
Type the region  
[Learn about Region](#)

**Storage server address**  
s3.amazonaws.com ✕  
[Host name of the storage address. Learn about Endpoint](#)

**Storage server port**  
443 ✕  
[Port of the storage service. Learn about Port](#)

**Scheme**  
HTTPS ▾  
[Connection protocol. Learn about Scheme](#)

**Verify SSL**   
Validate SSL certificates of the target

← Go back

Next >

## Type-specific config

Configure the Ngenea target according to the selected target type

### Bucket

Type the bucket

Learn about [Bucket](#)

### Access key ID

Type the access key ID

Learn about [AccessKeyId](#)

### Secret access key

Type the secret access key

Learn about [SecretAccessKey](#)

### Region

Type the region

Learn about [Region](#)

### Storage server address

s3.amazonaws.com



Host name of the storage address. Learn about [Endpoint](#)

### Storage server port

443



Port of the storage service. Learn about [Port](#)

### Scheme

HTTPS



Connection protocol. Learn about [Scheme](#)

### Verify SSL

Validate SSL certificates of the target



Enter the settings as required, which must match those set in the S3 object storage provider:

Setting	Description
Bucket	The name of the storage bucket as specified at the object storage service.
Access key ID	The unique access key for the AWS user account performing data transfers. This will be stored encrypted.
Secret access key	The unique security key for the AWS user account performing data transfers. This will be stored encrypted.
Region	The AWS (or S3 compliant provider) region hosting the S3 Cloud Storage
Storage server address	Not used for Amazon S3 Cloud Storage. For services which reside at specific IPs, such as AWS Snowball, MinIO or LocalStack, specific the host or IP address to connect to.
Storage server port	The TCP/IP port used to communicate
Scheme	HTTP or HTTPS transfer. HTTPS is recommended. Data integrity cannot be guaranteed over HTTP transfer schemes.
Verify SSL	Whether to verify the SSL connection of the target. Disabling the SSL verification allows connections to storage targets which do not provide valid SSL certificates. Connecting to invalid SSL certificates is insecure.

### Type-specific config

Configure the Ngenea target according to the selected target type

#### Access key

Type the access key

Learn about [AccessKey](#)

#### Scheme

HTTPS

Connection protocol. Learn about [Scheme](#)

#### Container

Type the container name

Learn about [Container](#)

#### Storage account

Type the storage account

Learn about [StorageAccount](#)

Enter the settings as required, which must match those set in the Azure object storage provider:

Setting	Description
Access key ID	The unique access key for the Azure user account performing data transfers. This will be stored encrypted.
Scheme	HTTP or HTTPS transfer. HTTPS is recommended. Data integrity cannot be guaranteed over HTTP transfer schemes.
Container	The storage container for the blob data.
Storage account.	The Azure namespace containing the Container

### Type-specific config

Configure the Ngenea target according to the selected target type

#### Bucket

Type the bucket

Learn about [Bucket](#)

#### Access key ID

Type the access key ID

Learn about [AccessKeyId](#)

#### Secret access key

Type the secret access key

Learn about [SecretAccessKey](#)

#### Storage server address

Type the storage server address

Host name of the storage address. Learn about [Endpoint](#)

Enter the settings as required, which must match those set in the BlackPearl DS3 object storage provider:

Setting	Description
Bucket	The name of the storage bucket as specified at the object storage service.
Access key ID	The unique access key for the BlackPearl user account performing data transfers. This will be stored encrypted.
Secret access key	The unique security key for the BlackPearl user account performing data transfers. This will be stored encrypted.
Storage server address	The FQDN hostname of the BlackPearl.

## Type-specific config Google Object Storage

**Type-specific config**  
Configure the Ngenea target according to the selected target type

**Bucket**

Type the bucket

Learn about [Bucket](#)

**Google authentication JSON**

{ }

Learn about [CredentialsJSON](#)

Enter the settings as required, which must match those set in the Google Cloud Storage object storage provider:

Setting	Description
Bucket	The name of the storage bucket as specified at the object storage service.
Google authentication JSON	Enter the contents of the JSON key for the user or service account granted permission to transfer data to Cloud Storage bucket. This will be stored encrypted. For more information refer to <a href="#">Google documentation</a>

**Important:** If the Ngenea Bucket is to be used as a backup only bucket, *do not* define JSON information in the Google Authentication JSON. Instead define keyword `CredentialsFile` with the path to the file containing JSON credentials on pixstor. For more information refer to [Backup-Only Targets](#).

## Type-specific config Filesystem Mount

**Type-specific config**  
Configure the Ngenea target according to the selected target type

**Target mount point**

Type the target mount point

Mount point of the storage target.  
Maps to `StoreObjectName`, `RetrieveObjectName` and `EnsureMountPoint`.  
Learn about [MigrationTargetFolder](#)

Enter the settings as required, which must match the location of the NAS mount point on the pixstor:

**Important:** Bucket mounts points are site-specific however Hub will create the target across sites associated with Space.

Setting	Description
Target mount point	The location of the POSIX compliant mounted storage. E.G. If the external POSIX storage is mounted on /mmfs1/myexternalnas enter /mmfs1/myexternalnas

## Advanced configuration

**Advanced configuration**

Define a custom configuration setting for the ngenea target

 **Keyword** 

.....

String ▾

Type the value

+ Add new key

To add configuration settings to a target to control specific behaviour during Ngenea data operations.

 Add new key

Click the Add new key to define a new configuration setting

 **Keyword**  
.....

Enter the name of the configuration setting in the Keyword field

String

Numeric

Boolean

Select the type of configuration setting from the drop down menu. Choose or enter the value for the configuration setting.

Example of added Advanced configuration settings:

## Advanced configuration

Define a custom configuration setting for the ngenea target

 **ACLSave** 

Boolean  True

---

 **EscapeNames** 

Boolean  False

## Summary

Upon completing the wizard steps a summary is presented:

### Summary

Review and confirm your settings

You named the bucket as **aws-single-version-bucket** [Go back and edit](#)

You set the bucket type as **AmazonS3** [Go back and edit](#)

You configured these advanced keys: **EscapeNames, ACLSave** [Go back and edit](#)

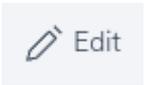
Click the Finish & Create button to apply the changes displayed on the wizard summary page.

Alternatively [Go back](#) and change the proposed configuration as required or [close](#) the wizard to cancel the creation of the Ngenea target.

## Editing a Bucket

**Important:** This function can only be performed by a Hub Administrator.

Clicking the Ngenea button in the main menu bar displays the list of Ngenea Buckets:



Click the edit icon on the required Ngenea Bucket row to edit the Ngenea Bucket

- Modify the Ngenea Bucket settings as required. Refer to [Adding a Bucket](#) for settings guidance.

### Name & type

Configure bucket basic settings

**Bucket name**

Name is required.

**Bucket label (optional)**

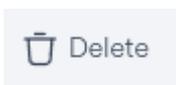
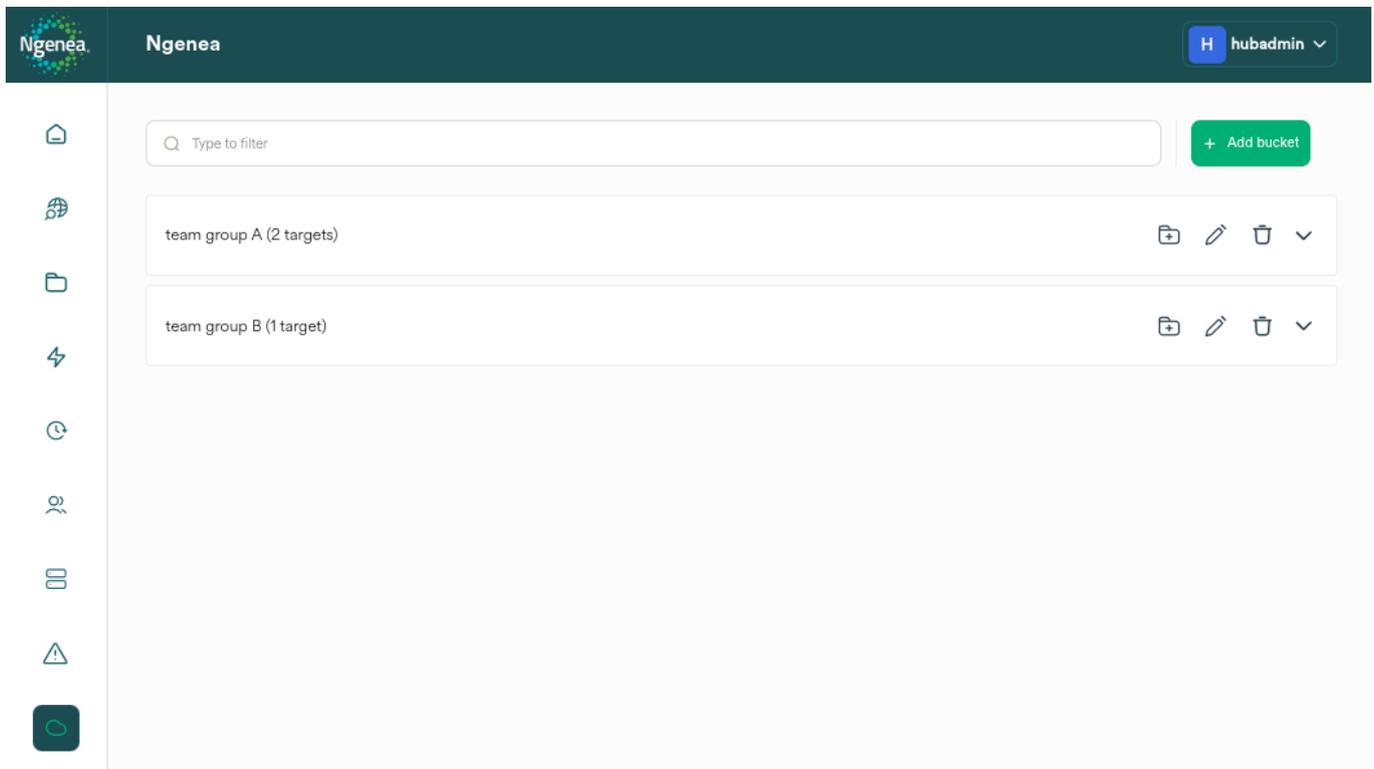
**Storage target type**

[Learn about StorageTarget](#)

## Deleting a Bucket

**Important:** This function can only be performed by a Hub Administrator.

Clicking the Ngenea button in the main menu bar displays the list of Ngenea Buckets:



Click the delete icon on the required Ngenea bucket row to delete the Ngenea Bucket

A confirmation dialog is raised:

### Delete bucket: team group A



To confirm, enter the name of the bucket below and press the confirm button.

Confirm

Cancel

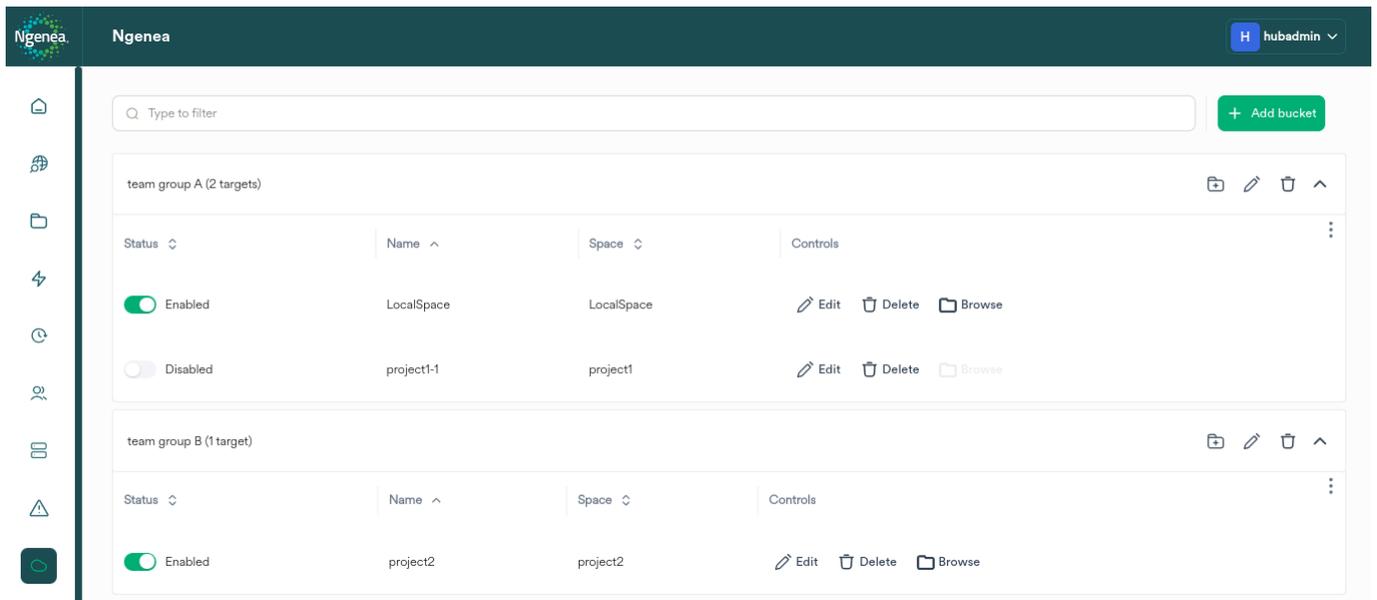
- Type the name of the Ngenea Bucket
- Click Yes to delete the Ngenea Bucket. This action is irreversible.
- Alternately click no, or close the confirmation dialog.

**Important:** Deleting a space automatically deletes associated targets. The parent bucket of the targets is not deleted, the bucket configuration still exists in pixstor and requires manual removal at the pixstor CLI.

## Browsing a Target

**Important:** This function can only be performed by a Hub Administrator.

Clicking the Ngenea button in the main menu bar displays the list of Ngenea targets:



Click the drop down button of a Bucket to view the associated Targets



Click the browse icon on the Ngenea target row to browse the Ngenea target

For more information on browsing and importing from an Ngenea target, see [Target Import](#)

## Adding a Target

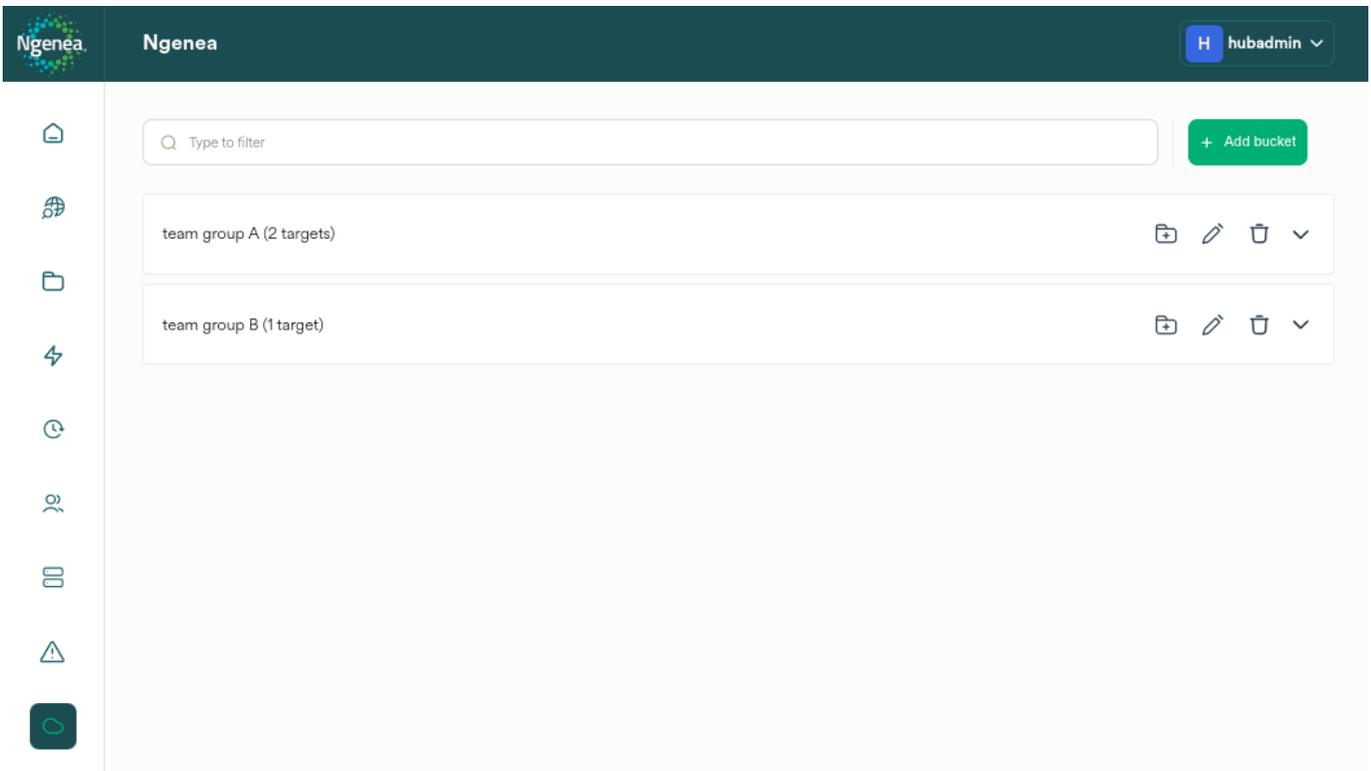
A Target links a Space to a Bucket. A Target that is linked in this way must:

- have a Regex filter that matches the Space mountpoint which can also include subdirectories with the Space mountpoint.
- be linked to the same sites as the Space.



Click the Ngenea button to navigate to the Ngenea screen

Clicking the Ngenea button in the main menu bar displays the list of Ngenea Buckets:



Click the Add Target button to start the External Target Wizard

## External Target Wizard

### Navigating the Wizard



Click the close button to exit the wizard. Changes are not saved.



Click the Next button to advance to the next page of the wizard. The Next button is disabled until all required page elements are completed.



Click the Go Back button to return to the previous wizard page.



Click the Finish & Create button to apply the changes displayed on the wizard summary page.

### Name & Location

Upon starting the External target wizard, the user is presented with the Name & Location page.

## Name & Location

Configure Ngenea target name and file match regex settings

### Basic settings

#### Bucket

team group C

#### Target space

project1

#### File match

/(mmfs1/data/project1/.+)

Pick location in the space ↗

Regex filter to match files for migration to target. Learn more about [LocalFileRegex](#)

#### Ngenea Target reference

project1-myref

Reference key for the Ngenea Target

#### Available on sites:

qatest-jtucker-260docs-siteA

Configure the migration settings as required to handle data migration accordingly:

Setting	Description
Bucket	The name of the Bucket the Target will be associated with. The bucket name cannot be changed.
Target Space	The name of the Space the Target will be associated with. Selecting the Space generates a suggested File match entry. If no space is selected, you must manually select which sites it is available on.
File match	Refer to the RegEx Filters example table below
Ngenea Target reference	The metadata key to add to all files processed by Ngenea HSM.
Available on sites	The sites the Space is associated with and therefore the Target will be created are listed. The sites cannot be changed.

**Note:** When pre-creating a target not associated to a Space where the Target Space is set to 'No space is selected', Hub will not suggest automatic settings for the dialog. In this case it required to manually set and review the dialog setting so that the wizard can proceed further.

Example regex filters where a space named myspace is present on the pixstor filesystem at location /mmfs1/data/myspace:

RegEx Filter Examples	Outcome
<code>/mmfs1/data/myspace/(.*)</code>	Dehydrated files within the myspace folder are present at the root of the storage target.
<code>/mmfs1/data/(myspace/.*)</code>	The myspace folder is present at the root of the storage target.
<code>/mmfs1/data/myspace/subdirectory/(.*)</code>	Dehydrated files within the subdirectory of the myspace directory are present at the root of the storage target. The myspace directory is not present. Data immediately within the myspace directory (other than that within the subdirectory) is not eligible for Ngenea operations.
<code>/mmfs1/data/myspace/(subdirectory/.*)</code>	The subdirectory of the myspace directory is present at the root of the storage target. The myspace directory is not present. Data immediately within the myspace directory (other than that within the subdirectory) is not eligible for Ngenea operations.
<code>/mmfs1/data/(myspace/.+)</code>	This regex matches paths under /mmfs1/data/ that contain myspace/ followed by one or more characters. The myspace folder is present at the root of the storage target.
<code>/mmfs1/(data/myspace/.+)</code>	This regex matches paths containing data/myspace/ after /mmfs1/. The data folder is present at the root of the storage target.
<code>/(mmfs1/data/myspace/.+)</code>	This regex matches paths under mmfs1/data/myspace/.

RegEx Filter Examples	Outcome
<code>/mmfs1/data/((myspace1 myspace2 myspace3)/.+)</code>	This regex matches paths under /mmfs1/data/ where the space is one of myspace1, myspace2, or myspace3.
<code>/mmfs1/(data/(myspace1 myspace2 myspace3)/.+)</code>	This regex matches paths under /mmfs1/ where the path contains data/ followed by one of myspace1, myspace2, or myspace3, and then additional path segments.
<code>/((mmfs1/data/(myspace1 myspace2 myspace3)/.+)</code>	This regex is similar to the previous one but matches paths that start directly with mmfs1/data/ and then one of the three space names, followed by additional segments.

## Advanced configuration

### Advanced configuration

Define a custom configuration setting for the Ngenea target

**Delete on recall**

Delete files from the external storage on recall

[Learn more about DeleteOnRecall](#)

---

**Key setup**

ACLSave

Boolean ▼ True ▼

---

EscapeNames

Boolean ▼ False ▼

+ Add new key

Configure the migration settings as required to handle data migration accordingly:

Setting	Description
Delete on recall	Determines whether to delete the recalled data from the Bucket after the data has been successfully recalled.
Key setup	Add configuration settings to a target to control specific behaviour during Ngenea data operations.

**Important:** Advanced Keys for a Target override those defined for the associated Bucket.

+ Add new key

Click the Add new key to define a new configuration setting

 **Keyword**  
.....

Enter the name of the configuration setting in the Keyword field

String  
Numeric  
Boolean

Select the type of configuration setting from the drop down menu. Choose or enter the value for the configuration setting.

## Summary

Upon completing the wizard steps a summary is presented:

### Summary

You named Ngenea target as **project1-myref**

[↶ Go back and edit](#)

You linked this target to the bucket **aws-bucket-west-coast**

[↶ Go back and edit](#)

You linked this target to the space **project1**

[↶ Go back and edit](#)

You created this Ngenea target for **site qatest-jtucker-260docs-siteA**

[↶ Go back and edit](#)

You configured these advanced keys: **ACLSave, EscapeNames**

[↶ Go back and edit](#)

Finish & Create >

Click the Finish & Create button to apply the changes displayed on the wizard summary page.

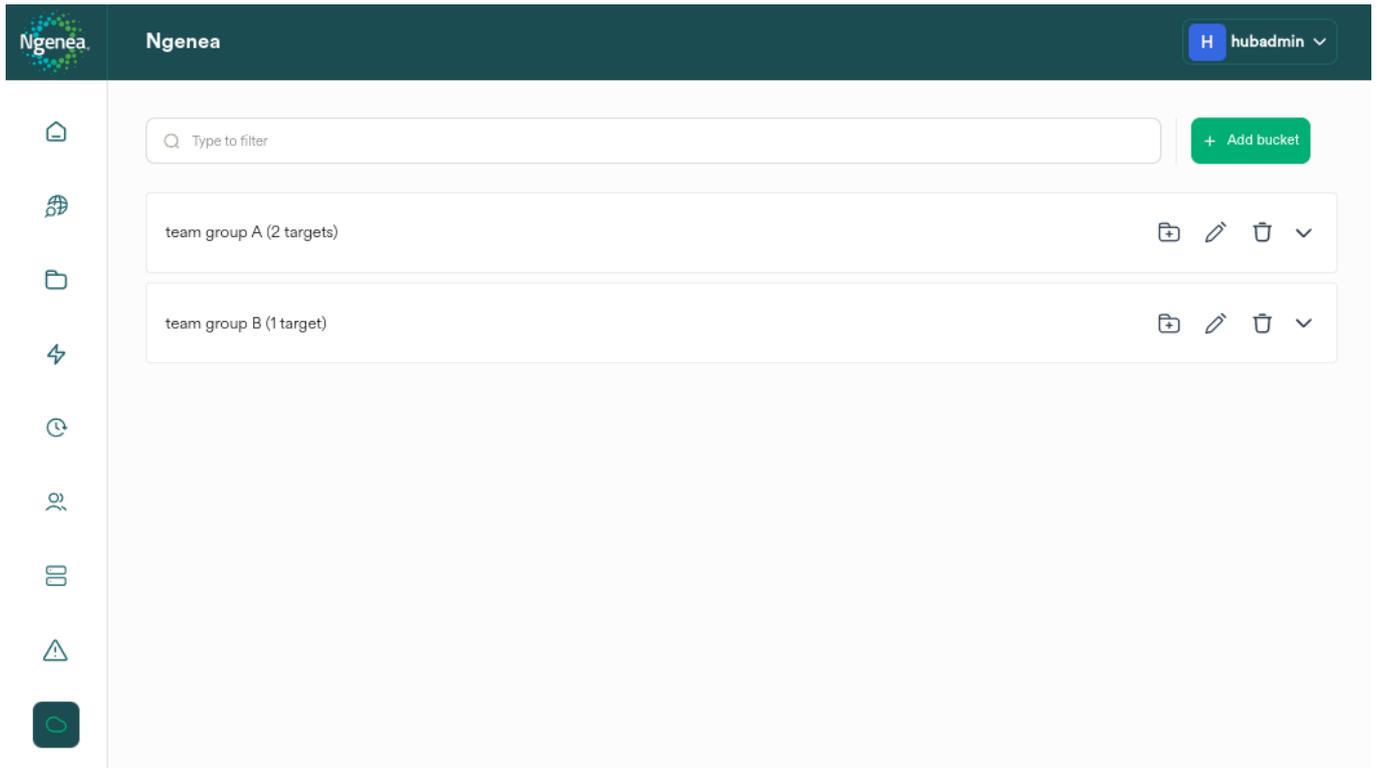
Alternatively [Go back](#) and change the proposed configuration as required or [close](#) the wizard to cancel the creation of the Ngenea target.

# Target Import

An Ngenea target can be browsed, and files can be imported to the local PixStor file system.

**Important:** This function can only be performed by a Hub Administrator.

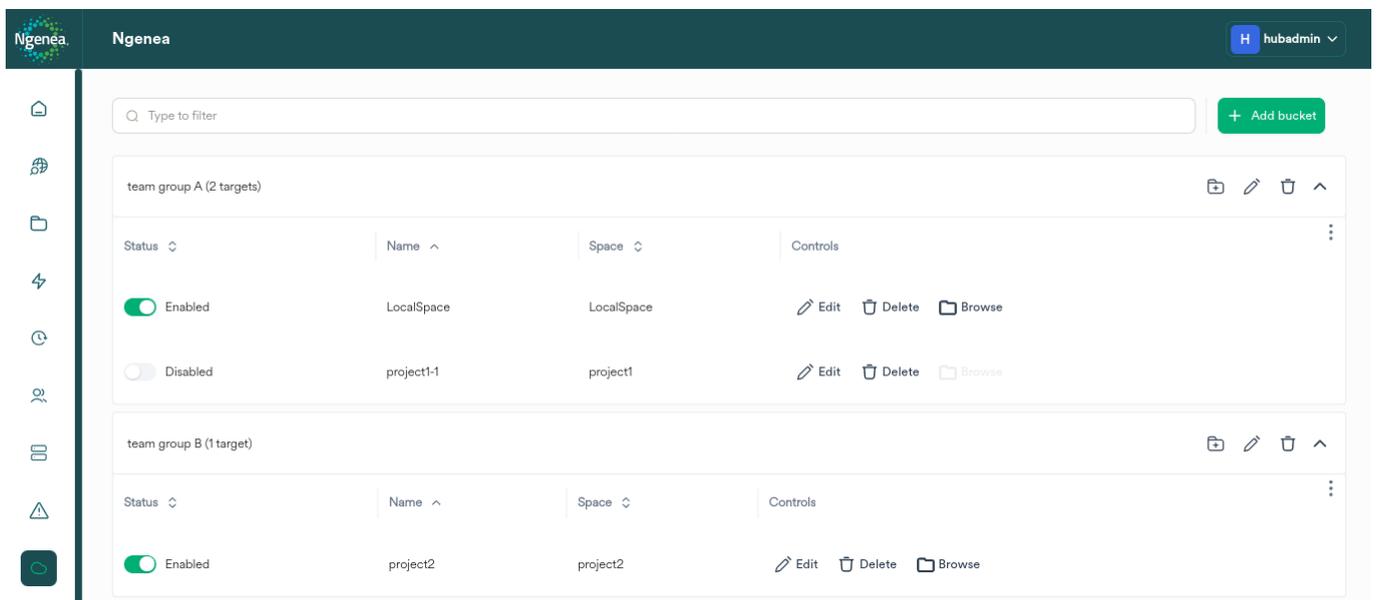
Clicking the Targets button in the main menu bar displays the list of Ngenea buckets:



A Target is the mapping for how data is transferred to and from a Bucket for a Space.



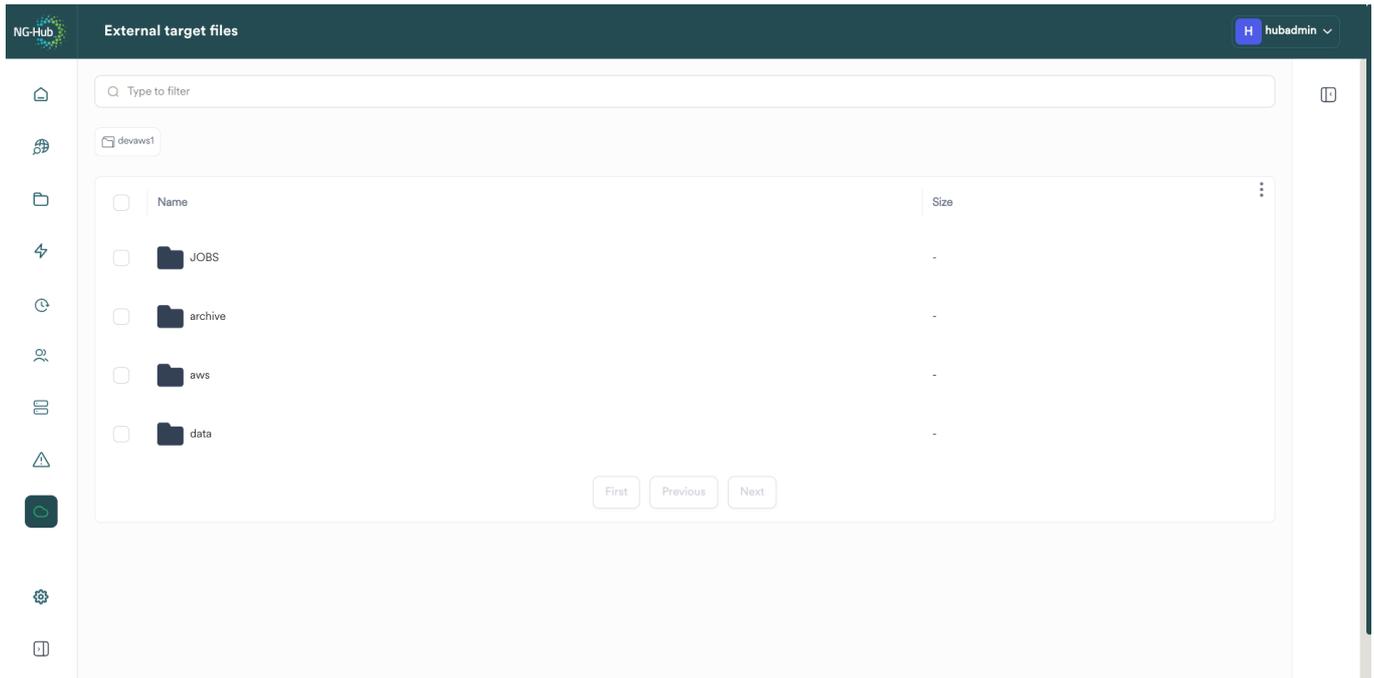
Click the drop down button of a Bucket to view the associated Targets



## Browsing a Target

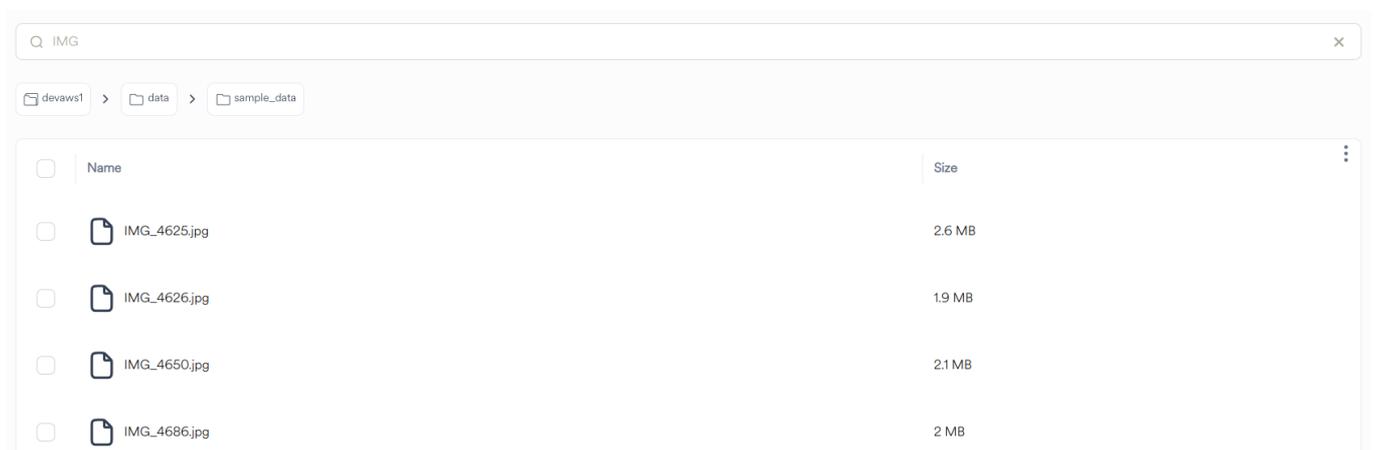
The target browser displays the file and folder contents of a target including additional contextual information such as size.

The target browser screen is comprised of several areas.



## Filtering the Target Browser

To display files or folders matching keywords, enter the keywords in the filter bar.



## Target Browser File Attributes

The target browser displays information regarding the files and folders within the Target.

Available information may vary between target types.

Option	Description
Name	The file or directory name
Size	The size of the file on the target

## Viewing File or Folder Metadata

### Metadata Panel

Click a file or directory name to view the associated metadata:



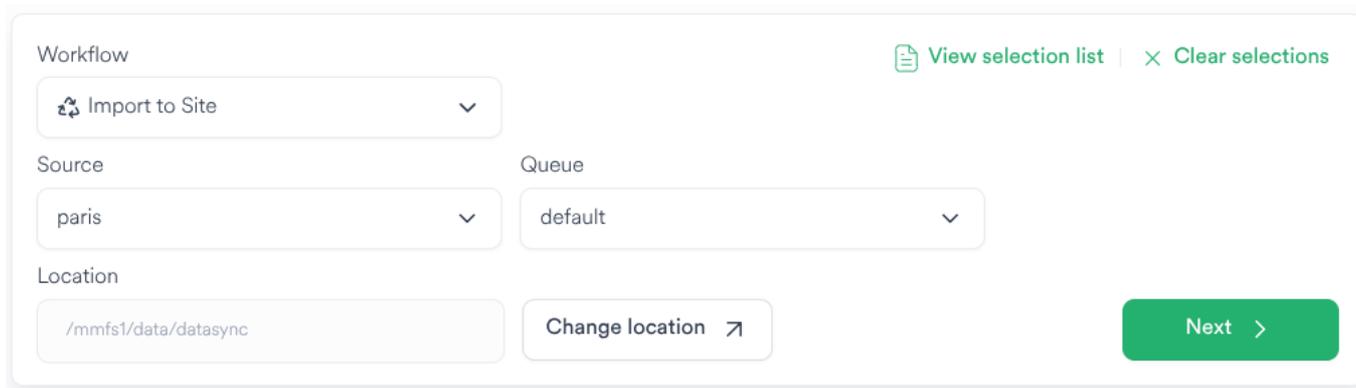
The image shows a metadata panel for a file named 'IMG\_4625.jpg'. It features a header 'Item info' with a minus sign, and three rows of metadata: Name (IMG\_4625.jpg), Type (file), and Path (data/sample\_data/IMG\_4625....). There are also navigation icons at the top.

Item info	
Name	IMG_4625.jpg
Type	file
Path	data/sample_data/IMG_4625....

The metadata panel provides a summary of metadata.

## Using the Job Creator Panel

Explain panel areas, buttons and operations



The image shows a 'Job Creator Panel' with several input fields and buttons. At the top right, there are links for 'View selection list' and 'Clear selections'. The main area contains three rows of dropdown menus: 'Workflow' (Import to Site), 'Source' (paris), and 'Queue' (default). Below these is a 'Location' field with the path '/mmfs1/data/datasync' and a 'Change location' button with an external link icon. A large green 'Next' button is positioned at the bottom right.

## Selecting files and directories

Selecting an individual file or directory populates the selection list with the item. Selecting a directory populates all items within the chosen directory tree.

Selections of the entire Target or a directory are each counted as 1 item.

Select the 'select all' checkbox next to the Name field in order to select the entire Target.

- Name
-  001.file
-  002.file
-  003.file

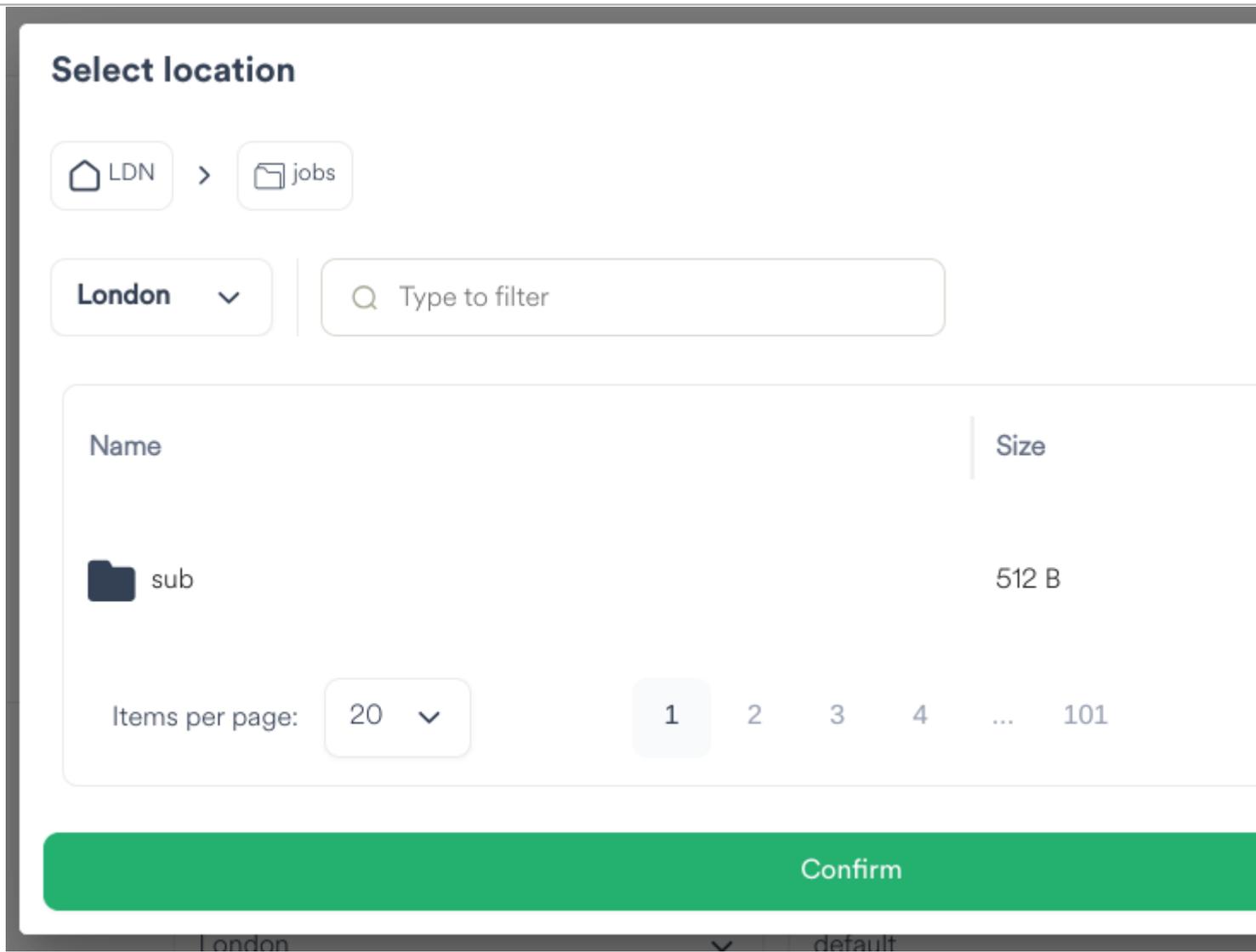
 [View selection list](#)

Click the View Selection List button to show the files and directories selected to be processed by the chosen workflow

[X Clear selections](#)

Click the Clear selections to remove all files and directories currently selected from the selection list

Choose location ↗



**Note:** Target files can only be imported to Locations in Spaces which match the target’s “File match” pattern.

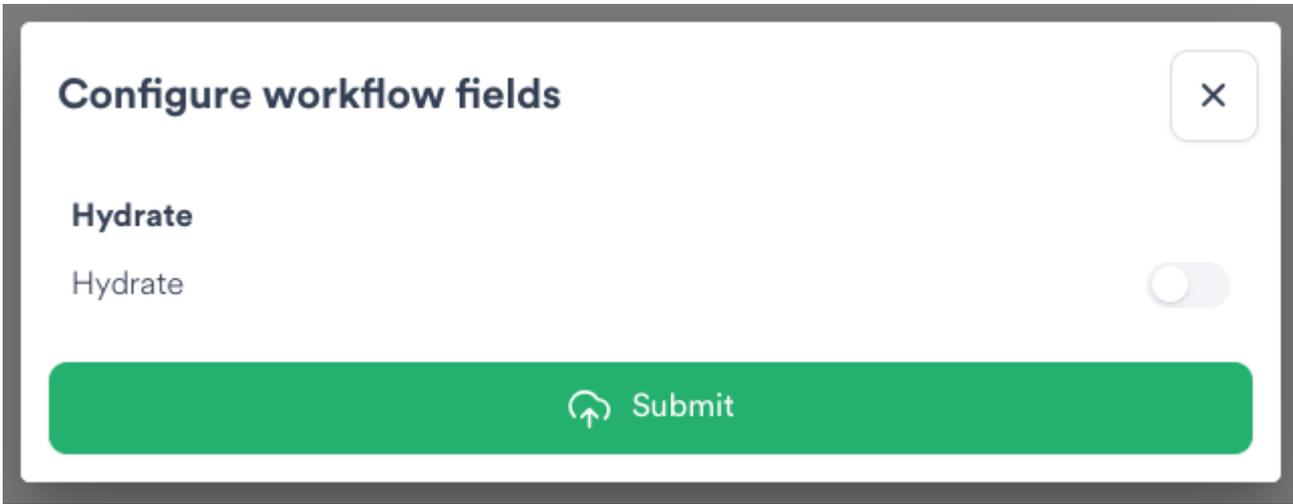
**Note:** Target files will be imported into the Space folder with their full remote path

For example, importing `path/in/cloud` to `/mmfs1/data/space/subpath` will result in `/mmfs1/data/space/subpath/path/in/cloud`

Next >

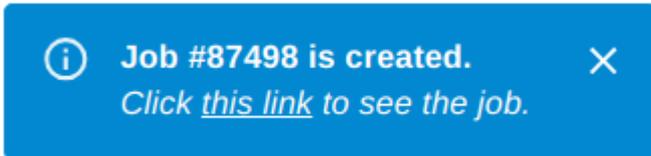
Click the Next button to enact the Job

Jobs with Workflows which require additional user decisions prior to enacting the Job raise the Configure workflow fields dialog:



After entering the field information [if required], select the button at the bottom of the dialog to submit the Job.

Click the button at the bottom of the dialog to submit the Job.



Upon submitting the workflow, a notification indicates the job was created with a link to view details of that job

## Job Types (Workflows)

Workflow [View selection list](#) | [Clear selections](#)

Source  Queue

Location  [Change location](#) [Next >](#)

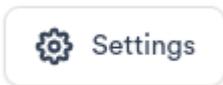
## Default Workflows

### Import to Site

The Import to Site workflow transfers the file metadata and data from the Ngenea target (E.G. an AWS cloud bucket). After successful transfer the metadata and data content of the file is present on the chosen site, within the chosen Location.

## Global Settings

The global settings page controls settings which are applied across all pixstor sites participating in hub management.

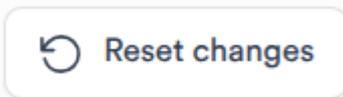


Click the settings button to navigate to the Global Settings screen

### Navigating the Settings page



After changing a setting, click the Save button to apply the changes



After changing a setting, click Reset Changes to reset any unsaved changes

## Database

Old job data can be retained in the database for a specific number of days so that the hub database does not fill up the system.

Database expiry can be configured by setting `jobs_ttl` in Global Settings page in UI.

Clicking the Global Settings button displays a form for updating the `jobs_ttl` in days. The `Save` button will be enabled once the user changes the value in the field.

**Database settings**

Expire database records for jobs older than  × days

Set blank (not 0) to keep all jobs

## Timeouts

Hub manages many varied operations, at differing scale, across Sites which can be in different geo-locations.

As such, the time to complete operations may require tuning for the differing scenarios.

Additional timeout settings are available in the Administration Guide. See “Hub Configuration”.

**Timeouts**

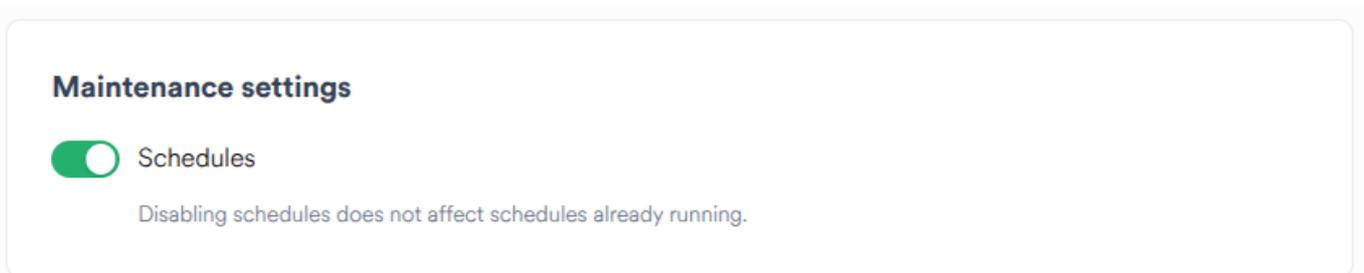
Retry snapshot create and delete operations during snapdiff workflows for	1000 <input type="text" value="x"/>	seconds
Auto-fail Started tasks which have finished processing and have not returned payloads after	3600 <input type="text" value="x"/>	minutes
Wait for file and directory information in the Space browser for	10 <input type="text" value="x"/>	seconds
Wait for Pixstor Analytics responses on Storage Info pages for	10 <input type="text" value="x"/>	seconds
Wait for Pixstor to apply settings changes for	60 <input type="text" value="x"/>	seconds

Setting	Description	Default
Retry snapshot create and delete operations during snapdiff workflows for	Where snapshots operations are numerous or blocked by cluster behaviour, continue to retry snapshot creation and deletion within the timeout window	1000 seconds
Auto-fail Started tasks which have finished processing and have not returned payloads after	If a Job’s task has completed, but the results of the task have not been sent back to Hub (perhaps due to network, environmental or payload failure), set the task to state Failure after the timeout window has expired	3600 minutes
Wait for file and directory information in the Space browser for	During browsing of Spaces and similar file browser interfaces do not return disk usage and count information if no such information is received from the Pixstor Analytics after the timeout has expired	10 seconds

Setting	Description	Default
Wait for Pixstor Analytics responses on Storage Info pages for	During the browsing of Storage Info for a Site, do not return disk usage and count information if no such information is received from the Pixstor Analytics after the timeout has expired	10 seconds
Wait for Pixstor to apply settings changes for	When applying changes to Sites, wait the specified number of seconds for the Pixstor to respond to the action before failing the Settings task	60 seconds

## Schedules

On the [Schedules](#) page, schedules can be enabled or disabled individually. The Global Settings page provides the ability to disable all schedules at once. Clicking the Global Settings button displays a “Schedules” toggle.



Set the toggle to disabled and click **Save** to disable all schedules.

No new scheduled jobs will start for as long as Schedules are disabled globally.

Any scheduled jobs which have already started when schedules are disabled will run to completion, but no new jobs for that schedule will start after that.

Set the toggle back to enabled and click **Save** to re-enable schedules globally. Any schedules which were disabled individually will remain disabled after Schedules are re-enabled globally.

## Backups

PixStor provides the capability to backup data within a Space on a per-Site basis to specific Ngenea Targets.

Hub enables configuration to be set for the Ngenea Backup service running on pixstor sites.

**Important:** Best practice is to treat backup data separately from live data. Hub will only configure a backup to an Ngenea target set as a `backup-only` target type.

## Configuring Backups

To perform a backup for a Space on a Site, the following actions must be undertaken:

- An Ngenea Target is provisioned with `Backup-Only` enabled
- The Site from which to backup is enabled to participate in backups
- An appropriate backup schedule is set
- The Space is enabled for backup, selecting the Site and the Ngenea Target

## Backup-Only Targets

An Ngenea Target can be utilised for backups of a Space.

Where a Space exists across multiple Sites, optionally, each site can perform its own backup of the Space.

**Important:** Multiple Sites are not permitted to backup to the same Ngenea Target.

### Backup-only target

Whether this target is for backups

---

## Enabling Site for Backup

pixstor provides the capability to backup data within a Space on a per-Site basis to specific Ngenea Targets.

Hub enables configuration to be set for the Ngenea Backup service running on pixstor sites.

If the Site is enabled to participate in backups, each Space requires additional configuration to enable the per-Space backup.

**Enable backup**

Do you want this site to participate in backups?

---

**Frequency**

Periodically

At specific time of a day

---

**Every**  Mon  Tue  Wed  Thu  Fri  Sat  Sun

**At**  :

Time selection is in the timezone of Site **Bravo** (Europe/London).  
 The schedule will run **every Tuesday, Wednesday, Thursday, Sunday at 16:06** in your timezone (Europe/London).

Determine the required frequency of the backup.

**Schedule**

**Frequency**

Periodically

At specific time of a day

---

**Every**  Mon  Tue  Wed  Thu  Fri  Sat  Sun

**Interval**

Choosing Periodically will ensure that the schedule will run on the next interval set.

E.G:

- 1 hour: The backup will run on the next hour (12.00, 13.00)
- 15 mins: The backup will run on the next 15 minute interval past the hour (15, 30, 45, 00)

**Schedule name**

sch1 ✕

**Status**

Enabled

**Frequency**

Periodically

At specific time of a day

---

**Every**  Mon  Tue  Wed  Thu  Fri  Sat  Sun

**At** 05  : 00

Time selection is in the timezone of Site **siteA** (Europe/London).  
The schedule will run **every Monday, Wednesday, Friday at 05:00** in your timezone (Europe/London).

Choosing At Specific Time of A Day allows the Policy to be scheduled once per chosen day at a specific time of day.

**Hint:** The schedule is run at the configured time in each site's timezone

Optional tuning can be set for the backup operation in the Advanced Configuration.

Refer to the Ngenea Backup documentation prior to applying any parameters.

## Advanced configuration

Leave fields blank to use defaults

### Number of threads

### Hashing threshold (MB)

### Timeout (seconds)

### Connection timeout (seconds)

### Number of connection retries

## Enabling Space Backup

### Space backup

#### Site(s) to backup

LON xROM x

#### Global exclusion rules

##### Exclude folders

##### Exclude filetypes

- Select the Sites which will perform backups for this space
- Define any Global Exclusions

## Global Exclusion Rules

Global exclusions apply to all Site backup configurations for the Space unless overridden on a per-Site basis.

Pick folders to exclude ↗

Click the Unselect folders to exclude button to raise the folder browser dialog

Use the folder browser to unselect items which will not be included (hence excluded) from backups.

### Unselect items to exclude

×

datasync

>

dubrovnik

Paris

▼

Q Type to filter

Name

Size

Number of files

Date created

⋮



dpx

8.2 GB

251

Wed, 24 Jan 2024, 10:24:17 GMT



png

2.8 GB

250

Wed, 24 Jan 2024, 10:24:18 GMT

Items per page:

20

▼

1

Previous

Next

Confirm

### Exclude filetypes

Type the file extension and hit Return key

Define file extensions which must be excluded from backups across all Sites. E.G. \*.tmp

**Hint:** If multiple Sites are selected, backup configuration is presented per-Site. Optionally each site can specify its own settings.

For each Site participating in Space backup a configuration panel is displayed:

PAR
paris backup settings
^

---

**Exclusion rules**

Do you want to use the global exclusion rules from above for this site?

---

**Ngenea target**

Choose where to store the backed up files
▼

**Number of versions**

2
×

**Inactive threshold (days)**

Type a number

If left blank or 0, automatic tier change of inactive files is disabled.

---

**ACL save**

Do you want ACL entries to be saved?

**Shadow folder metadata save**

Do you want shadow folder metadata to be saved?

Review the backup settings for each site:

Setting	Description
Exclusion Rules	By default the Site inherits the Global exclusion rules. To override the rules, deselect the slider and define any exclusions using the same methods as described above.
Ngenea Target	Choose an available Ngenea Target. Only targets configured as <i>Backup-Only target</i> and not currently in use for other Sites are available for selection.
Number of versions	Defines the maximum number of all file versions within a remote storage location for the targeted Fileset before Ngenea Backup prunes excess versions. If the number of versions of a file has exceeds the defined threshold, the oldest version will be deleted.

Setting	Description
Inactive threshold(days)	Defines the threshold of days for a defined CRITERIA (E.G.: modification) after which each file within the monitored Independent Fileset is validated when INACTIVE_THRESHOLD is enabled. Those files where their defined CRITERIA exceeds this value will be re-copied from the local PixStor filesystem to storage container into an in-active tier. All instances of the file in typical standard storage classes are transitioned to older file versions.
ACL save	If enabled, all of the related NSFv4 ACL entries for an ingested file will be included in the remote object's metadata when a file is backed up. This allows Ngenea to apply those NSFv4 ACL entries when recalled or stubbed.
Shadow folder metadata save	If enabled, additional data objects will be created within the remote storage target as this data is stored as an object within the cloud provider. If enabled, all the directory modification, creation and deletion operations between subsequent backup runs will be stored in remote storage. This allows the restoration or ngsrecall of directories with NFSv4 ACL and POSIX permission support. This data will also be version controlled similarly to files. This operation will occur if the permissions or ACL entries are edited on any directories meaning that each change to ACLs will be updated with regular runs of backup.

## Iris

### Prerequisites

- IRIS feature enabled on Pixstor. For further information refer to the **PixStor Deployment And Configuration Guide**.
- Ngenea targets assigned to Spaces used for Iris
- ngclient configured

## Iris Spaces

Enabling the Space for Iris:

- enables the Space data to be accessed via S3 protocol by the suite of Iris applications (Vision, AI+, Ngenea)
- creates an hourly schedule to send notifications of file changes within the Space to the Iris event queue. To change the schedule interval, edit the Schedule within Space settings or the Schedules page.

To enable Iris applications to access a Space, enable the Space for Iris.



Enabling a Space for Iris automatically creates an `iris-notify` schedule for the Space which can be managed from the Space settings or the Schedules page.

The `iris-notify` schedule periodically sends notifications of file events within the Space from the Pixstor file system to the centralised Iris notification queue.

## Authentication

Access to Spaces by users of Vision is granted through Hub permissions.

Users can successfully access Spaces (Vision: 'Buckets') where:

- the username in Hub and Vision matches
- access to the Space is granted to the Hub user through an appropriate Hub group

An example of a compliant setup is:

## Vision Users

**Basic settings**

**Group name**

Vision Users ✕

**Description**

Users of Vision ✕

**Users**

1 user selected ▼

stduser ✕

**Spaces**

**Administrated Spaces**

Select Spaces ▼

**User Spaces**

1 space selected ▼

space01 ✕

Users requiring to access Spaces in Vision do not require Space Administration privileges.

## Administration Guide

Ngenea Hub harnesses the power of Ngenea to provide global workflows, enabling your data to be where you need it, when you need it.

## Download

### Ngeneea Hub

Component	Link
Ngeneea Hub	Not Found
Ngeneea Hub Images	Not Found
Documentation (PDF)	<a href="#">ngeneea-hub-v2.9.1</a>

### Ngeneea Worker

Component	Link
Ngeneea Worker (RPM)	Not Found

### Ngeneea Hub Client

Component	Link
Ngeneea Hub Client (RPM)	Not Found
Ngeneea Hub Client (whl)	<a href="#">ngclient-2.9.1.post1</a>

### Cloud Functions

Provider	Link
Google Cloud	Not Found
Amazon Web Services	Not Found

## Installation

This section provides a comprehensive guide for installing and configuring Ngeneea Hub and Ngeneea Worker on CentOS/RedHat systems.

### Installing Ngeneea Hub :

- **Prerequisites:** Details the required version of Ngeneea Hub, network configurations, software compatibility, and necessary steps for offline installation and **Docker authentication**.
- **Online Installation - CentOS/RedHat:** Outlines steps to install Ngeneea Hub RPM, create configuration files, start the service, and verify its status.
- **Offline Installation - CentOS/RedHat:** Explains the installation procedure for systems without internet access using local RPM files for both Ngeneea Hub and necessary Docker images.

**Installing Ngeneea Worker:** Describes prerequisites, installation of Ngeneea Worker RPM, and configuration for communication with Ngeneea Hub.

### Installing Ngeneea Hub

## Prerequisites

Before proceeding with the installation of Ngenea Hub, ensure the following conditions are met:

**Ngenea Hub Version:** Ensure that you are installing the latest Ngenea Hub version.

**Warning:** There is no direct upgrade path from Hub 1 to Hub 2.

Please contact support for guidance on performing this upgrade.

**Network Requirements:** Ngenea Hub must be reachable from all Ngenea Workers on the following ports:

- 6379/tcp
- 5672/tcp
- 8000/tcp (for Ngenea Hub versions 1.18 and above)

**Software Compatibility:** The interoperability page discusses compatibility between Ngenea Hub and Ngenea HSM. You can check compatibility using the [Product Interoperability Matrix](#) provided in the software documentation.

**Note:** For compatibility between Ngenea Hub and Ngenea Worker, the version numbers must match up to the minor version. Specifically, if the version format is major.minor.patch, both Hub and Worker must share the same major and minor versions (the patch version may differ).

**Post-Installation Features:** After installation, you may want to enable additional features like Search. Follow the instructions in the Feature Set-up guide for specific feature configurations.

**CentOS / RedHat Systems:** Ensure that the target system where you will install Ngenea Hub is running either CentOS or RedHat operating systems.

**CentOS / RedHat - Offline Installation (if applicable):** For offline installations, ensure that you have both the `ngenea-hub` and `ngenea-hub-images` RPM packages downloaded and available on the target system.

**Docker Authentication (if applicable):** If your setup requires Docker authentication (not necessary for Pixstor systems), configure it by running:

```
docker login eurepo.arcapix.com
```

## Online Installation : CentOS / RedHat

- 1. Transfer the Ngenea Hub RPM Package:** First, ensure that the `ngenea-hub-<version>.rpm` package is available on your target system. You can transfer the RPM file using various methods such as SCP, FTP, or other file transfer protocols.

- Install the Ngenea Hub Package:** Once the RPM file has been transferred,
2. navigate to the directory where you stored the package and run the following command:

```
yum install ngenea-hub-<version>.rpm
```

Be sure to replace `<version>` with the actual version number of the Ngenea Hub RPM file.

**Note:** For offline installation, please refer to section [Offline Installation: CentOS / RedHat](#).

1. **Create Initial Configuration File (Optional):** To manually set up the initial configuration for Ngenea Hub, you can edit the file located at `/etc/sysconfig/ngeneahub`. This configuration file includes settings for external queue systems and other deployment parameters. If you'd like to create or adjust the configuration file yourself, run:

```
ngeneahubctl createconfig
```

If you choose not to create it, the file will be automatically generated the first time you start the Ngenea Hub service.

2. **Enable and Start the Ngenea Hub Service:** To ensure the Ngenea Hub service starts automatically on system boot and also starts immediately, execute the following command:

```
systemctl enable --now ngeneahub
```

3. **Check the Status of the Services:** Verify that both the Ngenea Hub and frontend services are running correctly. Use these commands to check their status:

For the Ngenea Hub service:

```
ngeneahubctl status
```

For the frontend service:

```
systemctl status ngeneahub-frontend.path
```

These commands will display the current status of the services, indicating whether they are active and running or if any issues need to be addressed.

When installing the Ngenea Hub on systems without internet access (due to network restrictions or other reasons), the service typically attempts to pull the necessary Docker images directly from Ngenea's software repository. However, if this is not possible, you can perform the installation offline by using RPM packages.

Here's how to proceed with the offline installation:

1. **Obtain the Required RPM Packages:** You need to download two RPM packages:
  - `ngenea-hub-<version>.rpm`: This RPM contains the main application for Ngenea Hub.
  - `ngenea-hub-images-<version>.rpm`: This additional RPM contains the Docker container images required for Ngenea Hub to operate, avoiding the need to pull them from the internet.

Both of these RPMs should be available in the same location where you obtained the main Ngenea Hub software.

2. **Transfer RPMs to the Target System:** Copy or transfer the downloaded RPM files (`ngenea-hub-<version>.rpm` and `ngenea-hub-images-<version>.rpm`) to the system where you wish to install Ngenea Hub. This can be done using USB, external storage, or any other secure transfer method.
3. **Install the RPMs:** Once the RPM files are available on the target system, you can install them using the `rpm` command. Open a terminal on the target system and run the following command, replacing `<version>` with the appropriate version number of the files you downloaded:

```
yum install ngenea-hub-<version>.rpm ngenea-hub-images-  
<version>.rpm
```

- `yum install` is the command used to install RPM packages.

1. **Verify Installation:** After the RPM installation is complete, you can verify that Ngenea Hub is properly installed by checking that the service is running and the required Docker containers are available locally.

## Installing Ngenea Worker

This section provides a step-by-step process for installing and configuring the Ngenea Worker. Following these instructions will enable you to install the worker on a system and have it interact with the Ngenea Hub.

### Prerequisites

#### Ngenea Server Software

Ensure that the Ngenea Server software is installed and configured before proceeding with the worker installation.

## File Systems Configuration with Auto-Inode-Limit

- The file systems on the nodes where you will install the ngenea-worker package must be configured with the auto-inode-limit.
- This setting is essential for the proper functioning of the worker.
- To configure auto-inode-limit on the file system, use the following command:

```
mmchfs <file_system_name> --auto-inode-limit
```

Replace `<file_system_name>` with the name of the file system.

**Software Compatibility:** The interoperability page discusses compatibility between Ngenea Hub and Ngenea HSM. You can check compatibility using the [Product Interoperability Matrix](#) provided in the software documentation.

## Installing the Ngenea Worker Package

To install the ngenea-worker package, use the YUM package manager. This process assumes that your system is configured to use YUM repositories.

Run the following command to install the package:

```
yum install ngenea-worker
```

The `yum` command will download and install the ngenea-worker package along with its necessary dependencies. Wait for the installation to complete.

## Worker Configuration

After the package installation, the next step involves configuring the worker so that it can communicate with the Ngenea Server.

### Create or Edit the Worker Configuration File

The Ngenea Worker configuration is stored in a file located at: `/etc/ngenea/ngenea-worker.conf`.

If this file does not already exist, please create it. The configuration file utilizes the `.ini` format. You will need to include the following content within it:

```
[settings]
site = site1
api_host = localhost
api_port = 8000
api_secure = true
redis_port = 6379
gpfs_nodes = ["localhost"]
```

Here's how to adjust the example configuration based on your setup:

- **site:** Replace *site1* with the name of your specific site.
- **api\_host:** Enter the hostname or IP address of your API server. If the API is hosted on the same machine as the worker, leave this as *localhost*.
- **api\_port:** Enter the port on which your API server is running. The default value is *8000*.
- **redis\_port:** This is the port Redis is running on. The default value is *6379*, and you should only change it if Redis is using a different port.
- **gpfs\_nodes:** If you are using a General Parallel File System (GPFS), list your nodes here. If GPFS is installed on the same machine, [*localhost*] is sufficient. You can specify multiple nodes if needed, using a comma-separated list within the brackets, E.G. [*node1*,"*node2*","*node3*"].

## Handling SSL Configuration

SSL (Secure Sockets Layer) ensures encrypted communication between the Ngenea Worker and the API. Here's how to handle the SSL settings:

- **If you have a valid SSL certificate**, set `api_secure=true`.
- When `api_secure=true`, the system requires a valid SSL certificate, and self-signed certificates are not allowed.
- Ensure that a valid SSL certificate is installed on the server if using SSL (`api_secure=true`). For assistance with obtaining or installing an SSL certificate, refer to the documentation on External SSL provisioning.
- **If you do not have a valid SSL certificate** and want to disable SSL, set `api_secure=false`. This will allow the system to communicate without using SSL.
- **If you do not specify the `api_secure` option** in the configuration file, the system will automatically default to `api_secure=true`. If you do not have SSL, you must explicitly set `api_secure=false` to avoid issues with the connection.

## Worker Configuration Settings - Introduction

The Ngenea Worker configuration involves setting up and managing workers that process tasks for the Ngenea Hub.

It includes options for API connectivity, task concurrency, Redis integration, and advanced logging settings. The system allows customization through custom configurations, multiple site setups, and debug-level adjustments to ensure efficient task handling and monitoring.

**Note:** Click the **link** to learn more about Ngenea Worker settings and configurations!

**Note:** Please refer to the link to understand more about Hub Configuration: {ref} `\Hub Configuration Documentation <hub_config>`.

## Joining the Worker to the Hub

To establish secure communications and register the worker with the hub, you will need to run the join command with a valid hub admin username and password.

Use the following command:

```
ngenea-worker join --user <USERNAME>
```

Example: Let's assume the username for the hub admin is hubadmin. To run the join command:

```
ngenea-worker join --user hubadmin
```

The system will then prompt you to enter the password for the hubadmin user.

After providing the password, the worker will authenticate with the hub, and you should see output similar to this:

```
hubadmin's password:  
Attempting to auth the hub using the provided credentials...  
Authenticated as user onprem-worker.  
Storing the client certificates for the worker...  
Client certificate stored at /etc/pki/tls/certs/onprem.crt  
Client private key stored at /etc/pki/tls/private/onprem.key  
Storing the root CA for NgeneaHub...  
Root CA stored at /etc/pki/tls/certs/ng-hub-ca.crt
```

## Enabling and Starting the Ngenea Worker Service

The steps for authentication and certificate storage are automatically performed as part of the `ngenea-worker join` command.

Once the worker is authenticated and certificates are stored, the next step is to ensure that the Ngenea Worker service is enabled and running. You will use the systemd system and service manager for this.

Enable and start the Ngenea Worker service using this command:

```
systemctl enable --now ngenea-worker
```

Verification: You can verify the service status by running:

```
systemctl status ngenea-worker
```

If everything is configured correctly, you should see an active and running status.

## Product Interoperability Matrix

Ngeneia Hub requires specific versions of Ngeneia.

- All Ngeneia Hub managed sites must use the same version of Ngeneia
- Mixed versions are unsupported

### Ngeneia

The following table defines the supported Ngeneia versions for each version of Ngeneia Hub.

<b>Ngeneia Hub version</b>	<b>Ngeneia version</b>	<b>minimum</b>	<b>Ngeneia version</b>	<b>maximum</b>
2.9.1	1.32.0-1		1.32.0-1	
2.9.0	1.32.0-1		1.32.0-1	
2.8.1	1.31.0-1		1.32.0-1	
2.8.0	1.31.0-1		1.32.0-1	
2.7.0	1.31.0-1		1.31.0-1	
2.6.0	1.31.0-1		1.31.0-1	
2.5.5	1.30.1-1		1.30.1-1	
2.5.4	1.30.1-1		1.30.1-1	
2.5.3	1.30.1-1		1.30.1-1	
2.5.2	1.30.1-1		1.30.1-1	
2.5.1	1.30.1-1		1.30.1-1	
2.5.0	1.30.1-1		1.30.1-1	
2.4.3	1.30.1-1		1.30.1-1	
2.4.2	1.30.1-1		1.30.1-1	
2.4.1	1.30.1-1		1.30.1-1	
2.4.0	1.30.1-1		1.30.1-1	
2.3.2	1.29.0-2		1.29.0-2	
2.3.1	1.29.0-2		1.29.0-2	
2.3.0	1.29.0-2		1.29.0-2	
2.2.5	1.28.0		1.28.0	
2.2.4	1.28.0		1.28.0	
2.2.3	1.28.0		1.28.0	
2.2.2	1.28.0		1.28.0	
2.2.1	1.28.0		1.28.0	
2.2.0	1.28.0		1.28.0	
2.1.0	1.27.0		1.27.0	
2.0.2	1.25.0		1.25.0	
1.30.0	1.27.0		1.27.0	
1.29.0	1.27.0		1.27.0	
1.28.0	1.26.1		1.26.1	
1.27.0	1.25.0		1.25.0	

Ngenea Hub version	Ngenea version	minimum	Ngenea version	maximum
1.26.0	1.24.1		1.24.1	
1.25.0	1.24.1		1.24.1	
1.24.0	1.21.0		1.22.0	
1.23.0	1.21.0		1.22.0	
1.22.0	1.21.0		1.22.0	
1.21.0	1.21.0		1.21.0	
1.20.0	1.21.0		1.21.0	
1.19.0	1.21.0		1.21.0	
1.17.3	1.20.1		1.20.1	
1.17.0	1.19.0		1.19.0	
1.13.0-1.16.0	1.16.0		1.19.0	
1.10.0-1.12.0	1.15.0		1.16.0	
1.9.0	1.14.0		1.14.0	
1.8.0	1.13.0		1.14.0	
1.7.0	1.12.0		1.12.0	
1.6.0	1.12.0		1.12.0	
1.5.0	1.12.0		1.12.0	
<=0.6.0	1.9.0		1.11.0	

## Event Based Orchestration

The following table defines the supported Event Based Orchestration versions for each version of Ngenea Hub.

Ngenea Hub version	Event Based Orchestration version
1.30.0	1.0.0

## Upgrade

**Warning:** There is no direct upgrade path from Hub 1 to Hub 2.

Please contact support for guidance on performing the upgrade.

**Note:** Hub versions 2.3.0+ have additional requirements.

Ensure to review the [Product Interoperability Matrix](#) and align software versions accordingly.

If an upgrade is being performed from a version < 2.3.0 please note changes in the Installation and Upgrade guides.

## Before you start

Before upgrading, you must wait for any pending or active jobs to complete, otherwise they may be lost or present an incorrect future state.

Scheduled workflows must be temporarily disabled prior to upgrading to prevent new jobs being submitted during the upgrade process.

## Backup Workflows

Ngenea Hub ships with some default workflows. New releases may make changes to these workflows, so any customisations to them may be lost during upgrade. For safety, workflows should be backed-up before upgrading.

The easiest way to backup workflows is using `ngclient` or by using Ngenea Hub backup management command [Backing Up HUB Static Configurations](#)

```
ngclient workflows list > workflows_backup.json
```

See [NGCLIENT-WORKFLOWS](#) for more information.

## Stop Services

**Note:** Hub versions 2.1.0+ have additional requirements

When upgrading Hub 2.1.0+, the additional service `ngenea-worker-frontend.path` is required to be actioned

First, shutdown Ngenea Worker on all nodes

```
systemctl stop ngenea-worker
```

Note that any Ngenea Worker packages pre-1.12.0 will use the older syntax:

```
systemctl stop ngenea-worker@SITENAME
```

Then shutdown Ngenea Hub

```
systemctl stop ngeneahub
systemctl stop ngeneahub-frontend.path
```

**Warning:** Not stopping the workers before upgrading may result in jobs being stuck as `PENDING`. If this happens, restarting the workers using `systemctl restart ngenea-worker` will allow jobs to start running again.

## Upgrade Packages

Download the latest RPMs from the [Download](#) page.

## Upgrade Ngenea Hub

```
yum upgrade ngenea-hub-<version>.rpm
```

As with [Installation](#), for offline situations, the Ngenea Hub base and image rpms can be upgraded with

```
rpm -Uvh ngenea-hub-<version>.rpm ngenea-hub-images-<version>.rpm
```

## Upgrade Ngenea Worker on all nodes

```
yum upgrade ngenea-worker-<version>.rpm
```

## Upgrade Configurations

**Warning:** If upgrading from Ngenea Hub version 1.17 or older, you must convert worker configuration to 1.18+ format. Please refer to the *appropriate worker configuration* and *worker join* steps as described in [Installing Ngenea Worker](#). Installation of the worker is not required as this has been achieved in the prior Upgrade Packages step.

Ngenea Hub versions 2.3+ have additional requirements. If an upgrade is being performed from a version < 2.3.0 please note changes in the Installation and Upgrade guides require prior LDAP connections require to be re-authenticated. Ensure to review the [Hub Authentication](#) sections applying the preferred setup accordingly.

## Restart Services

First, startup Ngenea Hub

```
systemctl start ngeneahub  
systemctl start ngeneahub-frontend.path
```

Then start Ngenea Worker on all nodes

```
systemctl start ngenea-worker
```

If any scheduled workflows were disabled, they can now safely be re-enabled.

## Validation

Check the status of the Ngenea Hub service with:

```
ngeneahubctl status  
systemctl status ngeneahub-frontend.path
```

Check the status of Ngenea Worker service with

```
systemctl status ngenea-worker
```

## Restoring Workflows

Check the workflows post-update. If there are any issue or inconsistencies with the upgraded workflows, they can be restored from the backup created pre-upgrade. This is also done using `ngclient`.

Any workflow which is missing can be re-imported using

```
ngclient workflows import <workflow_file>
```

Any workflow which has changed can be restored using

```
ngclient workflows update <id> <workflow_file>
```

Note, `ngclient` only allows importing or updating single workflows at a time. The `workflow_file` passed to the above commands must only contain a single workflow definition.

## Configuration

### Hub First Steps

You can now log into the Ngenea Hub User Interface (UI).

- Open a web browser and navigate to : `http://server.address:8000`
- Replace `server.address` with the actual IP address or domain of your server.
- Enter your admin user credentials

If you don't have a hub admin user set up yet, create one by following the steps:

- Open a terminal on the server where Ngenea Hub is installed. Run the following command to create a new admin user:

```
ngeneahubctl adduser
```

- You will be prompted to provide a username and password. These credentials will be used to log into the Ngenea Hub UI later.
- Replace `SITENAME` with the required name of your site and run the following command:

```
ngeneahubctl addsite SITENAME
```

- Once you've created the admin user and registered the site, you can now log into the Ngenea Hub User Interface (UI).

## Hub Configuration

### Settings

Ngenea Hub requires some important settings for correct operation. These settings tell the system how to connect to its database, process tasks, and secure data.

The main configuration file is located at:

```
/etc/sysconfig/ngeneahub
```

This file contains all the necessary information for Ngenea Hub to function. If you do not set these values, the system will use default settings.

### Mandatory Settings

Here's a simple explanation of each important setting:

Setting	Description
<b>DJANGO_SECRET</b>	A secret key that protects important system data, like user sessions. Think of it as a password used internally by the system.
<b>POSTGRES_DB</b>	The name of the database where Ngenea Hub stores its information.
<b>POSTGRES_USER</b>	The username that allows the system to connect to the database.
<b>POSTGRES_PASSWORD</b>	The password used to access the database securely.
<b>WORKER_THREADS</b>	Controls how many tasks can be handled at the same time. Default: <b>2</b> .
<b>DAG_THREADS</b>	Helps process multiple tasks at the same time. Default: <b>7</b> .
<b>REFRESH_THREADS</b>	Controls how many jobs can refresh at the same time. Default: <b>2</b> .
<b>BROKER_PROVIDER</b>	Defines the task queue broker service ( <b>rabbitmq</b> , <b>redis</b> , <b>external_rabbitmq</b> or <b>external_redis</b> ). Default: <b>redis</b> .
<b>RESULT_PROVIDER</b>	Defines the task result storage ( <b>redis</b> or <b>external_redis</b> ). Default: <b>redis</b> .
<b>RABBITMQ_USER</b>	The username for RabbitMQ (if used). Default: <b>ngeneahub</b> .
<b>RABBITMQ_PASSWORD</b>	The password for RabbitMQ (if used). Default: <b>ngeneahub</b> .
<b>RABBITMQ_VHOST</b>	A virtual host inside RabbitMQ for organizing tasks. Default: <b>nghub</b> .
<b>TASK_DAEMON_BATCH_SIZE</b>	Number of tasks that update their status when a job starts. Default: <b>100</b> .

Setting	Description
<b>DAG_REFRESH_INTERVAL</b>	Controls how often in seconds the job refresh daemon polls for new jobs to refresh. Default: <b>1</b>
<b>DAG_REFRESH_MAX_AGE</b>	Controls how long in seconds the job refresh daemon will wait for a refresh to complete before retrying it. Default: <b>600</b>
<b>DAG_REFRESH_BATCH_SIZE</b>	Controls the maximum number of job refreshes that will be queued per refresh interval. Default: <b>5</b>
<b>JWT_PRIVATE_KEY</b>	A key used to sign user authentication tokens. Generated on first startup.
<b>JWT_PUBLIC_KEY</b>	A key used to verify authentication tokens. Generated on first startup.
<b>JWT_EXPOSED_JSON</b>	Stores extra details related to authentication security.
<b>GF_SECURITY_ADMIN_PASSWORD</b>	Password for accessing <b>Grafana</b> , the system monitoring tool.
<b>HUB_PORT</b>	The port where Ngenea Hub runs. Default: <b>8000</b> .
<b>WEB_BIND_IP</b>	The IP address used for connecting to the system. Default: <b>0.0.0.0</b> .
<b>SHARED_SECRET</b>	A secret key for secure communication within the system.
<b>DJANGO_ENCRYPTED_FIELDS_KEY</b>	Encryption key used to secure sensitive database information.
<b>DJANGO_EJF_CRYPTER_KEY</b>	Additional security key for encrypting Django responses.

## Optional settings

### Settings and Description

- **REDIS\_HOST**: The address of the Redis queue results store, can be external to the hub services. Defaults to the container service address *redis*.
- **REDIS\_PORT**: The port of the Redis broker or results store, can be external to the hub services. Defaults to *6379*.
- **REDIS\_PASSWORD**: The password for an external Redis broker or results store, this setting is exclusively for external services.
- **REDIS\_TLS**: Enables TLS support for external Redis services, defaults to *False*.
- **RABBITMQ\_HOST**: The address of a RabbitMQ service, can be external to the hub services. Defaults to the container service address *rabbitmq*.
- **RABBITMQ\_PORT**: The port of the RabbitMQ broker service, defaults to *5671*.
- **RABBITMQ\_TLS**: Enables TLS support for external RabbitMQ services, defaults to *False*.
- **POSTGRES\_HOST**: The address of the PostgreSQL database instance. Defaults to container service address.

- **POSTGRES\_PORT**: The port of the PostgreSQL database instance. Defaults to container service port.
- **POSTGRES\_TARGET\_SESSION\_ATTRS**: The session properties to apply to the connection to a PostgreSQL database instance. Defaults to any.
- **WORKERS**: The number of workers for API requests. More workers allow the system to handle more requests simultaneously. Default: **8**. This is deprecated. Please use **GUNICORN\_WORKERS** instead.
- **GUNICORN\_THREADS**: The number of worker threads for handling requests. Typically, use 2-4 × CPU cores; adjust as needed for your workload. Default: **2**
- **GUNICORN\_WORKERS**: The number of gunicorn workers for API requests. More gunicorn workers allow the system to handle more requests simultaneously. This setting will override any **WORKERS** settings provided. Default: **8**
- **API\_TIMEOUT**: The timeout in seconds for API requests. Default: **600** seconds.
- **GATEWAY\_TIMEOUT**: The timeout for requests passing through nginx. Should be greater than or equal to API\_TIMEOUT. Default: **600** seconds.
- **CONSUMER\_TIMEOUT**: The timeout for RabbitMQ consumer delivery acknowledgment in seconds. Default: **10800000** seconds (3 hours).
- **PUBLIC\_URL**: Configurable base URL for the hub stack. Must not end in a trailing slash.
- **CELERY\_THREADS**: The number of concurrency threads for handling multiple background tasks. More threads mean faster processing of tasks.
- **EVENT\_THREADS**: The number of concurrency threads for handling event reporting tasks. More threads help report events faster.
- **RESULT\_THREADS**: The number of concurrency threads for handling result reporting tasks. More threads mean quicker reporting of task results.
- **HEARTBEAT**: Enables or disables celery heartbeats to keep connections alive. Default: **True** (enabled).
- **GOSSIP**: Enables or disables celery gossip communication. Default: **False** (disabled).
- **MINGLE**: Enables or disables celery mingle for coordination. Default: **False** (disabled).
- **REDIS\_HEALTH\_CHECK\_INTERVAL**: The interval in seconds between health checks for Redis backend. Default: **60** seconds.
- **REDIS\_TCP\_BACKLOG**: The number of pending requests to Redis. Higher values help avoid slow connections in high request environments. Default: **511**.
- **REDIS\_SOCKET\_TIMEOUT**: The timeout in seconds for resetting idle Redis backend connection sockets. Default: **60** seconds.
- **CELERY\_SOCKET\_TIMEOUT**: The timeout in seconds for resetting idle Celery broker connection sockets. Default: **60** seconds.
- **CELERY\_CONNECTION\_TIMEOUT**: The timeout in seconds for resetting idle connections via Redis broker. Default: **60** seconds.
- **EXPIRE\_OLD\_JOBS\_INTERVAL**: Cron schedule for expiring old jobs. Default: `0 * * * *` (daily).
- **REMOVE\_OLD\_SEARCH\_RESULTS\_INTERVAL**: Cron schedule for removing old search results. Default: `0 0 * * *` (daily).
- **INVALIDATE\_CANCELLED\_JOB\_TASKS\_INTERVAL**: Cron schedule for revoking cancelled job tasks. Default: `0 * * * *` (every hour).
- **CLEANUP\_OLD\_EVENTS\_INTERVAL**: Cron schedule for cleaning up old snapdiff events. Default: `0 * * * *` (every hour).

- **INACTIVE\_TASKS\_INTERVAL**: Cron schedule for invalidating inactive tasks. Default: `0 * * * *` (every hour).
- **SYNC\_SITE\_SETTINGS\_INTERVAL**: Cron schedule for syncing site settings in the database. Default: `0 * * * *` (every hour).
- **SYNC\_GLOBAL\_SETTINGS\_INTERVAL**: Cron schedule for syncing global settings across all sites. Default: `0 * * * *` (every hour).
- **REFRESH\_SITE\_ANALYTICS\_INTERVAL**: Cron schedule for refreshing site analytics. Default: `37 */12 * * *` (every 12 hours).
- **SYNC\_STORAGE\_POOLS\_INTERVAL**: Cron schedule for syncing storage pools. Default: `*/30 * * * *` (every 30 minutes).
- **SYNC\_REMOTE\_SERVERS\_INTERVAL**: Cron schedule for syncing remote servers. Default: `0 0 * * *` (once a day).
- **SYNC\_SPACES\_QUOTA\_INTERVAL**: Cron schedule for syncing spaces' quotas. Default: `*/30 * * * *` (every 30 minutes).
- **SYNC\_SPACES\_INTERVAL**: Cron schedule for syncing spaces. Default: `0 * * * *` (every hour).
- **SYNC\_ALERTS\_INTERVAL**: Cron schedule for syncing alerts from all sites. Default: `* * * * *` (every minute).
- **EXPIRE\_OLD\_FSOBJECTS\_INTERVAL**: Cron schedule for expiring old file system objects. Default: `0 0 * * *` (daily).
- **REMOVED\_QUEUE\_CLEANUP\_INTERVAL**: Cron schedule for cleaning up removed queues. Default: `24 * 60` (every day).
- **CERTIFICATE\_LIFE\_TIME\_DAYS**: Lifetime of SSL certificates in days. Default: **36500** (100 years).
- **QUEUE\_ONLINE\_CHECK\_INTERVAL**: Interval in seconds to check if a queue is online. Default: **10** seconds.

## Broker Settings

The messaging queue configuration for Ngenea Hub is a crucial component in managing communication between workers and the Hub.

This system supports two main brokers: **Redis** and **RabbitMQ**, offering flexibility depending on your specific requirements and infrastructure. Configuring the messaging queue is handled through various settings in the `/etc/sysconfig/ngeneahub` file, along with specific configuration files for Redis and RabbitMQ.

In the sections that follow, we will delve into the details of selecting and configuring the messaging queue, including how to manage Redis and RabbitMQ settings, enable the RabbitMQ admin interface, and understand the limitations of these configurations within the Hub environment.

For more details, refer to [Hub Messaging Queue Configuration](#).

## Server Configurations

In **Ngenea Hub**, certain settings are stored in the Ngenea Hub database and can be easily viewed and modified via the **Ngenea Hub REST API** at the `/api/configurations/` endpoint.

The Ngenea Hub REST API allows you to manage configuration settings both globally and on a per-site basis. These configurations control various aspects of the system, such as job time-to-live (TTL), search backend setup, snapshot retries, task invalidation times, and more. By using simple API requests, you can optimize your system's performance and behavior.

For a comprehensive overview of available configurations, including how to view and change them through the API, as well as additional features like dynamic file batching, refer to the full documentation - [Configuration](#).

## Docker Compose Configuration

The `Docker Compose` configuration file for Ngenea Hub is located at `/usr/share/ngeneahub/docker/docker-compose.yml`.

If you need to make changes or add customizations, you can create an override file at `/usr/share/ngeneahub/docker/docker-compose.override.yml`. This override file allows you to extend or modify the default settings without changing the original configuration file. This setup makes it easier to customize your Docker Compose environment according to your specific needs.

## Hub Authentication

Ngenea Hub provides several authentication modes for users of the Ngenea Hub user interface.

### Standalone

- In this mode all users are authenticated locally by the Hub
- No external services (E.G. Microsoft Active Directory) are used for authentication
- This is the default mode of Hub when deployed standalone from PixStor, or on PixStor  $\leq$  v6.10.x

### Direct: LDAP/Active Directory

- In this mode authentication is provided by an external service, typically OpenLDAP or Microsoft Active Directory
- This mode is can be used when Hub is deployed standalone from PixStor

To configure this authentication mode refer to [LDAP / Active Directory Login](#)

### Single Sign On

- Single Sign On mode cannot be used when Hub is deployed standalone from PixStor
- New installations of PixStor  $\geq$  v6.11.x are deployed in Single Sign On mode by default

- Upgrades from PixStor versions  $\leq$  v6.10.x retain their prior authentication mode

**Important:** In order to utilise additional products, such as Iris, Hub’s Single Sign On service on is required

### Hub Only

- In this mode users created in Hub are added to Hub’s Single Sign On provision
- Users added to the Single Sign On provision are readily available for future use across PixStor products (E.G. Iris)
- No external services (E.G. Microsoft Active Directory) are used for authentication

### Active Directory

- In this mode Microsoft Active Directory is used to authenticate user’s logins to Hub using their Active Directory credentials
- In case of loss of connection to Microsoft Active Directory, user accounts created prior to SSO enablement can continue to authenticate to Hub using their Hub managed credentials

To configure Single Sign on authentication refer to [Single Sign-On / External IdP](#)

### Worker Configuration

**Note:** In the installation guide we have explained how to configure the Ngenea Worker, create or edit the `/etc/ngenea/ngenea-worker.conf` file with the required settings for your site, API server, Redis, and GPFS nodes. You can also configure SSL for secure communication with the API.

For more details, please refer to the link.

### Settings

The following is a list of available settings:

Option	Type	Default	Required	Description
<i>site</i>	<i>string</i>		Yes	The name of the queue to listen to
<i>api_host</i>	<i>string</i>		Yes	The base url for Ngenea Hub, this will be the url without the https protocol or port.

Option	Type	Default	Required	Description
<i>api_port</i>	<i>string</i>		Yes	The port that the Ngenea Hub is being hosted on, by default within Ngenea Hub it is 8000.
<i>api_secure</i>	<i>string</i>		No	If the API is behind a secure HTTPS connection, by default this is true. Refer to: <a href="#">Installing SSL Certificates for provisioning SSL certificates if api_secure=true</a> .
<i>api_secure_verify</i>	<i>string</i>		No	If the API requests should verify certificates, by default this is true.
<i>broker_provider</i>	<i>string</i>	redis	No	The service that will provide worker connectivity with the hub, must be one of the following: <i>redis/ rabbitmq/ external_rabbitmq/ external_redis</i>
<i>result_provider</i>	<i>string</i>	redis	No	The result storage that will store completed worker tasks for the hub to access, must be one of the following: <i>redis/ external_redis</i>
<i>threads</i>	<i>int</i>	10	No	The number of concurrent tasks that can be run.
<i>heartbeat</i>	<i>bool</i>	true	No	Key for Disabling/ Enabling celery heartbeats, by default Enabled.
<i>gossip</i>	<i>bool</i>	false	No	Key for Disabling/ Enabling celery gossip, by default Disabled.

<b>Option</b>	<b>Type</b>	<b>Default</b>	<b>Required</b>	<b>Description</b>
<i>mingle</i>	<i>bool</i>	<i>false</i>	No	Key for Disabling/Enabling celery mingle, by default Disabled.
<i>redis_health_check_interval</i>	<i>int</i>	<i>60</i>	No	The Redis backend supports health checks. This value must be set as an integer whose value is the number of seconds between health checks.
<i>redis_socket_timeout</i>	<i>int</i>	<i>60</i>	No	The Redis results backend supports a socket connection timeout, this value must be set as an integer whose value is the number of seconds.
<i>redis_host</i>	<i>string</i>		No	The host for a Redis service that is not within the hub's services, this value must be a valid IP or hostname.
<i>redis_port</i>	<i>string</i>	<i>6379</i>	No	The host port for a Redis service that is not within the hub's services, this value must be a string of a valid port.
<i>redis_password</i>	<i>string</i>		No	The password for a Redis service that is not within the hub's services, this value must be a string.
<i>redis_tls</i>	<i>bool</i>	<i>false</i>	No	Enables TLS for external Redis service configurations. This does not disable TLS when not configured as external, disabled by default.

Option	Type	Default	Required	Description
<i>redis_tls_ca</i>	<i>string</i>		No	The absolute path to the root certificate for an external Redis service, this value must be a string.
<i>redis_tls_cert</i>	<i>string</i>		No	The absolute path to the client certificate for an external Redis service, this value must be a string.
<i>redis_tls_key</i>	<i>string</i>		No	The absolute path to the certificate key for an external Redis service, this value must be a string.
<i>rabbitmq_host</i>	<i>string</i>		No	The host for a RabbitMQ service that is not within the hub's services, this value must be a valid IP or hostname.
<i>rabbitmq_port</i>	<i>string</i>	5671	No	The port for a RabbitMQ service both external and within the hub's services, this value must be string of a valid port.
<i>rabbitmq_vhost</i>	<i>string</i>	<i>nghub</i>	No	The virtual host for a RabbitMQ service that both external and within the hub's services, this value must a string.
<i>rabbitmq_user</i>	<i>string</i>	<i>ngeneahub</i>	No	The username for a RabbitMQ service that both external and within the hub's services, this value must a string.
<i>rabbitmq_password</i>	<i>string</i>	<i>ngeneahub</i>	No	The password for a RabbitMQ service that both external and within the hub's services, this value must a string.

Option	Type	Default	Required	Description
<i>rabbitmq_tls</i>	<i>bool</i>	<i>false</i>	No	Enables TLS for external RabbitMQ service configurations. This does not disable TLS when not configured as external, disabled by default.
<i>rabbitmq_tls_ca</i>	<i>string</i>		No	The absolute path to the root certificate for an external RabbitMQ service, this value must be a string.
<i>rabbitmq_tls_cert</i>	<i>string</i>		No	The absolute path to the client certificate for an external RabbitMQ service, this value must be a string.
<i>rabbitmq_tls_key</i>	<i>string</i>		No	The absolute path to the certificate key for an external RabbitMQ service, this value must be a string.
<i>celery_socket_timeout</i>	<i>int</i>	<i>60</i>	No	The Redis celery broker supports a socket timeout, this value must be set as an integer whose value is the number of seconds.
<i>celery_connection_timeout</i>	<i>int</i>	<i>60</i>	No	The Redis celery broker supports a socket connection timeout, this value must be set as an integer whose value is the number of seconds.
<i>gpfs_nodes</i>	<i>list</i>		No	A list of nodes to run the snapdiff policy scan on as a list of hostnames
<i>enable_plugins</i>	<i>bool</i>	<i>false</i>	No	Key for Disabling/Enabling <a href="#">worker plugin</a> behaviour, by default Disabled.

Option	Type	Default	Required	Description
<i>loglevel</i>	<i>str</i>	<i>INFO</i>	No	Key for setting the worker loglevel (more specific to worker main process). valid choices are INFO, DEBUG, WARNING, CRITICAL, ERROR (by default INFO).

## Controlling Functions

Ngenea Worker uses internal function queues to process tasks. These queues can be adjusted based on your needs.

### What Are Function Queues ?

Function queues are like task managers that organize and run specific tasks. You can turn these on or off and adjust their settings.

### How to Configure Function Queues ?

- Open the configuration file (`/etc/ngenea/ngenea-worker.conf.`) for Ngenea Worker.
- Modify settings to enable or disable queues.
- Refer to the [Workflow Steps documentation](#) to see what each queue does.

## Creating Custom Queues

If the default queues don't meet your needs, you can create custom job queues. These allow you to prioritize specific tasks or allocate more resources.

### Example Configuration for a Custom Queue

Steps to Add a Custom Queue

1. Open the worker's configuration file (`/etc/ngenea/ngenea-worker.conf.`).
2. Add a new section with the name of the queue in brackets, like `[Queue highpriority]`.
3. Specify the number of threads for that queue. (Optional)
4. Save and reload the worker service to apply changes.

For detailed information, check [Queues Documentation](#).

## Using a Custom Configuration File

Configuration files are text files used to set options and preferences for a system or application. Sometimes, you may need to override the default configuration with a custom one. Here's how to set it up:

By default, the system uses the file located at:

```
/etc/ngenea/ngenea_config_arg.conf
```

## How to Use a Custom Config File ?

- **Uncomment the CONFIG Line:** Open the file `/etc/ngenea/ngenea_config_arg.conf` and remove the `#` symbol in front of this line:

```
CONFIG=/etc/ngenea/ngenea-worker-custom.conf
```

- **Create a Custom Worker Config File:** Save a new file with a name like `ngenea-worker-custom.conf`. Use this file to define your settings.
- **Register Your Site:** Run these commands to register the custom site:

```
ngeneahubctl addsite <sitename>  
ngenea-worker join --user <username> --site <sitename>
```

## Running Ngenea Worker with Multiple Sites

**Note:** Running multiple sites on a node has several drawbacks, so using custom queues is preferred where possible.

To run services with two sites:

- Create new service file same as `/usr/lib/systemd/system/ngenea-worker.service` with different filename (Eg: `ngenea-worker-site1.service`).
- Create new custom config file same as `/etc/ngenea/ngenea_config_arg.conf` with different filename (Eg: `ngenea_config_arg1.conf`).
- Create new worker config file same as `/etc/ngenea/ngenea-worker.conf` with different filename and give the filename in `ngenea_config_arg1.conf`.
- In `ngenea-worker-site1.service`, change the value of `EnvironmentFile=...` to new custom config file created (Eg: `EnvironmentFile=/etc/ngenea/ngenea_config_arg1.conf`).
- Now run `systemctl start ngenea-worker.service` and `systemctl start ngenea-worker-site1.service`.

## Setting Ngenea Worker Debug Level in systemd Service Script

**Environment Directive:** In a system, there are background tasks that run automatically (called services). The ``Environment` directive` in the service's setup tells it about certain settings it should use while running.

### What Does ``DYNAMO_DEBUG=true`` Do?

`Environment=DYNAMO_DEBUG=true` sets a setting called ``DYNAMO_DEBUG`` to ``true`` for the service called **ngenea-worker**.

## What Happens with This Setting?

- Normally, the **ngenea-worker** service only logs basic information about what it's doing (like regular updates).
- When you set ``DYNAMO_DEBUG=true``, the service will log **extra, detailed information** about its activities.

## Hub Messaging Queue Configuration

When setting up communication between various components of the Ngenea Hub, such as workers and the hub itself, a messaging queue plays a crucial role. These messaging queues act as intermediaries, efficiently managing and delivering messages between components.

The Ngenea Hub supports two messaging queue systems: **Redis** and **RabbitMQ**. Below is a step-by-step guide to understanding and configuring these systems.

## Choosing the Messaging Queue

The Ngenea Hub provides two primary options for a messaging queue:

- **Redis**: Known for its speed and simplicity, Redis is an excellent choice for systems requiring high performance with straightforward configuration.
- **RabbitMQ** : RabbitMQ offers advanced features compared to Redis, including more sophisticated tools for managing queues, making it a better choice for complex messaging requirements.

The messaging between workers and Ngenea Hub is configurable between two different supported brokers. This is controlled with variables in `/etc/sysconfig/ngeneahub` along with additional configuration files.

The following are all broker related configuration values:

Setting	Default	Description
CELERY_BROKER	redis	This controls the messaging queue <code>redis rabbitmq</code>
RABBITMQ_USER	ngeneahub	User for the rabbitmq user for use with Ngenea Hub
RABBITMQ_PASSWORD	Randomly generated password	Password used for the rabbitmq user for use with Ngenea Hub
RABBITMQ_VHOST	nghub	The virtual host used within the rabbitmq instance within Ngenea Hub
REDIS_HOST	redis	Address of the Redis queue results store. Defaults to the container service address.

Setting	Default	Description
REDIS_HEALTH_CHECK_INTERVAL	60	The Redis backend supports health checks. This value must be set as an integer whose value is the number of seconds between health checks.
REDIS_TCP_BACKLOG	511	In high requests-per-second environments you need a high backlog in order to avoid slow client connections issues to redis.
REDIS_SOCKET_TIMEOUT	60	When there are network issues redis backend connection sockets can become stale, this timeout setting will reset the socket connection after this value in seconds after becoming idle and resume operation.

For more details on general configuration see [Hub Configuration](#) for more details.

## Redis Setting Files

When setting up Redis within Ngenea Hub, you're provided with a default configuration file located at: `/etc/ngenea/redis/redis.conf`, any edits made to this file will persist with software upgrades.

This file is pre-configured to help get you started with Redis, but it can be customized to better meet your specific needs. Common adjustments include tuning memory usage, adjusting data persistence settings, or optimizing performance based on the expected workload.

## Customizing Redis

To make changes to the Redis configuration, follow these steps:

- **Open the Configuration File:** Use a text editor to open the `redis.conf` file:  
`sudo nano /etc/ngenea/redis/redis.conf`
- **Edit the File:** Make the necessary changes to the configuration. The file allows you to adjust various Redis settings, including memory limits, persistence options, and more. For a full list of configurable options, you can refer to [Redis configuration](#).
- **Save the Changes:** After making the required changes, save the file and close the text editor.

## Restarting Redis to Apply Changes

For your changes to take effect, Redis must be restarted. There are two ways to restart the Redis service:

### Preferred Method: Restarting Ngenea Hub

The easiest and preferred method is to restart the entire Ngenea Hub system. This can be done with the following command:

```
sudo systemctl restart ngeneahub
```

This will restart all services, including Redis, and apply your changes without any risk of inadvertently disrupting the Redis container.

### **Alternative: Restarting Only the Redis Container**

If you prefer to restart just the Redis container without affecting other services, you can restart it using Docker. **However, this method may have unintended consequences**, as it only restarts Redis and not the other dependent services in Ngenea Hub.

To restart the Redis container, use the following command:

```
docker restart ngeneahub_redis_1
```

While this can be useful for testing small changes, it's generally safer to restart the entire system to avoid potential issues with container dependencies.

## RabbitMQ Setting Files

If Ngenea Hub is configured to use RabbitMQ, additional configuration files can be provided within the directory: `/etc/ngenea/rabbitmq/conf.d`

This directory can be populated with custom configuration files for broader RabbitMQ configuration.

**Default Configuration Files:** The provided default configuration files within the `/etc/ngenea/rabbitmq/conf.d` directory are defined and updated in: `/usr/share/ngeneahub/rabbitmq`.

These default configuration files will be replaced during software upgrades. Therefore, it is important to apply any changes within custom configuration files to preserve your customizations.

**Customizing RabbitMQ:** RabbitMQ allows extensive customization, such as setting limits on the number of messages processed concurrently.

**Note:** Be mindful that some default configuration files may be overwritten during software updates. To avoid losing customizations, save your configuration changes in separate files within the `/etc/ngenea/rabbitmq/conf.d` directory.

**Applying Changes:** After modifying the RabbitMQ configuration files, you must restart the RabbitMQ service to apply the changes. This can be done with the following command: `sudo systemctl restart rabbitmq-server`.

## Using RabbitMQ's Admin Interface

Unlike Redis, RabbitMQ does not come with built-in command line tools to monitor or manage its operations directly.

However, a tool known as the “admin panel” is available for RabbitMQ. By default, it is not turned on, but it can be enabled by running the following command in the Ngenea Hub host's command line:

```
ngeneahubctl exec -c rabbitmq rabbitmq-plugins enable rabbitmq_management
```

Once it is turned on, access can be gained by visiting the address (**port 15672**) on the Ngenea Hub.

```
http://<hub-host>:15672
```

To access this, a login is required using a username and password. These login details are stored in a specific file on the server, called `/etc/sysconfig/ngeneahub`, where two important pieces of information can be found:

- `RABBITMQ_USER` : The username to log in.
- `RABBITMQ_PASSWORD` : The password for the username.

## Limitations

When using RabbitMQ, it's important to note that its data—such as queue metrics, worker statuses, and throughput—will not appear in the Ngenea Hub's built-in monitoring tool, Grafana, which is accessible via:

```
/hubmetrics
```

Instead, you must rely on the RabbitMQ admin panel to view and manage such metrics.

## Iris Configuration

This page describes how to configure Ngenea Hub to integrate with the Iris product.

## Iris Tasks and RabbitMQ

Ngenea Hub provides a set of tasks — also known as ‘publishers’ — for generating and extracting file metadata. These tasks integrate with Iris by publishing messages to the Iris RabbitMQ.

The configurations for these Iris tasks to connect with RabbitMQ are defined in `/etc/ngenea/iris-rabbitmq.yaml`.

**Important:** In a Pixstor environment, when Iris is enabled, this file is pre-configured and should not be edited.

The config file is divided into several sections, described below.

## RabbitMQ

The `rabbitmq` section defines general connection settings for RabbitMQ. These settings apply to all publishers.

- **host** — Hostname or IP address of the RabbitMQ instance to connect to.
- **port** — Port of the RabbitMQ instance, typically 5671.
- **username** — Username to authenticate the connection to RabbitMQ (default: `guest`).
- **password** — Password for the `username` used to connect to RabbitMQ (default: `guest`).
- **use\_ssl** — Whether to connect to RabbitMQ using SSL (default: `false`).
- **ca\_cert\_path** — Path to the certificate authority file for SSL connections.
- **client\_cert\_path** — Path to the client certificate file, signed by the configured certificate authority.
- **client\_key\_path** — Path to the client key file matching the configured client certificate.
- **virtual\_host** — Virtual host to use when connecting to RabbitMQ (default: `/`).
- **max\_retries** — Number of connection attempts if a connection cannot be achieved (default: 3).
- **retry\_interval** — Time to wait between connection attempts, in seconds (default: 5).
- **log\_level** — Controls the level of RabbitMQ connection logging in Ngenea Worker logs. Values range from 0 (least verbose; default) to 2 (most verbose).

**Warning:** `password` is stored in plaintext. Ensure permissions on `iris-rabbitmq.yaml` prevent unwanted access.

Example `rabbitmq` section:

```
rabbitmq:
  host: localhost
  port: 5671

  username: guest
  password: guest

  use_ssl: true
  ca_cert_path: /path/to/rabbitmq/tls/ca.crt
  client_cert_path: /path/to/rabbitmq/tls/tls.crt
  client_key_path: /path/to/rabbitmq/tls/tls.key

  virtual_host: /

  max_retries: 3
```

```
retry_interval: 5
```

```
log_level: 0
```

## Publishers

The `publishers` section defines which RabbitMQ exchange the ‘publishers’ — Iris tasks — should publish their messages to.

There is one subsection per publisher, and each subsection defines the following:

- **exchange\_name** — Name of the RabbitMQ exchange to publish messages to.

Currently, there are three publishers:

- **filenotify** — Generates file system change events, such as when a file is created or a directory is moved.
- **mediainfo** — Extracts media file metadata using the `mediainfo` tool.
- **exiftool** — Extracts file metadata using the `exiftool` tool.

Example `publishers` section:

```
publishers:  
  filenotify:  
    exchange_name: fs-events-xchg  
  mediainfo:  
    exchange_name: metadata-xchg  
  exiftool:  
    exchange_name: metadata-xchg
```

## Messages

The `messages` section defines per-publisher metadata.

There is one subsection per publisher, and each subsection defines the following key:

- **endpoint\_url** — URL of the Versity endpoint which exposes files processed by this publisher.

Typically, the `endpoint_url` has the form `https://VERSITY_GATEWAY:7070`. It will normally be the same for all publishers.

The existing publishers are listed in the **Publishers** section above.

Example `messages` section:

```
messages:  
  filenotify:  
    endpoint_url: https://10.100.0.100:7070  
  mediainfo:  
    endpoint_url: https://10.100.0.100:7070
```

```
exiftool:  
  endpoint_url: https://10.100.0.100:7070
```

## Error Handling

The `error_handling` section defines how tasks should handle errors when processing files.

There is one subsection per task (publisher), and each subsection defines the following key:

- **on\_error\_set\_aborted** — Whether to mark a file as `aborted` (true) or `failure` (false) when the file cannot be processed.

When files are marked as `failed`, the whole job is also marked as failed. When files are marked as `aborted`, the job will be marked as successful (unless other, unrelated failures occur in the job).

The existing publishers are listed in the **Publishers** section above.

Additionally, `on_error_set_aborted` can be set at the top level of the `error_handling` section to apply the same setting to all tasks.

Example `error_handling` section:

```
error_handling:  
  on_error_set_aborted: true  
  
  exiftool:  
    on_error_set_aborted: true  
  mediainfo:  
    on_error_set_aborted: false
```

In the above example, the `exiftool` task (and any others not explicitly included) will inherit the top-level `on_error_set_aborted: true`.

## Iris Workflow Queue

When a space is enabled for Iris in Ngenea Hub, a scheduled workflow is created which runs the Iris tasks mentioned in the previous section.

This scheduled workflow is configured to run on the dedicated `iris_notify` queue. This means that the notify workflow will not block or be blocked by any other tasks running at the same time in Ngenea Hub, such as file sync.

The Iris queue **must** be defined in the Ngenea Worker configuration file, as described in [Queues](#).

For example:

```
[Queue iris_notify]  
threads = 10
```

If the queue is not defined in the worker config or is removed, the Iris tasks will not execute.

**Note:** In a Pixstor deployment, this queue is defined automatically. Configuration changes, such as altering the number of threads, must be done via Pixstor

## Feature Set-up

To use certain features in Ngenea Hub, additional set-up is required as described in this section.

## Search

The search feature in Ngenea Hub allows you to easily find files and folders across different sites. Setting it up correctly will ensure that you can use this powerful tool to quickly locate files when needed.

## Requirements

The search feature works with systems running on PixStor, which is the platform that powers Ngenea Hub. There are two search options available: **PixStor Search** and **PixStor Analytics**.

This guide assumes that one of these options has already been set up as part of your PixStor installation.

## Configuration Steps

There are two main configurations you need to consider to set up search properly.

### Choose Your Search Backend

Depending on the version of Ngenea Hub you're using, the system may utilize either the Analytics Backend or the PixStor Search Backend for handling search functionality. Both backends provide the same core features, but you might need to switch between them based on your system's specific configuration.

If you want to switch from the default Analytics Backend to the PixStor Search backend, it's simple to do, and no coding is required. You can change the setting by sending a request through a command. Here's how:

#### Option 1: Using curl

`curl` is a tool that allows you to interact with online services from the command line. To switch to the PixStor Search backend, use the following command:

```
curl -s -X PATCH 'http://example.com/api/configurations/' -H 'Accept: application/json' -H "Authorization: Bearer
```

```
$JWT_ACCESS_TOKEN" -H 'Content-Type: application/json' -d '{"search_backend": "pixstor_search"}'
```

- Replace `http://example.com` with your system's actual address.
- `$JWT_ACCESS_TOKEN` should be replaced with your valid access token, which is required for authentication.

This command will update the configuration of your system to use PixStor Search instead of the default Analytics Backend.

## Option 2: Using ngcurl

If you have `ngcurl` installed and configured on your system, you can use this simpler command:

```
ngcurl patch configurations '{"search_backend": "pixstor_search"}'
```

This will also switch the search backend to PixStor Search. Both options achieve the same result; you can choose the one that fits your setup.

**Note:** To understand in detail please refer to the [Global Configuration](#) documentation.

## Set the Elasticsearch URL

If you're using the Analytics backend and your system is running on PixStor 6, you'll need to adjust the Elasticsearch URL to ensure the system can find the right data. The new address will be `http://localhost:19200`.

If you're using PixStor 5, the default address `localhost:9200` will work fine, and you don't need to change anything.

Here's an example of how to update this setting for PixStor 6:

```
$ curl -s -X PATCH 'http://example.com/api/sites/1/' -H 'Accept: application/json' -H "Authorization: Api-Key $APIKEY" -H 'Content-Type: application/json' -d '{"elasticsearch_url": "localhost:19200"}'
```

**Note:** To understand in detail please refer to the [Site-specific Configurations](#) documentation.

## Using the Search Feature

Once everything is set up, you can begin using the search feature in Ngenea Hub.

### Search via REST API:

The search functionality can be accessed through the Ngenea Hub's REST API. This is a great option if you're comfortable with using API tools. For details on how to use search via the REST API, refer to [Search](#)

## Search via the Ngenea Hub User Interface (UI):

The Ngenea Hub interface provides a user-friendly way to search for files across sites directly from the global search page in UI.

## Cloud Functions

### Introduction

“**Cloud to Hub**” is a function that works in the cloud and reacts to changes in cloud storage, like when files are added or deleted. When something changes, it sends an update to Ngenea Hub, which then syncs the changes with other systems (like PixStor). This ensures that all the systems stay up-to-date and match the information in cloud storage.

It works with any supported platform and can handle any type of event (like creating or deleting files). To set it up for a new platform or event, you only need to change the settings in the `config.json` file.

**Note:** A function is a specific task or action that a system or program can perform. In this case, the Cloud to Hub function reacts to changes in cloud storage and triggers actions to keep other systems in sync.

### Why Use Cloud Functions ?

**Automation:** Cloud Functions ensure that once something happens in the cloud (like a file upload), the correct action is taken automatically, without manual intervention.

**Synchronization:** Cloud Functions help keep different systems in sync with each other, making sure all systems know when a file has changed.

**Scalability:** The cloud-based nature of the function means it can handle large amounts of data and automatically scale as needed.

Supported Platforms:

## GCP Cloud Function

**Google Cloud Platform (GCP)** is a set of cloud tools by Google. It helps you run apps, store data, and automate tasks without using your own servers. One of these tools is Cloud Functions. A Cloud Function runs code when something happens—like when a file is uploaded to storage.

In this section of the guide, you’ll create a function that runs when a file is added or changed in a **Cloud Storage bucket**. This is useful for things like data processing or connecting to other systems.

Before you start, here are some important things to know:

- A **Cloud Storage bucket** is a place in the cloud to store your files.

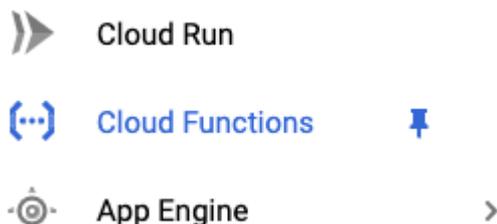
- The function will **watch the bucket** and run automatically when a file is added or changed.
- A **service account** is needed so the function can access the bucket.
- The service account needs the `storage.objectViewer` role to read files from the bucket.
- The function will use **Python 3.9** as its programming language.
- Your code will be uploaded to GCP as a **ZIP file**.
- You'll edit a file called `config.json` to set specific settings for how the function works.
- If the function needs to talk to a private system (with no public IP), you may need a **VPC Connector**.

This guide will show you each step in order. You'll learn how to create the function, set the right permissions, choose the correct settings, upload your code, and deploy it. When you're done, your function will automatically run whenever a file is added or changed in your storage bucket. This introduction helps you understand the basics so you can follow the setup process more easily.

## Step 1: Navigate to Cloud Functions in Google Cloud Console

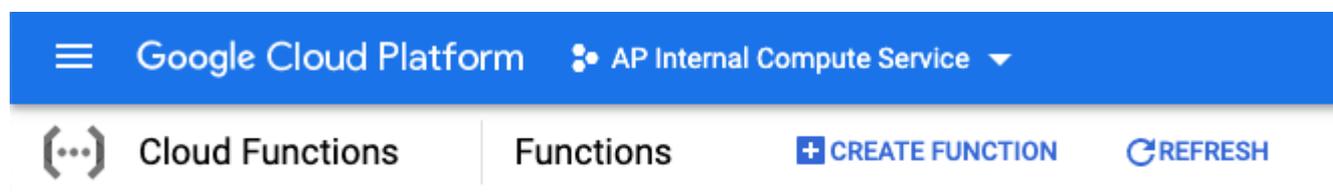
- Open the Google Cloud Console. This is where you manage all your cloud resources.
- In the left-hand menu, under the **Serverless** section, click on **Cloud Functions**.

SERVERLESS



## Step 2: Create a New Function

- Click **Create Function** to start the process of setting up your Cloud Function.



- In the Configuration page, fill out the following details:
  - **Function Name:** Choose a unique name for your function (for example, `my-bucket-monitor`).
  - **Region:** Select a region for your function to run in. A **region** is a physical location where your cloud resources (like storage and compute instances)

- are hosted. It's best to choose the same region as your Cloud Storage bucket to reduce latency (delay in data processing).
- **Trigger:** Choose **Cloud Storage** as the trigger type. This means the function will be activated whenever something happens in your Cloud Storage bucket.
  - **Event Type:** Choose the event you want to monitor (such as **Finalize/Create**, which triggers when a new file is uploaded).
  - **Bucket:** Select the Cloud Storage bucket you want to monitor for events.
- Once you've completed these steps, click **Save** to create the function.

 Cloud Functions  Create function

**1** Configuration — **2** Code

### Basics

Function name \*  
ngeneahub-function 

Region  
europe-west2  

### Trigger

 **Cloud Storage**

Trigger type  
Cloud Storage 

Event type \*  
Finalise/Create  

Bucket \*  
pixcloud-reports **BROWSE**

Retry on failure 

**SAVE** CANCEL

### Step 3: Set Up Service Account for Access

Cloud Functions often need permissions to interact with other Google Cloud services, like Cloud Storage. We'll create a service account to grant these permissions.

**What is a Service Account?** A service account is like a virtual identity that a program or a service can use to interact with Google Cloud resources. It has specific permissions assigned to it.

- To create a service account using the `gcloud` command-line tool, run the following commands. Replace `GCP-PROJECT-1` with your actual **project ID** and **ngeneahub-function** with the name of your service account.
- **Assigning the `storage.objectViewer` role:** This grants the service account the ability to view objects (files) in your Cloud Storage bucket.

```
PROJECT_ID='GCP-PROJECT-1'
SERVICE_ACCOUNT_ID='ngeneahub-function'
ROLE_NAME='roles/storage.objectViewer'

gcloud iam service-accounts create $SERVICE_ACCOUNT_ID \
  --description='A service account to give the {{ brand_name }}
function read access to GCS buckets' \
  --display-name=$SERVICE_ACCOUNT_ID

gcloud projects add-iam-policy-binding $PROJECT_ID \
  --member="serviceAccount:$SERVICE_ACCOUNT_ID@$PROJECT_ID.iam.
gserviceaccount.com" \
  --role=$ROLE_NAME
```

#### Step 4: Configure the Function Runtime and VPC Settings

**What is a Runtime?** A runtime is the environment in which your code will execute. It includes the programming language, libraries, and tools your code needs to run. In this case, you are using **Python 3.9**.

#### Steps to Configure:

- Open the **Runtime, Build and Connections** Settings section.
- Go to the **Runtime** tab.
  - At the bottom of this tab, select a Runtime Service Account.
  - This account must have at least the `storage.objectViewer` permission.
- You can use an existing service account or the one you created earlier (for example, `ngeneahub-function`).
- Click **Next** to proceed to the next step.

## Runtime, build, connections and security settings



RUNTIME

BUILD

CONNECTIONS

SECURITY

Memory allocated \*

256 MB

Timeout \*

60

seconds



### Runtime service account

Runtime service account

ngeneahub-function

### Auto-scaling

Minimum number of instances

0

Maximum number of instances

3000

**Note: VPC Connector (Optional)** – If your function needs to access a private network (such as a private IP address or a database), you'll need to set up a VPC Connector. However, if your function doesn't require a private connection, you can skip this part.

**What is a VPC Connector?** A VPC (Virtual Private Cloud) Connector enables your Cloud Function to access resources located in your Google Cloud private network. This is necessary if your function needs to communicate with services that do not have a public IP address, such as a private database or internal system like the Ngenea Hub.

**When is it Needed?** If the Ngenea Hub does not have an external (public) IP address, you will need to use a VPC Connector to allow the function to connect to it via its private IP.

### Steps to Configure:

- In the Runtime, **Build and Connections Settings section**, go to the **Connections** tab.
- From the **VPC Connector** dropdown, select an existing VPC Connector.
- Enable the option **“Only route requests to private IPs through the VPC connector”**.

**Note:** Creating a new VPC Connector is outside the scope of this documentation. Ensure that a connector is already set up if your function requires access to private network resources.

## Runtime, build, connections and security settings



RUNTIME

BUILD

CONNECTIONS

SECURITY

### Ingress settings

- Allow all traffic
- Allow internal traffic only  
Only traffic from VPC networks in the same project or the same VPC SC perimeter is allowed.
- Allow internal traffic and traffic from Cloud Load Balancing  
Traffic from VPC networks in the same project, the same VPC SC perimeter or from Cloud Load Balancing is allowed.

### Egress settings

By default, your function can send requests to the Internet, but not to resources in VPC networks. To send requests to resources in your VPC network, create or select a VPC connector already created in the same region as the function.

VPC Connector

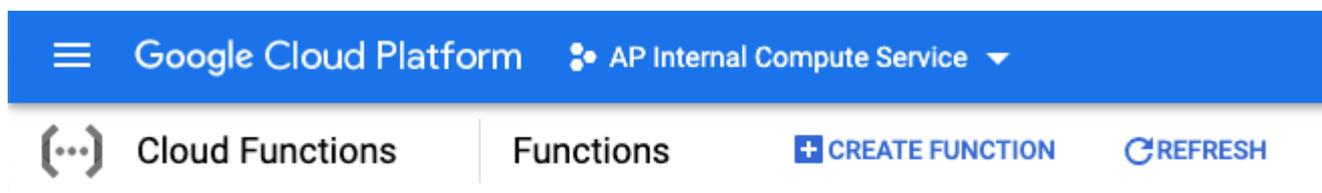
[Create a serverless VPC connector](#)

- Only route requests to private IPs through the VPC connector
- Route all traffic through the VPC connector

## Step 5: Code Configuration for Cloud Function

In the **Code** section of the Cloud Function setup:

- Set the **Runtime** to **Python 3.9**.
- Set the **Entry Point** to `main` (this should match the main function in your code).
- Under **Source code**, select **ZIP upload**.
- Upload the ZIP file you previously downloaded from the `../..../download` page.
- Choose a **Stage Bucket** for deployment. You can use the same bucket that the function is monitoring.
- Click **Next** to proceed to build the function.



## Step 6: Edit the `config.json` File

Once the Cloud Function is successfully built:

- In the **Cloud Console**, go to the list of your Cloud Functions.

- Click on the name of the function you just created.
- Click the **EDIT** button at the top.
- Click **Next** to navigate to the code editor.
- In the file list, locate and select `config.json`.

Configuration — 2 Code

Runtime  
Python 3.9

Source code  
Inline Editor

main.py

**config.json**

requirements.txt

Press Alt+F1 for Accessibility Options.

```

1  {
2    "version": 1.0,
3    "hub_access": {
4      "hub_ip": "52.212.107.49",
5      "hub_port": 8000,
6      "hub_protocol": "http",
7      "api_key": "DkKyQfyQ.SyVHFjou02nQ6wSQySGMjyvGHG12nN2F"
8    },
9    "actions": {
10     "stub": [],
11     "premigrate": []
12   },
13   "optional": {
14     "ngenea_prefix": "",
15     "excludes": [],

```

- Update the contents of `config.json` as instructed in your Cloud Functions documentation.

**Note:** Deployment may take 1-2 minutes to complete.

## AWS Lambda Function

### What's AWS Lambda?

AWS Lambda is a service provided by Amazon Web Services (AWS) that allows you to run code without needing to manage servers. Imagine it as a machine that runs your code only when something specific happens, like a file being uploaded to an online storage system (like S3, which is AWS's storage service). You just upload your code, and AWS Lambda automatically handles the running of that code when it's needed.

### What's IAM (Identity and Access Management)?

IAM is a service in AWS that helps you manage access to AWS resources. It allows you to define who can access what and what they can do with those resources. Think of IAM as a security guard that checks if someone has permission to use a certain resource or perform a certain action.

## Create an IAM Policy and Role

**IAM Policy:** This is a set of permissions that define what a service (like Lambda) can or cannot do. For example, in this guide, the policy gives Lambda permission to:

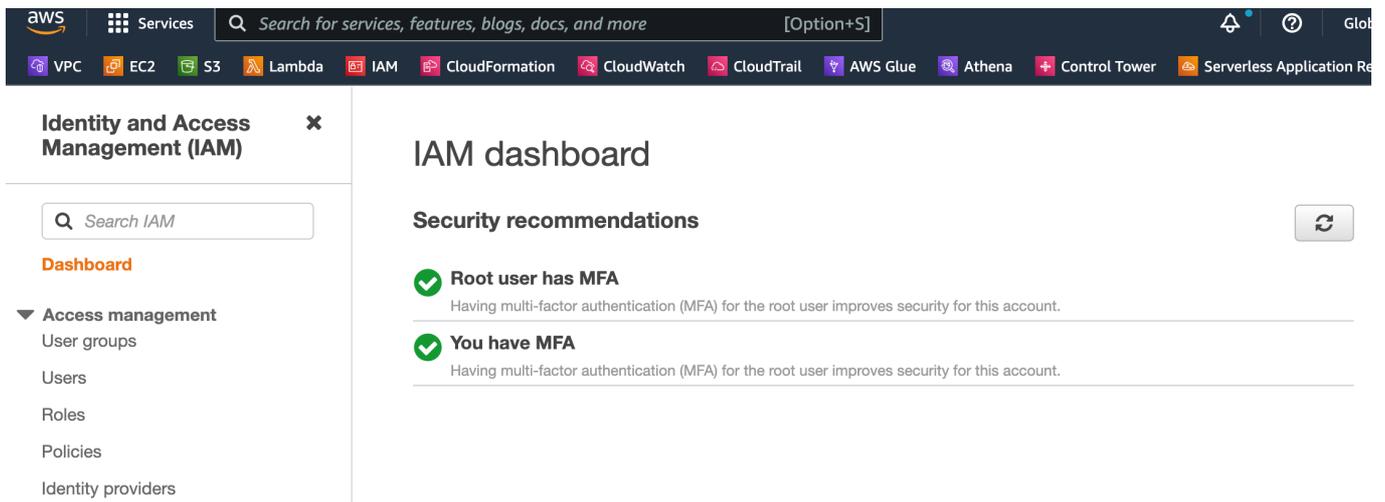
- Create log groups (where logs are stored).

- Write logs into CloudWatch (a service that monitors AWS resources).
- Get information about IAM users (a part of the AWS permissions system).

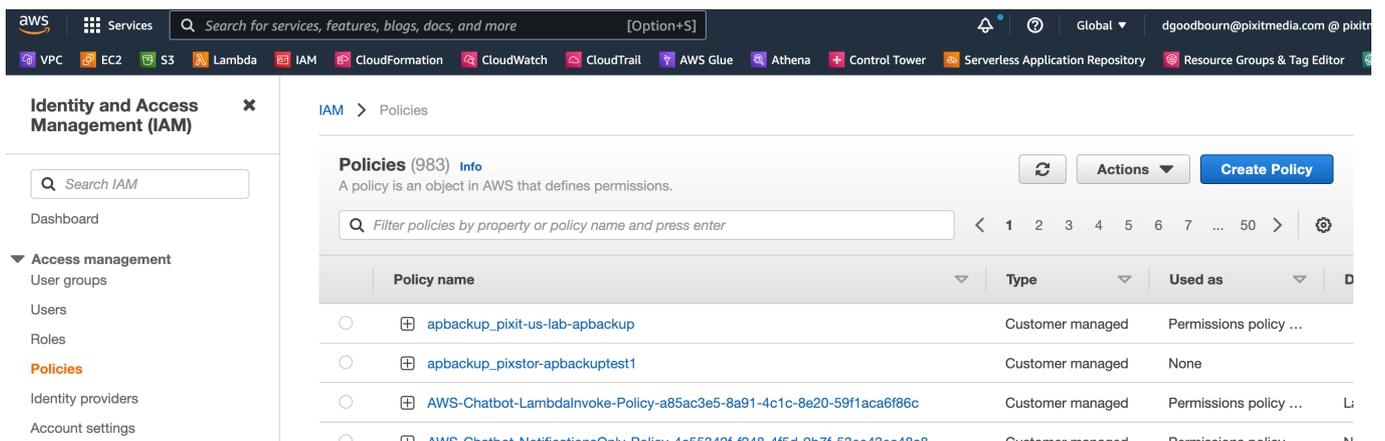
**IAM Role:** A role is like a job given to a service, like AWS Lambda, with specific permissions attached. The role lets Lambda use the permissions defined in the IAM policy you just created. It's like assigning a job to an employee (Lambda) and giving them a set of instructions (the policy) for what they're allowed to do.

**To set up an IAM policy and role for AWS Lambda, follow these steps in the AWS console:**

1. **Navigate to the IAM Service:** In the AWS Management Console, go to the IAM service. You can search for "IAM" in the search bar if it's hard to find.



1. **Create a New Policy:** In the left-hand menu, choose Policies and click the **Create policy** button.



1. **Switch to the JSON Tab:** After clicking **Create policy**, you'll be taken to a page where you can define the policy. Select the JSON tab.
2. **Replace the Default Policy JSON:** Replace the existing text in the **JSON** editor with the following policy document:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
```

```

    "Action": "logs:CreateLogGroup",
    "Resource": "arn:aws:logs:*:<<AWS_ACCOUNT_ID>>:*"
  },
  {
    "Effect": "Allow",
    "Action": [
      "logs:CreateLogStream",
      "logs:PutLogEvents"
    ],
    "Resource": [
      "arn:aws:logs:*:<<AWS_ACCOUNT_ID>>:log-group:/aws/
lambda/<<LAMBDA_NAME>>:*"
    ]
  },
  {
    "Effect": "Allow",
    "Action": "iam:GetUser",
    "Resource": "*"
  }
]
}

```

- Replace <<AWS\_ACCOUNT\_ID>>: Substitute <<AWS\_ACCOUNT\_ID>> with your actual AWS account ID. Your AWS account ID is a 12-digit number (e.g., 123456789012). **Do not include any hyphens.**
- Replace <<LAMBDA\_NAME>>: Replace <<LAMBDA\_NAME>> with the name of your Lambda function (e.g., my-lambda-function).

### 1. Review and Create the Policy:

- After replacing the placeholders with the correct values, click **Next: Tags**.
  - If you need to add tags (optional), you can do so here, otherwise click **Next: Review**.
- Give the policy a meaningful name, such as `ngeneahub_lambda_policy`.
- Finally, click **Create Policy**.

## Create policy



### Review policy

Name\*

Use alphanumeric and '+,.,@,-' characters. Maximum 128 characters.

Description

Maximum 1000 characters. Use alphanumeric and '+,.,@,-' characters.

#### Summary

Service	Access level	Resource	Request condition
Allow (2 of 316 services) <a href="#">Show remaining 314</a>			
CloudWatch Logs	Limited: Write	Multiple	None
IAM	Limited: Read	All resources	None

## Create the IAM Role

1. To **Create the IAM Role**, In the left-hand menu, select **Roles** and Click the **Create role** button.

The screenshot shows the AWS IAM console interface. On the left, the 'Identity and Access Management (IAM)' sidebar is visible with 'Roles' selected under 'Access management'. The main area displays the 'Roles (92)' page with a search bar and a table of existing roles. The table has columns for 'Role name', 'Trusted entities', and 'Last active'. The 'Create role' button is highlighted in blue in the top right corner.

1. For the **trusted entity type**, choose **AWS service**. In the use case, select **Lambda**.

## Select trusted entity

### Trusted entity type

The screenshot shows the 'Trusted entity type' selection screen. Five options are presented in rounded rectangular boxes, each with a radio button and a description:

- AWS service**  
Allow AWS services like EC2, Lambda, or others to perform actions in this account.
- AWS account**  
Allow entities in other AWS accounts belonging to you or a 3rd party to perform actions in this account.
- Web identity**  
Allows users federated by the specified external web identity provider to assume this role to perform actions in this account.
- SAML 2.0 federation**  
Allow users federated with SAML 2.0 from a corporate directory to perform actions in this account.
- Custom trust policy**  
Create a custom trust policy to enable others to perform actions in this account.

### Use case

Allow an AWS service like EC2, Lambda, or others to perform actions in this account.

#### Common use cases

- EC2**  
Allows EC2 instances to call AWS services on your behalf.
- Lambda**  
Allows Lambda functions to call AWS services on your behalf.

1. On the next screen, you'll be asked to attach permissions to the role. Search for the policy you just created, Select the policy, then click **Next: Tags**.
  - Again, if you need to add tags, you can do so here, otherwise click **Next: Review**.

Step 1  
Select trusted entityStep 2  
Add permissionsStep 3  
Name, review, and create

## Add permissions

**Permissions policies** (Selected 1/791) ↻ Create Policy ↗  
Choose one or more policies to attach to your new role.

Q Filter policies by property or policy name and press enter 1 match < 1 > ⚙

"ngeneahub" ✕ Clear filters

<input checked="" type="checkbox"/>	Policy name ↗	Type	Description
<input checked="" type="checkbox"/>	ngeneahub_lambda_policy	Custom...	

▶ **Set permissions boundary - optional**  
Set a permissions boundary to control the maximum permissions this role can have. This is not a common setting, but you can use it to delegate permission management to others.

Cancel Previous Next

1. Name the role `ngeneahub_lambda_role` to keep it descriptive and clear. Finally, click **Create Role**.

Step 1  
Select trusted entityStep 2  
Add permissionsStep 3  
Name, review, and create

## Name, review, and create

## Role details

## Role name

Enter a meaningful name to identify this role.

ngeneahub\_lambda\_role

Maximum 128 characters. Use alphanumeric and '+,=, @, \_' characters.

## Description

Add a short explanation for this policy.

Allows Lambda functions to call AWS services on your behalf.

Maximum 1000 characters. Use alphanumeric and '+,=, @, \_' characters.

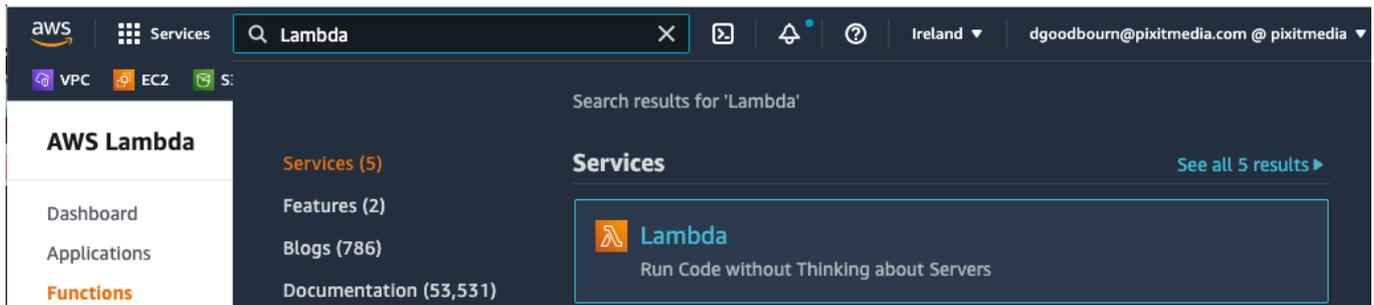
## Create the Lambda function

A function in AWS Lambda is a small piece of code that does something specific when triggered. For example, you could write a Lambda function that resizes images whenever a new image is uploaded to S3. The Lambda function runs automatically when an event occurs, like uploading a file.

**Creating the Function:** To create a Lambda function, you start by selecting Python 3.9 or above as the runtime and choosing the appropriate IAM role that defines the permissions for the function. If the function needs to connect to a private network, you configure the VPC, Subnet, and Security Group. You then upload the function code in a ZIP file, which contains the logic for Lambda to execute when triggered. Additionally, you provide a config.json file with necessary settings, such as API keys or database connections, for the function to operate correctly.

## Follow the steps to create an AWS Lambda function.

1. Go to the AWS Management Console at Cloud Computing Services - Amazon Web Services (AWS) and log in with your account.
2. In the AWS Console, type “Lambda” in the search bar at the top and select Lambda from the dropdown list. This will take you to the Lambda service.



1. On the Lambda dashboard, you'll see a button that says Create function. Click on it.
2. Select **“Author from scratch”**: This is the option that allows you to build a function from the ground up.
  - **Function name**: Enter a name for your Lambda function (e.g., “MyLambdaFunction”).
  - **Runtime**: From the Runtime dropdown, choose **Python 3.9+** (or another version of Python if required for your use case).

### **Note: Re-enabling the Requests Module in AWS Lambda (Python 3.9 Runtime)**

Since AWS has removed Python 3.7 from the Lambda runtimes, it has also removed the **Requests module**. To continue using the Requests module in your Lambda functions running on Python 3.9, you will need to add it back by creating a custom Layer.

Follow the steps provided the in section: **5.2.2.5. AWS Lambda with Python 3.9: Adding Requests Module** to add a custom Layer to your Lambda function, which will include the Requests module for your code to utilize.

# Create function [Info](#)

AWS Serverless Application Repository applications have moved to [Create application](#).

**Author from scratch**  
Start with a simple Hello World example.

**Use a blueprint**  
Build a Lambda application from sample code and configuration presets for common use cases.

**Container image**  
Select a container image to deploy for your function.

## Basic information

### Function name

Enter a name that describes the purpose of your function.

ngeneahub\_connection

Use only letters, numbers, hyphens, or underscores with no spaces.

### Runtime [Info](#)

Choose the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby.

Python 3.7

1. Under **Execution role**, choose Use an existing role. In the **Existing role** dropdown, select the IAM role that you have previously created for this function (the one that has the appropriate permissions for your Lambda).

## Permissions [Info](#)

By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers.

### ▼ Change default execution role

#### Execution role

Choose a role that defines the permissions of your function. To create a custom role, go to the [IAM console](#).

- Create a new role with basic Lambda permissions
- Use an existing role
- Create a new role from AWS policy templates

#### Existing role

Choose an existing role that you've created to be used with this Lambda function. The role must have permission to upload logs to Amazon CloudWatch Logs.

ngeneahub\_lambda\_role



[View the ngeneahub\\_lambda\\_role role](#) on the IAM console.

1. **Configure VPC and Networking (If Necessary):** If your Ngenea Hub doesn't have an external IP to connect to, follow these steps:
  - Scroll down to Advanced settings and select **Enable Network**.
  - From the dropdown, select the **VPC** where the Ngenea Hub is located.
  - Select the **Subnet** within the VPC where the Ngenea Hub resides.
  - Choose a **Security Group** that allows access to the Ngenea Hub over port 8000 (Only if hub is being served on port 8000).

## ▼ Advanced settings

### Enable Code signing [Info](#)

Use code signing configurations to ensure that the code has been signed by an approved source and has not been altered since signing.

### Enable Network [Info](#)

To provide network access for your Lambda function, specify a virtual private cloud (VPC), VPC subnets, and VPC security groups. VPC configuration is optional unless your user permissions require you to configure a VPC.

#### VPC

Choose a VPC for your function to access.

vpc-0bd7136b621f84a87 (10.10.0.0/24) ▼



#### Subnets

Select the VPC subnets for Lambda to use to set up your VPC configuration.

Choose subnets ▼



subnet-01c2a9d8719207552 (10.10.0.0/24) eu-west-1c ✕  
Name: pixstor-demo

We recommend that you choose at least 2 subnets for Lambda to run your functions in high availability mode.

#### Security groups

Choose the VPC security groups for Lambda to use to set up your VPC configuration. The table below shows the inbound and outbound rules for the security groups that you choose.

Choose security groups ▼



sg-032d65f704d480aa5 (pixstor-demo-002-SG-FRONTEND) ✕  
PixCloud Security Group  
aws:cloudformation:logical-id: pixCloudSG    aws:cloudformation:stack-name: pixstor-demo-002  
aws:cloudformation:stack-id: arn:aws:cloudformation:eu-west-1:918992847240:stack/pixstor-demo-002/af457060-d040-11eb-9b92-06df0d66bfc3  
Name: pixstor-demo-002-SG-FRONTEND

1. **Update the IAM Policy:** Your Lambda function will need permission to traverse the VPC's networking. Here's how to do it:

- Go to the **IAM console** and find the policy you previously created. Add the following section to the policy:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": "logs:CreateLogGroup",
      "Resource": "arn:aws:logs:*:<<AWS_ACCOUNT_ID>>:*"
    },
    {
      "Effect": "Allow",
      "Action": [
        "logs:CreateLogStream",
        "logs:PutLogEvents"
      ],
      "Resource": [
        "arn:aws:logs:*:<<AWS_ACCOUNT_ID>>:log-group:/aws/lambda/<<LAMBDA_NAME>>:*"
      ]
    }
  ],
}
```

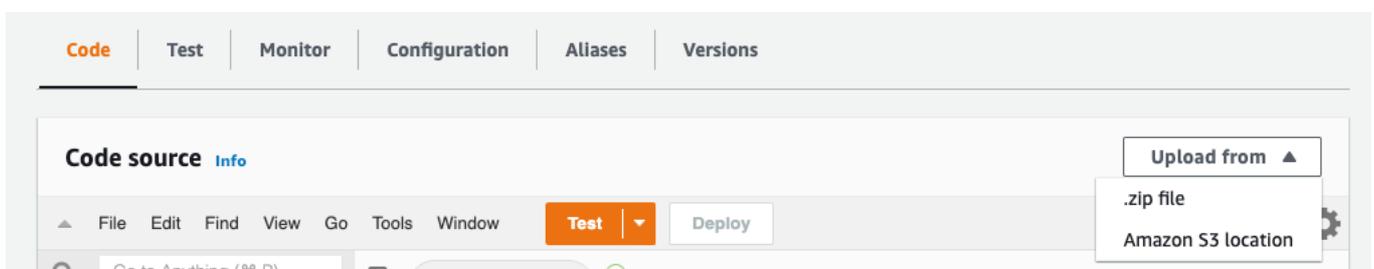
```

{
  "Effect": "Allow",
  "Action": "iam:GetUser",
  "Resource": "*"
},
{
  "Effect": "Allow",
  "Action": [
    "iam:GetUser",
    "ec2:DescribeNetworkInterfaces",
    "ec2:CreateNetworkInterface",
    "ec2>DeleteNetworkInterface"
  ],
  "Resource": "*"
}
]
}

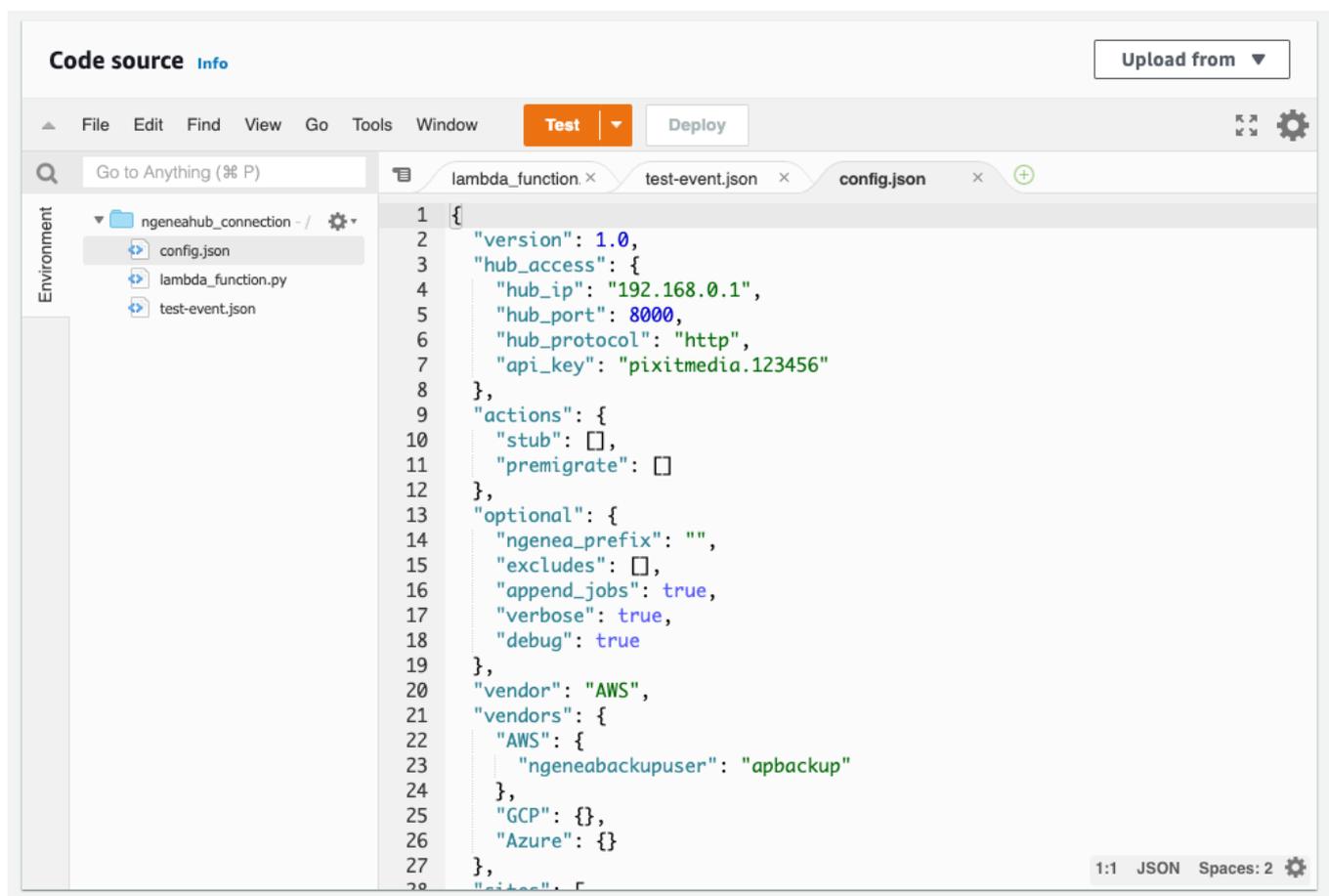
```

- Replace <<AWS\_ACCOUNT\_ID>> with your actual AWS account ID.
- Replace <<LAMBDA\_NAME>> with the name of your Lambda function.
- Once you've updated the policy, **save** it.

1. **Create the Lambda Function:** With the role and network settings configured, click the **Create function** button. This will take a few minutes.
2. After your function is created, you will be redirected to the **function's configuration page**. Click on the **Code tab**.
3. Click on **Upload a .zip file**.
4. Click Upload, and then browse to select the **AWS zip file** you previously downloaded (from the .././download page). Select the zip file and click **Save** to upload your code.



1. **Update the config.json File:** In the Code section, locate and edit the `config.json` file. You will need to update this file with all the relevant details based on the docs from [Cloud Functions](#)



1. Once you have updated the file, click **Deploy** to save your changes.

## Set Up the Trigger (S3 Bucket Event)

**Event Trigger:** A trigger is an event that automatically activates a specific action, and in this case, you can set up an S3 trigger to invoke a Lambda function whenever a file is uploaded to an S3 bucket. By selecting the “All object create events” option, you ensure that Lambda responds to any new file uploaded to the bucket, regardless of the file type. This allows Lambda to automatically execute whenever a new file is created in the S3 bucket.

**Recursive Invocation:** This setting ensures that if Lambda’s own activities (like writing logs) somehow trigger the function again, it won’t end up running in an endless loop.

### Assigning a trigger to your Lambda function using an S3 bucket event:

1. Open the **AWS Lambda Console**. Select the **Lambda function** you created earlier.
2. Under the **Function overview** section, click on **Add trigger**.

## ngeneahub\_connection

### ▼ Function overview [Info](#)

 ngeneahub\_connection  
 Layers (0)

+ Add trigger

1. From the list of available triggers, choose **S3**.
2. In the **Bucket** dropdown, select the S3 bucket where you want the Lambda function to be triggered.
3. For **Event type**, select **All object create events**. This ensures that Lambda is triggered whenever any new object (file) is created in the S3 bucket.
4. Check the box labeled **Recursive Invocation checkbox warning**. This prevents Lambda from continuously triggering itself if it processes files within the bucket.
5. After selecting the options, click the **Add** button to assign the trigger to your Lambda function.

# Add trigger

## Trigger configuration



S3  
aws storage

### Bucket

Please select the S3 bucket that serves as the event source. The bucket must be in the same region as the function.

dgoodbourn-playground2

### Event type

Select the events that you want to have trigger the Lambda function. You can optionally set up a prefix or suffix for an event. However, for each bucket, individual events cannot have multiple configurations with overlapping prefixes or suffixes that could match the same object key.

All object create events

### Prefix - optional

Enter a single optional prefix to limit the notifications to objects with keys that start with matching characters.

*e.g. images/*

### Suffix - optional

Enter a single optional suffix to limit the notifications to objects with keys that end with matching characters.

*e.g. .jpg*

Lambda will add the necessary permissions for Amazon S3 to invoke your Lambda function from this trigger. [Learn more](#) about the Lambda permissions model.



### Recursive invocation

If your function writes objects to an S3 bucket, ensure that you are using different S3 buckets for input and output. Writing to the same bucket increases the risk of creating a recursive invocation, which can result in increased Lambda usage and increased costs. [Learn more](#)

- I acknowledge that using the same S3 bucket for both input and output is not recommended and that this configuration can cause recursive invocations, increased Lambda usage, and increased costs.

Cancel

Add

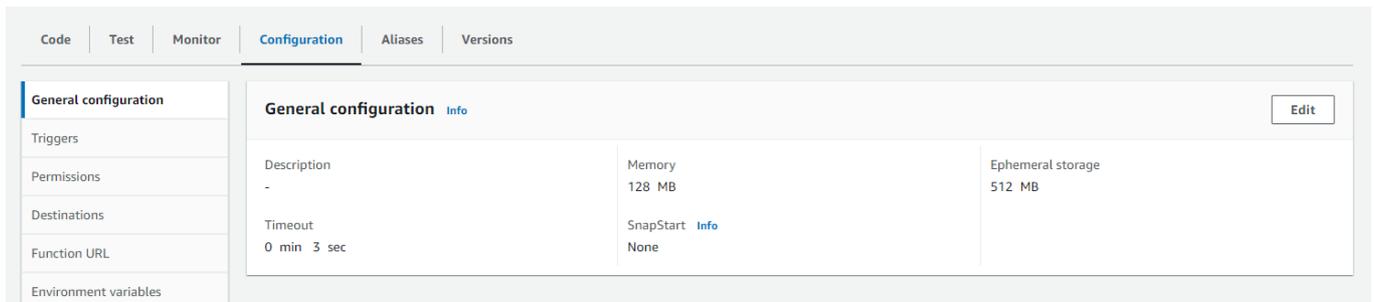
1. Your Lambda function is now configured with the S3 bucket event trigger, meaning it will automatically execute whenever a new file is uploaded to the selected bucket.

## Configuring Timeout

Lambda runs your code for a set amount of time before timing out. Timeout is the maximum amount of time in seconds that a Lambda function can run. The default value for this setting is 3 seconds, but you can adjust this in increments of 1 second up to a maximum value of 900 seconds (15 minutes).

You can configure function timeout in the Lambda console. When your Lambda function is configured,

1. Select the function
2. Choose the **Configuration tab** and select **General Configuration**
3. Under **General Configuration**, choose **Edit**
4. For **Timeout**, set a value between 1 and 900 seconds (15 minutes)
5. Click on **Save**



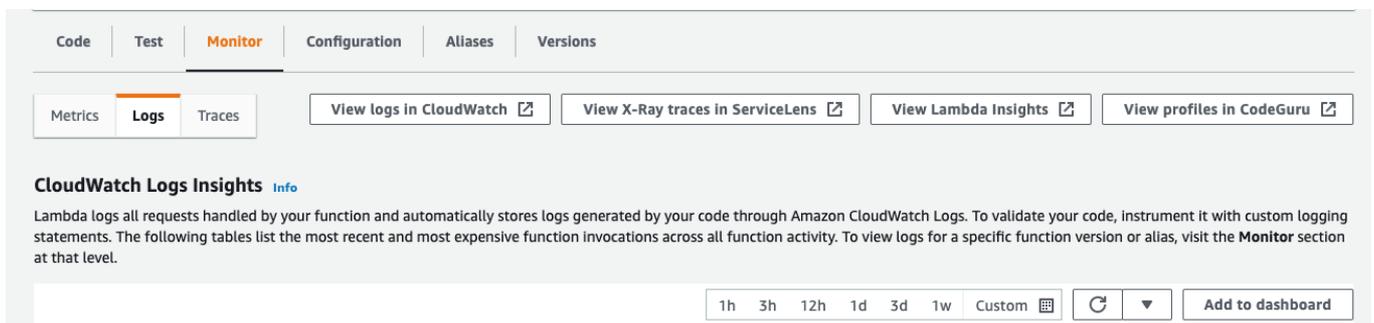
## Monitoring Lambda Functions

**CloudWatch:** Amazon CloudWatch is an essential tool provided by AWS for monitoring various aspects of your AWS resources, including Lambda functions. It tracks vital metrics such as execution duration and logs that capture detailed information about the function's behavior.

By leveraging CloudWatch, you can determine if your Lambda function is performing correctly and identify any potential errors or issues.

Once a trigger is assigned to your Lambda function, you can monitor its performance in the **Monitor tab**. This tab provides a variety of monitoring options, giving you a comprehensive view of your function's performance.

For a more in-depth analysis, you can use View **Logs in CloudWatch**. This is the best place to access detailed logs and troubleshoot any issues your Lambda function might be facing.

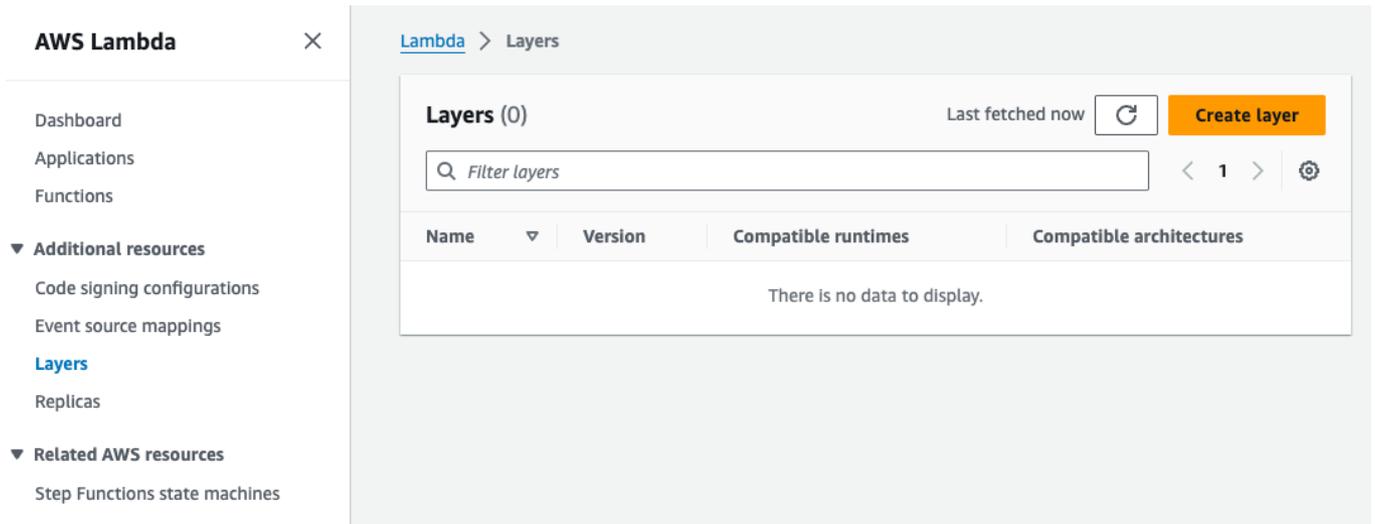


## AWS Lambda with Python 3.9: Adding Requests Module

AWS has removed Python 3.7 from its Lambda runtimes, which also means the requests module is no longer included. Until we update the cloud bucket events code, we need to manually add the requests module. To do this, we'll create a Layer and attach it to the Lambda function.

In AWS Lambda, a Layer is a way to package and share additional code, such as libraries, dependencies, or even custom runtime components, that your Lambda function can use. In this case, you can create a Lambda Layer that includes the Requests library and attach it to your function.

1. **To create a new Lambda Layer**, In the AWS Console, go to **Lambda** and click **Layers** in the left menu. Click **Create Layer** to continue.



1. Enter a name for your layer (e.g., `RequestsLayer`).
2. Upload the `python_modules.zip` zip file.
3. Select `x86_64` architecture and `Python 3.9` runtime. Click **Create** to save.

# Create layer

## Layer configuration

Name

Requests\_module

Description - *optional*

Description

Upload a .zip file

Upload a file from Amazon S3

 Upload

python\_modules.zip

842.39 KB

For files larger than 10 MB, consider uploading using Amazon S3.

Compatible architectures - *optional* [Info](#)

Choose the compatible instruction set architectures for your layer.

x86\_64

arm64

Compatible runtimes - *optional* [Info](#)

Choose up to 15 runtimes.

Runtimes

Python 3.9

License - *optional* [Info](#)

Cancel

Create

1. In your Lambda function, scroll down to the **Layers** section and click the **Add a Layer** button.

Layers [Info](#)

Edit

Add a layer

Merge order

Name

Layer version

Compatible runtimes

Compatible architectures

Version ARN

There is no data to display.

1. Select the **Custom layers** option, then choose the layer you created from the **Custom layers dropdown** and pick the **Version**.

### Choose a layer

**Layer source** [Info](#)  
 Choose from layers with a compatible runtime and instruction set architecture or specify the Amazon Resource Name (ARN) of a layer version. You can also [create a new layer](#).

**AWS layers**  
 Choose a layer from a list of layers provided by AWS.

**Custom layers**  
 Choose a layer from a list of layers created by your AWS account or organization.

**Specify an ARN**  
 Specify a layer by providing the ARN.

**Custom layers**  
 Layers created by your AWS account or organization that are compatible with your function's runtime.

Requests\_module ▼

**Version**

1 ▼

Cancel Add

1. Your Lambda function should now work, as the `Requests` module is successfully loaded.

## Configuration

The configuration file `config.json` is the key to setting up Cloud Functions and defining how they should behave. This file is written in JSON, and it tells the system what actions to take when certain events occur. You will configure the settings to ensure everything works correctly.

Here are the most important sections of the configuration file:

### version

The version field specifies the version of the configuration format. Currently, the only supported version is `1.0`.

### hub\_access

To integrate and interact with Ngenea Hub, you need to configure a set of settings to establish communication with its REST API. These settings ensure that your system or application can properly authenticate, submit files, and trigger workflows for processing. Below is an explanation of each configuration setting, along with example values.

- **hub\_ip** : The IP address of the Ngenea Hub REST API. This identifies the location of the Ngenea Hub server within your network or on the internet. Example: `hub_ip = "192.168.1.100"`

- **hub\_port** : The port number used by the Ngenea Hub REST API. By default, the Ngenea Hub API may be set to use port 8000, but this can vary depending on your specific setup. Example: `hub_port = 8000`
- **hub\_protocol** : The protocol used for communicating with the Ngenea Hub API. You can choose between `http` (insecure) and `https` (secure). Example: `hub_protocol = "https"`
- **api\_key**: An API key used for authentication with the Ngenea Hub. This key ensures that your system has the necessary permissions to interact with the Hub. Example: `api_key = "your-api-key-here"`
- **workflow**: The name of the workflow you wish to submit for processing an event file. Workflows define a set of tasks or steps that Ngenea Hub follows to process data.
  - **reverse\_stub**: Typically used for new files, reversing or processing them in a specific way. Example: `workflow = "reverse_stub"`
  - **recall**: Another default workflow for recalling or processing files.
- **workflow\_flags**: A mapping of additional settings you can pass to customize the behavior of the selected workflow. These flags allow you to fine-tune the process by specifying certain options. Example: `workflow_flags = {"hydrate": true}`
- **Custom Workflows**: By default, Ngenea Hub does not have a delete workflow. If you need to delete files, you must create a custom workflow to handle file deletion. As shown below, you might create a workflow named `delete_file` for this purpose:

```
{
  "name": "delete_file",
  "label": "delete_file",
  "icon_classes": [
    "fa fa-cloud fa-stack-2x text-success",
    "fa fa-angle-up fa-stack-2x text-light"
  ],
  "discovery": null,
  "enabled": true,
  "visible": true,
  "fields": [],
  "filter_rules": [
    {
      "type": "all",
      "state": "all",
      "action": [
        {
          "name": "dynamo.tasks.delete_paths_from_gpfs",
          "recursive": false
        }
      ]
    }
  ],
  "description": "Delete the file at a given path"
}
]
```

In systems like Ngenea Hub, events (such as file updates or deletions) need to be reflected across multiple sites to maintain consistency.

- **Site Name** : Each site in the Ngenea Hub system is identified by a **name**. This name is crucial for tracking and managing events on a particular site.
- **Default Mode for ‘Recall’ Workflows**: When an event occurs, the system needs to decide how to recall or reflect that event across sites. If the event path does not match a specific action, the **default mode** is used.
- The two available default modes are:
  - **Stub**: A placeholder or temporary record used when the system doesn't have detailed information.
  - **Premigrate**: This mode prepares the system for future migration or change before the event is fully applied.
- **Skip from Ngenea**:
  - If the system is syncing files between multiple sites, there may be situations where certain files should not be reflected or recalled on sites. This is where the **skip\_from\_ngenea** setting comes into play.
  - When **skip\_from\_ngenea** is set to **True**, files created or transferred via Ngenea Hub will be skipped for recall. This is useful because files transferred through Ngenea Hub are already in sync between sites, so recalling them again is unnecessary.
  - However, if a file is uploaded directly to the cloud (outside of Ngenea Hub), it still needs to be reflected or recalled across the sites to ensure consistency.
- **Handling Delete Events**:
  - Deleting a file or event can sometimes be tricky, especially when using cloud platforms like GCP (Google Cloud Platform). In these cases, it may be unclear where the file was deleted from, which can complicate the process of reflecting that delete action.
  - As a result, when a **delete event** occurs and the system cannot determine its origin, the system will reflect the delete on **all sites** to ensure that no inconsistent or outdated data remains across the sites.

By configuring these settings carefully, you can ensure that the right events are reflected accurately across all your sites, while avoiding unnecessary updates or recalls for already-synced data.

### Mapping of actions - stub or premigrate - to path prefixes.

This section explains how actions such as “stub” or “pre migrate” are mapped to specific path prefixes. These mappings determine whether a file should be included in a “recall” workflow, where the file is downloaded and prepared for use.

If a path matches multiple actions, the longest matching prefix will take priority. For example, consider the following configuration:

```
{
  "stub": ["data"],
  "premigrate": ["data/cats"]
}
```

In this case:

- The path `data/cats/cat-01.jpg` will undergo **premigrate**, meaning this action prepares a file for migration to a different storage location, typically involving downloading and preparing the file for a transition or backup.
- The path `data/cats-02.jpg` will be **stubbed**, meaning it will remain as a placeholder without being fully downloaded.

If no specific action is defined for a given path, the default action for the site (as mentioned earlier) will be applied.

However, if the default action is not set, or if `hydrate` is explicitly specified in the `workflow_flags`, that setting will take priority and override the default behavior. If no configuration is provided at all, the default action is to stub the file.

This system allows for more flexibility and precise control over how files are handled during the migration and recall processes.

## optional

**Optional settings** are additional settings that can be configured in the `config.json` file to customize the behavior of the system. While their use is not mandatory, they offer increased flexibility for those seeking to refine and optimize the system's functionality. Below is a detailed overview:

- **ngenea\_prefix** : Allows you to map a cloud path to a local storage path. For example, if you have a file in the cloud at `data/cats-01.jpg`, but want it to appear in a specific folder on your local system, like `/mmfs1/data/cats-01.jpg`, this setting adds a prefix to the cloud file path. This ensures it matches your local storage path. By **default**, the setting is empty (`'`), meaning no mapping occurs unless you specify one.
- **excludes** : Allows you to exclude specific paths or files from being processed. For example, if you want to ignore files in the `logs/` folder, you can add `logs` to the `excludes` list. By **default**, this setting is an empty list (`[]`), meaning no exclusions are applied unless explicitly specified.
- **append\_jobs** : The `append_jobs` setting controls whether multiple tasks should be grouped under the same job ID. If set to `true`, it groups tasks that occur within the same hour under one job ID. If set to `false`, each task will be assigned its own unique job ID. By **default**, this setting is `false`, meaning tasks are handled separately unless modified.
- **verbose** : The `verbose` refers to the level of detail included in the output, especially in logs or messages. If set to `true`, it displays general `info level` logs, which provide information on the system's activities. If set to `false`, only `minimal log` information will be shown. The **default** value is `false`, meaning only basic logs are shown unless specified otherwise.

- **debug** : The `debug` setting provides detailed logs for troubleshooting. When set to `true`, it displays 'debug level logs, which contain in-depth technical information for resolving issues. If set to `false`, it does not show detailed debug information. The `**default**` value is `false`, meaning fewer details are shown unless enabled.
  - **Note** : If both `verbose` and `debug` are enabled, the debug logs will take priority and provide more detailed information.

## vendor

This setting tells the system which cloud service is being used. Right now, there are two options:

- **AWS** (Amazon Web Services)
- **GCP** (Google Cloud Platform)

So, if you're using AWS or GCP for your system, you would set this option to either "AWS" or "GCP" to let the system know which cloud platform it should work with.

## vendors

This section contains settings that are specific to a particular cloud platform (vendor), such as AWS. **Currently, these settings are only used for AWS.**

- **AWS-specific setting - `ngeneabackupuser`:**
  - The `ngeneabackupuser` is the name of the user account that Ngenea uses within AWS. It's used to identify whether a file came from the Ngenea system when processing files.
  - This identification is helpful for situations where you might want to skip files that were already uploaded or created by Ngenea, especially when the `skip_from_ngenea` setting is **enabled**.
  - Essentially, this ensures that files associated with Ngenea are handled appropriately, preventing redundant actions or unnecessary processing.

## Complete Example

```
{
  "version": 1.0,
  "hub_access": {
    "hub_ip": "192.168.0.1",
    "hub_port": 8000,
    "hub_protocol": "http",
    "api_key": "pixitmedia.123456",
    "workflow": "reverse_stub",
    "workflow_flags": {
      "hydrate": false,
      "overwrite": true
    }
  },
  "sites": [
    {
```

```

        "site": "uk",
        "default": "stub"
    },
    ],
    "actions": {
        "stub": [],
        "premigrate": []
    },
    "optional": {
        "ngenea_prefix": "",
        "excludes": [],
        "append_jobs": true,
        "verbose": true,
        "debug": true
    },
    "vendor": "AWS",
    "vendors": {
        "AWS": {
            "ngeneabackupuser": ""
        },
        "GCP": {},
        "Azure": {}
    }
}

```

## Ngenea Worker Plugins

When creating workflows on Ngenea Hub, there might not be a pre-existing task that matches the specific behavior required for a particular workflow. To address this issue, Ngenea Hub now supports the **ability to add custom plugin tasks to any instance of Ngenea Worker**, allowing you to define tasks that cover the missing behavior.

These custom tasks are defined using Celery, a popular task distribution framework. You can read more about Celery and how it works here: <https://docs.celeryq.dev/en/stable/>.

### Creating your plugin

Ngenea Hub allows the integration of **custom Celery tasks** through a plugin system. These plugins are Python modules recognized by the **Ngenea Worker** and can be used within defined workflows in Ngenea Hub.

### Creating a Custom Plugin: echo\_args

Ngenea Hub supports plugin development through its CLI, allowing users to extend functionality via custom task plugins. This section walks through creating a sample plugin named `echo_args`, which simply returns the arguments provided to it.

### Plugin Directory

All custom plugins must reside in the following directory for correct installation and execution:

```
/var/lib/ngenea-worker/plugins
```

Each plugin will persist in this location, and Ngenea Hub will reference this path to discover and load available plugins.

### Step 1: Create the Plugin Template

To generate the basic structure for the `echo_args` plugin, use the following command:

```
ngenea-worker plugins create echo_args
```

This command creates the plugin at: `/var/lib/ngenea-worker/plugins/echo_args`.

Inside this directory, you will find a Python module at: `/var/lib/ngenea-worker/plugins/echo_args/echo_args/echo_args.py`.

This module contains a default task function named `example_task`, which we will customize in the next step.

### Step 2: Implement the Plugin Logic

The default `example_task` function is provided as a template. Here's the original sample code:

```
from arcapix.dynamo.server.celeryapp import app
from arcapix.dynamo.server.status import FileActionStatus
from arcapix.dynamo.server.queue import get_current_task_queue_name

@app.task(bind=True, name="dynamo.custom.example_task")
def example_task(self, *args, paths: List = None, jobid: int = None, **kwargs):
    print(paths)
    print(jobid)
    status = FileActionStatus(self.name, paths, jobid, get_current_task_queue_name())
    for path in paths:
        status.add("processed", path["path"])
    return status.dump()
```

For plugins that may spawn dynamic children, also consider including the `will_spawn_children` field in your task results to ensure proper job completion tracking. See the “Dynamic Children and Job Completion” section in the Custom Tasks documentation.

**Important:** Custom tasks must return their results using the `FileActionStatus` object, as shown above. Failure to follow this return structure will result in the task being stuck in a **Pending** state, with tracebacks visible in the Ngenea Hub logs.

Refer to **Custom Tasks > Return Payload** for required return formats.

### Step 3: Modify the Task for `echo_args`

Update the function and task name to reflect the custom behavior of our plugin. The revised implementation should look like this:

**Note:** The name provided to `app.task` will be the task name that is used to call the task within a workflow.

```
from arcapix.dynamo.server.celeryapp import app
from arcapix.dynamo.server.status import FileActionStatus
from arcapix.dynamo.server.queue import get_current_task_queue_name

@app.task(bind=True, name="dynamo.custom.echo_args")
def echo_args(self, *args, paths: List = None, jobid: int = None,
**kwargs):
    status = FileActionStatus(self.name, paths, jobid, get_current_task_queue_name())
    for path in paths:
        status.add("processed", path["path"])
    return status.dump()
```

**Note:** The value provided to the `name` parameter in the `@shared_task` decorator determines the task name that will be used within workflow definitions.

### Step 4: Update the `setup.py` Entry Point

For Ngenea Hub to recognize and register your custom task, you must define an appropriate entry point in your plugin's `setup.py` file. Entry points for custom tasks should be declared under the `worker_plugin` group.

Original setup:

```
"worker_plugin": [
    "echo_args=echo_args.echo_args:example_task",
]
```

Updated setup (to reflect the new function name):

```
"worker_plugin": [
    "echo_args=echo_args.echo_args:echo_args",
]
```

## External Dependencies

If your plugin relies on external Python packages, you can manage these dependencies through the `setup.py` file, which is automatically included in the plugin template created using:

## ngenea-worker plugins create

To specify additional dependencies, add them to the `install_requires` list within `setup.py`. This ensures the required packages are installed into the Ngenea Worker environment when the plugin is deployed.

Example:

```
install_requires = [  
    "celery<=5.4",  
    "example-module==0.1.0"  
]
```

**Note:** Do not modify the version or presence of the `celery` package in this list.

Ngenea Worker enforces constraints on critical packages, such as `celery`. Altering these packages could lead to compatibility issues or disrupt core Ngenea Worker functionality.

If your plugin requests a dependency which is incompatible with any of these critical packages, you will see an error like below

```
ERROR: Cannot install example_plugin==0.1.0 because these package  
versions have conflicting dependencies.
```

The conflict is caused by:

```
example_plugin 0.1.0 depends on celery==5.4  
The user requested (constraint) celery==5.3.6
```

The `user requested (constraint)` refers to Ngenea Worker.

Your plugin directory includes a file called `constraints.txt`, which lists the required critical package versions. This is included for information and testing. Note, editing this file will not change the constraints which are applied when you install a plugin.

By managing dependencies in this way, you ensure plugin compatibility, reduce runtime errors, and maintain seamless integration with the Ngenea Worker framework.

## Managing plugins

Once you've created your plugin, you'll need to enable it and manage it within the Ngenea Worker system.

### Enabling your plugin

- To make your plugin work, you need to enable it in the system settings.
- Go to the configuration file `/etc/ngenea/ngenea-worker.conf` file.
- In this file, look for the line that says `enable_plugins`. By default, it is set to `false`, which means plugins are disabled. Change it to:

```
enable_plugins=true
```

- Once you've made this change, save the file.
- By enabling this setting, you're telling Ngenea Worker that you want to use the custom plugins you've created.

## Installing your plugin

To install plugins on Ngenea Worker, you can follow these steps:

**Install All Plugins:** If you want to install all the plugins that are in the `/var/lib/ngenea-worker/plugins` folder, use the following command:

```
ngenea-worker plugins install
```

This will install all the plugin packages in the `plugins` directory. Keep in mind that Ngenea Worker will only update the plugins if their version number has changed in the `setup.py` file.

**Install a Single Plugin:** If you want to install just one specific plugin, use the command below, replacing `PACKAGE_NAME` with the name of the plugin you want to install:

```
ngenea-worker plugins install PACKAGE_NAME
```

**Restart the Ngenea Worker Service:** After installing plugins, you'll need to restart the Ngenea Worker service to apply the changes:

```
systemctl restart ngenea-worker
```

## Uninstalling your plugin

Uninstalling any of the plugins can be done through the uninstall script:

**Warning:** Be cautious when uninstalling plugins, as removing modules that aren't directly in `/var/lib/ngenea-worker/plugins` might cause Ngenea Worker to stop working properly.

**Uninstall a Specific Plugin:** If you want to uninstall a single plugin, use this command, replacing `PACKAGE_NAME` with the name of the plugin:

```
ngenea-worker plugins uninstall <PACKAGE_NAME>
```

**Uninstall All Plugins in the Directory:** If you want to uninstall all plugins in the plugin directory at once, run the following commands:

```
pushd /var/lib/ngenea-worker/plugins/  
ngenea-worker plugins uninstall * -y  
popd
```

This will uninstall all plugins in the `/var/lib/ngenea-worker/plugins/` directory.

## Listing your plugin

Listing your plugin involves two distinct sections:

- **Listing Installed Plugins:** Displays only the plugins that are currently installed with versions.
- **Listing All Plugins:** Displays all plugins available in the plugins directory with versions, located at `/var/lib/ngenea-worker/plugins` regardless of whether they are installed or not.

To list plugins, use the following command:

```
ngenea-worker plugins list
```

## Custom Tasks

In addition to the [predefined tasks](#), Ngenea Worker plugins allow custom tasks to be defined.

Once [created](#), custom tasks can be included in [Custom Workflows](#).

Custom tasks must accept the same standard arguments, and return a payload in the same format, as predefined tasks do.

## The Structure of a Task

### Arguments

Tasks must accept the following keyword arguments:

name	description	example	default
<code>jobid</code>	ID of the job the task is associated with.	<code>100</code>	None

name	description	example	default
paths	List of paths (may be files, folders or symlinks) to be processed. Each path is given as a dict with a "path" key, and can also have other keys such as "size" and "message".	[{"path": "/mmfs1/data/my-fileset/file1", "size": 264321}, {"path": "/mmfs1/data/my-fileset/file2", "size": 15}]	None

To pass specific keyword arguments to a task, include these in the workflow definition as hardcoded values or [Runtime fields](#).

In addition, tasks should accept arbitrary other keyword arguments via a `**kwargs` parameter, but do not need to process them.

Here is an example function signature, from the definition of the predefined task `dynamo.tasks.migrate`:

```
def migrate(self, *args, jobid=None, paths=None, skip_modified_during_migrate=False, **kwargs)
```

## Return Payload

Ngenea Hub expects task results to be returned in a specific format.

There is a class `FileActionStatus` that the worker code uses as a convenience for constructing the return payload. This may be used as an alternative to constructing the return payload from scratch.

## Using the FileActionStatus class

The class is imported like this:

```
from arcapix.dynamo.server.status import FileActionStatus
```

A status object is instantiated like this:

```
status = FileActionStatus(taskname, input_paths, jobid, queue_name)
```

- `taskname` is the name of the current task
- `input_paths` is the list of path objects as passed to the task in the `paths` parameter
- `jobid` is the job's numerical id. This is provided as an input to the task.

- `queue_name` is the queue the task is currently running on. This can be retrieved with `get_current_task_queue_name()` from `arcapix.dynamo.server.queue`

For each path operated on by the task, call the `.add(key, path)` method on the status object, where `key` is the state of the file:

```
status.add("processed", "/mmfs1/data/my-fileset/file1")
```

The status object keeps track of files as they are added. At the completion of the task, return the results like this:

```
return status.dump()
```

## Constructing a return payload from scratch

Tasks return a dict containing at least these 3 keys:

```
{
  "jobid": <job_id>,
  "paths": <list of path objects that were processed or
skipped>,
  "status": {
    "task": <task_name>,
    "input_paths": <list of path objects input to the task>,
    "input_total": <number of paths input to the task>,
    "summary": <dict giving number of files keyed by state>,
    "details": <dict giving list of file objects keyed by sta
te>,
    "started": <timezone-aware datetime for when the task sta
rted>
  }
}
```

The `paths` key lists the paths to be passed to the next task in the workflow.

Here is an example payload:

```
{
  "jobid": 100,
  "paths": [{"path": "/mmfs1/data/my-fileset/file1"}],
  "status": {
    "task": "my-plugin",
    "input_paths": [{"path": "/mmfs1/data/my-fileset/file1"},
{"path": "/mmfs1/data/my-fileset/file2"}],
    "input_total": 2,
    "summary": {
      "failures": 1,
      "processed": 1,
      "skipped": 0
    },
    "details": {
      "failures": [{"path": "/mmfs1/data/my-fileset/file2",
"message": ["Reason xyz for the failure"]}]}],
  "message": ["Reason xyz for the failure"]}]
```

```

        "processed": [{"path": "/mmfs1/data/my-fileset/file1"}
    ],
    "skipped": []
  },
  "started": "2023-04-25T14:56:31.253043",
}
}

```

## Supported file states

These are the supported file states for tasks that perform operations on files:

- “processed”: file was successfully processed
- “skipped”: file was not processed because they were already in the desired state
- “aborted”: file was not processed and should not be processed by subsequent tasks in the workflow
- “failures”: file could not be processed because of an error
- “inprogress”: file is still being processed (this state is rarely used)

Generally, the files that should be passed to the next task are those that were processed or skipped.

## Streaming task results

This applies to delete and move handlers in a snapdiff workflow.

Rather than returning, results for delete and move handler in snapdiff workflows must be streamed back to Ngenea Hub

In this case Ngenea Hub will pass keyword argument `stream_results=True` to the task to indicate that it expects streamed results

**Important:** If your task will be used as a move or delete handler in a snapdiff workflow, it must accept `stream_results` either as an explicit parameter or via `**kwargs`

A `StreamTaskResults` class is provided to facilitate this.

```

from arcapix.dynamo.server.streamstatus import StreamTaskResults

```

The class behaves the same as a `FileActionStatus`

```

if stream_results:
    status = StreamTaskResults(taskname, input_paths, jobid, queue_name, taskid)
else:
    status = FileActionStatus(taskname, input_paths, jobid, queue_name)

```

The parameters are the same as `FileActionStatus`, described above, with the addition on `taskid`. The task must be defined with `bind=True`. The `taskid` can then be retrieved with `self.request.id`

For each path operated on by the task, call the `.add(key, path)` method on the status object, where `key` is the state of the file:

```
status.add("processed", "/mmfs1/data/my-fileset/file1")
```

The status object keeps track of files as they are added, and in the background sends them to Ngenea Hub in batches.

At the completion of the task, return the results like this:

```
return status.dump()
```

Calling `status.dump()` also flushes any outstanding files to Ngenea Hub.

## Support for Streaming Paths from API

This applies to delete and move handlers in a snapdiff workflow.

To fetch the streaming paths, the function `expand_paths` from the module `arcapix.dynamo.server.utils.inputs` has to be used like below.

```
from arcapix.dynamo.server.utils.inputs import expand_paths
```

**Warning:** `expand_paths` provides a generator function fetching pages of paths on demand. Developers must ensure that memory starvation of Hub is negated by following the principles of generator functions thereby avoiding storing large number of values in memory concurrently.

## Queues

There are various functions available to get information about the celery queue a custom task is running on

**Note:** The way queues are handled, and the way celery queue names are formatted, has changed in Ngenea Hub 2.4.0

For more information on Ngenea Hub queues see [Queues](#)

```
from arcapix.dynamo.server.queue import ...
```

- `get_current_task_queue_name()` - returns the name of the celery queue the current task is running on
- `get_current_site()` - returns the name of the site the current task is running on

- `get_formatted_queue_name(site, queue, function)` - returns the celery queue name for a given `site`, `queue`, and `function`
- `ParsedQueueName` - a class representing a celery queue name, parsed into `site`, `queue`, and `function`

```
parsed_queue = ParsedQueueName.current_task_queue()

print(parsed_queue.site) # london
print(parsed_queue.queue) # highpriority
print(parsed_queue.function) # custom

print(str(parsed_queue)) # london.highpriority#custom
```

**Important:** The format of celery queue names is subject to change. You should always use the above functions, rather than manually parsing and formatting queue names.

## Dynamic Children and Job Completion

When creating plugins that may spawn dynamic child tasks, it's important to understand how the hub tracks job completion.

The `will_spawn_children` Field

The `will_spawn_children` field is automatically managed by the `DynamicSubmitter` class when you use it to spawn dynamic child tasks. This field indicates whether your plugin has spawned any dynamic children (processing or traversal tasks) and is crucial for the hub's job completion tracking.

Using `DynamicSubmitter` (Recommended)

For plugins that spawn dynamic children, use the `DynamicSubmitter` class which automatically handles the `will_spawn_children` field:

```
from arcapix.dynamo.server.dags.status import DynamicSubmitter
from arcapix.dynamo.server.status import FileActionStatus
from arcapix.dynamo.server.queue import get_current_task_queue_name

@app.task(bind=True, name="dynamo.custom.dynamic_plugin")
def dynamic_plugin(self, *args, paths: List = None, jobid: int = None, **kwargs):
    status = FileActionStatus(self.name, paths, jobid, get_current_task_queue_name())

    # Create a submitter to handle dynamic child task spawning
    submitter = DynamicSubmitter(
        status=status,
        settings={}, # Your dynamic template settings here
        task_id=self.request.id,
        chunk_size=40,
        chunk_gb=1,
```

```

        auto_chunk_size=False,
    )

    # Process paths and potentially spawn children
    for path in paths:
        submitter.add("files", path["path"])

    # The submitter automatically handles will_spawn_children flag
    # based on whether any children were actually spawned
    return submitter.dump()

```

## Customizing will\_spawn\_children Logic

You can override the `will_spawn_children()` method in your submitter to implement custom logic:

```

class MyCustomSubmitter(DynamicSubmitter):
    def will_spawn_children(self) -> bool:
        """
        Override to implement custom logic for determining if
        children will be spawned.

        Default behavior: returns True if any dynamic children
        were submitted.
        Customize this method to implement your own business
        logic.
        """
        # Example: only count certain types of children
        # return len(self._chunks) > 0 # Only count processing
        children

        # Example: add thresholds
        # return self._spawned_children and
        len(self._status.details["files"]) > 100

        # Default: return True if any children were spawned
        return self._spawned_children

@app.task(bind=True, name="dynamo.custom.custom_plugin")
def custom_plugin(self, *args, paths: List = None, jobid: int = None, **kwargs):
    status = FileActionStatus(self.name, paths, jobid, get_current_task_queue_name())

    submitter = MyCustomSubmitter(
        status=status,
        settings={},
        task_id=self.request.id,
        chunk_size=40,
        chunk_gb=1,
        auto_chunk_size=False,
    )

    # Your plugin logic here...

```

```
return submitter.dump()
```

### Simple Plugins (No Dynamic Children)

For plugins that don't spawn dynamic children, simply return `status.dump()` without any submitter:

```
@app.task(bind=True, name="dynamo.custom.simple_plugin")
def simple_plugin(self, *args, paths: List = None, jobid: int = None, **kwargs):
    status = FileActionStatus(self.name, paths, jobid, get_current_task_queue_name())

    # Process all paths without spawning children
    for path in paths:
        status.add("processed", path["path"])

    return status.dump()
```

### Why This Matters

The `will_spawn_children` field helps the hub track when your plugin has finished spawning dynamic children. Without proper tracking, a job may not report the correct status, such as reporting "ONGOING" after all tasks have completed, or reporting as completed while tasks are still in flight.

### Backward Compatibility

The `DynamicSubmitter` automatically handles the `will_spawn_children` field, so you don't need to manually set it. This ensures consistent behavior across all plugins that spawn dynamic children.

## Example Plugins

Here are a couple examples of functionality that can be added to the hub, these can be dropped into any template project.

### Email notification task

The intent of this plugin is to email a list of staff members at the end of a workflow to ensure that they are informed of its completion, it has extra key word arguments that allow the editing of the subject:

```
import sys

from email.mime.multipart import MIMEMultipart
from email.mime.text import MIMEText
from email.utils import formatdate
from smtplib import SMTP
from typing import List
```

```

from arcapix.dynamo.server.celeryapp import app
from arcapix.dynamo.server.status import FileActionStatus
from arcapix.dynamo.server.queue import get_current_task_queue_name

def send_email(email_to: List[str], email_from: str, subject: str,
message: str, server: str = "localhost"):
    """
    Sends an email through an already configured SMTP server

    :param email_to: List of email recipients
    :param email_from: Address that email derives from
    :param subject: Email subject
    :param message: Message to send
    :param server: Target SMTP server address
    :return: None
    """

    smtp_message = MIMEMultipart()
    smtp_message['From'] = email_from
    smtp_message['To'] = ', '.join(email_to)
    smtp_message['Date'] = formatdate(localtime=True)
    smtp_message['Subject'] = subject

    smtp_message.attach(MIMEText(message))

    try:
        smtp = SMTP(server)
        smtp.sendmail(email_from, email_to,
smtp_message.as_string())
        smtp.close()
    except OSError as error:
        # All SMTP errors are derived from OSError and catching
all SMTP errors from the base exception is not allowed
        print('Error sending notification email: %s', error)

@app.task(bind=True, name="dynamo.custom.email_staff")
def email_staff(
    self,
    *args,
    paths: List = None,
    jobid: int = None,
    staff_members: List = None,
    message: str = None,
    subject: str = None,
    server: str = None,
    from_address: str = None,
    **kwargs
):
    if not message:
        message = f"Job {jobid} has completed successfully
processing {len(paths)} paths"

```

```

if not from_address:
    from_address = "ngenea-worker@pixitmedia.com"

if not subject:
    subject = "Ngenea Worker Job completed successfully"

if not server:
    server = "localhost"

    status = FileActionStatus(self.name, paths, jobid, get_curren
t_task_queue_name())

    send_email(email_to=staff_members, email_from=from_address, s
ubject=subject, message=message, server=server)

return status.dump()

if __name__ == "__main__":
    sys.exit(0) # pragma: no cover

```

The `setup.py` will need editing to make the entry point the name of the function `email_staff` in the module that had been created for this example plugin.

To make use of this new task in the hub, here is an example workflow that will email staff members after all the data has been migrated with a custom subject and receiving email address:

```

{
  "name": "migrate_notif",
  "label": "Migrate with notif",
  "icon_classes": [
    "fa fa-cloud fa-stack-2x text-primary",
    "fa fa-refresh fa-stack-1x text-light"
  ],
  "discovery": null,
  "enabled": true,
  "visible": true,
  "fields": [],
  "filter_rules": [
    {
      "type": "all",
      "state": "all",
      "action": [
        {
          "name": "dynamo.tasks.migrate"
        },
        {
          "name": "dynamo.custom.email_staff",
          "staff_members": [
            "johnsmith@organisation.com",
            "admin@organisation.com"
          ]
        }
      ]
    }
  ]
}

```

```

    ],
    "subject": "Project number 7 job complete",
    "from_address": "notifications@organisation.c
om"
    }
  ]
}

```

## Running additional script

After running a set of tasks, you may need to execute a script on the host machine of the Ngenea Worker instance. The following plugin allows the execution of an arbitrary script located at `/opt/cloud_script.sh`:

**Note:** Any script run through this plugin will be run with root access

```

import sys

from subprocess import run as run_script
from subprocess import TimeoutExpired, SubprocessError, PIPE, STDOUT

from typing import List

from arcapix.dynamo.server.celeryapp import app

from arcapix.dynamo.server.status import FileActionStatus
from arcapix.dynamo.server.queue import get_current_task_queue_name

DEFAULT_SCRIPT = "/opt/cloud_script.sh"

@app.task(bind=True, name="dynamo.custom.run_cloud_script")
def run_cloud_script(
    self,
    *args,
    paths: List = None,
    jobid: int = None,
    script_location: str = None,
    timeout: int = 600,
    additional_args: List = None,
    use_paths: bool = False,
    **kwargs
):
    status = FileActionStatus(self.name, paths, jobid, get_current_task_queue_name())

    try:
        args = [script_location if script_location else DEFAULT_S

```

```

CRIPT]
    if additional_args:
        args = args + additional_args

    if use_paths:
        # Appends the paths to the arguments
        args = args + [path["path"] for path in paths]

    result = run_script(
        args,
        stdout=PIPE,
        stderr=STDOUT,
        check=True,
        timeout=timeout,
    )

    status.add_log(str(result.stdout))

    if result.returncode == 0:
        for path in paths:
            status.add("processed", path["path"])

    except TimeoutExpired:
        status.add_log("Called script timed out")
    except SubprocessError as sp_err:
        status.add_log(str(sp_err))

    return status.dump()

if __name__ == "__main__":
    sys.exit(0) # pragma: no cover

```

The `setup.py` will need editing to make the entry point the name of the function `run_cloud_script` in the module that had been created for this example plugin.

To make use of this new task in the hub, here is an example workflow that will run the default cloud script after all of the data has been migrated:

```

{
  "name": "migrate_cloud_script",
  "label": "Migrate with notif",
  "icon_classes": [
    "fa fa-cloud fa-stack-2x text-primary",
    "fa fa-refresh fa-stack-1x text-light"
  ],
  "discovery": null,
  "enabled": true,
  "visible": true,
  "fields": [],
  "filter_rules": [
    {
      "type": "all",

```

```

        "state": "all",
        "action": [
            {
                "name": "dynamo.tasks.migrate"
            },
            {
                "name": "dynamo.custom.run_cloud_script"
            }
        ]
    }
]
}

```

## SubDAG Helpers

Typically, workflows have a fixed definition. However, certain use cases require modifying the workflow at runtime. For instance, a task might need to dynamically batch paths for child tasks to ensure load balancing, or submit different child tasks based on the results of the current task.

Sub-DAGs enable the dynamic definition of workflows. A sub-DAG can consist of a single task or a chain/graph of multiple tasks. Once submitted, the sub-DAG is automatically integrated into the parent job for reporting and job control.

The worker repository provides a helper function called `task_template` which allows for defining a single task DAG graph for use with dynamic DAGs.

The function is defined in `arcapix.dynamo.server.dags.util` module. An example for defining a task using the DAG helper module is shown below:

```

from arcapix.dynamo.server.dags.util import task_template, submit_
subdag

def submit_stub_task(self, paths, source_site, dest_site,
**kwargs):
    stub_template = task_template(
        "dynamo.tasks.reverse_stub",
        kwargs={
            "hydrate": False,
            "overwrite": True,
        },
        site=dest_site,
    )

    submit_subdag(
        paths=paths,
        task_id=self.request.id,
        "dynamocore.tasks.dag.run_subdag",
        subgraph_template=stub_template
    )

```

For complex sub-DAGs, the worker repository provides a helper module in `arcapix.dynamo.server.dag.helper`. This module allows for defining a chain of tasks using the helper functions like `add_task` and `map` for use with dynamic DAGs.

An example for defining a chain of tasks using the DAG helper module is shown below:

```
from arcapix.dynamo.server.dags.helper import Graph, add_task
from arcapix.dynamo.server.dags.util import submit_subdag

def submit_chain_of_dag_tasks(self, paths, source_site, dest_site,
**kwargs):
    graph = Graph()

    xattr = graph.add_task(
        "dynamo.tasks.remove_location_xattrs_for_moved",
        kwargs={"jobid": jobid},
        site=source_site,
    )

    recall = graph.add_task(
        "dynamo.tasks.reverse_stub",
        parents=[xattr.id],
        kwargs={
            "jobid": jobid,
            "site": dest_site,
            "endpoint": endpoint,
            "hydrate": True,
            "overwrite": True,
            "skip_hash": True,
            "extra_flags": ["--skip-check-uuid"],
            "batch_size": REVERSE_STUB_BATCH_SIZE,
        },
        site=dest_site,
    )

    submit_subdag(
        paths=[{"path": i} for i in paths],
        task_id=self.request.id,
        "dynamocore.tasks.dag.run_subdag",
        subgraph_template=graph.to_dict()
    )
```

This example demonstrates how to use the `Graph` and `add_task` helpers to create a chain of tasks and submit them as a sub-DAG. The `submit_subdag` function is used to submit the sub-DAG with the specified paths and task ID, using the dynamically generated task graph template.

## Disaster Recovery / Cold Failover

It's possible to configure Ngenea Hub to be able to cold-failover to another node if it's running on a PixStor.

### Setup

#### Configure datastore

Configure Ngenea Hub to store its persistent data on the GPFS filesystem so it can be read by multiple nodes. This is done by settings the following setting in `/etc/sysconfig/ngeneahub`

```
DATA_DIR=/mmfs1/.arcapix/ngeneahub/data
```

#### Configure Networking

It's strongly recommended to configure a floating IP that can be used for the Ngenea Worker to connect to. This will allow cold failover without having to reconfigure workers.

This can be done by setting the following settings in `/etc/sysconfig/ngeneahub`:

- `SERVICE_CIDR`. Set this to the IP and netmask of the IP you want to be managed by ngeneahub. e.g. `192.168.2.3/24` for the IP `192.168.2.3` on a network with a netmask of `255.255.255.0`
- `SERVICE_INTERFACE`. Set this to the name of the interface the IP address should be added to. e.g. `man0`

Configure the workers to use this IP by editing `/etc/ngenea/ngenea-worker.conf` on each worker node and modifying `broker_url` and `result_backend`

#### Install Ngenea Hub

Install Ngenea Hub on multiple nodes as usual. Make sure `/etc/sysconfig/ngeneahub` are in sync across these nodes. Enable and start the service on one node only. Leave the service disabled and stopped on the other nodes.

#### Performing failover

In the case of a node failure, after confirming the services are no longer running on the other node, the following steps can be performed to bring the service up on another node:

*important* You must be certain the service is not running anywhere else before continuing, otherwise data loss can occur.

- Remove the lock file from `${DATA_DIR}/.lock`.
- Start the Ngenea Hub service

## Migration from local datastore

After setting `DATA_DIR` in `/etc/sysconfig/ngeneahub` and restarting the service, data will automatically be migrated. This is a one-way operation.

## Installing SSL Certificates

In a PixStor environment, foundational web server setup tasks—such as installing NGINX, configuring it, and setting up a proxy for Hub access—are already handled as part of the standard deployment. This simplifies the process for administrators, as they don't need to repeat these initial steps.

Generating an SSL certificate falls outside the scope of our guidance (as this typically depends on organizational security policies or certificate authorities).

Let us understand, **How to Install SSL Certificates**

PixStor systems include self-signed SSL certificates. To replace the default certifications with custom certificates, overwrite the certificate files on each of the PixStor nodes:

`/etc/pki/tls/certs/arcapix.crt` - the full server certificate

`/etc/pki/tls/private/arcapix.key` - the private key for the certificate

Ensure that the file permissions are set appropriately on these files:

```
chmod 644 /etc/pki/tls/certs/arcapix.crt
chown root:root /etc/pki/tls/certs/arcapix.crt
chmod 640 /etc/pki/tls/private/arcapix.key
chown root:nginx /etc/pki/tls/private/arcapix.key
```

Once updated these files, restart the `nginx` web server to load the new certificates:

```
systemctl restart nginx
```

**Note:** To learn about **“How to set up an nginx proxy for hub if you're not using PixStor”**, please contact us.

## Queues

When a system needs to handle many tasks (called jobs), it organizes them into different **queues**. A **queue** is like a waiting line where jobs sit until a worker is ready to run them.

By using **custom job queues**, you can control how and when certain jobs run. Each queue can have its own settings, like how many jobs it can run at the same time.

Here are some examples:

- **High Priority Queue:** This queue is for important jobs that need to be finished quickly. It uses more threads (like more workers), so these jobs are handled faster.
- **Low Priority Queue:** This queue is for jobs that are not urgent. It uses fewer threads, which means jobs here will take longer, but that's okay because they're not time-sensitive.
- **Transparent Recall Queue:** This special queue is only for transparent recall jobs. It ensures these jobs aren't delayed by other tasks, so they always get the attention they need.

In addition to these custom queues, there is always a default queue. If you don't choose a specific queue when submitting a job, it will automatically go to the default queue.

## Configuration

Queues are set up in a file called the worker configuration file, which is located at: `/etc/ngenea/ngenea-worker.conf`

To create a new queue, you simply add a new section to this file using the format: `[Queue queue_name]`

For example, to create a queue named **highpriority** that can run 20 jobs at the same time, you would add this:

```
[Queue highpriority]
threads = 20
```

### Rules for Naming Queues:

- You can use **letters, numbers, underscores (\_), and hyphens (-)**.
- **Spaces are not allowed** in queue names.

Each queue can have settings to control how it works. The most important one is:

```
- **threads**: This tells the system how many jobs it can run at the same time in that queue.
```

### Inheriting Settings

If you don't add any settings to a queue, it will **inherit the default (global) settings** from a special section in the same file called `[settings]`.

Here's an example:

```
[settings]
...
threads = 4

[Queue transparent_recall]
```

### [Queue highpriority]

```
threads = 10
```

In this case:

- The **highpriority** queue will run up to **10 jobs at once** because it's explicitly set.
- The **transparent\_recall** queue doesn't specify a number of threads, so it **uses the global setting**, which is 4.
- If there is no global `threads` setting at all, the system uses **10 threads by default**.

## Functions

Job queues can be used for different types of tasks, called functions. Each queue supports a specific set of these functions.

### Functions in Custom Queues

Custom queues (the ones you define yourself) can run the following functions:

- `worker` - runs the main workflow tasks
- `discovery` - runs discovery tasks like recursive scans or snapdiff
- `custom` - runs tasks from `custom plugin`

### Functions in the Default Queue

The **default queue**, which always exists, supports all the functions listed above **plus two more**:

- `interactive` - handles internal tasks like browsing files
- `settings` - handles configuration tasks like creating spaces or setting policies

**Note: Custom queues do not support `interactive` or `settings` functions.** Only the default queue can run these.

By default, all functions in a queue share the same number of threads. For example, if a queue has 20 threads, each function can use those 20 threads as needed.

You can also **customize how many threads each function gets**.

Here's an example:

### [Queue highpriority]

```
threads = 20
custom = {"threads": 10}
```

In this example:

- The **worker** and **discovery** functions will each use up to **20 threads**.
- The **custom** function is limited to **10 threads**, even though the total thread count is 20.

**Note:** If you set per-function settings in the [settings] section (the global configuration), they **only apply to the default queue**. These settings are **not inherited** by your custom queues.

## Disabling Functions

You can **turn off (disable)** specific functions for a queue if you don't want certain types of tasks to run there.

For example, if you don't want a queue to run custom plugin tasks, you can disable the `custom` function by setting it to `false`.

Example:

```
[Queue no-custom]
custom = false
```

### In this example:

- The custom function is disabled.
- That means **custom plugin jobs will not run** in the `highpriority` queue.
- This is useful when you want a queue to handle only specific types of jobs and avoid others.

In the same way, `default` queue functions can be disabled.

For example, in a cluster, you may set the management node to only run settings tasks

```
# management node
[settings]
discovery = false
worker = false
custom = false
```

And, you set `ngenea` nodes to only run workflow tasks, and not run settings tasks

```
# ngenea node
[settings]
settings = false
```

**Warning:** Each default queue function must be enabled on at least one node within a cluster, or else Hub will not function correctly.

## Queue discovery

When you update the worker config file to **add a new queue**, it will automatically start up. If you **remove a queue** from the config, it will automatically shut down.

If this doesn't happen right away, you can force the worker to reload the config with this command:

```
systemctl reload ngenea-worker
```

This reloads the worker config without affecting any queues that haven't changed.

## Queue Visibility in Ngenea Hub

Ngenea Hub automatically picks up new queues shortly after they're started, using worker heartbeats. New queues will show up in the Hub and can be used in workflows almost immediately.

However, **removing a queue** from the config **doesn't automatically remove it from Ngenea Hub**.

Removed queues must be manually de-registered using:

```
ngeneahubctl manage remove_queue <site> <queue>
```

## Re-using a Queue Name

If you want to re-use a queue name that was previously removed:

First, restart the worker completely: `systemctl restart ngenea-worker`

Then remove the queue using this command:

```
ngeneahubctl manage remove_queue --offline-only <site> <queue>
```

- `--offline-only` will only remove the queue if it's not running. If the queue is still active, it will be recreated.
- To ensure a queue is completely removed and doesn't come back, shut it down first and then use `--offline-only`.

Note: If you submit a job to a queue which has been shutdown and not de-registered, the job will not be processed unless the queue is configured and started up again.

## Queue removal

When a queue is removed from the worker configuration file and the worker is reloaded, the queue will be shutdown.

However, the removed queue will *not* be automatically de-registered from Ngenea Hub.

**Warning:** If you submit a job to a queue which has been shutdown and not de-registered, the job will not be processed unless the queue is configured and started up again.

Removed queues **must** be manually de-registered using the following command

```
ngeneahubctl manage remove_queue <site> <queue>
```

If the queue is brought back online, or if a new queue is created with the same name, it **will not** be recreated in Ngenea Hub until the queue has expired.

Removed queues expire when no heartbeats have been received for some interval after being removed. The expiry interval is configured using the `REMOVED_QUEUE_CLEANUP_INTERVAL` setting, which defaults to 1 day.

To immediately re-use the same queue name of a previously removed queue, the `--offline-only` flag can be used. This must be preceded by a complete worker restart

```
systemctl restart ngenea-worker
```

- `--offline-only` will remove the queue only if the queue is offline.
- If the queue is still online, or comes back online, it will be automatically recreated.

Note: If you send a job to a queue that has been shut down but not de-registered, the job won't be processed until the queue is set up and started again.

## Memory considerations

Queues use about **40MB of RAM per thread** when no tasks are running.

Each queue has three functions, and if all three functions in a queue are set up with the same number of threads, the memory needed will be roughly: **threads \* 125MB**.

For example:

- A high-priority queue with 20 threads per function (60 threads in total) will use about 2.5GB of memory when no tasks are running.
- A low-priority queue with 5 threads per function (15 threads in total) will use about 625MB of memory when no tasks are running.

Keep in mind that **task execution** will require additional memory on top of this baseline. The more threads there are, the more tasks can run simultaneously, which means a queue with many threads can use a lot of memory at peak times.

## Workflows

When submitting a workflow, you can specify a queue to use. If no queue is provided, the **default queue** will be used.

For workflows that involve tasks running on **multiple sites** (like `send` or `sync` workflows), the **same queue** will be used across all sites. If the specified queue doesn't exist on one of the sites, the **default queue** will be used instead.

You can also assign a different queue to each task within a workflow. This is done by specifying the queue in the task parameters, like so:

```
{
  "name": "dynamo.tasks.migrate",
  "queue": "highpriority"
}
```

## Selecting Queues at Runtime

When you're setting up a workflow, you can choose which queue to use for each task at the time the workflow runs (this is known as "runtime"). This allows you to dynamically decide which queue a task should use, based on the situation or inputs you provide while the workflow is executing.

You can use workflow **fields** to define which queue to use for tasks within that workflow. These fields allow you to pass values into the workflow at runtime.

For example, in the built-in **send workflow**, there's a field called `destinationqueue`. This field can be used to specify the queue that should be used for the task, and it can be passed when the workflow runs, just like how you pass the `destinationsite` field to specify the site the task should go to.

Here's an example to show how it works:

```
{
  "paths": [
    "/mmfs1/data/project_one",
  ],
  "site": "london",
  "queue": "highpriority",
  "workflow": "send_to_site",
  "fields": {
    "destinationsite": "dublin",
    "destinationqueue": "lowpriority"
  }
}
```

For more information on constructing and running workflows, see [Custom Workflows](#)

## Usage

## Monitoring and Management

### Managing Ngenea Hub with systemd

`systemd` is the tool that makes sure all the necessary programs and services on a Linux system start automatically, run properly, and restart if they crash.

The `ngeneahub` `systemd` service ensures that the application starts automatically on boot, stays running in the background, and can be easily managed using standard Linux commands like `systemctl`.

**The service name is:** `ngeneahub`

You can use the following commands to manage it:

```
sudo systemctl status ngeneahub      # Check if it's running
sudo systemctl start ngeneahub       # Start the service
sudo systemctl stop ngeneahub        # Stop the service
sudo systemctl restart ngeneahub     # Restart the service
```

## Using the Command-Line Tool: `ngeneahubctl`

`ngeneahubctl` is a command-line tool designed to manually control the individual components of Ngenea Hub, such as starting, stopping, or checking the status of services like the web app or background jobs.

Unlike `systemd`, which manages the entire Ngenea Hub service as a whole, `ngeneahubctl` offers more fine-grained control and is especially useful for debugging or development purposes.

This tool is particularly helpful when `systemd` is not functioning correctly or if you want to test specific parts of the application without restarting the entire service.

*In short ``ngeneahubctl`` is a component-level tool that complements `systemd` (but doesn't replace it) by enabling quick debugging, testing, and troubleshooting of individual Ngenea Hub components.*

## Docker Containers

**Docker containers** are compact, isolated environments that package an application along with all its libraries and configurations, allowing it to run consistently across different systems without interference.

Ngenea Hub uses Docker containers to run its different components in isolated environments, which improves stability, scalability, and ease of management. Each container serves a specific function within the system:

### Core Components

- `ngeneahub_backend`: A middleware service built on Django. It provides the **REST API**, orchestrates jobs and workflows, and acts as the central logic layer connecting the database, UI, and background tasks.
- `ngeneahub_db`: A **PostgreSQL** database container. This third-party service stores all persistent data, including configurations, logs, and metadata for tasks and jobs.
- `ngeneahub_redis`: A **Redis** container acting as a fast in-memory **key-value store**. It serves multiple roles:
  - Acts as a **Celery results backend**, storing temporary task results.
  - In some configurations, serves as the **task queue** (in place of RabbitMQ).
  - Facilitates **direct communication** of task/job states between the Hub and workers.

- `ngeneahub_rabbitmq` (optional): A **RabbitMQ** container used as the **task queue**. Tasks are transmitted to workers via a pub-sub model. In some setups, Redis replaces RabbitMQ for this role.

## Task Management & Scheduling

- `celery` (internal worker): Despite the name, this container is an **internal Celery worker** responsible for asynchronous internal tasks like job refreshes and housekeeping. It does not represent the full Celery engine.
- `celery-dags`: Handles **DAG-based workflow** orchestration. This worker processes callbacks, submits child tasks, and handles the state and results of each step in a DAG.
- `celery-events`: Specialized for receiving streamed events from **discovery services** (e.g., SnapDiff). This replaces large event payloads that might exceed Celery's size limits.
- `celery-results`: Receives streamed task results for tasks that produce large outputs, avoiding Celery payload size issues.
- `celery-beats`: A **Celery scheduler**. Triggers both internal and user-defined periodic tasks (e.g., data syncs, housekeeping routines).
- `celery-monitor`: Monitors the health and availability of Celery workers by listening for **heartbeat** signals and updating the central database accordingly.
- `celery-exporter`: Collects Celery **performance metrics**, such as queue lengths and worker status, and exposes them to Prometheus.
- `task-daemon`: A lightweight internal service responsible for updating task state at the moment a task is picked from the queue. Communicates via **Redis**.

## Monitoring & Metrics

- `prometheus`: A metrics storage and query engine, It gathers system and **Celery metrics** (via `celery-exporter`) and provides an API for data access (not publicly exposed).
- `grafana`: A visualization dashboard that displays system metrics collected by Prometheus. It is accessible via the `/hubmetrics` endpoint.

### Hub Task Metrics

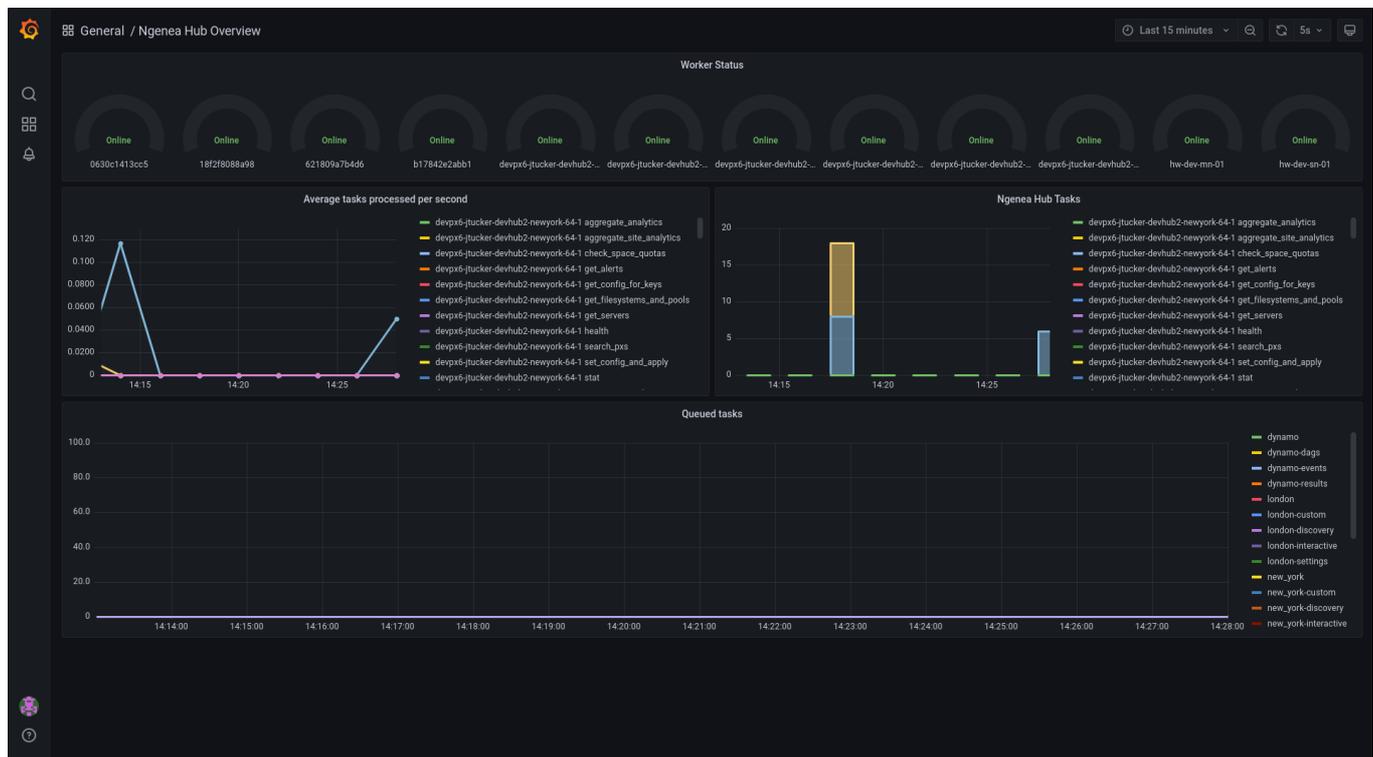
The Hub Task Metrics is a monitoring feature provided by Hub. This feature helps you monitor the status of tasks that are currently queued or being processed in the Hub, as well as the status of the workers that execute these tasks.

#### The Grafana Panel

- Grafana is a popular open-source platform for visualizing time-series data like metrics and logs.
- The Hub Task Metrics use Grafana panels to display data visually.
- The panel shows the current queue of tasks waiting to be processed and the status (like idle, busy, or down) of each worker.

You can access the metrics at `http(s)://myhub/hubmetrics`, replacing `myhub` with your Hub's actual hostname or IP address.

**Authentication is required to access the metrics page** to protect sensitive Hub data, so if you're not logged in, you'll be redirected to the login page or see an error.



## Health Endpoints

Health endpoints are special URLs provided by a system to report the current status or health of various components it manages. They are used to monitor and check if everything is working properly.

To check the status of all the sites and the nodes (servers or machines) managed by Ngenea Hub, you can send a `GET` request to the special URL endpoint `/api/health`.

This request asks the Hub to provide information about:

- All the sites it knows about.
- The nodes within each site.
- The status of the Hub service itself.

The Hub then tells you the health status based on how many nodes are currently online and working at each site using the following states:

- `ok`: All nodes in the site are working fine.
- `warning`: Some nodes in the site are offline or not responding.
- `critical`: One or more entire sites are completely offline (no nodes are working).

So, by making this `GET` request, you get a quick overview of which parts of your infrastructure are healthy and which might have issues.

To make a `GET` request, use the following command:

```
curl -X 'GET' \
  'http://myhub/api/health/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <api_key>'
```

**Note:** You can run the `curl` commands in a **bash environment**. If you're using **Windows**, it's recommended to use a tool like **Git Bash**.

Make sure to replace `<api_key>` with your actual API key.

For more details on generating API keys, refer to the [Programming Guide](#).

An example output of the health endpoint can be seen below:

```
{
  "overall_health": "ok",
  "hub_status": {
    "health": "ok"
  },
  "site_status": [
    {
      "site": "site1",
      "health": "ok",
      "nodes": [
        {
          "name": "pixstor-east-ng-test",
          "health": "ok",
          "online": true
        }
      ]
    },
    {
      "site": "site2",
      "health": "ok",
      "nodes": [
        {
          "name": "pixstor-west-ng-test",
          "health": "ok",
          "online": true
        }
      ]
    }
  ]
}
```

A request can also be performed to specific sites using `/api/sites/ID/health/` to view the site specific health status:

```
{
  "site": "site1",
  "health": "ok",
  "nodes": [
```

```

    {
      "name": "pixstor-east-ng-test",
      "health": "ok",
      "online": true
    }
  ]
}

```

## Custom Workflows

### Defining workflows

It's possible to define custom workflows which use pre-defined rules as building blocks to create your workflow.

**Note:** Custom workflows are not currently exposed via the UI. Use the API `/api/workflows/` endpoint to create custom workflows

A workflow definition requires the following parameters:

Name	Description
<code>name</code>	The unique name for this workflow. For easy of submission again the API, this should not contain spaces.
<code>label</code>	The human readable name for this workflow, can contain spaces.
<code>icon_classes</code>	List of icon classes to represent the workflow in the UI. Font Awesome is useful here.
<code>filter_rules</code>	A list of rules to apply to provided files that match defined states. Described in more detail below.
<code>fields</code>	A list of runtime fields. Described in more detail below.

Additionally, you can optionally provide:

Name	Description
<code>discovery</code>	Which discovery task the workflow should be used by default, this can be either recursive or snapdiff.
<code>discovery_options</code>	A json containing any additional options to pass to the workflow default discovery. Described in more detail below.

## Filter Rules

Filter rules are defined in JSON. They are a list of individual rules in a mapping format that will be performed on each matching file result when a discovery task is complete. If called through the API with no discovery task provided, rules will be applied to any states provided in the workflow input.

Steps are defined in JSON. Steps is a list of individual steps that will be performed serially. Each rule must contain the following:

Name	Description	Required
<code>state</code>	The state of a result provided by the discovery task with any given path, an example of that could be “processed” or “modified” more details about this are in the discovery section.	Yes
<code>type</code>	The type of result the rule will apply to, the only valid types are: <code>file directory symlink all</code>	Yes
<code>action</code>	A list of tasks to perform on files that match the state and type	Yes
<code>include</code>	A list of globs to apply to provided files to limit actions to just them.	No
<code>exclude</code>	A list of globs to apply to provided files. Described in more detail below.	No
<code>ignore_site_includes</code>	Whether to ignore any global includes defined on the site the workflow will run on	No
<code>ignore_site_excludes</code>	Whether to ignore any global excludes defined on the site the workflow will run on	No

These rules control which actions will be performed on certain files based on their given state that they have been given following specific discovery tasks such as `snapdiff` or provided in the initial input of a workflow. These states can allow direct control of workflows performed on files provided, allowing multiple workflow paths within the same job by utilizing multiple rules controlling specific states with additional control with include and exclude path rules.

Alongside rules bound to a state, there are two special states that rules can be used, these being `default` and `all`. Rule sets cannot have both `default` and `all` rules within them, but it is possible to have multiple of one type with different sets of exclude and include rules to allow for more granular control.

Rules defined with `default` as their `state` and `type` will perform their action on paths that have not been captured by all other rules within a given rule set. This means that if there are specific file states that need to be actioned differently, paths

that do not match any other rules actioned against without ignoring those non-matching paths.

The other special rule type is rules with the `state` and `type` of `all`. This rule will perform its action on all paths regardless of their provided type and state. This is an additional operation so if another rule has an explicit rule provided it will perform multiple actions on the same path, for each matching rule in rule set. Simple workflows are typically composed of a single rule with the state and type of `all` as this will simply process all paths provided to it.

Within each rule, there must be a list of actions to perform on the resulting file provided within the `action` key. These actions will be performed serially. Each action must be a mapping that contain the following in each entry:

Name	Description	Required
<code>name</code>	The name of the task to run, e.g. <code>dynamo.tasks.migrate</code>	Yes
<code>site</code>	The name of the site to run against, if this is not provided it will use the site provided within the workflow call.	No
<code>queue</code>	The name of the queue the task should run on. The queue must exist on the site the task will run against. If not provided it will use the queue provided in the workflow call, or the <code>default</code> queue if one is not provided	No

If steps have optional arguments, these can be passed as additional key:value pairs in these step definition mapping to pass those optional arguments.

As an example we can define a generic rule that captures every type of file and state and sends it to a second site, this would be useful for a bulk move using the `recursive` discovery task to cover all types of files in directories provided to the task:

#### Example 1 - Send to london

```
{
  "state": "all",
  "type": "all",
  "action": [
    {
```

```

    "name": "dynamo.tasks.migrate",
    "queue": "highpriority"
  },
  {
    "name": "dynamo.tasks.reverse_stub",
    "site": "london"
  }
]
}

```

## Runtime fields

A workflow needs to be able to accept parameters as it submitted. Taking example #1 above, “london” doesn’t want to be hardcoded as the destination site, as that would mean a new workflow would need to be defined for each possible destination.

Instead, fields can be defined, that in turn will need to be provided at workflow submission time. Fields are defined as a mapping with the following keys:

Name	Description	Required
name	The name of the field.	Yes
label	The friendly name for this field, used for presenting in the UI	Yes

Name	Description	Required
type	<p>The type of the field, valid options are:</p> <ul style="list-style-type: none"> <li>• <code>string</code> - a free text field</li> <li>• <code>int</code> - a free text field that will be validated a integer</li> <li>• <code>bool</code> - a checkbox</li> <li>• <code>choices</code> - A dropdown box representing a list of choices, populated from choices list of objects.</li> <li>• <code>enum[enum_type]</code> - A dropdown box representing a choice of option, populated from <code>enum_type</code>. <code>enum_type</code> can be one of the following <ul style="list-style-type: none"> <li>◦ <code>site</code> - A list of all the sites Ngenea Hub has defined</li> <li>◦ <code>queue</code> - A list of all queues available on the selected site</li> </ul> </li> <li>• <code>list</code> - a list of values of any scalar type</li> </ul>	Yes
default	The default value for runtime fields	optional

The following is an example of a custom field definition for providing a site to an action step:

#### Example 2 - Custom field definition

```
[
  {
    "name": "target_site",
    "label": "Site to migrate to",
    "type": "enum[site]"
  }
]
```

#### Custom field definition with default value

```
[
  {
    "name": "target_site",
    "label": "site to migrate to",
    "type": "enum[site]",
    "default": "london"
  }
]
```

If default value is specified in runtime fields, it will take the default value for fields while running workflow if the user input is not given otherwise it will always use the user input.

Back in the definition of an action step, any value that is prefixed with a `*` will be used as a field name and the value replaced instead of a literal string.

The following example, modifies example #1 to use the custom field as defined in example #3:

#### Example 3 - Updated rule now using custom fields

```
{
  "state": "all",
  "type": "all",
  "action": [
    {
      "name": "dynamo.tasks.migrate"
    },
    {
      "name": "dynamo.tasks.reverse_stub",
      "site": "*target_site"
    }
  ]
}
```

So, a complete request to create a workflow that will process all file and state types with a dynamic “site” field will look like:

#### Example 4 - Full workflow request

```
{
  "name": "send_file",
  "label": "Send files from one site to another",
  "icon_classes": ["fa fa-cloud fa-stack-2x text-primary", "fa fa-refresh fa-stack-1x text-light"],
  "filter_rules": [
    {
      "state": "all",
      "type": "all",
      "action": [
        {
          "name": "dynamo.tasks.migrate"
        },
        {
          "name": "dynamo.tasks.reverse_stub",
```

```

        "site": "*target_site"
    }
}
],
"fields": [
    {
        "name": "target_site",
        "label": "Site to migrate to",
        "type": "enum[site]"
    }
]
}

```

The following is an example of a custom field definition for providing a choices to an action step:

#### Example 5 - Custom field definition

```

[
    {
        "name": "sync_policy",
        "label": "sync_policy",
        "type": "choices",
        "choices": [
            {
                "label": "Newest",
                "value": "newest"
            },
            {
                "label": "Sourcesite",
                "value": "sourcesite"
            }
        ]
    }
]

```

choices support both string and integer type values.

Back in the definition of an action step, any value that is prefixed with a `*` will be used as a field name and the value replaced instead of a literal string.

The following example, uses the custom field in action:

#### Example 6 - Updated rule now using custom fields

```

{
    "state": "all",
    "type": "all",
    "action": [
        {
            "name": "dynamo.tasks.migrate"
        },
        {
            "name": "dynamo.tasks.reverse_stub",

```

```

        "sync_policy": "*sync_policy"
    }
]
}

```

So, a complete request to create a workflow that will process all file and state types with a static choices field will look like:

#### Example 7 - Full workflow request

```

{
  "name": "send_file",
  "label": "Send files from one site to another",
  "icon": "<span class='fa-stack'><i class='fa fa-cloud fa-stack-2x text-primary'></i><i class='fa fa-angle-right fa-stack-2x text-light'></i></span>"
  "filter_rules": [
    {
      "state": "all",
      "type": "all",
      "action": [
        {
          "name": "dynamo.tasks.migrate"
        },
        {
          "name": "dynamo.tasks.reverse_stub",
          "sync_policy": "*sync_policy"
        }
      ]
    }
  ],
  "fields": [
    {
      "name": "sync_policy",
      "label": "sync_policy",
      "type": "choices",
      "choices": [
        {
          "label": "Newest",
          "value": "newest"
        },
        {
          "label": "Sourcesite",
          "value": "sourcesite"
        }
      ]
    }
  ]
}

```

## Running Workflows

Once a workflow has been defined, it can be performed through the file browser by selecting files and directories and clicking the actions button. It is then possible to

select the workflow you wish to call, this workflow call will not use a discovery task unless a directory is selected, in that case it will make use of the recursive discovery step.

This can also be performed via a POST request to `/api/file/workflow`. When called through the API, you have the option to provide a discovery step, these steps can expand the initial paths provided to them to either recursively perform actions or perform something like a file difference scan.

Name	Description	Type	Required
<code>paths</code>	A list of paths to perform the workflows against, these can be just strings of file absolute file paths or can be JSON with the keys of "path" and "state", detailed example in example 7	JSON List	Yes
<code>site</code>	The site to perform the workflow against	String	Yes
<code>queue</code>	The queue to run workflow tasks on. The default queue will be used if not provided.	String	None
<code>fields</code>	The runtime fields for a workflow	String	Yes
<code>discovery</code>	The discovery phase to use for this workflow run, this will override any defaults	String	No
<code>job</code>	The ID of a job that this workflow should be run within	Integer	No

Following the example workflow defined above, you can call the workflow to recursively send all files within any paths provided using the following POST to `/api/file/workflow`:

**Example 8 - Calling example workflow**

```
{
  "paths": [
    "/mmfs1/data/project_one",
    "/mmfs1/data/project_two"
  ]
}
```

```

],
"site": "london",
"queue": "highpriority",
"workflow": "send_file",
"discovery": "recursive",
"fields": {
  "target_site": "dublin",
}
}

```

This will now migrate all files within `/mmfs1/data/project_one` and `/mmfs1/data/project_two` and then recall them at the site defined as `dublin`.

If there is a more complex workflow that have been defined that includes rules for specific states, the input paths can include this state information. This behaviour can be only be used when no discovery state is provided, an example of a custom rule set using could be:

#### Example 9 - Calling workflow with state data

```

{
  "name": "migrate_state",
  "label": "Stateful file migration",
  "filter_rules": [
    {
      "type": "all",
      "state": "modified",
      "action": {
        "name": "dynamo.tasks.migrate"
      }
    },
    {
      "type": "all",
      "state": "moved",
      "action": {
        "name": "dynamo.tasks.delete_paths_from_gpfs"
      }
    }
  ],
  "discovery": null,
  "fields": []
}

```

Here is a simple rule set that will migrate all paths provided with the state `modified` and will delete all paths provided with the state `moved`. With this example workflow provided you can perform a POST to `/api/file/workflow` with the following JSON:

#### Example 10 - Calling workflow with state data

```

{
  "paths": [
    {
      "path": "/mmfs1/data/project_one",
      "state": "modified"
    },
    {
      "path": "/mmfs1/data/project_two",

```

```

        "state": "moved"
    }
  ],
  "site": "london",
  "workflow": "migrate_state",
  "discovery": null,
  "fields": {}
}

```

Using multiple state based rules with different include and exclude path filters, you could achieve more complex behaviour in workflow calls for more finite control.

## Discovery Steps

Discovery steps can make complex large bulk operations much more manageable to call, allowing you to provide a single path that expands to cover all the contents of a path, or to see time based differences for a given path.

**Note:** If a workflow is submitted without a discovery task explicitly provided, it will default to using the discovery task defined as the default during the workflow's creation, visible via the workflow's "discovery" attribute. To avoid this, it is possible to explicitly pass `null` as the discovery task via the API to skip any discovery phase and additional processing on the paths provided and instead process the actions specified using the rules, without any additional checks.

Name	Description	Supported states
<code>recursive</code>	Performs a recursive expansion of the initial provided paths. This allows paths to be expanded to cover all sub file and directories, it will then perform the defined action for all the generic rules in a workflow against all resulting files.	<code>all</code>
<code>snappdiff</code>	Performs a time based file scan on an independant fileset between the last time a scan was performed. It will retrieve all file differences between those moments in time and the state of that file.	<code>created updated moved deleted all</code>

For more complex discovery steps such as `snapdiff`, there are defined states that files, directories and links can be in once it has completed its scan. This allows more explicit control of file and state control within a single call to a workflow. If for example you want all results with the type of `file` that have the state `created` to be sent to another site without any temporary files, a rule to cover that could be:

#### Example 11 - Custom rule for filtering `snapdiff` discovery results

```
{
  "state": "created",
  "type": "file",
  "exclude": ["*.temp"],
  "action": [
    {
      "name": "dynamo.tasks.migrate"
    },
    {
      "name": "dynamo.tasks.reverse_stub",
      "site": "*target_site"
    }
  ]
}
```

## Discovery Options

Additional options can be passed to the discovery task by setting `discovery_options` on the workflow. The supported options are those described in [Discovery Steps](#).

#### Example 12 - Passing options to the discovery

```
{
  "discovery": "recursive",
  "discovery_options": {
    "skip_missing": false
  }
}
```

Discovery options will be used with the workflow default discovery only. If a different discovery is set at runtime, the discovery options will be ignored. Discovery options cannot currently be overwritten at runtime.

## Includes and Excludes

Includes and excludes can be used to select paths that individual filter rules should apply to, or generally limit which paths should be handled during a workflow run.

Include/exclude patterns behave like unix shell pattern matching ('globbing'). The 'wildcard' asterisk character `*` will match any characters within a string. Patterns must match whole paths; partial matches are *not* supported, except through the use of wildcards.

Includes and excludes are combined as "a path matching any includes and not any excludes". For example `{"include": ["/mmfs1/data/*"], "exclude": ["*.tmp"]}` would match only files in `/mmfs1/data`, but not files in that directory with the `.tmp`

extension. If no includes are defined, then all files are considered included (unless explicitly excluded).

There are three places where path include and exclude patterns can be defined:

- on a site
- within a filter rule
- at runtime, when a workflow is submitted

Site patterns can be used to apply includes and excludes globally, to all workflows and workflow steps. If defined, these will be *appended* to any patterns defined within a filter rule or at runtime.

For example, if a rule defines `{"exclude": ["*.tmp"]}` and the site defines `{"exclude": ["*.cache"]}`, then the combined excludes for that rule would be `{"exclude": ["*.tmp", "*.cache"]}`

If not desired, this behaviour can be overridden by specifying `ignore_site_includes` / `ignore_site_excludes` either on a per-rule basis, or for all rules by passing those parameters when submitting a workflow run.

For workflows involving multiple sites, such as send and sync, only the primary (source) site patterns will be considered.

If includes and excludes are passed when submitting a workflow, they will be applied to all filter rules within the workflow, replacing any patterns already defined within the workflow rules. Any site patterns will be appended to the runtime patterns, unless 'ignore' is specified.

## Jobs

### Housekeeping

Job details are kept for a time after job completion. During this time, they can be viewed in the UI.

But older jobs are periodically culled from the database, to keep it to a manageable size. The housekeeping process runs once a day, and removes results for any job that completed more than 90 days ago (by default). A different 'time-to-live' (TTL) can be set using the `jobs_ttl` configuration - see [Configuration](#) for more information.

## Site Sync

Ngenea Hub provides the facility for syncing data from one site to another.

Site Sync applies changes in one direction. See also [Bidirectional Site Sync](#) for applying changes in both directions.

Synchronisation is achieved by utilising a scheduled workflow which periodically discovers file and directory changes within an Independent Fileset on a source site and applying those changes to a target site. Changes are applied by sending newly created or recently modified files and directories, including deleting or moving files or directories in place on the target site as necessary to match the source site.

The [REST API](#) can also be utilised to achieve the same setup.

## Troubleshooting

If you encounter issues with sync, refer to the [sync troubleshooting guide](#) page for guidance.

## Bidirectional Site Sync

Ngenea Hub provides the facility for syncing data between sites.

Bidirectional Site Sync is similar to [Site Sync](#), but applies changes in both directions. If a Bidirectional Site Sync runs between sites A and B, changes on site A will be applied on site B, followed by changes on site B being applied on site A.

Synchronisation is achieved by utilising a scheduled workflow which periodically discovers file and directory changes within an Independent Fileset on each of the sites and applies those changes to the other site. Changes are applied by sending newly created or recently modified files and directories, including deleting or moving files or directories in place on the target site as necessary to match the other site.

A prerequisite for a working Bidirectional Site Sync is that the Independent Fileset has been created on both sites.

The principles of setting up Bidirectional Site Sync are similar (but with some differences explained below) to setting up a Site Sync, so please refer to the walkthrough on the [Site Sync page](#) for detailed instructions. It can be done using the Ngenea Hub UI or the [REST API](#).

## Schedule

### Discovery

Create a new schedule. Unlike with Site Sync, for Bidirectional Site Sync set the schedule's Discovery to `bidirectional_snapdiff`.

This discovery type operates identically to the `snapdiff` discovery type, with snapshots used to track changes over time within an Independent Fileset.

A separation is enforced between `bidirectional_snapdiff` schedules and schedules with other discovery types. Whereas the Discovery of other schedules may be changed, a change from or to the `bidirectional_snapdiff` discovery type is not allowed. This is to ensure consistency of the specific workflow rules that apply to Bidirectional Site Sync.

## Time criteria

Unlike with Site Sync, a Bidirectional Site Sync will not be triggered if the previous sync is still running. This means that some syncs will be skipped if scheduled closer together than the time it takes to complete a sync.

## Workflow

### Subscribing a workflow

Select the `Bi-directional Site Sync` workflow.

This is the only workflow that may be subscribed to a `bidirectional_snapdiff` schedule, and it cannot be subscribed to other types of schedule.

A `bidirectional_snapdiff` schedule may have at most one subscribed workflow.

### Outcome

When executing the scheduled workflow, only one job is created and appears within the schedule details page. This job includes the tasks for both the snapdiff discoveries (one on each site), as well as the tasks that enact the sync in each direction.

## Troubleshooting

If you encounter issues with sync, refer to the [sync troubleshooting guide](#) page for guidance.

## Search

The search endpoint provides the ability to search for files across multiple sites, and aggregate the results.

Search is performed in two steps - submitting a query, and retrieving the results.

## Submitting a query

Search performs a query by submitting asynchronous tasks to each requested site. The sites then perform the actual search and return results as available.

A search is initiated by `POST`ing a query to the search endpoint

```
curl -s -X POST 'http://example.com/api/search/' -H 'Accept: application/json' -H 'Content-Type: application/json' -H "Authorization: Api-Key $TOKEN" -d '{"path": "/mmfs1/data", "sites": ["site1"], "recursive": true, "filters": {"hsm.status": "migrated"}}'
```

The search request payload is made of

name	description
path	Directory to query
sites	List of one or more sites to search. Default: all sites
recursive	Whether to search the path recursively. Default: false, only immediate children of path will be returned.
filters	A collection of filters against arbitrary metadata, see below. Default: None
metadata_fields	A list of metadata fields to include in search results. This can include specific field names (e.g. hsm.status), or namespace wildcards (e.g. core.*) to select all fields in a given namespace. Default: all available fields.
merge	If the same file exists on multiple site, this will cause them to be merged in the results (see below). Default: false

Upon successful submission, the request will return status 201 (Created), and a response body which includes the url for retrieving search results (see below)

```
{"id":1,"url":"http://example.com/api/search/1/"}
```

## Filters

Filters are a collection of filters to apply to arbitrary file metadata.

The specific metadata available to be filtered on depends on the search backend being used. The fields in the following examples may not be available for all backends.

At a minimum, one can expect to be able to filter on core.filename, the file basename. For example to filter only jpeg files, {"core.filename": "\*.jpg"}

Possible filter types are

type	description	example
exact match	match a value exactly	{"core.filename": "cats-01.jpg"}, {"core.size": 0}
match list	match any of the values in the list (value1 OR value2 OR ...)	{"core.group.name": ["editor", "admin"]}
wildcard	any string value containing an asterisk (*) is treated as a wildcard	{"core.filename", "*.jpg"}

type	description	example
range	numerical or date range, using any combination of less-than (lt), less-than-equal (lte), greater-than (gt), greater-than-equal (gte)	<code>{"core.modificationtime": {"gte": "2021-01-01", "lt": "2021-02-01"}}, {"core.size": {"gt": 1000000000}}</code>
negation	exclude anything matching a given filter	<code>{"not": {"core.filename": ".DS_Store"}}</code>

Filters are combined as AND, e.g. `{"core.extension": ".jpg", "hsm.status": "migrated"}` matches .jpg files which are HSM migrated.

## Retrieving results

When search results are read, they can be retrieved using the url returned when the query was submitted.

```
$ curl 'http://example.com/api/search/1/' -H "Authorization: Api-Key $TOKEN"
{
  "count": 1,
  "next": null,
  "previous": null,
  "items": [
    {
      "href": "http://example.com/api/file/?
path=%2Fmmfs1%2Fdata%2Fhello.txt&site=sitel",
      "site": "sitel",
      "path": "/mmfs1/data",
      "name": "hello.txt",
      "metadata": {
        "core.accesstime": "2021-10-12T16:27:28",
        "core.changetime": "2021-10-12T16:28:45",
        "core.directory": "/mmfs1/data",
        "core.extension": ".txt",
        "core.filename": "hello.txt",
        "core.group.id": 0,
        "core.group.name": "root",
        "core.hash.sha512": "db3974a97...94d2434a593",
        "core.modificationtime": "2021-10-12T16:28:45",
        "core.pathname": "/mmfs1/data/hello.txt",
        "core.size": 12,
        "core.user.id": 0,
        "core.user.name": "root",
        "gpfs.filesetname": "root",
        "gpfs.filesystem": "mmfs1",
        "gpfs.kballocated": 0,
        "gpfs.poolname": "sas1",
        "hsm.status": "migrated",
        "ngenea.pathname": "data/hello.txt",
```

```

        "ngenea.size" : 12,
        "ngenea.target" : "awss3",
        "ngenea.uuid": "acf1a307-5b6a-43b0-8fb2-d2b366e88008",
    },
    "proxies": {
        "_thumbnail": "/media/123/456/789/123456789012345.png"
    }
}
],
"metadata_fields": ["core.accesstime", ...],
"complete": true,
"errors": {"site2": "Search backend is offline"}
}

```

Results from different sites may not arrive at the same time. The `complete` field indicates whether all sites what returned their results. This includes when a site returns with an error.

Results from different sites are ‘concatenated’, meaning if the same file exists on multiple sites, there will be separate result items for the file for each site.

The `metadata` field on each item contains arbitrary file metadata. The specific metadata will vary depending on the search backend being used. In the case of the PixStor Search backend, the available fields will vary depending on file type, and which plugins were used when the files were ingested.

If `metadata_fields` was specified when the query was submitted, the `metadata_fields` entry in the response will match, with any wildcards expanded to list the available fields which match those wildcards. Otherwise, the `metadata_fields` entry will list all the available metadata fields which could be returned from the search backend. Individual files may not have all the listed fields.

All search backends format results to be namespaced, similar to PixStor Search, for consistency.

If an error occurs while performing the search on any of the sites, the `errors` entries will provide a mapping of site names and error messages.

## Proxies

The `proxies` field on each item contains links to proxies of the file, such as thumbnails and previews.

These will only be available if the backend is `pixstor_search`, and PixStor Search itself has been configured and ingested in ‘search plus’ mode.

The links are relative urls, which must be combined with the `public_url` from the corresponding `/sites` endpoint to fetch the actual proxy files, e.g. `https://pixstor-site1/media/....`

Typical proxies may include:

- `_thumbnail` - a 150x150 px thumbnail image

- `image.preview` - a 400x300 px preview image
- `video.preview` - a 400x300 px, lower resolution version of a video
- `audio.preview` - a downscaled version of an audio file

Proxies may not be available for all file types, depending on which search plugins have been enabled and ingested.

## Parameters

Search results are paginated. The following parameters can be used to control what results are returned

name	description
<code>page</code>	Numbered page of results to fetch. Default: 1
<code>page_size</code>	Maximum number of results to return per page. Default: 20
<code>sort</code>	One or more fields to sort results on, separated by commas, e.g. <code>?sort=name,site</code> . Field names can be prefixed with <code>-</code> to reverse order. For fields in <code>metadata</code> , the field name is specified as <code>is</code> , e.g. <code>?sort=-core.accesstime</code> . Default: arbitrary order.
<code>group_by_name</code>	When this url parameter is 'true' results are merged based on matching name, e.g. <code>?group_by_name=true</code>

## Merged results

When a search is submitted with `"merge": true`, the search results will be 'merged'.

This means that entries for matching files from different sites will be combine. An entry is considered to be matching if it has the same full path.

```
$ curl 'http://example.com/api/search/2/' -H "Authorization: Api-Key $TOKEN"
{
  "count": 1,
  "next": null,
  "previous": null,
  "items": [
    {
      "path": "/mmfs1/data",
      "name": "hello.txt",
      "metadata": {
        "core.accesstime": "2021-10-12T16:27:28",
        "core.changetime": "2021-10-12T16:28:45",
        "core.directory": "/mmfs1/data",
        "core.extension": ".txt",
```

```

    "core.filename" : "hello.txt",
    "core.group.id" : 0,
    "core.group.name" : "root",
    "core.hash.sha512" : "db3974a97...94d2434a593",
    "core.modificationtime" : "2021-10-12T16:28:45",
    "core.pathname" : "/mmfs1/data/hello.txt",
    "core.size" : 12,
    "core.user.id" : 0,
    "core.user.name" : "root",
    "gpfs.filesetname" : "root",
    "gpfs.filesystem" : "mmfs1",
    "gpfs.kballocated" : 0,
    "gpfs.poolname" : "sas1",
    "hsm.status" : "migrated"
    "ngenea.pathname" : "data/hello.txt",
    "ngenea.size" : 12,
    "ngenea.target" : "awss3",
    "ngenea.uuid" : "acf1a307-5b6a-43b0-8fb2-d2b366e88008",
  },
  "status": {
    "site1": true,
    "site2": false
  }
},
],
"metadata_fields": ["core.accesstime", ...],
"complete": true
}

```

Merged results no longer have the `site` and `href` fields. In their place is a `status` field, which maps sites to whether the file is 'resident' on that site.

A file is considered resident if the file is not migrated, or is premigrated ('hydrated'). A file is considered not resident if the file is migrated (stubbed), or not present at all.

## Results grouped by name

To group search results by name, add the url parameter `group_by_name=true`.

This will return results from any of the requested sites. Results within a group may belong to different directories.

```

$ curl 'http://example.com/api/search/1/?group_by_name=true' -H "
Authorization: Api-Key $TOKEN"
{
  "count": 60,
  "next": "http://testserver/api/search/1/?
group_by_name=true&page=2",
  "previous": "http://testserver/api/search/1/?
group_by_name=true",
  "more_results": false,
  "items": [
    {"test-10": [

```

```

    {
      "site": "testsite",
      "path": "/mmfs1/data",
      "metadata": {...}
    },
    {
      "site": "anothersite",
      "metadata": {...}
    }
  ]
},
{"test-11": [
  {
    "site": "testsite",
    "path": "/mmfs1/data",
    "metadata": {...}
  },
  {
    "site": "anothersite",
    "path": "/mmfs1/archive",
    "metadata": {...}
  }
]
},
{"test-19": [
  {
    "site": "testsite",
    "path": "/mmfs1/data",
    "metadata": {...}
  },
  {
    "site": "anothersite",
    "path": "/mmfs1/data",
    "metadata": {...}
  }
],
...
]
}
],
"complete": true,
"metadata_fields": null,
"errors": {}
}

```

## Max Results

There is a hard limit on the number of results returned, per site. By default, each site will return, at most, 200 results.

Fetching a lot of results makes queries slower and, since results are stored in the DB, storing more results uses more space. On the other hand, the limiting may lead to some matches not being returned.

The maximum number of results per site is controlled by the `search_max_results` configuration - see [Configuration](#) for more info.

Result limiting is applied when the search query is submitted, not when results are retrieved. If you change `search_max_results`, you will need to resubmit your query to fetch any additional matches.

Note, some backends have a hard limit of 10,000 results.

## Housekeeping

The results from a query are stored, so they can be retrieved multiple times without performing a new query.

However, over time, the files on each site will change, and the stored results may no longer accurately reflect the active file system.

Therefore, old results are periodically culled. The housekeeping process runs once a day, and removes results for any search which was submitted more than a week ago (by default). A different 'time-to-live' (TTL) can be set using the `search_result_ttl` configuration - see [Configuration](#) for more information.

Results can also be manually removed by performing a `DELETE` request against the given search result endpoint

```
curl -X DELETE 'http://example.com/api/search/1/' -H "Authorization: Api-Key $TOKEN"
```

## Controlling Bandwidth Usage

Ngenea Hub can control the amount of traffic speed for each node within each site that processes files through Ngenea. This will limit both outgoing and incoming traffic with defined cloud services.

## Bandwidth configuration in the UI

The bandwidth setting can be updated both via the REST API and directly through the UI. Any changes to the `bandwidth` attribute on a `Site` instance will take effect immediately.

The UI on the Site details page now includes a field for setting the bandwidth limit, displayed in Mb/s

## Checking Node status

Each site within Ngenea Hub is the collection of all nodes running an instance of Ngenea Worker using the name of a given site. These are nodes within a cluster that are collectively listening to the same queue for a given site. Each time any worker comes online on a new node or a known node, this is tracked within Ngenea Hub using `Node` objects. These are automatically created when first starting up a worker, after creation their online status can be monitored.

You can view the nodes for each site within `/api/nodes/` this will be a complete list of all nodes known to Ngenea Hub.

For bandwidth control, there will need to be existing nodes known to Ngenea Hub, otherwise the bandwidth rules cannot be applied. If your worker coming online was not tracked due to timing issues, you can manually scan for existing nodes using one of the [Actions](#).

## Registering Datastores

In order to control the bandwidth for all nodes under a site, the site will need to have the Ngenea policy targets defined as `Datastore` instances within Ngenea Hub.

The following example is for defining an AWS S3 target for Ngenea within Ngenea Hub:

```
{
  "name": "site1_amazon",
  "type": "S3",
  "bucket": "bucket01",
  "secretaccesskey": "secret-key",
  "accesskey": "access-key"
}
```

With this established datastore, all that is left to do is link the created datastore to a site so that when a change in bandwidth is applied, the site knows what service to limit the traffic to.

## Cloud IPAddresses

Each datastore that points to a cloud target will have access to a list of all known IP addresses that are associated with that specific service. This will be used to limit all traffic between those IP ranges and the nodes currently running a worker instance when a bandwidth limit is applied.

These IP ranges are updated internally once a day in a scheduled task.

## Using manual IP addresses

Manual IP addresses can be used to override the list of cloud related IPs, this can be useful to control bandwidth to custom endpoint targets such as services like minio making use of POST `api/ipaddresses/`. Using the following example to add an address to the list of IPAddresses:

**Note:** This will disable the use of all cloud addresses for a datastore and will instead only use the custom IP addresses.

```
{
  "ipaddr": "208.65.153.237",
  "datastore": 1
}
```

This will ensure that all traffic between those nodes and the defined IP addresses will be limited to the max bandwidth limit

## Linking a Datastore to a Site

With our example site `site1` creating a `SiteLink` between `site1` and the datastore `site1_amazon` allows the bandwidth to be applied to all S3 targets on all nodes that are running the Ngenea Worker service.

For this example all local data for this Ngenea is located in `/mmfs1/data/aws_data` with data being placed in the bucket `bucket01` under `aws_data/`.

The following `SiteLink` can be used to represent this:

```
{
  "site": "site1",
  "datastore": "site1_amazon",
  "site_path": "/mmfs1/data/aws_data/",
  "datastore_path": "aws_data/"
}
```

This will ensure that each `Node` under `site1` will limit its traffic to all related addresses.

## Applying the bandwidth

**Note:** This will effect all traffic on each node running a worker to the cloud services defined with the sites linked datastores.

With the `SiteLink` in place, changing the bandwidth attribute to the Mb/s desire on the site instance via the API route `PATCH /api/site/{id}`:

```
{
  "bandwidth": 1000
}
```

Using this or the UI, this will cause the hub to signal the worker to limit traffic using the IP ranges defined for the datastores.

This total bandwidth will be divided between all nodes for any given site, so if a site has a bandwidth of 1Gb/s then both nodes will be limited to 500mb/s.

## Configuration

### Global Configurations

Some configurations are stored in the Ngenea Hub configuration file, as described in [Hub Configuration](#). These are generally static, or sensitive settings. Changes to these settings require a service restart.

In addition, there are configurations which can be changed on-the-fly, typically to change Ngenea Hub behaviour. These settings can be viewed and changed via the REST API, as described below.

### Available Settings

Name	Description	Default
jobs_ttl	How long job details should be stored after job completion, in days.	90
search_backend	Backend to use when performing searches. Currently supported backends: analytics, pixstor_search.	pixstor_sea
search_result_ttl	How long search results should be stored, in days.	7
search_max_results	Maximum number of search results to fetch from the search backend, per site. Fetching more results will make queries slower and will require more storage space. Fetching fewer results may lead to some files being missing. Note, some backends have a hard limit of 10,000 results.	200
analytics_timeout	How long to wait for results from search results when configured to use analytics, in seconds.	10
snapshot_create_delete_retry_timeout	Time in seconds after which workers will give up retrying snapshot create and delete operations. These occur in the dynamo.tasks.snapdiff and dynamo.tasks.rotate_snapshot tasks. The default 1000s will give 4 or more retries. Set to 0 to disable retries.	1000

Name	Description	Default
stat_timeout	How long to wait for results from the <code>/api/file/</code> endpoint, in seconds.	10
stat_refresh_period	How long a files details will be retained as a cache within the file browser, in seconds.	10
task_invalidation_timeout	How long in minutes for a task in the STARTED state will wait before being invalidated.	360
snapdiff_stream_timeout	Idle timeout when waiting for delete and move tasks to complete during snapdiff workflows, in minutes.	10
force_local_managed_users	Allow local NAS users to be managed on AD joined sites.	False
custom_statistics_tasks	A list containing the names of custom tasks that add their number of reported files to the job total, it will do so regardless of when these tasks are executed within a workflow.	[ <code>"dynamo.cu</code> <code>"dynamo.cu</code>
maximum_external_results	Maximum number of items to retrieve per page from an external target scan.	100
node_health_last_heartbeat_interval	The maximum allowed time (in seconds) between the last recorded heartbeat and the current time for a node to be considered online. If the node's last heartbeat occurred more than this interval ago, the node will be marked as offline.	120
initial_uid	Minimum uid value for the nas user that can be configured	100000
initial_gid	Minimum gid value for the nas group that can be configured	100000
schedules_enabled	Allow the processing of automated tasks (Policies and Scheduled Workflows).	True
health_timeout	Maximum wait time in seconds for a health check to determine available sites.	1
salt_task_timeout	How long to wait for settings tasks to return their results, in seconds.	60
default_space_location	Path of a directory, relative to the file system root, to use as the default location for space creation	data
keycloak_jwks_timeout	Number of seconds to cache SSO tokens between Hub's SSO services	3600

**Note:** If the file details are not returned for large fileset, increase the default value of `stat_refresh_period` in the configuration tab of hub admin page <http://admin> or do a patch on configuration API.

## REST API

Configurations can be listed and set via the Ngenea Hub REST API.

**Note:** The configurations endpoint does not support client key authentication. You must use [JWT Authentication](#).

To list the current configuration settings,

```
$ curl -s 'http://example.com/api/configurations/' -H 'Accept: application/json' -H "Authorization: Bearer $JWT_ACCESS_TOKEN"
{
  "search_backend": "analytics",
  "search_max_results": 200,
  "search_result_ttl": 7,
  ...
}
```

To change one or more configuration settings, make a `PATCH` request the same endpoint

```
$ curl -s -X PATCH 'http://example.com/api/configurations/' -H 'Accept: application/json' -H "Authorization: Bearer $JWT_ACCESS_TOKEN" -H 'Content-Type: application/json' -d '{"search_max_results": 500}'
{
  "search_max_results": 500,
  ...
}
```

## Settings Migration

In versions 1.9.0 and earlier, some of the above settings were configured via the Ngenea Hub config file ([Hub Configuration](#)).

Upon updating to version 1.10.0 or above, any values currently set in that config file will be captured. Thereafter, any changes to those settings within the config file will be ignored.

## Site-specific Configurations

Some configuration options can be set on a per-site level, and may differ between sites.

These can be viewed and changed via the REST API, as described below. They can also be viewed and changed in the Ngenea Hub UI, from the 'Sites' tab on the Administration page.

### Available Settings

Name	Description	Default
bandwidth	Limit the bandwidth for the site (In MB/s). In the UI, it is hidden behind the <code>bandwidth_controls</code> feature flag (see <a href="#">Feature Flags</a> )	<i>not set</i> (unlimited)
elasticsearch_url	URL used to interact with Elasticsearch when <code>search_backend</code> is set to <code>analytics</code> (see <b>Global Configurations</b> above). The URL is evaluated on the node(s) on which the site worker is running.	<code>localhost:9200</code>
pixstor_search_url	URL used to interact with PixStor Search when <code>search_backend</code> is set to <code>pixstor_search</code> (see <b>Global Configurations</b> above). The URL is evaluated on the node(s) on which the site worker is running.	<code>https://localhost/</code>
public_url	Public URL that can be used to reach this site. Typically this will be the hostname or external IP address of the site management node.	<i>not set</i>
file_batch_gb	Limit the total size of file data in a batch, in gigabytes. See <b>File Batching</b> below	1
file_batch_size	Limit the total number of files in a batch. See <b>File Batching</b> below	40
enable_auto_file_batch_sizing	If Dynamic file batching should be enabled for this site. See <b>Dynamic File Batching</b> below	<code>True</code>

Name	Description	Default
soft_lock_threshold	The <code>snapdiff</code> discovery uses locking to prevent multiple <code>snapdiff</code> running against the same fileset at once. To prevent stale locks, lock are considered 'expired' after the <code>lock_threshold</code> , given in seconds.	86400 (one day)
include	A list of include glob patterns which will apply to all workflows run against this site	<i>not set</i>
exclude	A list of exclude glob patterns which will apply to all workflows run against this site	<i>not set</i>
iscanThreads	Defines the number of threads that can be used during <code>snapdiff</code> operations.	<i>not set</i>
iscanBuckets	Defines the number of buckets that can be used during <code>snapdiff</code> operations.	<i>not set</i>

## File Batching

The file list generated by [discovery tasks](#) may be broken into smaller batches before passing them to workflow steps.

This makes the overall job execution more granular. Individual tasks will be smaller and faster. This also makes it easier to cancel a job, given that only PENDING tasks can be cancelled.

On the other hand, if the batching is too small, the large number of tasks generated may saturate the job queue, blocking out tasks from other jobs.

File batching is based on both `file_batch_gb` and `file_batch_size`. Whichever limit results in a smaller batch is the one which is used. For example, given 100 files of 500MB each, a `file_batch_gb` of 1 and `file_batch_size` of 10 will result in 50 batches of 2 files each (1GB total per batch), because 1GB (2 files) is smaller than 10 files (5GB).

## Dynamic File Batching

The Dynamic File Batching feature is designed to improve the processing of tasks with large sets of files by adjusting batch size based on the total number of files being processed from using a predefined set of ranges.

By enabling the auto file batch sizing configuration option, the system automatically adjusts file batch sizes to optimize resource utilization and enhance performance.

## REST API

Configurations can be listed and set via the Ngenea Hub REST API.

The sites endpoint supports client key authentication

To list the current site configuration settings,

```
$ curl -s 'http://example.com/api/sites/1/' -H 'Accept: application/json' -H "Authorization: Api-Key $APIKEY"
{
  "name": "site1",
  "elasticsearch_url": "localhost:19200",
  "file_batch_size": 100,
  ...
}
```

Note - configurations are only included when fetching a specific site, not when listing all sites.

To change one or more configuration settings, make a `PATCH` request the same endpoint

```
$ curl -s -X PATCH 'http://example.com/api/sites/1/' -H 'Accept: application/json' -H "Authorization: Api-Key $APIKEY" -H 'Content-Type: application/json' -d '{"file_batch_gb": 5}'
{
  "file_batch_gb": 5,
  ...
}
```

## Certificate Lifetime

The certificate lifetime refers to the duration for which a certificate is valid. You can view and modify this duration through the `/api/pki/lifetime/1/` endpoint.

### Viewing the Certificate Lifetime

To view the current certificate lifetime, you can send a `GET` request to the `/api/pki/lifetime/1/` endpoint. This will return a JSON response with the current lifetime in days.

```
{
  "days": 2147483647,
  "updated_at": "2024-04-12T09:19:43.732Z",
  "updated_by": 0
}
```

## Modifying the Certificate Lifetime

To modify the certificate lifetime, you can send a `PATCH` request to the `/api/pki/lifetime/1/` endpoint. The request body should be a JSON object with a `days` field specifying the new lifetime in days.

Please note that only administrators and users with the `filebrowser.change_certificatelifetime` permission can modify the certificate lifetime.

Example:

```
curl -X PATCH -H "Content-Type: application/json" -d '{"days": 365}' https://your-domain.com/api/pki/lifetime/1/
```

In this example, we are setting the certificate lifetime to 365 days.

Remember to replace the `days` value with the desired lifetime in days.

## Summary

The `/api/pki/lifetime/1/` endpoint allows you to view and modify the certificate lifetime. Remember that to use the changed lifetime in the certificates, then Ngenea Hub needs to be restarted.

## Feature Flags

Feature flags control whether selected pre-release features are enabled.

Certain features may be included in a release which aren't yet fully implemented, or fully tested. By default, these features are disabled and 'hidden', so should not affect normal functionality.

However, these features may be enabled on a 'preview' basis, on the understanding that they may be incomplete or unstable.

**Warning:** Do not enable preview features unless you are willing to accept the potential risks.

Once a feature is finalised and stable, it will be released officially, and the corresponding feature flag will be removed.

## Available Features

There are currently no feature flags.

**Note:** The feature flags in the examples below are for demonstration purposes only. They may not exist or may have been removed.

Features can be listed, enabled, or disabled via the Ngenea Hub REST API.

To list the available features, and whether they're currently enabled

```
$ curl -s 'http://example.com/api/features/' -H 'Accept:
application/json' -H "Authorization: Api-Key $TOKEN"
{
  "count": 1,
  "next": null,
  "results": [
    {
      "name": "searchui",
      "description": "Enable search features in the Ngenea
Hub UI",
      "enabled": false
    },
    {
      "name": "bandwidth_controls",
      "description": "Enable bandwidth controls in the
Ngenea Hub UI",
      "enabled": false,
    }
  ]
}
```

Individual features are keyed by their name, e.g. <http://example.com/api/features/searchui/>

To enable a feature, make a `PATCH` request against the desired feature

```
$ curl -s -X PATCH 'http://example.com/api/features/searchui/' -
H 'Accept: application/json' -H "Authorization: Api-Key $TOKEN" -
H 'Content-Type: application/json' -d '{"enabled": true}'
[
  {
    "name": "searchui",
    "description": "Enable search features in the Ngenea Hub
UI",
    "enabled": true
  },
  ...
]
```

And similarly, to disable a feature

```
curl -s -X PATCH 'http://example.com/api/features/searchui/' -H '
Accept: application/json' -H "Authorization: Api-Key $TOKEN" -H '
Content-Type: application/json' -d '{"enabled": false}'
```

**Note:** It may be necessary to restart the Ngenea Hub service for a feature change to take effect.

## ngclient

Alternatively, feature flags can be interacted with using `ngclient`.

To list available features and whether they're currently enabled

```
$ ngclient features list
[X] searchui           Enable search features in the UI
[ ] bandwidth_controls Enable bandwidth controls in the UI
```

To enable a feature

```
ngclient features enable bandwidth_controls
```

And to disable a feature

```
ngclient features disable bandwidth_controls
```

See [ngclient features](#) for more information.

## Actions

Actions allow administrative users to perform certain operations, as described below.

### Available Actions

#### discover\_nodes

Ngenea Hub monitors for when new nodes come online.

The `discover_nodes` action can be used to manually scan for nodes. This may be necessary if a node was previously manually removed from Ngenea Hub

*This action takes no arguments.*

## REST API

Actions are submitted via the `/api/actions/` endpoint, and typically execute asynchronously. The state of the action can be viewed via the same endpoint.

**Note:** The actions endpoint does not support client key authentication. You must use [JWT Authentication](#).

To submit an action, make a `POST` request against the `/api/actions/` endpoint

```
$ curl -s -X POST 'http://example.com/api/actions/' -H 'Accept: application/json' -H "Authorization: Bearer $JWT_ACCESS_TOKEN" -H 'Content-Type: application/json' -d '{"action": "discover_nodes"}'
{
  "id": 12345,
  ...
}
```

This returns a unique id, which can be used to check the status and results of the action

```
$ curl -s 'http://example.com/api/actions/12345/' -H 'Accept: application/json' -H "Authorization: Bearer $JWT_ACCESS_TOKEN"
{
  "action": "discover_nodes",
  "user": "myuser",
  "state": "SUCCESS"
  "results": {...}
}
```

## Limitations

### Site Sync

Site Sync must only be used in one direction

The intent of `site_sync` is for one source site to synchronise all required changes to any amount of destination sites and not consider the state of the destination site(s). Site Sync must only be utilised when data is required to be synchronised without concern for any active changes on destination site(s).

Site Sync only considers changes within an applicable time window for synchronisation

Synchronisation is not 'event driven'. Changes are collated within a window of time (defined by the associated schedule), and sent as a group.

The order in which certain events occurred cannot be determined. For example; delete determination; where no data point exists to determine the 'change time' [ctime] of a file or directory due to deletion prior to the sync time window.

During bidirectional synchronisation, when conflicting create/modify and delete events occur for files, the create/modify event takes precedence over the delete event to prevent data loss. In such scenarios, a newer version of the file which was prior deleted will be present after synchronisation. Directory behaviour is not affected.

## Site Sync supports Independent Filesets

Site Sync methodology is incompatible with any requirement to synchronise an entire file system, nor is use of Dependent Filesets, or arbitrary directory trees supported.

## Destination site Independent Filesets must exist prior to synchronisation

Site Sync does not create Independent Filesets on destination site(s) prior to synchronisation. Destination Independent Fileset creation is an administrative function and must be undertaken prior to configuration and operation of a Site Sync methodology to the destination site.

## Directory deletion is not supported

Site sync does not support directory deletion. Deletion of a large file tree structure on a source site will delete files within the directory structure, resulting in an empty directory tree on the destination site.

## Bidirectional Site Sync

### Bidirectional Site Sync implements eventual consistency

Site Sync adheres to the principle of eventual consistency whereby one or more subsequent Site Sync jobs or tasks are required to be enacted for source and destination sites to be in sync . Prior to all required Site Sync jobs enacting the synchronisation status is viewed as partially synchronised. Each subsequent job increases the totality of synchronisation.

Data which has failed to be synchronised in prior synchronisations is placed into subsequent synchronisation runs, leading to eventual consistency.

### Bidirectional Site Sync is only supported via schedules

Ref: [Schedules](#)

A bidirectional Site Sync is created via defining a schedule using the `bidirectional_snapdiff` discovery and subscribing the `bidirectional_sync` workflow to the schedule.

A path may only be managed by one schedule per site, and at most one workflow may be subscribed to a `bidirectional_snapdiff` schedule.

Hub does not support multiple bidirectional synchronisation with the same source site for the same Independent Fileset (E.G. between site1 and site2, and between site1 and site3).

The `bidirectional_snapdiff` discovery causes all iterative Independent Fileset changes to be tracked. Identified changes are compared to across iterative runs. When both sets of changes have been evaluated, only appropriately valid changes are synchronised to the destination site.

## Bidirectional synchronisation is sequential

When setting up a bidirectional site sync 'site1' is the site which is configured when creating the schedule, and 'site2' is the site configured as the `destination site` when subscribing the workflow to the schedule.

A bidirectional site sync will first synchronise changes from site1 to site2, and then from site2 to site1.

A failure while synchronising site1 to site2 will not block the reverse direction sync from enacting.

The sequential nature of synchronisation ensures conflict situations where the synchronisation from site2 to site1 wins by virtue of the last write [most recent write at any site] of a file taking precedence.

## Swapping files / Last write wins

Synchronisation of a set of file moves whereby the actions include synchronisation determination of the paths of two files being swapped is complex and can result in conflicts. Where identical file paths exist at the destination site, file moves will fail rather than overwriting the existing files.

Manual intervention is required before a synchronisation will again succeed. N.B.: the replaying of the swap of the files on the destination site is not sufficient to resolve the conflict.

## Renaming or deleting files and directories causes re-sending of data

Where a file is moved on site1 and the same file is deleted on site2 during an active synchronisation, the moved file from site1 will be resent to site2. This behaviour will be observed even if the delete event occurred later chronologically.

## Renaming or files and directories on both bidirectional Site Sync sites causes duplication of data

This behaviour is observed when a file or directory is moved on both sites to different locations during an active synchronisation. E.G.:

- `/mmfs1/data/path1` is moved to `/mmfs1/data/path2` on site1
- `/mmfs1/data/path1` is moved to `/mmfs1/data/path3` on site2

This scenario results in duplicate data at both sites in both `/mmfs1/data/path2` and `/mmfs1/data/path3`.

## Creation or deletion of empty directories on site 1 does not synchronise to site 2

Site Sync does not perform deletions of empty directories on a destination site and does not create empty directories on a destination site.

## Iris

### Spaces API: Iris Integration and User Filtering

The `/api/spaces/` endpoint now supports filtering spaces by username to determine what spaces a user can access. This feature allows Hub Admins to query a user's space access based on their group memberships and Iris permissions.

Additionally, spaces and their associated sites include `iris` information to indicate whether they are Versity S3 presented, and what level of access the user has on each site.

#### Iris state

- **enabled: true** - The space (and its associated sites) is Versity S3 presented.
- **enabled: false** - The space is not Versity S3 presented.

### Permissions and Group-Based Access

Iris permissions are defined `per space per site`, and are granted to `groups`. User Permissions are derived from the groups the user belongs to.

The possible permissions are

1. `readonly` (default) - A user is granted readonly access if they belong only to groups with readonly permission (or no groups at all). Readonly users can list spaces but cannot upload/download to buckets.
2. `readwrite` - A user is granted readwrite access if any of their groups have readwrite permission for a space-site. Readwrite users can fully upload/download to buckets.

**Note:** If a user belongs to multiple groups with different permissions on the same space-site, the highest permission (readwrite) is applied.

Permissions are advisory — they do not enforce access within Hub, but provided information to Iris.

### REST API

```
GET /api/spaces/?username=<target_username>
```

- The authenticated user must have admin privileges.
- If `username` is not provided, the API returns spaces for the authenticated user by default and does not include Iris permissions.

### Example for Iris Response Payload Structure

When Iris is enabled:

```
"iris": {
  "enabled": true,
  "user_permission": "readwrite"
}
```

When Iris is not enabled, `user_permission` is omitted from the payload.

```
"iris": {
  "enabled": false
}
```

#### Example Response with Iris User Permissions.

```
{
  "count": 1,
  "next": null,
  "previous": null,
  "results": [
    {
      "url": "http://10.201.2.195:8000/api/spaces/2/",
      "id": 2,
      "uuid": "67d887c4-50c6-40f1-95f5-f1c346b12494",
      "name": "space-67",
      "mountpoint": "/mmfs1/data/space-67",
      "sites": [
        {
          "id": 2,
          "name": "siteA",
          "label": "siteA",
          "pool": "sas1",
          "usage": null,
          "iris": {
            "enabled": true,
            "user_permission": "readwrite"
          }
        }
      ],
      "created": "2025-06-17T11:05:41.815258Z",
      "size": 10737418240,
      "snapshot_schedule": {
        "id": 1,
        "frequency": "1 00:00:00",
        "time": "00:05:00",
        "duration": "7 00:00:00",
        "space": 2
      },
      "on_sites": {
        "siteA": {
          "name": "space-67",
          "size": 10737418240,
          "present": true
        }
      }
    }
  ]
}
```

```

    },
    "immutable": false,
    "editable": true,
    "color": [191, 99, 64],
    "permission_mode": null,
    "relationships": {
      "shares": [],
      "policies": [],
      "schedules": []
    },
    "nested_shares": {
      "samba": [],
      "nfs": []
    },
    "is_ready": true
  }
]
}

```

### Example Response When User Has No Accessible Spaces

```

{
  "count": 0,
  "next": null,
  "previous": null,
  "results": []
}

```

### Summary

1. Returns spaces for the authenticated user if username is not provided.
2. Returns 200 OK with no spaces if the target user does not exist.
3. Returns 200 OK with no spaces if the user exists but has no group memberships.
4. Returns 200 OK with no spaces if user's groups do not have view\_space permission.
5. Returns all spaces where user's groups have view\_space permission.
6. Supports additional filtering by site\_id when both username and site\_id are provided.
7. Returns all spaces if the username is omitted or username=.

### Groups API: Iris Permissions

The `/api/groups/` endpoint supports assigning and retrieving Iris permissions for spaces.

Permissions are defined `per space per site`, and groups cannot have duplicate permissions on the same space-site combination.

Permissions currently support two levels:

- readonly (default)

- readwrite

If a user is a member of multiple groups with different permissions on the same space-site, the highest level (readwrite) is applied.

#### Example: View Group with Iris Permissions

```
GET /api/groups/1/
{
  "id": 1,
  "name": "iris-admin",
  "users": [
    {
      "username": "bob"
    }
  ],
  "iris_permissions": [
    {
      "space": "Project1",
      "site": "london",
      "permission": "readwrite"
    },
    {
      "space": "Project1",
      "site": "paris",
      "permission": "readonly"
    }
  ]
}
```

#### Example: Create Group with Iris Permissions

```
POST /api/groups/
{
  "name": "london-admin",
  "iris_permissions": [
    {
      "space": "Project1",
      "site": "london",
      "permission": "readwrite"
    }
  ]
}
```

#### Example: Update Group Permissions

```
PATCH /api/groups/1/
{
  "iris_permissions": [
    {
      "space": "Project1",
      "site": "london",

```

```
    "permission": "readwrite"
  },
  {
    "space": "Project1",
    "site": "paris",
    "permission": "readonly"
  }
]
```

## Troubleshooting

This section outlines steps for troubleshooting issues with Ngenea Hub

### Service Status

To check the status of Ngenea Hub and its individual services

```
ngeneahubctl status
```

To check the status of Ngenea Worker

```
systemctl status ngenea-worker
```

### Service Logs

The full logs for Ngenea Hub can be viewed with

```
journalctl -u ngeneahub
```

To view Ngenea Worker logs

```
journalctl -u ngenea-worker
```

## Specific Features

### Site Sync

Site sync - both one-way and bidirectional - may fail due to conflicts which cannot be automatically resolved. This page outlines options for intervening to resolve such conflicts.

### Snapshot Rotation

By default, snapdiff snapshots will always rotate, even if an error occurs during sync.

Traditionally, snapshots are rolled-back on error. However, this can lead to changes being replayed inappropriately, leading to further errors and conflicts. Because of this, the default behaviour was changed to always rotate.

The downside to this approach is that some changes may be missed by sync. For example, if a network issues prevent a file from being synced, that file will not be re-synced unless or until it changes again. Note, however, there are retries within a sync run to mitigate such temporary issues.

If a sync job does fail, it will be necessary to determine the source of the error and manually resolve any issues. The job details will report on which paths failed overall. Looking at the individual task details will give more information on where and why a specific path failed.

To disable this behaviour, so that snapshots will rollback on error, set the runtime field `snappdiff_rotate_on_error` to `False`

**Note:** If the sync is run within a schedule, it will use the first subscribed workflow's `snappdiff_rotate_on_error` value. This does not apply to `bidirectional_sync` as it can only have one subscribed workflow.

## Manual Resolution

In some cases it is possible to resolve conflicts by manually applying changes.

For example, if a file is moved on site A and deleted on site B, sync will fail because there is no file to move (or delete, depending on the sync direction) on the target site. In this case, manually deleting the file on site A, or re-sending the file (in its new location) onto site B will resolve the conflict. Thereafter, sync will be able to run without issue.

## Re-sync all

Another option is to re-sync everything from scratch. This is the safest option, as it ensures that no file changes are lost.

Note that sync will skip any files which are already in the correct state, so a re-sync won't take as long as syncing to a brand new target.

Snappdiff-based sync uses filesystem snapshots to track file changes over time. The snappdiff discovery uses a 'last snap' file to record the last snapshot which was successfully synced.

This last snap file is located at `/mmfs1/.rotate/ngenea-worker.lastsnap.name.<fileset_name>.id.<fileset_id>`

By removing the last snap file, the next sync run will behave as if it has not been run before, and so will sync everything. Once sync has run successfully, you can safely delete the snapshot which was previously recorded in the last snap file (before that file was deleted).

## Force rotate

The riskiest option is to force a snapshot rotation. This effectively says that you don't care about the current failure and just want the sync to move on.

As discussed above, this is the default behaviour. Note that this may result in some file changes not being synced. For a safer option, see **Re-sync all** above.

The following steps can be used as a one-off when the default rotate-on-error function has been disabled.

To force a rotate, you should first temporarily disable sync. This can be done by setting the sync schedule to disabled in the Ngenea Hub UI.

Next, create a new snapshot of the fileset. The name is expected to be of the form `ngenea-worker.snapdiff.<timestamp>`.

Update the 'last snap' file (described above), replacing the currently recorded snapshot name with the name of the new snapshot you just created.

This last snap file is located at `/mmfs1/.rotate/ngenea-worker.lastsnap.name.<fileset_name>.id.<fileset_id>`

Finally, re-enable sync. Sync will now pick up new file changes starting from the point at which the new snapshot was created.

Once sync has run successfully, you can safely delete the snapshot which was previously recorded in the last snap file (before that file was updated).

## Locking Errors

Lock files are used to ensure that a sync for a given fileset will not run if one is already running.

In this case, any new sync job will fail, and under the snapdiff task details, you will see an error like

```
SnapdiffLockError: Could not perform snapdiff as one is currently running for provided fileset
```

Under rare circumstances, a lock may not be correctly cleaned up, preventing syncs from running, even though there are none currently active.

In that case, the lock file can be removed manually. First, ensure there aren't any syncs running. For extra safety, temporarily disable any scheduled syncs.

The lock file is located at `/mmfs1/.rotate/snapdiff.name.<fileset_name>.id.<fileset_id>.lock`

Any snapdiff lock file will automatically expire after 24 hours by default. The lifetime can be changed using the `lock_threshold` [site setting](#)

# Reference

## Default Workflows

This section documents all the workflows which come installed in Ngenea Hub by default. See [Custom Workflows](#) for guidance on how to create your own workflows.

### migrate

Migrate one or more files from a site.

**discovery:** recursive

**steps:**

- [dynamo.tasks.migrate](#)

**fields:**

- `lock_level` (choice): Filesystem locking level for ngenea operations. One of: `partial`, `implicit`, `none`. Default=`partial`

### premigrate

Premigrate one or more files from a site.

**discovery:** recursive

**steps:**

- [dynamo.tasks.migrate](#)
  - `premigrate: True`

**fields:**

- `lock_level` (choice): Filesystem locking level for ngenea operations. One of: `partial`, `implicit`, `none`. Default=`implicit`

### recall

Recall one or more files on to a site.

**discovery:** recursive

**steps:**

- [dynamo.tasks.recall](#)

**fields:**

- `lock_level` (choice): Filesystem locking level for ngenea operations. One of: `partial`, `implicit`, `none`. Default=`implicit`

## send

Send files from one site to another via cloud storage.

**discovery:** recursive

**steps:**

- `dynamo.tasks.remove_location_xattrs_for_moved`
- `dynamo.tasks.migrate`
  - `premigrate: True`
- `dynamo.tasks.reverse_stub`

**fields:**

- `destinationsite` (string): site to send files to
- `destinationqueue` (string): queue on the destination site to run the task on
- `hydrate` (bool): hydrate files on the destination site

## unmanage

Removes a correspondence between files and storage endpoints.

**discovery:** recursive

**steps:**

- `dynamo.tasks.unmanage`

**fields:**

- `no_flock` (optional): Disable using lock files. Sets lock level to `implicit` if it is not set. Conflicts with `partial` lock level.
- `lock_level` (choice): Filesystem locking level for ngenea operations. One of: `partial`, `implicit`, `none`. Default=`implicit`
- `storage_key` (pattern): Removes the link between files and storage endpoints, optionally filtering by keys that match a specified extended glob pattern (multiple patterns can be separated by `|`). By default, it removes all keys.

## site\_sync

Sync a fileset from one site to another via cloud storage.

The `snappdiff` discovery looks for changes within the fileset on the source site since the last time the workflow was invoked. These changes are then synced to the destination site.

The workflow should be invoked with a single path which is the link point of the independent fileset to be synced.

**discovery:** `snappdiff`

## fields:

- `destination` (string): site to sync changes to
- `destinationqueue` (string): queue on the destination site to run the task on
- `sync_preference` (string): determines how conflicts should be resolved on the remote site. One of: newest, local, ignore

## created

Files with state `created` are sent to the destination site, subject to `sync_preference`

## steps:

- `dynamo.tasks.remove_location_xattrs_for_moved`
- `dynamo.tasks.migrate`
  - `pre_migrate`: True
  - `overwrite`: True
  - `abort_missing`: True
- `dynamo.tasks.reverse_stub`
  - `overwrite`: True

## updated

Files with state `updated` are sent to the destination site, subject to `sync_preference`

## steps:

- `dynamo.tasks.check_sync_state`
- `dynamo.tasks.remove_location_xattrs_for_moved`
- `dynamo.tasks.migrate`
  - `pre_migrate`: True
  - `overwrite`: True
  - `abort_missing`: True
- `dynamo.tasks.reverse_stub`
  - `overwrite`: True

## moved

Files with state `moved` are moved 'in-place' on the destination site

## steps:

- `dynamo.tasks.move_paths_on_gpfs`

## deleted

Files with state `deleted` are removed on the destination site

## steps:

- `dynamo.tasks.delete_paths_from_gpfs`

## import\_to\_site\_hydrated

This workflow is designed to import fully hydrated remote objects from external ngenea targets to the local filesystem.

**discovery:** null

**steps:**

- `dynamo.tasks.import_files_from_external_target`
  - `hydrate`: True

**fields:**

- `endpoint` (string): Name of the ngenea target configuration
- `location` (string): An absolute path for where to place the file/folder in the local filesystem, this can be a different path than the remote location. Defaults to None
- `lock_level` (string): Filesystem locking level for ngenea operations. One of: `partial`, `implicit`, `none`. Default=`implicit`

## import\_to\_site\_dehydrated

This workflow is designed to import stubbed remote objects from external ngenea targets to the local filesystem.

**discovery:** null

**steps:**

- `dynamo.tasks.import_files_from_external_target`
  - `hydrate`: False

**fields:**

- `endpoint` (string): Name of the ngenea target configuration
- `location` (string): An absolute path for where to place the file/folder in the local filesystem, this can be a different path than the remote location. Defaults to None
- `lock_level` (string): Filesystem locking level for ngenea operations. One of: `partial`, `implicit`, `none`. Default=`implicit`

## Hidden Workflows

This section documents all the workflows which come installed in Ngenea Hub by default that are not provided in the UI. Some of these are intended for advanced users making use of the API, and some are used for GPFS policy automation.

## transparent\_recall

This is the workflow that will be performed on dehydrated files on the system when accessed, if the policy is configured to make use of Ngenea Hub within its Transparent Recall policy.

Typically, all of these Transparent Recalls are placed into a single job within Ngenea Hub.

### **steps:**

- `dynamo.tasks.recall`
  - `lock_level`: "partial"

## reverse\_stub

This workflow is designed to create stubs files or fully hydrated files using remote content on a given site without the need for an existing file on the site for a given path. Due to this requiring the data to be within the cloud and not present on the filesystem, it requires the paths to target cloud targets through the API.

### **steps:**

- `dynamo.tasks.reverse_stub`

### **fields:**

- `hydrate` (bool): If the file should be fully hydrated during the recall operation
- `overwrite` (bool): If the operation should overwrite a local file that already exists

## delete\_file

This workflow deletes one or more file/folder paths from the filesystem.

### **steps:**

- `dynamo.tasks.delete_paths_from_gpfs`

### **fields:**

- `recursive` (bool): If non-empty directories should be deleted. if recursive is `false` additional jobs will be needed to delete empty directories. Defaults to `false`

## Discovery Steps

This section documents all the currently supported discovery steps in Ngenea Hub. See [Custom Workflows](#) for guidance on how to use these in your own workflows.

## dynamo.tasks.recursive\_navigate - recursive - Function: discovery

Navigates down any folder tree provided using the initial paths as the base of this navigation. It will process every discovered item and can have its behaviour defined using type rules using `file|link|folder` or action on all items with `all` as its type and state.

Upon discovering non-empty directories, it will create another instance of this task to navigate down that directory while still processing the current directory. Once a batch of items has been found it will action the appropriate rule on them.

Argument	Type	Default	Description
<code>skip_missing</code>	<code>bool</code>	<code>False</code>	Allows the processing of any files directly provided to the discovery step regardless of it being on the filesystem.

## dynamo.tasks.recursive\_action - recursive(deprecated) - Function: discovery

Navigates down any folder tree provided to it and actions any rule defined with `all` as its type and state on all found files.

Argument	Type	Default	Description
<code>skip_missing</code>	<code>bool</code>	<code>False</code>	Allows the processing of any files directly provided to the discovery step regardless of it being on the filesystem.

## dynamo.tasks.snapdiff - snapdiff - Function: discovery

For use only with a GPFS Independent Fileset, it will create a GPFS snapshot and it will then process the list of differences between the time of the initial run and subsequent runs. On the first run of this, it will ingest all the files within that Fileset.

Argument	Type	Default	Description
<code>skip_old_ctimes</code>	<code>bool</code>	<code>False</code>	Skips any files within the snapdiff difference list if the ctime of the file is older than the oldest snapshot.
<code>condense_moves</code>	<code>bool</code>	<code>True</code>	If a directory is moved, this will condense all the move operations into a single operation for move based tasks, otherwise it will action against every effected file.
<code>extra_fields</code>	<code>list</code>	<code>none</code>	Additional metadata to fetch for discovered files. When available, this will be included in the path objects passed to tasks, under the <code>additional_metadata</code> field

Available `extra_fields`:

- `inode`: file inode number
- `generation`: file inode generation number

- `is_metadata_only_update`: for updated files, this field will be `True` if only the file's metadata was changed and `False` if the file contents may have been changed (based on file `mtime`).

## Workflow Steps

The following are all the currently supported steps in Ngenea Hub. All of these steps are ran on the Ngenea Worker provided site on its respective function queue when running a workflow. See [Custom Workflows](#) for guidance on how to use these steps in your own workflows.

Each task alongside its name has its function queue detailed, these functions can be controlled through the Ngenea Worker [configuration](#)

### `dynamo.tasks.migrate` - Function: Worker

Migrates a list of files to a pre-defined remote target using Ngenea.

Argument	Type	Default	Description
<code>premigrate</code>	<code>bool</code>	<code>False</code>	retain the content of every migrated file and do not set the OFFLINE flag for the file.migrating.
<code>stub_size</code>	<code>int</code>	<code>0</code>	retain a segment of every migrated file starting from its beginning and having a specified approximate length in bytes.
<code>overwrite</code>	<code>bool</code>	<code>False</code>	overwrite remote objects if they already exist-do not create remote object instances with various UUID suffixes
<code>fail_on_mismatch</code>	<code>bool</code>	<code>False</code>	fail a file migration if a remote object exists but has different hash or metadata. In that case, the task errors
<code>lock_level</code>	<code>string</code>	<code>implicit</code>	Defined the locking mode that ngenea will use when performing the migrate
<code>endpoint</code>	<code>string</code>		specify the endpoint to migrate
<code>abort_missing</code>	<code>bool</code>	<code>False</code>	allow the migrate task to make any missing files end up in the "aborted" state instead of "failed"
<code>migrate_offline_files</code>	<code>bool</code>	<code>False</code>	If set to <code>True</code> , the migrate task will process offline files in the same manner as regular online files. If set to <code>False</code> , the migrate task will process the offline files using <code>--sync-metadata</code>

Argument	Type	Default	Description
sub_batch	int	optional	The number of paths to process in each sequential chunk. When set, the task will be split and executed in smaller batches of this size. By default, sub_batch=None processes all paths in a single batch

### dynamo.tasks.recall - Function: Worker

Recalls a list of files to a pre-defined remote target using Ngenea.

Argument	Type	Default	Description
skip_hash	bool	False	If the recall should skip checking the hash of the file
endpoint	string		specify which endpoint(site) to recall from
lock_level	string	partial	Defines the locking level ngenea will use during the recall
default_uid	string		When a file is recalled, it uses this UID if one is not set on the remote object
default_gid	string		When a file is recalled, it uses this GID if one is not set on the remote object
update_atime	bool	false	When a files is recalled, update its access time (atime) to 'now'
update_mtime	bool	false	When a files is recalled, update its modification time (mtime) to 'now'
delete_remote	bool	false	If set, when a file is recalled, it deletes the file in the remote location
sub_batch	int	optional	The number of paths to process in each sequential chunk. When set, the task will be split and executed in smaller batches of this size. By default, sub_batch=None processes all paths in a single batch

### dynamo.tasks.reverse\_stub - Function: Worker

Recalls a list of files to a pre-defined remote target using Ngenea.

Argument	Type	Default	Description
hydrate	bool	False	If the file should be premigrated instead of a regular stub
stub_size	int	0	The max file size before files will be stubbed for this task
skip_hash	bool	False	If the recall should skip checking the hash of the file

Argument	Type	Default	Description
<code>overwrite</code>	<code>bool</code>	<code>False</code>	Overwrite local files if they already exist, except files with only metadata changes.
<code>endpoint</code>	<code>string</code>		specify which endpoint(site) to recall from.
<code>retry_stale</code>	<code>string</code>	<code>None</code>	Controls if the worker should attempt to retry file failures due to stale file handles. This string can be either <code>stub</code> for only removing reverse stubbed files or <code>all</code> .
<code>lock_level</code>	<code>string</code>	<code>implicit</code>	Defines the locking level ngenea will use during the recall
<code>default_uid</code>	<code>string</code>		When a file is recalled, it uses this UID if one is not set on the remote object
<code>default_gid</code>	<code>string</code>		When a file is recalled, it uses this GID if one is not set on the remote object
<code>update_atime</code>	<code>bool</code>	<code>false</code>	When a files is recalled, update its access time (atime) to 'now'
<code>update_mtime</code>	<code>bool</code>	<code>false</code>	When a files is recalled, update its modification time (mtime) to 'now'
<code>conflict_preference</code>	<code>string</code>	<code>None</code>	Dictates what state the local file should be to pass the check. Options are "newest" which passes if the local file is the latest version of the file on either site, "local" which accepts the local file version regardless of the check and "ignore" which always uses the other sites file version.
<code>sub_batch</code>	<code>int</code>	<code>optional</code>	The number of paths to process in each sequential chunk. When set, the task will be split and executed in smaller batches of this size. By default, <code>sub_batch=None</code> processes all paths in a single batch

## `dynamo.tasks.unmanage` - Function: Worker

Removes a correspondence between files and storage endpoints.

Argument	Type	Default	Description
<code>lock_level</code>	<code>string</code>	<code>implicit</code>	Defines the locking level ngenea will use during the unmanage
<code>no_flock</code>	<code>bool</code>	<code>False</code>	Disable using lock files during the unmanage. Conflicts with <code>partial</code> lock level
<code>storage_key</code>	<code>string</code>	<code>optional</code>	Only remove keys that match an extended glob pattern. Multiple patterns can be separated by <code> </code> .

Argument	Type	Default	Description
<code>sub_batch</code>	<code>int</code>	<code>optional</code>	The number of paths to process in each sequential chunk. When set, the task will be split and executed in smaller batches of this size. By default, <code>sub_batch=None</code> processes all paths in a single batch

#### `dynamo.tasks.ngenea_sync_metadata` - Function: Worker

Sync the local ngenea metadata on a file with the remote target using Ngenea.

Argument	Type	Default	Description
<code>skip_hash</code>	<code>bool</code>	<code>False</code>	If the sync should skip checking the hash of the file
<code>endpoint</code>	<code>string</code>		Specify which endpoint(site) to recall from
<code>default_uid</code>	<code>string</code>		When a file is synced, it uses this UID if one is not set on the remote object
<code>default_gid</code>	<code>string</code>		When a file is synced, it uses this GID if one is not set on the remote object

#### `dynamo.tasks.delete_paths_from_gpfs` - Function: Worker

Removes a list of files from a GPFS filesystem.

Argument	Type	Default	Description
<code>recursive</code>	<code>bool</code>	<code>False</code>	If any directory path is provided and this is set, it will remove the entire file tree, otherwise it will only remove empty directories. It is important to note that the recursive behaviour of removing the entire directory tree will not apply to filesets or if the target directory contains files or directories that are restricted from being deleted such as <code>snapshots</code> , in such cases the task will silently ignore those files or directories and report the task as successful.

#### `dynamo.tasks.check_sync_state` - Function: Worker

Checks a provided site against the calling sites to ensure that the local file is in a specified state compared to another site. Using this task will also perform `dynamo.tasks.stat_paths` on the provided site before execution.

Argument	Type	Default	Description
<code>sync_preference</code>	string	ignore	Dictates what state the local file should be to pass the check. Options are “newest” which passes if the local file is the latest version of the file on either site, “local” which accepts the local file version regardless of the check and “ignore” which always uses the other sites file version.
<code>site</code>	string		The target site to compare
<code>abort_outdated</code>	bool	False	If this bool is set files that do not need to be executed will be marked as aborted as opposed to skipped
<code>hash_includes_acl</code>	bool	False	If this bool is set the metadata comparison for directories will also compare Access Control Lists

### `dynamo.tasks.move_paths_on_gpfs` - Function: Worker

Moves files on the filesystem using provided paths with a `source` key.

This task moves files in two steps (via an intermediate temporary location), to avoid move conflicts (for example, this task correctly handles cases where files are ‘swapped’: `fileA` moved to `fileB`, and `fileB` moved to `fileA`).

Argument	Type	Default	Description
<code>delete_remote_xattrs</code>	bool	False	If set, after a file has been moved all remote location xattrs will be removed
<code>source_missing_signature</code>	json	null	A signature to send any paths to where the source is missing. If this isn’t set, a missing source is treated as a failure.
<code>target_max_age</code>	int	null	If the target file exists, it is overwritten by default. If this optional parameter is set, the target has to have a ctime $\leq$ this timestamp for the move to proceed. Otherwise, the source file is removed. Given in seconds since epoch. Primarily used for sync workflows.

### `dynamo.tasks.one_step_move_paths_on_gpfs` - Function: Worker

Moves files on the filesystem using provided paths with a `source` key.

This task is not used in the default Ngenea Hub workflows. It is less robust than `dynamo.tasks.move_paths_on_gpfs`, because it moves files directly from source to their new location (in one step). So for example, trying to ‘swap’ files (`fileA` moved to `fileB`, and `fileB` moved to `fileA`) with this task will effectively result in one of these files being deleted on the target site.

However, this task is for cases where doing moves in two steps is not an acceptable option.

Argument	Type	Default	Description
<code>delete_remote_xattrs</code>	bool	False	If set, after a file has been moved all remote location xattrs will be removed
<code>source_missing_signature</code>	json	null	A signature to send any paths to where the source is missing. If this isn't set, a missing source is treated as a failure.
<code>target_max_age</code>	int	null	If the target file exists, it is overwritten by default. If this optional parameter is set, the target has to have a ctime <= this timestamp for the move to proceed. Otherwise, the source file is removed. Given in seconds since epoch. Primarily used for sync workflows.

`dynamo.tasks.remove_location_xattrs_for_moved` - Function: Worker

This task removes all remote location xattrs on all provided paths.

*This step takes no additional arguments.*

`dynamo.tasks.move_in_cloud` - Function: Worker

Moves a file on the filesystem's related cloud storage platform using provided paths with a `source` key.

*This step takes no additional arguments.*

`dynamo.tasks.remove_from_cloud` - Function: Worker

Deletes a file on the filesystem's related cloud storage platform using provided paths.

*This step takes no additional arguments.*

## dynamo.tasks.ensure\_cloud\_file\_exists - Function: Worker

Ensures all files provided to the task exist on the filesystem's related cloud storage platform. If some do not, it will attempt to retry this check an additional two more times before failing.

*This step takes no additional arguments.*

## dynamo.tasks.import\_files\_from\_external\_target - Function: Worker

Recalls a list of files from an external target to a predefined local object using Ngenea. The input files must be a list of remote object paths not local file paths. (eg, projects/)

Argument	Type	Default	Description
endpoint	string		Specify which endpoint(ngenea target name) to recall from
lock_level	string	implicit	Defines the locking level ngenea will use during the recall
location	string	null	Specify an absolute path for where to place the file/folder in the local filesystem
hydrate	bool	false	If the remote object should be premigrated instead of a regular stub
extra_flags	list		List of extra arguments that can be passed to recall command
skip_hash	bool	false	If the recall should skip checking the hash of the file
default_uid	string		When a file is recalled, it uses this UID if one is not set on the remote object
default_gid	string		When a file is recalled, it uses this GID if one is not set on the remote object
update_atime	bool	false	When a files is recalled, update its access time (atime) to 'now'
update_mtime	bool	false	When a files is recalled, update its modification time (mtime) to 'now'

## dynamo.tasks.copy\_files\_from\_external\_target

Copies a list of files from an external target to a predefined local location using Ngenea. The input files should be provided as a list of remote object paths, not local file paths (e.g., projects/). Once copied, these files are no longer associated with the target.

Argument	Type	Default	Description
endpoint	string		Specify which endpoint(ngenea target name) to recall from

Argument	Type	Default	Description
lock_level	string	implicit	Defines the locking level ngenea will use during the recall
location	string	null	Specify an absolute path for where to place the file/folder in the local filesystem
default_uid	string	requires ignore_metadata to be: True, else ignored	When a file is recalled, it uses this UID if one is not set on the remote object
default_gid	string	requires ignore_metadata to be: True, else ignored	When a file is recalled, it uses this GID if one is not set on the remote object
extra_flags	list		List of extra arguments that can be passed to recall command
ignore_metadata	bool	false	Do not read user, group and timestamps etc, from data to be copied

### dynamo.tasks.import\_bytes - Function: Worker

Recalls specific byte ranges of files from an external target to a predefined local location using Ngenea. The input files should be provided as a list of remote object paths (e.g., projects/), and the recall operation will be based on the byte-level data of these files, rather than entire files.

Argument	Type	Default	Description
endpoint	string		Specify which endpoint(ngenea target name) to recall from
lock_level	string	implicit	Defines the locking level ngenea will use during the recall
location	string	null	Specify an absolute path for where to place the file/folder in the local filesystem
remote_offset_start	int	0	Beginning offset of a segment of a remote object to download
remote_offset_end	int	remote object size	Ending offset of a segment of a remote object to download
default_uid	string		When a file is recalled, it uses this UID if one is not set on the remote object
default_gid	string		When a file is recalled, it uses this GID if one is not set on the remote object

Argument	Type	Default	Description
<code>default_mode_file</code>	int		Specify mode bits (in octal format) to set for stubbed/premigrated files if there are no mode bits associated with remote objects
<code>default_mode_dir</code>	int		Specify mode bits (in octal format) to set for directories created locally if there are no mode bits associated with remote objects

**Warning:** This task is incompatible with recursive discovery.

## `dynamo.tasks.recall_bytes` - Function: Worker

Recalls specific byte ranges of files from local stubbed paths to a predefined local location using Ngenea. The input should be a list of local stubbed file paths, and the recall will only retrieve the byte-level data of those files, rather than entire files.

Argument	Type	Default	Description
<code>lock_level</code>	string	implicit	Defines the locking level ngenea will use during the recall
<code>location</code>	string	null	Specify an absolute path for where to place the file/folder in the local filesystem
<code>remote_offset_start</code>	int	0	Beginning offset of a segment of a remote object to download
<code>remote_offset_end</code>	int	remote object size	Ending offset of a segment of a remote object to download
<code>default_uid</code>	string		When a file is recalled, it uses this UID if one is not set on the remote object
<code>default_gid</code>	string		When a file is recalled, it uses this GID if one is not set on the remote object
<code>default_mode_file</code>	int		Specify mode bits (in octal format) to set for stubbed/premigrated files if there are no mode bits associated with remote objects
<code>default_mode_dir</code>	int		Specify mode bits (in octal format) to set for directories created locally if there are no mode bits associated with remote objects

**Warning:** This task is incompatible with recursive discovery.

## Automated Tasks

All detailed tasks below are run on automated schedules defined by the hub itself, some of these can have their schedules adjusted and thresholds adjusted.

### Every minute

#### `alerts.tasks.fetch_alerts`

Submits the task `dynamo.tasks.get_alerts` to retrieve and sync the alerts on all sites with the Ngenea Hub's internal database. This is run on the `discovery` function of the Ngenea Worker. The returning task that stores the alerts in the database runs within the internal `celery` queue within Ngenea Hub.

The schedule of this task can be controlled by using the `SYNC_ALERTS_INTERVAL` config setting, any provided value must comply with cron syntax.

### Every 30 minutes

#### `dynamocore.tasks.admin.load_storagepools`

Fetches the GPFS storage pools from all active sites registered within Ngenea Hub and stores them within the database. Additionally, it will also create the default filesystem root spaces if they don't exist for a site.

The schedule of this task can be controlled by using the `REFRESH_SITE_ANALYTICS_INTERVAL` config setting, any provided value must comply with cron syntax.

#### `dynamocore.tasks.space_site.send_check_space_site_quota`

Sends a task to the Ngenea Hub's internal `celery` queue to collect all spaces within every site named `dynamocore.tasks.space_site.send_check_space_site_quota` which will then queue the worker task `dynamo.tasks.check_space_quotas` on every site's `worker` function queue. It will then send a task back to the hub `celery` queue to store the quotas in the database.

The schedule of this task can be controlled by using the `SYNC_SPACES_QUOTA_INTERVAL` config setting, any provided value must comply with cron syntax.

### Hourly

#### `dynamocore.tasks.jobs.update_state_as_failed_for_inactive_tasks`

This task will assess all tasks currently that have been started in Ngenea Hub and will ensure that they are not lost due to a communication error.

Any tasks found to not be actively running within any of the defined queues will be marked as invalid after the configurable time threshold `task_invalidation_timeout` in the `configuration API`.

The schedule of this task can be controlled by using the `INACTIVE_TASKS_INTERVAL` config setting, any provided value must comply with cron syntax.

#### `dynamocore.tasks.jobs.invalidate_cancelled_job_tasks`

After jobs are cancelled within the Ngenea Hub some tasks can be left in an un-cancelled state if the service un-expectedly exits leaving tasks in a non-cancelled state indefinitely. This task will automatically clean up these tasks that are in incorrect states.

The schedule of this task can be controlled by using the `INVALIDATE_CANCELLED_JOB_TASKS_INTERVAL` config setting, any provided value must comply with cron syntax.

#### `dynamocore.tasks.network.ensure_consistent_tc_rules`

With bandwidth controls enabled for any sites this task ensures that these rules are enacted on each site. Sites that are already compliant with their networking rules will not see any effect.

#### `dynamocore.tasks.events.cleanup_old_events`

This task automatically removes bidirectional sync events within the database. It will clear all objects for all but the latest 2 jobs along with any jobs that have been cancelled and failed

The schedule of this task can be controlled by using the `CLEANUP_OLD_EVENTS_INTERVAL` config setting, any provided value must comply with cron syntax.

#### `dynamocore.tasks.browsing.browsing_task_clear`

Removes all cached task results for API requests for file details for the file browser in the UI. It will remove all entries that are older than an hour along with any that received errors when retrieving results.

#### `dynamocore.tasks.system_settings.create_or_update_site_settings_auto`

This task starts up a task in the main `celery` queue within Ngenea Hub for updating or creating outstanding settings across all active sites within the management of Ngenea Hub. This starts by executing `dynamocore.tasks.site.active_sites` followed immediately by `dynamocore.tasks.system_settings.create_or_update_site_settings_for_sites`. This will cause Ngenea Hub to retrieve the settings for every site using `dynamo.tasks.get_config_for_keys` and update the hub database accordingly using an additional task on the main `celery` queue within Ngenea Hub.

This call uses the main `worker` function queue with the Ngenea Worker, more details on queue functions are available in the [function configuration](#).

The schedule of this task can be controlled by using the `SYNC_SITE_SETTINGS_INTERVAL` config setting, any provided value must comply with cron syntax.

## `dynamocore.tasks.system_settings.sync_global_settings_auto`

Starts up a task in the main `celery` within Ngenea Hub that creates a collection of tasks to retrieve the global settings and external Ngenea targets within the hub database and apply them to every Ngenea Worker. It achieves this with the Ngenea Worker task `dynamo.tasks.set_config_and_apply` this is run on the main `worker` function.

The schedule of this task can be controlled by using the `SYNC_GLOBAL_SETTINGS_INTERVAL` config setting, any provided value must comply with cron syntax.

## `dynamocore.tasks.spaces.sync_spaces`

When a space is created or updated and the job fails, this automated task schedules a retry attempt on making the space. If this is already being processed, it will not update the space within this interval.

The schedule of this task can be controlled by using the `SYNC_SPACES_INTERVAL` config setting, any provided value must comply with cron syntax.

## Every 12 Hours

## `dynamocore.tasks.site.fetch_site_analytics`

.. note:: This has an offset of 37 minutes to prevent overlapping system tasks.

Retrieves the site-wide analytics from all sites and then stores them within the Ngenea Hub database. The timeout for this operation is controlled via the `analytics_timeout` in the `configuration API`. This analytics task is run on the `discovery` function within the Ngenea Hub.

The schedule of this task can be controlled by using the `REFRESH_SITE_ANALYTICS_INTERVAL` config setting, any provided value must comply with cron syntax.

## Daily

## `dynamocore.tasks.search.remove_old_search_results`

This automated task removes all the old search result caches for searches submitted by the UI. The time period for this lifetime is controlled by the `search_result_ttl` in the `configuration API`, the default for this threshold is 7 days.

The schedule of this task can be controlled by using the `REMOVE_OLD_SEARCH_RESULTS_INTERVAL` config setting, any provided value must comply with cron syntax.

## `dynamocore.tasks.jobs.expire_old_jobs`

This automated task removes all the old jobs (settings, workflows, scheduled) that have been submitted and processed within Ngenea Hub.

The threshold for this can be controlled by the `jobs_ttl` in the [configuration API](#), the default for this is 30 days.

The schedule of this task can be controlled by using the `EXPIRE_OLD_JOBS_INTERVAL` config setting, any provided value must comply with cron syntax.

#### `dynamocore.tasks.network.update_cloud_ips_for_s3`

Once per day, Ngenea Hub collects the IP addresses published by Amazon for their S3 service for uses in controlling the bandwidth of any S3 related operations going through Ngenea Worker.

If there are any changes in the address listings, this will be reported to the Ngenea Worker which will adjust any network interface it may be managing.

If bandwidth controls are not enabled, the changes will have no effect on any existing Ngenea Worker instances.

#### `dynamocore.tasks.network.update_cloud_ips_for_azure`

Once per day, Ngenea Hub collects the IP addresses published by Microsoft for their Azure Blob service for uses in controlling the bandwidth of any Azure related operations going through Ngenea Worker.

If there are any changes in the address listings, this will be reported to the Ngenea Worker which will adjust any network interface it may be managing.

If bandwidth controls are not enabled, the changes will have no effect on any existing Ngenea Worker instances.

#### `dynamocore.tasks.network.update_cloud_ips_for_google`

Once per day, Ngenea Hub collects the IP addresses published by Google for their GCS service for uses in controlling the bandwidth of any GCS related operations going through Ngenea Worker.

If there are any changes in the address listings, this will be reported to the Ngenea Worker which will adjust any network interface it may be managing.

If bandwidth controls are not enabled, the changes will have no effect on any existing Ngenea Worker instances.

#### `dynamocore.tasks.server.get_remote_servers`

Once per day Ngenea Hub has to retrieve the currently configured CTDB servers on each Ngenea Worker. It achieves this through the Ngenea Worker task `dynamo.tasks.get_servers` on the `worker` function of each site. This is then stored through the main Ngenea Hub `celery` queue through the `dynamocore.tasks.server.store_server_callback` task.

The schedule of this task can be controlled by using the `SYNC_REMOTE_SERVERS_INTERVAL` config setting, any provided value must comply with cron syntax.

## dynamocore.tasks.jobs.expire\_old\_fsubjects

Removes the stored long term file browser caching entries in the database and will expire any entries that have not been accessed within 7 days.

The schedule of this task can be controlled by using the `EXPIRE_OLD_FSOBJECTS_INTERVAL` config setting, any provided value must comply with cron syntax.

## dynamocore.tasks.refresh.delete\_removed\_queues

Once queues are marked for deletion after being removed from a sites config file and the queue removal tool has been run, it will collect these queues and remove them along with and alerts linked to them.

The schedule of this task can be controlled by using the `REMOVED_QUEUE_CLEANUP_INTERVAL` config setting, any provided value must comply with cron syntax.

## Job States

When jobs are created on the call of a workflow, they can end up in specific state that

State	Description
Pending	The job is being populated with tasks through its discovery task and will begin when paths have been collected
Started	Some tasks within the job have started to be processed
Success	All tasks in a job have completed successfully
Failure	There was an error or failure when attempting a task within a job, meaning the job could not complete
Pausing	The job has been manually paused via request and is waiting for on-going tasks to complete
Paused	The job has been manually paused via request and can be resumed or cancelled manually
Cancelled	The job has been manually closed via request and all remaining task have been cancelled
Dequeuing	The job has been manually cancelled via request and is in the process of removing tasks from the queue

## Task States

When jobs create tasks, after performing their action on the provided files they can end up in specific state as seen below

State	Description
Pending	This task is has been created but has not yet been picked up by a site
Started	This task is now running on site
Success	This task has completed successfully

State	Description
Failure	There was a unexpected error when attempting a task within a job, meaning the job could not complete and could not provide structured output
Error	There was a captured error when attempting a task within a job, meaning the job will not have processed all paths but has structured output of what has been completed. Any paths which were successfully processed will be handled by subsequent tasks in a task chain.
Skipped	This task has will have no work to perform so it has been automatically skipped by another task
Cancelled	Either a previous task has failed or the job has been manually cancelled, causing this task to no longer run

**Note:** Job and task states are updated asynchronously. There may be, for example, a short delay between a job/task completing and its state being reported as such.

## File States

As a file is processed by a workflow, each task reports whether the state of the file following the task. The containing job reports the state of the file after all workflow steps have completed.

A file can have any of the following states

### Processed

The file was successfully processed by the workflow step without issues

### Skipped

The files was not processed because it was already in the expected state, e.g. a delete was skipped because the file wasn't found, a migration was skipped because the file was already offline.

Because it is in the expected state, skipped files can be processed by subsequent tasks in the workflow.

### Failed

An error occurred meaning the file couldn't be processed. Because of this error, the file will not be processed by later tasks in the workflow.

The overall job will be marked as failed if it contains any failed files. Workflows which use the `snappdiff` discovery will be 'rolled back' in this case.

Failed files typically indicate an issue that needs to be manually resolved, such as network issues.

## Aborted

An error occurred meaning the file couldn't be processed. Because the file was aborted, it will not be processed by later tasks in the workflow.

The overall job is **not** marked as failed if it contains aborted files. Workflows which use the `snappdiff` discovery will 'rotate' in this case.

The intended use case for this state is in scheduled (recurring) jobs, where the any aborted files are expected to be successfully processed in a later run.

For example, if a file changes while it is being sent, the send will be aborted to prevent data corruption. But because the file was modified, it will be identified as modified in the next `snappdiff` scan and processed again; effectively retried.

## API

### GET /actions/

#### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].action** (*string*) - (required)
- **results[].id** (*integer*) - (read only)
- **results[].state** (*string*) -

### POST /actions/

#### Request JSON Object:

- **action** (*string*) - (required)

#### Status Codes:

- 201 Created -

#### Response JSON Object:

- **action** (*string*) - (required)

### GET /actions/{id}/

#### Parameters:

- **id** (*string*) -

#### Status Codes:

- 200 OK -

### Response JSON Object:

- **action** (*string*) - (required)
- **id** (*integer*) - (read only)
- **results** (*string*) - (read only)
- **state** (*string*) -
- **user** (*integer*) -

## GET /alerts/

### Query Parameters:

- **name** (*string*) - name
- **node** (*string*) - node
- **site** (*string*) - site
- **severity** (*string*) - severity
- **summary** (*string*) - summary
- **timestamp** (*string*) - timestamp
- **suppressed** (*string*) - suppressed

### Status Codes:

- 200 OK -

### Response JSON Object:

- **[].created** (*string*) - Time that the alert was recorded in Hub
- **[].id** (*integer*) - (read only)
- **[].name** (*string*) - Name of of the alert (required)
- **[].node** (*string*) - Hostname of the node the alert originated from
- **[].queue** (*string*) - Name of the queue that the alert relates to
- **[].severity** (*string*) - (required)
- **[].site** (*string*) - (read only)
- **[].summary** (*string*) - Summary description of the alert
- **[].suppressed** (*boolean*) - Whether the alert is suppressed
- **[].timestamp** (*string*) - Time when the alert was triggered (required)

## GET /alerts/{id}/

### Parameters:

- **id** (*integer*) - A unique integer value identifying this alert.

### Status Codes:

- 200 OK -

### Response JSON Object:

- **created** (*string*) - Time that the alert was recorded in Hub
- **id** (*integer*) - (read only)
- **name** (*string*) - Name of of the alert (required)
- **node** (*string*) - Hostname of the node the alert originated from
- **queue** (*string*) - Name of the queue that the alert relates to
- **severity** (*string*) - (required)
- **site** (*string*) - (read only)
- **summary** (*string*) - Summary description of the alert
- **suppressed** (*boolean*) - Whether the alert is suppressed
- **timestamp** (*string*) - Time when the alert was triggered (required)

## GET /analytics/

Retrieves list of files under given path for given site.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **path** (*string*) - Target directory path
- **site** (*string*) - Site name
- **children** (*boolean*) - Include children directories
- **cache\_ttl** (*integer*) - How long the cache will last for the target path
- **custom\_timeout** (*integer*) - Timeout for fetching analytics
- **raise\_exception** (*boolean*) - Raise exception if timeout
- **download** (*string*) - Download details as file e.g. CSV ?download=csv.

### Status Codes:

- 200 OK -

## GET /auth/clientkeys/

API endpoint for managing client keys

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].id** (*integer*) - (read only)
- **results[].name** (*string*) - Name of the client key (required)
- **results[].url** (*string*) - (read only)
- **results[].user** (*string*) - (required)

## POST /auth/clientkeys/

API endpoint for managing client keys

### Request JSON Object:

- **api\_key** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **name** (*string*) - Name of the client key (required)
- **url** (*string*) - (read only)

### Status Codes:

- 201 Created -

### Response JSON Object:

- **api\_key** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **name** (*string*) - Name of the client key (required)
- **url** (*string*) - (read only)

## GET /auth/clientkeys/{id}/

API endpoint for managing client keys

### Parameters:

- **id** (*string*) -

### Status Codes:

- [200 OK](#) -

### Response JSON Object:

- **id** (*integer*) - (read only)
- **name** (*string*) - Name of the client key (required)
- **url** (*string*) - (read only)
- **user** (*string*) - (required)

## PATCH /auth/clientkeys/{id}/

API endpoint for managing client keys

### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **id** (*integer*) - (read only)
- **name** (*string*) - Name of the client key (required)
- **url** (*string*) - (read only)
- **user** (*string*) - (read only)

### Status Codes:

- [200 OK](#) -

### Response JSON Object:

- **id** (*integer*) - (read only)
- **name** (*string*) - Name of the client key (required)
- **url** (*string*) - (read only)
- **user** (*string*) - (read only)

## DELETE /auth/clientkeys/{id}/

API endpoint for managing client keys

### Parameters:

- **id** (*string*) -

### Status Codes:

- [204 No Content](#) -

## POST /auth/keycloak/token/

**Exchange a Keycloak token for Django JWT tokens.**

Validates the Keycloak token and returns Django JWT access/refresh tokens along with user information.

**Status Codes:**

- 201 Created -

**POST /auth/token/****Request JSON Object:**

- **password** (*string*) - (required)
- **username** (*string*) - (required)

**Status Codes:**

- 201 Created -

**Response JSON Object:**

- **password** (*string*) - (required)
- **username** (*string*) - (required)

**GET /auth/token/publickey/**

API endpoint for retrieving public key that is used for token verification.

**Status Codes:**

- 200 OK -

**POST /auth/token/refresh/**

Takes a refresh type JSON web token and returns an access type JSON web token if the refresh token is valid.

**Request JSON Object:**

- **access** (*string*) - (read only)
- **refresh** (*string*) - (required)

**Status Codes:**

- 201 Created -

**Response JSON Object:**

- **access** (*string*) - (read only)
- **refresh** (*string*) - (required)

**POST /auth/token/verify/**

Verifies that the token is not expired AND the token owner exists in the database AND the token owner is an active user.

**Request JSON Object:**

- **token** (*string*) - (required)
- **type** (*string*) - Token type e.g: *access* or *refresh* (required)

**Status Codes:**

- 201 Created -

**Response JSON Object:**

- **token** (*string*) - (required)
- **type** (*string*) - Token type e.g: *access* or *refresh* (required)

**GET /automatedschedules/****Query Parameters:**

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination

and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].day\_of\_month** (*string*) - (required)
- **results[].day\_of\_week** (*string*) - (required)
- **results[].discovery\_id** (*integer*) - (read only)
- **results[].discovery\_managed\_paths** (*string*) - (read only)
- **results[].discovery\_name** (*string*) - (read only)
- **results[].discovery\_workflow** (*string*) - (read only)
- **results[].enabled** (*boolean*) - (required)
- **results[].hour** (*string*) - (required)
- **results[].minute** (*string*) - (required)
- **results[].month\_of\_year** (*string*) - (required)
- **results[].name** (*string*) - (required)
- **results[].policy\_id** (*integer*) - (read only)
- **results[].policy\_name** (*string*) - (read only)
- **results[].schedule\_type** (*string*) - (required)
- **results[].site\_name** (*string*) - (read only)
- **results[].spaces** (*string*) - (read only)

## GET /buckets/

Model View Set for the Bucket model.

#### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].access\_key** (*string*) - (read only)
- **results[].access\_key\_id** (*string*) - (read only)
- **results[].advanced\_settings** (*object*) - Advanced settings for the target
- **results[].container** (*string*) - Azure storage container
- **results[].credentials\_file** (*string*) - JSON file containing Google Cloud credentials
- **results[].credentials\_json** (*string*) - (read only)

- **results[].endpoint** (*string*) - Hostname of the target storage service
- **results[].external\_targets[]** (*integer*) -
- **results[].id** (*integer*) - (read only)
- **results[].label** (*string*) - Bucket label
- **results[].migration\_target\_folder** (*string*) - Filepath of migration target for FS storage type
- **results[].name** (*string*) - Bucket name (required)
- **results[].port** (*integer*) - Port of the target storage service
- **results[].region** (*string*) - Region where the bucket is located
- **results[].scheme** (*string*) - Connection protocol
- **results[].secret\_access\_key** (*string*) - (read only)
- **results[].soft\_deleting** (*boolean*) - The bucket is soft-deleting. Remote tasks are still running.
- **results[].ssl\_verify** (*boolean*) - Verify SSL certificate when connecting
- **results[].storage\_account** (*string*) - Azure storage account name
- **results[].storage\_type** (*string*) - Type of external storage (e.g., Amazon S3, Azure, etc.) (required)

## POST /buckets/

Model View Set for the Bucket model.

### Request JSON Object:

- **access\_key** (*string*) - Azure-specific access key
- **access\_key\_id** (*string*) - Access key ID for the storage service
- **advanced\_settings** (*object*) - Advanced settings for the target
- **container** (*string*) - Azure storage container
- **credentials\_file** (*string*) - JSON file containing Google Cloud credentials
- **credentials\_json** (*object*) - JSON blob containing Google Cloud credentials
- **endpoint** (*string*) - Hostname of the target storage service
- **id** (*integer*) - (read only)
- **label** (*string*) - Bucket label
- **migration\_target\_folder** (*string*) - Filepath of migration target for FS storage type
- **name** (*string*) - Bucket name (required)
- **port** (*integer*) - Port of the target storage service
- **region** (*string*) - Region where the bucket is located
- **scheme** (*string*) - Connection protocol
- **secret\_access\_key** (*string*) - Secret access key for the storage service
- **ssl\_verify** (*boolean*) - Verify SSL certificate when connecting
- **storage\_account** (*string*) - Azure storage account name
- **storage\_type** (*string*) - Type of external storage (e.g., Amazon S3, Azure, etc.) (required)

### Status Codes:

- [201 Created](#) -

### Response JSON Object:

- **access\_key** (*string*) - Azure-specific access key
- **access\_key\_id** (*string*) - Access key ID for the storage service
- **advanced\_settings** (*object*) - Advanced settings for the target
- **container** (*string*) - Azure storage container
- **credentials\_file** (*string*) - JSON file containing Google Cloud credentials

- **credentials\_json** (*object*) - JSON blob containing Google Cloud credentials
- **endpoint** (*string*) - Hostname of the target storage service
- **id** (*integer*) - (read only)
- **label** (*string*) - Bucket label
- **migration\_target\_folder** (*string*) - Filepath of migration target for FS storage type
- **name** (*string*) - Bucket name (required)
- **port** (*integer*) - Port of the target storage service
- **region** (*string*) - Region where the bucket is located
- **scheme** (*string*) - Connection protocol
- **secret\_access\_key** (*string*) - Secret access key for the storage service
- **ssl\_verify** (*boolean*) - Verify SSL certificate when connecting
- **storage\_account** (*string*) - Azure storage account name
- **storage\_type** (*string*) - Type of external storage (e.g., Amazon S3, Azure, etc.) (required)

## GET /buckets/{id}/

Model View Set for the Bucket model.

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **access\_key** (*string*) - (read only)
- **access\_key\_id** (*string*) - (read only)
- **advanced\_settings** (*object*) - Advanced settings for the target
- **container** (*string*) - Azure storage container
- **credentials\_file** (*string*) - JSON file containing Google Cloud credentials
- **credentials\_json** (*string*) - (read only)
- **endpoint** (*string*) - Hostname of the target storage service
- **external\_targets[]** (*integer*) -
- **id** (*integer*) - (read only)
- **label** (*string*) - Bucket label
- **migration\_target\_folder** (*string*) - Filepath of migration target for FS storage type
- **name** (*string*) - Bucket name (required)
- **port** (*integer*) - Port of the target storage service
- **region** (*string*) - Region where the bucket is located
- **scheme** (*string*) - Connection protocol
- **secret\_access\_key** (*string*) - (read only)
- **soft\_deleting** (*boolean*) - The bucket is soft-deleting. Remote tasks are still running.
- **ssl\_verify** (*boolean*) - Verify SSL certificate when connecting
- **storage\_account** (*string*) - Azure storage account name
- **storage\_type** (*string*) - Type of external storage (e.g., Amazon S3, Azure, etc.) (required)

## PATCH /buckets/{id}/

Model View Set for the Bucket model.

### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **access\_key** (*string*) - Azure-specific access key
- **access\_key\_id** (*string*) - Access key ID for the storage service
- **advanced\_settings** (*object*) - Advanced settings for the target
- **container** (*string*) - Azure storage container
- **credentials\_file** (*string*) - JSON file containing Google Cloud credentials
- **credentials\_json** (*object*) - JSON blob containing Google Cloud credentials
- **endpoint** (*string*) - Hostname of the target storage service
- **id** (*integer*) - (read only)
- **label** (*string*) - Bucket label
- **migration\_target\_folder** (*string*) - Filepath of migration target for FS storage type
- **name** (*string*) - Bucket name (required)
- **port** (*integer*) - Port of the target storage service
- **region** (*string*) - Region where the bucket is located
- **scheme** (*string*) - Connection protocol
- **secret\_access\_key** (*string*) - Secret access key for the storage service
- **ssl\_verify** (*boolean*) - Verify SSL certificate when connecting
- **storage\_account** (*string*) - Azure storage account name
- **storage\_type** (*string*) - Type of external storage (e.g., Amazon S3, Azure, etc.) (required)

### Status Codes:

- **200 OK** -

### Response JSON Object:

- **access\_key** (*string*) - Azure-specific access key
- **access\_key\_id** (*string*) - Access key ID for the storage service
- **advanced\_settings** (*object*) - Advanced settings for the target
- **container** (*string*) - Azure storage container
- **credentials\_file** (*string*) - JSON file containing Google Cloud credentials
- **credentials\_json** (*object*) - JSON blob containing Google Cloud credentials
- **endpoint** (*string*) - Hostname of the target storage service
- **id** (*integer*) - (read only)
- **label** (*string*) - Bucket label
- **migration\_target\_folder** (*string*) - Filepath of migration target for FS storage type
- **name** (*string*) - Bucket name (required)
- **port** (*integer*) - Port of the target storage service
- **region** (*string*) - Region where the bucket is located
- **scheme** (*string*) - Connection protocol
- **secret\_access\_key** (*string*) - Secret access key for the storage service
- **ssl\_verify** (*boolean*) - Verify SSL certificate when connecting
- **storage\_account** (*string*) - Azure storage account name
- **storage\_type** (*string*) - Type of external storage (e.g., Amazon S3, Azure, etc.) (required)

## DELETE /buckets/{id}/

Delete the bucket and apply the settings to delete them on external targets on all sites that they are available.

### Parameters:

- **request** -
- **id** (*string*) -

### Status Codes:

- **204 No Content** -

## GET /configurations/

API endpoint for viewing and setting configurations.

### Status Codes:

- **200 OK** -

### Response JSON Object:

- **analytics\_timeout** (*integer*) - Maximum time to wait for results from analytics in seconds
- **custom\_statistics\_tasks** (*object*) - A list of custom tasks to be considered discovery tasks
- **default\_space\_location** (*string*) - Default location for space
- **filebrowser\_proxies\_backend** (*string*) - Filebrowser proxies backend
- **force\_local\_managed\_users** (*boolean*) - Allow NAS users to be managed on AD joined sites
- **health\_timeout** (*integer*) - Maximum time to wait health check to see what sites are available in seconds
- **initial\_gid** (*integer*) - Minimum GID to be configured
- **initial\_uid** (*integer*) - Minimum UID to be configured
- **jobs\_ttl** (*integer*) - Time to store job details after the job completes, in days
- **keycloak\_jwks\_timeout** (*integer*) - Configurable timeout to avoid repeated HTTP requests to JWKS endpoint
- **maximum\_external\_results** (*integer*) - Maximum number of items to retrieve per page from an external target scan
- **node\_health\_last\_heartbeat\_interval** (*integer*) - The time since the last health heartbeat was recorded in seconds
- **salt\_task\_timeout** (*number*) - Salt timeout in seconds
- **schedules\_enabled** (*boolean*) - Allow processing of automated schedules
- **search\_backend** (*string*) - Search backend
- **search\_max\_results** (*integer*) - Maximum search results
- **search\_result\_ttl** (*integer*) - Maximum time to store search results in days
- **snapdiff\_stream\_timeout** (*integer*) - Maximum amount of minutes to wait for task results
- **snapshot\_create\_delete\_retry\_timeout** (*integer*) - Maximum time for workers to retry snapshot create and delete operations, in seconds
- **stat\_refresh\_period** (*integer*) - Maximum time to wait for results from stat in seconds
- **stat\_timeout** (*integer*) - Maximum time to wait for results from stat in seconds
- **task\_invalidation\_timeout** (*integer*) - Maximum amount of minutes before a task in the STARTED state is considered invalid

## PATCH /configurations/

API endpoint for viewing and setting configurations.

### Request JSON Object:

- **analytics\_timeout** (*integer*) - Maximum time to wait for results from analytics in seconds
- **custom\_statistics\_tasks** (*object*) - A list of custom tasks to be considered discovery tasks
- **default\_space\_location** (*string*) - Default location for space
- **filebrowser\_proxies\_backend** (*string*) - Filebrowser proxies backend
- **force\_local\_managed\_users** (*boolean*) - Allow NAS users to be managed on AD joined sites
- **health\_timeout** (*integer*) - Maximum time to wait health check to see what sites are available in seconds
- **initial\_gid** (*integer*) - Minimum GID to be configured
- **initial\_uid** (*integer*) - Minimum UID to be configured
- **jobs\_ttl** (*integer*) - Time to store job details after the job completes, in days
- **keycloak\_jwks\_timeout** (*integer*) - Configurable timeout to avoid repeated HTTP requests to JWKS endpoint
- **maximum\_external\_results** (*integer*) - Maximum number of items to retrieve per page from an external target scan
- **node\_health\_last\_heartbeat\_interval** (*integer*) - The time since the last health heartbeat was recorded in seconds
- **salt\_task\_timeout** (*number*) - Salt timeout in seconds
- **schedules\_enabled** (*boolean*) - Allow processing of automated schedules
- **search\_backend** (*string*) - Search backend
- **search\_max\_results** (*integer*) - Maximum search results
- **search\_result\_ttl** (*integer*) - Maximum time to store search results in days
- **snapdiff\_stream\_timeout** (*integer*) - Maximum amount of minutes to wait for task results
- **snapshot\_create\_delete\_retry\_timeout** (*integer*) - Maximum time for workers to retry snapshot create and delete operations, in seconds
- **stat\_refresh\_period** (*integer*) - Maximum time to wait for results from stat in seconds
- **stat\_timeout** (*integer*) - Maximum time to wait for results from stat in seconds
- **task\_invalidation\_timeout** (*integer*) - Maximum amount of minutes before a task in the STARTED state is considered invalid

### Status Codes:

- **200 OK** -

### Response JSON Object:

- **analytics\_timeout** (*integer*) - Maximum time to wait for results from analytics in seconds
- **custom\_statistics\_tasks** (*object*) - A list of custom tasks to be considered discovery tasks
- **default\_space\_location** (*string*) - Default location for space
- **filebrowser\_proxies\_backend** (*string*) - Filebrowser proxies backend
- **force\_local\_managed\_users** (*boolean*) - Allow NAS users to be managed on AD joined sites
- **health\_timeout** (*integer*) - Maximum time to wait health check to see what sites are available in seconds
- **initial\_gid** (*integer*) - Minimum GID to be configured
- **initial\_uid** (*integer*) - Minimum UID to be configured

- **jobs\_ttl** (*integer*) - Time to store job details after the job completes, in days
- **keycloak\_jwks\_timeout** (*integer*) - Configurable timeout to avoid repeated HTTP requests to JWKS endpoint
- **maximum\_external\_results** (*integer*) - Maximum number of items to retrieve per page from an external target scan
- **node\_health\_last\_heartbeat\_interval** (*integer*) - The time since the last health heartbeat was recorded in seconds
- **salt\_task\_timeout** (*number*) - Salt timeout in seconds
- **schedules\_enabled** (*boolean*) - Allow processing of automated schedules
- **search\_backend** (*string*) - Search backend
- **search\_max\_results** (*integer*) - Maximum search results
- **search\_result\_ttl** (*integer*) - Maximum time to store search results in days
- **snappdiff\_stream\_timeout** (*integer*) - Maximum amount of minutes to wait for task results
- **snapshot\_create\_delete\_retry\_timeout** (*integer*) - Maximum time for workers to retry snapshot create and delete operations, in seconds
- **stat\_refresh\_period** (*integer*) - Maximum time to wait for results from stat in seconds
- **stat\_timeout** (*integer*) - Maximum time to wait for results from stat in seconds
- **task\_invalidation\_timeout** (*integer*) - Maximum amount of minutes before a task in the STARTED state is considered invalid

## GET /datastores/

API endpoint for managing DataStores.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].accesskey** (*string*) -
- **results[].accesskeyid** (*string*) -
- **results[].bucket** (*string*) -
- **results[].container** (*string*) -
- **results[].credentialsfile** (*string*) -
- **results[].endpoint** (*string*) -
- **results[].id** (*integer*) - (read only)
- **results[].name** (*string*) - DataStore Name (required)
- **results[].region** (*string*) -
- **results[].secretaccesskey** (*string*) -

- **results[].storageaccount** (*string*) -
- **results[].type** (*string*) - Site Type (required)
- **results[].url** (*string*) - (read only)

## POST /datastores/

API endpoint for managing DataStores.

### Request JSON Object:

- **accesskey** (*string*) -
- **accesskeyid** (*string*) -
- **bucket** (*string*) -
- **container** (*string*) -
- **credentialsfile** (*string*) -
- **endpoint** (*string*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - DataStore Name (required)
- **region** (*string*) -
- **secretaccesskey** (*string*) -
- **storageaccount** (*string*) -
- **type** (*string*) - Site Type (required)
- **url** (*string*) - (read only)

### Status Codes:

- [201 Created](#) -

### Response JSON Object:

- **accesskey** (*string*) -
- **accesskeyid** (*string*) -
- **bucket** (*string*) -
- **container** (*string*) -
- **credentialsfile** (*string*) -
- **endpoint** (*string*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - DataStore Name (required)
- **region** (*string*) -
- **secretaccesskey** (*string*) -
- **storageaccount** (*string*) -
- **type** (*string*) - Site Type (required)
- **url** (*string*) - (read only)

## GET /datastores/{id}/

API endpoint for managing DataStores.

### Parameters:

- **id** (*string*) -

### Status Codes:

- [200 OK](#) -

### Response JSON Object:

- **accesskey** (*string*) -
- **accesskeyid** (*string*) -
- **bucket** (*string*) -
- **container** (*string*) -

- **credentialsfile** (*string*) -
- **endpoint** (*string*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - DataStore Name (required)
- **region** (*string*) -
- **secretaccesskey** (*string*) -
- **storageaccount** (*string*) -
- **type** (*string*) - Site Type (required)
- **url** (*string*) - (read only)

## PATCH /datastores/{id}/

API endpoint for managing DataStores.

### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **accesskey** (*string*) -
- **accesskeyid** (*string*) -
- **bucket** (*string*) -
- **container** (*string*) -
- **credentialsfile** (*string*) -
- **endpoint** (*string*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - DataStore Name (required)
- **region** (*string*) -
- **secretaccesskey** (*string*) -
- **storageaccount** (*string*) -
- **type** (*string*) - Site Type (required)
- **url** (*string*) - (read only)

### Status Codes:

- **200 OK** -

### Response JSON Object:

- **accesskey** (*string*) -
- **accesskeyid** (*string*) -
- **bucket** (*string*) -
- **container** (*string*) -
- **credentialsfile** (*string*) -
- **endpoint** (*string*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - DataStore Name (required)
- **region** (*string*) -
- **secretaccesskey** (*string*) -
- **storageaccount** (*string*) -
- **type** (*string*) - Site Type (required)
- **url** (*string*) - (read only)

## DELETE /datastores/{id}/

API endpoint for managing DataStores.

### Parameters:

- **id** (*string*) -

### Status Codes:

- 204 No Content -

## GET /external\_targets/

Model View Set for filebrowser's ExternalTarget model.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **bucket** (*string*) - External target bucket name

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].advanced\_settings** (*object*) - Advanced settings for the target
- **results[].available\_on\_sites[]** (*integer*) - Sites where this target is available
- **results[].backup\_only** (*boolean*) - Mark this target as backup only
- **results[].backup\_site** (*integer*) - Site which claimed this target for backup
- **results[].bucket.access\_key** (*string*) - (read only)
- **results[].bucket.access\_key\_id** (*string*) - (read only)
- **results[].bucket.advanced\_settings** (*object*) - Advanced settings for the target
- **results[].bucket.container** (*string*) - Azure storage container
- **results[].bucket.credentials\_file** (*string*) - JSON file containing Google Cloud credentials
- **results[].bucket.credentials\_json** (*string*) - (read only)
- **results[].bucket.endpoint** (*string*) - Hostname of the target storage service
- **results[].bucket.external\_targets[]** (*integer*) -
- **results[].bucket.id** (*integer*) - (read only)
- **results[].bucket.label** (*string*) - Bucket label
- **results[].bucket.migration\_target\_folder** (*string*) - Filepath of migration target for FS storage type
- **results[].bucket.name** (*string*) - Bucket name (required)
- **results[].bucket.port** (*integer*) - Port of the target storage service
- **results[].bucket.region** (*string*) - Region where the bucket is located
- **results[].bucket.scheme** (*string*) - Connection protocol
- **results[].bucket.secret\_access\_key** (*string*) - (read only)
- **results[].bucket.soft\_deleting** (*boolean*) - The bucket is soft-deleting. Remote tasks are still running.
- **results[].bucket.ssl\_verify** (*boolean*) - Verify SSL certificate when connecting

- **results[].bucket.storage\_account** (*string*) - Azure storage account name
- **results[].bucket.storage\_type** (*string*) - Type of external storage (e.g., Amazon S3, Azure, etc.) (required)
- **results[].bucket\_instance** (*integer*) - Associated bucket
- **results[].delete\_on\_recall** (*boolean*) - Delete files from the external storage on recall
- **results[].enabled** (*boolean*) - Whether this ngenea target is enabled. Default is true
- **results[].endpoint\_name** (*string*) - (read only)
- **results[].id** (*integer*) - (read only)
- **results[].include\_bucket\_in\_endpoint\_name** (*boolean*) - Set the endpoint name to <target>-<bucket>
- **results[].is\_ready** (*string*) - (read only)
- **results[].local\_file\_regex** (*string*) - Regex filter to match files for migration to this target (required)
- **results[].name** (*string*) - Ngenea target name (required)
- **results[].space.mountpoint** (*string*) - Mount point (required)
- **results[].space.name** (*string*) - Space Name (required)
- **results[].space.sites[]** (*integer*) -

## POST /external\_targets/

Model View Set for filebrowser's ExternalTarget model.

### Request JSON Object:

- **advanced\_settings** (*object*) - Advanced settings for the target
- **available\_on\_sites[]** (*integer*) - Sites where this target is available
- **backup\_only** (*boolean*) - Mark this target as backup only
- **backup\_site** (*integer*) - Site which claimed this target for backup
- **bucket.access\_key** (*string*) - (read only)
- **bucket.access\_key\_id** (*string*) - (read only)
- **bucket.advanced\_settings** (*object*) - Advanced settings for the target
- **bucket.container** (*string*) - Azure storage container
- **bucket.credentials\_file** (*string*) - JSON file containing Google Cloud credentials
- **bucket.credentials\_json** (*string*) - (read only)
- **bucket.endpoint** (*string*) - Hostname of the target storage service
- **bucket.external\_targets[]** (*integer*) -
- **bucket.id** (*integer*) - (read only)
- **bucket.label** (*string*) - Bucket label
- **bucket.migration\_target\_folder** (*string*) - Filepath of migration target for FS storage type
- **bucket.name** (*string*) - Bucket name (required)
- **bucket.port** (*integer*) - Port of the target storage service
- **bucket.region** (*string*) - Region where the bucket is located
- **bucket.scheme** (*string*) - Connection protocol
- **bucket.secret\_access\_key** (*string*) - (read only)
- **bucket.soft\_deleting** (*boolean*) - The bucket is soft-deleting. Remote tasks are still running.
- **bucket.ssl\_verify** (*boolean*) - Verify SSL certificate when connecting
- **bucket.storage\_account** (*string*) - Azure storage account name

- **bucket.storage\_type** (*string*) - Type of external storage (e.g., Amazon S3, Azure, etc.) (required)
- **bucket\_instance** (*integer*) - Associated bucket
- **delete\_on\_recall** (*boolean*) - Delete files from the external storage on recall
- **enabled** (*boolean*) - Whether this ngenea target is enabled. Default is true
- **endpoint\_name** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **include\_bucket\_in\_endpoint\_name** (*boolean*) - Set the endpoint name to <target>-<bucket>
- **is\_ready** (*string*) - (read only)
- **local\_file\_regex** (*string*) - Regex filter to match files for migration to this target (required)
- **name** (*string*) - Ngenea target name (required)
- **space.mountpoint** (*string*) - Mount point (required)
- **space.name** (*string*) - Space Name (required)
- **space.sites[]** (*integer*) -

#### Status Codes:

- 201 Created -

#### Response JSON Object:

- **advanced\_settings** (*object*) - Advanced settings for the target
- **available\_on\_sites[]** (*integer*) - Sites where this target is available
- **backup\_only** (*boolean*) - Mark this target as backup only
- **backup\_site** (*integer*) - Site which claimed this target for backup
- **bucket.access\_key** (*string*) - (read only)
- **bucket.access\_key\_id** (*string*) - (read only)
- **bucket.advanced\_settings** (*object*) - Advanced settings for the target
- **bucket.container** (*string*) - Azure storage container
- **bucket.credentials\_file** (*string*) - JSON file containing Google Cloud credentials
- **bucket.credentials\_json** (*string*) - (read only)
- **bucket.endpoint** (*string*) - Hostname of the target storage service
- **bucket.external\_targets[]** (*integer*) -
- **bucket.id** (*integer*) - (read only)
- **bucket.label** (*string*) - Bucket label
- **bucket.migration\_target\_folder** (*string*) - Filepath of migration target for FS storage type
- **bucket.name** (*string*) - Bucket name (required)
- **bucket.port** (*integer*) - Port of the target storage service
- **bucket.region** (*string*) - Region where the bucket is located
- **bucket.scheme** (*string*) - Connection protocol
- **bucket.secret\_access\_key** (*string*) - (read only)
- **bucket.soft\_deleting** (*boolean*) - The bucket is soft-deleting. Remote tasks are still running.
- **bucket.ssl\_verify** (*boolean*) - Verify SSL certificate when connecting
- **bucket.storage\_account** (*string*) - Azure storage account name
- **bucket.storage\_type** (*string*) - Type of external storage (e.g., Amazon S3, Azure, etc.) (required)
- **bucket\_instance** (*integer*) - Associated bucket
- **delete\_on\_recall** (*boolean*) - Delete files from the external storage on recall
- **enabled** (*boolean*) - Whether this ngenea target is enabled. Default is true

- **endpoint\_name** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **include\_bucket\_in\_endpoint\_name** (*boolean*) - Set the endpoint name to <target>-<bucket>
- **is\_ready** (*string*) - (read only)
- **local\_file\_regex** (*string*) - Regex filter to match files for migration to this target (required)
- **name** (*string*) - Ngenea target name (required)
- **space.mountpoint** (*string*) - Mount point (required)
- **space.name** (*string*) - Space Name (required)
- **space.sites[]** (*integer*) -

## GET /external\_targets/{id}/

Model View Set for filebrowser's ExternalTarget model.

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **advanced\_settings** (*object*) - Advanced settings for the target
- **available\_on\_sites[]** (*integer*) - Sites where this target is available
- **backup\_only** (*boolean*) - Mark this target as backup only
- **backup\_site** (*integer*) - Site which claimed this target for backup
- **bucket.access\_key** (*string*) - (read only)
- **bucket.access\_key\_id** (*string*) - (read only)
- **bucket.advanced\_settings** (*object*) - Advanced settings for the target
- **bucket.container** (*string*) - Azure storage container
- **bucket.credentials\_file** (*string*) - JSON file containing Google Cloud credentials
- **bucket.credentials\_json** (*string*) - (read only)
- **bucket.endpoint** (*string*) - Hostname of the target storage service
- **bucket.external\_targets[]** (*integer*) -
- **bucket.id** (*integer*) - (read only)
- **bucket.label** (*string*) - Bucket label
- **bucket.migration\_target\_folder** (*string*) - Filepath of migration target for FS storage type
- **bucket.name** (*string*) - Bucket name (required)
- **bucket.port** (*integer*) - Port of the target storage service
- **bucket.region** (*string*) - Region where the bucket is located
- **bucket.scheme** (*string*) - Connection protocol
- **bucket.secret\_access\_key** (*string*) - (read only)
- **bucket.soft\_deleting** (*boolean*) - The bucket is soft-deleting. Remote tasks are still running.
- **bucket.ssl\_verify** (*boolean*) - Verify SSL certificate when connecting
- **bucket.storage\_account** (*string*) - Azure storage account name
- **bucket.storage\_type** (*string*) - Type of external storage (e.g., Amazon S3, Azure, etc.) (required)
- **bucket\_instance** (*integer*) - Associated bucket
- **delete\_on\_recall** (*boolean*) - Delete files from the external storage on recall

- **enabled** (*boolean*) - Whether this ngenea target is enabled. Default is true
- **endpoint\_name** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **include\_bucket\_in\_endpoint\_name** (*boolean*) - Set the endpoint name to <target>-<bucket>
- **is\_ready** (*string*) - (read only)
- **local\_file\_regex** (*string*) - Regex filter to match files for migration to this target (required)
- **name** (*string*) - Ngenea target name (required)
- **space.mountpoint** (*string*) - Mount point (required)
- **space.name** (*string*) - Space Name (required)
- **space.sites[]** (*integer*) -

## PATCH /external\_targets/{id}/

Model View Set for filebrowser's ExternalTarget model.

### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **advanced\_settings** (*object*) - Advanced settings for the target
- **available\_on\_sites[]** (*integer*) - Sites where this target is available
- **backup\_only** (*boolean*) - Mark this target as backup only
- **backup\_site** (*integer*) - Site which claimed this target for backup
- **bucket.access\_key** (*string*) - (read only)
- **bucket.access\_key\_id** (*string*) - (read only)
- **bucket.advanced\_settings** (*object*) - Advanced settings for the target
- **bucket.container** (*string*) - Azure storage container
- **bucket.credentials\_file** (*string*) - JSON file containing Google Cloud credentials
- **bucket.credentials\_json** (*string*) - (read only)
- **bucket.endpoint** (*string*) - Hostname of the target storage service
- **bucket.external\_targets[]** (*integer*) -
- **bucket.id** (*integer*) - (read only)
- **bucket.label** (*string*) - Bucket label
- **bucket.migration\_target\_folder** (*string*) - Filepath of migration target for FS storage type
- **bucket.name** (*string*) - Bucket name (required)
- **bucket.port** (*integer*) - Port of the target storage service
- **bucket.region** (*string*) - Region where the bucket is located
- **bucket.scheme** (*string*) - Connection protocol
- **bucket.secret\_access\_key** (*string*) - (read only)
- **bucket.soft\_deleting** (*boolean*) - The bucket is soft-deleting. Remote tasks are still running.
- **bucket.ssl\_verify** (*boolean*) - Verify SSL certificate when connecting
- **bucket.storage\_account** (*string*) - Azure storage account name
- **bucket.storage\_type** (*string*) - Type of external storage (e.g., Amazon S3, Azure, etc.) (required)
- **bucket\_instance** (*integer*) - Associated bucket
- **delete\_on\_recall** (*boolean*) - Delete files from the external storage on recall
- **enabled** (*boolean*) - Whether this ngenea target is enabled. Default is true

- **endpoint\_name** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **include\_bucket\_in\_endpoint\_name** (*boolean*) - Set the endpoint name to <target>-<bucket>
- **is\_ready** (*string*) - (read only)
- **local\_file\_regex** (*string*) - Regex filter to match files for migration to this target (required)
- **name** (*string*) - Ngenea target name (required)
- **space.mountpoint** (*string*) - Mount point (required)
- **space.name** (*string*) - Space Name (required)
- **space.sites[]** (*integer*) -

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **advanced\_settings** (*object*) - Advanced settings for the target
- **available\_on\_sites[]** (*integer*) - Sites where this target is available
- **backup\_only** (*boolean*) - Mark this target as backup only
- **backup\_site** (*integer*) - Site which claimed this target for backup
- **bucket.access\_key** (*string*) - (read only)
- **bucket.access\_key\_id** (*string*) - (read only)
- **bucket.advanced\_settings** (*object*) - Advanced settings for the target
- **bucket.container** (*string*) - Azure storage container
- **bucket.credentials\_file** (*string*) - JSON file containing Google Cloud credentials
- **bucket.credentials\_json** (*string*) - (read only)
- **bucket.endpoint** (*string*) - Hostname of the target storage service
- **bucket.external\_targets[]** (*integer*) -
- **bucket.id** (*integer*) - (read only)
- **bucket.label** (*string*) - Bucket label
- **bucket.migration\_target\_folder** (*string*) - Filepath of migration target for FS storage type
- **bucket.name** (*string*) - Bucket name (required)
- **bucket.port** (*integer*) - Port of the target storage service
- **bucket.region** (*string*) - Region where the bucket is located
- **bucket.scheme** (*string*) - Connection protocol
- **bucket.secret\_access\_key** (*string*) - (read only)
- **bucket.soft\_deleting** (*boolean*) - The bucket is soft-deleting. Remote tasks are still running.
- **bucket.ssl\_verify** (*boolean*) - Verify SSL certificate when connecting
- **bucket.storage\_account** (*string*) - Azure storage account name
- **bucket.storage\_type** (*string*) - Type of external storage (e.g., Amazon S3, Azure, etc.) (required)
- **bucket\_instance** (*integer*) - Associated bucket
- **delete\_on\_recall** (*boolean*) - Delete files from the external storage on recall
- **enabled** (*boolean*) - Whether this ngenea target is enabled. Default is true
- **endpoint\_name** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **include\_bucket\_in\_endpoint\_name** (*boolean*) - Set the endpoint name to <target>-<bucket>
- **is\_ready** (*string*) - (read only)

- **local\_file\_regex** (*string*) - Regex filter to match files for migration to this target (required)
- **name** (*string*) - Ngenea target name (required)
- **space.mountpoint** (*string*) - Mount point (required)
- **space.name** (*string*) - Space Name (required)
- **space.sites[]** (*integer*) -

## DELETE /external\_targets/{id}/

Model View Set for filebrowser's ExternalTarget model.

### Parameters:

- **id** (*string*) -

### Status Codes:

- [204 No Content](#) -

## GET /external\_targets/{id}/files/

Model View Set for filebrowser's ExternalTarget model.

### Parameters:

- **id** (*string*) -

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **path** (*string*) - Target remote path, value can be a glob eg 'aws/cats\*.jpg'. NOTE: For globs the scan is'nt recursive
- **max\_items** (*integer*) - Maximum number of items to retrieve per page
- **marker** (*string*) - Last pagination response marker

### Status Codes:

- [200 OK](#) -

### Response JSON Object:

- **directories[].name** (*string*) - (read only)
- **directories[].path** (*string*) - (required)
- **directories[].size** (*string*) - (read only)
- **directories[].type** (*string*) - (required)
- **files[].name** (*string*) - (read only)
- **files[].path** (*string*) - (required)
- **files[].size** (*string*) - (read only)
- **files[].type** (*string*) - (required)
- **marker** (*string*) - (required)
- **next\_marker** (*string*) - (required)
- **path** (*string*) - (required)
- **summary** (*object*) - (required)

## GET /features/

API endpoint for managing feature flags.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].description** (*string*) - Description of what the feature does (read only)
- **results[].enabled** (*boolean*) - Whether the feature has been enabled
- **results[].name** (*string*) - Name of the feature (read only)

## GET /features/{name}/

API endpoint for managing feature flags.

### Parameters:

- **name** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **description** (*string*) - Description of what the feature does (read only)
- **enabled** (*boolean*) - Whether the feature has been enabled
- **name** (*string*) - Name of the feature (read only)

## PATCH /features/{name}/

API endpoint for managing feature flags.

### Parameters:

- **name** (*string*) -

### Request JSON Object:

- **description** (*string*) - Description of what the feature does (read only)
- **enabled** (*boolean*) - Whether the feature has been enabled
- **name** (*string*) - Name of the feature (read only)

### Status Codes:

- 200 OK -

### Response JSON Object:

- **description** (*string*) - Description of what the feature does (read only)
- **enabled** (*boolean*) - Whether the feature has been enabled
- **name** (*string*) - Name of the feature (read only)

## GET /file/

Retrieves list of files under given path for given site.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **path** (*string*) - Target directory path
- **site** (*string*) - Site name
- **details** (*boolean*) - Show details of children objects
- **restricted** (*boolean*) - Include restricted objects
- **cache\_ttl** (*integer*) - How long the cache will last for the target path
- **type** (*string*) - item type

### Status Codes:

- 200 OK -

## POST /file/workflow/

Performs a workflow on a list of files

### Request JSON Object:

- **discovery** (*string*) - Discovery name
- **exclude[]** (*string*) -
- **fields** (*object*) -
- **ignore\_site\_excludes** (*boolean*) -
- **ignore\_site\_includes** (*boolean*) -
- **include[]** (*string*) -
- **job** (*integer*) - Job ID
- **paths[]** (*object*) -
- **queue** (*string*) - Queue name
- **site** (*string*) - Site name (required)
- **workflow** (*string*) - Workflow name (required)

### Status Codes:

- 201 Created -

### Response JSON Object:

- **discovery** (*string*) - Discovery name
- **exclude[]** (*string*) -
- **fields** (*object*) -
- **ignore\_site\_excludes** (*boolean*) -
- **ignore\_site\_includes** (*boolean*) -
- **include[]** (*string*) -
- **job** (*integer*) - Job ID
- **paths[]** (*object*) -
- **queue** (*string*) - Queue name
- **site** (*string*) - Site name (required)
- **workflow** (*string*) - Workflow name (required)

## GET /filesets/

Retrieve list of filesets on a given site.

### Query Parameters:

- **site** (*string*) – Site name

### Status Codes:

- 200 OK –

## GET /filestatustypes/

API endpoint for managing file status types.

### Query Parameters:

- **page** (*integer*) – A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) – Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- 200 OK –

### Response JSON Object:

- **count** (*integer*) – (required)
- **next** (*string*) –
- **previous** (*string*) –
- **results[].background\_color** (*string*) – (required)
- **results[].key** (*string*) – (required)
- **results[].label** (*string*) – (required)
- **results[].text\_color** (*string*) – (required)
- **results[].url** (*string*) – (read only)

## GET /filestatustypes/{key}/

API endpoint for managing file status types.

### Parameters:

- **key** (*string*) –

### Status Codes:

- 200 OK –

### Response JSON Object:

- **background\_color** (*string*) – (required)
- **key** (*string*) – (required)
- **label** (*string*) – (required)
- **text\_color** (*string*) – (required)
- **url** (*string*) – (read only)

## PATCH /filestatustypes/{key}/

API endpoint for managing file status types.

### Parameters:

- **key** (*string*) –

### Request JSON Object:

- **background\_color** (*string*) – (required)
- **label** (*string*) – (required)
- **text\_color** (*string*) – (required)

### Status Codes:

- 200 OK -

### Response JSON Object:

- **background\_color** (*string*) - (required)
- **label** (*string*) - (required)
- **text\_color** (*string*) - (required)

## GET /filesystems/

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].mountpoint** (*string*) - Filesystem mount point (required)
- **results[].name** (*string*) - Name of the filesystem (required)
- **results[].site** (*string*) - Site the filesystem belongs to (required)

## GET /filesystems/{id}/

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **mountpoint** (*string*) - Filesystem mount point (required)
- **name** (*string*) - Name of the filesystem (required)
- **site** (*string*) - Site the filesystem belongs to (required)

## GET /groups/

API endpoint for managing groups.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].description** (*string*) - (read only)
- **results[].id** (*integer*) - (read only)
- **results[].iris\_permissions[].permission** (*string*) -
- **results[].iris\_permissions[].site** (*string*) - (required)
- **results[].iris\_permissions[].space** (*string*) - (required)
- **results[].name** (*string*) - (required)
- **results[].nas\_group.gid** (*integer*) - GID number for the user. This is automatically generated and cannot be changed. (read only)
- **results[].object\_permissions[].model** (*string*) - (required)
- **results[].object\_permissions[].object\_pk** (*string*) - (required)
- **results[].object\_permissions[].permission** (*integer*) - (required)
- **results[].permissions[]** (*integer*) -
- **results[].users[].date\_joined** (*string*) -
- **results[].users[].email** (*string*) -
- **results[].users[].first\_name** (*string*) -
- **results[].users[].last\_login** (*string*) -
- **results[].users[].last\_name** (*string*) -
- **results[].users[].username** (*string*) - Required. 150 characters or fewer. Letters, digits and @/./+/\_ only. (required)

### POST /groups/

API endpoint for managing groups.

### Request JSON Object:

- **description** (*string*) -
- **id** (*integer*) - (read only)
- **iris\_permissions[].permission** (*string*) - (required)
- **iris\_permissions[].site** (*string*) - (required)
- **iris\_permissions[].space** (*string*) - (required)
- **name** (*string*) - (required)
- **nas\_group** (*boolean*) -
- **object\_permissions[].model** (*string*) - (required)
- **object\_permissions[].object\_pk** (*string*) - (required)
- **object\_permissions[].permission** (*integer*) - (required)
- **permissions[]** (*integer*) -
- **users[]** (*string*) -

### Status Codes:

- [201 Created](#) -

### Response JSON Object:

- **description** (*string*) -
- **id** (*integer*) - (read only)
- **iris\_permissions[].permission** (*string*) - (required)
- **iris\_permissions[].site** (*string*) - (required)
- **iris\_permissions[].space** (*string*) - (required)
- **name** (*string*) - (required)
- **nas\_group** (*boolean*) -

- **object\_permissions[].model** (*string*) - (required)
- **object\_permissions[].object\_pk** (*string*) - (required)
- **object\_permissions[].permission** (*integer*) - (required)
- **permissions[]** (*integer*) -
- **users[]** (*string*) -

## POST /groups/sync/

API to sync nas groups on each site

### Status Codes:

- 201 Created -

### Response JSON Object:

- **description** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **iris\_permissions[].permission** (*string*) -
- **iris\_permissions[].site** (*string*) - (required)
- **iris\_permissions[].space** (*string*) - (required)
- **name** (*string*) - (required)
- **nas\_group.gid** (*integer*) - GID number for the user. This is automatically generated and cannot be changed. (read only)
- **object\_permissions[].model** (*string*) - (required)
- **object\_permissions[].object\_pk** (*string*) - (required)
- **object\_permissions[].permission** (*integer*) - (required)
- **permissions[]** (*integer*) -
- **users[].date\_joined** (*string*) -
- **users[].email** (*string*) -
- **users[].first\_name** (*string*) -
- **users[].last\_login** (*string*) -
- **users[].last\_name** (*string*) -
- **users[].username** (*string*) - Required. 150 characters or fewer. Letters, digits and @/./+/-/\_ only. (required)

## GET /groups/{id}/

API endpoint for managing groups.

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **description** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **iris\_permissions[].permission** (*string*) -
- **iris\_permissions[].site** (*string*) - (required)
- **iris\_permissions[].space** (*string*) - (required)
- **name** (*string*) - (required)
- **nas\_group.gid** (*integer*) - GID number for the user. This is automatically generated and cannot be changed. (read only)
- **object\_permissions[].model** (*string*) - (required)
- **object\_permissions[].object\_pk** (*string*) - (required)

- **object\_permissions[].permission** (*integer*) - (required)
- **permissions[]** (*integer*) -
- **users[].date\_joined** (*string*) -
- **users[].email** (*string*) -
- **users[].first\_name** (*string*) -
- **users[].last\_login** (*string*) -
- **users[].last\_name** (*string*) -
- **users[].username** (*string*) - Required. 150 characters or fewer. Letters, digits and @/./+/-/\_ only. (required)

## PATCH /groups/{id}/

API endpoint for managing groups.

### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **description** (*string*) -
- **id** (*integer*) - (read only)
- **iris\_permissions[].permission** (*string*) - (required)
- **iris\_permissions[].site** (*string*) - (required)
- **iris\_permissions[].space** (*string*) - (required)
- **name** (*string*) - (required)
- **nas\_group** (*boolean*) -
- **object\_permissions[].model** (*string*) - (required)
- **object\_permissions[].object\_pk** (*string*) - (required)
- **object\_permissions[].permission** (*integer*) - (required)
- **permissions[]** (*integer*) -
- **users[]** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **description** (*string*) -
- **id** (*integer*) - (read only)
- **iris\_permissions[].permission** (*string*) - (required)
- **iris\_permissions[].site** (*string*) - (required)
- **iris\_permissions[].space** (*string*) - (required)
- **name** (*string*) - (required)
- **nas\_group** (*boolean*) -
- **object\_permissions[].model** (*string*) - (required)
- **object\_permissions[].object\_pk** (*string*) - (required)
- **object\_permissions[].permission** (*integer*) - (required)
- **permissions[]** (*integer*) -
- **users[]** (*string*) -

## DELETE /groups/{id}/

API endpoint for managing groups.

### Parameters:

- **id** (*string*) -

### Status Codes:

- 204 No Content -

## GET /health/

### Status Codes:

- 200 OK -

## GET /ipaddresses/

API endpoint for managing IP addresses.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **datastore\_id** (*integer*) - Data store ID that the IP is assigned to

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].datastore.id** (*integer*) - (read only)
- **results[].datastore.name** (*string*) - DataStore Name (required)
- **results[].datastore.url** (*string*) - (read only)
- **results[].id** (*integer*) - (read only)
- **results[].ipaddr** (*string*) - IP Address (IPv4) (required)
- **results[].url** (*string*) - (read only)

## POST /ipaddresses/

API endpoint for managing IP addresses.

### Request JSON Object:

- **datastore** (*integer*) - (required)
- **id** (*integer*) - (read only)
- **ipaddr** (*string*) - (required)
- **url** (*string*) - (read only)

### Status Codes:

- 201 Created -

### Response JSON Object:

- **datastore** (*integer*) - (required)
- **id** (*integer*) - (read only)
- **ipaddr** (*string*) - (required)
- **url** (*string*) - (read only)

## GET /ipaddresses/{id}/

API endpoint for managing IP addresses.

#### Parameters:

- **id** (*string*) -

#### Status Codes:

- [200 OK](#) -

#### Response JSON Object:

- **datastore.id** (*integer*) - (read only)
- **datastore.name** (*string*) - DataStore Name (required)
- **datastore.url** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **ipaddr** (*string*) - IP Address (IPv4) (required)
- **url** (*string*) - (read only)

### PATCH /ipaddresses/{id}/

API endpoint for managing IP addresses.

#### Parameters:

- **id** (*string*) -

#### Request JSON Object:

- **datastore** (*integer*) - (required)
- **id** (*integer*) - (read only)
- **ipaddr** (*string*) - (required)
- **url** (*string*) - (read only)

#### Status Codes:

- [200 OK](#) -

#### Response JSON Object:

- **datastore** (*integer*) - (required)
- **id** (*integer*) - (read only)
- **ipaddr** (*string*) - (required)
- **url** (*string*) - (read only)

### DELETE /ipaddresses/{id}/

API endpoint for managing IP addresses.

#### Parameters:

- **id** (*string*) -

#### Status Codes:

- [204 No Content](#) -

### GET /jobs/

API endpoint for managing jobs.

#### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between `20` and `100`. For disabling pagination and retrieving all results, `0` should be given. When page size parameter is empty or `<20`, `20` results are returned by default. When page size parameter `>100`, `100` results are returned by default.
- **created** (*string*) - Time period string for filtering jobs by time. Leave `null` for displaying jobs in all times.

- **created\_time\_from** (*string*) - Start time for filtering jobs by creation time in UTC. Discarded when `created` parameter is given.
- **created\_time\_to** (*string*) - End time for filtering jobs by creation time in UTC. Discarded when `created` parameter is given.
- **completed\_time\_from** (*string*) - Start time for filtering jobs by completion time in UTC.
- **completed\_time\_to** (*string*) - End time for filtering jobs by completion time in UTC.
- **workflow** (*string*) - Job workflow type
- **state** (*array*) - Job states
- **owner\_ids** (*array*) - Job owner user IDs. Send `-1` for the Unknown owner. Send `-2` for the System jobs.
- **clientkey\_ids** (*array*) - Job clientkey IDs
- **schedule\_ids** (*array*) - Job schedule IDs
- **site** (*string*) - Job site name
- **site\_id** (*integer*) - Job site ID
- **input\_paths\_prefix** (*string*) - Path prefix for the job paths
- **search\_keyword** (*string*) - Keyword to filter by
- **hide\_noop** (*boolean*) - Hide successful jobs with no processed files
- **queue** (*string*) - Job queue name
- **queue\_id** (*integer*) - Job queue ID

#### Status Codes:

- 200 OK -

## POST /jobs/

API endpoint for managing jobs.

#### Status Codes:

- 201 Created -

## GET /jobs/jobtype\_choices/

Get all custom jobtypes.

#### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between `20` and `100`. For disabling pagination and retrieving all results, `0` should be given. When page size parameter is empty or `<20`, `20` results are returned by default. When page size parameter `>100`, `100` results are returned by default.

#### Status Codes:

- 200 OK -

## GET /jobs/recent/

Retrieves last N jobs as recent jobs. N = 5 by default (defined in `dynamohub/settings/base.py`).

#### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.

- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

#### Status Codes:

- 200 OK -

## GET /jobs/stats/

API endpoint for managing jobs.

#### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **created** (*string*) - Time period string for filtering jobs by time. Leave null for displaying jobs in all times.
- **created\_time\_from** (*string*) - Start time for filtering jobs by creation time in UTC. Discarded when created parameter is given.
- **created\_time\_to** (*string*) - End time for filtering jobs by creation time in UTC. Discarded when created parameter is given.
- **completed\_time\_from** (*string*) - Start time for filtering jobs by completion time in UTC.
- **completed\_time\_to** (*string*) - End time for filtering jobs by completion time in UTC.
- **workflow** (*string*) - Job workflow type
- **state** (*array*) - Job states
- **owner\_ids** (*array*) - Job owner user IDs. Send -1 for the Unknown owner. Send -2 for the System jobs.
- **clientkey\_ids** (*array*) - Job clientkey IDs
- **schedule\_ids** (*array*) - Job schedule IDs
- **site** (*string*) - Job site name
- **site\_id** (*integer*) - Job site ID
- **input\_paths\_prefix** (*string*) - Path prefix for the job paths
- **search\_keyword** (*string*) - Keyword to filter by
- **hide\_noop** (*boolean*) - Hide successful jobs with no processed files
- **queue** (*string*) - Job queue name
- **queue\_id** (*integer*) - Job queue ID

#### Status Codes:

- 200 OK -

## GET /jobs/{id}/

API endpoint for managing jobs.

#### Parameters:

- **id** (*string*) -

**Status Codes:**

- 200 OK -

**PATCH /jobs/{id}/**

API endpoint for managing jobs.

**Parameters:**

- **id** (*string*) -

**Status Codes:**

- 200 OK -

**DELETE /jobs/{id}/**

API endpoint for managing jobs.

**Parameters:**

- **id** (*string*) -

**Status Codes:**

- 204 No Content -

**POST /jobs/{id}/cancel/**

Cancels the pending and started tasks currently on the MQ for the given ID's job.

**Parameters:**

- **id** (*string*) -

**Status Codes:**

- 201 Created -

**GET /jobs/{id}/files/**

Retrieves the files related with a job, with their execution status.

**Parameters:**

- **id** (*string*) -

**Query Parameters:**

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **category** (*string*) -

**Status Codes:**

- 200 OK -

**POST /jobs/{id}/pause/**

API endpoint to pause the active dag job

**Parameters:**

- **id** (*string*) -

**Status Codes:**

- 201 Created -

## GET /jobs/{id}/progress/

Returns the job completion percentage for the given job id

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

## POST /jobs/{id}/resubmit/

Resubmits the job with given id. If the job is not finished yet, this action will not have an effect.

### Parameters:

- **id** (*string*) -

### Status Codes:

- 201 Created -

## POST /jobs/{id}/resume/

API endpoint to resume the paused dag job

### Parameters:

- **id** (*string*) -

### Status Codes:

- 201 Created -

## GET /jobs/{id}/statistics/

Returns the statistics of all files for the given job id

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

## GET /jobstats/

API endpoint for managing jobstat.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **state** (*array*) - Job states
- **job** (*integer*) - Job ID
- **path** (*string*) - Target path
- **history** (*boolean*) - Returns the task history along with job stat

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].code** (*string*) -
- **results[].id** (*integer*) - (read only)
- **results[].job** (*integer*) - Related job id (required)
- **results[].message** (*string*) -
- **results[].path** (*string*) - Path to object on filesystem
- **results[].state** (*string*) -
- **results[].task** (*integer*) - Latest related dag task (required)
- **results[].url** (*string*) - (read only)

### GET /jobstats/{id}/

API endpoint for managing jobstat.

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **code** (*string*) -
- **id** (*integer*) - (read only)
- **job** (*integer*) - Related job id (required)
- **message** (*string*) -
- **path** (*string*) - Path to object on filesystem
- **state** (*string*) -
- **task** (*integer*) - Latest related dag task (required)

### GET /jobstats/{id}/history/

Returns the task history for the job stat ID

### Parameters:

- **id** (*string*) -

### Query Parameters:

- **state** (*array*) - Job states
- **job** (*integer*) - Job ID
- **path** (*string*) - Target path
- **history** (*boolean*) - Returns the task history along with job stat

### Status Codes:

- 200 OK -

### Response JSON Object:

- **code** (*string*) -
- **id** (*integer*) - (read only)
- **job** (*integer*) - Related job id (required)
- **message** (*string*) -
- **path** (*string*) - Path to object on filesystem
- **state** (*string*) -
- **task** (*integer*) - Latest related dag task (required)

### GET /my-permissions/

API endpoint for viewing the requesting user permissions.

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **[].group\_object\_permissions.app\_label** (*string*) - (required)
- **[].group\_object\_permissions.codename** (*string*) - (required)
- **[].group\_object\_permissions.id** (*integer*) - (required)
- **[].group\_object\_permissions.model** (*string*) - (required)
- **[].group\_object\_permissions.name** (*string*) - (required)
- **[].group\_object\_permissions.object\_pk** (*string*) - (required)
- **[].group\_permissions.app\_label** (*string*) - (required)
- **[].group\_permissions.codename** (*string*) - (required)
- **[].group\_permissions.id** (*integer*) - (read only)
- **[].group\_permissions.model** (*string*) - (required)
- **[].group\_permissions.name** (*string*) - (required)
- **[].user\_object\_permissions.app\_label** (*string*) - (required)
- **[].user\_object\_permissions.codename** (*string*) - (required)
- **[].user\_object\_permissions.id** (*integer*) - (required)
- **[].user\_object\_permissions.model** (*string*) - (required)
- **[].user\_object\_permissions.name** (*string*) - (required)
- **[].user\_object\_permissions.object\_pk** (*string*) - (required)
- **[].user\_permissions.app\_label** (*string*) - (required)
- **[].user\_permissions.codename** (*string*) - (required)
- **[].user\_permissions.id** (*integer*) - (read only)
- **[].user\_permissions.model** (*string*) - (required)
- **[].user\_permissions.name** (*string*) - (required)

GET /nodes/

#### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].has\_default\_queue** (*string*) - (read only)
- **results[].id** (*integer*) - (read only)
- **results[].last\_heartbeat** (*string*) - Time the node sent its last heartbeat event
- **results[].name** (*string*) - Hostname for a given worker node (required)
- **results[].online** (*string*) - (read only)
- **results[].site** (*string*) - (required)

- **results[].url** (*string*) - (read only)

## GET /nodes/{id}/

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **has\_default\_queue** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **last\_heartbeat** (*string*) - Time the node sent its last heartbeat event
- **name** (*string*) - Hostname for a given worker node (required)
- **online** (*string*) - (read only)
- **site** (*string*) - (required)
- **url** (*string*) - (read only)

## PATCH /nodes/{id}/

### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **has\_default\_queue** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **last\_heartbeat** (*string*) - Time the node sent its last heartbeat event
- **name** (*string*) - Hostname for a given worker node (required)
- **online** (*string*) - (read only)
- **site** (*string*) - (required)
- **url** (*string*) - (read only)

### Status Codes:

- 200 OK -

### Response JSON Object:

- **has\_default\_queue** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **last\_heartbeat** (*string*) - Time the node sent its last heartbeat event
- **name** (*string*) - Hostname for a given worker node (required)
- **online** (*string*) - (read only)
- **site** (*string*) - (required)
- **url** (*string*) - (read only)

## DELETE /nodes/{id}/

### Parameters:

- **id** (*string*) -

### Status Codes:

- 204 No Content -

## GET /permissions/

API endpoint for viewing permissions.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.

- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].app\_label** (*string*) - (required)
- **results[].codename** (*string*) - (required)
- **results[].id** (*integer*) - (read only)
- **results[].model** (*string*) - (required)
- **results[].name** (*string*) - (required)

### GET /permissions/{id}/

API endpoint for viewing permissions.

#### Parameters:

- **id** (*string*) -

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **app\_label** (*string*) - (required)
- **codename** (*string*) - (required)
- **id** (*integer*) - (read only)
- **model** (*string*) - (required)
- **name** (*string*) - (required)

### GET /pki/ca/pub/

#### Status Codes:

- 200 OK -

### GET /pki/lifetime/

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **[].days** (*integer*) - The number of days the certificate is valid for.
- **[].updated\_at** (*string*) - (read only)
- **[].updated\_by** (*integer*) - (read only)

### GET /pki/lifetime/{id}/

#### Parameters:

- **id** (*integer*) - A unique integer value identifying this certificate lifetime.

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **days** (*integer*) - The number of days the certificate is valid for.

- **updated\_at** (*string*) - (read only)
- **updated\_by** (*integer*) - (read only)

## PATCH /pki/lifetime/{id}/

### Parameters:

- **id** (*integer*) - A unique integer value identifying this certificate lifetime.

### Request JSON Object:

- **days** (*integer*) - The number of days the certificate is valid for.
- **updated\_at** (*string*) - (read only)
- **updated\_by** (*integer*) - (read only)

### Status Codes:

- 200 OK -

### Response JSON Object:

- **days** (*integer*) - The number of days the certificate is valid for.
- **updated\_at** (*string*) - (read only)
- **updated\_by** (*integer*) - (read only)

## GET /pki/service/private/

### Status Codes:

- 200 OK -

## GET /pki/service/pub/

### Status Codes:

- 200 OK -

## POST /pki/site/

### Status Codes:

- 201 Created -

## GET /policies/

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].condition\_groups[].date\_conditions[].age** (*string*) -
- **results[].condition\_groups[].date\_conditions[].condition\_group** (*integer*) - (required)
- **results[].condition\_groups[].date\_conditions[].date\_field** (*string*) -
- **results[].condition\_groups[].date\_conditions[].id** (*integer*) - (read only)
- **results[].condition\_groups[].date\_conditions[].include** (*boolean*) -

- **results[].condition\_groups[].date\_conditions[].older\_or\_newer** ( *string*) -
- **results[].condition\_groups[].filesize\_conditions[].condition\_group** ( *integer*) - (required)
- **results[].condition\_groups[].filesize\_conditions[].greater\_or\_less** ( *string*) - (required)
- **results[].condition\_groups[].filesize\_conditions[].id** ( *integer*) - (read only)
- **results[].condition\_groups[].filesize\_conditions[].include** ( *boolean*) -
- **results[].condition\_groups[].filesize\_conditions[].size** ( *integer*) - (required)
- **results[].condition\_groups[].filetype\_conditions[].condition\_group** ( *integer*) - (required)
- **results[].condition\_groups[].filetype\_conditions[].filetypes[]** ( *string*) -
- **results[].condition\_groups[].filetype\_conditions[].id** ( *integer*) - (read only)
- **results[].condition\_groups[].filetype\_conditions[].include** ( *boolean*) -
- **results[].condition\_groups[].id** ( *integer*) - (read only)
- **results[].condition\_groups[].name** ( *string*) - (required)
- **results[].condition\_groups[].policy** ( *integer*) - (required)
- **results[].created** ( *string*) - (read only)
- **results[].enabled** ( *boolean*) -
- **results[].filesystem** ( *string*) -
- **results[].id** ( *integer*) - (read only)
- **results[].name** ( *string*) - (required)
- **results[].order.by** ( *string*) -
- **results[].order.id** ( *integer*) - (read only)
- **results[].order.reverse** ( *boolean*) -
- **results[].policy\_type** ( *string*) -
- **results[].schedule.day\_of\_month** ( *string*) - Cron Days Of The Month to Run. Use "\*" for "all". (Example: "1,15")
- **results[].schedule.day\_of\_week** ( *string*) - Cron Days Of The Week to Run. Use "\*" for "all". (Example: "0,5")
- **results[].schedule.first\_occur** ( *boolean*) - Whether the first occurrence will be at the stipulated time.
- **results[].schedule.hour** ( *string*) - Cron Hours to Run. Use "\*" for "all". (Example: "8,20")
- **results[].schedule.id** ( *integer*) - (read only)
- **results[].schedule.minute** ( *string*) - Cron Minutes to Run. Use "\*" for "all". (Example: "0,30")
- **results[].schedule.month\_of\_year** ( *string*) - Cron Months Of The Year to Run. Use "\*" for "all". (Example: "0,6")
- **results[].schedule.start\_date\_time** ( *string*) - Start date time based on the time provided, timezone and if self.first\_occur is true.
- **results[].schedule.time** ( *string*) - Time to start running on the policy's SITE. REMEMBER: The Ngenea hub and the site may be running in different timezones
- **results[].schedule.timezone** ( *string*) - (required)
- **results[].site** ( *integer*) -
- **results[].spaces[]** ( *integer*) -

- **results[].threads** (*integer*) - Number of threads to run policy on
- **results[].triggers** (*string*) - (read only)

## POST /policies/

### Request JSON Object:

- **created** (*string*) - (read only)
- **enabled** (*boolean*) -
- **filesystem** (*string*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - (required)
- **order.by** (*string*) -
- **order.id** (*integer*) - (read only)
- **order.reverse** (*boolean*) -
- **policy\_type** (*string*) -
- **run\_immediately** (*boolean*) -
- **schedule.day\_of\_month** (*string*) - Cron Days Of The Month to Run. Use "\*" for "all". (Example: "1,15")
- **schedule.day\_of\_week** (*string*) - Cron Days Of The Week to Run. Use "\*" for "all". (Example: "0,5")
- **schedule.first\_occur** (*boolean*) - Whether the first occurrence will be at the stipulated time.
- **schedule.hour** (*string*) - Cron Hours to Run. Use "\*" for "all". (Example: "8,20")
- **schedule.id** (*integer*) - (read only)
- **schedule.minute** (*string*) - Cron Minutes to Run. Use "\*" for "all". (Example: "0,30")
- **schedule.month\_of\_year** (*string*) - Cron Months Of The Year to Run. Use "\*" for "all". (Example: "0,6")
- **schedule.time** (*string*) - Time to start running on the policy's SITE. REMEMBER: The Ngenea hub and the site may be running in different timezones
- **site** (*integer*) -
- **spaces[]** (*integer*) -
- **threads** (*integer*) - Number of threads to run policy on
- **triggers[].is\_cloud** (*boolean*) -
- **triggers[].lower\_threshold** (*number*) -
- **triggers[].max\_utilisation** (*number*) -
- **triggers[].pool\_name** (*string*) - (required)
- **triggers[].premigrate\_threshold** (*number*) -
- **triggers[].upper\_threshold** (*number*) -

### Status Codes:

- [201 Created](#) -

### Response JSON Object:

- **created** (*string*) - (read only)
- **enabled** (*boolean*) -
- **filesystem** (*string*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - (required)
- **order** (*integer*) -
- **policy\_type** (*string*) -

- **run\_immediately** (*boolean*) -
- **schedule.day\_of\_month** (*string*) - Cron Days Of The Month to Run. Use "\*" for "all". (Example: "1,15")
- **schedule.day\_of\_week** (*string*) - Cron Days Of The Week to Run. Use "\*" for "all". (Example: "0,5")
- **schedule.first\_occur** (*boolean*) - Whether the first occurrence will be at the stipulated time.
- **schedule.hour** (*string*) - Cron Hours to Run. Use "\*" for "all". (Example: "8,20")
- **schedule.id** (*integer*) - (read only)
- **schedule.minute** (*string*) - Cron Minutes to Run. Use "\*" for "all". (Example: "0,30")
- **schedule.month\_of\_year** (*string*) - Cron Months Of The Year to Run. Use "\*" for "all". (Example: "0,6")
- **schedule.time** (*string*) - Time to start running on the policy's SITE. REMEMBER: The Ngenea hub and the site may be running in different timezones
- **site** (*integer*) -
- **spaces[]** (*integer*) -
- **threads** (*integer*) - Number of threads to run policy on
- **triggers[].id** (*integer*) - (read only)
- **triggers[].is\_cloud** (*boolean*) -
- **triggers[].lower\_threshold** (*number*) -
- **triggers[].max\_utilisation** (*number*) -
- **triggers[].pool\_name** (*string*) - (required)
- **triggers[].premigrate\_threshold** (*number*) -
- **triggers[].upper\_threshold** (*number*) -

## GET /policies/{id}/

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **condition\_groups[].date\_conditions[].age** (*string*) -
- **condition\_groups[].date\_conditions[].condition\_group** (*integer*) - (required)
- **condition\_groups[].date\_conditions[].date\_field** (*string*) -
- **condition\_groups[].date\_conditions[].id** (*integer*) - (read only)
- **condition\_groups[].date\_conditions[].include** (*boolean*) -
- **condition\_groups[].date\_conditions[].older\_or\_newer** (*string*) -
- **condition\_groups[].filesize\_conditions[].condition\_group** (*integer*) - (required)
- **condition\_groups[].filesize\_conditions[].greater\_or\_less** (*string*) - (required)
- **condition\_groups[].filesize\_conditions[].id** (*integer*) - (read only)
- **condition\_groups[].filesize\_conditions[].include** (*boolean*) -
- **condition\_groups[].filesize\_conditions[].size** (*integer*) - (required)
- **condition\_groups[].filetype\_conditions[].condition\_group** (*integer*) - (required)

- **condition\_groups[].filetype\_conditions[].filetypes[]** (*string*) -
- **condition\_groups[].filetype\_conditions[].id** (*integer*) - (read only)
- **condition\_groups[].filetype\_conditions[].include** (*boolean*) -
- **condition\_groups[].id** (*integer*) - (read only)
- **condition\_groups[].name** (*string*) - (required)
- **condition\_groups[].policy** (*integer*) - (required)
- **created** (*string*) - (read only)
- **enabled** (*boolean*) -
- **filesystem** (*string*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - (required)
- **order.by** (*string*) -
- **order.id** (*integer*) - (read only)
- **order.reverse** (*boolean*) -
- **policy\_type** (*string*) -
- **schedule.day\_of\_month** (*string*) - Cron Days Of The Month to Run. Use "\*" for "all". (Example: "1,15")
- **schedule.day\_of\_week** (*string*) - Cron Days Of The Week to Run. Use "\*" for "all". (Example: "0,5")
- **schedule.first\_occur** (*boolean*) - Whether the first occurrence will be at the stipulated time.
- **schedule.hour** (*string*) - Cron Hours to Run. Use "\*" for "all". (Example: "8,20")
- **schedule.id** (*integer*) - (read only)
- **schedule.minute** (*string*) - Cron Minutes to Run. Use "\*" for "all". (Example: "0,30")
- **schedule.month\_of\_year** (*string*) - Cron Months Of The Year to Run. Use "\*" for "all". (Example: "0,6")
- **schedule.start\_date\_time** (*string*) - Start date time based on the time provided, timezone and if self.first\_occur is true.
- **schedule.time** (*string*) - Time to start running on the policy's SITE. REMEMBER: The Ngenea hub and the site may be running in different timezones
- **schedule.timezone** (*string*) - (required)
- **site** (*integer*) -
- **spaces[]** (*integer*) -
- **threads** (*integer*) - Number of threads to run policy on
- **triggers** (*string*) - (read only)

## PATCH /policies/{id}/

### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **created** (*string*) - (read only)
- **enabled** (*boolean*) -
- **filesystem** (*string*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - (required)
- **order.by** (*string*) -
- **order.id** (*integer*) - (read only)

- **order.reverse** (*boolean*) -
- **policy\_type** (*string*) -
- **schedule.day\_of\_month** (*string*) - Cron Days Of The Month to Run. Use "\*" for "all". (Example: "1,15")
- **schedule.day\_of\_week** (*string*) - Cron Days Of The Week to Run. Use "\*" for "all". (Example: "0,5")
- **schedule.first\_occur** (*boolean*) - Whether the first occurrence will be at the stipulated time.
- **schedule.hour** (*string*) - Cron Hours to Run. Use "\*" for "all". (Example: "8,20")
- **schedule.id** (*integer*) - (read only)
- **schedule.minute** (*string*) - Cron Minutes to Run. Use "\*" for "all". (Example: "0,30")
- **schedule.month\_of\_year** (*string*) - Cron Months Of The Year to Run. Use "\*" for "all". (Example: "0,6")
- **schedule.time** (*string*) - Time to start running on the policy's SITE. REMEMBER: The Ngenea hub and the site may be running in different timezones
- **site** (*integer*) -
- **spaces[]** (*integer*) -
- **threads** (*integer*) - Number of threads to run policy on
- **triggers[].is\_cloud** (*boolean*) -
- **triggers[].lower\_threshold** (*number*) -
- **triggers[].max\_utilisation** (*number*) -
- **triggers[].pool\_name** (*string*) - (required)
- **triggers[].premigrate\_threshold** (*number*) -
- **triggers[].upper\_threshold** (*number*) -

#### Status Codes:

- [201 Created](#) -

#### Response JSON Object:

- **created** (*string*) - (read only)
- **enabled** (*boolean*) -
- **filesystem** (*string*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - (required)
- **order** (*integer*) -
- **policy\_type** (*string*) -
- **run\_immediately** (*boolean*) -
- **schedule.day\_of\_month** (*string*) - Cron Days Of The Month to Run. Use "\*" for "all". (Example: "1,15")
- **schedule.day\_of\_week** (*string*) - Cron Days Of The Week to Run. Use "\*" for "all". (Example: "0,5")
- **schedule.first\_occur** (*boolean*) - Whether the first occurrence will be at the stipulated time.
- **schedule.hour** (*string*) - Cron Hours to Run. Use "\*" for "all". (Example: "8,20")
- **schedule.id** (*integer*) - (read only)
- **schedule.minute** (*string*) - Cron Minutes to Run. Use "\*" for "all". (Example: "0,30")

- **schedule.month\_of\_year** (*string*) - Cron Months Of The Year to Run. Use "\*" for "all". (Example: "0,6")
- **schedule.time** (*string*) - Time to start running on the policy's SITE. REMEMBER: The Ngenea hub and the site may be running in different timezones
- **site** (*integer*) -
- **spaces[]** (*integer*) -
- **threads** (*integer*) - Number of threads to run policy on
- **triggers[].id** (*integer*) - (read only)
- **triggers[].is\_cloud** (*boolean*) -
- **triggers[].lower\_threshold** (*number*) -
- **triggers[].max\_utilisation** (*number*) -
- **triggers[].pool\_name** (*string*) - (required)
- **triggers[].premigrate\_threshold** (*number*) -
- **triggers[].upper\_threshold** (*number*) -

## DELETE /policies/{id}/

### Parameters:

- **id** (*string*) -

### Status Codes:

- [204 No Content](#) -

## POST /policies/{id}/run/

### Parameters:

- **id** (*string*) -

### Status Codes:

- [202 Accepted](#) - Task id of the task fired for the associated request.

## GET /queues/

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- [200 OK](#) -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].id** (*integer*) - (read only)
- **results[].label** (*string*) - UI facing label for the queue
- **results[].last\_heartbeat** (*string*) -
- **results[].name** (*string*) - Queue name. Must match [a-zA-Z0-9-\_]+ (required)
- **results[].nodes** (*string*) - (read only)
- **results[].site** (*string*) - (read only)

## GET /queues/{id}/

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **id** (*integer*) - (read only)
- **label** (*string*) - UI facing label for the queue
- **last\_heartbeat** (*string*) -
- **name** (*string*) - Queue name. Must match [a-zA-Z0-9-\_-]+ (required)
- **nodes** (*string*) - (read only)
- **site** (*string*) - (read only)

## GET /schedules/

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **site\_id** (*integer*) - Site ID
- **space\_id** (*integer*) - Space ID

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].day\_of\_month** (*string*) - The day setting for the cron schedule
- **results[].day\_of\_week** (*string*) - The week setting for the cron schedule
- **results[].discovery** (*string*) -
- **results[].discovery\_options** (*object*) -
- **results[].enabled** (*boolean*) - If the schedule should be enabled
- **results[].hour** (*string*) - The hour setting for the cron schedule
- **results[].id** (*integer*) - (read only)
- **results[].managed\_paths** (*object*) - Path of managed filesystem elements
- **results[].minute** (*string*) - The minute setting for the cron schedule
- **results[].month\_of\_year** (*string*) - The month setting for the cron schedule
- **results[].name** (*string*) - Schedule Name (required)
- **results[].site** (*string*) - (required)
- **results[].space** (*string*) - (required)
- **results[].url** (*string*) - (read only)

## POST /schedules/

### Request JSON Object:

- **day\_of\_month** (*string*) - The day setting for the cron schedule
- **day\_of\_week** (*string*) - The week setting for the cron schedule
- **discovery** (*string*) -

- **discovery\_options** (*object*) -
- **enabled** (*boolean*) - If the schedule should be enabled
- **hour** (*string*) - The hour setting for the cron schedule
- **id** (*integer*) - (read only)
- **managed\_paths** (*object*) - Path of managed filesystem elements
- **minute** (*string*) - The minute setting for the cron schedule
- **month\_of\_year** (*string*) - The month setting for the cron schedule
- **name** (*string*) - Schedule Name (required)
- **site** (*string*) - (required)
- **space** (*string*) -
- **url** (*string*) - (read only)

#### Status Codes:

- 201 Created -

#### Response JSON Object:

- **day\_of\_month** (*string*) - The day setting for the cron schedule
- **day\_of\_week** (*string*) - The week setting for the cron schedule
- **discovery** (*string*) -
- **discovery\_options** (*object*) -
- **enabled** (*boolean*) - If the schedule should be enabled
- **hour** (*string*) - The hour setting for the cron schedule
- **id** (*integer*) - (read only)
- **managed\_paths** (*object*) - Path of managed filesystem elements
- **minute** (*string*) - The minute setting for the cron schedule
- **month\_of\_year** (*string*) - The month setting for the cron schedule
- **name** (*string*) - Schedule Name (required)
- **site** (*string*) - (required)
- **space** (*string*) -
- **url** (*string*) - (read only)

## GET /schedules/{id}/

#### Parameters:

- **id** (*string*) -

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **day\_of\_month** (*string*) - The day setting for the cron schedule
- **day\_of\_week** (*string*) - The week setting for the cron schedule
- **discovery** (*string*) -
- **discovery\_options** (*object*) -
- **enabled** (*boolean*) - If the schedule should be enabled
- **hour** (*string*) - The hour setting for the cron schedule
- **id** (*integer*) - (read only)
- **managed\_paths** (*object*) - Path of managed filesystem elements
- **minute** (*string*) - The minute setting for the cron schedule
- **month\_of\_year** (*string*) - The month setting for the cron schedule
- **name** (*string*) - Schedule Name (required)
- **site** (*string*) - (required)
- **space** (*string*) - (required)
- **url** (*string*) - (read only)

## PATCH /schedules/{id}/

### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **day\_of\_month** (*string*) - The day setting for the cron schedule
- **day\_of\_week** (*string*) - The week setting for the cron schedule
- **discovery** (*string*) -
- **discovery\_options** (*object*) -
- **enabled** (*boolean*) - If the schedule should be enabled
- **hour** (*string*) - The hour setting for the cron schedule
- **id** (*integer*) - (read only)
- **managed\_paths** (*object*) - Path of managed filesystem elements
- **minute** (*string*) - The minute setting for the cron schedule
- **month\_of\_year** (*string*) - The month setting for the cron schedule
- **name** (*string*) - Schedule Name (required)
- **site** (*string*) - (required)
- **space** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **day\_of\_month** (*string*) - The day setting for the cron schedule
- **day\_of\_week** (*string*) - The week setting for the cron schedule
- **discovery** (*string*) -
- **discovery\_options** (*object*) -
- **enabled** (*boolean*) - If the schedule should be enabled
- **hour** (*string*) - The hour setting for the cron schedule
- **id** (*integer*) - (read only)
- **managed\_paths** (*object*) - Path of managed filesystem elements
- **minute** (*string*) - The minute setting for the cron schedule
- **month\_of\_year** (*string*) - The month setting for the cron schedule
- **name** (*string*) - Schedule Name (required)
- **site** (*string*) - (required)
- **space** (*string*) -

## DELETE /schedules/{id}/

### Parameters:

- **id** (*string*) -

### Status Codes:

- 204 No Content -

## POST /schedules/{id}/run/

### Parameters:

- **id** (*string*) -

### Status Codes:

- 201 Created -

### Response JSON Object:

- **day\_of\_month** (*string*) - The day setting for the cron schedule
- **day\_of\_week** (*string*) - The week setting for the cron schedule
- **discovery** (*string*) -
- **discovery\_options** (*object*) -

- **enabled** (*boolean*) – If the schedule should be enabled
- **hour** (*string*) – The hour setting for the cron schedule
- **id** (*integer*) – (read only)
- **managed\_paths** (*object*) – Path of managed filesystem elements
- **minute** (*string*) – The minute setting for the cron schedule
- **month\_of\_year** (*string*) – The month setting for the cron schedule
- **name** (*string*) – Schedule Name (required)
- **site** (*string*) – (required)
- **space** (*string*) – (required)
- **url** (*string*) – (read only)

## GET /schedules/{parent\_lookup\_schedule}/workflows/

### Parameters:

- **parent\_lookup\_schedule** (*string*) –

### Query Parameters:

- **page** (*integer*) – A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) – Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- 200 OK –

### Response JSON Object:

- **count** (*integer*) – (required)
- **next** (*string*) –
- **previous** (*string*) –
- **results[].fields** (*object*) – Mapping of path to operation for task usage
- **results[].id** (*integer*) – (read only)
- **results[].queue** (*string*) – (required)
- **results[].site** (*string*) – (required)
- **results[].url** (*string*) – (read only)
- **results[].workflow** (*string*) – (required)

## POST /schedules/{parent\_lookup\_schedule}/workflows/

### Parameters:

- **parent\_lookup\_schedule** (*string*) –

### Request JSON Object:

- **fields** (*object*) – Mapping of path to operation for task usage
- **id** (*integer*) – (read only)
- **queue** (*string*) – Queue name
- **site** (*string*) – (required)
- **workflow** (*string*) – (required)

### Status Codes:

- 201 Created –

### Response JSON Object:

- **fields** (*object*) – Mapping of path to operation for task usage
- **id** (*integer*) – (read only)
- **queue** (*string*) – Queue name

- **site** (*string*) - (required)
- **workflow** (*string*) - (required)

**GET** /schedules/{parent\_lookup\_schedule}/workflows/{id}/

**Parameters:**

- **parent\_lookup\_schedule** (*string*) -
- **id** (*string*) -

**Status Codes:**

- 200 OK -

**Response JSON Object:**

- **fields** (*object*) - Mapping of path to operation for task usage
- **id** (*integer*) - (read only)
- **queue** (*string*) - (required)
- **site** (*string*) - (required)
- **url** (*string*) - (read only)
- **workflow** (*string*) - (required)

**PATCH** /schedules/{parent\_lookup\_schedule}/workflows/{id}/

**Parameters:**

- **parent\_lookup\_schedule** (*string*) -
- **id** (*string*) -

**Request JSON Object:**

- **fields** (*object*) - Mapping of path to operation for task usage
- **id** (*integer*) - (read only)
- **queue** (*string*) - (required)
- **site** (*string*) - (required)
- **url** (*string*) - (read only)
- **workflow** (*string*) - (required)

**Status Codes:**

- 200 OK -

**Response JSON Object:**

- **fields** (*object*) - Mapping of path to operation for task usage
- **id** (*integer*) - (read only)
- **queue** (*string*) - (required)
- **site** (*string*) - (required)
- **url** (*string*) - (read only)
- **workflow** (*string*) - (required)

**DELETE** /schedules/{parent\_lookup\_schedule}/workflows/{id}/

**Parameters:**

- **parent\_lookup\_schedule** (*string*) -
- **id** (*string*) -

**Status Codes:**

- 204 No Content -

**POST** /search/

API endpoint for file search

**Request JSON Object:**

- **filters** (*object*) - Metadata filters to apply to search

- **merge** (*boolean*) - Whether matching files should be merged
- **metadata\_fields** (*object*) - Available metadata fields from this search
- **path** (*string*) - Directory to search (required)
- **recursive** (*boolean*) - Search the target path recursively
- **sites[]** (*string*) -

#### Status Codes:

- [201 Created](#) -

#### Response JSON Object:

- **filters** (*object*) - Metadata filters to apply to search
- **merge** (*boolean*) - Whether matching files should be merged
- **metadata\_fields** (*object*) - Available metadata fields from this search
- **path** (*string*) - Directory to search (required)
- **recursive** (*boolean*) - Search the target path recursively
- **sites[]** (*string*) -

### PATCH /search/metadata/

API endpoint for file search

#### Request JSON Object:

- **id** (*integer*) - (read only)
- **url** (*string*) - (read only)

#### Status Codes:

- [200 OK](#) -

#### Response JSON Object:

- **id** (*integer*) - (read only)
- **url** (*string*) - (read only)

### GET /search/metadata\_fields/

API endpoint for file search

#### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

#### Status Codes:

- [200 OK](#) -

#### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].id** (*integer*) - (read only)
- **results[].url** (*string*) - (read only)

### GET /search/{id}/

Get paginated results for a given search id.

### Parameters:

- **id** (*string*) -

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **sort** (*string*) - One or more fields to sort results by
- **group\_by\_name** (*boolean*) -  
When this url parameter is 'True' results are merged based on matching file name. e.g.

```
[
  {
    data: [
      {site: site1, path: /mmfs1, ...},
      {site: site2, path: /mmfs1, ...}
    ]
  },
  {
    foo: [
      {site: site1, path: /mmfs1/data, ...}
      # not present on site2
    ]
  }
]
```

### Status Codes:

- 200 OK -

### Response JSON Object:

- **href** (*string*) - (read only)
- **metadata** (*object*) - File metadata
- **name** (*string*) - Directory or file name (required)
- **path** (*string*) - Directory or file path (required)
- **proxies** (*object*) - File proxies (thumbnails, etc.)
- **site** (*string*) - Site Name

## DELETE /search/{id}/

API endpoint for file search

### Parameters:

- **id** (*string*) -

### Status Codes:

- 204 No Content -

## GET /servers/

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].list\_of\_interfaces** (*object*) - List of interfaces of this server
- **results[].name** (*string*) - Server name (required)
- **results[].site** (*integer*) - Site correlated with this server (required)

## GET /servers/{id}/

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **list\_of\_interfaces** (*object*) - List of interfaces of this server
- **name** (*string*) - Server name (required)
- **site** (*integer*) - Site correlated with this server (required)

## GET /settings/

API to get a list of global settings.

### Status Codes:

- 200 OK -

### Response JSON Object:

- **[].desc** (*string*) - (read only)
- **[].id** (*integer*) - (read only)
- **[].key** (*string*) - (required)
- **[].value** (*object*) -

## PATCH /settings/

API to set a setting or a group of global settings. A group of settings should be sent in key-value schema. Requested data will be stored in the database, and then sent to each site. Terminology Setting - An individual setting e.g. ngenea:realm

Notes on use:

- Non-global settings cannot be set on this endpoint either alone or with global settings
- Setting a key to None will delete it from the database and set null on all active sites

e.g. {"values": [{"key": "ngeneahsm\_targets:devaws:Storage", "value": None}]}

#### Request JSON Object:

- **values[].desc** (*string*) – (read only)
- **values[].id** (*integer*) – (read only)
- **values[].key** (*string*) – (required)
- **values[].value** (*object*) –

#### Status Codes:

- **202 Accepted** – Task id of the task fired for the associated request per site.

### POST /settings/sync/

API to sync global settings on each site. Stored data will be sent to the given site or to each site if not given.

#### Query Parameters:

- **site** (*string*) – Site to run the sync operation on if provided, otherwise all sites

#### Status Codes:

- **202 Accepted** – Task id of the task fired for the associated request per site.

### GET /settingstasks/

API endpoint for viewing tasks.

#### Query Parameters:

- **page** (*integer*) – A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) – Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **tasktype** (*string*) – Task type
- **state** (*array*) – Task states
- **job\_id** (*integer*) – Job ID

#### Status Codes:

- **200 OK** –

#### Response JSON Object:

- **count** (*integer*) – (required)
- **next** (*string*) –
- **previous** (*string*) –
- **results[].id** (*integer*) – (read only)
- **results[].job** (*integer*) –
- **results[].site** (*string*) – (required)
- **results[].started** (*string*) – Time that the task started running
- **results[].state** (*string*) –
- **results[].task\_id** (*string*) – (read only)
- **results[].tasktype** (*string*) – (read only)
- **results[].url** (*string*) – (read only)

### GET /settingstasks/{id}/

API endpoint for viewing tasks.

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **completed** (*string*) - Time of the task completion
- **friendly\_name** (*string*) - Text to be used to describe what this task is doing.
- **id** (*integer*) - (read only)
- **job** (*integer*) -
- **request** (*string*) - (read only)
- **results** (*string*) - (read only)
- **runtime** (*string*) - (read only)
- **site** (*string*) - (required)
- **started** (*string*) - Time that the task started running
- **state** (*string*) -
- **task\_id** (*string*) - (read only)
- **tasktype** (*string*) - (read only)
- **url** (*string*) - (read only)

## GET /shares/nfs/

### Status Codes:

- 200 OK -

### Response JSON Object:

- **[].clients[].advanced\_settings** (*object*) -
- **[].clients[].anonymous\_group\_id** (*integer*) -
- **[].clients[].anonymous\_user\_id** (*integer*) -
- **[].clients[].asynchronous** (*boolean*) -
- **[].clients[].force\_all\_user\_id** (*boolean*) -
- **[].clients[].force\_root\_user\_id** (*boolean*) -
- **[].clients[].hosts** (*string*) - (required)
- **[].clients[].id** (*integer*) - (read only)
- **[].clients[].insecure\_ports** (*boolean*) -
- **[].clients[].nfs\_share** (*integer*) - (required)
- **[].clients[].read\_only** (*boolean*) -
- **[].clients[].subtree\_check** (*boolean*) -
- **[].clients[].uuid** (*string*) - (read only)
- **[].clients[].write\_delay** (*boolean*) -
- **[].fsid** (*integer*) -
- **[].id** (*integer*) - (read only)
- **[].name** (*string*) - Note: This name is for identification only. NFSClients don't have names in remote representations
- **[].path** (*string*) -
- **[].space** (*integer*) - (required)
- **[].uuid** (*string*) - (read only)

## POST /shares/nfs/

### Request JSON Object:

- **clients[].advanced\_settings** (*object*) -
- **clients[].anonymous\_group\_id** (*integer*) -
- **clients[].anonymous\_user\_id** (*integer*) -

- **clients[].asynchronous** (*boolean*) -
- **clients[].force\_all\_user\_id** (*boolean*) -
- **clients[].force\_root\_user\_id** (*boolean*) -
- **clients[].hosts** (*string*) - (required)
- **clients[].id** (*integer*) - (read only)
- **clients[].insecure\_ports** (*boolean*) -
- **clients[].nfs\_share** (*integer*) - (required)
- **clients[].read\_only** (*boolean*) -
- **clients[].subtree\_check** (*boolean*) -
- **clients[].uuid** (*string*) - (read only)
- **clients[].write\_delay** (*boolean*) -
- **fsid** (*integer*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - Note: This name is for identification only. NFSClients don't have names in remote representations
- **path** (*string*) -
- **space** (*integer*) - (required)
- **uuid** (*string*) - (read only)

#### Status Codes:

- **201 Created** -

#### Response JSON Object:

- **clients[].advanced\_settings** (*object*) -
- **clients[].anonymous\_group\_id** (*integer*) -
- **clients[].anonymous\_user\_id** (*integer*) -
- **clients[].asynchronous** (*boolean*) -
- **clients[].force\_all\_user\_id** (*boolean*) -
- **clients[].force\_root\_user\_id** (*boolean*) -
- **clients[].hosts** (*string*) - (required)
- **clients[].id** (*integer*) - (read only)
- **clients[].insecure\_ports** (*boolean*) -
- **clients[].nfs\_share** (*integer*) - (required)
- **clients[].read\_only** (*boolean*) -
- **clients[].subtree\_check** (*boolean*) -
- **clients[].uuid** (*string*) - (read only)
- **clients[].write\_delay** (*boolean*) -
- **fsid** (*integer*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - Note: This name is for identification only. NFSClients don't have names in remote representations
- **path** (*string*) -
- **space** (*integer*) - (required)
- **uuid** (*string*) - (read only)

**GET** /shares/nfs/{id}/

#### Parameters:

- **id** (*integer*) - A unique integer value identifying this nfs share.

#### Status Codes:

- **200 OK** -

#### Response JSON Object:

- **clients[].advanced\_settings** (*object*) -

- **clients[].anonymous\_group\_id** (*integer*) -
- **clients[].anonymous\_user\_id** (*integer*) -
- **clients[].asynchronous** (*boolean*) -
- **clients[].force\_all\_user\_id** (*boolean*) -
- **clients[].force\_root\_user\_id** (*boolean*) -
- **clients[].hosts** (*string*) - (required)
- **clients[].id** (*integer*) - (read only)
- **clients[].insecure\_ports** (*boolean*) -
- **clients[].nfs\_share** (*integer*) - (required)
- **clients[].read\_only** (*boolean*) -
- **clients[].subtree\_check** (*boolean*) -
- **clients[].uuid** (*string*) - (read only)
- **clients[].write\_delay** (*boolean*) -
- **fsid** (*integer*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - Note: This name is for identification only. NFSClients don't have names in remote representations
- **path** (*string*) -
- **space** (*integer*) - (required)
- **uuid** (*string*) - (read only)

## PATCH /shares/nfs/{id}/

### Parameters:

- **id** (*integer*) - A unique integer value identifying this nfs share.

### Request JSON Object:

- **clients[].advanced\_settings** (*object*) -
- **clients[].anonymous\_group\_id** (*integer*) -
- **clients[].anonymous\_user\_id** (*integer*) -
- **clients[].asynchronous** (*boolean*) -
- **clients[].force\_all\_user\_id** (*boolean*) -
- **clients[].force\_root\_user\_id** (*boolean*) -
- **clients[].hosts** (*string*) - (required)
- **clients[].id** (*integer*) - (read only)
- **clients[].insecure\_ports** (*boolean*) -
- **clients[].nfs\_share** (*integer*) - (required)
- **clients[].read\_only** (*boolean*) -
- **clients[].subtree\_check** (*boolean*) -
- **clients[].uuid** (*string*) - (read only)
- **clients[].write\_delay** (*boolean*) -
- **fsid** (*integer*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - Note: This name is for identification only. NFSClients don't have names in remote representations
- **path** (*string*) -
- **space** (*integer*) - (required)
- **uuid** (*string*) - (read only)

### Status Codes:

- **200 OK** -

### Response JSON Object:

- **clients[].advanced\_settings** (*object*) -

- **clients[].anonymous\_group\_id** (*integer*) -
- **clients[].anonymous\_user\_id** (*integer*) -
- **clients[].asynchronous** (*boolean*) -
- **clients[].force\_all\_user\_id** (*boolean*) -
- **clients[].force\_root\_user\_id** (*boolean*) -
- **clients[].hosts** (*string*) - (required)
- **clients[].id** (*integer*) - (read only)
- **clients[].insecure\_ports** (*boolean*) -
- **clients[].nfs\_share** (*integer*) - (required)
- **clients[].read\_only** (*boolean*) -
- **clients[].subtree\_check** (*boolean*) -
- **clients[].uuid** (*string*) - (read only)
- **clients[].write\_delay** (*boolean*) -
- **fsid** (*integer*) -
- **id** (*integer*) - (read only)
- **name** (*string*) - Note: This name is for identification only. NFSClients don't have names in remote representations
- **path** (*string*) -
- **space** (*integer*) - (required)
- **uuid** (*string*) - (read only)

## DELETE /shares/nfs/{id}/

### Parameters:

- **id** (*integer*) - A unique integer value identifying this nfs share.

### Status Codes:

- [204 No Content](#) -

## GET /shares/samba/

### Status Codes:

- [200 OK](#) -

### Response JSON Object:

- **[].admin\_users** (*object*) -
- **[].advanced\_settings** (*object*) -
- **[].allowed\_users** (*object*) -
- **[].create\_mask** (*string*) -
- **[].directory\_mask** (*string*) -
- **[].force\_create\_mode** (*string*) -
- **[].force\_directory\_mode** (*string*) -
- **[].guest\_ok** (*boolean*) -
- **[].hosts\_allow** (*object*) -
- **[].hosts\_deny** (*object*) -
- **[].hsm\_support** (*boolean*) -
- **[].id** (*integer*) - (read only)
- **[].multi\_thread\_reads** (*boolean*) -
- **[].multi\_thread\_writes** (*boolean*) -
- **[].name** (*string*) - (required)
- **[].on\_sites** (*object*) -
- **[].path** (*string*) -
- **[].read\_only** (*boolean*) - (required)
- **[].root\_share\_locking** (*boolean*) -

- **[].space** (*integer*) - (required)
- **[].uuid** (*string*) - (read only)
- **[].visible** (*boolean*) - (required)

## POST /shares/samba/

### Request JSON Object:

- **admin\_users** (*object*) -
- **advanced\_settings** (*object*) -
- **allowed\_users** (*object*) -
- **create\_mask** (*string*) -
- **directory\_mask** (*string*) -
- **force\_create\_mode** (*string*) -
- **force\_directory\_mode** (*string*) -
- **guest\_ok** (*boolean*) -
- **hosts\_allow** (*object*) -
- **hosts\_deny** (*object*) -
- **hsm\_support** (*boolean*) -
- **id** (*integer*) - (read only)
- **multi\_thread\_reads** (*boolean*) -
- **multi\_thread\_writes** (*boolean*) -
- **name** (*string*) - (required)
- **on\_sites** (*object*) -
- **path** (*string*) -
- **read\_only** (*boolean*) - (required)
- **root\_share\_locking** (*boolean*) -
- **space** (*integer*) - (required)
- **uuid** (*string*) - (read only)
- **visible** (*boolean*) - (required)

### Status Codes:

- [201 Created](#) -

### Response JSON Object:

- **admin\_users** (*object*) -
- **advanced\_settings** (*object*) -
- **allowed\_users** (*object*) -
- **create\_mask** (*string*) -
- **directory\_mask** (*string*) -
- **force\_create\_mode** (*string*) -
- **force\_directory\_mode** (*string*) -
- **guest\_ok** (*boolean*) -
- **hosts\_allow** (*object*) -
- **hosts\_deny** (*object*) -
- **hsm\_support** (*boolean*) -
- **id** (*integer*) - (read only)
- **multi\_thread\_reads** (*boolean*) -
- **multi\_thread\_writes** (*boolean*) -
- **name** (*string*) - (required)
- **on\_sites** (*object*) -
- **path** (*string*) -
- **read\_only** (*boolean*) - (required)
- **root\_share\_locking** (*boolean*) -

- **space** (*integer*) - (required)
- **uuid** (*string*) - (read only)
- **visible** (*boolean*) - (required)

## GET /shares/samba/{id}/

### Parameters:

- **id** (*integer*) - A unique integer value identifying this samba share.

### Status Codes:

- 200 OK -

### Response JSON Object:

- **admin\_users** (*object*) -
- **advanced\_settings** (*object*) -
- **allowed\_users** (*object*) -
- **create\_mask** (*string*) -
- **directory\_mask** (*string*) -
- **force\_create\_mode** (*string*) -
- **force\_directory\_mode** (*string*) -
- **guest\_ok** (*boolean*) -
- **hosts\_allow** (*object*) -
- **hosts\_deny** (*object*) -
- **hsm\_support** (*boolean*) -
- **id** (*integer*) - (read only)
- **multi\_thread\_reads** (*boolean*) -
- **multi\_thread\_writes** (*boolean*) -
- **name** (*string*) - (required)
- **on\_sites** (*object*) -
- **path** (*string*) -
- **read\_only** (*boolean*) - (required)
- **root\_share\_locking** (*boolean*) -
- **space** (*integer*) - (required)
- **uuid** (*string*) - (read only)
- **visible** (*boolean*) - (required)

## PATCH /shares/samba/{id}/

### Parameters:

- **id** (*integer*) - A unique integer value identifying this samba share.

### Request JSON Object:

- **admin\_users** (*object*) -
- **advanced\_settings** (*object*) -
- **allowed\_users** (*object*) -
- **create\_mask** (*string*) -
- **directory\_mask** (*string*) -
- **force\_create\_mode** (*string*) -
- **force\_directory\_mode** (*string*) -
- **guest\_ok** (*boolean*) -
- **hosts\_allow** (*object*) -
- **hosts\_deny** (*object*) -
- **hsm\_support** (*boolean*) -
- **id** (*integer*) - (read only)
- **multi\_thread\_reads** (*boolean*) -

- **multi\_thread\_writes** (*boolean*) -
- **name** (*string*) - (required)
- **on\_sites** (*object*) -
- **path** (*string*) -
- **read\_only** (*boolean*) - (required)
- **root\_share\_locking** (*boolean*) -
- **space** (*integer*) - (required)
- **uuid** (*string*) - (read only)
- **visible** (*boolean*) - (required)

#### Status Codes:

- [200 OK](#) -

#### Response JSON Object:

- **admin\_users** (*object*) -
- **advanced\_settings** (*object*) -
- **allowed\_users** (*object*) -
- **create\_mask** (*string*) -
- **directory\_mask** (*string*) -
- **force\_create\_mode** (*string*) -
- **force\_directory\_mode** (*string*) -
- **guest\_ok** (*boolean*) -
- **hosts\_allow** (*object*) -
- **hosts\_deny** (*object*) -
- **hsm\_support** (*boolean*) -
- **id** (*integer*) - (read only)
- **multi\_thread\_reads** (*boolean*) -
- **multi\_thread\_writes** (*boolean*) -
- **name** (*string*) - (required)
- **on\_sites** (*object*) -
- **path** (*string*) -
- **read\_only** (*boolean*) - (required)
- **root\_share\_locking** (*boolean*) -
- **space** (*integer*) - (required)
- **uuid** (*string*) - (read only)
- **visible** (*boolean*) - (required)

## DELETE /shares/samba/{id}/

#### Parameters:

- **id** (*integer*) - A unique integer value identifying this samba share.

#### Status Codes:

- [204 No Content](#) -

## GET /sitelinks/

API endpoint for managing sitelinks.

#### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is

empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

- **site\_id** (*integer*) - Site ID
- **datastore\_id** (*integer*) - Data store ID

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].datastore** (*string*) - (required)
- **results[].datastore\_path** (*string*) - (required)
- **results[].id** (*integer*) - (read only)
- **results[].site** (*string*) - (required)
- **results[].site\_path** (*string*) - (required)
- **results[].url** (*string*) - (read only)

## POST /sitelinks/

API endpoint for managing sitelinks.

#### Request JSON Object:

- **datastore** (*string*) - (required)
- **datastore\_path** (*string*) - (required)
- **id** (*integer*) - (read only)
- **site** (*string*) - (required)
- **site\_path** (*string*) - (required)
- **url** (*string*) - (read only)

#### Status Codes:

- 201 Created -

#### Response JSON Object:

- **datastore** (*string*) - (required)
- **datastore\_path** (*string*) - (required)
- **id** (*integer*) - (read only)
- **site** (*string*) - (required)
- **site\_path** (*string*) - (required)
- **url** (*string*) - (read only)

## GET /sitelinks/{id}/

API endpoint for managing sitelinks.

#### Parameters:

- **id** (*string*) -

#### Status Codes:

- 200 OK -

#### Response JSON Object:

- **datastore** (*string*) - (required)
- **datastore\_path** (*string*) - (required)
- **id** (*integer*) - (read only)
- **site** (*string*) - (required)
- **site\_path** (*string*) - (required)

- **url** (*string*) - (read only)

## PATCH /sitelinks/{id}/

API endpoint for managing sitelinks.

### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **datastore** (*string*) - (required)
- **datastore\_path** (*string*) - (required)
- **id** (*integer*) - (read only)
- **site** (*string*) - (required)
- **site\_path** (*string*) - (required)
- **url** (*string*) - (read only)

### Status Codes:

- **200 OK** -

### Response JSON Object:

- **datastore** (*string*) - (required)
- **datastore\_path** (*string*) - (required)
- **id** (*integer*) - (read only)
- **site** (*string*) - (required)
- **site\_path** (*string*) - (required)
- **url** (*string*) - (read only)

## DELETE /sitelinks/{id}/

API endpoint for managing sitelinks.

### Parameters:

- **id** (*string*) -

### Status Codes:

- **204 No Content** -

## GET /sites/

API endpoint for managing sites.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- **200 OK** -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].am\_i\_configured** (*boolean*) - Boolean field determining if UI has been configured for the site

- **results[].bandwidth** (*integer*) - speed for site (in Mb/s)
- **results[].color[]** (*integer*) -
- **results[].directories\_count** (*integer*) - How many directories this site has
- **results[].editable** (*string*) - (read only)
- **results[].files\_count** (*integer*) - How many files this site has
- **results[].files\_hydrated\_count** (*integer*) - How many files hydrated this site has
- **results[].files\_stubbed\_count** (*integer*) - How many files stubbed this site has
- **results[].id** (*integer*) - (read only)
- **results[].iris\_enabled** (*boolean*) - Is Iris enabled on this site
- **results[].label** (*string*) - Human readable name for this site
- **results[].name** (*string*) - Site Name. Must match [a-zA-Z0-9- \_]+ (required)
- **results[].public\_url** (*string*) - The base URL by which this site can be reached
- **results[].ready\_to\_configure** (*boolean*) - Boolean to check if site is ready to configure
- **results[].shortcode** (*string*) - Shortcode
- **results[].spaces[]** (*string*) -
- **results[].timezone** (*string*) -
- **results[].type** (*string*) - Type indicating where the site (pixstor) is deployed
- **results[].url** (*string*) - (read only)

## POST /sites/

API endpoint for managing sites.

### Request JSON Object:

- **am\_i\_configured** (*boolean*) - Boolean field determining if UI has been configured for the site
- **bandwidth** (*integer*) - speed for site (in Mb/s)
- **color[]** (*integer*) -
- **directories\_count** (*integer*) - How many directories this site has
- **elasticsearch\_url** (*string*) - URL of the Elasticsearch server to use for the Analytics search backend on this site
- **enable\_auto\_file\_batch\_sizing** (*boolean*) - If optimal batch size should be determined at runtime.
- **exclude** (*object*) - Global workflow excludes for this site
- **file\_batch\_gb** (*integer*) - File batch GB
- **file\_batch\_size** (*integer*) - File batch size
- **files\_count** (*integer*) - How many files this site has
- **files\_hydrated\_count** (*integer*) - How many files hydrated this site has
- **files\_stubbed\_count** (*integer*) - How many files stubbed this site has
- **gpfs\_iscan\_buckets** (*integer*) - Number of buckets to use for the gpfs snapdiff policy
- **gpfs\_iscan\_threads** (*integer*) - Number of threads to use for the gpfs snapdiff policy
- **id** (*integer*) - (read only)
- **include** (*object*) - Global workflow includes for this site
- **iris\_enabled** (*boolean*) - Is Iris enabled on this site
- **label** (*string*) - Human readable name for this site

- **lock\_threshold** (*integer*) - Threshold for soft locking snapshot rotations
- **name** (*string*) - Site Name. Must match [a-zA-Z0-9-\_]+ (required)
- **pixstor\_search\_url** (*string*) - The base URL for querying the PixStor API
- **public\_url** (*string*) - The base URL by which this site can be reached
- **ready\_to\_configure** (*boolean*) - Boolean to check if site is ready to configure
- **shortcode** (*string*) - Shortcode (required)
- **spaces[]** (*string*) -
- **timezone** (*string*) -
- **type** (*string*) - Type indicating where the site (pixstor) is deployed

#### Status Codes:

- [201 Created](#) -

#### Response JSON Object:

- **am\_i\_configured** (*boolean*) - Boolean field determining if UI has been configured for the site
- **bandwidth** (*integer*) - speed for site (in Mb/s)
- **color[]** (*integer*) -
- **directories\_count** (*integer*) - How many directories this site has
- **editable** (*string*) - (read only)
- **elasticsearch\_url** (*string*) - URL of the Elasticsearch server to use for the Analytics search backend on this site
- **enable\_auto\_file\_batch\_sizing** (*boolean*) - If optimal batch size should be determined at runtime.
- **exclude** (*object*) - Global workflow excludes for this site
- **file\_batch\_gb** (*integer*) - File batch GB
- **file\_batch\_size** (*integer*) - File batch size
- **files\_count** (*integer*) - How many files this site has
- **files\_hydrated\_count** (*integer*) - How many files hydrated this site has
- **files\_stubbed\_count** (*integer*) - How many files stubbed this site has
- **gpfs\_iscan\_buckets** (*integer*) - Number of buckets to use for the gpfs snapdiff policy
- **gpfs\_iscan\_threads** (*integer*) - Number of threads to use for the gpfs snapdiff policy
- **id** (*integer*) - (read only)
- **include** (*object*) - Global workflow includes for this site
- **iris\_enabled** (*boolean*) - Is Iris enabled on this site
- **label** (*string*) - Human readable name for this site
- **lock\_threshold** (*integer*) - Threshold for soft locking snapshot rotations
- **name** (*string*) - Site Name. Must match [a-zA-Z0-9-\_]+ (required)
- **pixstor\_search\_url** (*string*) - The base URL for querying the PixStor API
- **public\_url** (*string*) - The base URL by which this site can be reached
- **ready\_to\_configure** (*boolean*) - Boolean to check if site is ready to configure
- **shortcode** (*string*) - Shortcode
- **spaces[].id** (*integer*) - (read only)
- **spaces[].name** (*string*) - Space Name (required)
- **spaces[].url** (*string*) - (read only)
- **timezone** (*string*) -
- **type** (*string*) - Type indicating where the site (pixstor) is deployed
- **url** (*string*) - (read only)

**GET /sites/{id}/**

API endpoint for managing sites.

#### Parameters:

- **id** (*string*) -

#### Status Codes:

- **200 OK** -

#### Response JSON Object:

- **am\_i\_configured** (*boolean*) - Boolean field determining if UI has been configured for the site
- **bandwidth** (*integer*) - speed for site (in Mb/s)
- **color[]** (*integer*) -
- **directories\_count** (*integer*) - How many directories this site has
- **editable** (*string*) - (read only)
- **elasticsearch\_url** (*string*) - URL of the Elasticsearch server to use for the Analytics search backend on this site
- **enable\_auto\_file\_batch\_sizing** (*boolean*) - If optimal batch size should be determined at runtime.
- **exclude** (*object*) - Global workflow excludes for this site
- **file\_batch\_gb** (*integer*) - File batch GB
- **file\_batch\_size** (*integer*) - File batch size
- **files\_count** (*integer*) - How many files this site has
- **files\_hydrated\_count** (*integer*) - How many files hydrated this site has
- **files\_stubbed\_count** (*integer*) - How many files stubbed this site has
- **gpfs\_iscan\_buckets** (*integer*) - Number of buckets to use for the gpfs snapdiff policy
- **gpfs\_iscan\_threads** (*integer*) - Number of threads to use for the gpfs snapdiff policy
- **id** (*integer*) - (read only)
- **include** (*object*) - Global workflow includes for this site
- **iris\_enabled** (*boolean*) - Is Iris enabled on this site
- **label** (*string*) - Human readable name for this site
- **lock\_threshold** (*integer*) - Threshold for soft locking snapshot rotations
- **name** (*string*) - Site Name. Must match [a-zA-Z0-9-\_]+ (required)
- **pixstor\_search\_url** (*string*) - The base URL for querying the PixStor API
- **public\_url** (*string*) - The base URL by which this site can be reached
- **ready\_to\_configure** (*boolean*) - Boolean to check if site is ready to configure
- **shortcode** (*string*) - Shortcode
- **spaces[].id** (*integer*) - (read only)
- **spaces[].name** (*string*) - Space Name (required)
- **spaces[].url** (*string*) - (read only)
- **timezone** (*string*) -
- **type** (*string*) - Type indicating where the site (pixstor) is deployed
- **url** (*string*) - (read only)

#### PATCH /sites/{id}/

API endpoint for managing sites.

#### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **am\_i\_configured** (*boolean*) - Boolean field determining if UI has been configured for the site
- **bandwidth** (*integer*) - speed for site (in Mb/s)
- **color[]** (*integer*) -
- **directories\_count** (*integer*) - How many directories this site has
- **elasticsearch\_url** (*string*) - URL of the Elasticsearch server to use for the Analytics search backend on this site
- **enable\_auto\_file\_batch\_sizing** (*boolean*) - If optimal batch size should be determined at runtime.
- **exclude** (*object*) - Global workflow excludes for this site
- **file\_batch\_gb** (*integer*) - File batch GB
- **file\_batch\_size** (*integer*) - File batch size
- **files\_count** (*integer*) - How many files this site has
- **files\_hydrated\_count** (*integer*) - How many files hydrated this site has
- **files\_stubbed\_count** (*integer*) - How many files stubbed this site has
- **gpfs\_iscan\_buckets** (*integer*) - Number of buckets to use for the gpfs snapdiff policy
- **gpfs\_iscan\_threads** (*integer*) - Number of threads to use for the gpfs snapdiff policy
- **id** (*integer*) - (read only)
- **include** (*object*) - Global workflow includes for this site
- **iris\_enabled** (*boolean*) - Is Iris enabled on this site
- **label** (*string*) - Human readable name for this site
- **lock\_threshold** (*integer*) - Threshold for soft locking snapshot rotations
- **name** (*string*) - Site Name. Must match [a-zA-Z0-9- \_]+
- **pixstor\_search\_url** (*string*) - The base URL for querying the PixStor API
- **public\_url** (*string*) - The base URL by which this site can be reached
- **ready\_to\_configure** (*boolean*) - Boolean to check if site is ready to configure
- **shortcode** (*string*) - Shortcode
- **spaces[]** (*string*) -
- **timezone** (*string*) -
- **type** (*string*) - Type indicating where the site (pixstor) is deployed

### Status Codes:

- **200 OK** -

### Response JSON Object:

- **am\_i\_configured** (*boolean*) - Boolean field determining if UI has been configured for the site
- **bandwidth** (*integer*) - speed for site (in Mb/s)
- **color[]** (*integer*) -
- **directories\_count** (*integer*) - How many directories this site has
- **editable** (*string*) - (read only)
- **elasticsearch\_url** (*string*) - URL of the Elasticsearch server to use for the Analytics search backend on this site
- **enable\_auto\_file\_batch\_sizing** (*boolean*) - If optimal batch size should be determined at runtime.
- **exclude** (*object*) - Global workflow excludes for this site
- **file\_batch\_gb** (*integer*) - File batch GB
- **file\_batch\_size** (*integer*) - File batch size
- **files\_count** (*integer*) - How many files this site has

- **files\_hydrated\_count** (*integer*) - How many files hydrated this site has
- **files\_stubbed\_count** (*integer*) - How many files stubbed this site has
- **gpfs\_iscan\_buckets** (*integer*) - Number of buckets to use for the gpfs snapdiff policy
- **gpfs\_iscan\_threads** (*integer*) - Number of threads to use for the gpfs snapdiff policy
- **id** (*integer*) - (read only)
- **include** (*object*) - Global workflow includes for this site
- **iris\_enabled** (*boolean*) - Is Iris enabled on this site
- **label** (*string*) - Human readable name for this site
- **lock\_threshold** (*integer*) - Threshold for soft locking snapshot rotations
- **name** (*string*) - Site Name. Must match [a-zA-Z0-9-\_]+ (required)
- **pixstor\_search\_url** (*string*) - The base URL for querying the PixStor API
- **public\_url** (*string*) - The base URL by which this site can be reached
- **ready\_to\_configure** (*boolean*) - Boolean to check if site is ready to configure
- **shortcode** (*string*) - Shortcode
- **spaces[].id** (*integer*) - (read only)
- **spaces[].name** (*string*) - Space Name (required)
- **spaces[].url** (*string*) - (read only)
- **timezone** (*string*) -
- **type** (*string*) - Type indicating where the site (pixstor) is deployed
- **url** (*string*) - (read only)

## DELETE /sites/{id}/

API endpoint for managing sites.

### Parameters:

- **id** (*string*) -

### Status Codes:

- [204 No Content](#) -

## GET /sites/{id}/health/

API endpoint for managing sites.

### Parameters:

- **id** (*string*) -

### Status Codes:

- [200 OK](#) -

### Response JSON Object:

- **am\_i\_configured** (*boolean*) - Boolean field determining if UI has been configured for the site
- **bandwidth** (*integer*) - speed for site (in Mb/s)
- **color[]** (*integer*) -
- **directories\_count** (*integer*) - How many directories this site has
- **editable** (*string*) - (read only)
- **files\_count** (*integer*) - How many files this site has
- **files\_hydrated\_count** (*integer*) - How many files hydrated this site has
- **files\_stubbed\_count** (*integer*) - How many files stubbed this site has
- **id** (*integer*) - (read only)
- **iris\_enabled** (*boolean*) - Is Iris enabled on this site

- **label** (*string*) - Human readable name for this site
- **name** (*string*) - Site Name. Must match [a-zA-Z0-9-\_]+ (required)
- **public\_url** (*string*) - The base URL by which this site can be reached
- **ready\_to\_configure** (*boolean*) - Boolean to check if site is ready to configure
- **shortcode** (*string*) - Shortcode
- **spaces[]** (*string*) -
- **timezone** (*string*) -
- **type** (*string*) - Type indicating where the site (pixstor) is deployed
- **url** (*string*) - (read only)

## POST /sites/{id}/refresh/

API endpoint for managing sites.

### Parameters:

- **id** (*string*) -

### Status Codes:

- 201 Created -

### Response JSON Object:

- **am\_i\_configured** (*boolean*) - Boolean field determining if UI has been configured for the site
- **bandwidth** (*integer*) - speed for site (in Mb/s)
- **color[]** (*integer*) -
- **directories\_count** (*integer*) - How many directories this site has
- **editable** (*string*) - (read only)
- **files\_count** (*integer*) - How many files this site has
- **files\_hydrated\_count** (*integer*) - How many files hydrated this site has
- **files\_stubbed\_count** (*integer*) - How many files stubbed this site has
- **id** (*integer*) - (read only)
- **iris\_enabled** (*boolean*) - Is Iris enabled on this site
- **label** (*string*) - Human readable name for this site
- **name** (*string*) - Site Name. Must match [a-zA-Z0-9-\_]+ (required)
- **public\_url** (*string*) - The base URL by which this site can be reached
- **ready\_to\_configure** (*boolean*) - Boolean to check if site is ready to configure
- **shortcode** (*string*) - Shortcode
- **spaces[]** (*string*) -
- **timezone** (*string*) -
- **type** (*string*) - Type indicating where the site (pixstor) is deployed
- **url** (*string*) - (read only)

## GET /sites/{id}/settings/

API endpoint for managing sites.

### Parameters:

- **id** (*string*) -

### Query Parameters:

- **flat** (*boolean*) - Return flat dict

### Status Codes:

- 200 OK -

### Response JSON Object:

- **[].desc** (*string*) - (read only)

- **[].id** (*integer*) - (read only)
- **[].key** (*string*) - (required)
- **[].value** (*object*) -

## PATCH /sites/{id}/settings/

API to set a setting or a group of settings associated with a site. A group of settings should be sent in key-value schema. Terminology Setting - An individual setting e.g. sambda:realm

### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **values[].desc** (*string*) - (read only)
- **values[].id** (*integer*) - (read only)
- **values[].key** (*string*) - (required)
- **values[].value** (*object*) -

### Status Codes:

- **202 Accepted** - Task id of the task fired for the associated request.

## POST /sites/{id}/settings/refresh/

Refresh settings for a given site under management. This API will also create settings in the hub for this site if they don't already exist.

### Parameters:

- **id** (*string*) -

### Status Codes:

- **202 Accepted** - Task id of the task fired for the associated request.

## GET /spaces/

Model View Set for filebrowser's Space model.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **site\_id** (*integer*) - Site ID
- **search\_keyword** (*string*) - Keyword to filter by

### Status Codes:

- **200 OK** -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].color[]** (*integer*) -
- **results[].created** (*string*) - Time of the job creation (read only)
- **results[].editable** (*string*) - (read only)
- **results[].id** (*integer*) - (read only)

- **results[].immutable** (*boolean*) - Space that once created cannot be deleted or updated. Usually the default space.
- **results[].is\_ready** (*string*) - (read only)
- **results[].mountpoint** (*string*) - Mount point (required)
- **results[].name** (*string*) - Space Name (required)
- **results[].nested\_shares** (*string*) - (read only)
- **results[].on\_sites** (*object*) -
- **results[].permission\_mode** (*string*) - Ability to set the permission mode on a space
- **results[].relationships** (*string*) - (read only)
- **results[].sites** (*string*) - (read only)
- **results[].size** (*integer*) - Space size quota in bytes. No value specified, means as large as your system allows.
- **results[].snapshot\_schedule.duration** (*string*) - (required)
- **results[].snapshot\_schedule.frequency** (*string*) - (required)
- **results[].snapshot\_schedule.id** (*integer*) - (read only)
- **results[].snapshot\_schedule.space** (*integer*) -
- **results[].snapshot\_schedule.time** (*string*) - (required)
- **results[].url** (*string*) - (read only)
- **results[].uuid** (*string*) - (read only)

## POST /spaces/

Model View Set for filebrowser's Space model.

### Request JSON Object:

- **color[]** (*integer*) -
- **created** (*string*) - Time of the job creation (read only)
- **mountpoint** (*string*) - (required)
- **name** (*string*) - (required)
- **permission\_mode** (*string*) - Ability to set the permission mode on a space
- **sites[].id** (*string*) - (read only)
- **sites[].iris** (*string*) - (read only)
- **sites[].label** (*string*) - (required)
- **sites[].name** (*string*) - (required)
- **sites[].pool** (*string*) - (read only)
- **sites[].usage[]** (*integer*) -
- **size** (*integer*) - Space size quota in bytes. No value specified, means as large as your system allows.
- **snapshot\_schedule.duration** (*string*) - (required)
- **snapshot\_schedule.frequency** (*string*) - (required)
- **snapshot\_schedule.id** (*integer*) - (read only)
- **snapshot\_schedule.space** (*integer*) -
- **snapshot\_schedule.time** (*string*) - (required)

### Status Codes:

- [201 Created](#) -

### Response JSON Object:

- **color[]** (*integer*) -
- **created** (*string*) - Time of the job creation (read only)
- **editable** (*string*) - (read only)
- **id** (*integer*) - (read only)

- **immutable** (*boolean*) - Space that once created cannot be deleted or updated. Usually the default space.
- **is\_ready** (*string*) - (read only)
- **mountpoint** (*string*) - Mount point (required)
- **name** (*string*) - Space Name (required)
- **nested\_shares** (*string*) - (read only)
- **on\_sites** (*object*) -
- **permission\_mode** (*string*) - Ability to set the permission mode on a space
- **relationships** (*string*) - (read only)
- **sites** (*string*) - (read only)
- **size** (*integer*) - Space size quota in bytes. No value specified, means as large as your system allows.
- **snapshot\_schedule.duration** (*string*) - (required)
- **snapshot\_schedule.frequency** (*string*) - (required)
- **snapshot\_schedule.id** (*integer*) - (read only)
- **snapshot\_schedule.space** (*integer*) -
- **snapshot\_schedule.time** (*string*) - (required)
- **url** (*string*) - (read only)
- **uuid** (*string*) - (read only)

## GET /spaces/{id}/

Model View Set for filebrowser's Space model.

### Parameters:

- **id** (*string*) -

### Query Parameters:

- **site\_id** (*integer*) - Site ID
- **search\_keyword** (*string*) - Keyword to filter by

### Status Codes:

- **200 OK** -

### Response JSON Object:

- **color[]** (*integer*) -
- **created** (*string*) - Time of the job creation (read only)
- **editable** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **immutable** (*boolean*) - Space that once created cannot be deleted or updated. Usually the default space.
- **is\_ready** (*string*) - (read only)
- **mountpoint** (*string*) - Mount point (required)
- **name** (*string*) - Space Name (required)
- **nested\_shares** (*string*) - (read only)
- **on\_sites** (*object*) -
- **permission\_mode** (*string*) - Ability to set the permission mode on a space
- **relationships** (*string*) - (read only)
- **sites** (*string*) - (read only)
- **size** (*integer*) - Space size quota in bytes. No value specified, means as large as your system allows.
- **snapshot\_schedule.duration** (*string*) - (required)
- **snapshot\_schedule.frequency** (*string*) - (required)
- **snapshot\_schedule.id** (*integer*) - (read only)

- **snapshot\_schedule.space** (*integer*) -
- **snapshot\_schedule.time** (*string*) - (required)
- **url** (*string*) - (read only)
- **uuid** (*string*) - (read only)

## PATCH /spaces/{id}/

Model View Set for filebrowser's Space model.

### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **color[]** (*integer*) -
- **created** (*string*) - Time of the job creation (read only)
- **mountpoint** (*string*) - Mount point (read only)
- **name** (*string*) -
- **permission\_mode** (*string*) - Ability to set the permission mode on a space
- **sites[].id** (*string*) - (read only)
- **sites[].iris** (*string*) - (read only)
- **sites[].label** (*string*) - (required)
- **sites[].name** (*string*) - (required)
- **sites[].pool** (*string*) - (read only)
- **sites[].usage[]** (*integer*) -
- **size** (*integer*) - Space size quota in bytes. No value specified, means as large as your system allows.
- **snapshot\_schedule.duration** (*string*) - (required)
- **snapshot\_schedule.frequency** (*string*) - (required)
- **snapshot\_schedule.id** (*integer*) - (read only)
- **snapshot\_schedule.space** (*integer*) -
- **snapshot\_schedule.time** (*string*) - (required)

### Status Codes:

- 200 OK -

### Response JSON Object:

- **color[]** (*integer*) -
- **created** (*string*) - Time of the job creation (read only)
- **editable** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **immutable** (*boolean*) - Space that once created cannot be deleted or updated. Usually the default space.
- **is\_ready** (*string*) - (read only)
- **mountpoint** (*string*) - Mount point (required)
- **name** (*string*) - Space Name (required)
- **nested\_shares** (*string*) - (read only)
- **on\_sites** (*object*) -
- **permission\_mode** (*string*) - Ability to set the permission mode on a space
- **relationships** (*string*) - (read only)
- **sites** (*string*) - (read only)
- **size** (*integer*) - Space size quota in bytes. No value specified, means as large as your system allows.
- **snapshot\_schedule.duration** (*string*) - (required)
- **snapshot\_schedule.frequency** (*string*) - (required)

- **snapshot\_schedule.id** (*integer*) - (read only)
- **snapshot\_schedule.space** (*integer*) -
- **snapshot\_schedule.time** (*string*) - (required)
- **url** (*string*) - (read only)
- **uuid** (*string*) - (read only)

## DELETE /spaces/{id}/

Model View Set for filebrowser's Space model.

### Parameters:

- **id** (*string*) -

### Status Codes:

- [204 No Content](#) -

## GET /spaces/{id}/files/

Model View Set for filebrowser's Space model.

### Parameters:

- **id** (*string*) -

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **site** (*string*) - Site to run the stat operation on if provided, otherwise all space's sites
- **path** (*string*) - Path to retrieve stat
- **details** (*boolean*) - Retrieve all the details of the children files
- **restricted** (*boolean*) - Include restricted objects
- **check\_available\_sites** (*boolean*) - Check only available sites
- **custom\_refresh\_period** (*integer*) - Custom time in seconds to invalidate the DB cache
- **custom\_timeout** (*integer*) - Custom time in seconds to invalidate the task
- **raise\_exception** (*boolean*) - Raise exception if timeout
- **type** (*string*) - item type

### Status Codes:

- [200 OK](#) -

### Response JSON Object:

- **atime** (*string*) -
- **children** (*string*) - (read only)
- **ctime** (*string*) -
- **data\_size** (*integer*) -
- **deleted** (*boolean*) -
- **disk\_usage** (*integer*) -
- **error** (*string*) - Failed to fetch file data error
- **image\_preview** (*string*) - Relative URL of an image preview
- **metadata** (*object*) -

- **mtime** (*string*) -
- **name** (*string*) - Name of of the fs object
- **path** (*string*) - Path of the object (required)
- **path\_depth** (*integer*) -
- **remote\_locations** (*object*) -
- **restricted** (*boolean*) -
- **site** (*string*) - (read only)
- **size** (*integer*) -
- **status** (*string*) - Migration status
- **thumbnail** (*string*) - Relative URL of an object thumbnail
- **time\_refreshed** (*string*) -
- **total\_files** (*integer*) - Only applies to directories
- **type** (*string*) -
- **url** (*string*) - (read only)
- **video\_preview** (*string*) - Relative URL of a video preview

## GET /storagepools/

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].capacity** (*integer*) - Capacity of storage pool (required)
- **results[].filesystem** (*string*) - Storage pool filesystem (required)
- **results[].free\_space** (*integer*) - Free space of storage pool (required)
- **results[].is\_default** (*boolean*) - Check if default pool
- **results[].name** (*string*) - Name storage pool (required)
- **results[].site** (*integer*) - Site correlated with storage object (required)
- **results[].used\_space** (*integer*) - Used space of storage pool (required)

## GET /storagepools/{id}/

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **capacity** (*integer*) - Capacity of storage pool (required)
- **filesystem** (*string*) - Storage pool filesystem (required)
- **free\_space** (*integer*) - Free space of storage pool (required)
- **is\_default** (*boolean*) - Check if default pool
- **name** (*string*) - Name storage pool (required)

- **site** (*integer*) - Site correlated with storage object (required)
- **used\_space** (*integer*) - Used space of storage pool (required)

## GET /tags/

API endpoint for search tags

### Query Parameters:

- **filter** (*string*) - substring that returned tags must contain

### Status Codes:

- 200 OK -

### Response JSON Object:

- **[].name** (*string*) - (required)

## GET /tasks/

API endpoint for viewing tasks.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **tasktype** (*string*) - Task type
- **task\_id** (*string*) - Task Id
- **state** (*array*) - Task states
- **job\_id** (*integer*) - Job ID
- **internal** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].dynamic\_parents[]** (*integer*) -
- **results[].id** (*integer*) - (read only)
- **results[].job** (*integer*) - (required)
- **results[].parents** (*string*) - (read only)
- **results[].queue** (*string*) - (required)
- **results[].site** (*string*) - (required)
- **results[].started** (*string*) - Time that the task started running
- **results[].state** (*string*) -
- **results[].task\_id** (*string*) - Celery task ID
- **results[].tasktype** (*string*) - (required)
- **results[].url** (*string*) - (read only)

## GET /tasks/{id}/

API endpoint for viewing tasks.

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **completed** (*string*) - Time of the task completion
- **dynamic\_parents[]** (*integer*) -
- **friendly\_name** (*string*) - Text to be used to describe what this task is doing.
- **id** (*integer*) - (read only)
- **job** (*integer*) - (required)
- **parents** (*string*) - (read only)
- **paths** (*string*) - (read only)
- **queue** (*string*) - (required)
- **result** (*object*) -
- **runtime** (*string*) - (read only)
- **site** (*string*) - (required)
- **started** (*string*) - Time that the task started running
- **state** (*string*) -
- **task\_id** (*string*) - Celery task ID
- **tasktype** (*string*) - (required)
- **url** (*string*) - (read only)

## GET /tasks/{id}/files/

API endpoint for viewing tasks.

### Parameters:

- **id** (*string*) -

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.
- **state** (*string*) -
- **type** (*string*) -
- **site** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **completed** (*string*) - Time of the task completion
- **dynamic\_parents[]** (*integer*) -
- **friendly\_name** (*string*) - Text to be used to describe what this task is doing.
- **id** (*integer*) - (read only)
- **job** (*integer*) - (required)
- **parents** (*string*) - (read only)
- **paths** (*string*) - (read only)
- **queue** (*string*) - (required)
- **result** (*object*) -

- **runtime** (*string*) - (read only)
- **site** (*string*) - (required)
- **started** (*string*) - Time that the task started running
- **state** (*string*) -
- **task\_id** (*string*) - Celery task ID
- **tasktype** (*string*) - (required)
- **url** (*string*) - (read only)

## GET /users/

API endpoint for managing users.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between 20 and 100. For disabling pagination and retrieving all results, 0 should be given. When page size parameter is empty or <20, 20 results are returned by default. When page size parameter >100, 100 results are returned by default.

### Status Codes:

- 200 OK -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -
- **results[].date\_joined** (*string*) -
- **results[].email** (*string*) -
- **results[].first\_name** (*string*) -
- **results[].groups[].id** (*integer*) - (read only)
- **results[].groups[].name** (*string*) - (required)
- **results[].groups[].url** (*string*) - (read only)
- **results[].id** (*integer*) - (read only)
- **results[].is\_active** (*boolean*) - Designates whether this user should be treated as active. Unselect this instead of deleting accounts.
- **results[].last\_login** (*string*) -
- **results[].last\_name** (*string*) -
- **results[].nas\_user.allow\_ssh** (*boolean*) -
- **results[].nas\_user.primary\_group** (*string*) - (required)
- **results[].nas\_user.uid** (*integer*) - UID number for the user. This is automatically generated. And cannot be changed (read only)
- **results[].profile.country** (*string*) - User's country
- **results[].profile.default\_site** (*integer*) -
- **results[].profile.department** (*string*) - Name of the department user is working in
- **results[].profile.home\_site** (*integer*) -
- **results[].profile.line\_manager** (*string*) - Name of the line manager of the user
- **results[].profile.phone** (*string*) - User's phone number
- **results[].profile.timezone** (*string*) - Timezone in a string format e.g. 'Europe/London'

- **results[].url** (*string*) - (read only)
- **results[].username** (*string*) - Required. 150 characters or fewer. Letters, digits and @/./+/-/\_ only. (required)

## POST /users/

API endpoint for managing users.

### Request JSON Object:

- **email** (*string*) -
- **first\_name** (*string*) -
- **groups[]** (*string*) -
- **last\_name** (*string*) -
- **nas\_user.allow\_ssh** (*boolean*) -
- **nas\_user.primary\_group** (*string*) - (required)
- **password** (*string*) - (required)
- **profile.country** (*string*) - User's country
- **profile.default\_site** (*integer*) -
- **profile.department** (*string*) - Name of the department user is working in
- **profile.home\_site** (*integer*) -
- **profile.line\_manager** (*string*) - Name of the line manager of the user
- **profile.phone** (*string*) - User's phone number
- **profile.timezone** (*string*) - Timezone in a string format e.g. 'Europe/London'
- **username** (*string*) - Required. 150 characters or fewer. Letters, digits and @/./+/-/\_ only. (required)

### Status Codes:

- [201 Created](#) -

### Response JSON Object:

- **email** (*string*) -
- **first\_name** (*string*) -
- **groups[]** (*string*) -
- **last\_name** (*string*) -
- **nas\_user.allow\_ssh** (*boolean*) -
- **nas\_user.primary\_group** (*string*) - (required)
- **password** (*string*) - (required)
- **profile.country** (*string*) - User's country
- **profile.default\_site** (*integer*) -
- **profile.department** (*string*) - Name of the department user is working in
- **profile.home\_site** (*integer*) -
- **profile.line\_manager** (*string*) - Name of the line manager of the user
- **profile.phone** (*string*) - User's phone number
- **profile.timezone** (*string*) - Timezone in a string format e.g. 'Europe/London'
- **username** (*string*) - Required. 150 characters or fewer. Letters, digits and @/./+/-/\_ only. (required)

## POST /users/change\_password/

API endpoint for managing users.

### Request JSON Object:

- **new\_password** (*string*) - (required)
- **old\_password** (*string*) - (required)

### Status Codes:

- 201 Created -

### Response JSON Object:

- **new\_password** (*string*) - (required)
- **old\_password** (*string*) - (required)

## POST /users/sync/

API to sync nas users on each site

### Status Codes:

- 201 Created -

### Response JSON Object:

- **date\_joined** (*string*) -
- **email** (*string*) -
- **first\_name** (*string*) -
- **groups[].id** (*integer*) - (read only)
- **groups[].name** (*string*) - (required)
- **groups[].url** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **is\_active** (*boolean*) - Designates whether this user should be treated as active. Unselect this instead of deleting accounts.
- **last\_login** (*string*) -
- **last\_name** (*string*) -
- **nas\_user.allow\_ssh** (*boolean*) -
- **nas\_user.primary\_group** (*string*) - (required)
- **nas\_user.uid** (*integer*) - UID number for the user. This is automatically generated. And cannot be changed (read only)
- **profile.country** (*string*) - User's country
- **profile.default\_site** (*integer*) -
- **profile.department** (*string*) - Name of the department user is working in
- **profile.home\_site** (*integer*) -
- **profile.line\_manager** (*string*) - Name of the line manager of the user
- **profile.phone** (*string*) - User's phone number
- **profile.timezone** (*string*) - Timezone in a string format e.g. 'Europe/London'
- **url** (*string*) - (read only)
- **username** (*string*) - Required. 150 characters or fewer. Letters, digits and @/./+/-/\_ only. (required)

## GET /users/{username}/

API endpoint for managing users.

### Parameters:

- **username** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **date\_joined** (*string*) -
- **email** (*string*) -
- **first\_name** (*string*) -
- **groups[].id** (*integer*) - (read only)

- **groups[].name** (*string*) - (required)
- **groups[].url** (*string*) - (read only)
- **id** (*integer*) - (read only)
- **is\_active** (*boolean*) - Designates whether this user should be treated as active. Unselect this instead of deleting accounts.
- **last\_login** (*string*) -
- **last\_name** (*string*) -
- **nas\_user.allow\_ssh** (*boolean*) -
- **nas\_user.primary\_group** (*string*) - (required)
- **nas\_user.uid** (*integer*) - UID number for the user. This is automatically generated. And cannot be changed (read only)
- **profile.country** (*string*) - User's country
- **profile.default\_site** (*integer*) -
- **profile.department** (*string*) - Name of the department user is working in
- **profile.home\_site** (*integer*) -
- **profile.line\_manager** (*string*) - Name of the line manager of the user
- **profile.phone** (*string*) - User's phone number
- **profile.timezone** (*string*) - Timezone in a string format e.g. 'Europe/London'
- **url** (*string*) - (read only)
- **username** (*string*) - Required. 150 characters or fewer. Letters, digits and @/./+/-/\_ only. (required)

## PATCH /users/{username}/

API endpoint for managing users.

### Parameters:

- **username** (*string*) -

### Request JSON Object:

- **email** (*string*) -
- **first\_name** (*string*) -
- **groups[]** (*string*) -
- **last\_name** (*string*) -
- **nas\_user.allow\_ssh** (*boolean*) -
- **nas\_user.primary\_group** (*string*) - (required)
- **password** (*string*) -
- **profile.country** (*string*) - User's country
- **profile.default\_site** (*integer*) -
- **profile.department** (*string*) - Name of the department user is working in
- **profile.home\_site** (*integer*) -
- **profile.line\_manager** (*string*) - Name of the line manager of the user
- **profile.phone** (*string*) - User's phone number
- **profile.timezone** (*string*) - Timezone in a string format e.g. 'Europe/London'

### Status Codes:

- [200 OK](#) -

### Response JSON Object:

- **email** (*string*) -
- **first\_name** (*string*) -
- **groups[]** (*string*) -
- **last\_name** (*string*) -
- **nas\_user.allow\_ssh** (*boolean*) -

- **nas\_user.primary\_group** (*string*) - (required)
- **password** (*string*) -
- **profile.country** (*string*) - User's country
- **profile.default\_site** (*integer*) -
- **profile.department** (*string*) - Name of the department user is working in
- **profile.home\_site** (*integer*) -
- **profile.line\_manager** (*string*) - Name of the line manager of the user
- **profile.phone** (*string*) - User's phone number
- **profile.timezone** (*string*) - Timezone in a string format e.g. 'Europe/London'

## DELETE /users/{username}/

API endpoint for managing users.

### Parameters:

- **username** (*string*) -

### Status Codes:

- [204 No Content](#) -

## POST /users/{username}/activate/

Activates user account with given username.

### Parameters:

- **username** (*string*) -

### Status Codes:

- [201 Created](#) -

## POST /users/{username}/deactivate/

Deactivates user account with given username.

### Parameters:

- **username** (*string*) -

### Status Codes:

- [201 Created](#) -

## GET /workflows/

API endpoint for viewing workflows.

### Query Parameters:

- **page** (*integer*) - A page number within the paginated result set. When not given, first page is retrieved by default.
- **page\_size** (*integer*) - Number of results to return per page. Page size parameter can be a number between `20` and `100`. For disabling pagination and retrieving all results, `0` should be given. When page size parameter is empty or `<20`, `20` results are returned by default. When page size parameter `>100`, `100` results are returned by default.

### Status Codes:

- [200 OK](#) -

### Response JSON Object:

- **count** (*integer*) - (required)
- **next** (*string*) -
- **previous** (*string*) -

- **results[].discovery** (*string*) -
- **results[].discovery\_options** (*object*) -
- **results[].enabled** (*boolean*) - Is the workflow available for use?
- **results[].external\_only** (*boolean*) - Signifies that the workflow is only allowed to operate on external targets
- **results[].fields** (*object*) -
- **results[].filter\_rules** (*object*) -
- **results[].icon\_classes** (*object*) -
- **results[].id** (*integer*) - (read only)
- **results[].label** (*string*) - Friendly name of the workflow (required)
- **results[].name** (*string*) - Name of Workflow (required)
- **results[].preferred\_queue** (*string*) - Preferred queue for this workflow
- **results[].schedule\_only** (*boolean*) - Workflow only callable inside of a schedule
- **results[].visible** (*boolean*) - Is the workflow visible on the UI?

## POST /workflows/

API endpoint for viewing workflows.

### Request JSON Object:

- **discovery** (*string*) -
- **discovery\_options** (*object*) -
- **enabled** (*boolean*) - Is the workflow available for use?
- **external\_only** (*boolean*) - Signifies that the workflow is only allowed to operate on external targets
- **fields** (*object*) -
- **filter\_rules** (*object*) -
- **icon\_classes** (*object*) -
- **id** (*integer*) - (read only)
- **label** (*string*) - Friendly name of the workflow (required)
- **name** (*string*) - Name of Workflow (required)
- **preferred\_queue** (*string*) - Preferred queue for this workflow
- **schedule\_only** (*boolean*) - Workflow only callable inside of a schedule
- **visible** (*boolean*) - Is the workflow visible on the UI?

### Status Codes:

- [201 Created](#) -

### Response JSON Object:

- **discovery** (*string*) -
- **discovery\_options** (*object*) -
- **enabled** (*boolean*) - Is the workflow available for use?
- **external\_only** (*boolean*) - Signifies that the workflow is only allowed to operate on external targets
- **fields** (*object*) -
- **filter\_rules** (*object*) -
- **icon\_classes** (*object*) -
- **id** (*integer*) - (read only)
- **label** (*string*) - Friendly name of the workflow (required)
- **name** (*string*) - Name of Workflow (required)
- **preferred\_queue** (*string*) - Preferred queue for this workflow
- **schedule\_only** (*boolean*) - Workflow only callable inside of a schedule

- **visible** (*boolean*) - Is the workflow visible on the UI?

## GET /workflows/{id}/

API endpoint for viewing workflows.

### Parameters:

- **id** (*string*) -

### Status Codes:

- 200 OK -

### Response JSON Object:

- **discovery** (*string*) -
- **discovery\_options** (*object*) -
- **enabled** (*boolean*) - Is the workflow available for use?
- **external\_only** (*boolean*) - Signifies that the workflow is only allowed to operate on external targets
- **fields** (*object*) -
- **filter\_rules** (*object*) -
- **icon\_classes** (*object*) -
- **id** (*integer*) - (read only)
- **label** (*string*) - Friendly name of the workflow (required)
- **name** (*string*) - Name of Workflow (required)
- **preferred\_queue** (*string*) - Preferred queue for this workflow
- **schedule\_only** (*boolean*) - Workflow only callable inside of a schedule
- **visible** (*boolean*) - Is the workflow visible on the UI?

## PATCH /workflows/{id}/

API endpoint for viewing workflows.

### Parameters:

- **id** (*string*) -

### Request JSON Object:

- **discovery** (*string*) -
- **discovery\_options** (*object*) -
- **enabled** (*boolean*) - Is the workflow available for use?
- **fields** (*object*) -
- **filter\_rules** (*object*) -
- **icon\_classes** (*object*) -
- **id** (*integer*) - (read only)
- **label** (*string*) - Friendly name of the workflow (required)
- **name** (*string*) - Name of Workflow (required)
- **preferred\_queue** (*string*) - Preferred queue for this workflow
- **schedule\_only** (*boolean*) - Workflow only callable inside of a schedule
- **visible** (*boolean*) - Is the workflow visible on the UI?

### Status Codes:

- 200 OK -

### Response JSON Object:

- **discovery** (*string*) -
- **discovery\_options** (*object*) -
- **enabled** (*boolean*) - Is the workflow available for use?
- **fields** (*object*) -

- **filter\_rules** (*object*) -
- **icon\_classes** (*object*) -
- **id** (*integer*) - (read only)
- **label** (*string*) - Friendly name of the workflow (required)
- **name** (*string*) - Name of Workflow (required)
- **preferred\_queue** (*string*) - Preferred queue for this workflow
- **schedule\_only** (*boolean*) - Workflow only callable inside of a schedule
- **visible** (*boolean*) - Is the workflow visible on the UI?

## DELETE /workflows/{id}/

API endpoint for viewing workflows.

### Parameters:

- **id** (*string*) -

### Status Codes:

- 204 No Content -

## Tools

The following sections document add-on tools for Ngenea Hub

### ngclient

### NGCLIENT

### SYNOPSIS

**ngclient** authenticate (-u USERNAME [-p PASSWORD] | -T TOKEN) [-k NAME]

**ngclient** migrate *path...* [-s *site*] [-r] [-p] [options...]

**ngclient** recall *path...* [-s *site*] [-r] [options...]

**ngclient** send *path...* [-s *source*] -t *target* [options...]

**ngclient** workflows *COMMAND*

**ngclient** features *COMMAND*

### DESCRIPTION

**ngclient** is a CLI wrapper for the default Ngenea Hub workflows - migrate, recall, and send. It also provides a mechanism for generating authentication tokens.

**ngclient** settings can be read from a config file, rather than being passed on the command line. See **ngenea-client.conf(5)** for more information on the configuration format. CLI flags take precedence over config file settings.

The *authenticate* command can be used to generate a client key from a username or access token. The generated client key will be printed to stdout. That client key can then be used with the workflow sub-commands, either via the *-client-key* flag, or by saving it to the **ngenea-client.conf(5)** configuration file.

The *workflows* command group contains sub-commands for interacting with workflows, such as listing workflows and importing new one. See **ngclient-workflows(1)** for more details.

The *features* command group contains sub-commands for listing, enabling, or disabling feature flags. See **ngclient-features(1)** for more details.

## OPTION SUMMARY

path...	One paths to call the workflow
on	
-T, --access-token TOKEN	Access token to authenticate
with	
-u, --username USERNAME	Username to authenticate with
-p, --password PASSWORD	Password for the authentication
username	
-k, --key-name NAME	Unique name for the client key
--base-url	Base URL of the
{{ brand_name }} API	
-c, --config CONFIG	Alternative configuration file
path	
--client-key KEY	Client API key to authenticate
with	
-D, --no-verify	Disable TLS verification
-s, --site SITE	Site to perform the workflow on
-t, --target TARGET	Site to send files to
-q, --queue QUEUE	Queue to perform the workflow
on	
-Q, --target-queue TARGETQUEUE	Queue to send files to
-d, --no-wait	Exit after job is submitted,
don't wait for it to complete	
--timeout SECONDS	wait for completion timeout. If
not set, wait indefinitely	
-r, --recursive	Perform task recursively.
-p, --premigrate	Premigrate files from site
-H, --hydrate	Hydrate files on the send
target site	
-h, --help	Print help message and exit

## OPTIONS

- **-T, -access-token**

An access token to generate a client key with.

- **-u, -username**

Username to generate a client key with.

- **-p, -password**

Password to use in combination with *-username*

If *-username* is specified and *-password* isn't, you will be prompted to enter a password interactively. This may be preferable so that the password doesn't appear in shell history.

- **-k, -key-name**

A *unique* name to assign when generating a client key.

This will be displayed in the Ngenea Hub UI

If not specified, a random uuid will be generated for the key name.

- **-base-url**

Base URL of the Ngenea Hub API, which operations will be performed against.

This can be used to perform Ngenea Hub operations on a remote server.

If not specified, the default is *http://localhost:8000/api*

- **-c, -config**

The path to an alternative configuration file.

If not specified, the default configuration paths will be used. The default paths are in the user's HOME directory *\$HOME/.config/ngenea/ngenea-client.conf*, and the global configuration at */etc/ngenea/ngenea-client.conf*

See **ngenea-client.conf(5)** for more information on the configuration format.

Command line options take precedence over any corresponding config file settings.

- **-D, -no-verify**

Disables TLS Verification

By default, **ngclient** will verify TLS certificate at the remote end.

With this flag, requests made by **ngclient** will accept any TLS certificate presented by the server, and will ignore hostname mismatches and/or expired certificates.

- **-client-key**

Ngenea Hub authentication client key.

This can be generated via the Ngenea Hub REST API, or using **ngclient(1) authenticate**

- **-s, -site**

Site to use for workflows.

For *migrate* and *recall*, this is the site where the workflows execute. For *send*, this is the source site, from which files are sent.

Site does not have to match the node where **ngclient** is being called. This can be used to migrate/recall/send files from a remote site.

Note - shell-globbing will be evaluated on the local node. For a remote site, the files that the glob would match may differ.

- **-t, -target**

Target site for the *send* workflow

- **-q, -queue**

Queue to use for workflows. By default, source queue is set as *default*

For *migrate* and *recall*, this is the queue where the workflows execute. For *send*, this is the source queue, from which files are sent.

- **-Q, -target-queue**

Target queue for the *send* workflow

If the target queue is not provided, it will use the source queue. If the source queue is also not provided, the queue will be set to *default*.

- **-d, -no-wait**

Don't wait for workflows to complete.

By default, **ngclient** will wait for the workflow to complete, subject to *-timeout*.

With this flag, **ngclient** will exit immediately. The workflow will continue to execute independently. In that case, the workflow can be monitored in the Ngenea Hub UI

- **-timeout**

How long to wait for workflows to complete, in seconds.

If not specified, **ngclient** will wait indefinitely.

If the workflow doesn't complete within the timeout, the client will exit with an error. The workflow itself may continue to execute.

- **-r, -recursive**

Migrate or recall files and directories recursively.

- **-p, -premigrate**

Premigrate files

Premigrated files are migrated, but the data is kept resident.

- **-H, -hydrate**

Controls whether the *send* workflow 'hydrates' files on the target.

If false, files are only reverse stubbed on the target.

- **-h, -help**

Prints the help message.

## EXAMPLES

### GENERATE A CLIENT KEY

```
$ ngclient authenticate --username pixadmin -k ngclient-pixadmin
pixadmin's password:
jDBh2cRk6.LswQfylT2BtGiqtYUWhMBliipJmQNgr
```

NOTE: The `authenticate` command doesn't read config values from the config file, so the `-no-verify` and `-base-url` arguments should be passed as cmd arguments if default values aren't required

### RECALL A FILE

```
ngclient recall /mmfs1/data/hello.txt -s site1 --client-key jDBh2
cRk6.LswQfylT2BtGiqtYUWhMBliipJmQNgr
```

For brevity, the *site* and *client-key* can be saved to the config file

### PREMIGRATE A DIRECTORY RECURSIVELY

Assuming the site and client key has been saved to the config file

```
ngclient migrate /mmfs1/data/sample_data/cats -p -r
```

### SEND A FILE TO A REMOTE SITE

```
ngclient send /mmfs1/data/hello.txt -s site1 -t site2 --hydrate
```

## AVAILABILITY

Distributed as part of the *ngenea-hub-client* rpm, or the *ngclient* wheel (Python) for non-Red Hat based systems.

The *ngclient* wheel can be installed and run on any operating system.

Note - `transparent_recall(1)` is packaged along with `ngclient`, but `transparent_recall` will only work on Unix-based operating systems.

## SEE ALSO

`ngenea-client.conf(5)`, `ngclient-workflows(1)`, `ngclient-features(1)`,  
`transparent_recall(1)`, `ngmigrate(1)`, `ngrecall(1)`

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## ngclient-workflows

## NGCLIENT-WORKFLOWS

## SYNOPSIS

**ngclient workflows** list [*workflow-id*] [options...]

**ngclient workflows** import *workflow-file* [options...]

**ngclient workflows** update *workflow-id workflow-file* [options...]

**ngclient workflows** delete *workflow-id* [options...]

## DESCRIPTION

The *list* command is used to list one or more existing workflows from Ngenea Hub. By default, workflows are output in json format, one per line. The `-yaml` flag can be used to output as yaml.

The *import* command can be used to import a new, custom workflow from a json or yaml formatted file.

Currently it is not possible to invoke these custom workflows from **ngclient**, once created. They can be invoked from the Ngenea Hub UI or via the REST API.

The *update* command can be used to update an existing workflow from a json or yaml formatted file. The file can contain only the fields you want to change to perform a partial update, or a whole workflow definition for a full replacement.

NOTE - it's not possible to make partial changes to the *fields* or *filter\_rules* blocks. They can only be replaced as a whole.

The *delete* command can be used to delete an existing workflow, by id.

Base URL and API key settings can be read from a config file, rather than being passed on the command line. See **ngenea-client.conf(5)** for more information on the configuration format. CLI flags take precedence over config file settings.

Interacting with workflows requires Ngenea Hub authentication. The **ngclient(1) authenticate** command can be used to generate a client key from a username or access token.

## OPTION SUMMARY

<code>workflow-id</code>	Unique workflow identifier
<code>workflow-file</code>	File containing a custom workflow definition
<code>--yaml</code>	List workflows <b>in</b> yaml <b>format</b>
<code>--base-url</code>	Base URL of the <code>{{ brand_name }}</code> API
<code>-c, --config CONFIG</code>	Alternative configuration file path
<code>--client-key KEY</code>	Client API key to authenticate <b>with</b>
<code>-h, --help</code>	Print help message <b>and</b> exit

## OPTIONS

- **workflow-file**

Path to a json or yaml formatted file, containing a workflow definition.

If '-' is used, the workflow definition will be read from stdin.

The workflow format is described in the main documentation, section '4.4. Custom Workflows'

- **-yaml**

List workflows in yaml format.

By default, workflows are output in json format, one per line (jsonl).

The `-yaml` flag will output the workflows in structured yaml format. If multiple workflows are being listed, each one will be separated by a blank line.

- **-base-url**

Base URL of the Ngenea Hub API, which operations will be performed against.

This can be used to perform Ngenea Hub operations on a remote server.

If not specified, the default is *http://localhost:8000/api*

- **-c, -config**

The path to an alternative configuration file.

If not specified, the default configuration paths will be used. The default paths are in the user's HOME directory *\$HOME/.config/ngenea/ngenea-client.conf*, and the global configuration at */etc/ngenea/ngenea-client.conf*

See **ngenea-client.conf(5)** for more information on the configuration format.

Command line options take precedence over any corresponding config file settings.

- **-client-key**

Ngenea Hub authentication client key.

This can be generated via the Ngenea Hub REST API, or using **ngclient(1) authenticate**

- **-h, -help**

Prints the help message.

## EXAMPLES

### GENERATE A CLIENT KEY

```
$ ngclient authenticate --username pixadmin -k ngclient-pixadmin
pixadmin's password:
jDBh2cRk6.LswQfyLT2BtGiqTYUWhMB1iipJmQNgr
```

The following examples assume that the client key has been saved in the default config file.

### GET AN EXISTING WORKFLOW

```
$ ngclient workflows list 1
{"id": 1, "name": "migrate", "label": "Migrate", "icon_classes":
["fa fa-cloud fa-stack-2x text-success", "fa fa-angle-up fa-
stack-2x text-light"], "discovery": "recursive", "enabled": true,
"visible": true, "fields": [], "filter_rules": [{"type": "all", "
state": "all", "action": [{"name": "dynamo.tasks.migrate"}], "des-
cription": "Migrates a file off from a given path"}]}
```

### LIST ALL EXISTING WORKFLOWS IN YAML FORMAT

```

$ ngclient workflows list --yaml
id: 1
name: migrate
label: Migrate
discovery: recursive
...
enabled: true
visible: true

id: 2
name: premigrate
label: Premigrate
discovery: recursive
...
enabled: true
visible: true

...

```

(the above example output has been truncated)

## IMPORT A CUSTOM WORKFLOW

Using the following workflow definition in json format

```

$ cat overwrite_workflow.json
{"name": "recall_overwrite", "label": "Overwrite On Recall", "icon_classes": ["fa fa-cloud fa-stack-2x text-primary", "fa fa-caret-down fa-stack-2x text-light"], "filter_rules": [{"type": "all", "state": "all", "action": [{"name": "dynamo.tasks.reverse_stub", "site": "*destinationsite", "overwrite": true}]}], "fields": [{"name": "destinationsite", "type": "enum[site]", "label": "Destination Site", "value": "site"}]}

```

Import the workflow as follows

```
ngclient workflows import overwrite_workflow.json
```

## RENAME A WORKFLOW

With the change in yaml format, using '-' to read from stdin

```
echo "name: overwrite_on_recall" | ngclient workflows update 6 -
```

## DELETE A WORKFLOW

```
ngclient workflows delete 6
```

## AVAILABILITY

Distributed as part of the *ngenea-hub-client* rpm, or the *ngclient* wheel (Python) for non-Red Hat based systems.

The *ngclient* wheel can be installed and run on any operating system.

## SEE ALSO

`ngclient(1)`, `ngenea-client.conf(5)`

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## ngclient-features

## NGCLIENT-FEATURES

## SYNOPSIS

**ngclient features** list [options...]

**ngclient features** enable *name* [options...]

**ngclient features** disable *name* [options...]

## DESCRIPTION

The *list* command is used to list available feature flags for Ngenea Hub.

The *enable* and *disable* commands can be used to enable a named feature in Ngenea Hub.

Base URL and API key settings can be read from a config file, rather than being passed on the command line. See **ngenea-client.conf(5)** for more information on the configuration format. CLI flags take precedence over config file settings.

Interacting with features requires Ngenea Hub authentication. The **ngclient(1)** *authenticate* command can be used to generate a client key from a username or access token.

## OPTION SUMMARY

<code>name</code>	Name of the feature to enable <b>or</b> disable
<code>--json</code>	List features <b>in json format</b>
<code>--base-url</code>	Base URL of the <code>{{ brand_name }}</code> API

-c, --config CONFIG	Alternative configuration file path
--client-key KEY	Client API key to authenticate <b>with</b>
-h, --help	Print help message <b>and</b> exit

## OPTIONS

- **-json**

List features in json format.

By default, the *list* command will report features in a table-based format. The *-json* flag will report features in json format instead, one per line.

- **-base-url**

Base URL of the Ngenea Hub API, which operations will be performed against.

This can be used to perform Ngenea Hub operations on a remote server.

If not specified, the default is *http://localhost:8000/api*

- **-c, -config**

The path to an alternative configuration file.

If not specified, the default configuration paths will be used. The default paths are in the user's HOME directory *\$HOME/.config/ngenea/ngenea-client.conf*, and the global configuration at */etc/ngenea/ngenea-client.conf*

See **ngenea-client.conf(5)** for more information on the configuration format.

Command line options take precedence over any corresponding config file settings.

- **-client-key**

Ngenea Hub authentication client key.

This can be generated via the Ngenea Hub REST API, or using **ngclient(1) authenticate**

- **-h, -help**

Prints the help message.

## EXAMPLES

The following examples assume that the client key has been saved in the default config file.

### LIST AVAILABLE FEATURES

```
$ ngclient features list
[X] searchui          Enable search features in the UI
```

```
[ ] bandwidth_controls    Enable bandwidth controls in the UI
[ ] rbac                  Enable role-based access controls
```

(The above are just examples and may not reflect actual feature flags)

ENABLE A FEATURE

```
ngclient features enable rbac
```

DISABLE A FEATURE

```
ngclient features disable searchui
```

## AVAILABILITY

Distributed as part of the *ngenea-hub-client* rpm, or the *ngclient* wheel (Python) for non-Red Hat based systems.

The *ngclient* wheel can be installed and run on any operating system.

## SEE ALSO

`ngclient(1)`, `ngenea-client.conf(5)`

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## ngclient-settings

## NGCLIENT-SETTINGS

## SYNOPSIS

```
ngclient settings refresh [options...]
```

## DESCRIPTION

The *settings refresh* command is used to trigger a refresh of site settings in Ngenea Hub.

This means loading the latest settings from PixStor on one or all sites into Ngenea Hub. This may be useful if a setting has been manually changed on a site, or if the settings displayed in Ngenea Hub are otherwise wrong or out-of-date.

Base URL and API key settings can be read from a config file, rather than being passed on the command line. See **ngenea-client.conf(5)** for more information on the configuration format. CLI flags take precedence over config file settings.

Interacting with features requires Ngenea Hub authentication. The **ngclient(1)** *authenticate* command can be used to generate a client key from a username or access token.

## OPTION SUMMARY

<code>--site</code>	Name of a specific site to refresh settings <b>from</b>
<code>--base-url</code>	Base URL of the <code>{{ brand_name }}</code> API
<code>-c, --config CONFIG</code>	Alternative configuration file path
<code>--client-key KEY</code>	Client API key to authenticate <b>with</b>
<code>-h, --help</code>	Print help message <b>and</b> exit

## OPTIONS

- **-site**

Name of a specific site to refresh settings on.

If this flag isn't specified, settings will be refreshed for all sites registered in Ngenea Hub

- **-base-url**

Base URL of the Ngenea Hub API, which operations will be performed against.

This can be used to perform Ngenea Hub operations on a remote server.

If not specified, the default is *http://localhost:8000/api*

- **-c, -config**

The path to an alternative configuration file.

If not specified, the default configuration paths will be used. The default paths are in the user's HOME directory *\$HOME/.config/ngenea/ngenea-client.conf*, and the global configuration at */etc/ngenea/ngenea-client.conf*

See **ngenea-client.conf(5)** for more information on the configuration format.

Command line options take precedence over any corresponding config file settings.

- **-client-key**

Ngenea Hub authentication client key.

This can be generated via the Ngenea Hub REST API, or using **ngclient(1)** *authenticate*

- **-h, -help**

Prints the help message.

## EXAMPLES

The following examples assume that the client key has been saved in the default config file.

### REFRESH SETTINGS ON ONE SITE

```
$ ngclient settings refresh --site london
```

### REFRESH SETTINGS ON ALL SITES

```
ngclient settings refresh
```

## AVAILABILITY

Distributed as part of the *ngenea-hub-client* rpm, or the *ngclient* wheel (Python) for non-Red Hat based systems.

The *ngclient* wheel can be installed and run on any operating system.

## SEE ALSO

[ngclient\(1\)](#), [ngenea-client.conf\(5\)](#)

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## ngclient-sites

## NGCLIENT-SITES

## SYNOPSIS

```
ngclient sites refresh [options...]
```

## DESCRIPTION

The *sites refresh* command is used to trigger a refresh of site-specific metadata in Ngenea Hub.

Site metadata includes things like storage pools, filesystems, analytics, etc. This metadata is typically refreshed periodically, but if the data currently returned from Ngenea Hub seems wrong or out of date, this command can be used to force a refresh.

Base URL and API key settings can be read from a config file, rather than being passed on the command line. See **ngenea-client.conf(5)** for more information on the configuration format. CLI flags take precedence over config file settings.

Interacting with features requires Ngenea Hub authentication. The **ngclient(1) authenticate** command can be used to generate a client key from a username or access token.

## OPTION SUMMARY

<code>--site</code>	Name of a specific site to refresh settings <b>from</b>
<code>--base-url</code>	Base URL of the <code>{{ brand_name }}</code> API
<code>-c, --config CONFIG</code>	Alternative configuration file path
<code>--client-key KEY</code>	Client API key to authenticate <b>with</b>
<code>-h, --help</code>	Print help message <b>and</b> exit

## OPTIONS

- **-site**

Name of a specific site to refresh metadata on.

If this flag isn't specified, metadata will be refreshed for all sites registered in Ngenea Hub

- **-base-url**

Base URL of the Ngenea Hub API, which operations will be performed against.

This can be used to perform Ngenea Hub operations on a remote server.

If not specified, the default is *http://localhost:8000/api*

- **-c, -config**

The path to an alternative configuration file.

If not specified, the default configuration paths will be used. The default paths are in the user's HOME directory `$HOME/.config/ngenea/ngenea-client.conf`, and the global configuration at `/etc/ngenea/ngenea-client.conf`

See **ngenea-client.conf(5)** for more information on the configuration format.

Command line options take precedence over any corresponding config file settings.

- **-client-key**

Ngenea Hub authentication client key.

This can be generated via the Ngenea Hub REST API, or using **ngclient(1)** *authenticate*

- **-h, -help**

Prints the help message.

## EXAMPLES

The following examples assume that the client key has been saved in the default config file.

REFRESH METADATA ON ONE SITE

```
$ ngclient sites refresh --site london
```

REFRESH METADATA ON ALL SITES

```
ngclient sites refresh
```

## AVAILABILITY

Distributed as part of the *ngenea-hub-client* rpm, or the *ngclient* wheel (Python) for non-Red Hat based systems.

The *ngclient* wheel can be installed and run on any operating system.

## SEE ALSO

ngclient(1), ngenea-client.conf(5)

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## ngenea-client.conf

## NGENEACLIENTCONF

### SYNOPSIS

The Ngenea Hub client configuration files is used to configure **ngclient(1)** and **transparent\_recall(1)**

The default config file locations are in the user's HOME directory *\$HOME/.config/ngenea/ngenea-client.conf*, with a global config at */etc/ngenea/ngenea-client.conf*.

If both configuration files exist, the user config will take precedence, with the global config used for any values not specified in the user config.

For example

```
# global config
[settings]
base_url = http://10.172.0.23:8000
site = default

# user config
[settings]
site = mysite
```

would result in *base\_url = http://10.172.0.23:8000/api*, since it's not specified in the user config, and *site = mysite* since the value from the user config takes precedence.

NOTE - unless explicitly specified with the *-config* flag, both *ngclient(1)* and *transparent\_recall(1)* will use this same default config files.

If a config file is explicitly specified with *-config*, the default configs will not be considered at all.

Command line options take precedence over any corresponding config file settings.

### FILE FORMAT

**ngenea-client.conf(5)** uses an ini-style format.

It is made up of *key = value* lines under the *[settings]* section header.

```
[settings]
client_key = mykey
```

Boolean type values can be either *true*, *false*, *yes*, or *no* (case-insensitive)

Additional sections, or unrecognised keys are ignored.

- **base\_url**

Base URL of the Ngenea Hub API, which operations will be performed against.

This can be used to perform Ngenea Hub operations on a remote server.

If not specified, the default is *http://localhost:8000/api*

- **client\_key**

Ngenea Hub authentication client key.

This can be generated via the Ngenea Hub REST API, or using **ngclient(1)** *authenticate*

- **site**

The default site to use for workflows.

For *migrate* and *recall*, this is the site where the workflows execute. For *send*, this is the source site, from which files are sent.

- **queue**

The default queue to use for workflows. By default, source queue is set as *default*

For *migrate* and *recall*, this is the queue where the workflows execute. For *send*, this is the source queue, from which files are sent.

- **wait**

Whether to wait for workflows to complete.

If true (default), tools will wait for the workflow to complete, subject to *timeout*.

If false, tools will exit immediately. The workflow will continue to execute independently. In that case, the workflow can be monitored in the Ngenea Hub UI

- **timeout**

How long to wait for workflows to complete, in seconds.

If not set, tools will wait indefinitely.

If the workflow doesn't complete within the timeout, the client will exit with an error. The workflow itself may continue to execute.

- **hydrate**

For **ngclient(1)** *send*, controls whether sent files are hydrated on the target.

If false, files are only reverse stubbed on the target.

- **api\_secure\_verify**

Whether to enable/disable TLS Verification when communicating with Ngenea Hub REST API.

This is particularly useful when Ngenea Hub REST API is behind a self-signed certificate.

If false, TLS verification will be disabled.

If not specified, the default is *true*.

## EXAMPLE

```
[settings]
base_url = http://mypixserver:8000
client_key = ...
site = mysite
queue = standard
wait = true
timeout = 180
hydrate = true
api_secure_verify = true
```

## SEE ALSO

ngclient(1), transparent\_recall(1)

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## transparent\_recall

## TRANSPARENT\_RECALL

## SYNOPSIS

**transparent\_recall** file [-config CONF]

## DESCRIPTION

**transparent\_recall** is a tool for recalling individual files via Ngenea Hub

Performing recalls via Ngenea Hub allows for monitoring progress via the Ngenea Hub UI. Individual recall tasks performed on demand, but for reporting are grouped together into one job per hour.

**transparent\_recall** can be called directly to recall files, but typically would be installed as a filesystem policy rule. See **TRANSPARENT RECALL POLICY** for more info.

## OPTION SUMMARY

file	One <b>or</b> more directory to export events <b>from</b>
--config CONF	Alternative configuration file location
-h, --help	Print help message <b>and</b> exit

## OPTIONS

- **-config**

The path to an alternative configuration file.

If not specified, the default configuration paths will be used. The default paths are in the user's HOME directory *\$HOME/.config/ngenea/ngenea-client.conf*, and the global configuration at */etc/ngenea/ngenea-client.conf*

See the **CONFIGURATION** section below and *ngenea-client.conf(5)* for more information.

Command line options take precedence over any corresponding config file settings.

- **-queue**

Queue to perform the transparent recall on.

- **-h, -help**

Prints the help message.

## CONFIGURATION

**transparent\_recall** requires authentication to be able to perform recalls via Ngenea Hub. To authenticate, a valid *client\_key* must be placed in the configuration file.

A client key can be generated via the Ngenea Hub REST API, or using the **ngclient(1)** *authenticate* command.

Minimally, the configuration must include this *client\_key*, as well as the *site* where recalls are performed.

### [settings]

```
client_key = ...  
site = thissite
```

The *site* must match the the node where the recall was triggered.

The *queue* can be specified in the configuration; otherwise, it will be set to the default option, *default*.

**transparent\_recall** will respect any **ngclient(1)** *recall* configuration options, except for *recursive*. This includes *timeout*; by default it will wait indefinitely for the recall to complete.

See **ngenea-client.conf(5)** for more information on the configuration format and additional options.

## TRANSPARENT RECALL POLICY

Transparent recall, by definition, is intended to be triggered automatically when an offline file is opened for reading or writing.

To enable transparent recall functionality using **transparent\_recall**, the following rules can be added to the filesystem placement policy.

```
/* BEGIN: NGENEA TRANSPARENT RECALL POLICY */  
  
define(xattr_stbsz,[INTEGER(XATTR('dmapi.APXstbsz'))])  
  
RULE FileOpen EVENT 'OPEN'  
    ACTION(SetDataEvent(0, OP_READ, CASE WHEN xattr_stbsz IS NULL  
THEN 0 ELSE xattr_stbsz END) AND  
        SetDataEvent(1, OP_WRITE+OP_TRUNC, 0))  
    WHERE LENGTH(XATTR('dmapi.APXguid'))>0 AND  
CountSubstr(MISC_ATTRIBUTES,'V')>0  
  
RULE FileOpen_else EVENT 'OPEN' DIRECTORIES_PLUS  
  
RULE FileData EVENT 'DATA'  
    ACTION( system_lw('/usr/bin/python3 /usr/bin/  
transparent_recall ':' ||  
        VARCHAR(FS_ID) || ':' ||VARCHAR(INODE) || ':' ||  
VARCHAR(GENERATION) ||  
        ' ' || getDetail('path_name') )=0  
    WHERE getDetail('open_flags')!='0' AND  
LENGTH(XATTR('dmapi.APXguid'))>0 AND  
CountSubstr(MISC_ATTRIBUTES,'V')>0  
  
RULE FileData_else EVENT 'DATA' DIRECTORIES_PLUS  
  
/* END: NGENEA TRANSPARENT RECALL POLICY */
```

If transparent recall (*EVENT*) rules are already installed for ngenea (native), these rules should replace those equivalent rules.

Don't replace any rules besides the ngenea *EVENT* rules, e.g. don't replace any *SET POOL* rules.

See **mmchpolicy(1)** for how to change the filesystem placement policy

Adjusting the transparent recall queue

If an alternative queue has been established, for example `transparent-recall` it can be used for all transparent recall operations by using this policy alternative:

```
RULE FileData EVENT 'DATA'
  ACTION( system_lw('/usr/bin/python3 /usr/bin/
transparent_recall --queue transparent-recall :' ||
  VARCHAR(FS_ID) || ':' || VARCHAR(INODE) || ':' ||
  VARCHAR(GENERATION) ||
  ' ' || getDetail('path_name') )=0)
  WHERE getDetail('open_flags')!='0' AND
  LENGTH(XATTR('dmapi.APXguid'))>0 AND
  CountSubstr(MISC_ATTRIBUTES, 'V')>0
```

This substitutes the main `ACTION` to allow for all transparent recall operations to go through the custom queue exclusively. This means transparent recalls will not be effected by any other operations happening on the main

For more details on how to create and enable these custom queues, refer to the configuration section of the ngeneahub documentation.

## TROUBLESHOOTING

When attempting to read an offline file, if the read process reports *“Operation not permitted”*, and it's not due to permissions, the most likely cause is that the recall failed.

Logs for the **transparent\_recall** command invocation can be found at `/var/adm/ras/mmfs.log.latest`

Logs for the transparent recall job can be viewed via Ngenea Hub.

**WARNING** - if reading a file triggers a recall, the read request will block until recall exits; it can't be interrupted (Ctrl+C) or killed (kill -9). If the recall job is 'stuck' and no timeout is set, the only way to make the read process exit is to kill the recall job via Ngenea Hub.

## AVAILABILITY

Distributed as part of the *ngenea-hub-client* rpm, or the *ngclient* wheel (Python) for non-Red Hat based systems.

Note - **transparent\_recall** makes use of flock(2), so can only be used on Unix-base operating systems.

## SEE ALSO

ngclient(1), ngenea-client.conf(5), ngrecall(1), mmchpolicy(1)

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## Backup

This section provides detailed instructions for backing up and restoring static configurations and selected database tables in Ngenea Hub. It is intended for administrators responsible for maintaining the stability and recoverability of the Hub environment.

Ngenea Hub's backup and restore functionality allows for the preservation of essential configuration data, such as users, schedules, workflows, external targets, and system settings.

Job information is not saved into an exported backup and therefore cannot be restored.

The guide outlines the commands and procedures required to:

- Export critical configuration files and database records into a secure archive.
- Restore the system to a previously saved state using that archive.

By following this document, administrators can ensure minimal downtime and maintain system integrity across updates or unexpected disruptions.

## Backing Up HUB Static Configurations

**Warning:** The backup process only includes static configurations and selected database tables. Job and task-related data are **not included** in the backup.

Ngenea Hub provides a set of commands to efficiently **back up** and restore critical static configurations and selected database tables. This ensures quick recovery and minimal downtime during system upgrades or failures.

These commands allow administrators to safeguard essential configuration data such as **schedules, users, workflows, external targets, and spaces**, while excluding transient job and task data. This approach streamlines the process and reduces the overall backup size..

Job information is not saved into an exported backup and therefore cannot be restored.

```
ngeneahubctl backup --help

Usage: ngeneahubctl backup [OPTIONS] COMMAND [ARGS]...

Backup and restore ngeneahub static configurations

Options:
  --help  Show this message and exit.

Commands:
  export  Export ngeneahub static configurations to a file
  restore Restore ngeneahub static configurations from a file
```

## Backup

The backup process captures key Ngenea Hub configurations and selected database tables, providing a snapshot of the system's critical static configurations.

To perform a backup, the Ngenea Hub database container (`ngeneahub_db_1`) must be running, or Ngenea Hub must be fully operational.

To start the Ngenea Hub database container separately, run the following command:

```
docker start ngeneahub_db_1
```

## Command:

```
ngeneahubctl backup export --help

Usage: ngeneahubctl backup export [OPTIONS]

Export ngeneahub static configurations to a file

Options:
  -o, --output DIRECTORY  Location to store generated archive. De
  fault
                           '$(PWD)'
  --help                  Show this message and exit.
```

This command performs the following actions:

- **Database dump:** Exports selected tables related to schedules, users, workflows, external targets, global configurations, spaces, etc., into a SQL file.
- **Configuration backup:** Copies static configuration files from key directories:
  - `/etc/ngenea/postgres` - PostgreSQL settings
  - `/etc/ngenea/redis` - Redis configurations
  - `/etc/ngenea/rabbitmq` - RabbitMQ configurations
  - `/etc/ngenea/ngenea-client.conf` - Hub client configuration

- `/etc/sysconfig/ngeneahub` - Hub configuration
- **Archive creation:** Packages the SQL dump and configuration files into a compressed archive (`ngeneahub_backup_<timestamp>.tar.gz`). The archive is saved to the current working directory, or to a directory specified by the `-o` or `--output` command-line option.

## Restore

**Note:** Depending on the scenario, a wipe **may be** required before restoring a backup.

The restore process reinstates the backed-up database tables and configuration files, returning the Hub to its operational state following a failure or upgrade.

To perform a restoration, Ngenea Hub must be fully operational.

**Note:** After performing a restoration, all services need to be restarted.

## Command:

```
ngeneahubctl backup restore <backup-file>
```

```
ngeneahubctl backup restore --help
```

```
Usage: ngeneahubctl backup restore [OPTIONS] PATH
```

```
Restore ngeneahub static configurations from a file
```

```
Options:
```

```
--help Show this message and exit.
```

This command performs the following:

- **Unpack the backup archive:** Extracts the contents of the backup file.
- **Restore configurations:** Copies the saved configuration files back into their respective directories, re-establishing the static system setup.
- **Truncate and reset tables:** Clears the selected database tables, resetting them to ensure no conflicts with the incoming data.
- **Import the SQL dump:** Inserts the backed-up data into the database, restoring schedules, users, workflows, targets, and spaces.

## Programming Guide

This **API Guide** is intended for users who work with, build, or integrate with our APIs. It provides a clear overview of how the API is structured, how to interact with it effectively, and the standards we follow in its design and implementation. You'll find information on authentication, endpoint conventions, request/response formats, error handling, versioning, and best practices.

# REST API

To better understand APIs in the context of **Ngenea Hub**, let's start with a quick overview of what an API is and its essential concepts.

An **API (Application Programming Interface)** is a set of rules and protocols that allows software applications to communicate with each other. APIs define how to request and send data, which functions are available, and what responses can be expected.

## What are Remote APIs?

Remote APIs are APIs where the software making the request and the software providing the data are on different machines or different networks. These APIs work over the internet or a network, using tools like HTTP.

## What are Web-Based APIs?

Web-based APIs are **remote APIs** that use web protocols like `HTTP` or `HTTPS` to communicate. They often send and receive data in formats like `JSON`. These APIs are widely used in websites and mobile apps to get or send data.

## What are REST APIs?

REST (Representational State Transfer) APIs are a special kind of web-based API that follow a specific set of design rules. They use URLs to identify resources (like a user or a file) and `HTTP` methods like `GET` or `POST` to perform actions on those resources.

## When is an API called RESTful?

An API is called `RESTful` when it follows the rules (constraints) of `REST`. It must behave in a certain predictable way, such as using `HTTP` properly and not storing client information on the server between requests.

## What Are the Constraints that make an API REST?

- **Stateless:** Each request from a client to the server must contain all the information needed. The server doesn't **remember** past requests.
- **Client-Server Architecture:** The system is split into clients (apps, browsers) and servers (data providers), and each focuses only on its role.
- **Cacheable:** Responses can be stored by the client to avoid repeating the same request.
- **Uniform Interface:** There is a standard way to access resources (like using `GET` to read data, `POST` to create).
- **Layered System:** The system can have layers (like security, load balancers) that the client doesn't need to know about.
- **Code on Demand** (optional): Servers can send code (like `JavaScript`) to the client to run if needed.

## How is JSON Related to API?

JSON (JavaScript Object Notation) is a simple format for organizing and exchanging data. When an app talks to an API, the API often replies with data in JSON format.

## What is an OAuth Token?

An OAuth token is like a digital key that lets someone use a service without logging in every time.

## HTTP Verbs vs CRUD Operations

HTTP Verb	CRUD Operation	Example Action
GET	Read	Get user details
POST	Create	Add a new blog post
PATCH	Update (partial)	Change only the email address
DELETE	Delete	Remove a user

Now, we'll focus on understanding the APIs specifically for Ngenea Hub.

## Authentication Methods

### Overview

This document outlines the two supported authentication methods for accessing the Ngenea Hub API: **JWT** (JSON Web Tokens) and **Client Keys** (API Keys).

It provides clear instructions on how to obtain, use, and manage these tokens and keys, including examples for both **command-line usage** and **Swagger UI**.

### API Reference Location

All endpoints, parameters, and schemas can be explored through the interactive API documentation available at:

```
http(s)://<your-hub-address>/api/docs/
```

**Note:** Replace `your-hub-address` with the actual IP address or domain of your Ngenea Hub instance.

### JWT Authentication - Using Curl

A **JWT** (JSON Web Token) is a compact, secure way to represent user identity. It is commonly used for authentication. After logging in with your credentials, the server provides a token that confirms your identity, allowing you to make future API requests without resending your username and password each time.

To obtain a JWT, send a **POST** request to the authentication endpoint using curl:.

### Example Format

```
curl -X 'POST' \
  'http://<your-hub-address>/api/auth/token/' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
  "username": "<username>",
  "password": "<password>"
}' |jq
```

**Note:** The `curl` command works across different operating systems, but with slight differences in usage.

On `Linux` and `macOS`, `curl` is typically pre-installed and can be run directly in the terminal without any setup.

On `Windows 10` and later, `curl` is also built into Command Prompt (CMD) and PowerShell, you can use GIT BASH as well.

If you're using an older version of Windows, you may need to download `curl` from the official site: [curl for Windows](#) .

**Note:** `jq` is a command-line tool used to easily parse and extract specific data from `JSON` responses, making it simpler to handle `API` outputs like `JWT` tokens.

It comes pre-installed on many Linux distributions and macOS, otherwise, it must be installed manually as per [Download jq](#) , while on Windows you can install it via package managers like Chocolatey, Winget, or use it in WSL - check your installed version anytime with `jq -version`.

The server responds with two tokens:

- An **access token**, which is short-lived (1 hour) and should be included in each request to authenticate the user.
- A **refresh token**, which lasts longer (1 day) and is used to obtain a new access token when the current one expires.

These tokens are returned in a JSON format like this:

```
{
  "access": "your_access_token_here",
  "refresh": "your_refresh_token_here"
}
```

## Using JWT Access Token for API Requests

When making authenticated requests using the JWT token, include it in the `Authorization` header using the `Bearer` scheme.

```
Bearer <JWT_Access_Token>
```

## Example: Hub Health

```
curl -X 'GET' \  
  'http://<your-hub-address>/api/health/' \  
  -H 'accept: application/json' \  
  -H 'Authorization: Bearer <JWT_Access_Token>' |jq
```

### Example Response:

```
{  
  "overall_health": "ok",  
  "hub_status": {  
    "health": "ok"  
  },  
  "site_status": [  
    {  
      "site": "siteA",  
      "health": "ok",  
      "nodes": [  
        {  
          "name": "siteA",  
          "health": "ok",  
          "online": true,  
          "has_default_queue": true,  
          "last_heartbeat": "2025-06-02T15:25:18.562813+00:00",  
          "worker_version": "2.6.0",  
          "ngenea_version": "1.31.0",  
          "analytics_version": "2.7.1",  
          "search_version": "1.2.0"  
        }  
      ],  
      "queues": [  
        {  
          "name": "default",  
          "health": "ok",  
          "online": true,  
          "last_heartbeat": "2025-06-02T15:25:18.562813+00:00"  
        }  
      ]  
    }  
  ],  
}
```

### Using Refresh Tokens to Obtain New Access Tokens

As mentioned earlier, **access tokens expire after 1 hour**, while refresh **tokens expire after 1 day**. When you use an expired access token, you'll receive an HTTP 401 Unauthorized or HTTP 403 Forbidden error.

In this situation, you should request a new access token using the `/api/auth/token/refresh/` endpoint with your refresh token.

### Example request using curl:

```
$ curl -s -X POST 'http://localhost:8000/api/auth/token/refresh/'  
-H 'Accept: application/json'
```

```
-H 'Content-Type: application/json'
-d '{"refresh": "<Refresh_Token>"}' | jq -r
```

## Response :

```
{
  "access": <new_access_token>,
}
```

## Client Key Authentication

A client key (or API key) is a long-lived, unique token used to authenticate and authorize applications or scripts to access an API. Unlike short-lived tokens like JWTs, client keys typically do not expire unless manually revoked, making them ideal for automated processes, integrations, and services that require persistent access without frequent re-authentication.

To generate a client key, send a `POST` request to the `/api/auth/clientkeys/` endpoint with a descriptive name for the key, including your **JWT access token** in the Authorization header:

*You can either use the access token obtained above or generate a new one using the following command:*

```
export JWT_TOKEN=$(curl -s -X POST 'http://localhost:8000/api/auth/token/' \
  -H 'Accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{"username": "<username>", "password": "*****"}' | jq -r .access)

echo $JWT_TOKEN
```

### Note: Why is this different ?

The difference lies in improving user flow and convenience:

- `export JWT_TOKEN=...` stores the access token in an environment variable called `JWT_TOKEN`. This makes the token easily accessible within the current shell session and any child processes (such as scripts or subsequent commands).
- The use of `jq -r .access` extracts only the raw access token (without quotes) from the JSON response.
- `echo $JWT_TOKEN` prints the token to the terminal, confirming that it was successfully retrieved and saved.

This approach simplifies usage by allowing the token to be reused easily in subsequent commands. (These commands are for Linux based systems)

## Example Format - Client Key Creation

```
curl -s -X POST 'http://10.201.2.224:8000/api/auth/clientkeys/'
-H 'Accept: application/json'
-H 'Content-Type: application/json'
-H "Authorization: Bearer $JWT_TOKEN"
-d '{"name": "your_key"}' | jq '.'
```

## Example Response

```
{
  "url": "http://localhost:8000/api/auth/clientkeys/10/",
  "id": 10,
  "name": "your_key",
  "api_key": "YOUR_API_KEY"
}
```

## Using Client Key for API Requests

Once you have the client key, you can use it for API access by including it in the `Authorization` header using the `Api-Key` scheme.

```
Api-Key <api_key>
```

## Example-Jobs

```
export API_KEY=YOUR_API_KEY

curl -s -X GET 'http://localhost:8000/api/jobs/'
-H 'Accept: application/json'
-H 'Content-Type: application/json'
-H "Authorization: Api-Key $API_KEY" | jq
```

**Note:** Replace `YOUR_API_KEY` with the actual API key string returned during creation.

## Example Response

```
{
  "count": 6,
  "next": null,
  "previous": null,
  "results": [
    {
      "url": "http://my-hub:8000/api/jobs/1/",
      "id": 1,
      "workflow": null,
      "fields": null,
      "created": "2025-05-14T13:00:40.153027Z",
      "started": "2025-05-14T13:00:48.166288Z",
      "completed": "2025-05-14T13:00:49.829041Z",
      "runtime": 1.662753,
      "state": "SUCCESS",
    }
  ]
}
```

```

    "site": "siteA",
    "queue": null,
    "owner": {
      "type": "user",
      "id": 1,
      "name": "pixit"
    },
    "discovery": null,
    "dir_walk_complete": true,
    "is_settings_job": true,
    "friendly_name": "Populating/Updating settings from site
siteA",
    "progress": null
  },
  {
    "url": "http://my-hub:8000/api/jobs/2/",
    "id": 2,
    "workflow": null,
    "fields": null,
    "created": "2025-05-14T13:02:14.395013Z",
    "started": "2025-05-14T13:02:18.294664Z",
    "completed": "2025-05-14T13:02:19.611492Z",
    "runtime": 1.316828,
    "state": "SUCCESS",
    "site": "siteB",
    "queue": null,
    "owner": {
      "type": "user",
      "id": 1,
      "name": "pixit"
    },
  },
],
"owners": [
  {
    "type": "user",
    "name": "hubadmin",
    "id": 2
  },
  {
    "type": "user",
    "name": "pixit",
    "id": 1
  },
  {
    "type": "system",
    "name": "System",
    "id": -2
  },
  {
    "type": "unknown",
    "name": "Unknown",
    "id": -1
  }
]

```

```
]
}
```

## Revoking a Client Key

Client keys can be revoked at any time. To do this, you must send a `DELETE` request to the URL of the specific client key, using a valid `JWT` for authentication.

### Example Format (Revoking API Key)

```
curl -X DELETE
'http(s)://<your-hub-address>/api/auth/clientkeys/<key-id>/' \
-H "Authorization: Bearer $JWT_TOKEN"
```

**Note:** Replace `key-id` with the numerical ID of the client key you wish to delete.

Once deleted, the API key will no longer grant access to any API resources.

## Key Differences Between JWT and API Keys

- `JWT` tokens consist of an access token that expires after 1 hour and a refresh token that allows you to obtain a new access token without re-entering user credentials. The refresh token itself expires after 1 day.
- `API` keys do not expire automatically and do not require refreshing. They remain valid until manually revoked or deleted.

## JWT Authentication - Using Swagger UI

Swagger UI provides a visual interface to test API endpoints easily, including authentication flows.

1. **Open Swagger UI:** Go to your Swagger API documentation, typically available at:

```
http(s)://<your-ngenea-hub-host>/api/docs/
```

This opens the interactive Swagger UI interface for exploring and testing the API.

1. **Authenticate via `/auth/token/` Endpoint:** This is the endpoint to obtain your access and refresh JWT tokens.

**Look for:** `POST/api/auth/token/`

**Execute the request:**

- Click the `POST/api/auth/token/` to expand it.
- Click **“Try it out”**.
- In the `Request body`, input your credentials in this format:

```
{
  "username": "your_username",
```

```
"password": "your_password"
}
```

- Click **“Execute”**.

**Response:** If successful, you’ll receive a `JSON` response like:

```
{
  "access": "your_access_token",
  "refresh": "your_refresh_token"
}
```

### Authorize the Access Token

To use the access token for other endpoints: Click the “Authorize” button (top right in Swagger UI).

- In the popup, enter your token in this format:

```
Bearer your_access_token
```

- Click **“Authorize”**, then **“Close”**.

Now, all subsequent API requests in Swagger UI will include this token.

### Refreshing Expired Access Tokens

Access tokens expire after 1 hour. Use the **refresh token** to get a new access token.

**Find the endpoint:** `POST/api/auth/token/refresh/`

**Execute the request:**

- Expand the endpoint.
- Click **“Try it out”**.

Input:

```
{
  "refresh": "your_refresh_token"
}
```

- Click **“Execute”**.

**Response:** You’ll receive a new access token:

```
{
  "access": "new_access_token"
}
```

Use the **Authorize** button again to replace the old access token with this new one.

## Generate a Client Key - Using Swagger UI

**Note:** Make sure you've already completed JWT token generation and authorization via the `/auth/token/` endpoint and used the **Authorize** button in **Swagger UI** to authenticate.

This is required before accessing protected endpoints like `/auth/clientkeys/`.

### Locate the `/auth/clientkeys/` Endpoint.

- In Swagger UI, search or scroll down to find: `POST /api/auth/clientkeys/`
- Click it to expand its details.
- Click **“Try it out”** button to make the request body editable.
- **Fill in the Request Body:** Enter the necessary parameters.
- A basic example:

```
{  
  "name": "my-client-key"  
}
```

- Once your request is ready, click **Execute** to send it.
- If successful, you'll receive a response similar to:

```
{  
  "url": "https://<your-ngenea-hub-host>/api/auth/clientkeys/0/",  
  "id": 0,  
  "name": "my-client-key",  
  "api_key": "generated_client_api_key"  
}
```

**Note:** Store the `api_key` securely, as it is not retrievable again through the API.

### Authorize the API Key

- To use the API key for other endpoints: Click the **“Authorize”** button (top right in Swagger UI).
- In the popup, enter your `API key` in the required format.

### Example format:

```
Api-Key <your_api_key>
```

- Click **“Authorize”**, then **“Close”**.
- Now, all subsequent API requests in Swagger UI will include this API key automatically.

## API Endpoints - User and Access Management

### Introduction

This section provides detailed documentation for all available Ngenea Hub API endpoints. Each endpoint is a specific URL path designed to perform a distinct function, such as retrieving analytics, managing client keys, or interacting with job data. Whether you're listing resources, updating configurations, or triggering actions, each endpoint follows standard HTTP conventions and returns structured JSON responses.

The purpose of this guide is to help you understand exactly how each API endpoint works, including:

- What the endpoint does and when to use it
- Required and optional parameters (path, query, or body)
- Example `curl` requests for real-world usage
- Sample responses with explanations of each field

Each endpoint is broken down into clearly labeled sections to help both beginners and experienced developers quickly understand how to use it effectively.

**Note:** While the Ngenea API is intended for internal tools and authorized automation within secured environments.

**All API calls require proper authentication using either JWT access tokens or Client API Keys.**

Refer to the link to know more about the authentication methods.

### API Reference Location

All endpoints, parameters, and schemas can be explored through the interactive API documentation available at:

```
http(s)://<your-hub-address>/api/docs/
```

**Note:** Replace `your-hub-address` with the actual IP address or domain of your Ngenea Hub instance.

### Auth - Authentication

GET /auth/clientkeys/

#### Description

Retrieves a paginated list of client API keys. This endpoint is typically used by administrators or authorized users to view all API keys that have been generated for client-side access to the hub. It is useful in scenarios where API access needs to be managed, audited, or reviewed for security purposes.

For example, developers or administrators might use this endpoint to list keys tied to specific users, monitor which keys are active, or integrate this data into dashboards or automated scripts. Each key entry includes its name, the associated user, and a URL that can be used to perform further operations such as updating or deleting the key.

This endpoint does not expose actual client keys, and there is no way to retrieve a client key once it has been created.

### Request Parameters

Name	Type	Required	Description
page	integer	No	Page number of the result set. Defaults to 1 if not specified.
page_size	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

### Example Request

```
curl -X GET \
  'http://<your-server>/api/auth/clientkeys/?page=1' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <your-api-key>'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "count": 12,
  "next": null,
  "previous": null,
  "results": [
    {
      "url": "http://<your-server>/api/auth/clientkeys/5/",
      "id": 5,
      "name": "client_key_1",
      "user": "hubadmin"
    },
    {
      "url": "http://<your-server>/api/auth/clientkeys/11/",
```

```

    "id": 11,
    "name": "key_2",
    "user": "hubadmin"
  },
  ...
]
}

```

## Response Fields

Field	Type	Description
count	integer	Total number of client keys available.
next	string/null	URL to the next page of results (if any).
previous	string/null	URL to the previous page of results (if any).
results	array	List of client key objects. Each object includes:
results[].url	string	API URL to access this specific client key.
results[].id	integer	Unique identifier of the client key.
results[].name	string	User-defined name for the client key.
results[].user	string	Username associated with this client key.

GET /auth/clientkeys/{id}/

## Description

Retrieves the details of a specific client API key by its `unique ID`. This endpoint is useful for viewing the metadata of an individual client key such as its name, associated user, and API URL for further operations.

## Request Parameter

Name	Type	Required	Description
id	string	Yes	The unique identifier (ID) of the client key to retrieve.

## Example Request

```

curl -X GET \
  'http://<your-server>/api/auth/clientkeys/7/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <your-api-key>'

```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```

{
  "url": "http://<your-server>/api/auth/clientkeys/7/",
  "id": 7,

```

```
"name": "new_key_0206",
"user": "hubadmin"
}
```

## Response Fields

Field	Type	Description
url	string	Full API endpoint URL for this client key.
id	integer	Unique ID of the client key.
name	string	User-defined name for the client key.
user	string	Username associated with the key (e.g., the creator or owner).

DELETE /auth/clientkeys/{id}/

## Description

This endpoint permanently deletes a specific client API key by its unique ID. Use this operation to remove keys that are no longer needed or have been compromised.

**Deleted keys cannot be recovered, so use with caution.**

## Request Parameter

Name	Type	Required	Description
id	string	Yes	The unique identifier (ID) of the client key to retrieve.

## Example Request

```
curl -X DELETE \
'http://<your-server>/api/auth/clientkeys/2/' \
-H 'accept: application/json' \
-H 'Authorization: Api-Key <your-api-key>'
```

## Successful Response

**HTTP Status Code:** 204 No Content

This means the key was successfully deleted.

There is no response body when deletion is successful.

GET /api/auth/token/publickey/

## Description

This API endpoint gives you the **public key** that is used to verify the **signature** on a JWT (JSON Web Token).

When a user logs in, the server creates a **JWT** and signs it using a **private key**. This signed token is then sent to the client (like a web app or mobile app).

Other systems or services (like your backend or microservices) can then use this **public key** to check:

- That the token really came from the authentication server, and
- That it has not been changed or tampered with.

This process is called **token verification**.

Using the public key like this is especially helpful in systems where different parts (like microservices) need to validate tokens **independently**, without needing to contact the main authentication server every time.

## Request Parameter

This endpoint does not require any query or path parameters.

## Example Request

```
curl -X GET \
  'http://<your-server>/api/auth/token/publickey/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <your-api-key>'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "keys": [
    {
      "alg": "RS256",
      "e": "AQAB",
      "kid": "<key-id>",
      "kty": "RSA",
      "n": "<modulus-value>",
      "use": "sig"
    }
  ]
}
```

## Response Fields

Field	Type	Description
alg	string	The algorithm used for the key (e.g., RS256).
e	string	Public exponent of the RSA key, encoded in Base64URL.
kid	string	Key ID — a unique identifier for the key.
kty	string	Key type (usually RSA).
n	string	The RSA public key modulus, Base64URL-encoded.

Field	Type	Description
-------	------	-------------

use	string	How the key is used (e.g., sig for signature verification).
-----	--------	---

POST /api/auth/token/verify/

## Description

This API endpoint is used to verify the validity of a JWT (JSON Web Token).

It checks three main things:

- The token has not expired.
- The user linked to the token exists in the system.
- The user is active (i.e., not disabled or deleted).

This is useful for confirming that a token should still be trusted before allowing access to a protected resource.

## Request Parameters

Field	Type	Required	Description
-------	------	----------	-------------

type	string	Yes	The type of token (e.g., "access" or "refresh").
token	string	Yes	The JWT you want to verify.

## Example Request

```
curl -X POST \
  'http://<your-server>/api/auth/token/verify/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <your-api-key>' \
  -H 'Content-Type: application/json' \
  -d '{
    "type": "access",
    "token": "<your-jwt-token>"
  }'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "id": 2,
  "username": "exampleuser",
  "first_name": "",
  "last_name": "",
  "email": "",
  "is_active": true,
  "is_superuser": false,
  "is_staff": false,
```

```

"last_login": "2025-06-11T12:17:53.724142Z",
"date_joined": "2025-05-23T10:57:26.219710Z",
"groups": [1],
"user_permissions": []
}

```

## Response Fields

Field	Type	Description
id	integer	Unique identifier of the user in the system.
username	string	The username associated with the token.
first_name	string	User's first name (empty if not provided).
last_name	string	User's last name (empty if not provided).
email	string	Email address of the user (empty if not provided).
is_active	boolean	Indicates whether the user account is currently active.
is_superuser	boolean	Indicates if the user has superuser (full admin) privileges.
is_staff	boolean	Indicates whether the user can log into the admin site.
last_login	string (ISO 8601)	Timestamp of the last time the user logged in.
date_joined	string (ISO 8601)	Timestamp of when the user account was created.
groups	array of integers	List of group IDs that the user belongs to.
user_permissions	array	List of permission identifiers assigned to the user (empty if none).
password	string	Hashed version of the user's password (internal use - do not expose).

## Users

In the Hub system, **users** represent individuals who have access to the platform through a secure login. Each user has a profile containing basic information such as their name, email, and group membership. The system defines two distinct user types:

- **Admins:** These users have full access to all system features and administrative functions. They can manage other users, configure settings, and generate or revoke API keys.
- **Read-Only Users:** These users have restricted access and can only view data within the Hub. They cannot modify settings, manage users, or perform administrative tasks.

Understanding user roles is essential for managing access control and integrating with the Users API. Only Admins are permitted to perform operations that alter user data or system configuration.

- `username`: A required field (max 150 characters) that can include alphanumeric characters, underscores, and some symbols like @, +, ., and -.
- `first_name` / `last_name`: Optional fields for the user's first and last name (max 150 characters).
- `email`: Optional field for the user's email address.
- `password`: Required field, with restrictions on which characters can be used.

GET `/users/`

## Description

The `/users/` endpoint retrieves a list of users registered in the Hub system. This endpoint is primarily accessible to Admin users, who can use it to manage or monitor users within the platform. It supports pagination and returns detailed user information, including group membership.

## Request Parameters

Refer to the **Request Parameters** under `GET /auth/clientkeys/` to learn more.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/users/?page=1' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "count": 2,
  "next": null,
  "previous": null,
  "results": [
    {
      "id": 2,
      "url": "http://your-hub-address:8000/api/users/hubadmin/",
      "username": "hubadmin",
      "first_name": "",
      "last_name": "",
      "email": "",
      "is_active": true,
      "last_login": "2025-06-24T12:59:29.823039Z",
    }
  ]
}
```

```

    "date_joined": "2025-05-23T10:57:26.219710Z",
    "groups": [
      {
        "id": 1,
        "url": "http://your-hub-address:8000/api/groups/1/",
        "name": "Administrators"
      }
    ],
    "profile": null,
    "nas_user": null
  },
  {
    "id": 1,
    "url": "http://your-hub-address:8000/api/users/pixit/",
    "username": "pixit",
    "first_name": "",
    "last_name": "",
    "email": "jenkins@example.com",
    "is_active": true,
    "last_login": "2025-05-14T13:07:57.656518Z",
    "date_joined": "2025-05-14T12:06:59.927211Z",
    "groups": [
      {
        "id": 1,
        "url": "http://your-hub-address:8000/api/groups/1/",
        "name": "Administrators"
      }
    ],
    "profile": null,
    "nas_user": null
  }
]
}

```

## Response Fields

Field	Type	Description
count	integer	Total number of users in the system.
next	string/ null	URL to the next page of results, or <code>null</code> if there are no more pages.
previous	string/ null	URL to the previous page of results, or <code>null</code> if on the first page.
results	array	List of user objects. Each object contains detailed information about a user.

Each **user object** in `results` includes:

Field	Type	Description
id	integer	Unique identifier for the user.
url	string	API endpoint URL for the individual user.
username	string	User's login name.

Field	Type	Description
first_name	string	User's first name (can be empty).
last_name	string	User's last name (can be empty).
email	string	User's email address.
is_active	boolean	Indicates whether the user account is active.
last_login	datetime	Timestamp of the user's last login.
date_joined	datetime	Timestamp of when the user account was created.
groups	array	List of groups the user belongs to. Typically used to determine user roles.
profile	object/ null	Reserved for extended profile information. Currently null.
nas_user	object/ null	Reserved for NAS-related user info. Reserved implies the field is unused, which means null unless the user is NAS enabled.

## POST /users/

### Description

This endpoint creates a new user in the Hub system. Only **Admin users** are authorized to create new user accounts.

Users can be assigned to one or more groups and **optionally provided with extended profile details**. By default, the new user is active. The `nas_user` field is included in the response and can be left `null` unless your system integrates with a NAS (Network-Attached Storage) component.

### Request Parameters

Name	Type	Required	Description
username	string	Yes	The unique username for the new user.
password	string	Yes	The password for the user. It will be securely hashed in the response.
first_name	string	No	User's first name.
last_name	string	No	User's last name.
email	string	No	User's email address.
groups	array	Yes	List of group names the user should belong to (e.g., ["Users"], ["Administrators"]).
profile	object	No	Optional user profile with extended info. See fields below.

### Profile Subfields

Field	Type	Description
phone	string	User's phone number.
timezone	string	User's preferred timezone. e.g. Europe/London
country	string	User's country.
department	string	Department to which the user belongs.

Field	Type	Description
line_manager	string	Name of the user's line manager.
default_site	integer	ID of the default site assigned to the user.
home_site	integer	ID of the user's home site.

## Example Request

```
curl -X 'POST' \
'http://your-hub-address:8000/api/users/' \
-H 'accept: application/json' \
-H 'Authorization: Api-Key your-api-key' \
-H 'Content-Type: application/json' \
-d '{
  "username": "Example2",
  "password": "*****",
  "first_name": "Example",
  "last_name": "User",
  "email": "user@gmail.com",
  "groups": ["Users"],
  "profile": {
    "phone": "12345678",
    "timezone": "string",
    "country": "string",
    "department": "string",
    "line_manager": "string",
    "default_site": 1,
    "home_site": 1
  }
}'
```

## Successful Response

**HTTP Status Code:** 201 Created

**Content-Type:** application/json

## Example Response

```
{
  "username": "Example2",
  "password": "*****",
  "first_name": "Example",
  "last_name": "User",
  "email": "user@gmail.com",
  "groups": ["Users"],
  "profile": {
    "phone": "12345678",
    "timezone": "string",
    "country": "string",
    "department": "string",
    "line_manager": "string",
    "default_site": 1,
    "home_site": 1
  }
}
```

```
},  
"nas_user": null  
}
```

## Response Fields

**Note:** The response fields are described under the request parameters section above. Please refer to that section for details.

POST /users/change\_password/

## Description

This endpoint allows an authenticated **user to securely change their password**. The request must include the user's current (old) password and the new password they wish to set.

**Only the currently logged-in user can change their own password** using this endpoint. Admin users must use the user management interface or a different admin-level endpoint to reset other users' passwords.

## Request Parameters

Name	Type	Required	Description
old_password	string	Yes	The user's current password.
new_password	string	Yes	The new password to set. Must meet password policies.

**Note:** When creating or changing a password, the following rules must be met:

- Must be at least **8 characters** long
- **Cannot be too similar** to the username
- Must include **at least one digit**
- Must include **at least one uppercase letter**
- Must include **at least one special character** (e.g., !@#\$%^&\*)

## Example Request

```
curl -X 'POST' \  
  'http://your-hub-address:8000/api/users/change_password/' \  
  -H 'accept: application/json' \  
  -H 'Authorization: Api-Key your-api-key' \  
  -H 'Content-Type: application/json' \  
  -d '{  
    "old_password": "*****",  
    "new_password": "*****"  
  }'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{  
  "message": "password successfully changed"  
}
```

### Error Response

HTTP Code	Description	Example Message
400	Invalid old password or weak new password	{"old_password": ["Incorrect password."]} or {"new_password": ["This password is too short."]}
401	Unauthorized (missing or invalid token)	{"detail": "Authentication credentials were not provided."}

GET /users/{username}/

This endpoint retrieves detailed information for a specific user identified by their **username**. It returns the user's basic info, group memberships, profile details, and NAS user reference (if applicable).

This endpoint is accessible to Admin users for reviewing user configurations, or by users retrieving their own account data (depending on permissions).

### Request Parameters

Name	Type	Required	Description
username	string	Yes	The username of the user to retrieve. Must match pattern: [\w\.\+\-\_@]+

### Example Request

```
curl -X 'GET' \  
  'http://your-hub-address:8000/api/users/Example/' \  
  -H 'accept: application/json' \  
  -H 'Authorization: Api-Key your-api-key'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{  
  "id": 4,
```

```

"url": "http://your-hub-address:8000/api/users/Example/",
"username": "Example",
"first_name": "Example",
"last_name": "User",
"email": "user@gmail.com",
"is_active": true,
"last_login": null,
"date_joined": "2025-06-25T11:53:37.572849Z",
"groups": [
  {
    "id": 2,
    "url": "http://your-hub-address:8000/api/groups/2/",
    "name": "Users"
  }
],
"profile": {
  "phone": "string",
  "timezone": "string",
  "country": "string",
  "department": "string",
  "line_manager": "string",
  "default_site": 1,
  "home_site": 1
},
"nas_user": null
}

```

## Response Fields

To view the information related to response fields and profile subfields, refer to [GET & POST Users](#) endpoint.

PATCH /users/{username}/

## Description

This endpoint allows partial updates to an existing user's information using their username. You can update any combination of the following fields: basic user details, group membership, password, and extended profile information. This endpoint also allows you to PATCH NAS user settings, such as enabling or disabling NAS access.

Only Admin users or authorized users (e.g., self-edit under permissions) can perform this action.

## Request Path Parameters

Name	Type	Required	Description
username	string	Yes	The username of the user to update.

## Request Body Parameters (Partial Update)

Name	Type	Description
password	string	(Optional) New password. Must comply with Password Requirements.
first_name	string	(Optional) Updated first name.
last_name	string	(Optional) Updated last name.
email	string	(Optional) Updated email address.
groups	array	(Optional) List of group names to which the user should belong.
profile	object	(Optional) User's profile data. See subfields below.

**Note:** To view the information related to profile subfields, refer to [POST Users](#) endpoint.

### Example Request

```
curl -X 'PATCH' \
  'http://your-hub-address:8000/api/users/Example2/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -H 'Content-Type: application/json' \
  -d '{
    "password": "*****",
    "first_name": "Updated",
    "last_name": "Info",
    "email": "user@example.com",
    "groups": ["Users"],
    "profile": {
      "phone": "string",
      "timezone": "string",
      "country": "string",
      "department": "string",
      "line_manager": "string",
      "default_site": 1,
      "home_site": 1
    }
  }'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "first_name": "Updated",
  "last_name": "Info",
  "email": "user@example.com",
  "groups": [
    "Users"
  ]
}
```

```

    ],
    "profile": {
      "phone": "string",
      "timezone": "string",
      "country": "string",
      "department": "string",
      "line_manager": "string",
      "default_site": 1,
      "home_site": 1
    },
    "nas_user": null
  }
}

```

## Response Fields

The response fields are the same as the request parameters. Please refer to the section above for a better understanding.

```
DELETE /users/{username}/
```

## Description

This endpoint permanently deletes a user from the system based on their **username**.

Only users with **Administrator privileges** can perform this action. Once deleted, the user account **cannot be recovered** unless the system provides a separate restore or archival mechanism.

## Request Parameters

Name	Type	Required	Description
username	string	Yes	The username of the user to delete. Must match pattern: <code>[\w\.\+\-\_@]+</code>

## Example Request

```

curl -X 'DELETE' \
  'http://your-hub-address:8000/api/users/Example2/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'

```

## Successful Response

**HTTP Status Code:** 204 No Content

**Content-Type:** None

**Body:** Empty

This status code indicates that the user was successfully deleted. No response body is returned.

## Note:

- This action **cannot be undone**. Make sure the user data is no longer needed or has been backed up before deletion.
- If the specified username does not exist, the API may return a `404 Not Found` error.
- System-protected users (like default admin accounts) might be restricted from deletion, depending on implementation.

POST `/users/{username}/activate/`

## Description

This endpoint activates a user account identified by the provided username. Activation sets the user's `is_active` flag to `true`, allowing them to log in and access the system, assuming they meet other authentication requirements.

## Request Parameters

Name	Type	Required	Description
username	string	Yes	The username of the user to delete. Must match pattern: <code>[\w\.\+\-\_@]+</code>

## Example Request

```
curl -X 'POST' \
  'http://your-hub-address:8000/api/users/Example3/activate/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -d ''
```

## Successful Response

**HTTP Status Code:** `201 Created`

**Content-Type:** `application/json`

**Description:** Returns the full user object with `is_active` set to `true`.

## Example Response

```
{
  "id": 6,
  "url": "http://your-hub-address:8000/api/users/Example3/",
  "username": "Example3",
  "first_name": "Example",
  "last_name": "User",
  "email": "",
  "is_active": true,
  "last_login": null,
  "date_joined": "2025-06-25T12:01:34.447630Z",
```

```
"groups": [
  {
    "id": 2,
    "url": "http://your-hub-address:8000/api/groups/2/",
    "name": "Users"
  }
]
```

## Response Fields

The response fields are identical to those returned by the `GET /users/` endpoint. Please refer to the section above for more details.

POST `/users/{username}/deactivate/`

## Description

This endpoint deactivates a user account identified by the `username` parameter. Deactivation sets the `is_active` field of the user to `false`, preventing login or API access.

Useful for managing user access without permanently deleting accounts.

## Request Parameters

Name	Type	Required	Description
username	string	Yes	The username of the user to delete. Must match pattern: <code>[\w\.\+ \- _@]+</code>

## Example Request

```
curl -X 'POST' \
  'http://10.201.2.224:8000/api/users/Example3/deactivate/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -d ''
```

## Successful Response

**HTTP Status Code:** 201 Created

**Content-Type:** application/json

**Description:** Returns the full user object with `is_active` set to `false`.

## Example Response

```
{
  "id": 6,
  "url": "http://your-hub-address:8000/api/users/Example3/",
  "username": "Example3",
  "first_name": "Example",
  "last_name": "User",
```

```

"email": "",
"is_active": false,
"last_login": null,
"date_joined": "2025-06-25T12:01:34.447630Z",
"groups": [
  {
    "id": 2,
    "url": "http://your-hub-address:8000/api/groups/2/",
    "name": "Users"
  }
],
"profile": {
  "phone": "12345678",
  "timezone": "string",
  "country": "string",
  "department": "string",
  "line_manager": "string",
  "default_site": 1,
  "home_site": 1
},
"nas_user": null
}

```

## Response Fields

Please refer to `PATCH /users/{username}/` response fields.

## My Permissions

The `/my-permissions/` endpoint allows an authenticated user to view all permissions assigned to them within the Ngenea Hub. These permissions may come from group memberships, direct assignments, or object-level grants.

The response includes details such as permission ID, name, application label, codename, and the associated model. This endpoint is strictly limited to the requesting user's own permissions and does not expose permissions of other users.

## GET /my-permissions/

### Description

This endpoint allows the `authenticated user` to view only their own permissions in the Ngenea Hub.

It returns all permissions the user has through:

- Group membership (`group_permissions`)
- Direct assignment (`user_permissions`)
- Object-level permissions (`group_object_permissions`, `user_object_permissions`)

**Note:** Users cannot view permissions of other users via this endpoint.

**Request Parameters:** None

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/my-permissions/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "group_permissions": [
    {
      "id": 290,
      "name": "Can add log entry",
      "app_label": "admin",
      "codename": "add_logentry",
      "model": "logentry"
    },
    {
      "id": 2,
      "name": "Can add alert",
      "app_label": "alerts",
      "codename": "add_alert",
      "model": "alert"
    }
  ],
  "user_permissions": [],
  "group_object_permissions": [],
  "user_object_permissions": []
}
```

## Response Fields

Field	Type	Description
group_permissions	array of objects	Permissions inherited through the user's group(s)
user_permissions	array of objects	Permissions assigned directly to the user
group_object_permissions	array	Object-level permissions via group (if any)
user_object_permissions	array	Object-level permissions assigned directly (if any)

**Each permission object contains:**

Subfield	Type	Description
id	integer	Unique identifier of the permission
name	string	Descriptive name of the permission
app_label	string	Application label (e.g., "admin")
codename	string	Permission codename used internally
model	string	Model associated with the permission

## Permissions

### GET /permissions/

#### Description

The `/permissions/` endpoint in Ngenea Hub provides a comprehensive list of **all system-wide permissions** configured in the backend. This endpoint is typically used by administrators, integrators, or role-management interfaces to list available permissions that can be assigned to users or groups within Ngenea Hub.

**Note:** This API returns all possible permissions in Ngenea Hub, not just those granted to the requesting user. To see permissions specific to the logged-in user, use the `/my-permissions/` endpoint.

#### Request Parameters

Name	Type	Required	Description
page	integer	No	Page number of the result set. Defaults to 1 if not specified.
page_size	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

#### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/permissions/?
  page=1&page_size=20' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

#### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

#### Example Response

```
{
  "count": 349,
```

```

"next": "http://your-hub-address:8000/api/permissions/?page=2",
"previous": null,
"results": [
  {
    "id": 1,
    "name": "Can view health endpoint",
    "app_label": "filebrowser",
    "codename": "view_health",
    "model": "node"
  },
  {
    "id": 2,
    "name": "Can add alert",
    "app_label": "alerts",
    "codename": "add_alert",
    "model": "alert"
  },
  {
    "id": 3,
    "name": "Can change alert",
    "app_label": "alerts",
    "codename": "change_alert",
    "model": "alert"
  }
  // ... more permissions
]
}

```

## Response Fields

Field	Type	Description
count	integer	Total number of available permissions
next	string / null	URL to the next page of results, if applicable
previous	string / null	URL to the previous page of results, if applicable
results	array of objects	List of permission objects for the current page or result set

## Each permission object contains:

Subfield	Type	Description
id	integer	Unique ID of the permission
name	string	Descriptive, human-readable name
app_label	string	Application/module the permission belongs to
codename	string	Internal codename used for logic checks
model	string	Model name the permission applies to

GET /permissions/{id}/

## Description

This endpoint retrieves **detailed information** about a **specific permission** in Ngenea Hub by its unique ID.

## Request Parameters

Name	Type	Location	Required	Description
id	string	path	Yes	The unique ID of the permission to retrieve

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/permissions/7/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "id": 7,
  "name": "Can change bucket",
  "app_label": "external_targets",
  "codename": "change_bucket",
  "model": "bucket"
}
```

## Response Fields

Please refer to the response fields section under [GET /permissions/](#).

## Groups

In Ngenea Hub, **groups** are fundamental for organizing users and managing their access to various **Sites** and **Spaces**. Groups allow administrators to define roles and permissions for multiple users at once, ensuring efficient access control across the system. By categorizing users into different groups, Hub administrators can easily assign **read-only access**, **administrative rights**, or specific permissions based on the group a user belongs to.

Ngenea Hub comes with default groups such as **Administrators** and **Users**, with predefined roles. However, custom groups can also be created to meet specific organizational needs. When integrated with [LDAP](#) or [Active Directory \(AD\)](#), group memberships can be automatically synced, allowing external directory users to inherit group-based permissions in Ngenea Hub.

**Note:** Refer to [Groups and Users](#) to learn more about groups.

## Description

The `GET /groups/` endpoint allows users to retrieve a paginated list of groups in the Ngenea Hub. This endpoint provides information about each group, including the group name, description, associated users, and the permissions assigned to the group.

## Request Parameters

Name	Type	Required	Description
<code>page</code>	integer	No	Page number of the result set. Defaults to 1 if not specified.
<code>page_size</code>	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/groups/?page=1' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

This request retrieves the first page of groups, with the default page size of 20.

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "count": 3,
  "next": null,
  "previous": null,
  "results": [
    {
      "id": 1,
      "name": "Administrators",
      "users": [
        {
          "username": "pixit",
          "first_name": "",
          "last_name": "",
          "email": "jenkins@example.com",
          "date_joined": "2025-05-14T12:06:59.927211Z",
          "last_login": "2025-05-14T13:07:57.656518Z"
        }
      ],
    }
  ],
}
```

```

    {
      "username": "hubadmin",
      "first_name": "",
      "last_name": "",
      "email": "",
      "date_joined": "2025-05-23T10:57:26.219710Z",
      "last_login": "2025-07-04T14:17:23.449154Z"
    }
  ],
  "description": "Default group for users with administrative
access",
  "permissions": [290, 291, 292, 293,],
  "object_permissions": [],
  "nas_group": null
},
{
  "id": 2,
  "name": "Users",
  "users": [
    {
      "username": "Test",
      "first_name": "Test",
      "last_name": "User",
      "email": "test@gmail.com",
      "date_joined": "2025-06-25T11:43:39.651419Z",
      "last_login": null
    },
    {
      "username": "Example",
      "first_name": "Example",
      "last_name": "User",
      "email": "user@gmail.com",
      "date_joined": "2025-06-25T11:53:37.572849Z",
      "last_login": null
    }
  ],
  "description": "Default group for users with read-only
access",
  "permissions": [305, 17, 109, 117,],
  "object_permissions": [],
  "nas_group": null
},
{
  "id": 3,
  "name": "Test",
  "users": [],
  "description": null,
  "permissions": [305, 17, 109, 117, 113, 26, 29,],
  "object_permissions": [],
  "nas_group": {"gid": 100000}
}
]
}

```

## Response Fields

### Group List Response Fields

Field Name	Description	Type	Example
<code>count</code>	The total number of groups available.	Integer	3
<code>next</code>	URL to the next set of results (if any).	String or null	null
<code>previous</code>	URL to the previous set of results (if any).	String or null	null
<code>results</code>	A list of group objects returned by the API.	Array of Objects	See below for details

### Group Object Fields

Field Name	Description	Type	Example
<code>id</code>	Unique identifier for the group.	Integer	1
<code>name</code>	The name of the group.	String	"Administrators"
<code>users</code>	A list of user objects associated with the group. Each user object contains user information.	Array of Objects	See below for details
<code>description</code>	A description of the group. If not provided, this will be null.	String or null	"Default group for users with administrative access"
<code>permissions</code>	A list of permission IDs assigned to the group.	Array of Integers	[290, 291, 292, 293, ...]
<code>object_permissions</code>	A list of object-level permissions (if any).	Array of Objects	[] (empty array)
<code>nas_group</code>	Information related to the group's NAS configuration. If not applicable, this will be null.	Object or null	null or { "gid": 100000 }

### User Object Fields - For each user in the `users` array:

Field Name	Description	Type	Example
<code>username</code>	Username of the user.	String	"pixit"
<code>first_name</code>	The user's first name.	String	"" (empty string)
<code>last_name</code>	The user's last name.	String	"" (empty string)

Field Name	Description	Type	Example
email	The user's email address.	String	"jenkins@example.com"
date_joined	The date when the user joined the system.	DateTime	"2025-05-14T12:06:59.927211Z"
last_login	The last time the user logged in.	DateTime or null	"2025-05-14T13:07:57.656518Z"

## POST /groups/

### Description

This API endpoint allows you to create a new group. By sending a `POST` request to this endpoint with the necessary details, a new group is created in the system. This includes specifying the group's name, users, description, and permissions.

### Request Parameters

Name	Description	Required
name	The name of the group being created (e.g., "Test Group").	Yes
users	A list of user usernames to add to this group. For example: ["Test", "Example", "Example3"].	Yes
description	A brief description of the group (e.g., "A group for testing purposes").	No
permissions	A list of permission IDs assigned to this group (e.g., [305, 17, 109]).	Yes

### Example Request

```
curl -X 'POST' \
  'http://your-hub-address:8000/api/groups/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -H 'Content-Type: application/json' \
  -d '{
    "name": "Test Group",
    "users": [
      "Test",
      "Example",
      "Example3"
    ],
    "description": "A group for testing purposes",
    "permissions": [
      305,
      17,
      109
    ]
  }'
```

## Successful Response

**HTTP Status Code:** 201 Created

**Content-Type:** application/json

The group has been successfully created.

## Example Response

```
{
  "id": 5,
  "name": "Test Group",
  "users": [
    "Test",
    "Example",
    "Example3"
  ],
  "description": "A group for testing purposes"
  "permissions": [
    305,
    17,
    109
  ],
  "object_permissions": [],
  "nas_group": null
}
```

## Response Fields

Name	Description
id	The unique identifier for the newly created group.
name	The name of the group (e.g., "Test Group").
users	A list of usernames added to the group (e.g., ["Test", "Example", "Example3"]).
description	The description of the group (e.g., "A group for testing purposes").
permissions	A list of permission IDs associated with this group (e.g., [305, 17, 109]).
object_permissions	A list of object-level permissions. In this case, it is an empty list, meaning no object-level permissions are assigned.
nas_group	The NAS (Network Attached Storage) group associated with this group. In this case, it is null as no NAS group is provided.

GET /groups/{id}/

## Description

This API endpoint retrieves detailed information about a specific group using its ID. It provides data such as:

- The name of the group
- A list of users assigned to the group (with user details like usernames, emails, join date, last login)
- The permissions granted to the group
- Any object permissions for the group
- The description of the group (if available)

### Request Parameters

Name	Description	Required	Type	Example
id	The unique identifier of the group you want to retrieve. This is a path parameter and should be included in the URL.	Yes	String	4

### Example Request

```
curl -X GET 'http://your-hub-address:8000/api/groups/4/' \
-H 'accept: application/json' \
-H 'Authorization: Api-Key YOUR_API_KEY'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "id": 4,
  "name": "API Test Group",
  "users": [
    {
      "username": "pixit",
      "first_name": "",
      "last_name": "",
      "email": "jenkins@example.com",
      "date_joined": "2025-05-14T12:06:59.927211Z",
      "last_login": "2025-05-14T13:07:57.656518Z"
    },
    {
      "username": "hubadmin",
      "first_name": "",
      "last_name": "",
      "email": "",
      "date_joined": "2025-05-23T10:57:26.219710Z",
      "last_login": "2025-07-04T14:17:23.449154Z"
    }
  ],
  {
    "username": "Test",
```

```

    "first_name": "Test",
    "last_name": "User",
    "email": "test@gmail.com",
    "date_joined": "2025-06-25T11:43:39.651419Z",
    "last_login": null
  },
  {
    "username": "Example",
    "first_name": "Example",
    "last_name": "User",
    "email": "user@gmail.com",
    "date_joined": "2025-06-25T11:53:37.572849Z",
    "last_login": null
  },
  {
    "username": "Example3",
    "first_name": "Example",
    "last_name": "User",
    "email": "",
    "date_joined": "2025-06-25T12:01:34.447630Z",
    "last_login": null
  }
],
"description": "Group for API testing users",
"permissions": [
  305,
  17,
  109,
  117,
  113
],
"object_permissions": [],
"nas_group": null
}

```

## Response Fields

Refer to response fields under **POST /Groups**.

## PATCH /groups/{id}/

### Description

The **PATCH /groups/{id}/** endpoint is used to update an existing group. You can modify the group's name, users, permissions, and other attributes. This request is typically used to make partial updates to a group without changing the entire resource.

In this case, we are updating a group with the **ID 5** by:

- Modifying its name to "Test Group".
- Adding/Removing users in the users array (in this case, users "Test" and "Example3").

- Modifying the `permissions` array (adding permission IDs 305, 17, and 109).

## Request Parameters

Name	Description	Type	Required	Example
<code>id</code>	The unique identifier of the group that you want to update (path parameter). This is the ID of the group.	String	Yes	5
<code>data</code> (body)	An object containing the data to update the group with. The fields that can be included are: <code>name</code> , <code>users</code> , <code>permissions</code> .	Object	Yes	{ "name": "Test Group", "users": ["Test", "Example3"], "permissions": [305, 17, 109] }

## Example Request

```
curl -X 'PATCH' \
  'http://your-hub-address:8000/api/groups/5/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -H 'Content-Type: application/json' \
  -d '{
    "name": "Test Group",
    "users": [
      "Test",
      "Example3"
    ],
    "permissions": [
      305,
      17,
      109
    ]
  }'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "id": 5,
  "name": "Test Group",
  "users": [
    "Test",
    "Example3"
  ],
  "description": null,
```

```

"permissions": [
  305,
  17,
  109
],
"object_permissions": [],
"nas_group": null
}

```

## Response Fields

Field Name	Description	Type	Example
id	The unique identifier of the group.	Integer	5
name	The updated name of the group.	String	"Test Group"
users	A list of the usernames associated with this group.	Array of Strings	["Test", "Example3"]
description	The description of the group. If no description is provided, this will be null.	String or null	null
permissions	A list of permission IDs assigned to this group.	Array of Integers	[305, 17, 109]
object_permissions	A list of object-level permissions assigned to the group (if any).	Array of Objects	[] (empty array)
nas_group	Information about the group's NAS configuration (if any). If not applicable, this will be null.	Object or null	null

DELETE /groups/{id}/

## Description

This API endpoint is used to delete a specific group from the system based on its ID.

## Request Parameters

Name	Description
id (path parameter)	The unique identifier of the group you wish to delete. It is provided in the URL path (e.g., 4).

## Example Request

```

curl -X 'DELETE' \
  'http://your-hub-address:8000/api/groups/4/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'

```

## No Request Body

Since this is a DELETE request, no body is required in the request. Only the ID is used to identify the group for deletion.

### Successful Response

**HTTP Status Code:** 204 (No Content) - This status code indicates that the group was successfully deleted, and there is no additional content to return in the response body.

**Content-Type:** The response is in JSON format (application/json), but there is no body content as the request was successful (since it's a DELETE operation).

## API Endpoint - Policies

A policy (specifically a policy-based tiering workflow) is an advanced data orchestration tool that automates the movement of data between storage pools or from pools to Ngenea targets. Policies are driven by conditions such as file age, size, access time, or storage pool utilization levels, enabling dynamic data management.

### Difference from Workflow:

- **Policy:** Operates vertically, automating data movement within storage tiers based on predefined conditions.
- **Workflow:** Operates horizontally, focusing on moving data into or out of a site.

## API Reference Location

All endpoints, parameters, and schemas can be explored through the interactive API documentation available at:

```
http(s)://<your-hub-address>/api/docs/
```

**Note:** Replace `your-hub-address` with the actual IP address or domain of your Ngenea Hub instance.

## GET /policies/

### Description

This endpoint allows you to retrieve a list of policies, with support for pagination. It returns a collection of policies configured in the system, including their details such as schedule, triggers, conditions, and other related configurations.

### Request Parameters

Name	Type	Required	Description
page	integer	No	Page number of the result set. Defaults to 1 if not specified.

Name	Type	Required	Description
page_size	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/policies/?page=1' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "count": 1,
  "next": null,
  "previous": null,
  "results": [
    {
      "id": 1,
      "schedule": {
        "id": 1,
        "timezone": "UTC",
        "minute": "0",
        "hour": "0",
        "day_of_week": "1",
        "day_of_month": "*",
        "month_of_year": "*",
        "time": "00:00:00",
        "first_occur": false,
        "start_date_time": null
      },
      "triggers": [
        {
          "id": 1,
          "pool_name": "sas1",
          "max_utilisation": null,
          "upper_threshold": null,
          "lower_threshold": null,
          "premigrate_threshold": null,
          "is_cloud": false
        }
      ],
      "order": {
        "id": 1,
```

```

        "by": "file_size",
        "reverse": false
    },
    "condition_groups": [],
    "name": "Example",
    "policy_type": "MIGRATION",
    "filesystem": "mmfs1",
    "created": "2025-06-27T14:14:31.272573Z",
    "enabled": true,
    "threads": 4,
    "site": 1,
    "spaces": [
        2
    ]
}
]
}

```

## Response Fields

Field	Description
count	The total number of policies available in the system (e.g., 1 policy).
next	URL of the next page of results (null if there are no more pages).
previous	URL of the previous page of results (null if there is no previous page).
results	An array of policy objects containing the policy details.

**Policy Object (Inside results Array)** - Each policy object contains the following fields:

Field	Description
id	The unique identifier for the policy (e.g., 1).
schedule	The schedule for when the policy should run, including timing and frequency.
triggers	The conditions that trigger the policy, such as storage pool settings or thresholds.
order	Defines how the data should be processed (e.g., by file size).
condition_groups	Groups of conditions that must be met for the policy to be executed (e.g., []).
name	The name of the policy (e.g., "Example").
policy_type	The type of policy (e.g., "MIGRATION" for moving data).
filesystem	The filesystem where the policy is applied (e.g., "mmfs1").
created	Timestamp of when the policy was created.
enabled	Whether the policy is enabled (true means enabled).
threads	The number of threads used for policy execution (e.g., 4).
site	The site to which the policy is applied (e.g., 1).
spaces	The storage spaces involved in the policy (e.g., 2).

## Description

This API endpoint is used to create a new policy, specifying how data should be managed, processed, or migrated between storage locations.

The policy can be scheduled to run at a specific time and trigger based on conditions like storage pool utilization, file size, and other predefined conditions.

The policy can migrate data between storage tiers or to different cloud targets based on these rules.

## Request Parameters

Name	Description
data (required)	The main body of the request. This contains the configuration for the new policy.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/policies/?page=1' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

```
{
  "schedule": {
    "timezone": "UTC",
    "minute": "0",
    "hour": "0",
    "day_of_week": "1",
    "day_of_month": "*",
    "month_of_year": "*",
    "time": "00:00:00",
    "first_occur": false,
    "start_date_time": null
  },
  "triggers": [
    {
      "pool_name": "sas1",
      "max_utilisation": 0,
      "lower_threshold": 0,
      "upper_threshold": 0,
      "premigrate_threshold": 0,
      "is_cloud": true
    }
  ],
  "order": {
    "by": "file_size",
    "reverse": false
  },
  "name": "Test Policy",
```

```

"policy_type": "MIGRATION",
"filesystem": "mmfs1",
"created": "2025-06-27T14:14:31.272573Z",
"enabled": true,
"threads": 4,
"site": 1,
"spaces": [
  2
]
}

```

## Request Body Fields

`schedule`: Defines when the policy should execute.

Field	Description
<code>timezone</code>	The timezone to use for scheduling (set to "UTC").
<code>minute</code>	Minute of the hour when the policy triggers (set to 0).
<code>hour</code>	Hour of the day for policy execution (set to 0, i.e., midnight).
<code>day_of_week</code>	Day of the week the policy runs (set to 1, i.e., Monday).
<code>day_of_month</code>	Day of the month (set to "*", meaning any day).
<code>month_of_year</code>	Month of the year (set to "*", meaning any month).
<code>time</code>	Exact time the policy will trigger (set to 00:00:00).
<code>first_occur</code>	Boolean flag for immediate first run (set to false).
<code>start_date_time</code>	When the policy becomes active (set to null).

**Note:** This configuration schedules the policy to run at **midnight every Monday (UTC time)**.

`triggers`: Specifies the conditions that activate the policy.

Field	Description
<code>pool_name</code>	The name of the storage pool (e.g., "sas1").
<code>max_utilisation</code>	Max storage pool utilization (set to 0, no limit).
<code>lower_threshold</code>	Lower utilization threshold (set to 0).
<code>upper_threshold</code>	Upper utilization threshold (set to 0).
<code>premigrate_threshold</code>	Threshold for pre-migration actions (set to 0).
<code>is_cloud</code>	Indicates if the pool is cloud-based (set to true).

**Note:** This configuration **triggers the policy for the cloud-based pool sas1** regardless of utilization.

`order`: Defines how files should be processed.

Field	Description
<code>by</code>	The file order criteria (e.g., "file_size" to prioritize larger files).
<code>reverse</code>	Boolean flag to reverse order (set to false, meaning no reversal).

**Note:** Files will be processed from **largest to smallest**.

## General Policy Fields

Field	Description
name	The name of the policy (e.g., "Test Policy").
policy_type	The type of policy (e.g., "MIGRATION").
filesystem	Filesystem where the policy applies (e.g., "mmfs1").
created	Timestamp of policy creation (e.g., "2025-06-27T14:14:31.272573Z").
enabled	Whether the policy is active (true means enabled).
threads	Number of threads for processing (e.g., 4).
site	ID of the associated site (e.g., 1).
spaces	List of storage space IDs (e.g., [2]).

## Successful Response

**HTTP Status Code:** 201 (Created)

**Content-Type:** application/json

This indicates that the policy was successfully created on the server.

## Example Response

```
{
  "id": 1,
  "schedule": {
    "timezone": "UTC",
    "minute": "0",
    "hour": "0",
    "day_of_week": "1",
    "day_of_month": "*",
    "month_of_year": "*",
    "time": "00:00:00",
    "first_occur": false,
    "start_date_time": null
  },
  "triggers": [
    {
      "pool_name": "sas1",
      "max_utilisation": 0,
      "lower_threshold": 0,
      "upper_threshold": 0,
      "premigrate_threshold": 0,
      "is_cloud": true
    }
  ],
  "order": {
    "by": "file_size",
    "reverse": false
  },
  "name": "Test Policy",
  "policy_type": "MIGRATION",
```

```
"filesystem": "mmfs1",
"created": "2025-06-27T14:14:31.272573Z",
"enabled": true,
"threads": 4,
"site": 1,
"spaces": [2]
}
```

## Response Fields

The response fields are the same as the request parameters. Please refer to the section above for a better understanding.

```
GET /policies/{id}/
```

## Description

This API endpoint retrieves detailed information about a specific policy identified by the `id` parameter. It returns the policy's configuration, including its schedule, triggers, order, and other associated details.

## Request Parameters

Name	Description
------	-------------

<code>id</code>	<b>(Required)</b> The unique identifier of the policy you want to retrieve. It is a string value and must be provided as part of the URL path.
-----------------	--

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/policies/1/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "id": 1,
  "schedule": {
    "id": 1,
    "timezone": "UTC",
    "minute": "0",
    "hour": "0",
    "day_of_week": "1",
    "day_of_month": "*",
    "month_of_year": "*",
    "time": "00:00:00",
  }
}
```

```

    "first_occur": false,
    "start_date_time": null
  },
  "triggers": [
    {
      "id": 1,
      "pool_name": "sas1",
      "max_utilisation": null,
      "upper_threshold": null,
      "lower_threshold": null,
      "premigrate_threshold": null,
      "is_cloud": false
    }
  ],
  "order": {
    "id": 1,
    "by": "file_size",
    "reverse": false
  },
  "condition_groups": [],
  "name": "Example",
  "policy_type": "MIGRATION",
  "filesystem": "mmfs1",
  "created": "2025-06-27T14:14:31.272573Z",
  "enabled": true,
  "threads": 4,
  "site": 1,
  "spaces": [
    2
  ]
}

```

## Response Fields

Field Name	Description
id	The unique identifier for the policy. In this case, the policy ID is 1.
schedule	Defines when the policy should execute based on the provided time parameters.
triggers	Defines the conditions that will trigger the policy.
order	Defines how the files will be processed during policy execution.
condition_groups	An empty list indicating that no condition groups are defined.
name	The name of the policy (e.g., "Example").
policy_type	The type of policy (e.g., "MIGRATION" for data migration).
filesystem	The filesystem to which the policy applies (e.g., "mmfs1").
created	The timestamp indicating when the policy was created (e.g., 2025-06-27T14:14:31.272573Z).
enabled	Boolean indicating if the policy is currently active (true).
threads	Number of threads used to process files (e.g., 4).
site	Site ID where the policy applies (e.g., 1).

Field Name	Description
spaces	List of space IDs associated with this policy (e.g., [2]).

**Nested Field:** schedule

Field Name	Description
schedule.id	The unique identifier of the schedule configuration.
schedule.timezone	The timezone in which the policy is scheduled (e.g., "UTC").
schedule.minute	The minute of the hour when the policy triggers (e.g., 0).
schedule.hour	The hour of the day when the policy triggers (e.g., 0 for midnight).
schedule.day_of_week	Day of the week the policy runs (e.g., 1 for Monday).
schedule.day_of_month	Day of the month (set to "*", meaning any day).
schedule.month_of_year	Month of the year (set to "*", meaning any month).
schedule.time	Exact time the policy will trigger (e.g., 00:00:00).
schedule.first_occur	Whether to start immediately on the first occurrence (false).
schedule.start_date_time	Start date and time when the policy becomes active (set to null).

**Nested Field:** triggers

Field Name	Description
triggers.id	The unique identifier of the trigger configuration.
triggers.pool_name	Storage pool name for the trigger (e.g., "sas1").
triggers.max_utilisation	Maximum utilization threshold (set to null).
triggers.upper_threshold	Upper utilization threshold (set to null).
triggers.lower_threshold	Lower utilization threshold (set to null).
triggers.premigrate_threshold	Pre-migration threshold (set to null).
triggers.is_cloud	Whether the pool is cloud-based (false).

**Nested Field:** order

Field Name	Description
order.id	The unique identifier of the order configuration.
order.by	Criterion used for ordering files (e.g., "file_size").
order.reverse	Whether to reverse the order (false).

PATCH /policies/{id}/

**Description**

This API endpoint allows updating an existing policy identified by its `id`. The PATCH request allows partial updates, meaning you can modify only the fields that need to be changed, such as the policy name, schedule, triggers, or other attributes.

## Request Parameters

Name	Description
<code>id</code>	<b>(Required)</b> The unique identifier of the policy you want to update. It should be provided as part of the URL path.
<code>data</code>	<b>(Required)</b> A JSON object containing the updated fields of the policy.

## Example Request

```
curl -X 'PATCH' \  
  'http://your-hub-address:8000/api/policies/2/' \  
  -H 'accept: application/json' \  
  -H 'Authorization: Api-Key your-api-key' \  
  -H 'Content-Type: application/json'
```

```
"schedule": {  
  "timezone": "UTC",  
  "minute": "0",  
  "hour": "0",  
  "day_of_week": "1",  
  "day_of_month": "*",  
  "month_of_year": "*",  
  "time": "00:00:00",  
  "first_occur": false,  
  "start_date_time": null  
},  
"triggers": [  
  {  
    "pool_name": "sas1",  
    "max_utilisation": 0,  
    "lower_threshold": 0,  
    "upper_threshold": 0,  
    "premigrate_threshold": 0,  
    "is_cloud": true  
  }  
],  
"order": {  
  "by": "file_size",  
  "reverse": false  
},  
"name": "Test Policy Updated",  
"policy_type": "MIGRATION",  
"filesystem": "mmfs1",  
"created": "2025-06-27T14:14:31.272573Z",  
"enabled": true,  
"threads": 4,  
"site": 1,  
"spaces": [  
  {  
    "name": "sas1",  
    "policy_type": "MIGRATION",  
    "filesystem": "mmfs1",  
    "created": "2025-06-27T14:14:31.272573Z",  
    "enabled": true,  
    "threads": 4,  
    "site": 1,  
    "spaces": [  
      {  
        "name": "sas1",  
        "policy_type": "MIGRATION",  
        "filesystem": "mmfs1",  
        "created": "2025-06-27T14:14:31.272573Z",  
        "enabled": true,  
        "threads": 4,  
        "site": 1,  
        "spaces": [  
          {  
            "name": "sas1",  
            "policy_type": "MIGRATION",  
            "filesystem": "mmfs1",  
            "created": "2025-06-27T14:14:31.272573Z",  
            "enabled": true,  
            "threads": 4,  
            "site": 1,  
            "spaces": [  
              {  
                "name": "sas1",  
                "policy_type": "MIGRATION",  
                "filesystem": "mmfs1",  
                "created": "2025-06-27T14:14:31.272573Z",  
                "enabled": true,  
                "threads": 4,  
                "site": 1,  
                "spaces": [  
                  {  
                    "name": "sas1",  
                    "policy_type": "MIGRATION",  
                    "filesystem": "mmfs1",  
                    "created": "2025-06-27T14:14:31.272573Z",  
                    "enabled": true,  
                    "threads": 4,  
                    "site": 1,  
                    "spaces": [  
                      {  
                        "name": "sas1",  
                        "policy_type": "MIGRATION",  
                        "filesystem": "mmfs1",  
                        "created": "2025-06-27T14:14:31.272573Z",  
                        "enabled": true,  
                        "threads": 4,  
                        "site": 1,  
                        "spaces": [  
                          {  
                            "name": "sas1",  
                            "policy_type": "MIGRATION",  
                            "filesystem": "mmfs1",  
                            "created": "2025-06-27T14:14:31.272573Z",  
                            "enabled": true,  
                            "threads": 4,  
                            "site": 1,  
                            "spaces": [  
                            ]  
                          }  
                        ]  
                      }  
                    ]  
                  }  
                ]  
              }  
            ]  
          }  
        ]  
      }  
    ]  
  }  
]
```

2  
]

**Note:** For example purpose, we have updated only the name of the policy to `Test Policy Updated` and the creation timestamp to reflect the update time (“2025-07-07T16:42:36.971472Z”).

You can modify other parameters such as the schedule, triggers, and other settings as per your specific requirements. All other configurations, including the filesystem (`mmfs1`) and storage pool trigger (`sas1`), remain the same or can be adjusted based on your needs.

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

The server successfully processes the request, and the policy is updated with the new values.

## Response Fields

**Note:** Refer to response fields under `GET /POLICES/ID`.

`DELETE /policies/{id}/`

## Description

This API endpoint is used to delete a policy identified by its `id`. The `DELETE` request permanently removes the policy from the system. The deletion is typically irreversible, and once deleted, the policy cannot be restored.

## Request Parameters

Name	Description
<code>id</code>	<b>(Required)</b> The unique identifier of the policy that you want to delete. It should be provided as part of the URL path.

## Example Request

```
curl -X 'DELETE' \  
  'http://your-hub-address:8000/api/policies/2/' \  
  -H 'accept: application/json' \  
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 204 (No Content)

The server successfully processes the request to delete the policy. A 204 No Content status code means that the request was successful, but there is no content to return in the response body. It indicates that the policy has been deleted.

**Content-Type:** application/json

POST /policies/{id}/run/

## Description

The POST /policies/{id}/run/ endpoint allows you to manually trigger the execution of a policy identified by its id. This action forces the policy to run immediately, bypassing its regular schedule. The policy will execute based on the predefined conditions and triggers that were set during its creation.

When you make this request, a unique task\_id is returned, which can be used to track the progress and status of the task.

This endpoint doesn't require any additional parameters; the policy runs according to its current configuration.

It is particularly useful for scenarios where immediate execution is necessary, such as during urgent data migration tasks or testing, without waiting for the next scheduled trigger.

## Request Parameters

Name	Description
id	<b>(Required)</b> The ID of the policy to run. It should be provided in the URL path.

## Example Request

```
curl -X 'POST' \
  'http://your-hub-address:8000/api/policies/1/run/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
```

This response indicates that the task has been successfully triggered. You can now track the task using the provided task\_id.

## Example Response

```
{
  "task_id": "ba14329f-7f77-4c60-9301-7bdfe36199b5"
}
```

## Response Fields

Name	Description
task_id	A unique identifier for the task initiated by this request. This ID can be used to track the progress or status of the policy execution.

## API Endpoints - File Management and Storage

### File

#### GET /file/

#### Description

The `/file/` API endpoint not only lists the files and folders under a specified path for a given site but also returns important metadata (details) about each item. These details provide valuable context about the nature, state, and attributes of each file, enabling more informed decisions and automated actions in file management systems.

Each file or folder returned by the endpoint includes a structured set of fields such as its name, type, size, creation/modification timestamps, access status, and more.

Additionally, each item is associated with a specific site. This ensures that files are clearly scoped to their respective locations, enabling secure, site-aware management and control.

#### Request Parameters

Parameter	Type	Required	Description
<code>path</code>	string	Yes	The target directory path to browse. (e.g., a path or virtual root).
<code>site</code>	string	Yes	The name of the site.
<code>page</code>	integer	No	Page number for paginated results. Defaults to 1.
<code>page_size</code>	integer	No	Number of items per page (20-100). Use 0 to disable pagination.
<code>details</code>	boolean	No	If true, returns detailed metadata for child files/folders. Defaults to false.
<code>restricted</code>	boolean	No	If true, includes restricted (e.g., hidden) objects. Defaults to false.
<code>cache_ttl</code>	integer	No	Duration (in seconds) for caching the result.
<code>type</code>	string	No	Filter by item type (e.g., <code>directory</code> , <code>file</code> ).

#### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/file/?
  path=mmfsl&site=siteA&details=false&restricted=false' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

#### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "url": "http://your-hub-address:8000/api/file/?
path=mmfs1&site=siteA&details=false&restricted=false",
  "site": "siteA",
  "path": "mmfs1",
  "type": "directory",
  "size": 262144,
  "ctime": "2025-05-14T12:01:11.995371Z",
  "mtime": "2025-05-14T12:01:11.995176Z",
  "atime": "2025-06-23T14:13:11.940276Z",
  "children": {
    "count": 1,
    "next": null,
    "previous": null,
    "results": [
      {
        "site": "siteA",
        "path": "mmfs1/data",
        "name": "data",
        "type": "directory",
        "size": 0,
        "deleted": false,
        "restricted": false,
        "status": "online"
      }
    ]
  }
}
```

## Response Fields

Field	Type	Description
url	string	URL of the current directory view.
site	string	Site name the data belongs to.
path	string	Current directory path.
type	string	Always "directory" in this context.
size	integer	Size of the directory (in bytes).
ctime, mtime, atime	string	Creation, modification, and access timestamps (ISO format).
children.count	integer	Number of child items in this directory.
children.results[]	array	List of file or folder objects under this path.

POST /file/workflow/

## Description

The `/file/workflow/` API endpoint initiates a specified [Workflow Operation](#) on a list of files or directories within a given site.

Workflows can perform automated actions such as migration, deletion, or metadata updates on targeted file paths. This operation supports recursive discovery and accepts additional workflow-specific parameters.

## Request Parameters

Parameter	Type	Required	Description
<code>paths</code>	array	Yes	List of target file or directory paths to apply the workflow to.
<code>site</code>	string	Yes	The <b>primary site</b> on which the workflow is executed.
<code>discovery</code>	string	Yes	How to discover files: <code>"recursive"</code> or <code>"flat"</code> (non-recursive).
<code>workflow</code>	string	Yes	Name of the workflow to execute (e.g., <code>migrate</code> , <code>delete</code> , <code>tag</code> ).
<code>fields</code>	object	No	Optional workflow-specific fields. Example: <code>{ "lock_level": "implicit" }</code>

## Example Request

```
curl -X 'POST' \
  'http://your-hub-address:8000/api/file/workflow/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -H 'Content-Type: application/json' \
  -d '{
    "paths": [{"path": "/mmfs1/data/"}],
    "site": "siteA",
    "discovery": "recursive",
    "workflow": "migrate",
    "fields": {
      "lock_level": "implicit"
    }
  }'
```

**Note:** In this example, the `/file/workflow/` API is used to trigger a migrate workflow on the directory `/mmfs1/data/` within the given site.

The `"discovery": "recursive"` parameter means the workflow applies to the specified directory and all of its contents, including files and nested subdirectories.

The `"fields"` section sets `"lock_level": "implicit"`, which controls how files are locked or reserved during the migration process.

The response confirms that a migration job has started, providing a job ID, status (STARTED), and a list of task IDs representing the operations in progress.

This kind of workflow is useful for moving data across storage systems, preparing content for processing, or archiving large data sets within a site managed by the Hub.

## Successful Response

**HTTP Status Code:** 201 Created

**Content-Type:** application/json

## Example Response

```
{
  "url": "http://your-hub-address:8000/api/jobs/38/",
  "id": 38,
  "workflow": "migrate",
  "fields": {
    "lock_level": "implicit"
  },
  "created": "2025-06-24T13:17:09.771857Z",
  "started": "2025-06-24T13:17:09.818646Z",
  "completed": null,
  "runtime": 0.088984,
  "state": "STARTED",
  "site": "siteA",
  "queue": "default",
  "owner": {
    "type": "user",
    "id": 2,
    "name": "hubadmin"
  },
  "discovery": "recursive",
  "is_settings_job": false,
  "friendly_name": "Dehydrate of '/mmfs1/data/' on 'siteA'",
  "progress": null,
  "tasks": [266, 265, 267]
}
```

## Response Fields

Field	Type	Description
id	integer	Job ID representing the submitted workflow operation.
url	string	API link to check job status and details.
workflow	string	Name of the executed workflow.
fields	object	Workflow-specific parameters used in this execution.
created	datetime	Timestamp when the job was created.
started	datetime	Timestamp when execution started.
completed	datetime	Timestamp when execution completed (null if still running).
runtime	float	Time (in seconds) taken so far.
state	string	Current job state: STARTED, COMPLETED, FAILED, etc.

Field	Type	Description
site	string	Site where the workflow was executed.
queue	string	Job queue used, usually "default".
owner	object	User who triggered the job (includes id, name, type).
discovery	string	Discovery mode used (recursive or flat).
friendly_name	string	Human-readable job description.
progress	object/ null	Progress tracking info (null if not yet tracked).
tasks	array	List of task IDs spawned by this job.

## Filesystems

### GET /filesystems/

#### Description

The `/filesystems/` API endpoint retrieves a list of **available file systems** across all configured sites. Each file system is associated with a specific site and includes basic metadata such as its name and mount point.

This endpoint is particularly useful, where each site may host its own instance of a distributed file system (e.g., GPFS/Spectrum Scale), and operations need to be scoped accordingly.

**Note:** A filesystem is a structured method of storing, organizing, and accessing data on a storage device.

In multi-site platforms like Ngenea Hub, a filesystem refers to a mounted storage volume, such as `mmfs1` that exists within a specific site. Each filesystem is uniquely identified by its name and mount point, and it serves as the root for all file and directory operations within that site.

This logical storage environment serves as the root for files, directories, and filesets within the associated site.

#### Request Parameters

Name	Type	Required	Description
page	integer	No	Page number of the result set. Defaults to 1 if not specified.
page_size	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

#### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/filesystems/?'
```

```
page=1&page_size=1' \  
-H 'accept: application/json' \  
-H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{  
  "count": 2,  
  "next": null,  
  "previous": null,  
  "results": [  
    {  
      "name": "mmfs1",  
      "site": "siteA",  
      "mountpoint": "/mmfs1"  
    },  
    {  
      "name": "mmfs1",  
      "site": "siteB",  
      "mountpoint": "/mmfs1"  
    }  
  ]  
}
```

## Response Fields

### Top-Level Fields

Field	Type	Description
count	integer	Total number of file systems across all pages.
next	string	URL to the next page of results (if any).
previous	string	URL to the previous page of results (if any).
results	array	List of file systems with their metadata.

Each item in the `results` array contains:

Field	Type	Description
name	string	Name of the file system (e.g., <code>mmfs1</code> ).
site	string	Name of the site where this file system is mounted.
mountpoint	string	Mount path of the file system on that site.

GET /filesystems/{id}/

## Description

The GET `/filesystems/{id}/` endpoint retrieves detailed information about a **specific filesystem space** by its unique ID. This is useful for querying metadata about a filesystem space associated with a particular site—such as its name and mount location.

This endpoint is typically used when you already know the filesystem's ID (from a `/filesystems/` list call) and want to fetch more focused data for display or internal logic.

## Request Parameters

Parameter	Type	Required	Description
<code>id</code>	string	Yes	The unique identifier of the filesystem.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/filesystems/1/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "name": "mmfs1",
  "site": "siteA",
  "mountpoint": "/mmfs1"
}
```

## Response Fields

Please check the above endpoint to understand the response field.

## Filesets

A fileset is a logical subdivision of a filesystem, used to organize, manage, and apply policies to files in a more granular way. *In Ngenea Hub, a fileset is automatically created when a space is created.*

It provides an isolated namespace within a filesystem, allowing for features such as:

- Independent data management (e.g., quota, snapshots)
- Enhanced access control
- Simplified backup and archiving

**Note:** The term “fileset” comes from its role: a set of files grouped by policy, location, or purpose within a larger filesystem. This abstraction helps manage large-scale data more efficiently.

GET /filesets/

## Description

This API endpoint allows users to retrieve all filesets for a specific site.

## Request Parameters

Name	Type	Location	Required	Description
site	string	query	Yes	Name of the site (minimum 1 character) where file sets are defined.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/filesets/?site=siteA' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
[
  {
    "path": "/mmfs1/data/Test_Space",
    "site": "qatest-pdevan-testplugin-siteA",
    "name": "sas1-Test_Space",
    "label": "sas1-Test_Space",
    "filesystem": "mmfs1"
  }
]
```

## Response Fields

Field	Type	Description
path	string	Full path to the fileset within the filesystem.
site	string	The name of the site the fileset belongs to.
name	string	The internal name of the fileset.
label	string	The display label of the fileset.
filesystem	string	The parent filesystem this fileset resides in.

## Sites

In Ngenea Hub, a site represents a distinct location or system within the Ngenea Hub ecosystem where data and events are managed and synchronized. Each site is identified by a unique name, which is crucial for tracking, managing, and reflecting events (such as file updates or deletions) across the distributed environment.

### GET /sites/

#### Description

The GET /sites/ endpoint allows you to retrieve a list of all sites registered in your Ngenea Hub system. Each site represents a physical or cloud-based server managed by the Hub. The endpoint supports pagination and provides detailed metadata about each site, such as its name, type, associated storage spaces, and file statistics.

#### Request Parameters

Name	Type	Required	Description
page	integer	No	Page number of the result set. Defaults to 1 if not specified.
page_size	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

#### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/sites/?page=1' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

#### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

#### Example Response

```
{
  "count": 2,
  "next": null,
  "previous": null,
  "results": [
    {
      "url": "http://your-hub-address:8000/api/sites/1/",
      "id": 1,
      "name": "siteA",
      "shortcode": "CXL",
      "label": "siteA",
    }
  ]
}
```

```

    "am_i_configured": true,
    "bandwidth": 0,
    "spaces": ["mmfs1", "Test_Space"],
    "type": "CLOUD",
    "directories_count": 317,
    "files_count": 977,
    "files_hydrated_count": 977,
    "files_stubbed_count": 0,
    "editable": true,
    "public_url": "https://your-hub-address",
    "color": [170, 232, 242],
    "ready_to_configure": true
  },
  {
    "url": "http://your-hub-address:8000/api/sites/2/",
    "id": 2,
    "name": "siteB",
    "shortcode": "I17",
    "label": "siteB",
    "am_i_configured": true,
    "bandwidth": 0,
    "spaces": ["mmfs1"],
    "type": "CLOUD",
    "directories_count": 317,
    "files_count": 1001,
    "files_hydrated_count": 1001,
    "files_stubbed_count": 0,
    "editable": true,
    "public_url": "https://10.201.2.185",
    "color": [227, 170, 242],
    "ready_to_configure": true
  }
]
}

```

## Response Fields

### Top-Level Fields

Field	Type	Description
count	integer	Total number of sites available.
next	string/null	URL to the next page of results, or null if none.
previous	string/null	URL to the previous page of results, or null if none.
results	array	List of site objects returned for the current page.

### results[] Object Fields

Field	Type	Description
url	string	API URL for the specific site resource.
id	integer	Unique identifier of the site.
name	string	Name of the site.
shortcode	string	Short code representing the site.

Field	Type	Description
label	string	Label for the site.
am_i_configured	boolean	Indicates if the site is configured.
bandwidth	integer	Bandwidth limit for the site.
spaces	array of strings	List of associated spaces for the site.
type	string	Type of the site (e.g., "CLOUD").
directories_count	integer	Number of directories in the site.
files_count	integer	Total number of files in the site.
files_hydrated_count	integer	Number of hydrated files.
files_stubbed_count	integer	Number of stubbed files.
editable	boolean	Whether the site is editable.
public_url	string	Public URL to access the site.
color	array of integers	RGB color values representing the site color.
ready_to_configure	boolean	Indicates if the site is ready to be configured.

POST /sites/

## Description

Creates a new site with the specified properties, including spaces, name, configuration parameters, and metadata.

## Request Parameters

Name	Type	Location	Description
data	object	body	JSON object containing the site details and configuration settings.

## Example Request

```
curl -X 'POST' \
  'http://your-hub-address:8000/api/sites/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -H 'Content-Type: application/json' \
  -d '{
    "spaces": ["mmfs1"],
    "name": "testexample",
    "shortcode": "str",
    "file_batch_size": 40,
    "file_batch_gb": 1,
    "enable_auto_file_batch_sizing": true,
    "lock_threshold": 86400,
    "bandwidth": 0,
    "elasticsearch_url": "localhost:9200",
    "pixstor_search_url": "https://localhost",
    "public_url": "https://pixstor-mn-001",
    "include": [],
```

```
"exclude": [],
"label": "string",
"am_i_configured": true,
"type": "CLOUD",
"color": [242, 170, 235],
"files_count": 2147483647,
"directories_count": 2147483647,
"files_stubbed_count": 2147483647,
"files_hydrated_count": 2147483647,
"gpfs_iscan_buckets": 2147483647,
"gpfs_iscan_threads": 2147483647,
"ready_to_configure": true
}'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "id": 3,
  "url": "http://10.201.2.224:8000/api/sites/3/",
  "name": "testexample",
  "shortcode": "str",
  "label": "string",
  "spaces": ["mmfs1"],
  "file_batch_size": 40,
  "file_batch_gb": 1,
  "enable_auto_file_batch_sizing": true,
  "lock_threshold": 86400,
  "bandwidth": 0,
  "elasticsearch_url": "localhost:9200",
  "pixstor_search_url": "https://localhost",
  "public_url": "https://pixstor-mn-001",
  "include": [],
  "exclude": [],
  "am_i_configured": true,
  "type": "CLOUD",
  "color": [242, 170, 235],
  "files_count": 2147483647,
  "directories_count": 2147483647,
  "files_stubbed_count": 2147483647,
  "files_hydrated_count": 2147483647,
  "gpfs_iscan_buckets": 2147483647,
  "gpfs_iscan_threads": 2147483647,
  "ready_to_configure": true,
  "editable": true
}
```

## Response Fields

Refer to the requests body fields under `GET/SITES`.

## GET /sites/{id}/

### Description

Retrieves detailed information about a specific site by its unique ID.

### Request Parameters

Name	Type	Location	Description
<code>id</code>	string	path	The unique ID of the site.

### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/sites/2/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "url": "http://your-hub-address:8000/api/sites/2/",
  "spaces": [
    {
      "url": "http://your-hub-address:8000/api/spaces/1/",
      "id": 1,
      "name": "mmfs1"
    }
  ],
  "editable": true,
  "id": 2,
  "name": "siteB",
  "shortcode": "I17",
  "file_batch_size": 40,
  "file_batch_gb": 1,
  "enable_auto_file_batch_sizing": true,
  "lock_threshold": 86400,
  "bandwidth": 0,
  "elasticsearch_url": "localhost:19200",
  "pixstor_search_url": null,
  "public_url": "https://10.201.2.185",
  "include": null,
  "exclude": null,
  "label": "siteB",
  "am_i_configured": true,
}
```

```

"type": "CLOUD",
"color": [227, 170, 242],
"files_count": 1001,
"directories_count": 317,
"files_stubbed_count": 0,
"files_hydrated_count": 1001,
"gpfs_iscan_buckets": null,
"gpfs_iscan_threads": null,
"ready_to_configure": true
}

```

## Response Fields

Refer to the requests body fields under [GET/SITES](#).

PATCH /sites/{id}/

## Description

Updates an existing site's properties using partial or full data. Only the fields included in the request will be updated.

## Request Parameters

Name	Type	Location	Description
id	string	path	The unique ID of the site to update.
data	object	body	JSON object containing the fields to update.

## Example Request

```

curl -X 'PATCH' \
  'http://your-hub-address:8000/api/sites/3/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -H 'Content-Type: application/json' \
  -d '{
    "spaces": ["mmfs1"],
    "name": "testexample",
    "shortcode": "Te",
    "label": "string"
  }'

```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```

{
  "url": "http://your-hub-address:8000/api/sites/3/",
  "spaces": [

```

```

    {
      "url": "http://your-hub-address:8000/api/spaces/1/",
      "id": 1,
      "name": "mmfs1"
    }
  ],
  "editable": true,
  "id": 3,
  "name": "testexample",
  "shortcode": "Te",
  "label": "string",
  "type": "CLOUD",
  "ready_to_configure": true
}

```

**Note:** The site with ID 3 was successfully updated with example values (e.g., shortcode: “Te”, label: “TestEx”). Any subset of parameters can be provided in the PATCH request to update specific fields as per user requirements.

## Response Fields

The response includes all updated site fields. These are the same as those returned in **GET /sites/{id}/**.

## DELETE /sites/{id}/

### Description

Deletes a specific site identified by its unique ID.

### Request Parameters

Name	Type	Location	Description
id	string	path	The unique ID of the site.

### Example Request

```

curl -X 'DELETE' \
  'http://your-hub-address:8000/api/sites/4/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'

```

### Successful Response

**HTTP Status Code:** 204 No Content — No response body returned.

**Note:** Site with ID 4 was deleted. This operation is irreversible. Ensure the correct ID is passed, as all associated metadata and configuration will be permanently removed.

## GET /sites/{id}/health/

**Description** Retrieves the health status of a specific site, including the health of its nodes and queues.

*Health represents the overall operational status of the site and its components, indicating whether they are functioning correctly, online, and responsive. A status of "ok" means the site and its nodes and queues are running normally without issues.*

### Request Parameters

Name	Type	Location	Description
id	string	path	The unique ID of the site.

### Example Request

```
curl -X 'GET' \
  'http://10.201.2.224:8000/api/sites/2/health/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key
  xxxxxxxx.xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "site": "qatest-pdevan-testplugin-siteB",
  "health": "ok",
  "nodes": [
    {
      "name": "qatest-pdevan-testplugin-siteB-1",
      "health": "ok",
      "online": true,
      "has_default_queue": true,
      "last_heartbeat": "2025-07-03T15:34:59.540149+00:00",
      "worker_version": "2.6.0",
      "ngenea_version": "1.31.0",
      "analytics_version": "2.7.1",
      "search_version": "1.2.0"
    }
  ],
  "queues": [
    {
      "name": "default",
      "health": "ok",
      "online": true,
      "last_heartbeat": "2025-07-03T15:35:09.552068+00:00"
    }
  ]
}
```

```
]
}
```

## Response Fields

### Site Health Response Fields

Field	Type	Description
site	string	Name of the site.
health	string	Overall health status of the site (e.g., ok).
nodes	array	List of node health objects.

### nodes[] Object Fields

Field	Type	Description
nodes[].name	string	Name of the node.
nodes[].health	string	Health status of the node.
nodes[].online	boolean	Whether the node is online.
nodes[].has_default_queue	boolean	Whether the node has a default queue configured.
nodes[].last_heartbeat	string	Timestamp of the last heartbeat received from the node.
nodes[].worker_version	string	Version of the worker component (if available).
nodes[].ngenea_version	string	Version of the ngenea component (if available).
nodes[].analytics_version	string	Version of the analytics module (if available).
nodes[].search_version	string	Version of the search module (if available).
nodes[].version_details	string	Version fetch status message (if any errors).

### queues[] Object Fields

Field	Type	Description
queues[].name	string	Queue name (e.g., default).
queues[].health	string	Health status of the queue.
queues[].online	boolean	Whether the queue is online.
queues[].last_heartbeat	string	Timestamp of the last heartbeat from the queue.

## POST /sites/{id}/refresh/

### Description

Triggers a refresh operation for the specified site, which may include updating analytics, fetching remote servers, loading storage pools, and checking space/site quotas asynchronously.

## Example Request

```
curl -X 'POST' \
  'http://your-hub-address:8000/api/sites/2/refresh/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -d ''
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

```
{
  "dynamocore.tasks.site.fetch_site_analytics": "4fb5b60a-630e-4a
db-b946-2c555184f0a4",
  "dynamocore.tasks.server.get_remote_servers": "900d2b0e-1c78-422
e-82c7-c6ac84a9693c",
  "dynamocore.tasks.admin.load_storagepools": "7edadbc1-c400-4d19-
b0b5-6af348085e5c",
  "dynamocore.tasks.space_site.send_check_space_site_quota": "34d9
4c8b-d4e4-4357-bf65-d589f920dbd6"
}
```

## Response Fields

Field	Type	Description
<i>Task names as keys</i>	string	Identifiers for the triggered asynchronous tasks.
<i>Task IDs as values</i>	string	UUIDs representing each task instance.

GET /sites/{id}/settings/

## Description

This API endpoint retrieves the configuration settings for a specific site identified by its id. These settings control various operational parameters such as backup schedules, logging, monitoring, network configurations, and other system behaviors related to the site.

Accessing site settings is essential for administrators or automated systems to review, audit, or adjust the configurations without direct access to the server. It allows monitoring of the current configuration state and supports troubleshooting, compliance checks, and dynamic adjustments to the site behavior.

## Request Parameters

Name	Type	Location	Description
id	string	path	The unique identifier of the site.
flat	boolean	query	Return settings as a flat dictionary (true or false, default: false).

## Example Request

```
curl -X 'GET' \  
  'http://your-hub-address:8000/api/sites/2/settings/?flat=false' \  
 \  
  -H 'accept: application/json' \  
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
[  
  {  
    "id": 32,  
    "key": "apbackup:schedule",  
    "value": "*-*-* 01:00:00",  
    "desc": "The systemd calendar event for configuring the  
systemd timer service that runs apbackup."  
  },  
  {  
    "id": 36,  
    "key": "email:arcapix_alert_address",  
    "value": "alerts@pixitmedia.com",  
    "desc": "Description not specified"  
  },  
  {  
    "id": 37,  
    "key": "monitoring:auth:monitoring_internal",  
    "value": "*****",  
    "desc": "Description not specified"  
  },  
  {  
    "id": 42,  
    "key": "ntp:servers",  
    "value": [  
      "0.centos.pool.ntp.org",  
      "1.centos.pool.ntp.org",  
      "2.centos.pool.ntp.org",  
      "3.centos.pool.ntp.org"  
    ],  
    "desc": "list of NTP servers"  
  }  
  // more settings ...  
]
```

## Response Fields

Field	Description
id	Setting unique identifier.
key	The setting key name.
value	The setting value (may be string, bool, array, etc.).
desc	Description of the setting (may be null or unspecified).

POST /sites/{id}/settings/refresh/

## Description

The POST /sites/{id}/settings/refresh/ endpoint is used to refresh the settings for a specific site identified by id. This action can be used to update existing settings or create settings in the Ngenea Hub if none exist for the given site. It's an asynchronous process, meaning the operation will be carried out in the background, and you can track its progress via a task ID.

## Request Parameters

Name	Type	Location	Description
id	string	path	<b>Required.</b> Unique identifier of the site to refresh settings for. This is part of the URL path. Example: /sites/2/settings/refresh/

## Example Request

```
curl -X 'POST' \
  'http://10.201.2.224:8000/api/sites/2/settings/refresh/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -d ''
```

## Successful Response

**HTTP Status Code:** 202 Accepted

This indicates that the request has been accepted and is now being processed, but the operation has not completed yet. The task is running asynchronously, so you can track its progress with the task\_id.

**Content-Type:** application/json

## Example Response

```
{
  "task_id": "201ef094-5e55-42b7-818b-1e586c52bda0"
}
```

## Response Fields

Field	Type	Description
task_id	string	A unique identifier for the refresh task. Use this ID to track its progress or retrieve status.

## Shares

Shares are designated directories or access points within the Pixstor storage system that are made available to external systems over a network. These *shares allow remote clients to access, read, write, or manage data stored in the Pixstor environment* as if it were part of their local file system.

These shares can be accessed using various protocols like **NFS** (for Linux/Unix-based clients) and **Samba** (for Windows and other SMB-compatible clients).

NFS and Samba are two common protocols for sharing files, with NFS being primarily used for Linux-based environments and Samba providing cross-platform compatibility for Windows and Linux systems.

### GET /shares/nfs/

The `GET /shares/nfs/` endpoint is used to retrieve a list of **NFS shares** from your storage system. NFS (Network File System) shares allow remote clients to access the file system over a network. This API call provides details of all NFS shares currently configured, including their associated settings, clients, and more.

#### Request Parameters

**No parameters** - This endpoint does not require any parameters in the request query. The response will return a list of all NFS shares.

#### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/shares/nfs/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

#### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

#### Example Response

```
[
  {
    "id": 1,
    "uuid": "a4255625-e9d9-4a72-817a-719cfd69d73e",
    "space": 2,
    "clients": [
      {
```

```

    "id": 1,
    "hosts": "*",
    "force_root_user_id": false,
    "force_all_user_id": false,
    "asynchronous": false,
    "write_delay": true,
    "insecure_ports": false,
    "subtree_check": true,
    "advanced_settings": null,
    "read_only": false,
    "anonymous_user_id": 65534,
    "anonymous_group_id": 65534,
    "uuid": "4edbd055-7ec6-4a3f-9b80-cde5d6f0d55d",
    "nfs_share": 1
  },
  {
    "path": "/mmfs1/data/Test_Space",
    "name": "test2",
    "fsid": 55102
  },
  {
    "id": 3,
    "uuid": "67aedd4b-60ee-462d-8673-0d8f662fae7b",
    "space": 1,
    "clients": [
      {
        "id": 2,
        "hosts": "string",
        "force_root_user_id": null,
        "force_all_user_id": true,
        "asynchronous": true,
        "write_delay": true,
        "insecure_ports": true,
        "subtree_check": true,
        "advanced_settings": {},
        "read_only": true,
        "anonymous_user_id": 2147483647,
        "anonymous_group_id": 2147483647,
        "uuid": "28a181ef-2c56-4e03-b64d-49f5082fda4a",
        "nfs_share": 3
      }
    ],
    "path": "/mmfs1/data/API_Example",
    "name": "test5",
    "fsid": 65535
  }
]

```

## Response Fields

Field	Description
id	The unique identifier for the NFS share.
uuid	A unique identifier for the NFS share.

Field	Description
space	The storage pool associated with this NFS share. Corresponds to the space identifier.
clients	A list of client configurations (who can access the share). Each includes access settings.
path	The file system path for the NFS share (e.g., /mmfs1/data/Test_Space).
name	The name of the NFS share.
fsid	The file system identifier (FSID) representing the file system for this share.

## POST /shares/nfs/

### Description

This request is used to create a new **NFS** share. The share can be accessed remotely by clients that support the NFS protocol.

### Example Request

```
curl -X 'POST' \
  'http://your-hub-address:8000/api/shares/nfs/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -H 'Content-Type: application/json' \
  -d '{
    "path": "/mmfs1",
    "name": "Test1",
    "space": 1,
    "clients": [
      {
        "hosts": "*",
        "read_only": false
      }
    ]
  }'
```

### Request Body Fields

#### NFS Share Configuration Fields

Field	Type	Description
path	string	Directory path of the NFS share (e.g., /mmfs1).
name	string	Name of the NFS share (e.g., "Test1").
space	integer	Space ID where the share is created (system managed).
clients[]	object	List of client configurations defining access permissions.
hosts	string	Hosts that can access the share (e.g., * for all hosts).
read_only	boolean	If true, makes the share read-only for clients (default: false)

#### Optional Fields

Field	Type	Description
force_root_user_id	boolean	If true, map requests from uid/gid 0 to the anonymous uid/gid.
force_all_user_id	boolean	If true, maps all users to a specific user ID when accessing the share.
asynchronous	boolean	If true, enables async writes (faster but risks data loss on failure).
write_delay	boolean	If true, enables write delay to enhance performance.
insecure_ports	boolean	If true, allows access from insecure (non-privileged) ports.
subtree_check	boolean	If true, enables subtree integrity checks when moving/renaming files.
advanced_settings	object	Placeholder for advanced or custom configurations.
anonymous_user_id	integer	User ID for anonymous access (e.g., 65534 for "nobody").
anonymous_group_id	integer	Group ID for anonymous access (e.g., 65534 for "nobody").
uuid	string	UUID of the client configuration (system generated).
nfs_share	integer	ID of the NFS share associated with this client config (auto-assigned).

## Successful Response

**HTTP Status Code:** 201 CREATED

**Content-Type:** application/json

## Example Response

```
{
  "id": 5,
  "uuid": "3eae699e-c148-4179-ac36-b94a4d5f4dc0",
  "space": 1,
  "clients": [
    {
      "id": 4,
      "hosts": "*",
      "force_root_user_id": null,
      "force_all_user_id": null,
      "asynchronous": null,
      "write_delay": null,
      "insecure_ports": null,
      "subtree_check": null,
      "advanced_settings": null,
      "read_only": false,
      "anonymous_user_id": null,
      "anonymous_group_id": null,
    }
  ]
}
```

```

    "uuid": "948bed6b-a87c-4b2d-8d38-3fd88ee5599a",
    "nfs_share": 5
  }
],
"path": "/mmfs1",
"name": "Test1",
"fsid": 19904
}

```

## Response Fields

Field	Type	Description
id	integer	The unique identifier for the newly created NFS share.
uuid	string	The UUID of the NFS share.
space	integer	The space (ID) where the share was created.
clients	array	List of client settings for the share, including host and permission info.
clients[]	object	Client-specific settings. Each includes <code>id</code> , <code>hosts</code> , <code>read_only</code> , etc.
path	string	The path of the directory being shared (e.g., <code>/mmfs1</code> ).
name	string	The name of the share (e.g., <code>"Test1"</code> ).
fsid	integer	The filesystem ID that represents the share's filesystem.

GET /shares/nfs/{id}/

## Description

This endpoint retrieves detailed information about a specific NFS share, identified by its `id`. The data returned includes the NFS share's properties such as the share's path, name, associated space, and client configurations.

## Request Parameters

Name	Description
id	<b>Required.</b> The unique integer identifier of the NFS share. Used as a path parameter in API requests.

## Example Request

```

curl -X 'GET' \
  'http://your-hub-address:8000/api/shares/nfs/1/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'

```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```

{
  "id": 1,
  "uuid": "a4255625-e9d9-4a72-817a-719cfd69d73e",
  "space": 2,
  "clients": [
    {
      "id": 1,
      "hosts": "*",
      "force_root_user_id": false,
      "force_all_user_id": false,
      "asynchronous": false,
      "write_delay": true,
      "insecure_ports": false,
      "subtree_check": true,
      "advanced_settings": null,
      "read_only": false,
      "anonymous_user_id": 65534,
      "anonymous_group_id": 65534,
      "uuid": "4edbd055-7ec6-4a3f-9b80-cde5d6f0d55d",
      "nfs_share": 1
    }
  ],
  "path": "/mmfs1/data/Test_Space",
  "name": "test2",
  "fsid": 55102
}

```

## Response Fields

Refer to the response fields under `GET/Shares/NFS/`.

`GET /shares/samba/`

## Description

This endpoint retrieves a **list of all Samba shares** available in the system, providing details like share name, access settings, and visibility.

**Request Parameters** : No parameters required for this request.

## Example Request

```

curl -X 'GET' \
  'http://your-hub-address:8000/api/shares/samba/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'

```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
[
  {
    "id": 1,
    "path": "/mmfs1",
    "uuid": "1406dc83-124c-4028-8b9d-8a0ef8c3b375",
    "hosts_allow": [],
    "hosts_deny": [],
    "admin_users": [],
    "allowed_users": [],
    "name": "Test1",
    "read_only": false,
    "visible": true,
    "create_mask": null,
    "directory_mask": null,
    "advanced_settings": {},
    "multi_thread_reads": true,
    "multi_thread_writes": true,
    "root_share_locking": true,
    "hsm_support": true,
    "guest_ok": false,
    "force_create_mode": null,
    "force_directory_mode": null,
    "space": 1
  },
  ////////////////////////////////////// - Sites info
]
```

## Response Fields

Field	Description
id	A unique identifier for the samba share.
path	The path to the shared directory in the file system (e.g., /mmfs1).
uuid	A universally unique identifier (UUID) for the samba share.
hosts_allow	List of allowed client hosts for accessing the share. Empty if no specific hosts are allowed.
hosts_deny	List of denied client hosts for accessing the share. Empty if no specific hosts are denied.
admin_users	List of users with administrative access to the share.
allowed_users	List of users permitted to access the share.
name	The name of the samba share (e.g., Test1).
read_only	Boolean indicating if the share is read-only. true means read-only; users can only view or read data but cannot modify it.
visible	Boolean indicating if the share is visible to clients. - true: Clients can see and browse the share. - false: Clients cannot see the share during normal browsing, but access is still possible if the path is known.

Field	Description
<code>create_mask</code>	Permissions mask for creating new files in the share.
<code>directory_mask</code>	Permissions mask for directories in the share.
<code>advanced_settings</code>	Advanced settings for the samba share (if any). Can be an empty object if no advanced settings exist.
<code>multi_thread_reads</code>	Boolean indicating whether multi-threaded reads are enabled.
<code>multi_thread_writes</code>	Boolean indicating whether multi-threaded writes are enabled.
<code>root_share_locking</code>	Boolean indicating if root share locking is enabled.
<code>hsm_support</code>	Boolean indicating if HSM (Hierarchical Storage Management) is supported.
<code>guest_ok</code>	Boolean indicating if guest access is allowed to the share.
<code>force_create_mode</code>	File creation mode enforced on the share, if any.
<code>force_directory_mode</code>	Directory creation mode enforced on the share, if any.
<code>space</code>	The storage space identifier associated with the share.

## POST /shares/samba/

### Description

The **POST /shares/samba/** endpoint is used to create a new Samba share on the server. You must send a request with details like the share's name, path, and visibility settings.

Additionally, you can specify which clients are allowed access to the share, along with specific permissions (read-only or full access).

### Example Request

```
curl -X POST \
  http://your-hub-address:8000/api/shares/samba/ \
  -H "accept: application/json" \
  -H "Authorization: Api-Key your-api-key" \
  -H "Content-Type: application/json" \
  -d '{
    "path": "/mmfs1",
    "name": "Test9",
    "space": 1,
    "read_only": true,
    "visible": true,
    "clients": [
      {
        "hosts": "*",
        "read_only": false
      }
    ]
  }'
```

### Request Body Fields

Field	Description	Example
path	The directory path to be shared via Samba.	/mmfs1
name	The name of the Samba share.	Test9
space	The storage space ID that this share will be linked to.	1
read_only	If set to true, the share is read-only for all users.	true
visible	If set to true, the share is visible to clients.	true
clients	A list of client configurations specifying which clients can access the share.	[{"hosts": "*", "read_only": false}]

## Successful Response

**HTTP Status Code:** 201 CREATED

**Content-Type:** application/json

## Example Response

```
{
  "id": 2,
  "path": "/mmfs1",
  "uuid": "bb4f28ae-996d-4e68-b973-e9c36238cb43",
  "hosts_allow": [],
  "hosts_deny": [],
  "admin_users": [],
  "allowed_users": [],
  "name": "Test9",
  "read_only": true,
  "visible": true,
  "create_mask": null,
  "directory_mask": null,
  "advanced_settings": {},
  "multi_thread_reads": false,
  "multi_thread_writes": false,
  "root_share_locking": false,
  "hsm_support": false,
  "guest_ok": false,
  "sites": {},
  "force_create_mode": null,
  "force_directory_mode": null,
  "space": 1
}
```

## Response Fields

Refer to the response fields under GET/**Shares/Samba**.

GET /shares/samba/{id}/

## Description

This API endpoint retrieves the details of a specific Samba share based on its unique ID. It returns metadata, configuration settings, and site-specific share information.

## Request Parameters

Name	Type	In	Required	Description
id	integer	path	Yes	A unique integer value identifying the Samba share.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/shares/samba/3/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "id": 3,
  "path": "/mmfs1",
  "uuid": "f01ab517-6b70-4bd8-8d60-9f7e9b3a7a58",
  "hosts_allow": {},
  "hosts_deny": {},
  "admin_users": {},
  "allowed_users": {},
  "name": "Samba Test",
  "read_only": true,
  "visible": true,
  "create_mask": "null",
  "directory_mask": "null",
  "advanced_settings": {},
  "multi_thread_reads": true,
  "multi_thread_writes": true,
  "root_share_locking": true,
  "hsm_support": true,
  "guest_ok": true,
  "sites": {
    "siteA": {
      "name": "Samba Test",
      "path": "/mmfs1",
      "present": true,
      "visible": true,
      "guest_ok": true,
      "read_only": true,
      "hosts_deny": {},
      "admin_users": {},
    }
  }
}
```

```

    "create_mask": "null",
    "hosts_allow": {},
    "hsm_support": true,
    "allowed_users": {},
    "directory_mask": "null",
    "advanced_settings": {},
    "multi_thread_reads": true,
    "root_share_locking": true,
    "multi_thread_writes": true
  },
  "siteB": {
    "name": "Samba Test",
    "path": "/mmfs1",
    "present": true,
    "visible": true,
    "guest_ok": true,
    "read_only": true,
    "hosts_deny": {},
    "admin_users": {},
    "create_mask": "null",
    "hosts_allow": {},
    "hsm_support": true,
    "allowed_users": {},
    "directory_mask": "null",
    "advanced_settings": {},
    "multi_thread_reads": true,
    "root_share_locking": true,
    "multi_thread_writes": true
  }
},
"force_create_mode": null,
"force_directory_mode": null,
"space": 1
}

```

## Response Fields

Field	Type	Description
id	integer	Unique ID of the Samba share
path	string	Path of the share on the filesystem
uuid	string	Unique identifier (UUID) for the Samba share
hosts_allow	object	List of allowed hosts (empty if unrestricted)
hosts_deny	object	List of denied hosts (empty if unrestricted)
admin_users	object	Admin users for the share (empty if none)
allowed_users	object	Allowed users for the share (empty if unrestricted)
name	string	Human-readable name of the share
read_only	boolean	Indicates if the share is read-only
visible	boolean	Indicates if the share is visible
create_mask	string	File permission mask on file creation (often null or a string like "0777")

Field	Type	Description
directory_mask	string	Directory permission mask on directory creation
advanced_settings	object	Advanced Samba configuration settings (if any)
multi_thread_reads	boolean	Whether multi-threaded reads are enabled
multi_thread_writes	boolean	Whether multi-threaded writes are enabled
root_share_locking	boolean	Indicates if root share locking is enabled
hsm_support	boolean	Whether HSM (Hierarchical Storage Management) support is enabled
guest_ok	boolean	Whether guest access is allowed
sites	object	Site-specific configuration and presence info (keyed by site name)
force_create_mode	string	Optional enforced file create mode (null if not set)
force_directory_mode	string	Optional enforced directory create mode (null if not set)
space	integer	Logical identifier or grouping reference (may represent tenant/project)

PATCH /shares/samba/{id}/

## Description

This endpoint allows partial updates to an existing Samba share identified by its `id`. Only specific fields are allowed to be updated as listed below. Any attempt to update other fields may result in validation errors or be ignored by the backend.

## Request Parameters

Name	Type	In	Required	Description
id	integer	path	Yes	A unique integer value identifying the Samba share.

## Example Request

```
curl -X 'PATCH' \
  'http://your-hub-address:8000/api/shares/samba/3/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -H 'Content-Type: application/json' \
  -d '{
    "path": "/mmfs1",
    "name": "Samba Test Updated",
    "read_only": true,
    "visible": true,
    "advanced_settings": {},
    "multi_thread_reads": true,
    "multi_thread_writes": true,
    "root_share_locking": true,
    "hsm_support": true,
    "guest_ok": true,
```

```

"sites": {
  "siteA": {
    "name": "Samba Test Updated",
    "path": "/mmfs1",
    "present": true,
    "visible": true,
    "guest_ok": true,
    "read_only": true,
    "hosts_deny": {},
    "admin_users": {},
    "create_mask": "null",
    "hosts_allow": {},
    "hsm_support": true,
    "allowed_users": {},
    "directory_mask": "null",
    "advanced_settings": {},
    "multi_thread_reads": true,
    "root_share_locking": true,
    "multi_thread_writes": true
  }
},
"space": 1
}

```

## Request Body Fields

Field	Type	Description
hosts_allow	object	Hosts allowed to access the share
hosts_deny	object	Hosts denied from accessing the share
admin_users	object	Admin users with elevated privileges
allowed_users	object	Regular users allowed to access the share
name	string	Display name of the Samba share
read_only	boolean	If true, the share is read-only
visible	boolean	If true, the share is visible to users
create_mask	string	File creation permission mask (e.g., "0755")
directory_mask	string	Directory creation permission mask (e.g., "0755")
advanced_settings	object	Additional advanced Samba settings
multi_thread_reads	boolean	Enable multi-threaded read operations
multi_thread_writes	boolean	Enable multi-threaded write operations
root_share_locking	boolean	Enable locking at the root share level
hsm_support	boolean	Enable Hierarchical Storage Management (HSM) support
guest_ok	boolean	If true, guest access is allowed
force_create_mode	string	Enforced file create mode (e.g., "0755")
force_directory_mode	string	Enforced directory create mode (e.g., "0755")

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "id": 3,
  "path": "/mmfs1",
  "uuid": "f01ab517-6b70-4bd8-8d60-9f7e9b3a7a58",
  "hosts_allow": {},
  "hosts_deny": {},
  "admin_users": {},
  "allowed_users": {},
  "name": "Samba Test Updated",
  "read_only": true,
  "visible": true,
  "create_mask": "null",
  "directory_mask": "null",
  "advanced_settings": {},
  "multi_thread_reads": true,
  "multi_thread_writes": true,
  "root_share_locking": true,
  "hsm_support": true,
  "guest_ok": true,
  "on_sites": {
    "siteA": {
      "name": "Samba Test Updated",
      "path": "/mmfs1",
      "present": true,
      "visible": true,
      "guest_ok": true,
      "read_only": true,
      "hosts_deny": {},
      "admin_users": {},
      "create_mask": "null",
      "hosts_allow": {},
      "hsm_support": true,
      "allowed_users": {},
      "directory_mask": "null",
      "advanced_settings": {},
      "multi_thread_reads": true,
      "root_share_locking": true,
      "multi_thread_writes": true
    }
  },
  "force_create_mode": null,
  "force_directory_mode": null,
  "space": 1
}
```

### Response Fields

Same as request fields above.

## Description

This endpoint deletes an existing Samba share identified by its unique id. Once deleted, the Samba share and its configuration will be permanently removed from the system.

## Request Parameters

Name	Type	In	Required	Description
id	integer	path	Yes	A unique integer value identifying the Samba share.

## Example Request

```
curl -X 'DELETE' \
  'http://your-hub-address:8000/api/shares/samba/3/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Request Body Fields

This request does **not** require a request body. Only the id parameter in the URL path is needed.

## Successful Response

**Status Code:** 204 **No Content**

**Content Type:** application/json

The Samba share was successfully deleted. No content is returned in the response body.

## Spaces

A **Space** represents a logical storage area within the PixStor environment that spans one or more storage systems. Each Space is defined by key attributes such as name, location, size, data protection level, performance profile, and file share accessibility.

Spaces allow for centralized or site-specific access to storage resources and support both global and local views. Access to Spaces is governed by user roles and group permissions, enabling flexible control for administrators, users, and restricted users.

This endpoint allows interaction with Spaces for purposes such as retrieving details, listing available Spaces, or performing administrative actions depending on access level.

## Description

The `GET /spaces/` API endpoint retrieves a list of **space** objects from the file browser. Each space represents a storage area (mount point) that may span across multiple sites with metadata such as snapshot schedule, shares, nested shares, and more.

This endpoint supports **pagination** and provides detailed information per space including IDs, names, sizes, site associations, usage stats, snapshot configurations, and relationships.

## Request Parameters

Name	Type	Required	Description
<code>page</code>	integer	No	Page number of the result set. Defaults to 1 if not specified.
<code>page_size</code>	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/spaces/?page=1&page_size=1' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "count": 3,
  "next": null,
  "previous": null,
  "results": [
    {
      "url": "http://your-hub-address:8000/api/spaces/3/",
      "id": 3,
      "uuid": "6526e45d-5d5e-41c8-8c49-d68efdaab7d5",
      "name": "API_Example",
      "mountpoint": "/mmfs1/data/API_Example",
      "sites": [
        {
          "id": 1,
```

```

        "name": "siteA",
        "label": "siteA",
        "pool": "sas1",
        "usage": [0, 1099511627776]
    }
],
"created": "2025-07-04T14:18:07.227156Z",
"size": 1099511627776,
"snapshot_schedule": {
    "id": 2,
    "frequency": "1 00:00:00",
    "time": "00:13:00",
    "duration": "7 00:00:00",
    "space": 3
},
"on_sites": {
    "qatest-pdevan-testplugin-siteA": {
        "name": "API_Example",
        "size": 1099511627776,
        "present": true,
        "syncing": true
    }
},
"immutable": false,
"editable": true,
"color": [111, 64, 191],
"permission_mode": null,
"relationships": {
    "shares": [],
    "policies": [],
    "schedules": [
        {
            "id": 3,
            "name": "Test4",
            "discovery": "recursive"
        }
    ]
},
"nested_shares": {
    "samba": [],
    "nfs": []
},
"is_ready": true
}
]
}

```

## Response Fields

Field	Description
id	Internal unique ID of the space.
uuid	Universally unique identifier.
name	Name of the space.

Field	Description
mountpoint	Filesystem mount path of the space.
sites	List of site objects the space is linked to, each with pool and usage data.
created	Creation timestamp of the space.
size	Total size in bytes.
snapshot_schedule	Optional object defining backup/snapshot timing and frequency.
on_sites	Map of site names to presence, size, and sync status of the space.
immutable	Boolean. Whether the space can be modified.
editable	Boolean. Indicates whether the space settings can be modified. This depends on the permissions of the user making the request.
color	RGB color array for display purposes.
permission_mode	(Optional) Permission configuration.
relationships	Contains related shares, policies, and scan schedules.
nested_shares	Samba and NFS shares nested within the space.
is_ready	Boolean. Indicates if the space is ready to be used.

## POST /spaces/

### Description

The `POST /spaces/` endpoint allows you to create a new space in the system. When posting, you define metadata like: Name & mount path, Associated sites, Size, Snapshot schedule (optional), Visual settings like color, Permission handling.

### Request Parameters

Name	Location	Type	Required	Description
data	body	object	Yes	JSON object representing the space

### Example Request

```
curl -X 'POST' \
  'http://your-hub-address:8000/api/spaces/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -H 'Content-Type: application/json' \
  -d '{
    "name": "post_example",
    "mountpoint": "/mmfs2",
    "sites": [
      {
        "name": "siteA"
      }
    ],
    "size": 922337203685477,
```

```

"snapshot_schedule": {
  "frequency": "1 00:00:00",
  "time": "00:00:00",
  "duration": "7 00:00:00"
},
"color": [255, 255, 255],
"permission_mode": "chmodOnly"
}'

```

## Request Body Fields

Field	Type	Required	Description
name	string	Yes	Name of the space. Must be unique.
mountpoint	string	Yes	Must start with /. Filesystem path to mount.
sites	list	Yes	List of sites (by name) to associate the space with.
size	integer	Yes	Space size in bytes.
snapshot_schedule	object	Optional	Defines snapshot automation.
└ frequency	string	Optional	Format like "1 00:00:00" (e.g., every 1 day).
└ time	string	Optional	Time of day to run snapshots (e.g., "00:00:00").
└ duration	string	Optional	Duration to retain snapshots (e.g., "7 00:00:00").
color	array	Optional	RGB array for UI display (e.g., [255, 255, 255]).
permission_mode	string	Optional	Permission handling mode (e.g., "chmodOnly").

## Successful Response

**HTTP Status Code:** 201 CREATED

**Content-Type:** application/json

## Example Response

```

{
  "url": "http://your-hub-address:8000/api/spaces/7/",
  "id": 7,
  "uuid": "1d485bb0-4680-4a87-b64b-cb757bc82ccf",
  "name": "post_example",
  "mountpoint": "/mmfs2",
  "sites": [
    {
      "id": 1,
      "name": "siteA",
      "label": "siteA",
      "pool": null,
      "usage": null
    }
  ]
}

```

```

    }
  ],
  "created": "2025-08-11T16:03:18.974929Z",
  "size": 922337203685477,
  "snapshot_schedule": {
    "id": 3,
    "frequency": "1 00:00:00",
    "time": "00:00:00",
    "duration": "7 00:00:00",
    "space": 7
  },
  "on_sites": {},
  "immutable": false,
  "editable": true,
  "color": [255, 255, 255],
  "permission_mode": "chmodOnly",
  "relationships": {
    "shares": [],
    "policies": [],
    "schedules": []
  },
  "nested_shares": {
    "samba": [],
    "nfs": []
  },
  "is_ready": false
}

```

## Response Fields

Field	Description
<code>url</code>	API URL to access this space.
<code>id</code>	Unique ID of the space.
<code>uuid</code>	Universally unique ID.
<code>name</code>	Name of the created space.
<code>mountpoint</code>	Mount path starting with <code>/</code> .
<code>sites</code>	List of site objects associated with this space.
├ <code>id</code> , <code>name</code> , <code>label</code> , etc.	Site metadata.
<code>created</code>	Timestamp when the space was created.
<code>size</code>	Size of the space in bytes.
<code>snapshot_schedule</code>	Object showing snapshot config and assigned ID.
├ <code>id</code> , <code>frequency</code> , etc.	Snapshot metadata.
<code>on_sites</code>	Mapping of space presence/sync on each site (may be empty initially).
<code>immutable</code>	Indicates if space is read-only.
<code>editable</code>	Indicates if settings can be changed.
<code>color</code>	RGB color for UI (e.g., <code>[255, 255, 255]</code> ).
<code>permission_mode</code>	Permission mode applied (e.g., <code>"chmodOnly"</code> ).

Field	Description
relationships	Linked resources: shares, policies, schedules.
nested_shares	Nested NFS/Samba shares inside this space.
is_ready	Indicates if space is ready for use (typically <code>false</code> immediately after creation).

GET /spaces/{id}/

## Description

The **GET /spaces/{id}/** endpoint retrieves detailed information about a specific space, identified by its `ID`. It returns metadata about the space, such as: Mount path and name, Associated sites, Size and usage, Snapshot schedule, Synchronization status, Shares, policies, schedules, Readiness and permissions.

## Request Parameters

Name	Location	Type	Required	Description
<code>id</code>	path	string	Yes	The numeric ID of the space to retrieve (e.g., 3).

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/spaces/3/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "url": "http://your-hub-address:8000/api/spaces/3/",
  "id": 3,
  "uuid": "6526e45d-5d5e-41c8-8c49-d68efdaab7d5",
  "name": "API_Example",
  "mountpoint": "/mmfs1/data/API_Example",
  "sites": [
    {
      "id": 1,
      "name": "siteA",
      "label": "siteA",
      "pool": "sas1",
      "usage": [0, 1099511627776]
    }
  ],
  "created": "2025-07-04T14:18:07.227156Z",
```

```

"size": 1099511627776,
"snapshot_schedule": {
  "id": 2,
  "frequency": "1 00:00:00",
  "time": "00:13:00",
  "duration": "7 00:00:00",
  "space": 3
},
"on_sites": {
  "siteA": {
    "name": "API_Example",
    "size": 1099511627776,
    "present": true,
    "syncing": true
  }
},
"immutable": false,
"editable": true,
"color": [111, 64, 191],
"permission_mode": null,
"relationships": {
  "shares": [],
  "policies": [],
  "schedules": [
    {
      "id": 3,
      "name": "Test4",
      "discovery": "recursive"
    }
  ]
},
"nested_shares": {
  "samba": [],
  "nfs": []
},
"is_ready": true
}

```

## Response Fields

Field	Description
url	API endpoint for the specific space.
id	Space ID.
uuid	Universally unique identifier for the space.
name	Display name of the space.
mountpoint	Filesystem path to the space.
sites	List of site objects where this space exists.
└ id, name, label	Site metadata.
└ pool, usage	Pool name and disk usage in bytes ([used, total]).
created	Timestamp of creation (ISO 8601 format).
size	Total size allocated for the space.

Field	Description
snapshot_schedule	Snapshot configuration and associated space ID.
└ frequency, time, etc.	Snapshot timing and duration settings.
on_sites	Dictionary of site names with current sync status.
└ present, syncing	Booleans showing sync and availability.
immutable	true if read-only; otherwise false.
editable	Whether the space settings can be changed.
color	RGB color code used for UI display (e.g., [255, 255, 255]).
permission_mode	Permissions mode (can be null).
relationships	Nested relationships with other objects.
└ shares, policies	Empty lists or linked share/policy objects.
└ schedules	Discovery or snapshot schedules attached.
nested_shares	Samba and NFS shares created within this space, including shares from any spaces nested under it. For example, a top-level space like <code>mmfs1</code> will list all shares, as all other spaces are nested beneath it.
is_ready	true if the space is initialized and ready.

DELETE /spaces/{id}/

## Description

Deletes a specific Space identified by its ID. This permanently removes the space from the system.

## Request Parameters

Name	Description	Type	Required	Location
id	The unique identifier of the Space to delete	string	Yes	Path

## Example Request

```
curl -X 'DELETE' \
  'http://your-hub-address:8000/api/spaces/2/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 204 No Content

No response body is returned. The 204 status confirms successful deletion.

GET /spaces/{id}/files/

## Description

Retrieves the file or directory structure inside a specific space, identified by its ID. This includes metadata such as file size, type, path, access times, and status across different sites. Useful for browsing contents within the space mount point.

## Request Parameters

Name	Type	Required	Description
id	string	Yes	ID of the space to browse.
path	string	Yes	Path within the space to retrieve files from. Must start with /.
site	string	No	Specific site to target. If omitted, checks all available sites.
details	boolean	No	Whether to retrieve all details of child files. Default: false.
restricted	boolean	No	Whether to include restricted objects. Default: false.
check_available_sites	boolean	No	Whether to only check available sites. Default: true.
raise_exception	boolean	No	Whether to raise an exception if a timeout occurs. Default: true.
custom_refresh_period	integer	No	Custom DB cache invalidation time in seconds.
custom_timeout	integer	No	Custom timeout period for the operation in seconds.
type	string	No	Filter by item type (e.g., file, directory).
page	integer	No	Page number for pagination.
page_size	integer	No	Number of results per page. Can be 0 (no pagination), or between 20–100.

## Example Request

```
curl -X 'GET' \
  'http://10.201.2.224:8000/api/spaces/1/files/?
  path=%2Fmfs1%2Fdata&details=false&restricted=false&check_availab
  le_sites=true&raise_exception=true' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
[
  {
```

```

"url": "http://your-hub-address:8000/api/file/?
path=%2Fmmfs1%2Fdata&site=qatest-pdevan-testplugin-siteB",
"children": {
  "count": 2,
  "results": [
    {
      "site": "siteB",
      "path": "/mmfs1/data/sample_data",
      "name": "sample_data",
      "type": "directory",
      "size": 0,
      "status": "online"
    },
    {
      "site": "siteB",
      "path": "/mmfs1/data/sample_data.tgz",
      "name": "sample_data.tgz",
      "type": "file",
      "size": 0,
      "status": "online"
    }
  ]
},
"site": "siteB",
"path": "/mmfs1/data",
"name": "data",
"type": "directory",
"size": 512,
"status": "online"
},
{
  "url": "http://your-hub-address:8000/api/file/?
path=%2Fmmfs1%2Fdata&site=siteA",
"children": {
  "count": 5,
  "results": [
    {
      "site": "siteA",
      "path": "/mmfs1/data/API_Example",
      "name": "API_Example",
      "type": "directory",
      "size": 0,
      "status": "online"
    },
    {
      "site": "siteA",
      "path": "/mmfs1/data/sample_data.tgz",
      "name": "sample_data.tgz",
      "type": "file",
      "size": 36375247,
      "status": "online",
      "disk_usage": 184025088,
      "total_files": 94,
      "data_size": 178229989
    }
  ]
}

```

```

    }
  ],
  "site": "siteA",
  "path": "/mmfs1/data",
  "name": "data",
  "type": "directory",
  "size": 512,
  "status": "online"
}
]

```

## Response Fields

Field	Type	Description
url	string	Link to file/directory API for this site.
children	object	Contains count, pagination, and results for sub-items.
site	string	Site this structure refers to.
path	string	Full path to the current folder.
name	string	Folder name.
type	string	Either "file" or "directory".
size	integer	Size in bytes.
status	string	Status of the object, e.g., "online".
ctime / mtime / atime	datetime	Creation, modification, and access timestamps (nullable).
disk_usage	integer	Disk usage in bytes (optional; present for files/directories).
total_files	integer	Total number of files under the directory (if available).
data_size	integer	Actual data size in bytes.
deleted	boolean	Whether it's deleted (soft-deleted).

## Buckets

GET /api/buckets/

### Description

This API endpoint retrieves a list of *storage buckets* configured in the system. Buckets represent logical containers for storing data, such as files or backups, often linked to cloud storage services like Amazon S3.

You can paginate through the results using `page` and `page_size` parameters.

### Request Parameters

Name	Type	Required	Description
page	integer	No	Page number of the result set. Defaults to 1 if not specified.
page_size	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

### Example Request

```
curl -X GET \
  'http://your-hub-address:8000/api/buckets/?page=1&page_size=1' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <your-api-key>'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "count": 1,
  "next": null,
  "previous": null,
  "results": [
    {
      "id": 1,
      "access_key_id": "*****",
      "secret_access_key": "*****",
      "access_key": "",
      "credentials_json": {},
      "external_targets": [],
      "name": "bucketttest",
      "label": "BT 1",
      "storage_type": "AmazonS3",
      "container": "",
      "storage_account": "",
      "credentials_file": null,
      "region": "London",
      "endpoint": "s3.amazonaws.com",
      "port": 443,
      "scheme": "https",
      "migration_target_folder": "",
      "ssl_verify": true,
      "soft_deleting": false,
      "advanced_settings": {}
    }
  ]
}
```

## Response Fields

Field	Type	Description
<code>id</code>	integer	Unique identifier for the bucket.
<code>access_key_id</code>	string (masked)	The access key ID used to authenticate with the storage service (masked for security).
<code>secret_access_key</code>	string (masked)	The secret access key for authentication (masked for security).
<code>access_key</code>	string	Azure-specific access key information, if applicable. Used in place of <code>access_key_id</code> as required by Azure (unlike S3).
<code>credentials_json</code>	object	JSON object with detailed credential info.
<code>external_targets</code>	array	List of external targets linked to this bucket.
<code>name</code>	string	Name of the bucket.
<code>label</code>	string	User-friendly label or alias for the bucket.
<code>storage_type</code>	string	Type of storage service (e.g., "AmazonS3").
<code>container</code>	string	Container name or identifier (if applicable).
<code>storage_account</code>	string	Storage account identifier (if applicable).
<code>credentials_file</code>	string / null	Path to credentials file, if used.
<code>region</code>	string	Geographical region of the storage bucket (e.g., "London").
<code>endpoint</code>	string	URL endpoint for the storage service (e.g., "s3.amazonaws.com").
<code>port</code>	integer	Network port used to connect (typically 443 for HTTPS).
<code>scheme</code>	string	Protocol scheme, usually "https".
<code>migration_target_folder</code>	string	Folder path for migration targets, if applicable.
<code>ssl_verify</code>	boolean	Whether SSL certificate verification is enabled.
<code>advanced_settings</code>	object	Additional advanced settings specific to the bucket.

### POST /api/buckets/

#### Description

This API endpoint creates a new storage bucket configuration. Buckets represent storage containers in cloud services like Amazon S3, and this endpoint lets you add new ones by providing the necessary connection and authentication details.

#### Request Parameters

Name	Type	Required	Description
name	string	Yes	Name of the bucket. Must contain only lowercase letters, numbers, periods (.) and dashes (-).
label	string	No	User-friendly label or alias for the bucket.
storage_type	string	Yes	Type of storage service (e.g., "AmazonS3").
container	string	No	Container name or identifier, if applicable.
access_key_id	string	Yes	Access key ID used for authenticating with the storage service.
secret_access_key	string	Yes	Secret key paired with the access key ID for authentication.
access_key	string	No	Additional access key info, if any.
storage_account	string	No	Storage account identifier, if applicable.
credentials_json	object	No	JSON object containing detailed credential information.
credentials_file	string	No	Path to a credentials file, if used.
region	string	No	Geographical region of the bucket (e.g., "us-west-1").
endpoint	string	No	URL endpoint for the storage service (e.g., "s3.amazonaws.com").
port	integer	No	Network port for connecting (default usually 443 for HTTPS).
scheme	string	No	Protocol scheme, usually "https".
migration_target_folder	string	No	Folder path for migration targets, if applicable.
ssl_verify	boolean	No	Whether SSL certificate verification is enabled (default: true).
advanced_settings	object	No	Additional advanced settings specific to the bucket.

### Example Request

```
curl -X POST \
  'http://your-hub-address:8000/api/buckets/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <your-api-key>' \
  -H 'Content-Type: application/json' \
  -d '{
    "name": "bucket1",
    "label": "test 2",
    "storage_type": "AmazonS3",
    "container": "string",
    "access_key_id": "string",
```

```
"secret_access_key": "string",
"access_key": "string",
"storage_account": "string",
"credentials_json": {},
"credentials_file": "string",
"region": "string",
"endpoint": "string",
"port": 2147483647,
"scheme": "https",
"migration_target_folder": "string",
"ssl_verify": true,
"advanced_settings": {}
}'
```

## Successful Response

**HTTP Status Code:** 201 CREATED

**Content-Type:** application/json

## Example Response

```
{
  "id": 2,
  "access_key_id": "*****",
  "secret_access_key": "*****",
  "access_key": "*****",
  "credentials_json": {},
  "external_targets": [],
  "name": "bucket1",
  "label": "test 2",
  "storage_type": "AmazonS3",
  "container": "string",
  "storage_account": "string",
  "credentials_file": "string",
  "region": "string",
  "endpoint": "string",
  "port": 2147483647,
  "scheme": "https",
  "migration_target_folder": "string",
  "ssl_verify": true,
  "soft_deleting": false,
  "advanced_settings": {}
}
```

## Response Fields

Please refer to the request parameters.

GET /buckets/{id}/

## Description

To retrieve details of a specific bucket by its unique ID.

## Request Parameters

Name	Type	Required	Description
id	string	Yes	Unique identifier of the bucket.

## Example Request

```
curl -X GET \  
  'http://your-hub-address:8000/api/buckets/2/' \  
  -H 'accept: application/json' \  
  -H 'Authorization: Api-Key <your-api-key>'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{  
  "id": 2,  
  "access_key_id": "*****",  
  "secret_access_key": "*****",  
  "access_key": "*****",  
  "credentials_json": {},  
  "external_targets": [],  
  "name": "bucket1",  
  "label": "test 2",  
  "storage_type": "AmazonS3",  
  "container": "string",  
  "storage_account": "string",  
  "credentials_file": "string",  
  "region": "string",  
  "endpoint": "string",  
  "port": 2147483647,  
  "scheme": "https",  
  "migration_target_folder": "string",  
  "ssl_verify": true,  
  "soft_deleting": false,  
  "advanced_settings": {}  
}
```

## Response Fields

The fields returned in the response are explained at **POST /api/buckets/**. Please refer to those descriptions for more information about each field.

PATCH /buckets/{id}/

## Description

Update details of an existing bucket by its unique ID.

## Request Parameters

Name	Description
id (path)	The unique identifier of the bucket to update.
data (body)	JSON object containing fields to update for the bucket.

## Example Request

```
curl -X 'PATCH' \  
  'http://your-hub-address:8000/api/buckets/2/' \  
  -H 'accept: application/json' \  
  -H 'Authorization: Api-Key <your-api-key>' \  
  -H 'Content-Type: application/json' \  
  -d '{  
    "name": "bucket2",  
    "label": "string",  
    "storage_type": "AmazonS3",  
    "container": "string",  
    "access_key_id": "string",  
    "secret_access_key": "string",  
    "access_key": "string",  
    "storage_account": "string",  
    "credentials_json": {},  
    "credentials_file": "string",  
    "region": "string",  
    "endpoint": "string",  
    "port": 2147483647,  
    "scheme": "https",  
    "migration_target_folder": "string",  
    "ssl_verify": true,  
    "advanced_settings": {}  
  }'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{  
  "id": 2,  
  "access_key_id": "*****",  
  "secret_access_key": "*****",  
  "access_key": "*****",  
  "credentials_json": {},  
  "external_targets": [],  
  "name": "bucket2",  
  "label": "string",  
  "storage_type": "AmazonS3",  
  "container": "string",  
  "storage_account": "string",
```

```
"credentials_file": "string",
"region": "string",
"endpoint": "string",
"port": 2147483647,
"scheme": "https",
"migration_target_folder": "string",
"ssl_verify": true,
"soft_deleting": false,
"advanced_settings": {}
}
```

## Response Fields

The fields returned in the response are explained at **POST /api/buckets/**. Please refer to those descriptions for more information about each field.

DELETE /buckets/{id}/

## Description

Deletes a specified **bucket** by **ID**. This operation also propagates the deletion settings to external targets across all sites where the bucket is available.

It is used for complete removal of the bucket from the NGENEA Hub as well as from any connected external storage systems, based on the system's configured deletion policies.

## Request Parameters

Name	Type	Required	Description
id	string	Yes	The unique identifier of the bucket.

## Example Request

```
curl -X 'DELETE' \
'http://your-hub-address:8000/api/buckets/2/' \
-H 'accept: application/json' \
-H 'Authorization: Api-Key <api-key>'
```

## Successful Response

**HTTP Status Code:** 204 No Content

**Content-Type:** application/json

No content is returned in the response body upon successful deletion.

**Note:** This operation is **irreversible**, once deleted, the bucket and its settings are removed from all locations.

Ensure that the bucket is not in use before calling this endpoint.

Deletion is subject to permission and may fail if the bucket is protected or referenced by other resources.

## Storage Pools

A storage pool is a logical collection of physical storage resources, such as hard drives or SSDs, grouped together to simplify management and optimize the usage of available storage.

In systems like Pixstor (GPFS), storage pools allow administrators to treat multiple devices as a single unit, enabling better scalability, load balancing, and efficient data management. These pools are essential for organizing and managing file systems across distributed environments.

In Ngenea Hub, storage pool metadata, including capacity and health status, is regularly refreshed to ensure accurate tracking and monitoring. By using storage pools, administrators can easily manage space, track storage utilization, and ensure system performance remains optimal.

### GET /storagepools/

#### Description

The GET /storagepools/ API retrieves a list of storage pools within the Ngenea Hub system, showing details like the pool's capacity, usage, and the site it belongs to.

#### Request Parameters

Name	Type	Required	Description
page	integer	No	Page number of the result set. Defaults to 1 if not specified.
page_size	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

#### Example Request

```
curl -X 'GET' \  
  'http://your-hub-address:8000/api/storagepools/?page=1' \  
  -H 'accept: application/json' \  
  -H 'Authorization: Api-Key your-api-key'
```

#### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

#### Example Response

```

{
  "count": 2,
  "next": null,
  "previous": null,
  "results": [
    {
      "name": "sas1",
      "filesystem": "mmfs1",
      "site": 1,
      "capacity": 89120571392,
      "used_space": 3070230528,
      "free_space": 86050340864,
      "is_default": true
    },
    {
      "name": "sas1",
      "filesystem": "mmfs1",
      "site": 2,
      "capacity": 89120571392,
      "used_space": 2944401408,
      "free_space": 86176169984,
      "is_default": true
    }
  ]
}

```

## Response Fields

Field	Description	Example
count	The total number of storage pools available.	2
next	The URL for the next page of results, if available. <code>null</code> if no more pages.	null
previous	The URL for the previous page of results, if available. <code>null</code> if first page.	null
results	An array containing details about each storage pool.	

Each entry in `results` contains the following fields:

Field	Description	Example
name	The name of the storage pool.	"sas1"
filesystem	The file system associated with the pool.	"mmfs1"
site	The site ID where the storage pool is located.	1
capacity	The total capacity of the storage pool in bytes.	89120571392
used_space	The amount of space currently used in the pool (in bytes).	3070230528
free_space	The remaining space available in the pool (in bytes).	86050340864
is_default	A boolean indicating if this is the default storage pool.	true

## Description

This endpoint is used to retrieve detailed information about a specific storage pool identified by the 'ID' parameter. This is a more focused API call compared to the previous one, as it allows you to get data for a particular storage pool rather than a list of all storage pools.

## Request Parameters

Field	Description	Example
id	The unique identifier (ID) for the specific storage pool to retrieve.	2

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/storagepools/2/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "name": "sas1",
  "filesystem": "mmfs1",
  "site": 2,
  "capacity": 89120571392,
  "used_space": 2961178624,
  "free_space": 86159392768,
  "is_default": true
}
```

## Response Fields

Please refer to the response fields under **GET/storagepools/**.

**Note:** In the example response:

- The storage pool is named **“sas1”** and uses the **“mmfs1”** filesystem.
- It is located at **site 2**.
- The total **capacity** of the pool is approximately **89 GB**, with around **3 GB** used and **86 GB** remaining.
- The pool is marked as the **default** pool (true).

## Configurations

### GET /configurations/

#### Description

This endpoint retrieves the current runtime configuration settings of the **Ngenea Hub**.

These are dynamic configurations, they can be read (and potentially modified through other endpoints, explained below) without requiring a restart of the Hub. This contrasts with the static configuration values that are set during the initial Hub setup, which typically require a restart to take effect.

These configuration values control various operational aspects of the **Ngenea Hub**, such as search behavior, job lifecycle, timeouts, analytics, and user management settings.

#### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/configurations/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <api-key>'
```

#### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

#### Example Response

```
{
  "jobs_ttl": 90,
  "search_backend": "pixstor_search",
  "search_max_results": 200,
  "search_result_ttl": 7,
  "snapshot_create_delete_retry_timeout": 1000,
  "stat_timeout": 10,
  "stat_refresh_period": 30,
  "task_invalidation_timeout": 3600,
  "snapdiff_stream_timeout": 10,
  "force_local_managed_users": false,
  "custom_statistics_tasks": [],
  "analytics_timeout": 10,
  "maximum_external_results": 100,
  "node_health_last_heartbeat_interval": 120,
  "initial_uid": 100000,
  "initial_gid": 100000,
```

```

"schedules_enabled": true,
"salt_task_timeout": 60
}

```

## Response Fields

Field	Type	Description
jobs_ttl	integer	How long job details should be stored after job completion, in days.
search_backend	string	Backend to use when performing searches. Currently supported backends: analytics, pixstor_search.
search_max_results	integer	Maximum number of search results to fetch from the search backend, per site. Some backends may have a hard limit of 10,000 results.
search_result_ttl	integer	How long search results should be stored, in days.
snapshot_create_delete_retry_timeout	integer	Time in seconds after which workers will give up retrying snapshot create and delete operations. Set to 0 to disable retries.
stat_timeout	integer	How long to wait for results from the /api/file/ endpoint, in seconds.
stat_refresh_period	integer	How long a file's details will be retained as a cache within the file browser, in seconds.
task_invalidation_timeout	integer	Idle timeout (in minutes) when waiting for delete and move tasks to complete during snapdiff workflows.
snapdiff_stream_timeout	integer	Timeout in seconds for snapdiff stream operations.
force_local_managed_users	boolean	Allows local NAS users to be managed on AD-joined sites.
custom_statistics_tasks	array	A list of custom tasks that add their reported file count to the job total, regardless of when they're executed in a workflow.
analytics_timeout	integer	How long to wait for results from search operations when using the analytics backend, in seconds.
maximum_external_results	integer	Maximum number of items to retrieve per page from an external target scan.

Field	Type	Description
node_health_last_heartbeat_interval	integer	Maximum allowed time (in seconds) between the last recorded heartbeat and now for a node to be considered online.
initial_uid	integer	Minimum UID value for NAS users that can be configured.
initial_gid	integer	Minimum GID value for NAS groups that can be configured.
schedules_enabled	boolean	Whether automated tasks (Policies and Scheduled Workflows) are enabled.
salt_task_timeout	integer	How long to wait for settings tasks to return results, in seconds.

## PATCH /configurations/

### Description

Updates one or more runtime configuration settings on the NGENEA Hub.

These settings are applied without requiring a restart of the Hub. They influence the behavior of search, task execution, user management, and other key services.

This endpoint allows partial updates, only the fields provided in the request body are modified.

### Request Parameters

Name	Type	Required	Location	Description
data	object	Yes	Body	A JSON object with one or more configuration fields to update.

### Example Request

```
curl -X 'PATCH' \
  'http://your-hub-address:8000/api/configurations/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <REDACTED>' \
  -H 'Content-Type: application/json' \
  -d '{
    "jobs_ttl": 10,
    "search_backend": "analytics",
    "search_max_results": 100,
    "search_result_ttl": 5,
    "snapshot_create_delete_retry_timeout": 1000,
    "stat_timeout": 10,
    "stat_refresh_period": 10,
    "task_invalidation_timeout": 360,
    "snapdiff_stream_timeout": 2147483647,
    "force_local_managed_users": true,
```

```

"custom_statistics_tasks": [
  "dynamo.custom.get_all_pnfs"
],
"analytics_timeout": 2147483647,
"maximum_external_results": 2147483647,
"node_health_last_heartbeat_interval": 2147483647,
"initial_uid": 100000,
"initial_gid": 100000,
"schedules_enabled": true,
"salt_task_timeout": 0
}'

```

## Request Body Fields

Field	Value	Description
jobs_ttl	10	Time-to-live for job records (in days).
search_backend	"analytics"	The backend engine used for search operations.
search_max_results	100	Maximum number of results returned per search query.
search_result_ttl	5	Time-to-live (in days) for cached search results.
snapshot_create_delete_retry_timeout	1000	Timeout in milliseconds before retrying snapshot create/delete operations.
stat_timeout	10	Timeout in seconds for file stat operations.
stat_refresh_period	10	Refresh interval (in seconds) for filesystem statistics.

Field	Value	Description
<code>task_invalidation_timeout</code>	360	Time in seconds before a background task becomes invalid or stale.
<code>snapdiff_stream_timeout</code>	2147483647	Timeout in seconds for snapdiff stream operations (effectively no timeout).
<code>force_local_managed_users</code>	true	Enforces user management to be handled locally rather than externally.
<code>custom_statistics_tasks</code>	["dynamo.custom.get_all_pngs"]	A list of custom tasks for advanced statistics processing.
<code>analytics_timeout</code>	2147483647	Timeout in seconds for analytics operations (effectively no timeout).
<code>maximum_external_results</code>	2147483647	Max number of results returned by external search sources (effectively no limit).

Field	Value	Description
<code>node_health_last_heartbeat_interval</code>	2147483647	Interval in seconds for checking the last heartbeat of nodes (effectively no timeout).
<code>initial_uid</code>	100000	Starting UID for system-generated users.
<code>initial_gid</code>	100000	Starting GID for system-generated groups.
<code>schedules_enabled</code>	true	Whether scheduled tasks are enabled on the Hub.
<code>salt_task_timeout</code>	0	Timeout in seconds for tasks handled by SaltStack orchestration (0 means no timeout).

**Note:** All the data provided above is for example purposes only.

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "jobs_ttl": 10,
  "search_backend": "analytics",
  "search_max_results": 100,
  "search_result_ttl": 5,
  "snapshot_create_delete_retry_timeout": 1000,
  "stat_timeout": 10,
  "stat_refresh_period": 10,
  "task_invalidation_timeout": 360,
```

```

"snappdiff_stream_timeout": 2147483647,
"force_local_managed_users": true,
"custom_statistics_tasks": [
  "dynamo.custom.get_all_pngs"
],
"analytics_timeout": 2147483647,
"maximum_external_results": 2147483647,
"node_health_last_heartbeat_interval": 2147483647,
"initial_uid": 100000,
"initial_gid": 100000,
"schedules_enabled": true,
"salt_task_timeout": 0
}

```

## Response Fields

Please refer to the response fields under **GET /configurations/**.

## Features - Feature Flag

Feature flags are configuration settings used to enable or disable specific functionality within an application without requiring code changes or redeployments. They are especially useful for testing new or experimental features in a controlled manner.

In Ngenea Hub, feature flags allow administrators to preview features that may still be under development or evaluation.

*By default, all preview features are disabled to ensure system stability.* However, they can be selectively enabled for testing or early access. It's important to understand that enabling these features comes with the risk of encountering incomplete or unstable behavior.

To interact with feature flags, you can use the `ngclient` command-line tool or make requests via the Ngenea Hub REST API.

- To turn features on or off using the command line, see the section: [Via `ngclient` command-line tool](#)
- To see the results using Swagger, see below.

## GET /features/

### Description

This API endpoint is used to **list all available feature flags** in the system. You can see which features are currently available and whether they are enabled or disabled.

### Request Parameters

Name	Type	Required	Description
<code>page</code>	integer	No	Page number of the result set. Defaults to 1 if not specified.

Name	Type	Required	Description
page_size	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/features/?page=1' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <api-key>'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "count": 0,
  "next": null,
  "previous": null,
  "results": []
}
```

### Response Fields

Field	Type	Description
count	integer	Total number of available features.
next	string	URL to the next page of results, or null if this is the last page.
previous	string	URL to the previous page of results, or null if this is the first page.
results	array	List of feature objects (name, description, and enabled status). Empty if no features are available.

There are **no feature flags** currently available.

GET /features/{name}/

### Description

This endpoint is used to retrieve details of a specific feature flag by its name. For example, to check the status of a feature named `searchui`.

### Request Parameters

Name	Type	In	Description
name	string	path	(Required) The name of the feature to look up.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/features/searchui/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <api_key>'
```

## Response

**HTTP Status Code:** 404 Not Found

## Example Response

```
{
  "detail": "No Feature matches the given query."
}
```

For example, we used `searchui` in the request. When the feature flag is available, this will return its details such as name, description, and whether it is enabled.

PATCH /features/{name}/

## Description

This endpoint is used to **enable or disable a specific feature flag** by name. You send a request with `{"enabled": true}` to turn the feature **on**, or `{"enabled": false}` to turn it **off**.

As there are **no feature flags currently available**, we are using `searchui` as an **example only** in this request.

## Request Parameters

Name	Type	In	Description
name	string	path	(Required) The name of the feature flag to update.
data	object	body	(Required) JSON object with the <code>enabled</code> field set to <code>true</code> or <code>false</code> .

## Example Request

```
curl -X 'PATCH' \
  'http://your-hub-address:8000/api/features/searchui/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key *****' \
  -H 'Content-Type: application/json' \
  -d '{
    "enabled": true
  }'
```

## Successful Response

**HTTP Status Code:** 404 Not Found

## Example Response

```
{
  "detail": "No Feature matches the given query."
}
```

## Nodes

GET /nodes/

### Description

This API endpoint retrieves a list of **worker nodes** that are registered with the Ngenea Server. Each node represents a system running the ngenea-worker component. This endpoint supports pagination, and each node includes details such as its name, site, status (online/offline), and last heartbeat timestamp.

### Request Parameters

Name	Type	Required	Description
page	integer	No	Page number of the result set. Defaults to 1 if not specified.
page_size	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/nodes/?page=1' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <your-api-key>'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "count": 2,
  "next": null,
  "previous": null,
  "results": [
    {
      "url": "http://<server-ip>:<port>/api/nodes/1/",
      "id": 1,
      "name": "node-siteA-1",
      "site": "siteA",

```

```

    "online": true,
    "has_default_queue": true,
    "last_heartbeat": "2025-06-30T13:04:44.758754Z"
  },
  {
    "url": "http://<server-ip>:<port>/api/nodes/2/",
    "id": 2,
    "name": "node-siteB-1",
    "site": "siteB",
    "online": true,
    "has_default_queue": true,
    "last_heartbeat": "2025-06-30T13:04:44.845662Z"
  }
]
}

```

## Response Fields

Field	Type	Description
count	integer	Total number of nodes in the system.
next	string or null	URL to the next page of results, if any.
previous	string or null	URL to the previous page of results, if any.
results	array	List of node objects. Each object includes the following fields:
→ url	string	API URL for the specific node.
→ id	integer	Unique ID of the node.
→ name	string	Name of the node.
→ site	string	Site or cluster the node belongs to.
→ online	boolean	Indicates if the node is currently online.
→ has_default_queue	boolean	Indicates if the node has a default task queue assigned.
→ last_heartbeat	string (timestamp)	Timestamp of the last time the node checked in (ISO 8601 format).

GET /nodes/{id}/

## Description

This API endpoint retrieves detailed information for a specific worker node identified by its unique 'ID'. This is useful for monitoring or managing individual nodes.

## Request Parameters

Name	Type	Location	Required	Description
id	string	path	Yes	The unique identifier of the node you want to retrieve.

## Example Request

```

curl -X 'GET' \
  'http://your-hub-address:8000/api/nodes/2/' \

```

```
-H 'accept: application/json' \  
-H 'Authorization: Api-Key <your-api-key>'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{  
  "url": "http://<server-ip>:<port>/api/nodes/2/",  
  "id": 2,  
  "name": "node-siteB-1",  
  "site": "siteB",  
  "online": true,  
  "has_default_queue": true,  
  "last_heartbeat": "2025-06-30T13:05:00.863706Z"  
}
```

## Response Fields

Please refer to response fields under **GET /nodes/**.

DELETE /nodes/{id}/

## Description

**Deletes a specific worker node** from the Ngenea Server by its ID. Once deleted, the node will no longer be registered **until it sends another heartbeat**.

This can be useful if a node has been intentionally taken offline and you no longer want the hub to report on it, otherwise, the site health status may show as *not OK*.

## Request Parameters

Name	Type	Location	Required	Description
id	string	path	Yes	The unique identifier of the node you want to retrieve.

## Example Request

```
curl -X 'DELETE' \  
  'http://your-hub-address:8000/api/nodes/2/' \  
  -H 'accept: application/json' \  
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 204 No Content

Indicates the node was successfully deleted. There is no response body when deletion is successful.

## Settings Tasks

### What is a task ?

In Ngenea hub, a task is a defined unit of work that performs a specific operation on a set of files or paths.

It is typically implemented as a Python function or method that receives a standardized set of arguments, such as the job ID (`jobid`), a list of paths to process (`paths`), and optional keyword arguments.

The task processes the inputs and returns a structured payload that describes the result, including which files were processed, skipped, failed, or aborted.

Tasks follow a strict input and output format to ensure compatibility within the Ngenea ecosystem.

### Why is a Task Needed?

Tasks are essential because they encapsulate discrete pieces of logic that can be reused and composed into larger workflows. Each task is responsible for carrying out a single step in a larger data processing pipeline, such as migrating data, deleting files, analyzing metadata, or verifying integrity.

### How is a Task Related to a Job?

A job in Ngenea is a higher-level structure that coordinates and tracks the execution of a workflow, a series of tasks. When a job is initiated, it orchestrates the execution of its constituent tasks in a defined sequence. Each task within the job receives the job's ID, so all task results can be traced back to the originating job. The job manages the state, progress, and outcome of the entire workflow, while tasks handle the execution of individual steps.

In essence, tasks are the functional building blocks of jobs. A job cannot execute without tasks, and tasks are only meaningful when they are executed within the context of a job. Together, they form the backbone of Ngenea's data processing capabilities, allowing for flexible, trackable, and customizable workflows.

[Learn More.](#)

## GET /settingstasks/

### Description

This API endpoint retrieves a list of tasks associated with a specific job. It supports filtering by task state and task type, as well as pagination. It is typically used to monitor the status of tasks within a job.

### Request Parameters

Name	Type	Required	Description
job_id	integer	Yes	The ID of the job whose tasks should be retrieved. Must be $\geq 1$ .
page	integer	No	Page number in the paginated result set. Defaults to 1.
page_size	integer	No	Number of results per page. Range: 20-100. Use 0 to disable pagination.
tasktype	string (max 50)	No	Filters tasks by their type (e.g., dynamo.tasks.set_config_and_apply).
state	array[string]	No	Filters tasks by their state. Accepted values include SUCCESS, ERROR, PENDING, etc.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/settingstasks/?
  page=1&state=SUCCESS&job_id=84' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Request Body Fields

Field	Type	Description
count	integer	Total number of tasks matching the query.
next	string or null	URL to the next page of results, if any.
previous	string or null	URL to the previous page of results, if any.
results	array of objects	List of task objects. Each represents one task.
stats	object	Summary statistics about the returned tasks, broken down by state and tasktype.

## Task Object (Inside results)

Field	Type	Description
url	string	URL of the individual task resource.
id	integer	Unique ID of the task.
task_id	string	UUID representing the task instance.
tasktype	string	Type of the task (function name).
state	string	Current state of the task (e.g., SUCCESS).
job	integer	Job ID the task belongs to.
site	string	Site where the task ran.
started	string	Start time in UTC (ISO 8601 datetime format).

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "count": 1,
  "next": null,
  "previous": null,
  "results": [
    {
      "url": "http://your-hub-address:8000/api/settingstasks/78/",
      "id": 78,
      "task_id": "b8bc9471-ea1f-47ec-bea7-75230452e7c5",
      "tasktype": "dynamo.tasks.set_config_and_apply",
      "state": "SUCCESS",
      "job": 84,
      "site": "siteA",
      "started": "2025-06-25T12:00:02.108785Z"
    }
  ],
  "stats": {
    "state": {
      "SUCCESS": 1
    },
    "tasktype": {
      "dynamo.tasks.set_config_and_apply": 1
    }
  }
}
```

## Response Fields

Please refer to the request body fields.

```
GET /settingstasks/{id}/
```

## Description

This API endpoint retrieves detailed information about a specific task by its 'ID'.

## Request Parameters

Name	Type	Location	Required	Description
id	string	path	Yes	The unique identifier of the no

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/settingstasks/78/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "url": "http://your-hub-address:8000/api/settingstasks/78/",
  "id": 78,
  "task_id": "b8bc9471-ea1f-47ec-bea7-75230452e7c5",
  "tasktype": "dynamo.tasks.set_config_and_apply",
  "state": "SUCCESS",
  "started": "2025-06-25T12:00:02.108785Z",
  "completed": "2025-06-25T12:01:17.021510Z",
  "runtime": 74.912725,
  "job": 84,
  "site": "siteA",
  "request": {
    "values": {
      "ngeneahsm_targets:mmfs1-test2:Port": 443,
      "ngeneahsm_targets:mmfs1-test2:Bucket": "test2",
      "ngeneahsm_targets:mmfs1-test2:Region": "London",
      "ngeneahsm_targets:mmfs1-test2:Scheme": "https",
      "ngeneahsm_targets:mmfs1-test2:enabled": true,
      "ngeneahsm_targets:mmfs1-test2:Endpoint":
"s3.amazonaws.com",
      "ngeneahsm_targets:Test_Space-test2:Port": 443,
      "ngeneahsm_targets:mmfs1-test2:SSLVerify": true,
      "ngeneahsm_targets:Test_Space-test2:Bucket": "test2",
      "ngeneahsm_targets:Test_Space-test2:Region": "London",
      "ngeneahsm_targets:Test_Space-test2:Scheme": "https",
      "ngeneahsm_targets:mmfs1-test2:StorageType": "AmazonS3",
      "ngeneahsm_targets:Test_Space-test2:enabled": true,
      "ngeneahsm_targets:Test_Space-test2:Endpoint": "s3.amazonaws
.com",
      "ngeneahsm_targets:Test_Space-test2:SSLVerify": true,
      "ngeneahsm_targets:mmfs1-test2>DeleteOnRecall": false
      // ... more values ...
    },
    "timeout": 0,
    "encrypted": [
      "ngeneahsm_targets:mmfs1-test2:AccessKeyId",
      "ngeneahsm_targets:mmfs1-test2:SecretAccessKey",
      "ngeneahsm_targets:Test_Space-test2:AccessKeyId",
      "ngeneahsm_targets:Test_Target-buckettest:AccessKeyId",
      "ngeneahsm_targets:Test_Space-test2:SecretAccessKey",
      "ngeneahsm_targets:Test_Target-buckettest:SecretAccessKey"
    ],
    "multi_update": false
  },
  "results": {
    "value": {
      "ngeneahsm_targets:mmfs1-test2:Port": {
        "value": 443,
        "is_set": true,
        "schema_key": "ngeneahsm_targets:mmfs1-test2:Port"
      }
    }
  }
}
```

```

    },
    "ngeneahsm_targets:mmfs1-test2:Bucket": {
      "value": "test2",
      "is_set": true,
      "schema_key": "ngeneahsm_targets:mmfs1-test2:Bucket"
    },
    "ngeneahsm_targets:mmfs1-test2:Region": {
      "value": "London",
      "is_set": true,
      "schema_key": "ngeneahsm_targets:mmfs1-test2:Region"
    },
    "ngeneahsm_targets:mmfs1-test2:Scheme": {
      "value": "https",
      "is_set": true,
      "schema_key": "ngeneahsm_targets:mmfs1-test2:Scheme"
    },
    "ngeneahsm_targets:mmfs1-test2:enabled": {
      "value": true,
      "is_set": true,
      "schema_key": "ngeneahsm_targets:mmfs1-test2:enabled"
    },
    "ngeneahsm_targets:mmfs1-test2:Endpoint": {
      "value": "s3.amazonaws.com",
      "is_set": true,
      "schema_key": "ngeneahsm_targets:mmfs1-test2:Endpoint"
    }
  }
  // ... more results ...
},
"status": "succeeded",
"apply_output": {
  "siteA-1.pixstor": "succeeded"
}
},
"friendly_name": "Example Friendly Name"
}

```

**Note:** This API response represents the details of a completed task that configures and applies multiple Amazon S3 storage settings to a specific site in the system. The task executed successfully, confirming that the configuration parameters (including security credentials, bucket names, endpoints, and access settings) were applied without errors to the target site `siteA`. The response provides a detailed snapshot of both the requested settings and the resulting state, useful for auditing and verification purposes.

## Response Fields

Field	Type	Description
<code>url</code>	string	The API URL for this specific task resource.
<code>id</code>	integer	Unique identifier of the task instance (database ID).
<code>task_id</code>	string	UUID representing the specific task instance.
<code>state</code>	string	Current status of the task, e.g., "SUCCESS", "ERROR".

Field	Type	Description
started	string	Timestamp when the task started (ISO 8601 UTC datetime).
completed	string	Timestamp when the task completed (ISO 8601 UTC datetime).
runtime	float	Duration of the task in seconds (completion time - start time).
results	object	Detailed output of the task after completion, including values, status, and apply output summary.
friendly_name	string	A user-friendly descriptive name for the task (optional).

## Tags

A **Tag** is a case-sensitive, user-defined keyword used to categorize and organize assets. Tags help group related assets together, making it easier to manage and retrieve them within your environment.

Tags are a core part of the **Search** functionality, powered by **PixStor Search**. Once applied, Tags allow users to filter and find assets more efficiently using the Search interface. Tags are indexed asynchronously, so there may be a short delay before newly applied Tags are searchable.

While there is no dedicated endpoint to create or assign Tags directly, Tags can be retrieved using the GET /tags endpoint. To apply Tags to assets, use the PATCH /search/metadata endpoint to update asset metadata with the desired Tags.

For more details, refer to the [Search documentation](#) and **Search API reference** to learn how Tags integrate with your search workflows.

### GET /tags/

#### Description

This API endpoint allows clients to retrieve a list of tags. You can optionally filter the results by passing a substring to match tag names.

#### Request Parameters

Name	Type	Description	Required	Constraints
filter	string	Substring that returned tags must contain (query)	No	Minimum length: 1

#### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/tags/?filter=ex' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

#### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
[
  {
    "name": "example"
  },
  {
    "name": "three"
  },
  {
    "name": "two"
  },
  {
    "name": "one"
  }
]
```

### Response Fields

Field	Type	Description
name	string	Name of the tag

## Servers

Servers are integral components of a `site`, and they work together to handle different data operations, including file storage, retrieval, and data synchronization. They also facilitate network interactions and ensure that data is accessible to users or other systems within the network.

Servers are closely linked to `sites`, as they are the primary units within a site that enable the actual storage and management of data, with configurations being centrally managed through Ngenea Hub for optimal performance and monitoring.

**No servers will be listed unless the gateway role is enabled on the site's Pixstor system.**

To enable the gateway role, run: `pixstor-enablefeature gateway`

After enabling, it may take some time for CTDB servers to appear in the Ngenea Hub. To force detection and synchronization, you can run the following Salt commands:

```
salt ' saltutil.sync_grains
salt ' mine.update
ngclient sites refresh
```

These steps ensure the server data is refreshed and made available in Hub for further configuration of network interfaces.

## Description

The GET /servers/ endpoint retrieves a list of servers associated with configured sites. Each server entry includes its name, the associated site ID, and a list of network interfaces available on that server. This data is useful for viewing and managing the network configuration of servers within a site.

## Request Parameters

Name	Type	Required	Description
page	integer	No	Page number of the result set. Defaults to 1 if not specified.
page_size	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/servers/?page=1&page_size=20' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "count": 1,
  "next": null,
  "previous": null,
  "results": [
    {
      "name": "siteA-1.pixstor",
      "site": 1,
      "list_of_interfaces": [
        "ens5",
        "ens6",
        "dummy0",
        "br-7cec54d64949",
        "br-88ea4b8e41a3",
        "br-02ebdc5f687f",
        "br-d15e54973410",
        "br-07214fcfa2b6",
        "br-bed322cf088d"
      ]
    }
  ]
}
```

```
    ]
  }
]
}
```

## Response Fields

Field	Type	Description
count	integer	Total number of server records available
next	string / null	URL to next page of results, or null if no next page
previous	string / null	URL to previous page of results, or null if on first page
results	array of objects	List of server objects

Server Object (Inside results)

Field	Type	Description
name	string	Fully qualified name of the server
site	integer	ID of the site the server belongs to
list_of_interfaces	array of strings	Network interfaces available on the server

GET /servers/{id}/

## Description

Retrieves detailed information about a specific server by its unique ID, including the server's name, associated site, and list of network interfaces.

## Request Parameters

Name	Type	Location	Required	Description
id	string	path	Yes	The unique identifier of the node you want to retrieve.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/servers/1/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "name": "siteA-1.pixstor",
  "site": 1,
```

```

"list_of_interfaces": [
  "ens5",
  "ens6",
  "dummy0",
  "br-7cec54d64949",
  "br-88ea4b8e41a3",
  "br-02ebdc5f687f",
  "br-d15e54973410",
  "br-07214fcfa2b6",
  "br-bed322cf088d"
]
}

```

## Response Fields

Please refer to Response Fields under **GET /servers/**.

## API Endpoints - Workflows, Automation & Jobs

### Workflows

Workflows are thoroughly covered under [Custom Workflows](#), but here's a quick overview of the essential fields required to **POST** a workflow using Swagger:

Concept	Description
<b>Workflow</b>	A workflow is a set of rules and steps designed to automatically process files based on their current state or condition. It functions like a recipe, guiding the system on which files to examine, what conditions to check, and which actions to perform.
<b>Define a Workflow</b>	A workflow is defined by specifying a few key elements: a <b>Name</b> , which is a unique identifier with no spaces (e.g., <code>send_files</code> ); a <b>Label</b> , which is a user-friendly display name that can include spaces; visual <b>Icons</b> for UI representation; <b>Filter Rules</b> to determine which files should be acted upon; and <b>Fields</b> , which are inputs or parameters required when the workflow is executed. You can also optionally include discovery tasks that help locate files dynamically.
<b>Filter Rules</b>	Filter rules are conditions within a workflow that determine which files should be included for processing. These rules can match file states (such as new or modified) and file types (like files, directories, symlinks, or all). Filters can include or exclude files based on path patterns (for example, only processing <code>.txt</code> files). Special filter states include <code>default</code> , which catches unmatched files, and <code>all</code> , which applies the rule to all files regardless of state or type.
<b>Actions</b>	Actions are the specific tasks performed on files that match the filter rules. Each action has a task name, such as "migrate file" or "delete file", and can optionally include parameters like the target site or processing queue. These define what happens to each selected file.

Concept	Description
<b>Runtime Fields</b>	Runtime fields are additional pieces of information requested from the user when a workflow is executed. They allow the workflow to be dynamic and customizable at runtime instead of relying solely on hardcoded values. Examples include entering a target site, choosing from dropdowns, or checking boxes. Supported field types include free text, numbers, checkboxes, and dropdowns.
<b>Running Workflows</b>	Workflows can be executed in multiple ways. Users can select files or folders through a user interface and apply the desired workflow. Alternatively, workflows can be triggered through an API call by providing a JSON input that includes file paths, site, queue, workflow name, and any required fields. Additionally, discovery tasks can be used to automatically search for files inside selected folders, enabling recursive or change-based file detection.
<b>Discovery Tasks</b>	Discovery tasks are processes used to scan input paths and find files within them. For example, the <code>recursive</code> task identifies all files inside folders, while <code>snappdiff</code> detects files that have changed since the last scan, including created, updated, moved, or deleted files. These tasks help automate and refine the file selection process.
<b>Includes &amp; Excludes</b>	Include and exclude filters help refine which files a workflow will consider. “Include” patterns limit processing to only those files that match certain criteria, such as <code>*.txt</code> files. “Exclude” patterns prevent files from being processed, like ignoring <code>*.tmp</code> files. These filters can be applied globally, per individual filter rule, or for a specific workflow run.

## GET /workflows

### Description

This endpoint retrieves a list of workflows configured in the system. It supports pagination through query parameters and returns detailed information about each workflow, including their names, labels, discovery methods, filter rules, fields, and operational status.

### Request Parameters

Name	Type	Required	Description
<code>page</code>	integer	No	Page number of the result set. Defaults to 1 if not specified.
<code>page_size</code>	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

### Example Request

```
curl -X GET "http://your-hub-address:8000/api/workflows/?page=1" \  
-H "accept: application/json" \  
-H "Authorization: Api-Key <your-api-key>"
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{  
  "count": 16,  
  "next": null,  
  "previous": null,  
  "results": [  
    {  
      "id": 1,  
      "name": "migrate",  
      "label": "Dehydrate",  
      "icon_classes": [  
        "hurricane-01"  
      ],  
      "discovery": "recursive",  
      "enabled": true,  
      "visible": true,  
      "schedule_only": false,  
      "external_only": false,  
      "fields": [  
        {  
          "name": "lock_level",  
          "type": "choices",  
          "label": "Locking mode",  
          "choices": [  
            {  
              "label": "Per block (Implicit)",  
              "value": "implicit"  
            }  
          ],  
          "default": "implicit"  
        }  
      ],  
      "filter_rules": [  
        {  
          "type": "all",  
          "state": "all",  
          "action": [  
            {  
              "name": "dynamo.tasks.migrate",  
              "lock_level": "*lock_level"  
            }  
          ],  
          "description": "Migrates a file off from a given path"  
        }  
      ]  
    }  
  ]  
}
```

```

    }
  ],
  "discovery_options": {
    "allow_missing_paths": false
  },
  "preferred_queue": null
},
{
  "id": 2,
  "name": "premigrate",
  "label": "Pre-Stage",
  "icon_classes": [
    "check-done-01"
  ],
  "discovery": "recursive",
  "enabled": true,
  "visible": true,
  "schedule_only": false,
  "external_only": false,
  "fields": [
    {
      "name": "lock_level",
      "type": "choices",
      "label": "Locking mode",
      "choices": [
        {
          "label": "Per block (Implicit)",
          "value": "implicit"
        }
      ],
      "default": "implicit"
    }
  ],
  "filter_rules": [
    {
      "type": "all",
      "state": "all",
      "action": [
        {
          "name": "dynamo.tasks.migrate",
          "lock_level": "*lock_level",
          "premigrate": true
        }
      ],
      "description": "Premigrates a file on a given site"
    }
  ]
  ////////////// - more workflows
},
"discovery_options": {
  "allow_missing_paths": false
},
"preferred_queue": null
}
"discovery_options": {

```

```

    "allow_missing_paths": false
  },
  "preferred_queue": null
]
}

```

## Response Fields

Field	Description
<b>id</b>	Unique workflow identifier (e.g., 1).
<b>name</b>	Short, unique workflow name (e.g., "migrate").
<b>label</b>	User-friendly name shown in the UI (e.g., "Dehydrate").
<b>icon_classes</b>	List of CSS icon classes for UI display (e.g., ["hurricane-01"]).
<b>discovery</b>	Discovery method used to find files (e.g., "recursive").
<b>enabled</b>	Boolean indicating if the workflow is active (true or false).
<b>visible</b>	Boolean indicating if the workflow is visible in the UI (true or false).
<b>fields</b>	List of input fields required when running the workflow (e.g., lock_level choice field).
<b>filter_rules</b>	Rules defining file types, states, and actions performed (e.g., migrate task on all files).
<b>discovery_options</b>	Additional settings for discovery (e.g., allow_missing_paths).
<b>preferred_queue</b>	Optional preferred queue name for running tasks (null if not set).

## POST /workflows

### Description

This API endpoint creates a new workflow in the system. It allows you to define a workflow by specifying various parameters such as the name, label, discovery type, schedule, and other custom fields related to the workflow. This is useful for automating tasks across sites.

### Request Body Fields

Name	Description	Type	Required	Default Value
<b>name</b>	The internal name for the workflow.	string	Yes	N/A
<b>label</b>	The display label for the workflow.	string	Yes	N/A
<b>icon_classes</b>	List of FontAwesome icon classes associated with the workflow.	array	No	[]
<b>discovery</b>	The discovery method to be used for the workflow (e.g., "snapdiff").	string	Yes	N/A

Name	Description	Type	Required	Default Value
<b>enabled</b>	Whether the workflow is enabled.	boolean	Yes	true
<b>visible</b>	Whether the workflow is visible in the system.	boolean	Yes	true
<b>schedule_only</b>	Whether the workflow can only be scheduled.	boolean	Yes	false
<b>external_only</b>	Whether the workflow is only applicable to external targets.	boolean	Yes	false
<b>fields</b>	A list of custom fields to include in the workflow (e.g., target site, etc.).	array	No	[]
<b>filter_rules</b>	Filter rules that define the actions for the workflow.	array	No	[]
<b>discovery_options</b>	Additional options for discovery (currently empty by default).	object	No	{}
<b>preferred_queue</b>	The preferred queue to which the workflow should be assigned.	string	No	N/A

### Example Request

```
{
  "name": "transfer_files",
  "label": "Transfer files between sites",
  "icon_classes": [
    "fa fa-cloud",
    "fa fa-arrow-right"
  ],
  "discovery": "snapdiff",
  "enabled": true,
  "visible": true,
  "schedule_only": false,
  "external_only": false,
  "fields": [
    {
      "name": "target_site",
      "type": "enum[site]",
      "label": "Destination Site",
      "default": "london"
    }
  ],
  "filter_rules": [
    {
      "type": "all",
      "state": "all",
      "action": [
        {
```

```

        "name": "dynamo.tasks.migrate",
        "site": "*target_site"
    }
]
}
],
"discovery_options": {},
"preferred_queue": "highpriority"
}

```

## Successful Response

**HTTP Status Code:** 201 Created

**Content-Type:** application/json

## Example Response

```

{
  "id": 19,
  "name": "transfer_files",
  "label": "Transfer files between sites",
  "icon_classes": [
    "fa fa-cloud",
    "fa fa-arrow-right"
  ],
  "discovery": "snapdiff",
  "enabled": true,
  "visible": true,
  "schedule_only": false,
  "external_only": false,
  "fields": [
    {
      "name": "target_site",
      "type": "enum[site]",
      "label": "Destination Site",
      "default": "london"
    }
  ],
  "filter_rules": [
    {
      "type": "all",
      "state": "all",
      "action": [
        {
          "name": "dynamo.tasks.migrate",
          "site": "*target_site"
        }
      ]
    }
  ]
},
"discovery_options": {},
"preferred_queue": "highpriority"
}

```

## Response Fields

Please refer to the response fields under `GET/workflows`.

GET /workflows/{id}/

### Description

This API endpoint retrieves detailed information about a specific workflow using its unique ID. It provides details such as the workflow's name, label, fields, filter rules, and more. This is useful for viewing or reviewing the configurations of existing workflows.

### Request Parameters

Name	Description	Type	Required	Default Value
id	The unique ID of the workflow to be viewed.	string	Yes	N/A

### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/workflows/7/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <your-api-key>'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "id": 7,
  "name": "reverse_stub",
  "label": "Reverse Stub",
  "icon_classes": [],
  "discovery": null,
  "enabled": true,
  "visible": false,
  "schedule_only": false,
  "external_only": false,
  "fields": [
    {
      "name": "hydrate",
      "type": "bool",
      "label": "Hydrate files on site"
    },
    {
      "name": "overwrite",
```

```

    "type": "bool",
    "label": "Overwrite files on site"
  }
],
"filter_rules": [
  {
    "type": "all",
    "state": "all",
    "action": [
      {
        "name": "dynamo.tasks.reverse_stub",
        "hydrate": "*hydrate",
        "overwrite": "*overwrite"
      }
    ]
  }
],
"discovery_options": {},
"preferred_queue": null
}

```

## Response Fields

Please refer to the response fields under [GET/workflows](#).

PATCH /workflows/{id}/

## Description

This endpoint allows partial updates to an existing workflow by its ID. It is used to modify editable fields of the workflow such as label, visibility, discovery method, schedule settings, and other workflow-specific configuration details.

## Request Parameters

Parameter	Location	Type	Required	Description
<b>id</b>	path	string	Yes	The unique ID of the workflow to update.
<b>data</b>	body	object	Yes	JSON object containing updatable fields.

## Example Request

```

curl -X 'PATCH' \
  'http://your-hub-address:8000/api/workflows/1/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <your-api-key>' \
  -H 'Content-Type: application/json' \
  -d '{
    "label": "Dehydrate_updated",
    "icon_classes": [],
    "discovery": "recursive",
    "enabled": true,

```

```
"visible": true,  
"schedule_only": false  
'}
```

## Request Body Fields

Only the following fields are allowed for updates:

Field	Type	Description
<b>label</b>	string	User-friendly label for the workflow.
<b>icon_classes</b>	array	List of CSS icon classes associated with the workflow.
<b>discovery</b>	string	Discovery mode (e.g., "recursive").
<b>enabled</b>	boolean	Whether the workflow is enabled.
<b>visible</b>	boolean	Controls if the workflow is visible in the UI.
<b>schedule_only</b>	boolean	Whether this workflow is only used for scheduling.
<b>fields</b>	array	List of field definitions (e.g., user inputs).
<b>filter_rules</b>	array	Rules that define workflow behavior and actions.
<b>discovery_options</b>	object	Options related to discovery behavior.
<b>preferred_queue</b>	string/ null	Optional field to set the preferred task queue.

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{  
  "id": 1,  
  "name": "migrate",  
  "label": "Dehydrate_updated",  
  "icon_classes": [],  
  "discovery": "recursive",  
  "enabled": true,  
  "visible": true,  
  "schedule_only": false,  
  "fields": [  
    {  
      "name": "lock_level",  
      "type": "choices",  
      "label": "Locking mode",  
      "choices": [  
        {  
          "label": "Per block (Implicit)",  
          "value": "implicit"  
        }  
      ],  
      "default": "implicit"  
    }  
  ]  
}
```

```

    }
  ],
  "filter_rules": [
    {
      "type": "all",
      "state": "all",
      "action": [
        {
          "name": "dynamo.tasks.migrate",
          "lock_level": "*lock_level"
        }
      ],
      "description": "Migrates a file off from a given path"
    }
  ],
  "discovery_options": {
    "allow_missing_paths": false
  },
  "preferred_queue": null
}

```

## Response Fields

Please refer to the response fields under [GET/workflows](#).

**DELETE** /workflows/{id}/

## Description

This API endpoint deletes a workflow identified by its unique ID. The workflow will be permanently removed from the system, and the operation is irreversible. Use this endpoint to clean up workflows that are no longer needed.

## Request Parameters

Name	Description	Type	Required	Default Value
<b>id</b>	The unique ID of the workflow to be deleted.	string	Yes	N/A

## Successful Response

**HTTP Status Code:** 204 No Content

**Content-Type:** application/json

**Response Body:** No content is returned in the response body.

There are no fields returned in the body when the deletion is successful.

## Automated Schedules

GET /api/automatedschedules/

### Description

This API endpoint retrieves a list of automated schedules that are configured in the system. Each schedule defines when and where a specific policy or workflow job should automatically run.

Users can view schedules and policies under Automated Schedules.

### Request Parameters

Name	Type	Required	Description
page	integer	No	Page number of the result set. Defaults to 1 if not specified.
page_size	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

### Example Request

```
curl -X GET \
  'http://your-hub-address:8000/api/automatedschedules/?
  page=1&page_size=1' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <your-api-key>'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "count": 1,
  "next": null,
  "previous": null,
  "results": [
    {
      "name": "Test1",
      "schedule_type": "workflow",
      "enabled": true,
      "site_name": "siteB",
      "spaces": [
        {
          "id": 1,
          "name": "mmfs1"
        }
      ]
    }
  ]
}
```

```

    }
  ],
  "discovery_name": "Test1",
  "discovery_id": 1,
  "discovery_managed_paths": [
    "/mmfs1"
  ],
  "discovery_workflow": "Dehydrate",
  "minute": "0",
  "hour": "0",
  "day_of_week": "*",
  "day_of_month": "*",
  "month_of_year": "*"
}
]
}

```

## Response Fields

### Top-Level Pagination Fields

Field	Type	Description
count	integer	Total number of schedules available.
next	string	URL for the next page of results, or null.
previous	string	URL for the previous page of results, or null.
results	array	List of schedule objects for the current page.

### Inside results[ ]

Field	Description
name	Name of the schedule
schedule_type	Type of schedule (e.g., workflow)
enabled	Indicates if the schedule is active (true) or not (false)
site_name	Name of the site where the schedule is applied
spaces	List of space objects with id and name
discovery_name	Name of the discovery job associated with the schedule
discovery_id	ID of the associated discovery job
discovery_managed_paths	List of paths being managed by the discovery job
discovery_workflow	Name of the workflow triggered by the schedule
minute	Minute value in cron format
hour	Hour value in cron format
day_of_week	Day of the week in cron format (* means every day)
day_of_month	Day of the month in cron format (* means every day)
month_of_year	Month of the year in cron format (* means every month)

## Tasks

Custom tasks in Ngenea Worker plugins allow users to define their own task logic to be used in custom workflows, alongside predefined tasks. These tasks must follow a specific structure, starting with accepting standard keyword arguments such as `jobid`, which identifies the job the task belongs to, and `paths`, which is a list of file or folder paths to be processed. Additional parameters can be included as needed, and tasks should also support arbitrary keyword arguments via `**kwargs`.

Tasks are required to return a structured payload containing at least the job ID, the list of resulting paths, and a `status` dictionary that includes metadata about the task execution, such as the task name, the original input paths, the number of input files, a summary of file statuses (e.g., processed, skipped, failed), detailed results for each file, and a timestamp of when the task started. To simplify this, developers can use helper classes like `FileActionStatus` to build the payload, or `StreamTaskResults` for streaming scenarios.

[Read More ..](#)

## GET/ tasks/

### Description

This endpoint retrieves information about tasks in the system. You can filter the results based on various parameters, such as task state, job ID, task type, or task ID. *If no state is specified*, the API returns *tasks in all states* by default. This endpoint is useful for monitoring and managing tasks based on their execution status, such as SUCCESS, FAILURE, STARTED and more.

### Request Parameters

Name	Type	Description
page	integer	Page number within the paginated results. Defaults to the first page if not specified.
page_size	integer	Number of tasks per page (20–100). Use 0 to disable pagination and retrieve all results.
tasktype	string	Filter by task type. Max length: 50 characters.
task_id	string	Filter by specific task ID. Max length: 100 characters.
state	array[string]	Filter by one or more task states (SUCCESS, FAILURE, STARTED, etc.).
job_id	integer	Filter by the job ID associated with the task. Minimum value: 1.
internal	string	Set to “false” to exclude internal system tasks.

### Example Request

```
curl -X 'GET' \  
  'http://your-hub-address:8000/api/tasks/?  
state=SUCCESS&internal=false' \  

```

```
-H 'accept: application/json' \  
-H 'Authorization: Api-Key your-api-key'
```

This example fetches all tasks with the `SUCCESS` state and excludes internal system tasks.

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{  
  "count": 242,  
  "next": "http://your-hub-address:8000/api/tasks/?  
internal=false&page=2&state=SUCCESS",  
  "previous": null,  
  "results": [  
    {  
      "url": "http://your-hub-address:8000/api/tasks/2164/",  
      "id": 2164,  
      "task_id": "f856aada-8d80-412d-af1d-38163937c2a7",  
      "tasktype": "dynamo.tasks.recursive_navigate",  
      "state": "SUCCESS",  
      "job": 191,  
      "site": "siteB",  
      "started": "2025-08-21T00:00:01.702996Z"  
    },  
  ],  
  "stats": {  
    "state": {},  
    "tasktype": {}  
  }  
}
```

**Note:** Only a single result is shown above for example purposes.

## Response Fields

Field	Type	Description
count	integer	Total number of matching tasks.
next	string or null	URL to the next page of results, if any.
previous	string or null	URL to the previous page of results, if any.
results	array[object]	List of task objects. Each task includes:

Task Object Fields (inside `results`):

Field	Type	Description
→ url	string	API endpoint for the specific task.
→ id	integer	Internal task ID.

Field	Type	Description
→ task_id	string	UUID of the task (Celery task ID).
→ tasktype	string	Type of the task (e.g., dynamo.tasks.recursive_navigate).
→ state	string	Current state of the task (SUCCESS, FAILURE, etc.).
→ job	integer	Associated job ID.
→ site	string	Site where the task ran.
→ started	datetime	When the task started (ISO 8601 format).
stats	object	Aggregated stats (empty in the example).

GET /tasks/{id}/

## Description

This endpoint retrieves detailed information about a specific task by its unique ID. It returns task metadata such as the task type, state, start and completion timestamps, associated job, site, runtime, and a comprehensive result breakdown. This endpoint is useful for analyzing individual task execution, including its input/output paths, file and directory counts, and any errors or skipped operations.

## Request Parameters

Name	Type	Location	Required	Description
id	string	path	Yes	The unique identifier of the node you want to retrieve.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/tasks/2164/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "url": "http://your-hub-address:8000/api/tasks/2164/",
  "id": 2164,
  "task_id": "f856aada-8d80-412d-af1d-38163937c2a7",
  "tasktype": "dynamo.tasks.recursive_navigate",
  "state": "SUCCESS",
  "started": "2025-08-21T00:00:01.702996Z",
  "completed": "2025-08-21T00:00:02.487565Z",
  "runtime": 0.784569,
  "job": 191,
  "site": "siteB",
```

```

"paths": "http://your-hub-address:8000/api/tasks/2164/files/",
"result": {
  "log": [],
  "skip": false,
  "jobid": 191,
  "paths": ["examples will be shown"],
  "queue": "siteB",
  "status": {
    "task": "dynamo.tasks.recursive_navigate",
    "details": {
      "dirs": [ "examples will be shown" ],
      "files": [ "examples will be shown" ],
      "aborted": [],
      "failures": [],
      "symlinks": [],
      "empty_dirs": [ "examples will be shown" ]
    },
    "started": "2025-08-21T00:00:01.231687+00:00",
    "summary": {
      "dirs": 84,
      "files": 26,
      "aborted": 0,
      "failures": 0,
      "symlinks": 0,
      "empty_dirs": 260
    },
    "input_paths": [ "examples will be shown" ],
    "input_total": 12,
    "has_dynamic_children": true
  }
},
"friendly_name": null
}

```

## Response Fields

Field	Type	Description
url	string	API URL for the task object.
id	integer	Internal task ID.
task_id	string	UUID representing the Celery task.
tasktype	string	Type of task executed.
state	string	Status of the task (e.g., SUCCESS, FAILURE, etc.).
started	string	ISO timestamp for when the task started.
completed	string	ISO timestamp for when the task completed.
runtime	float	Execution duration in seconds.
job	integer	Associated job ID.
site	string	Site or environment where the task was executed.
paths	string	Link to fetch associated file paths.
result	object	Detailed output of the task including logs, paths, summary statistics, and directory/file breakdowns.

Field	Type	Description
friendly_name	string or null	Optional user-defined name for the task.

GET /tasks/{id}/files/

## Description

Retrieves the list of files and directories associated with a specific task. Supports optional query parameters to *filter results by status, type, and site*. If no filters are provided, all available entries are returned (subject to pagination).

## Request Parameters

Name	Type	Location	Required	Description
id	string	path	Yes	The unique identifier of the node you want to retrieve.

## Query Parameters

Name	Type	Required	Description
page	integer	No	Page number for pagination (default: 1).
page_size	integer	No	Number of results per page. Range: 20-1000. Use 0 to disable pagination and return all.
state	string	No	Filter entries by their processing state (e.g., processed, skipped).
type	string	No	Filter by file type (if applicable).
site	string	No	Filter by site (if multiple sites are in use).

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/tasks/2164/files/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "count": 3,
  "next": null,
  "previous": null,
  "results": [
    {
      "path": "/mmfs1/data/Project1/goodbye",
```

```

    "state": "processed",
    "type": null,
    "size": null
  },
  {
    "path": "/mmfs1/data/Project1/foo",
    "state": "processed",
    "type": null,
    "size": null
  },
  {
    "path": "/mmfs1/data/Project1",
    "state": "skipped",
    "type": null,
    "size": null
  }
]
}

```

## Response Fields

Field	Type	Description
count	integer	Total number of matching entries.
next	string or null	URL to next page (if paginated).
previous	string or null	URL to previous page (if paginated).
results	array	List of file/directory entries.

Each item in `results` contains:

Field	Type	Description
path	string	Absolute path of the file or directory.
state	string	Processing status (e.g., processed, skipped).
type	string or null	Type of the entry (e.g., file, directory).
size	integer or null	Size in bytes (if applicable).

## Queues

Ngenea hub uses `job queues` to organize and manage task execution efficiently. Each queue acts as a processing line where jobs wait for available worker threads to run them.

### Why Use Custom Queues ?

- Prioritize important tasks (e.g., high-priority jobs).
- Isolate specific types of jobs (e.g., Transparent Recall).
- Control how many jobs run simultaneously using threads.

### Key Features

- `Default Queue`: Always available. Runs all task types, including interactive and settings.

- **Custom Queues:** User-defined. Only support worker, discovery, and custom functions.
- **Per-Function Thread Limits:** Fine-tune how many threads each function uses in a queue.
- **Disable Functions:** Prevent specific task types from running in a queue.
- **Automatic Discovery:** Queues are automatically started/stopped based on config changes.

**Configuration File:** Queues are defined in `/etc/ngenea/ngenea-worker.conf`.

**Memory Notes:** Each thread uses ~40MB of RAM idle, and up to 125MB depending on functions configured. More threads = more memory use.

**Removing Queues:** Removing a queue from config stops it. It must be manually de-registered using: `ngeneahubctl manage remove_queue <site> <queue>`. To re-use a name, restart the worker and use `ngeneahubctl manage remove_queue <site> <queue> --offline-only`.

[Read More..](#)

GET /queues/

## Description

Retrieves a list of active job queues in the system, grouped by site. Each queue includes details such as the site it belongs to, nodes handling the queue, its name, and the timestamp of its last heartbeat (i.e., when it was last active).

This is useful for monitoring which queues are currently running across different sites in your cluster.

## Request Parameters

Name	Type	Required	Description
<code>page</code>	integer	No	Page number of the result set. Defaults to 1 if not specified.
<code>page_size</code>	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/queues/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "count": 2,
  "next": null,
  "previous": null,
  "results": [
    {
      "id": 1,
      "site": {
        "id": 1,
        "name": "siteA",
        "label": "siteA"
      },
      "nodes": [
        {
          "id": 1,
          "name": "siteA-1"
        }
      ],
      "name": "default",
      "label": "default",
      "last_heartbeat": "2025-09-02T14:23:27.048619Z"
    },
    {
      "id": 2,
      "site": {
        "id": 2,
        "name": "siteB",
        "label": "siteB"
      },
      "nodes": [
        {
          "id": 2,
          "name": "sitetest"
        },
        {
          "id": 3,
          "name": "siteB-1"
        }
      ],
      "name": "default",
      "label": "default",
      "last_heartbeat": "2025-09-02T14:23:28.171405Z"
    }
  ]
}
```

## Response Fields

Field	Type	Description
count	integer	Total number of queues.
next	string   null	URL to the next page of results, if paginated.
previous	string   null	URL to the previous page of results, if paginated.
results	array	List of queue objects.

Inside `results` array:

Field	Type	Description
<code>results[].id</code>	integer	ID of the queue.
<code>results[].site</code>	object	Site where the queue is running.

Inside `results[].site`:

Field	Type	Description
<code>site.id</code>	integer	ID of the site.
<code>site.name</code>	string	Name of the site.
<code>site.label</code>	string	Display label of site.
<code>results[].nodes</code>	array	Nodes running this queue.

Inside `results[].nodes`:

Field	Type	Description
<code>nodes[].id</code>	integer	ID of the node.
<code>nodes[].name</code>	string	Name of the node.
<code>results[].name</code>	string	Name of the queue (e.g., default).
<code>results[].label</code>	string	Display label of the queue.
<code>last_heartbeat</code>	string (ISO 8601)	Timestamp of the last queue activity (heartbeat) in UTC.

GET `/queues/{id}/`

## Description

Fetch detailed information about a specific job queue using its unique ID. This includes: the site it belongs to, the nodes it's running on, queue name and label, the last time it sent a heartbeat (used to check if the queue is alive).

Useful for queue monitoring, debugging, or administrative checks on a particular queue.

## Request Parameters

Name	Type	Location	Required	Description
<code>id</code>	string	path	Yes	The unique identifier of the node you want to retrieve.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/queues/2/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <your-api-key>'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "id": 2,
  "site": {
    "id": 2,
    "name": "siteB",
    "label": "siteB"
  },
  "nodes": [
    {
      "id": 2,
      "name": "sitetest"
    },
    {
      "id": 3,
      "name": "siteB-1"
    }
  ],
  "name": "default",
  "label": "default",
  "last_heartbeat": "2025-09-02T14:39:37.163821Z"
}
```

## Response Fields

Field	Type	Description
id	integer	Unique identifier of the queue.
site	object	Details of the site this queue belongs to.

Inside `site` object:

Field	Type	Description
site.id	integer	Unique ID of the site.
site.name	string	Internal name of the site.
site.label	string	Human-readable label of the site.
nodes	array	List of nodes where this queue is active.

Inside `nodes[]` array:

Field	Type	Description
nodes[ ].id	integer	ID of the node.
nodes[ ].name	string	Name of the node.
name	string	Internal name of the queue (e.g., default).
label	string	Human-readable label of the queue.
last_heartbeat	string (ISO 8601)	Last time this queue was active (UTC time).

## API Endpoints - Monitoring and Analytics

### Alerts

#### GET /alerts/

##### Description

Retrieves a list of active, non-muted alerts from the Ngenea Hub system.

This endpoint is primarily used by the Hub UI to populate both **Global** and **Site-specific** alert dashboards. The API supports filtering by multiple parameters such as `name`, `site`, `node`, `severity`, and more.

##### Note:

- All parameters in the Swagger UI for this endpoint are **optional**.
- The response will be **filtered based on the parameters you provide** (e.g., filtering by `name`, `site`, or `severity`).
- If no parameters are specified, the API will return **all active and non-muted alerts by default**.

##### Request Parameters

Name	Type	Location	Description
<code>name</code>	string	query	Filter alerts by name (e.g., <code>SiteHealth</code> )
<code>site</code>	string	query	Filter alerts by site name
<code>node</code>	string	query	Filter alerts by node name
<code>severity</code>	string	query	Filter alerts by severity ( <code>INFO</code> , <code>WARNING</code> , <code>CRITICAL</code> )
<code>summary</code>	string	query	Filter alerts by summary text
<code>timestamp</code>	string	query	Filter alerts by timestamp (ISO 8601 format)
<code>suppressed</code>	string	query	Filter alerts by suppression status

##### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/alerts/?name=SiteHealth' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
[
  {
    "id": 99,
    "site": "testexample",
    "name": "SiteHealth",
    "node": null,
    "queue": null,
    "created": "2025-07-03T14:33:00.031598Z",
    "timestamp": "2025-08-07T12:16:00.018308Z",
    "severity": "INFO",
    "summary": "No workers are joined",
    "suppressed": false
  }
]
```

### Response Fields

Field	Type	Description
id	integer	Unique ID of the alert
site	string	Name of the site where the alert occurred
name	string	Alert name/type (e.g., SiteHealth)
node	string	Node name if applicable
queue	string	Queue name if applicable
created	string	ISO timestamp when alert was created
timestamp	string	ISO timestamp of the most recent alert event
severity	string	Alert severity (INFO, WARNING, CRITICAL)
summary	string	Short summary of the alert
suppressed	boolean	Whether the alert is currently suppressed

GET /alerts/{id}/

### Description

Fetch detailed information about a **specific alert** using its unique ID. This endpoint returns the full alert object, including metadata such as severity, timestamps, and associated site or node.

Used by the Hub system to display detailed alert information in dashboards or drill-down views.

### Request Parameters

Name	Type	Location	Description
id	integer	path	A unique integer identifying the alert. <b>(Required)</b>

### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/alerts/99/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "id": 99,
  "site": "testexample",
  "name": "SiteHealth",
  "node": null,
  "queue": null,
  "created": "2025-07-03T14:33:00.031598Z",
  "timestamp": "2025-08-07T12:28:00.014935Z",
  "severity": "INFO",
  "summary": "No workers are joined",
  "suppressed": false
}
```

### Response Fields

Please refer to the response feilds under GET /alerts/.

## Health

### GET /health/

#### Description

The GET /health/ endpoint provides a real-time overview of the health status of the Ngenea Hub and all connected infrastructure components.

This endpoint is used to monitor:

- The health of the **Hub service** itself
- All **registered sites**
- The **nodes** (servers/machines) within each site
- Any associated queues

The system reports health using the following states:

- **ok**: All nodes in the site are functioning normally
- **warning**: Some nodes are offline or unresponsive
- **critical**: An entire site is offline (no working nodes)

By querying this endpoint, administrators can quickly assess which parts of the infrastructure are healthy and identify potential issues at the site or node level. This is useful for operational monitoring, alerting, and overall system visibility.

## Request Parameters

This endpoint **does not require any parameters**. Simply calling the endpoint returns the health status of the Hub and all registered Sites.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/health/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "overall_health": "ok",
  "hub_status": {
    "health": "ok"
  },
  "site_status": [
    {
      "site": "Site 1",
      "health": "ok",
      "nodes": [
        {
          "name": "Site 1",
          "health": "ok",
          "online": true,
          "has_default_queue": true,
          "last_heartbeat": "2025-08-07T13:34:23.276099+00:00",
          "worker_version": "2.6.0",
          "ngenea_version": "1.31.0",
          "analytics_version": "2.7.1",
          "search_version": "1.2.0"
        }
      ]
    },
    {
      "site": "Site 2",
      "health": "warning",
      "nodes": [
        {
          "name": "Site 2",
          "health": "warning",
          "online": false,
          "has_default_queue": true,
          "last_heartbeat": "2025-08-07T13:34:23.276099+00:00",
          "worker_version": "2.6.0",
          "ngenea_version": "1.31.0",
          "analytics_version": "2.7.1",
          "search_version": "1.2.0"
        }
      ]
    }
  ],
  "queues": [
    {
      "queue": "Queue 1",
      "status": "ok",
      "workers": 10
    },
    {
      "queue": "Queue 2",
      "status": "warning",
      "workers": 5
    }
  ]
}
```

```

        "name": "default",
        "health": "ok",
        "online": true,
        "last_heartbeat": "2025-08-07T13:34:23.276099+00:00"
    }
]
},
{
    "site": "Site 2",
    "health": "ok",
    "nodes": [
        {
            "name": "Site 1",
            "health": "ok",
            "online": true,
            "has_default_queue": true,
            "last_heartbeat": "2025-08-07T13:34:24.781445+00:00",
            "worker_version": "2.6.0",
            "ngenea_version": "1.31.0",
            "analytics_version": "2.7.1",
            "search_version": "1.2.0"
        },
        {
            "name": "sitetest",
            "health": "ok",
            "online": true,
            "has_default_queue": true,
            "last_heartbeat": "2025-07-01T10:54:54.269000+00:00",
            "version_details": "Could not retrieve version
information for example@sitetest"
        }
    ],
    "queues": [
        {
            "name": "default",
            "health": "ok",
            "online": true,
            "last_heartbeat": "2025-08-07T13:34:34.791954+00:00"
        }
    ]
},
{
    "site": "testexample",
    "health": "ok",
    "nodes": [],
    "queues": []
}
]
}

```

## Response Fields

Field	Type	Description
overall_health	string	Overall system health status (ok, warning, error, etc.)
hub_status.health	string	Health status of the central Hub component
site_status	array	List of health status entries per site
site_status[].site	string	Name of the site
site_status[].health	string	Health of the site (ok, etc.)
site_status[].nodes	array	List of nodes for that site
site_status[].nodes[].name	string	Node name
site_status[].nodes[].health	string	Health of the node
site_status[].nodes[].online	boolean	Whether the node is online
site_status[].nodes[].has_default_queue	boolean	Whether the node has the default queue
site_status[].nodes[].last_heartbeat	string	Timestamp of last node heartbeat
site_status[].nodes[].worker_version	string	Worker component version (if available)
site_status[].nodes[].ngenea_version	string	Ngenea service version (if available)
site_status[].nodes[].analytics_version	string	Analytics service version
site_status[].nodes[].search_version	string	Search service version
site_status[].nodes[].version_details	string	Additional version info or errors (optional)
site_status[].queues	array	List of queue objects for the site
site_status[].queues[].name	string	Name of the queue
site_status[].queues[].health	string	Health of the queue
site_status[].queues[].online	boolean	Whether the queue is online
site_status[].queues[].last_heartbeat	string	Timestamp of last queue heartbeat

## Search

Ngenea Hub's Search feature allows users to quickly locate files and folders across all connected sites, making it easier to manage distributed storage environments. Built on top of **PixStor**, the search functionality supports both **PixStor Search** and **PixStor Analytics** backends.

Before using the search APIs, it's important to ensure the appropriate backend is configured and that the system points to the correct instance (based on your PixStor version).

There are two ways to interact with the search capability:

- **Via REST API** : Ideal for developers or automated tools needing programmatic access
- **Via UI** : A user-friendly global search page within the Ngenea Hub web interface

Depending on the setup, users can switch between search backends (e.g., from Analytics to PixStor Search) using configuration API calls. The actual data source (Elasticsearch) must also be correctly pointed to, especially for systems running **Pix Stor 6+**.

With the proper configuration, Ngenea Search enables efficient, site-wide or global file discovery with minimal effort.

**Note:** When the search backend is configured as analytics, metadata updates are not supported.

To switch to the PixStor Search backend, please refer to the [Search](#) documentation.

## POST /search/

### Description

Initiates a **file or folder search** across one or more sites managed by the Ngenea Hub. This endpoint allows users to search for files within a specified path using optional filters and settings.

The request body includes search criteria such as:

- The target site(s)
- Path to search from
- Filters (e.g., metadata)
- Whether to search recursively
- Whether to merge results from multiple sites

Once triggered, the search operation is submitted, and a unique search ID is returned.

### Request Parameters

Name	Type	Location	Description
data	object	body	JSON object containing search criteria ( <b>Required</b> )

### Example Request

```
curl -X 'POST' \
  'http://your-hub-address:8000/api/search/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -H 'Content-Type: application/json' \
```

```
-d '{
  "sites": [
    "siteA"
  ],
  "path": "/path/to/file",
  "filters": {},
  "merge": false,
  "metadata_fields": [],
  "recursive": true
}'
```

## Request Body Fields

Field	Type	Required	Description
sites	array	Yes	List of site names to search in
path	string	Yes	Root path where the search should begin
filters	object	No	Optional key-value filters (e.g., by metadata attributes)
merge	boolean	No	Whether to merge results from multiple sites (default: false)
metadata_fields	array	No	List of specific metadata fields to include in the response
recursive	boolean	No	Whether to search recursively through subdirectories (default: true)

## Successful Response

**HTTP Status Code:** 201 Created

**Content-Type:** application/json

Returns a unique ID for the search task and a URL to retrieve results.

## Example Response

```
{
  "id": 21,
  "url": "http://your-hub-address:8000/api/search/21/"
}
```

## Response Fields

Field	Type	Description
id	integer	Unique identifier for the search job
url	string	URL to access the status or results of the search

PATCH /search/metadata/

## Description

This endpoint is used to **set or update metadata tags on files or folders** in the Ngenea Hub search index. These metadata updates help improve search relevance and filtering by associating custom tags or attributes with files.

**Note:** This endpoint is primarily used for setting tags on files within the search system.

For detailed information on how tags work and how to use them effectively, please refer to the **Tags** section in the [Search](#) documentation.

## Request Parameters

Name	Type	Location	Description
data	array	body	Array of objects containing file path, site, and metadata updates ( <b>Required</b> )

## Example Request

```
curl -X 'PATCH' \
  'http://your-hub-address:8000/api/search/metadata/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key' \
  -H 'Content-Type: application/json' \
  -d '[
{
  "pathname": "/path/to/file",
  "site": "site A",
  "metadata": {
    "search.tags": ["example", "two", "three"]
  }
}
]'
```

## Request Body Fields

Field	Type	Required	Description
pathname	string	Yes	The file or folder path where metadata is updated
site	string	Yes	Site name where the file/folder resides
metadata	object	Yes	Key-value pairs representing metadata updates (e.g., tags)

## Successful Response

**HTTP Status Code:** 201 Created

**Content-Type:** application/json

Indicates the metadata updates have been accepted and will be applied asynchronously.

## Example Response

```
{
  "message": "updates accepted, they will be applied
asynchronously"
}
```

## Response Fields

Field	Type	Description
message	string	Confirmation that updates have been accepted for asynchronous processing

GET /search/metadata\_fields/

## Description

This endpoint retrieves a list of available metadata fields that can be used for searching or filtering files and folders across one or more sites in Ngenea Hub.

These metadata fields describe file attributes (e.g., size, owner, mimetype), file system details (e.g., GPFS fields), and custom fields like search.tags.

## Request Parameters

Name	Type	Required	Description
page	integer	No	Page number of the result set. Defaults to 1 if not specified.
page_size	integer	No	Number of results to return per page. Must be between 20 and 100. Use 0 to return all results without pagination. Defaults to 20 if not specified or below the minimum.

## Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/search/metadata_fields/?
page=1&page_size=1' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

## Example Response

```
{
  "siteA": [
    {
      "name": "core.accesstime",
      "type": "datetime"
    }
  ]
}
```

```

    },
    {
      "name": "core.blocksize",
      "type": "long"
    },
    {
      "name": "search.tags",
      "type": "set"
    }
  ],
  "siteB": [
    {
      "name": "core.accesstime",
      "type": "datetime"
    },
    {
      "name": "search.tags",
      "type": "set"
    }
  ]
}

```

## Response Fields

Field	Type	Description
site_name	string	Name of the site (e.g., siteA, siteB)
name	string	Name of the metadata field
type	string	Data type (e.g., string, integer, set)

GET /search/{id}/

## Description

This endpoint retrieves the **results of a previously initiated search operation** using the search ID returned from the POST /search/ request.

It supports pagination, sorting, and optional grouping of results across multiple sites. This endpoint is useful for retrieving large result sets in a controlled, page-by-page manner or for merging matching file paths by name across different sites.

## Request Parameters

Name	Type	In	Description
id	string	path	<b>(Required)</b> Unique ID of the search operation.
page	integer	query	Page number within the paginated result set. Defaults to the first page if not provided.
page_size	integer	query	Number of results per page.
sort	string	query	One or more metadata fields to sort the results by.

Name	Type	In	Description
group_by_name	boolean	query	If true, groups results by matching file names across multiple sites. Useful for comparing file presence and metadata consistency.

### Example Request

```
curl -X 'GET' \
  'http://your-hub-address:8000/api/search/21/' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key your-api-key'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "count": 1,
  "next": null,
  "previous": null,
  "id": 34,
  "parameters": {
    "path": "/",
    "sites": ["siteA"],
    "filters": {
      "core.pathname": "*helloworld*"
    }
  },
  "more_results": false,
  "items": [
    {
      "href": "http://your-hub-address:8000/api/file/?
path=%2Fmmfs1%2Fdata%2Fsample_data%2Fhelloworld.txt&site=siteA",
      "site": "siteA",
      "path": "/mmfs1/data/sample_data",
      "name": "helloworld.txt",
      "metadata": {
        "core.size": 116,
        "core.type": "file",
        "core.inode": 30984,
        "core.user.name": "root",
        "core.group.name": "root",
        "core.pathname": "/mmfs1/data/sample_data/helloworld.txt",
        "core.modificationtime": "2017-05-26T14:26:28",
        "core.changetime": "2025-05-14T11:57:08",
        "gpfs.poolname": "sas1",
        "gpfs.filesetname": "root"
      },
      "proxies": {}
    }
  ]
}
```

```

    }
  ],
  "complete": false,
  "errors": {}
}

```

## Response Fields

Field	Type	Description
count	integer	Total number of matching items returned.
next / previous	string/ null	Pagination links for next/previous result pages, if available.
id	integer	Unique request or search ID, useful for tracking and debugging.
parameters.path	string	Root path used in the search query.
parameters.sites	array	List of site names where the search was performed.
parameters.filters	object	Filters used in the search query (e.g., pathname match patterns).
more_results	boolean	Indicates whether more results are available beyond the current response.
items	array	Array of matching file entries from the search.
items[].site	string	Site where the file was found.
items[].path	string	Directory path where the file is located.
items[].name	string	File name.
items[].href	string	API link to fetch file metadata or access the file.
items[].metadata	object	Key-value pairs containing detailed metadata about the file.
complete	boolean	Indicates whether the search has completed across all queried sites.
errors	object	Any site-specific errors encountered during the search (empty if none).

DELETE /search/{id}/

## Description

This endpoint is used to **delete a previously created search operation** and its associated results from the system. It is typically used to clean up resources once the search is complete and no longer needed.

## Request Parameters

Name	Type	In	Description
id	string	path	<b>(Required)</b> The unique search ID to be deleted.

## Example Request

```
curl -X 'DELETE' \  
  'http://your-hub-address:8000/api/search/21/' \  
  -H 'accept: application/json' \  
  -H 'Authorization: Api-Key your-api-key'
```

## Successful Response

**HTTP Status Code:** 204 No Content

The search and its results were successfully deleted. No content is returned in the response body.

## Response Fields

No response body is returned for this request.

*This action is irreversible. Once a search is deleted, its results and metadata are permanently removed and cannot be retrieved again. Be sure you no longer need the data before performing this operation.*

## Analytics

### GET /analytics

#### Description

The `GET /analytics/` endpoint retrieves analytics data related to file storage usage for a specified site and directory path. It provides information such as the total number of files, total bytes used, and per-directory or per-storage pool statistics. The API supports optional parameters like pagination, child directory inclusion, CSV downloads, and customizable timeout or cache settings.

This API is used when there is a need to understand how storage is being utilized within a site. It is particularly useful for analyzing a specific directory or for retrieving detailed data across child directories.

Administrators can call this endpoint periodically or on demand to review current storage metrics.

It is useful for storage monitoring, capacity planning, and troubleshooting. By analyzing file count and storage consumption, teams can optimize storage usage, detect anomalies or growth patterns, and generate reports for internal audits or compliance purposes. The option to export data as CSV makes it convenient for external reporting or integration with other tools.

#### Request Parameters

Name	Type	Required	Description
site	string	Yes	The name of the site to retrieve analytics for. Minimum length: 1.

Name	Type	Required	Description
path	string	No	The target directory path to analyze. If not provided, analytics will be retrieved for all space roots.
page	integer	No	Page number within the paginated result set. Defaults to 1 if not provided.
page_size	integer	No	Number of results per page. Must be between 20 and 100. Use 0 to disable pagination and retrieve all results. Defaults to 20 if not specified or too low.
children	boolean	No	Whether to include child directories in the response. Default is false.
cache_ttl	integer	No	Optional cache time-to-live for the analytics data (in seconds).
custom_timeout	integer	No	Custom timeout (in seconds) for fetching analytics data.
download	string	No	If set to csv, returns the result as a downloadable CSV file.

### Example Request

```
curl -X GET \
  'http://your-hub-address:8000/api/analytics/?
page=1&site=siteB&children=true' \
  -H 'accept: application/json' \
  -H 'Authorization: Api-Key <your-api-key>'
```

### Successful Response

**HTTP Status Code:** 200 OK

**Content-Type:** application/json

### Example Response

```
{
  "children": {
    "count": 1,
    "next": null,
    "previous": null,
    "results": [
      {
        "site": "siteB",
        "pools": [
          {
            "name": "sas1",
            "total_used_bytes": 475529216,
            "total_files_count": 532
          },
          {
            "name": "cloud",
```

```

        "total_used_bytes": 0,
        "total_files_count": 0
    }
],
"path": "/mmfs1",
"total_used_bytes": 475529216,
"total_files_count": 532
}
]
},
"site": "siteB",
"pools": [],
"path": "",
"total_used_bytes": null,
"total_files_count": null
}

```

## Response Fields

Field	Type	Description
children	object	Contains results for child directories (if <code>children=true</code> was set).
children.count	integer	Total number of items returned.
children.results	array	List of objects representing directories under the target path.
site	string	Name of the site queried.
pools	array	List of storage pools (only filled when the path is not specified or children are not included).
path	string	The requested directory path.
total_used_bytes	integer	Total disk usage in bytes for the specified path.
total_files_count	integer	Total number of files under the specified path.

## Glossary

### C

#### Celery

An open-source tool that helps applications perform tasks in the background without slowing down the main program. It assigns tasks, like processing files or maintaining systems, to separate workers that operate independently. Celery keeps track of which tasks are waiting, in progress, or done, and it can schedule tasks for specific times or retry them if there's an issue.

#### Celery Beats

A scheduling tool is software that plans and runs tasks automatically at specific times. It's like setting an alarm for a task you want done regularly, such as backing up data every day or syncing files between locations every hour.

Celery Beat is one of these tools; it manages these recurring tasks in the system, ensuring they happen on schedule without needing someone to start them manually.

## **Celery Monitor**

Celery Monitor is a tool that tracks the health and status of Celery workers, which are background processes that handle tasks. It listens for regular “heartbeats” from these workers, which are signals that confirm each worker is still active and functioning. **Celery Worker**

A Celery Worker is a process that runs in the background, ready to take on tasks sent by a central Hub server. These tasks might include organizing files, processing data, or adjusting settings. Each worker is connected to a specific list of tasks, called a queue, which it monitors constantly. When a new task appears in its queue, the worker completes it and then reports back to the Hub server. This setup allows tasks to be distributed across multiple workers, making task handling more efficient.

## **D**

### **Data Mover**

A Data Mover is a tool or service that helps transfer data from a company’s internal storage system to external locations, like cloud storage. It is designed to handle large amounts of data without slowing down the primary system. By using methods like data compression and parallel processing, a Data Mover makes the transfer process faster and more efficient, ensuring the system remains responsive.

### **Django**

Django is a set of tools (web development framework) that helps developers create the backend of a website, like the Hub’s user interface. It manages software requests, such as retrieving data from a database or initiating tasks, and ensures fast responses.

Django also helps different parts of the system, like databases (where onfiguration and Hub stateful data is stored) and external services (APIs that provide additional functionality), communicate with each other, allowing everything to work together smoothly.

## **E**

### **External Target**

An external target is any storage type that is not part of your main system. This includes things like cloud storage services (like AWS or Google Cloud) or shared network drives (like NFS). These systems help you move and store your data away from your main setup, allowing you to back up information, save it for the long term, or share it with others easily.

Another key benefit of using an external target is that by offloading data to it, you free up space on your PixStor system, enabling you to perform more tasks and improve overall efficiency.

## **Filesystem**

A filesystem is like a digital storage organizer where all files are kept and managed. It provides a way to arrange and control how data is stored and accessed on storage devices, such as hard drives, solid-state drives, or cloud storage.

A cluster is a group of interconnected systems that work together as one. Each system in the cluster is called a node (a separate computer or device that contributes to the cluster's tasks).

In a clustered environment, the filesystem is usually shared across all (but not necessarily all) of the nodes, allowing any of them to access and change files as needed. Effective filesystem management ensures that data is organized efficiently, makes it easy to retrieve information, and helps maintain overall system performance.

## **G**

### **GPFS (General Parallel File System)**

**Note:** Definition not approved !!!

GPFS, or General Parallel File System, is a high-performance storage solution designed for clustered environments (groups of interconnected systems that work together to perform tasks).

Unlike a standard file system, which typically allows only one user or process to access a file at a time, GPFS enables multiple nodes to read from and write to the same set of files simultaneously. This parallel access significantly boosts efficiency, especially in scenarios where large datasets are involved.

GPFS is optimized for concurrent file operations, ensuring that users experience minimal delays and can manage large amounts of data effectively without performance degradation. This makes it particularly well-suited for tasks that require fast and reliable data sharing among many users or processes.

### **Grafana**

Grafana is an open-source analytics and monitoring platform that provides dynamic visualizations of system performance metrics. It enables users to create and customize dashboards with various data representations, such as graphs, charts, and alerts.

Grafana collects real-time data on key performance indicators (KPIs) (metrics used to measure the success or performance of a system), including task completion rates, queue lengths, and system latency (the time delay between a request and its response). This allows for effective monitoring and troubleshooting of system operations.

## Gateway Node (gw)

A Gateway Node is responsible for providing connectivity to users and applications. It typically runs protocol services such as SMB3, NFSv3, and NFSv4 to enable access to the cluster's data.

**Note:** Protocol services are methods that define how data is transferred between devices or applications. They ensure different devices or programs can communicate with each other and share information in a standardized way. Examples include SMB3 (used for file sharing) and NFS (used for accessing files over a network).

## H

### Hub Server

The Hub Server serves as the central management component of the system. It coordinates tasks and workflows while facilitating communication between various services, including a database, a REST API for handling user requests, a web-based interface for automated interaction, and a task scheduler for automated operations.

## M

### Management Node (mn)

The main node responsible for overseeing the entire cluster. It typically runs critical functions like the Hub server, search functionality, and analytics tools. The management node coordinates tasks and manages other nodes in the cluster.

### Ngenea Node (ng)

A specialized node within the cluster that is responsible for transferring data between the cluster and external storage locations, such as cloud services (e.g., AWS, Google Cloud). The Ngenea Node manages data migration and backup processes without affecting the performance of other nodes in the cluster, including gateway nodes.

### Ngenea Worker

A worker is a software component that runs on designated nodes within a network. Its main role is to perform tasks assigned to it by a central server known as the Hub. These tasks often include:

- **Managing Files:** Primarily involves pushing data to the cloud and retrieving it, as well as organizing, moving, or deleting files as needed.
- **Processing Data:** Analyzing or transforming data to extract useful information.
- **Changing System Settings:** Modifying configurations to improve performance or functionality.

Once the worker finishes its tasks, it sends the results to Redis, from which the Hub retrieves them to coordinate overall operations and monitor the status of each worker.

## **Nginx**

Nginx is software that serves as both a web server and a load balancer. It manages incoming user requests and directs them to the right internal service within the Hub system. For example, when a user accesses the Hub's web interface, Nginx ensures that their request is sent to the correct part of the system to get the needed response. This helps improve performance and ensures that requests are handled efficiently.

## **Node**

A node is an individual unit within a cluster. Each node has specific roles, such as storing data, managing the system, or allowing user access. Nodes work together in the cluster to ensure that data is processed and stored efficiently, helping the entire system function smoothly.

## **NVMe Node**

An NVMe Node is a type of storage node that uses NVMe (Non-Volatile Memory Express), a fast data transfer technology, for quicker access to data. Instead of traditional storage connections like SAS cables, it connects using high-speed Ethernet, allowing for much faster data services.

# P

## **PixStor Cluster**

A PixStor Cluster consists of multiple interconnected nodes that function together to manage and store data efficiently. Each node within the cluster has distinct responsibilities, such as data management, storage, or facilitating access for users and applications.

## **Prometheus**

Prometheus is a monitoring tool that collects and stores data about the performance of a system, such as CPU usage, memory consumption, and task processing times. It gathers this information over time and allows administrators to analyze it to track the health and performance of the system. Prometheus also makes this data available for visualization tools like Grafana, which helps users create dashboards to easily see how the system is performing.

# R

## **RabbitMQ**

RabbitMQ is a messaging tool (broker) that helps different parts of an application communicate. It allows the Hub server to send tasks to workers by organizing those

tasks into a “queue.” Workers pick up tasks from the queue, process them, and then send a message back to RabbitMQ when they are done. This ensures tasks are handled efficiently, even if there are many tasks or workers operating at the same time.

## **Redis**

Redis is a fast, in-memory database that stores data in a key-value format. It is commonly used for temporary data, like caching results or tracking tasks within a system. In addition to storing data, Redis facilitates communication between different parts of the system, such as the Hub server and workers, ensuring tasks are completed and results are shared quickly and efficiently.

For example, task queues are pushed through a Redis queue by default, demonstrating its role in managing task distribution and communication within the system.

# S

## **Salt**

Salt, also known as SaltStack, is a versatile tool used for managing and automating the configuration of multiple computers (or “nodes”) in a network. It ensures that all the nodes in a cluster have the same settings, software, and updates by applying changes across the entire system.

For example, if you need to install software or update configurations on all nodes, Salt allows you to do this centrally and efficiently, without having to manually update each node one by one. This helps keep all systems in sync and simplifies management tasks.

## **Search Backend**

The part of the system that allows users to search for files and metadata (information about files) within the cluster. The search backend indexes certain files in the system so that users can quickly locate what they are looking for.

**Note:** “Search Backend” is a generic term that could refer to either PixStor Search or PixStor Analytics, depending on how the Hub is configured.

## **Site**

A Site is a collection of one or more nodes (which are individual units that can process and store data) working together within a single PixStor cluster (a system that combines multiple nodes to manage large amounts of information).

Each Site has specific responsibilities, such as managing tasks, processing data, and transferring data to and from external sources. In simpler terms, a Site is a team of nodes that collaborates to handle and organize data efficiently within the PixStor system.

## **Snapdiff Discovery**

Snapdiff Discovery is a method for finding changes in files or folders by using saved point-in-time images (snapshots) of them. Instead of checking every single file each time, it compares these snapshots to see what has changed. This makes the process more reliable and traceable, especially when there's a lot of data to look through. In simple terms, it helps identify differences without having to search everything all over again.

### Storage Node (sn)

A storage node is a part of a cluster that connects directly to storage devices like hard drives. Its main job is to manage how data is saved and accessed. In simple terms, it makes sure that information can be stored and retrieved quickly and easily within a larger group of connected devices.

## W

### Web UI

A web UI, or web user interface, is the part of a web application or online system that you see and interact with. It allows you to manage tasks, check the status of your files, and use various tools—all through your web browser.

## Changelog

```
2.9.1: 2025-10-18
=====

Bug
---
HUB2-3273 - Hub tries to fetch thumbnails and proxies when Pixstor
Search is disabled
HUB2-3274 - Files not reported as SKIPPED when skipped by
check_sync_state
HUB2-3346 - Snapdiff schedules can't find lastsnap file after
upgrade

2.9.0: 2025-10-22
=====

Feature
-----

Iris enablement for spaces
Iris Single Sign On (SSO) using Keycloak
External service support for Postgres, RabbitMQ and Redis
Ngenea Core 1.32 support

Improvement
-----
HUB2-2955 - Add subtitle explanations for using site includes/
excludes modals
```

HUB2-2956 - Cancelling is now referred to as "Dequeuing"  
HUB2-2996 - The generated skip files are now included in the snapdiff automatic cleanup  
HUB2-2998 - Increase max width allowed for site and summary column content, in alerts table  
HUB2-3012 - Added an additional snapshot rotation safety check  
HUB2-3055 - Removed the skip button from Spaces bucket page for consistency  
HUB2-3086 - Plugin templates are now created with up to date dependencies  
HUB2-3188 - Fixed typo about wording for "Administered Spaces" in UI  
HUB2-3152 - Schedules now accept longer schedule names

## Bug

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HUB2-2853 - Submitting policy creation with existing name no longer creates a duplicate policy  
HUB2-2927 - Jobs are no longer left indefinitely pending when workflow and site include or excludes are used  
HUB2-2992 - Worker unmanage task no longer uses deprecated batch\_size parameter  
HUB2-3052 - Ngenea worker no longer takes over 20 minutes to shutdown  
HUB2-3057 - Updating a schedule in the UI no longer deletes and recreates the subscribed workflow  
HUB2-3082 - API now provides the correct response when a folder does not exist in all sites  
HUB2-3101 - OpenSearch now respects the provided timeout from the hub  
HUB2-3107 - Storage analytics no longer reports "ingest needed" when the Space has been ingested  
HUB2-3149 - "hydrate files on site" can now be toggled off for Reverse Stub  
HUB2-3153 - Ngenea targets are now populating correctly on the dropdowns for backup configurations  
HUB2-3172 - Handle the case where proxies of the search result is not available with analytics backend  
HUB2-3179 - StorageKey is now applies to all target sites when creating AWS targets  
HUB2-3203 - A direct link to a path in the Filebrowser now correctly loads regardless of the amount of spaces in the hub

2.8.1: 2025-08-21

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## Improvement

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HUB2-3072 - Add support for new ngenea 1.32 configurations  
HUB2-3080 - Archive Ngenea targets on delete

## Bug

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HUB2-3052 - Ngenea worker no longer hangs during shutdown

HUB2-3069 - Support for Ngenea targets without bucket in name  
HUB2-3081 - The hub no longer provides the "directory is deleted" warning when the folder does not exist in all sites  
HUB2-3082 - The API no longer throws "path does not exist" error when a folder does not exist in all sites  
HUB2-3101 - The configured timeout is now respected for OpenSearch

2.8.0: 2025-09-01

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#### Feature

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\* Iris Beta

#### Improvement

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HUB2-1720 - Improve snackbar appearance  
HUB2-2735 - Restart ngeneahub critical containers in the event of a crash  
HUB2-2308 - Update docs to include raising the lambda timeouts  
HUB2-2846 - User Guide improvements

#### Bug

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HUB2-2243 - Removing filter from failure states does not remove filter  
HUB2-2782 - Fix the issue of labels not being truncated when they are too long  
HUB2-2885 - Don't error on remove remote xattr for top level directory  
HUB2-2935 - Can't disable snapshot schedule on filesystem spaces  
HUB2-2946 - Could not update global settings because of initial\_uid and initial\_gid error  
HUB2-2978 - Space unexpectedly deleted when adding sites via UI after creating space via API  
HUB2-3030 - Files with epoch 0 timestamp cause file browser to fail  
HUB2-3032 - API modified schedules now pickup new settings

2.7.0: 2025-06-24

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#### Improvement

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HUB2-620 - API: Policies can now be run immediately after being created  
HUB2-948 - Policies are no longer restricted to mmfs1 named file systems  
HUB2-2183 - API: The default location of Spaces can be configured for all Sites  
HUB2-2316 - The global settings is synced after an 'apply settings' job has been run

HUB2-2337 - The visual contrast for grouping boxes and dividers has been improved  
HUB2-2338 - Spaces can now be viewed in table layout  
HUB2-2339 - Job tables can now be sorted for job creator, site, queue, workflow, queue  
HUB2-2340 - Workflow batch and item GB size are now available as Site options  
HUB2-2342 - Timeout settings have been added to the Global Settings page  
HUB2-2672 - All automated schedule times are now shown in local time, not UTC  
HUB2-2677 - Ngenea Targets now have validation on their advanced key options  
HUB2-2794 - File browser timeouts can now be configured in the Global Settings page  
HUB2-2812 - The path when you pick a location in a space space now starts at the space mountpoint  
HUB2-2829 - Policy based workflows renamed from 'Tiering' to 'Policy-based Tiering'  
HUB2-2877 - Added GUNICORN\_WORKERS as a synonym for WORKERS configuration key, the WORKERS configuration is now deprecated  
HUB2-2878 - New GUNICORN\_THREADS setting to increase API performance  
HUB2-2890 - RabbitMQ container is now migrated to the configured destination when DATA\_DIR is set

## Bug

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HUB2-1520 - Newly added sites now pick up NAS users and groups  
HUB2-1699 - Hub metrics no longer fails to load due to an authentication error  
HUB2-2733 - Hubmetrics dashboard no longer fails to load  
HUB2-2746 - Site snapshot times no longer contain timezones  
HUB2-2751 - When renaming a Site, the original name is autofilled  
HUB2-2764 - Ngenea target name validation now does not allow names containing "."  
HUB2-2787 - Rotate snapshot completion time is now set correctly  
HUB2-2796 - Rotate tasks no longer errors when attempting to store its results  
HUB2-2818 - Transparent recall no longer throws a traceback despite successful recall of files  
HUB2-2827 - Snapdiff workflows no longer assume old queue name format for custom plugins  
HUB2-2830 - Updating an NFS share in the UI no longer causes share deletion on Pixstor  
HUB2-2835 - Job engine now correctly waits for the parent task in high speed workflows  
HUB2-2836 - Workflow discovery option can now be patched to be null  
HUB2-2845 - Creation of a discovery schedule no longer fails to create due to an existing schedule sharing the same scheduled time  
HUB2-2848 - A deleted schedule no longer remains on the dashboard when a schedule is deleted

HUB2-2849 - day\_of\_month is no longer edited within the schedule picker  
HUB2-2884 - Fix "key error" for create NAS user and update NAS group members jobs  
HUB2-2915 - Added safety measures to prevent deadlock failures in snapdiff jobs  
HUB2-2917 - Ensure Next button is not disabled in Network settings Page when configuring a newly added Site  
HUB2-2924 - Added safety measure for looking up task\_id during DAG callback  
HUB2-2927 - Jobs are no longer left indefinitely pending when workflows and site include or excludes are used

2.6.0-2: 2025-05-27

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Documentation updates

2.6.0: 2025-04-30

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Feature

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HUB2-1651 - Simplified Ngenea Targets for Spaces  
\* Targets and buckets can now be created during Space creation  
\* Targets and buckets are now separately defined and can be re-used  
HUB2-1975 - Schedule Management Interface  
\* There is now a dedicated page for Schedule Management  
\* This controls both workflow schedules and Policies  
\* There is now an additional single endpoint for serving a read only listing of schedules and policies  
HUB2-2126 - Added workflow for ngenea download only mode

Improvement

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HUB2-628 - Salt related tasks timeout is now configurable  
HUB2-1699 - Hub metrics no longer requires an additional login  
HUB2-2303 - Policy file condition selection now prepends dot automatically  
HUB2-2304 - Space endpoint can now be filtered via site\_id  
HUB2-2372 - Targets are not longer required to be backup\_only  
HUB2-2487 - The same path is now allowed to be used by multiple non-snapdiff schedules  
HUB2-2489 - The space endpoint now returns 'is\_ready'  
HUB2-2329 - ngenea-worker plugins list now provides the version of all installed plugins  
HUB2-2531 - LDAP TLS Certificate support  
HUB2-2646 - Global settings now has a quick link when attempting to edit a schedule when all are disabled  
HUB2-2689 - Non snapdiff job task responses have improved performance

HUB2-2701 - Job details page now loads statistics separately making page loading much faster

Bug

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HUB2-1932 - Schedules from other Spaces are no longer visible under a Space

HUB2-1990 - When searching space specific RBAC no longer returns no results

HUB2-2087 - Spaces can now correctly be re-added to be backed up

HUB2-2229 - AD groups now support whitespaces in names

HUB2-2243 - A settings job is no longer created when changing the site short code

HUB2-2252 - Jobs can no longer prematurely report as done

HUB2-2315 - Transparent recall through Hub no longer fails with path containing certain characters

HUB2-2327 - Not submitting group name no longer returns a 500 error

HUB2-2404 - When immediately disabling the sync schedule on a newly created space, it now correctly disables

HUB2-2415 - ngenea-worker plugins uninstall can now remove multiple plugins at once

HUB2-2418 - ngenea-worker plugins install now correctly installs only the specified plugins

HUB2-2438 - Policy exclude conditions are no longer treated the same as includes

HUB2-2432 - Removing the task filter now works as expected in the task table

HUB2-2456 - dynamo.tasks.rotate\_snapshot no longer always shows as NULL

HUB2-2534 - Send to site no longer shows files both as "processed" and "pending" upon job completion

HUB2-2540 - Trailing slash in site settings no longer causes 404

HUB2-2662 - File browser in schedule wizard now shows restricted items

HUB2-2539 - Changing the pool from the default now correctly refreshes

HUB2-2656 - Fixed issue with 'sssd' not applying when applying domain settings in shares

HUB2-2658 - Deleting a target via "delete bucket" now fully clear salt pillar

HUB2-2669 - Non admin users can now update their profile

HUB2-2711 - Transparent recall error on job id expiry check

HUB2-2712 - GCS targets can now switch between credentials\_json and credentials\_file in a single PATCH request

HUB2-2718 - Space cards sizes are now consistent

HUB2-2719 - Ensured that shares cannot allow all\_squash and no\_root\_squash

HUB2-2767 - Fixed issue with navigating Buckets using Azure based targets

HUB2-2769 - Snapdiff cache files are now consistent between multiple nodes

2.5.5: 2025-03-04

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#### Feature

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HUB2-2344 - Workflows to enable partial recall and importing bytes

2.5.4: 2025-02-28

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#### Improvement

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HUB2-2547 - Allow users to specify preferred queue for a workflow via API using "preferred\_queue"

#### Bug

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HUB2-2520 - Automated queue cleanup task no longer throws an exception on startup

HUB2-2541 - Space creation location picker now returns correct folders when not browsed prior in the file browser

2.5.3: 2025-02-19

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#### Bug

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HUB2-2611 - Ensured shares defined before version 2.5.3 could be removed from the salt pillar

HUB2-2545 - Renaming an NFS share no longer creates a new match-all share

HUB2-2588 - Creating a Samba share no longer results in endless looping jobs

HUB2-2600 - Existing NFS clients are no longer updated when new NFS client is added

HUB2-2601 - Editing an existing NFS share no longer has the potential to create new match-all shares

2.5.2: 2025-02-10

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#### Improvement

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HUB2-2531 - Hub login support for LDAPs and STARTTLS

#### Bug

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HUB2-2545 - Renaming NFS shares no longer creates a new wildcard share

2.5.1-1: 2025-01-13

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Bug

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HUB2-2455 - Fixed tasks unexpectedly exiting while attempting to log job statistics

2.5.0-2: 2024-12-13

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Updated Ngenea HSM dependency to 1.30.1-1

2.5.0: 2024-11-13

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Feature

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HUB2-1965 - Support for setting a Spaces permission mode

HUB2-2198 - ngeneahubctl now supports database export

HUB2-2199 - ngeneahubctl now supports database import

HUB2-2280 - Provide DownloadOnly workflow in file browser

Improvement

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HUB2-1333 - Started tasks no stuck after a sudden worker exit

HUB2-1519 - Improve scanning performance for policies against single spaces

HUB2-1643 - ngclient now accepts relative paths

HUB2-2037 - Ngenea targets can be unlinked from all sites

HUB2-2068 - Added additional safety guards to ngeneahubctl wipe

HUB2-2099 - The Site management page now displays when sites are configured on their respective nodes

HUB2-2119 - ngclient now identifies authentication issues

HUB2-2240 - Stopping/restarting a worker causes tasks to get killed and lost

HUB2-2286 - Support ConfigFile, LocalFileRegex, LocalSymlinkTargets, RemoteLocationXAttrRegex, StorageKey in ngenea target advanced keys

HUB2-2294 - NFS share now display with multiple non-CIDR clients in the UI

HUB2-2300 - Ensure the email entry is omitted on the users table if not set

HUB2-2301 - Star character is no longer displayed when Search query is submitted

HUB2-2305 - Ensure Kerberos connections are bound as authenticated user

HUB2-2306 - The "Minimize" tooltip for left bar is no longer incorrectly sized

HUB2-2324 - Workflows that select a secondary site now default to

the "default" queue if not provided  
HUB2-2333 - Google cloud storage targets can now use  
CredentialsFile as the only credentials provider  
HUB2-2335 - When rabbitmq is not the target broker the container  
no longer spawns  
HUB2-2353 - Either credentials\_json or credentials\_files can be  
used when defining a target with Google Cloud Storage

## Bug

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HUB2-1288 - Fix page scrollbar sizing in Job list page  
HUB2-1424 - Ensure Hub cannot overwrite existing users and groups  
from pixdjango  
HUB2-1460 - Provide values for usage and capacity in Policy UI  
when no quota is in place on a space  
HUB2-1584 - Resolve issue with per-process lock acquisition in  
transparent recall  
HUB2-1806 - Ensure migrations to ngenea are limited to one source  
pool  
HUB2-1937 - The automated job to expire old jobs has been  
optimised  
HUB2-1955 - Resolve 500 error when deleting a schedules workflow  
HUB2-1983 - NFS shares are now correctly configured with multiple  
clients  
HUB2-1984 - Resolve traceback observed: AttributeError: 'QuerySet'  
object has no attribute 'objects' when using check\_sync\_state  
HUB2-1986 - Ensured every client for the same NFS share have the  
same fsid  
HUB2-1999 - Resolve GCS bucket creation failure due to mangled  
json auth  
HUB2-2002 - Recursive navigate now reports failed paths  
HUB2-2084 - Remove redis connection log error under normal  
operation  
HUB2-2174 - Job descriptions are now case sensitive  
HUB2-2216 - Non-existing ngenea target now correctly raises a 404  
HUB2-2220 - Ensure Space mountpoint is not presented with double  
forward slash in the space wizard  
HUB2-2224 - reverse\_stub task no longer lists "--overwrite-local".  
HUB2-2277 - Thread counts can now be explicitly for each default  
queue function  
HUB2-2279 - Browsing external targets now correctly parse errors  
from listing cloud files  
HUB2-2283 - Fix inability to change Space card colour  
HUB2-2284 - Remote folder not matched of top level folder  
selection no longer causes import from site jobs to fail  
HUB2-2307 - Shares can now be browsed when Samba allowed\_hosts is  
null  
HUB2-2317 - Target name too long error not correctly reported to  
user in UI  
HUB2-2318 - Targets now correctly supports StorageKey numerical  
strings  
HUB2-2322 - The 'invalid character' error message when browsing a  
space no longer appears when there are no files to browse

2.4.4: 2025-02-07

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Feature

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HUB2-2479 - Improved snapdiff based workflows performance providing snapdiff includes and excludes on the worker

2.4.3: 2024-10-16

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Improvement

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HUB2-2245 - Snapdiff based workflow moves now support same named queues

2.4.2: 2024-10-14

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Improvement

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HUB2-2214 - Transparent recall now supports alternative queues

Bug

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HUB2-2170 - Resolves LDAP plaintext authentication failure  
HUB2-2193 - GPFS Policies scans now run across multiple nodes  
HUB2-2209 - Scheduled jobs without a second site now correctly run  
HUB2-2225 - All ngenea target keywords are now supported

2.4.1: 2024-10-07

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Bug

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HUB2-2209 - Workflows without a destination site now correct run from a schedule

2.4.0: 2024-10-04

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Feature

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Multiple Job Queues  
RabbitMQ as an optional broker

Improvement

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HUB2-908 - Limit ngenea target creation to specific sites via API  
HUB2-1544 - Move ngenea target settings to dedicated / external\_targets endpoint  
HUB2-1640 - Attempt to premigrate files from snapshot even if live copy doesn't exist  
HUB2-1776 - Summary page update for Ngenea bucket configuration

HUB2-1898 - Improve performance of Job no-op filter  
HUB2-1970 - Make the job link middle- & right- clickable on "job is created" popup  
HUB2-1989 - API-Keys no longer require an email for creation  
HUB2-2005 - Unify order of statuses in Job specific page  
HUB2-2117 - Make node heartbeat check interval configurable

#### Bug

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HUB2-599 - Workflow schedules will now wait until space creation completes on all sites to start  
HUB2-1382 - The search\_keyword argument correctly filters jobs via ID  
HUB2-1641 - Snapdiff tasks no longer skip files not on the live filesystem  
HUB2-1799 - Search filter chips no longer disappear after a search completes  
HUB2-1802 - Policy related jobs are no longer always stuck in pending  
HUB2-1973 - Disable rpm build-id debug files  
HUB2-1994 - Login page now has correct page title

#### Documentation

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HUB2-1820 - Update existing Plugin docs for new DAG capabilities  
HUB2-1866 - Existing worker task options have been updated

2.3.2: 2024-08-23

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#### Bug

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HUB2-1893: Reverted; due to causing Bidirectional sync to fail intermittently

2.3.1: 2024-08-09

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#### Improvement

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HUB2-1685: Added documented new engine functionality to the worker  
HUB2-1016: Double clicking thumbnails within search now opens a full screen preview  
HUB2-1457: Fileset snapshots retention period language is improved for international users  
HUB2-1895: Snapdiff workflows now support root filesets

#### Bug

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HUB2-1672: Fix engine deadlock issue when running a non null

discovery job  
HUB2-1704: Shares deleted on the UI are now always deleted on the target system  
HUB2-1707: Snapshot schedule update task is submitted when editing shares  
HUB2-1762: Settings jobs can now be cancelled  
HUB2-1859: Resolve rare race condition when storing task results  
HUB2-1865: Ganesha exports now stored with numerical value for allowing persistence on shares reload  
HUB2-1893: Snapdiff rotate task now correctly runs after processing task is revoked  
HUB2-1916: Resolved flickering on second page of tasks in a job  
HUB2-1944: When creating a space, the scheduled job now waits for the space to be completed before starting  
HUB2-1957: Resolved race condition in site settings task  
HUB2-1985: Deleting a client from an NFS export now removes the share from the site  
HUB2-1798: UI automatic file browser refresh no longer display some restricted folders

2.3.0: 2024-07-05

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#### Feature

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Job Reporting improvements  
LDAP and Kerberos integration  
Space deletion via the UI  
Dynamic job batching  
Database size reduction with tunable settings

#### Improvement

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HUB2-1190: Default locking method options are now applied to all default workflows  
HUB2-1804: Custom plugin docs have been updated to support new engine functionality  
HUB2-1891: Job details page now renders regardless of statistics being loaded  
HUB2-1892: API\_TIMEOUT and GATEWAY\_TIMEOUT now default 10 minutes  
HUB2-1356: Various database size reduction optimisations  
HUB2-1644: Recursive jobs now use less calls to mmlsfileset  
HUB2-1644: Recursive jobs now no longer navigate into excluded directories  
HUB2-1691: Removed search is halted message when interrupting a search  
HUB2-1700: SMB shares now supports definitions in the hosts to allow/deny  
HUB2-1719: Ngenea worker analytics requests can now have their timeouts configured  
HUB2-1281: Error and failed jobs can now be re-submitted  
HUB2-1610: Job descriptions have been added to all non-settings

## jobs

HUB2-1621: Users can now to filter paths across all pages when searching for a related job

HUB2-1462: Installed internal SSL certificates can now be displayed on the command line

HUB2-1613: Plugins and internal tasks now use jobid consistently

HUB2-1664: Transparent recall is now using the new task engine

## Bug

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HUB2-1895: Snapdiff workflows now support root fileset snapshots

HUB2-1414: Circular symbolic links no longer cause analytics

errors

HUB2-1491: Shares now correctly cannot contain white spaces

HUB2-1683: Users and groups are no longer allowed to contain white spaces

HUB2-1693: Alerts are now shown immediately

HUB2-1821: Site options are now pre-populated in bidirectional sync setup

HUB2-1839: Analytics caches are correctly removed on an analytics error

HUB2-1861: Downloading a file list now provides the correct output

HUB2-1550: Fixed the runtime for paused jobs

HUB2-1614: Default spaces are created correctly for filesystems not mounted at the standard default

HUB2-1694: Cancelling a snapdiff with specific timings no longer causes the job to remain in an unknown state

HUB2-1701: Permissions are now correctly applied to the alerts on the the site page

HUB2-1706: Storage metric graphs now correctly display on lower resolutions

HUB2-1737: Site labels now default to their names if not set

HUB2-1464: Custom snapdiff jobs now correctly track progress correctly in job list page

HUB2-810: Space creation no longer fails due to unrelated salt state errors

HUB2-847: Site network settings now allow CIDR values as 0-32 , with 0 included

HUB2-1055: Only one job is now created when spaces are deleted

HUB2-1187: Un-necessary SSL warnings have been removed in worker logs

HUB2-1299: Ensure text in UI tooltips no longer go off the screen

HUB2-1396: Site colour picker shows multiple shades of a colour selected

HUB2-1466: None snapdiff job runtimes are now consistent between summary and detail views

HUB2-1478: Job ids can now be longer than 22 characters

HUB2-1480: Client certificate expiry is now set correctly internally

HUB2-1484: Clicking "x" for site filter chip now behaves consistently

HUB2-1492: Long space names now display correctly in the "location" section of space creation as well as summary screen

HUB2-1493: UI now correctly states the correct maximum name size

for spaces

HUB2-1535: Job progress bar in the job listing page now correct reflect progress

HUB2-1540: Job progress bar in the job listing page now shows progress without manual refresh

HUB2-1551: Task details modal tooltip no longer blinks

HUB2-1566: Job "id" field is now correctly set for settings tasks

HUB2-1574: Ordering of jobs in the job listing page when sorting by state is now consistent

HUB2-1587: Internal task non\_discovery\_rule\_filter now shows date started

HUB2-1589: ngclient authenticate now correctly uses the api\_secure\_verify from config file

HUB2-1603: Schedules for recreated filesets now correctly run

HUB2-1608: The rightbar no longer flickers in the job details page when scrolled down

HUB2-1609: Pending item stats have been removed snapdiff jobs as they do not use them

HUB2-1620: Non UTC datetime in custom DAG tasks now correctly refresh

HUB2-1628: Ensured that on custom plugin install that the internal packages do not change version

HUB2-1629: Populate settings job no longer get stuck in the "NEW" state with an "Unknown" owner

HUB2-1631: Delete space task now runs even if create space hasn't completed yet

HUB2-1635: Transparent recall no longer fails if existing transparent recall job does not exist

HUB2-1666: The filter bar now always displays correctly in the file browser

HUB2-1669: The current view is now retaining on jobs detail page refresh

2.2.5: 2024-06-21

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Improvement

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HUB2-1852 - Ensured that storage analytics can have its request timeout configured

Fix

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HUB2-1852 - Pass API\_TIMEOUT from the hub sysconfig file to the API container

2.2.4: 2024-05-31

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Improvement

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HUB2-1644 - Recursive navigate tasks no longer call mmlsfileset

more than once

## Bug

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HUB2-1680 - Task failures no longer stop downstream tasks to stay in PENDING

2.2.3: 2024-05-21

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## Improvement

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HUB2-1625 - The API wide timeout can now be configured

## Bug

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HUB2-1626 - The job details UI now waits for job results regardless of request duration

HUB2-1667 - The job list UI now waits for results regardless of request duration

HUB2-1682 - Job related web socket connections now waits for connection regardless of duration

HUB2-1619 - Jobs with the state "Failing" no longer disappear from jobs list page

2.2.2: 2024-05-06

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## Bug

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HUB2-1630 - Fixed issue with bidirectional sync re-submission

2.2.1: 2024-04-29

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## Bug

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HUB2-1630 - Transparent recall functionality now correctly submits with new engine

2.2.0: 2024-03-28

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## Feature

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UI Colours

Search Tags

Custom Attributes for SMB

## New DAG Job Engine

### Improvement

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- HUB2-291 - Better wrap long space names
- HUB2-365 - Different colors for task table chips instead of "gray" ones
- HUB2-368 - Fix scrolling arrows showing up by default on rightbar
- HUB2-652 - Utility for translating schedule object to user
- HUB2-770 - Automatically name policy condition group titles
- HUB2-863 - Task stats should apply the filter on job details page
- HUB2-895 - Provide API support for editing search tags
- HUB2-990 - Provide the ability to filter site alerts by severity
- HUB2-1032 - Search: Support extensions starting with dot for core.extension filter
- HUB2-1035 - Enforce unique space mount point (API)
- HUB2-1072 - Ensure group titles wrap better
- HUB2-1084 - Swap files above tasks in job details
- HUB2-1089 - Provide the ability to set the number of executed policy threads in the UI
- HUB2-1103 - Add buttons for pausing and resuming a job
- HUB2-1104 - API response for job Owner is different
- HUB2-1105 - Adjust Job details UI labels to new DAG statistics
- HUB2-1107 - Adjust websocket responses to conform with new serializers
- HUB2-1112 - Ensure NAS components are not visible if all sites in AD mode
- HUB2-1162 - Site filtering for policies
- HUB2-1213 - Ensure apbackup chip colours are consistent and correct site colour when input is changed
- HUB2-1218 - Make top bar green
- HUB2-1219 - Implement yellow progress bar across wizards
- HUB2-1220 - Provide the ability to set the colour of the Site Chip in the Create Site wizard
- HUB2-1222 - Updated colourful left bar menu buttons
- HUB2-1223 - Updated login page presentation
- HUB2-1224 - Cyclic colours for space cards
- HUB2-1225 - Provide the ability to set the colour of the Space Card in the Space Wizard
- HUB2-1226 - General CSS changes for button/checkbox/slider etc. elements
- HUB2-1227 - Add SMB Custom Options Panel to Create Space Wizard
- HUB2-1228 - Add SMB Customs Options Panel to Update Space Modal
- HUB2-1230 - Modify multiselect dropdown component for search of a tag
- HUB2-1237 - Remove feature flags for stable features
- HUB2-1256 - Provide API support for Site chip colours
- HUB2-1259 - Increase intervals for site refreshes
- HUB2-1261 - Provide alphabetical ordering for managed keys
- HUB2-1263 - Add tag selector filter to Search filters (in main search filter list)
- HUB2-1264 - Add tag editor to search side panel for asset
- HUB2-1282 - Grant metadata update permission to worker service user

HUB2-1291 - Switch site chips to double colour chips  
HUB2-1294 - Don't display muted alerts in the GUI  
HUB2-1310 - Update Hub favicon  
HUB2-1311 - Add danger notification  
HUB2-1312 - Make rightbar stay at the same place on scroll for global search page  
HUB2-1316 - Hide resubmit button for settings tasks  
HUB2-1328 - Better render "Date started" for cancelled tasks  
HUB2-1334 - Ensure backup UI components are only displayed if the site has nodes configured with the apbackup role  
HUB2-1346 - Implement database expiry page in global settings page  
HUB2-1358 - Make sticked sidebar on default for all elements  
HUB2-1376 - Re-expose grafana dashboard  
HUB2-1377 - Provide role lookup for apbackup feature  
HUB2-1378 - Add filter by job creator inside jobs  
HUB2-1389 - RPM of public facing html docs  
HUB2-1399 - Change text inside of tags multi-select  
HUB2-1401 - Remove Default Location toggle from space create wizard  
HUB2-1402 - Where a site only has one pool, auto-select it in the space creation drop-down  
HUB2-1411 - Document swagger URL  
HUB2-1417 - Add a base class to all non system worker tasks that check if it can run  
HUB2-1418 - Adjust the cancel process to use redis and change the cancelling states  
HUB2-1436 - Add the enable\_plugin setting to the plugin docs  
HUB2-1438 - Type filter updates on Jobs page for DAG jobs  
HUB2-1442 - Job details show job status as Pausing when the job is in state Pausing  
HUB2-1446 - Remove settings task types from workflow filter list in the UI  
HUB2-1447 - Support for filtering on CANCELLING and PAUSING states in the UI  
HUB2-1450 - Document the /hubmetrics endpoint  
HUB2-1469 - Task stats should include PENDING task counts  
HUB2-1496 - Provide clarification that File Stats processes more than Files  
HUB2-1498 - Rename the "In-Progress" file stats label to "Pending"  
HUB2-1530 - Rename Job Type to Workflow in job creator

## Bug

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HUB2-395 - Prevent setting space mount point to existing path  
HUB2-473 - Deleting any of the site config fields and submitting does not delete the fields  
HUB2-581 - Resolve an issue whereby a resubmitted job displays Job Creator unknown  
HUB2-703 - Client key name max length error  
HUB2-807 - Invalid date message on filebrowser table  
HUB2-812 - Resolve an issue whereby full screen for task logs does not display in full screen  
HUB2-892 - Resolve an issue whereby a space cannot be deleted using the python shell without deleting snapshot\_schedule first

HUB2-928 - Fix timeout message in search page  
HUB2-946 - Small Browser Window Stylesheet Issue  
HUB2-997 - Task type filter options are not loaded for some of the system jobs  
HUB2-1006 - Ensure that site creation summaries are accurate  
HUB2-1061 - Provide job not found page  
HUB2-1079 - Resolve an issue whereby full screen video preview does not fullscreen  
HUB2-1083 - Resolve an issue whereby joined sites have no job site labels  
HUB2-1086 - Resolve an issue whereby key names can be obscured  
HUB2-1136 - Very long file name takes all the width in file browser table  
HUB2-1144 - Resolve an issue whereby a invalid nginx config can cause frontend service interruption  
HUB2-1146 - Error handling error response from search  
HUB2-1184 - Cursor jumps to end of line as you type in the space name textbox  
HUB2-1185 - Job gets stuck in processing if permissions on ngmigrate do not allow execution  
HUB2-1189 - Remove unneeded warnings in the worker logs  
HUB2-1232 - Cannot add API key via UI if profile fields aren't set  
HUB2-1242 - Resolve an issue whereby all NAS interfaces cannot be removed  
HUB2-1245 - Resolve an issue whereby the Username is truncated in the top right  
HUB2-1260 - Resolve an issue whereby the Sites page shifts off screen when the left bar is expanded  
HUB2-1262 - Resolve an issue whereby flickering is observed when loading pages  
HUB2-1279 - 500 Server error when trying to verify an auth token  
HUB2-1284 - Resolve an issue whereby SAMBA configuration entries are duplicated on update or deletion  
HUB2-1285 - Unable to save NAS settings  
HUB2-1289 - Fix duplicate job detection preventing Samba keys from being updated more than once  
HUB2-1290 - Resolve an issue whereby a basic auth login prompt is presented  
HUB2-1293 - Pre-set public url is not populated on create site wizard  
HUB2-1301 - Setting a schedule to 1 hour causes it to run every minute  
HUB2-1307 - Unable to create NAS users after deleting NAS user  
HUB2-1314 - Create and update Space wizard error if no ngenea targets have been defined  
HUB2-1319 - Fix validation email for create user wizard & update user modal  
HUB2-1322 - Migration policy with three pools skips the second pool  
HUB2-1323 - Cannot create a policy with a schedule  
HUB2-1324 - Site settings - existing extra domain can not be deleted & validation needed for extra domain without name  
HUB2-1326 - public\_url = None crashes UI for unconfigured site  
HUB2-1339 - Fix "get() returned more than one Server" issue

HUB2-1359 - Fix height of the multi-select dropdowns to have valid minimum height

HUB2-1360 - Selecting a tag for an item, assign it for all items with exact path, which is not unique

HUB2-1362 - Job status appears as Ongoing for job in state UNKNOWN\_FAILURE

HUB2-1366 - Resolve an issue whereby ngenea target secrets are visible in log files

HUB2-1367 - Spaces can suddenly become unlinked where multiple "sites" are defined for a given PixStor cluster

HUB2-1379 - Filter input inside jobs is not working

HUB2-1380 - transparent\_recall does not honour api\_secure\_verify

HUB2-1384 - Cannot change snapshot schedule on a space

HUB2-1394 - SettingsTask deduplication logic prevents legitimate jobs from running

HUB2-1400 - Redis will consume all available ram on a system over time

HUB2-1403 - Fix settings refresh

HUB2-1404 - Timestamp rules for policy weighting are incorrect

HUB2-1412 - Space settings loads a blank screen if site label is not set

HUB2-1413 - Job submitter does not show anything if site label is missing

HUB2-1415 - Make sure the UI does not break when workflows are visible=False

HUB2-1416 - Link to space path lost on login

HUB2-1420 - Job submitter does not allow running workflow

HUB2-1423 - DAGs submit custom tasks to the wrong queue

HUB2-1425 - Tasks filter not applying to live updates

HUB2-1426 - Unable to disable site apbackup

HUB2-1434 - Tasks go into state "STARTED" even though they are still "PENDING"

HUB2-1441 - Ngenea worker service cannot start up when no filesystem exists

HUB2-1448 - Possible to cancel PAUSING jobs via the jobs overview

HUB2-1455 - Job details rightbar shows ongoing when the job is in cancelling state

HUB2-1467 - Job stats are not updated correctly when a DAG job is cancelled

HUB2-1477 - Docker images manifest file is missing from rpms

HUB2-1494 - UI is redirected to /undefined

HUB2-1495 - Only in progress File stats are updating

HUB2-1497 - Clicking the files stats number retrieves no content into the pop up JSON modal

HUB2-1499 - job task list IDs are not being sorted correctly

HUB2-1500 - API request should call refresh token once expired, rather than logging the user out

HUB2-1509 - Long job descriptions break the UI on job table

HUB2-1517 - Cancelling a recursive job can cause tasks to be stuck in PAUSED

HUB2-1518 - Cancelling a job while "recursive\_navigate" task is in started, causes objects to be stuck "In-progress"

HUB2-1521 - Error in return status of ngmigrate task

HUB2-1549 - Completed time not set for cancelled job with failed

tasks

HUB2-1559 - UI does not allow having empty emails on user update modal

2.1.1: 2024-02-08

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Bug

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HUB2-1367 - Spaces can become unlinked where multiple "sites" are defined on the same PixStor cluster

2.1.0: 2023-12-22

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Feature

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Ability to configure Ngenea Backup

Ability to manage NAS users and groups

Ability to view disk metrics

New storage info page

New Alerts UI

2.0.2: 2023-11-17

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Feature

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New Search page, integrating PixStor Search into Hub

New Policies page, to configure and run data migration policies from the Hub UI

HUB2-27 - Prevent access to UI components according to user permissions

HUB2-660 - Display all GPFS filesystems in Site Dashboard

HUB2-691 - Ability to give space shares custom names

HUB2-692 - Ability to create multiple shares per space at different paths

HUB2-754 - API to fetch settings tasks list for a job

HUB2-791 - Global view of Jobs in the UI

HUB2-792 - Support for submitting custom workflows in the UI

HUB2-823 - Support for setting analytics and metrics URL from UI

HUB2-828 - Ability to specify target path for Space creation

HUB2-831 - Filesystems API endpoint

HUB2-1003 - System folders are hidden in the UI

HUB2-1014 - Ability to bookmark and link locations in the file browser

HUB2-1043 - Ability to view job file lists in job details page rightbar

HUB2-1071 - Added DNS search domains to Site settings

HUB2-1075 - Support for editing job Schedules in the UI

## Improvement

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- HUB2-370 - Improved progress bars proportion in job details page
- HUB2-527 - Sensitive settings such as ngenea secret keys are hidden from the UI and API
- HUB2-785 - Include share path in file list for share jobs
- HUB2-795 - Jobs page view persists when refreshing the page
- HUB2-825 - All members of the group can be viewed via the "view all members" button
- HUB2-833 - Improved UI for settings Job details
- HUB2-834 - Adds user-friendly job descriptions
- HUB2-835 - Snapshot time can only be set when the frequency is greater than 1 day
- HUB2-861 - Ability to search for a job by ID on jobs page
- HUB2-905 - Updated storage target type naming in ngenea wizard
- HUB2-915 - "view task" modal is now full width in the jobs page
- HUB2-927 - Users list is sorted alphabetically in the groups tab
- HUB2-951 - Server address is now optional when creating S3 ngenea targets
- HUB2-1025 - Tooltip for long values in the details sidebar
- HUB2-1030 - Validation notice for Samba shares in the Space wizard
- HUB2-1070 - Don't allow setting server names longer than NETBIOS allowed limit
- HUB2-1124 - Updated labels and icons for default workflows

## Bug

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- HUB2-595 - Create space parent directory if it doesn't already exist
- HUB2-783 - Set owner for automated settings tasks to 'system'
- HUB2-796 - Exclude certain interface types from site NAS settings
- HUB2-805 - Filters not working on Users or Groups pages
- HUB2-816 - Workflow file list selected whole space instead of individual files
- HUB2-832 - Validation for space placement pools
- HUB2-854 - Folder metadata not loading in the file browser
- HUB2-856 - Fix settings page link for when a custom base URL is configured
- HUB2-931 - None values being written to samba shares
- HUB2-932 - Multiple delete jobs being triggered for the same share
- HUB2-933 - Don't force changing site shortcode on create site wizard
- HUB2-935 - Broken spaces page when only one site is configured
- HUB2-949 - Go back button for "advanced configuration" breaks UI on ngenea target wizard summary
- HUB2-953 - Add api\_secure\_verify support to ngclient
- HUB2-1028 - Site settings weren't updated in the UI after applying a change

2.0.1: 2023-09-19

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## Bug

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HUB2-931: Don't write None values to samba shares

## Documentation

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HUB2-673: Updated user docs for Ngenea Hub 2.0

2.0.0: 2023-08-11

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## Feature

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### Initial Release:

- Hub 2.0 UI
- Provide the ability to view pixstor sites and storage
- Provide the ability to configure pixstor sites from the Hub UI
- Provide the ability to create Spaces
- Provide the ability to view files globally across all Space associated sites
- Provide the ability to perform data workflows
- Provide the ability to monitor jobs and tasks
- Provide the ability to manage Hub users and groups
- Support for Active Directory/LDAP logon
- Worker support of Hub 2.0 functions
  - Analytics data
  - Get and Set pixstor settings for a site
  - Autojoin to Hub

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Early Termination. Except for early termination due to a material breach of this Agreement by DataCore, You may not terminate Your Term License, Subscription Term or Support Agreement without prior payment of all fees due for the entire period for which Your Order applies. For multi-year license or support terms, all future payments must be received by DataCore prior to DataCore's acceptance of early termination, which acceptance shall be made at DataCore's sole discretion. In the event of early termination due to a material breach of this Agreement by DataCore, you must first pay all fees due and unpaid in respect of the entire period for which Your Order applies up to the date of such breach. In no event shall any of Your prepaid fees be returned to You by DataCore for early termination.

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