

Gravity Deep

Admin User Guide



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1.Introduction

GravityDeep is an Archive and Storage management solution which ensures the availability and safety of your data with efficient backup.

GravityDeep supports the following storage devices:

- Disk Storage.
- LTO tapes (LTO 5, LTO 6, LTO 7, LTO 8)
- ODA.
- DVD.

Bin: Bin is a storage space, which can be shared to access it from multiple locations.

Watch-Folder: It is a folder inside the source bin. Any files placed inside this folder will be detected and moved to an Archive-Ingest folder.

Archive-Ingest: It is another folder physically located inside the same source bin. Any files detected inside the Watch-Folder are moved to this folder.

Cache: In GravityDeep, Cache is used as a temporary and immediate-access storage. It has been introduced to remove the dependency of secondary storage device availability.

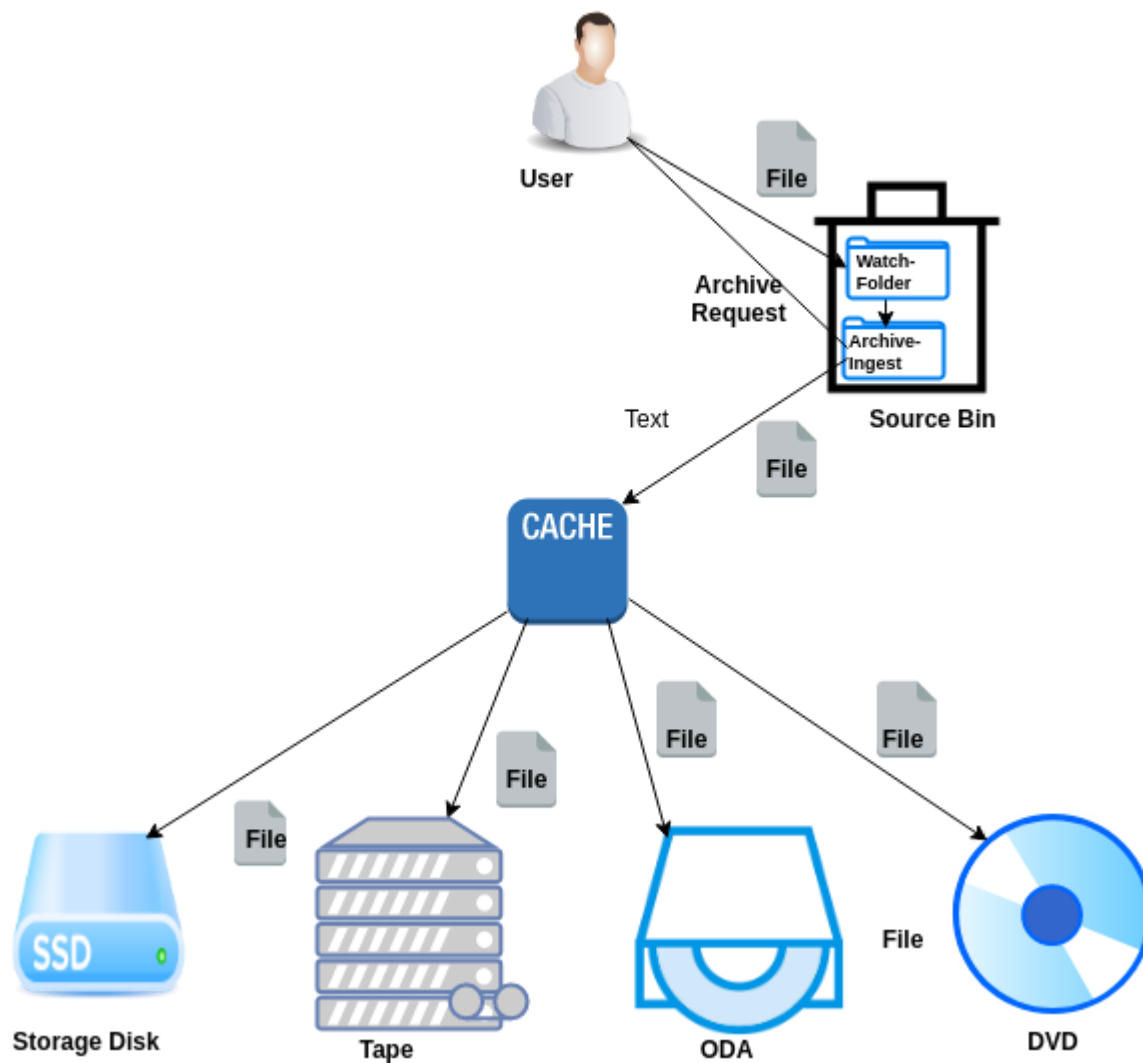
Pool: Pool is a logical group of storage components.

Workflow: Workflow defines a set of actions that need to be done, to complete the task.

1.1 Archive Workflow

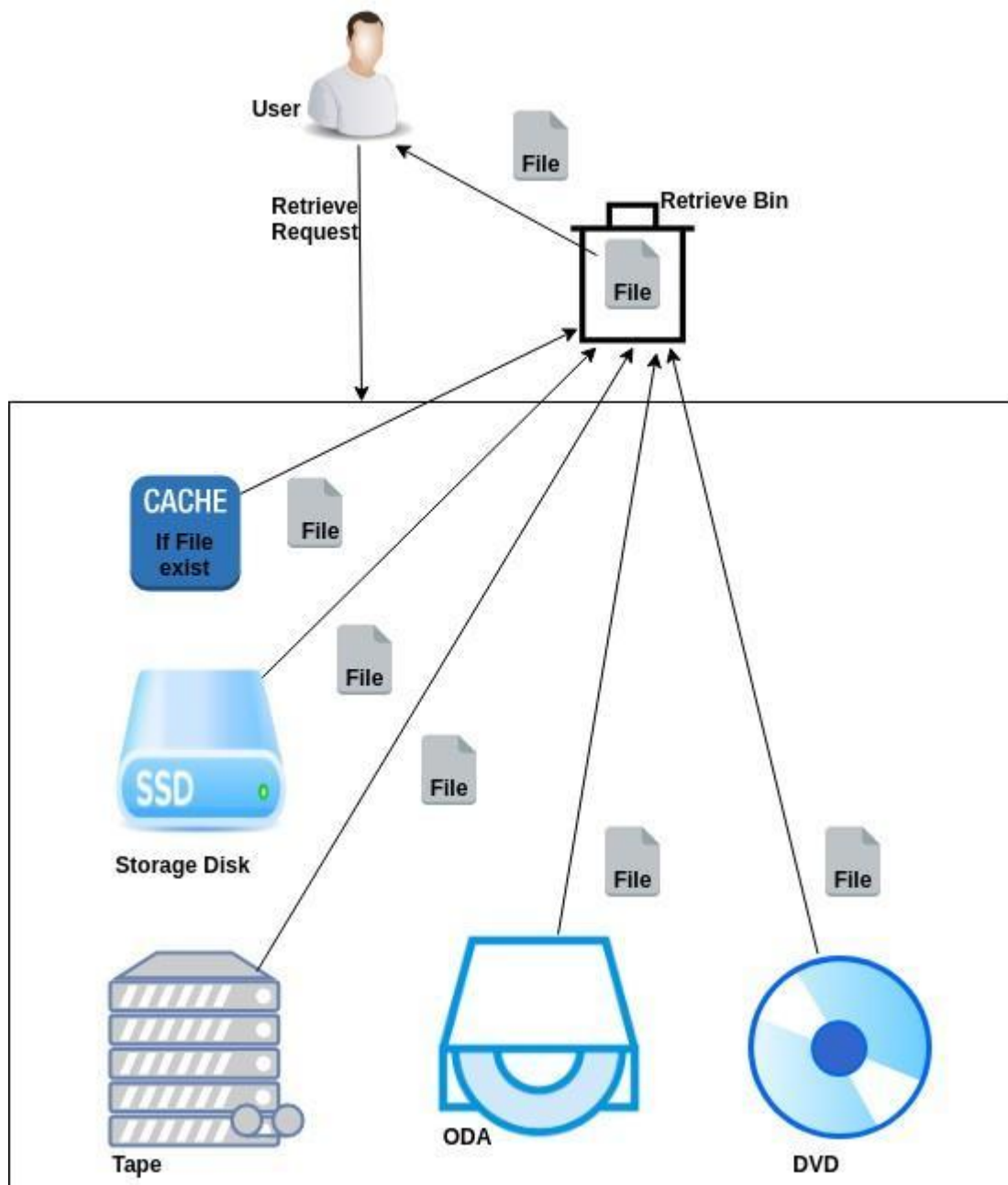
Once a user places assets inside the Watch-Folder of a source bin, the assets are detected and moved to an Archive-Ingest folder. The assets present in this Archive-Ingest folder are listed to the user in GravityDeep's Workspace-> Archive. Users can select the files and archive them to any required pool. If Auto Archive is enabled for the source bin, all the assets present inside the source bin will be automatically archived by following the created Workflow.

By default, the assets will be archived to Cache. From Cache, they can be achieved to any secondary storage device when it is available.



1.2 Retrieve Workflow

Once the assets are archived, users can retrieve the assets whenever required. While retrieving, by default Cache is checked first for the requested asset (since cache is a temporary storage, all files might not be present in Cache). If the assets are present in cache, retrieval happens from it else the assets can be retrieved from any secondary storage. Also, User can change the retrieval device priority.

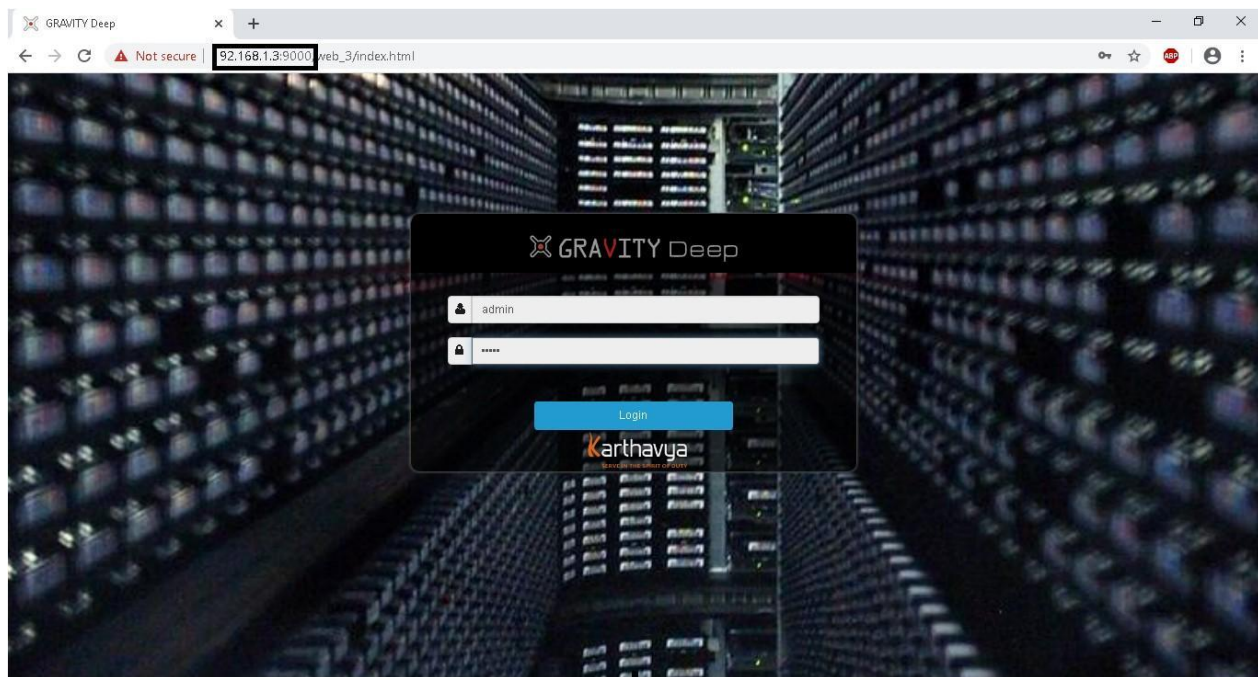


2. GravityDeep Setup Guide

Once the installation is completed, Admin can login to GravityDeep web using the url:

[Installed_Server_IP:9000]. Login to the web by providing the Username and Password credentials.

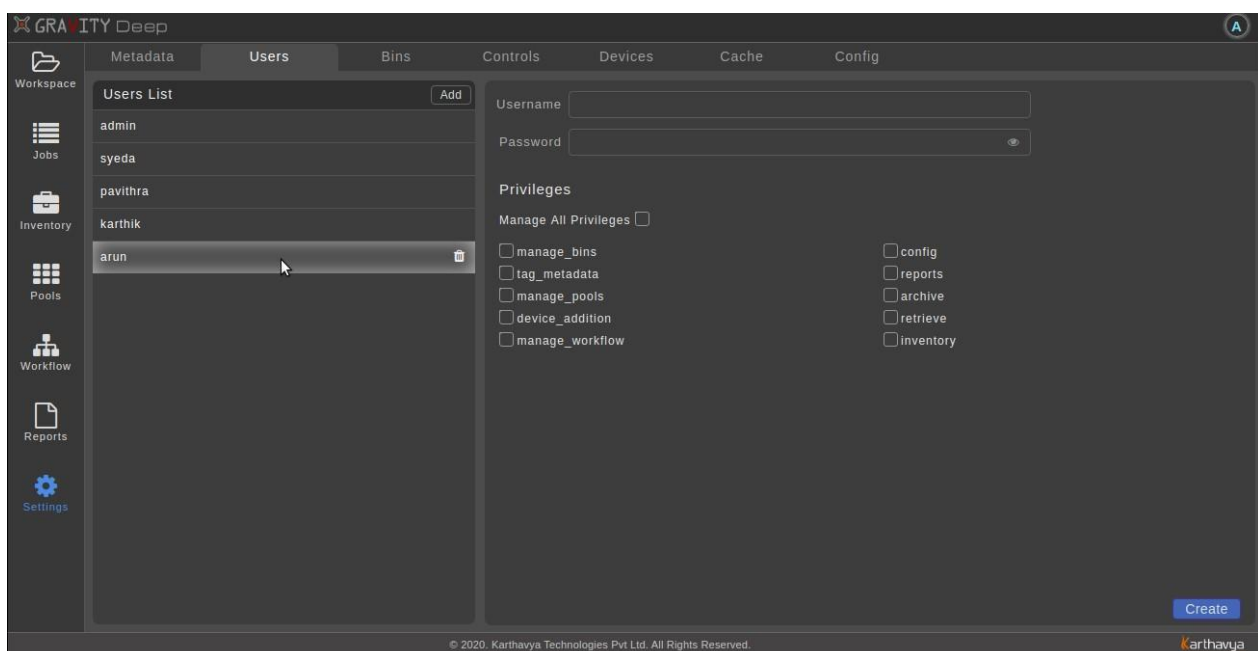
Note: By default, user admin will be created.



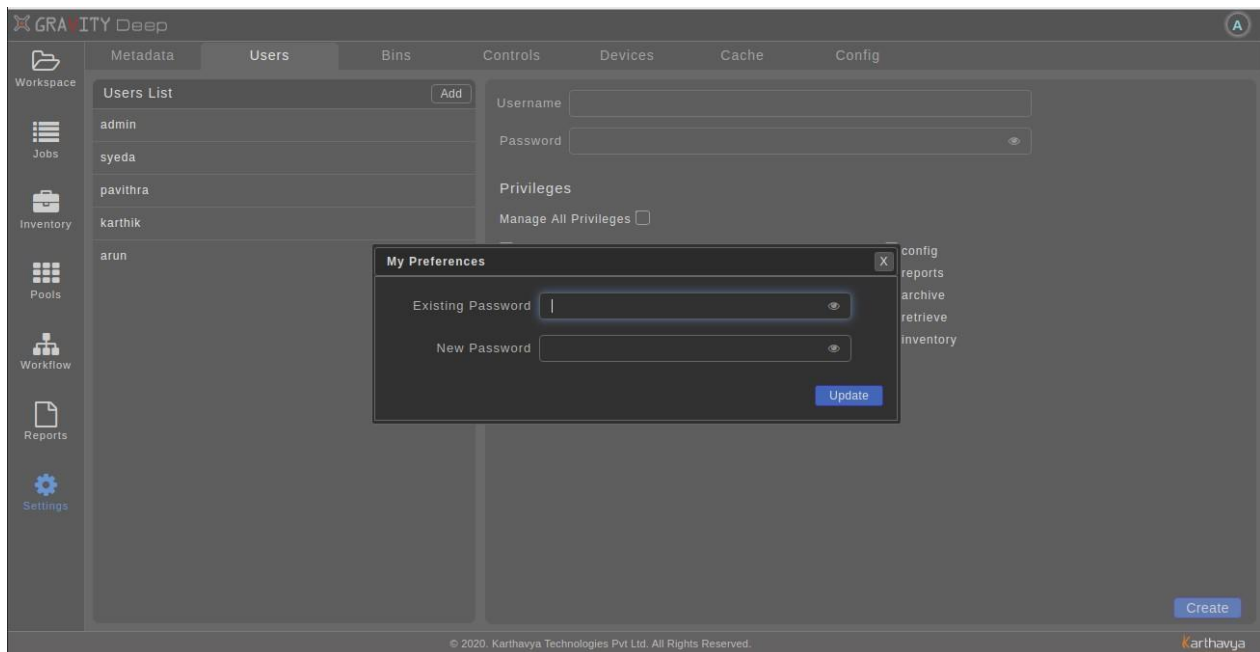
2.1 Manage Users

Admin can create users by adding appropriate privileges. Based on the privileges assigned, a user can have the rights to execute tasks. By default, user Admin is created with all the privileges.

To create a new user, go to Settings-> Users. Here, all the existing users will be listed in the Users List panel. Create a new user by clicking Add. Enter the Username, Password, select the required Privileges and Create it. To edit the existing user, select the user, update the user's credentials, and click Update. To delete a user, click on the delete icon present on the right side of the user. Confirmation response will be asked, based on which required action will be taken (Logged-in user cannot be deleted).



To change the user's password, select the user icon at the top-right corner and click on My Preferences. Give Existing Password, New Password and click Update.



2.2 Manage Bins

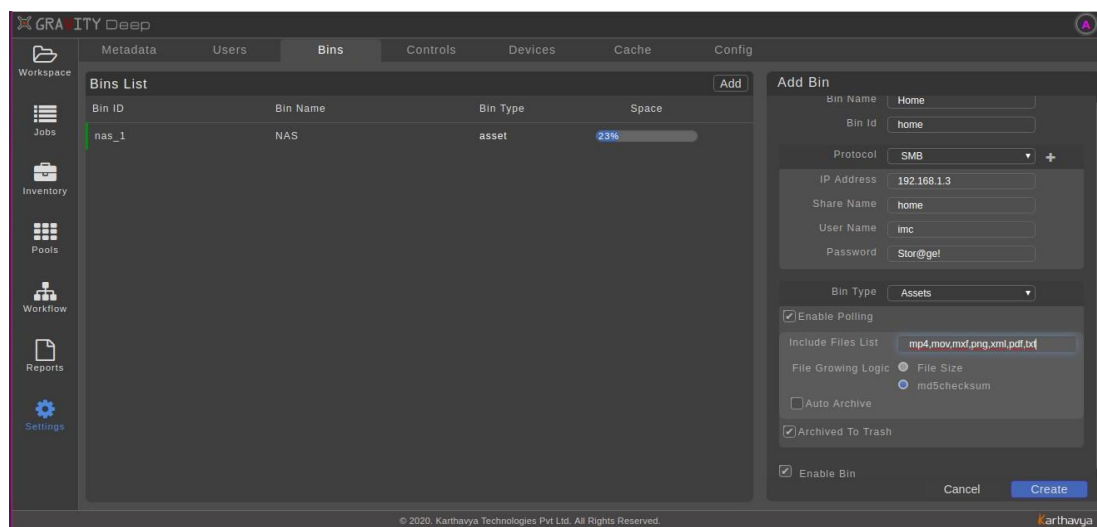
Any storage generally contains several storage spaces or slots. These are called Storage bins. Bins are the basic storage spaces in GravityDeep. In this section, we will explain how to create different types of bins in GravityDeep.

After logging into the web, go to Settings -> Bins. Existing bins will be listed in this page. To create a new bin, click Add in the top-right corner of the page. Add the following fields which are common to all types of bins. Bin Name Bin Id Protocol [SMB] IP Address Sharename Username Password.

2.2.1 Source Bin Creation

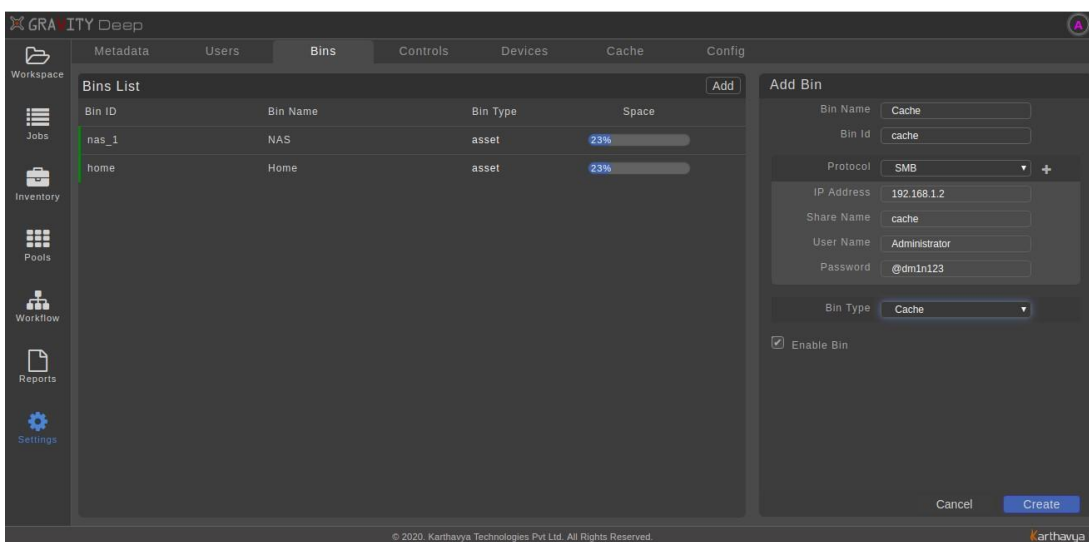
Bin Type- Select Asset type to create an asset bin

- o Enable Polling- Assets inside the Watch-Folder of that source bin will be polled (i.e. assets are monitored constantly and once detected; they are moved to the Archive-Ingest folder).
- o Include File List- It specifies what type of files need to be polled (by default mp4, mov, mxf file extensions are added)
- o File Growing Logic- It specifies the logic to detect the file state (by default md5 checksum is selected)
- o Auto Archive- Ingested files will be auto-archived.
- o Move to Trash- Files are moved to a Trash folder after the archive is completed.
- o Enable Bin- To state the validity of bin (i.e. if enabled or disabled).



2.2.2 Cache Bin Creation

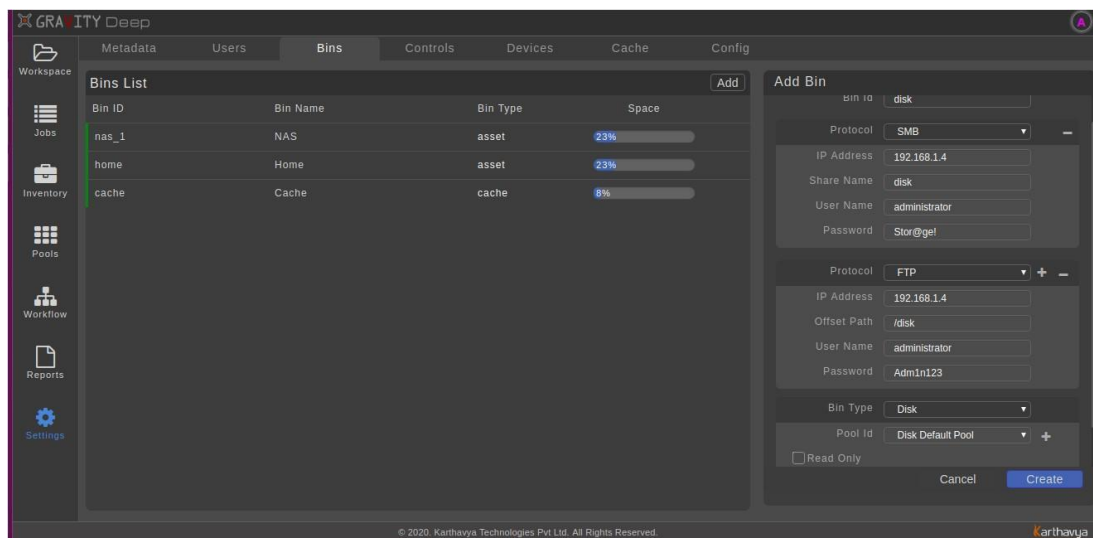
- o Bin Type- Select Cache type to create a cache bin
- o Enable Bin- To state the validity of bin (i.e. if enabled or disabled).



2.2.3 Disk Bin Creation

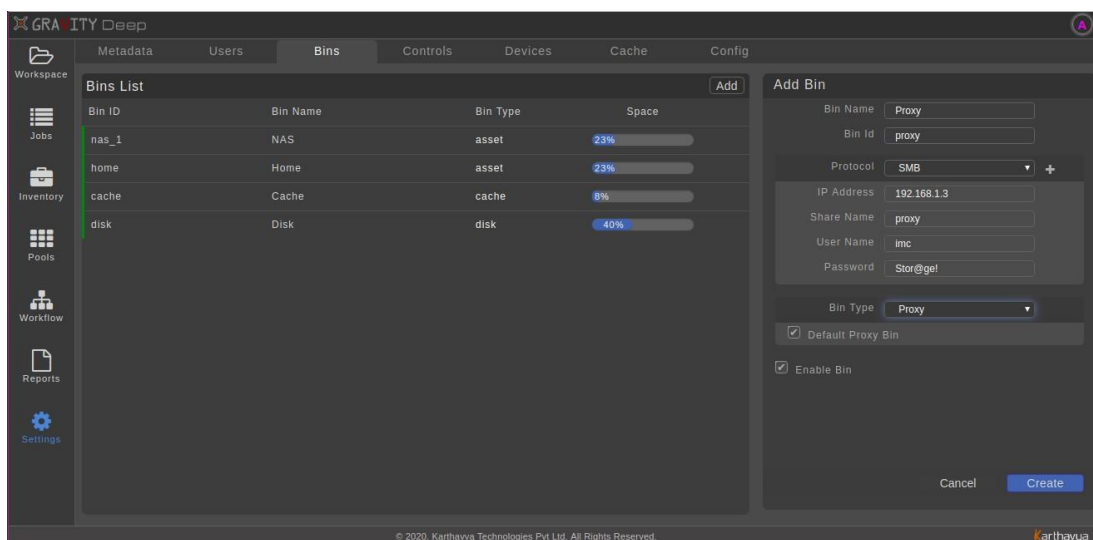
To create a Disk Bin, addition of two protocols is required. SMB and FTP.

- o Add SMB credentials. To add FTP credentials, click + next to Protocol and select FTP in Protocol dropdown. Add IP Address, Offset Path, Username, Password.
- o Bin Type- Select Disk type to create disk bin.
- o Pool Id- To assign to a pool. An existing pool can be selected, or a new pool can be created by clicking +, upon which user is redirected to the pool creation panel.
- o Read Only- To make the bin read-only.
- o Enable Bin-To state the validity of bin(i.e. if enabled or disabled).



2.2.4 Proxy Bin Creation

- Bin Type- Select Proxy type to create proxy bin.
- Default Proxy Bin- To make the bin as a default proxy bin. (At least one default proxy bin should exist to generate proxy for the assets)
- Enable Bin- To state the validity of bin (i.e. if enabled or disabled).



To edit an existing bin, select the target bin (edit window appears). Click the Edit icon at the top right corner.

Note: After archiving assets to Cache and Disk, edit and delete on these bins as well as Default Proxy Bin is not allowed.

3. Storage Device Addition

A Storage device also known as a Storage medium is defined as any type of computing hardware that stores data. They are one of the core components of any computing device. There are two different types of storage devices:

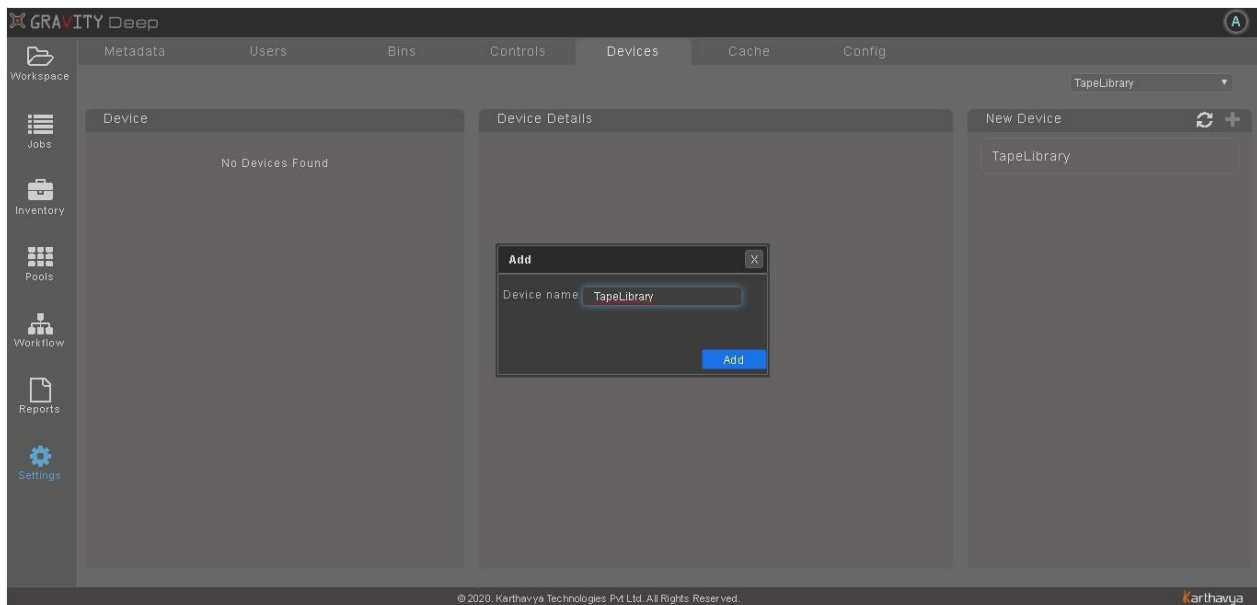
- **Primary storage devices:** These types of devices are generally smaller in size, designed to hold data temporarily and are internal to the computer. They have the fastest data access speed as well as include RAM and cache memory.
- **Secondary storage devices:** These usually have large storage capacity, and they store data permanently. They can be either internal or external to the computer. They include the hard disk (Disk Bin), tape drive, optical disk drive and USB storage device.

In this section, we see how to set up a Tape Drive (ManualTape or TapeLibrary) and Optical Disk Drive to GravityDeep.

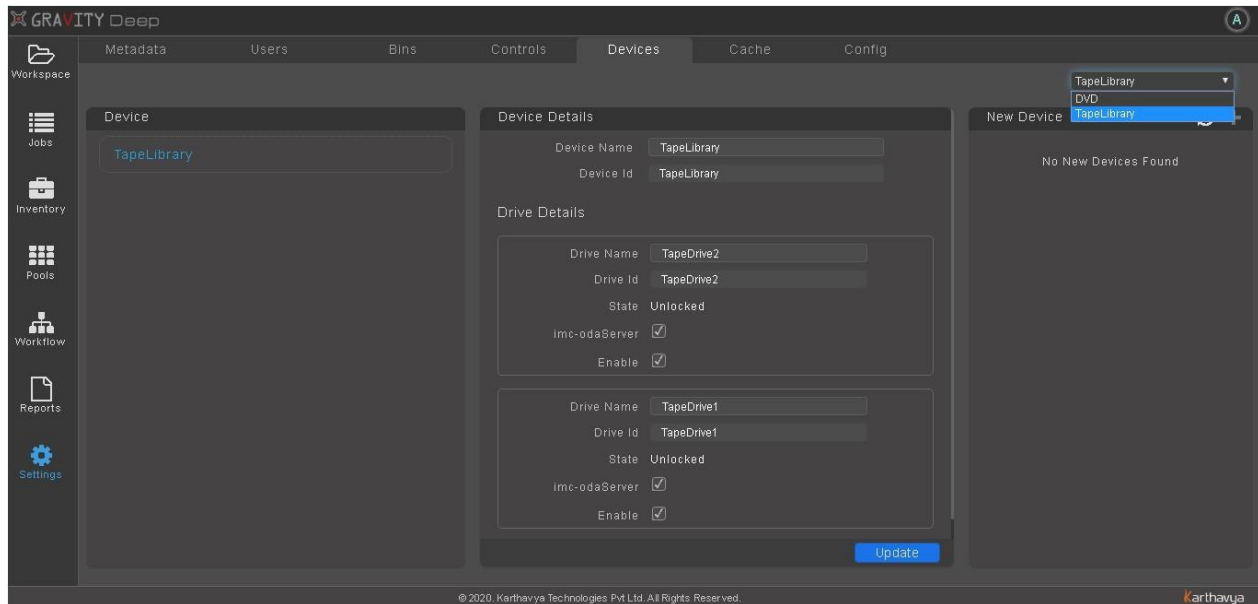
Goto Settings -> Devices. By selecting appropriate device type from the dropdown present at the top-right corner, newly attached devices can be seen in the New Device section. Select the required device and click +. A device addition pop-up appears where the device name can be edited. Click Add after renaming the device. The added device moves from New Device to Device panel.

After adding the device, the drives can be enabled or disabled in the Device Details panel.

3.1 Device Addition



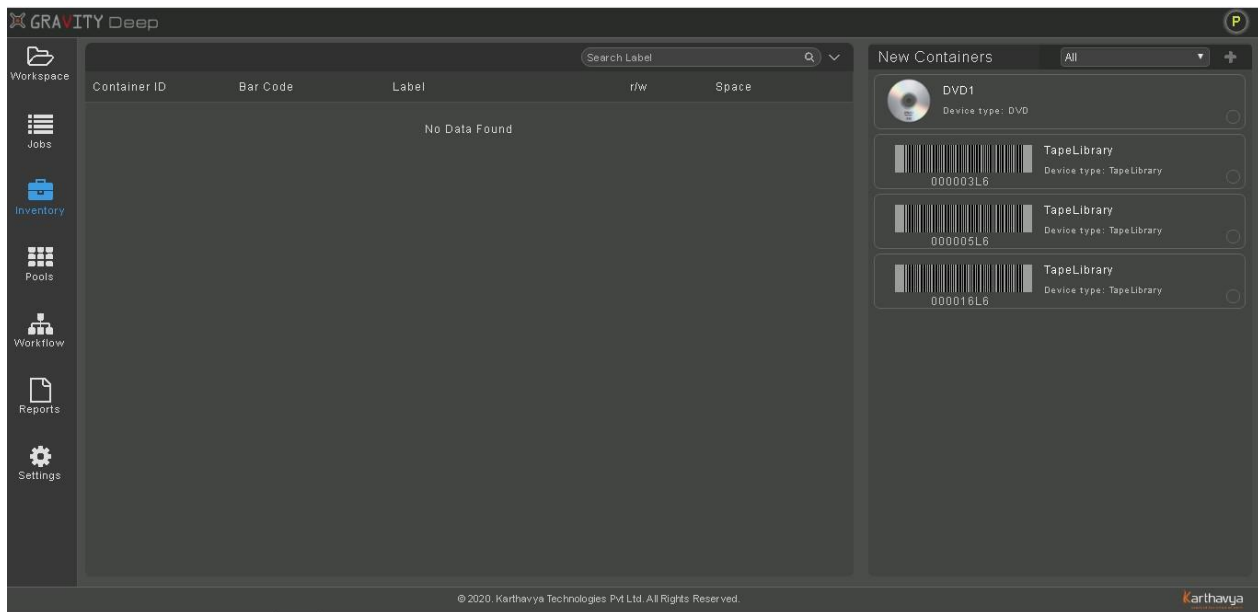
3.2 After Device Addition



4. Manage Inventory

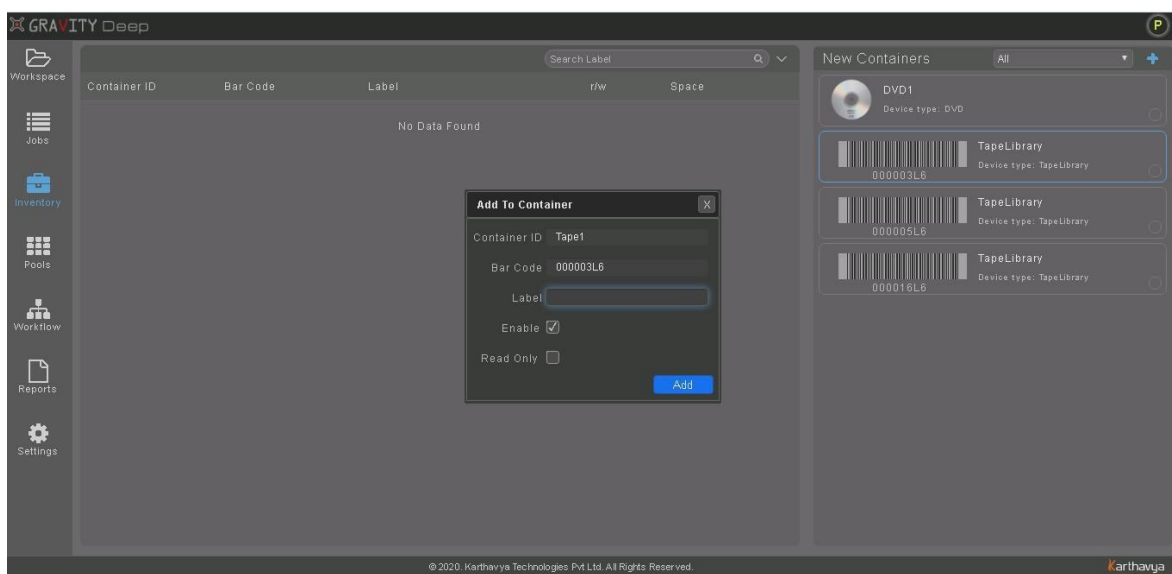
Inventory is a collection of goods that are available for use (i.e. the tapes that are available for use). In GravityDeep, addition of a Tape Drive to inventory is required to USE it for archival and retrieval.

After adding the storage device, all the Tapes of the device will be visible in Inventory page. The Tapes which are already added to the inventory will be listed in the left panel whereas the Tapes which are not added to inventory yet will be listed in right panel under New Containers.



Select the required Tape and click +, an 'Add To Container' pop-up appears.

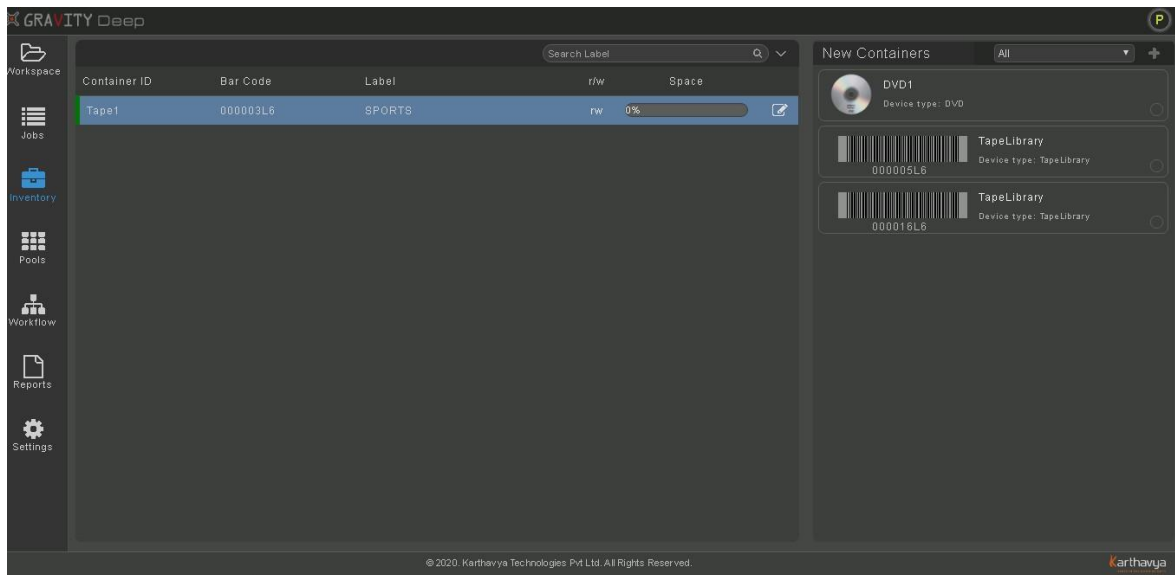
- Container Id- Non editable.
- Barcode- Add a barcode if it is not present (Barcode will be attached on the tape).
- Label- Give appropriate label.
- Enable- To disable the Tape deselect it.
- Read Only- Select if required to read from the tape and not write.



On click of Add, AddToInventory task starts where the selected tape will blink at the bottom right corner

In New containers panel. Once the tape is added to Inventory, the blink notification stops. If add to inventory fails, pop will be displayed with the reason for failure.

Once Tape is added to Inventory, it will be moved from the right panel to the left one.

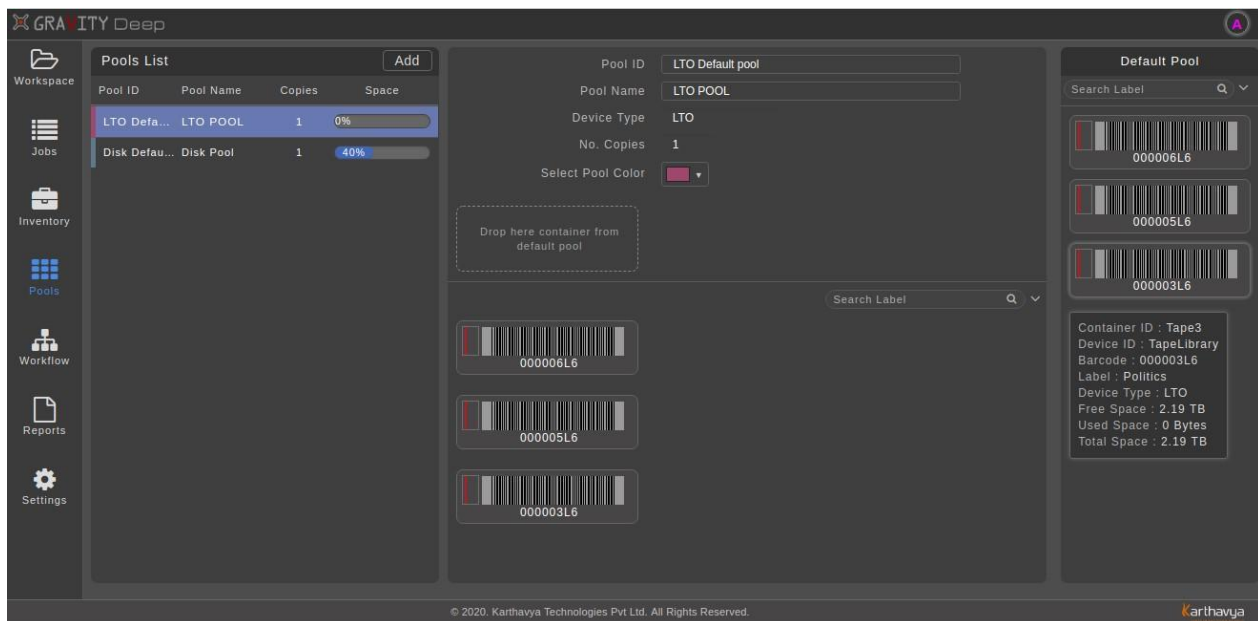


The added Tape can be edited by selecting edit icon on the Tape. Note that once a Tape is added, it cannot be removed from the Inventory.

5. Manage Pools

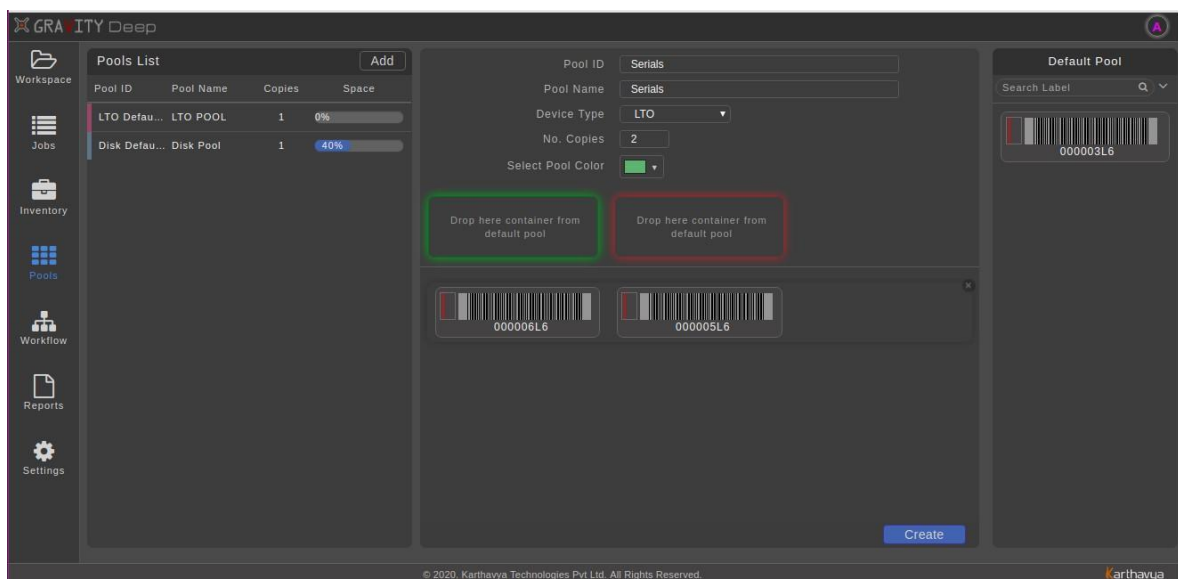
Pool is a logical entity having a group of physical hardware. In GravityDeep, Pools can be considered as a group of similar devices (i.e 2 or 3 Tapes can be grouped as one pool). They can be a Tape pool, Disk pool or a DVD pool. It is generally created to achieve large capacity of storage, that is in terms of GBs/TBs/PBs. With the help of pools, data can be organized and retrieved easily.

Once a Tape is added to the Inventory, it will be under a default device pool. All the secondary storage devices will have their respective default pools and the container (i.e the Tape/Disk/ DVD) added to inventory will fall under the default pool of that device.



The Tapes which are under default pool are also available to be a part of a custom pool (i.e. a user-customized pool), provided no asset is archived to that Tape. To create a new pool, go to Pools page, where all the existing pools are listed in Pools List(left panel) and those Tapes that are available to be added to a new pool will be listed under Default Pool(right panel). To add a new pool, click Add in the Pools List panel and add the following:

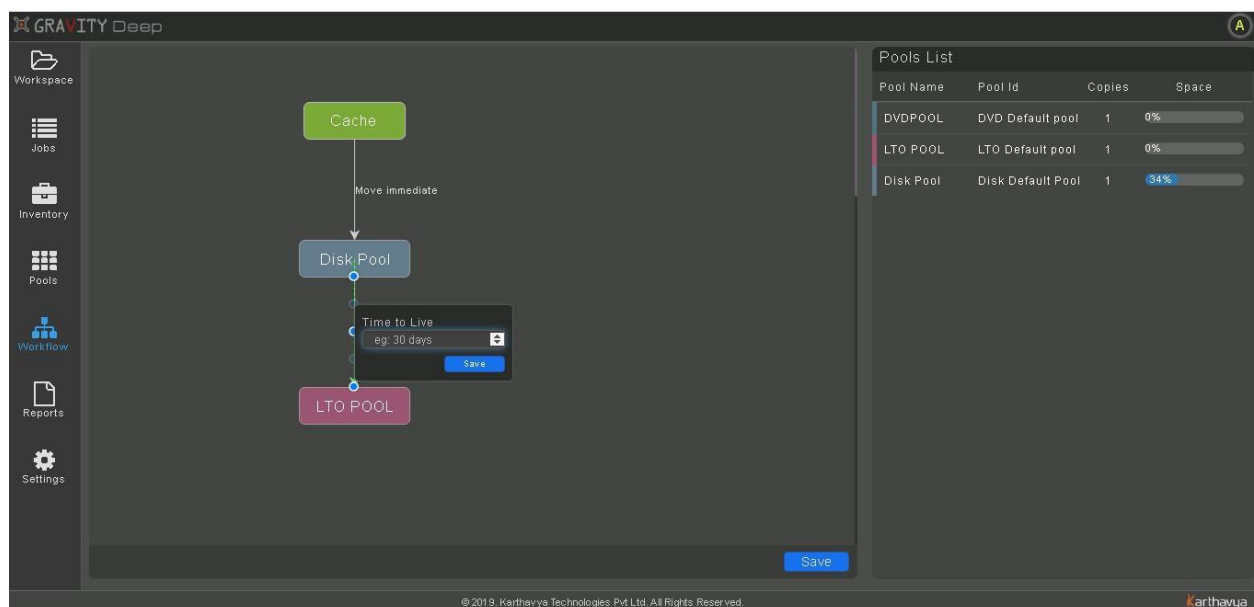
- Pool Id- Give unique pool id.
- Pool Name- Give name to the pool.
- Device Type- Select the device type (LTO, ODA, DVD) for the pool.
- Number of Copies- This number conveys the number of copies of a single asset. (i.e. one asset can have maximum 3 backups)
- Select Pool Color- Give appropriate pool color.
- Based on Number of Copies, the boxes appear to drag and drop the container from Default Pool. After drag and drop, click on Create



After adding the new pool, it will be listed in Pools List panel.

6. Manage Workflow

Workflow is a set of actions that need to be done to complete a task. In GravityDeep, Workflow defines the journey of an asset (i.e when user gives 'Archive to Workflow', where all the asset should be archived). Note that this is a one-time configuration where based on the user's requirement, the workflow can be designed. By default, Cache will be seen in the Workflow. In the Pools List panel, select the pool which is to be added to the Workflow. Drag and drop the selected pool into the workflow area and connect it from the respective source pool (supported source and destination are: Cache -> Any Pool, Disk -> LTO Pool). Double click on the connected line will show a Time to Live box, that represents the number of days after which the file will be archived to the destination pool. Assign the required Time to Live and Save. Once the full Workflow is created, click Save.



7. Configurations

7.1 Basic Configurations Settings

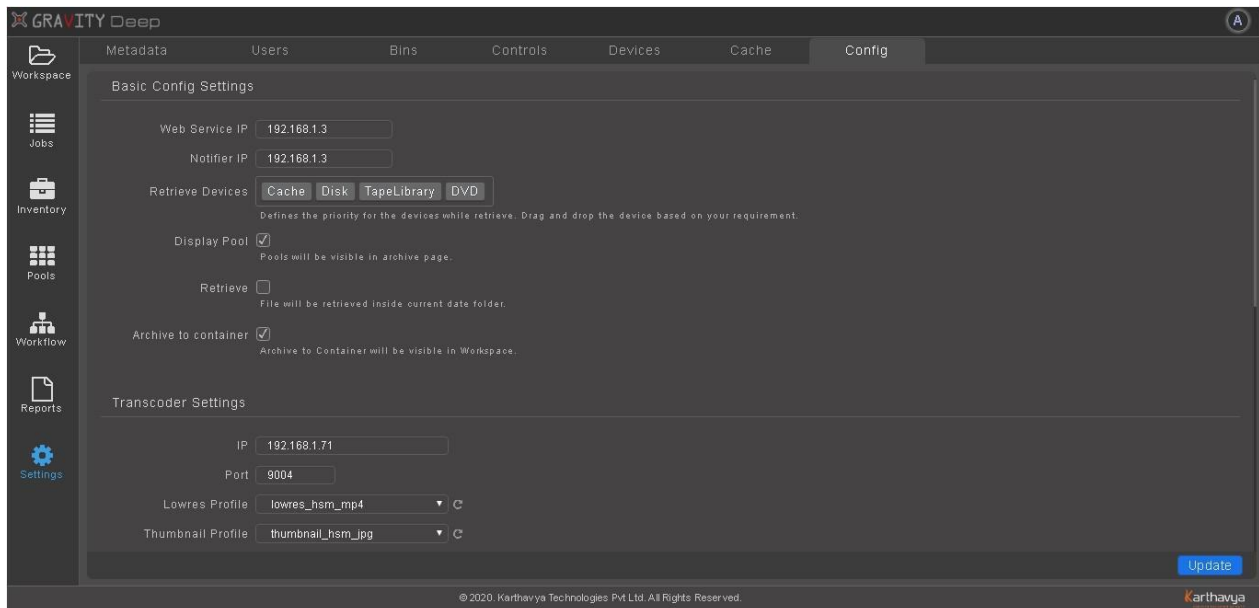
To update basic config, go to Settings-> Config and update the following:

- o Web Service Ip
- o Notifier Ip
- o Retrieve Devices- Defines the priority of device during retrieve based on which, retrieve-device will be selected.
- o Display Pool- The pools are visible to the user in Workspace->Archive page to archive.
- o Retrieve- Retrieve the asset and save in a 'date-folder structure' in the destination path.
- o Archive to Container- The tab will be visible to the user in Workspace to trigger 'Archive to Container' jobs (Required only for manual devices).

7.2 Transcoder Settings

To Generate the Lowres and Thumbnail for source and archived assets, the user needs to configure Transcoder. Users need to add the Source, Cache and Proxy bins which are created in GravityDeep in the Transcoder server with the same bin id and credentials.

Go to Settings-> Proxy and configure the below flags: * IP- Give Transcoder IP * Port- Give Transcoder Port (Default port is 9004). (To load transcoder profiles click reload icon, if given Transcoder is running and the Transcoder profiles are created in Transcoder) * Lowres Profile- Select the required Lowres profile. * Thumbnail Profile- Select the required Thumbnail profile. * Enabled- To enable Transcoder



7.3 E-Mail Notification

To setup email notification for pool storage, archive-retrieve failed jobs and archived retrieved assets, configure the below flags:

Threshold- To set a pool's storage notification value (in percentage). After the pool's storage reaches this value, user configured mail Ds will be notified.

- o Email to- List of user email ids to be notified whenever the pool reaches the Threshold value.
- o Email failed jobs to- List of user email ids to be notified when archive retrieve jobs fails.
- o Email reports to- List of user email ids to receive archived-retrieved assets reports.
- o NOTE: Email sender script should be added in task scheduler to mail to the configured users.

7.4 DB Backup configuration

To set up DB Backup, add the ftp share configuration.

- o FTP IP
- o FTP Port
- o Username
- o Password

o Offset Path

NOTE:DB dump script should be added in task scheduler.

The screenshot shows the 'Config' tab in the GRAVITY Deep interface. It is divided into two sections: 'Email Notification' and 'DB Dump Configuration'.

Email Notification:

- Threshold:** 90. Ex: Once the Pool storage reaches 90 % Email to users.
- Email to:** pavithra@karthavya.com. Ex: Once the Pools threshold reaches, pool storage report will be mailed to users.
- Email failed jobs to:** syeda@karthavya.com, karthik@karthavya.com. Archive/Retrieves failed jobs report will be mailed to the users.
- Email reports to:** arun@karthavya.com. Archived/Retrieved assets report will be mailed to the users.

DB Dump Configuration:

- FTP IP:** 192.168.1.3
- FTP Port:** 21. Default FTP port is 21.
- Username:** administrator
- Password:** [masked]
- Offset Path:** /t22_disk

An 'Update' button is located at the bottom right of the configuration section.

8. Manage Cache

Cache is a temporary storage. Therefore, once the cache cleanup threshold (Default 30 %) is reached, files will be cleaned up from cache (by scheduled script). All the cached assets are listed in Settings->Cache, where users can filter them based on file name, lock status, created time and pool ids. Users can also view how much space can be cleaned up from the cache by hover on Cache Storage. Users can perform cache cleanup by clicking Clean.

The screenshot shows the 'Cache' tab in the GRAVITY Deep interface. It displays a table of cached files with columns for File name, Created time, Size, and Pool ID. There are also filters for Locked Files, Unlocked Files, Created Time, and Pool ID.

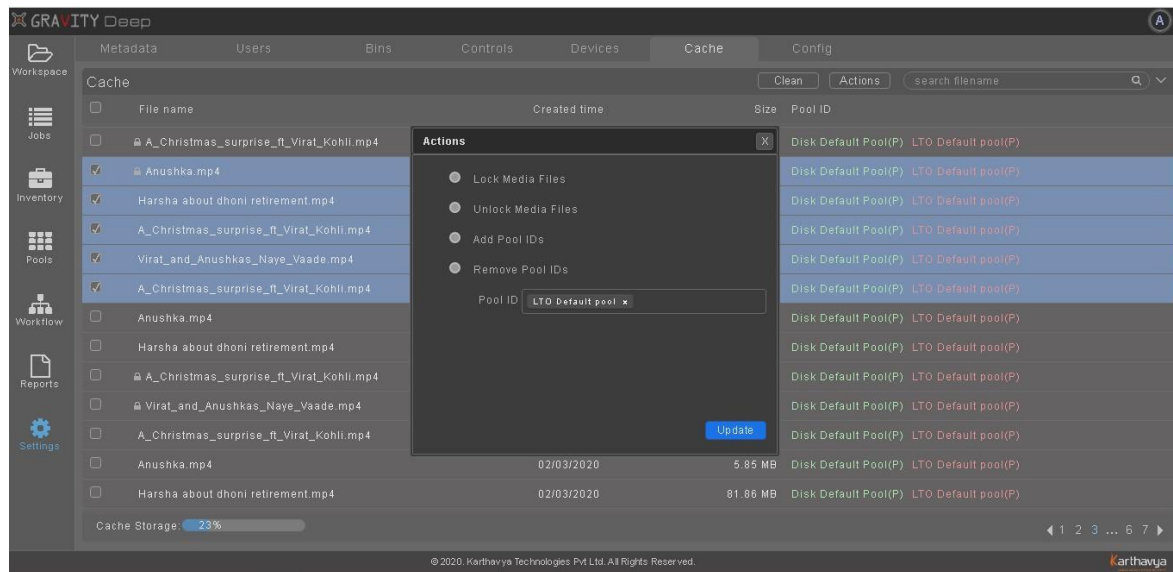
File name	Created time	Size	Pool ID
A_Christmas_surprise_ft_Virat_Kohli.mp4	02/03/2020	11.15 MB	Disk Default Pool(P)
Anushka.mp4	02/03/2020	5.85 MB	Disk Default Pool(P)
Harsha about dhoni retirement.mp4	02/03/2020	81.86 MB	Disk Default Pool(P)
A_Christmas_surprise_ft_Virat_Kohli.mp4	02/03/2020	11.15 MB	Disk Default Pool(P)
Virat_and_Anushkas_Naye_Vaade.mp4	02/03/2020	11.41 MB	Disk Default Pool(P)
A_Christmas_surprise_ft_Virat_Kohli.mp4	02/03/2020	11.15 MB	Disk Default Pool(P)
Anushka.mp4	02/03/2020	5.85 MB	Disk Default Pool(P)
Harsha about dhoni retirement.mp4	02/03/2020	81.86 MB	Disk Default Pool(P)
A_Christmas_surprise_ft_Virat_Kohli.mp4	02/03/2020	11.15 MB	Disk Default Pool(P)
Virat_and_Anushkas_Naye_Vaade.mp4	02/03/2020	11.41 MB	Disk Default Pool(P)
A_Christmas_surprise_ft_Virat_Kohli.mp4	02/03/2020	11.15 MB	Disk Default Pool(P)
Anushka.mp4	02/03/2020	5.85 MB	Disk Default Pool(P)
Harsha about dhoni retirement.mp4	02/03/2020	81.86 MB	Disk Default Pool(P)

Cache Storage: 23%

User can select the required files and on click of Actions, the following actions can be performed:

- lock the assets
- unlock the assets
- add pool ids to existing pool ids

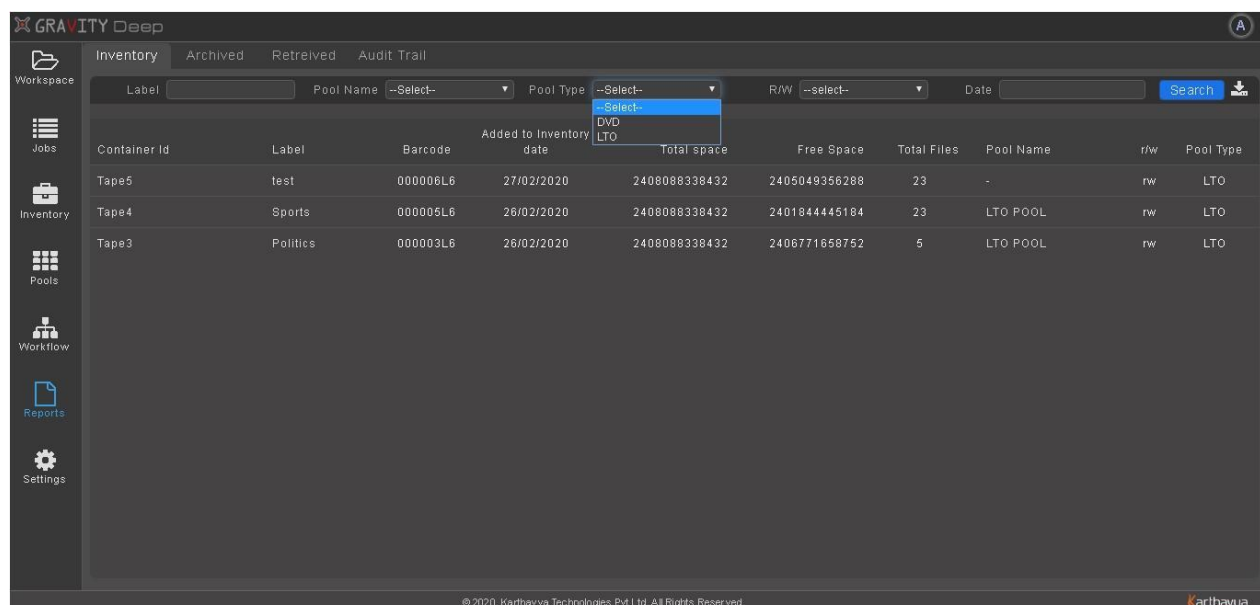
- remove pool ids from the existing pool ids



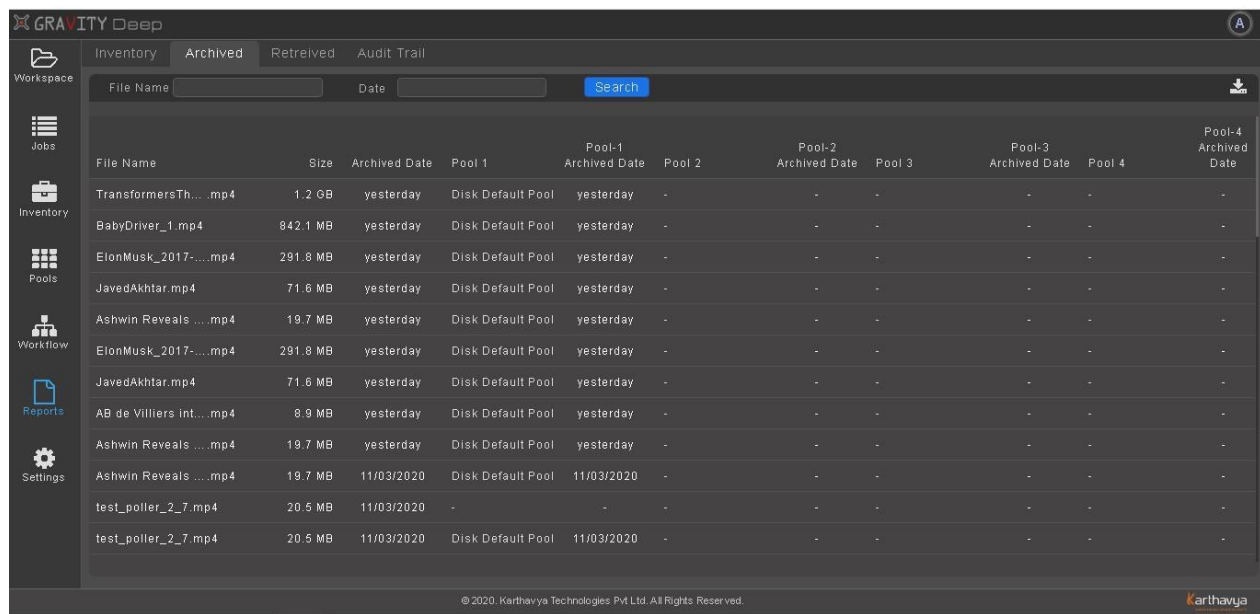
9. Manage Reports

Report is an account given, of a particular matter that one has observed, heard, done, or investigated. In GravityDeep, user can view and download (by clicking download icon) the following reports:

9.1 Inventory Report



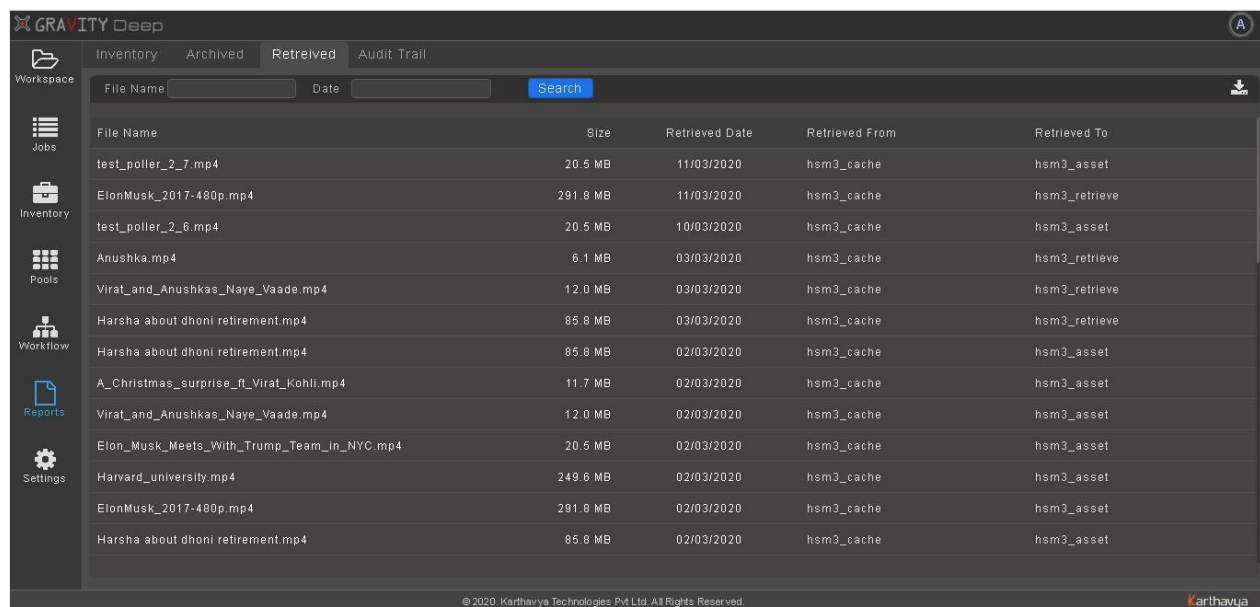
9.2 Archived Report



The screenshot shows the GRAVITY Deep interface with the 'Archived' tab selected. The table lists various files with their sizes and archival dates. The interface includes a sidebar with navigation options like Workspace, Jobs, Inventory, Pools, Workflow, Reports, and Settings. At the top, there are tabs for Inventory, Archived, Retrieved, and Audit Trail. A search bar is located above the table.

File Name	Size	Archived Date	Pool 1	Pool-1 Archived Date	Pool 2	Pool-2 Archived Date	Pool 3	Pool-3 Archived Date	Pool 4	Pool-4 Archived Date
TransformersTh... .mp4	1.2 GB	yesterday	Disk Default Pool	yesterday	-	-	-	-	-	-
BabyDriver_1.mp4	842.1 MB	yesterday	Disk Default Pool	yesterday	-	-	-	-	-	-
ElonMusk_2017-....mp4	291.8 MB	yesterday	Disk Default Pool	yesterday	-	-	-	-	-	-
JavedAkhtar.mp4	71.6 MB	yesterday	Disk Default Pool	yesterday	-	-	-	-	-	-
Ashwin Revealsmp4	19.7 MB	yesterday	Disk Default Pool	yesterday	-	-	-	-	-	-
ElonMusk_2017-....mp4	291.8 MB	yesterday	Disk Default Pool	yesterday	-	-	-	-	-	-
JavedAkhtar.mp4	71.6 MB	yesterday	Disk Default Pool	yesterday	-	-	-	-	-	-
AB de Villiers int... .mp4	8.9 MB	yesterday	Disk Default Pool	yesterday	-	-	-	-	-	-
Ashwin Revealsmp4	19.7 MB	yesterday	Disk Default Pool	yesterday	-	-	-	-	-	-
Ashwin Revealsmp4	19.7 MB	11/03/2020	Disk Default Pool	11/03/2020	-	-	-	-	-	-
test_poller_2_7.mp4	20.5 MB	11/03/2020	-	-	-	-	-	-	-	-
test_poller_2_7.mp4	20.5 MB	11/03/2020	Disk Default Pool	11/03/2020	-	-	-	-	-	-

9.3 Retrieved Report



The screenshot shows the GRAVITY Deep interface with the 'Retrieved' tab selected. The table lists files that have been retrieved, showing their size, retrieval date, and the source and destination locations. The interface is similar to the archived report, with a sidebar and navigation tabs.

File Name	Size	Retrieved Date	Retrieved From	Retrieved To
test_poller_2_7.mp4	20.5 MB	11/03/2020	hsm3_cache	hsm3_asset
ElonMusk_2017-480p.mp4	291.8 MB	11/03/2020	hsm3_cache	hsm3_retrieve
test_poller_2_6.mp4	20.5 MB	10/03/2020	hsm3_cache	hsm3_asset
Anushka.mp4	6.1 MB	03/03/2020	hsm3_cache	hsm3_retrieve
Virat_and_Anushkas_Naye_Vaade.mp4	12.0 MB	03/03/2020	hsm3_cache	hsm3_retrieve
Harsha about dhoni retirement.mp4	85.8 MB	03/03/2020	hsm3_cache	hsm3_retrieve
Harsha about dhoni retirement.mp4	85.8 MB	02/03/2020	hsm3_cache	hsm3_asset
A_Christmas_surprise_ft_Virat_Kohli.mp4	11.7 MB	02/03/2020	hsm3_cache	hsm3_asset
Virat_and_Anushkas_Naye_Vaade.mp4	12.0 MB	02/03/2020	hsm3_cache	hsm3_asset
Elon_Musk_Meets_With_Trump_Team_in_NYC.mp4	20.5 MB	02/03/2020	hsm3_cache	hsm3_asset
Harvard_university.mp4	249.6 MB	02/03/2020	hsm3_cache	hsm3_asset
ElonMusk_2017-480p.mp4	291.8 MB	02/03/2020	hsm3_cache	hsm3_asset
Harsha about dhoni retirement.mp4	85.8 MB	02/03/2020	hsm3_cache	hsm3_asset

9.4 Audit Trail

The screenshot displays the GRAVITY Deep Audit Trail interface. The top navigation bar includes tabs for Inventory, Archived, Retrieved, and Audit Trail. The Audit Trail tab is active, showing a table of user actions. A dropdown menu is open for the Action column, listing various actions such as Log-in, Log-out, Create, Update, Delete, Reload, Retry, Retrieve, MoveContainer, LoadContainer, UnloadContainer, Device Addition, Cache Cleanup, AddToInventory, ArchiveToCache, ArchiveToDisk, and ArchiveToContainer. The table columns are User Name, Action, File Name, Description, and Objects. The table contains 12 rows of data, including actions like 'Abort', 'ArchiveToCache', and 'ArchiveToDisk' performed by 'admin' on various files.

User Name	Action	File Name	Description	Objects
admin	Abort	Ashwin Reveals How Sehwa Mocked Him.mp4	in Reveals How Sehwa Mocked Him.mp4 requested for assetAbort	Files
admin	Abort	ElonMusk_2017-480p.mp4	Musk_2017-480p.mp4 requested for assetAbort	Files
admin	ArchiveToCache	JavedAkhtar.mp4	t 'JavedAkhtar.mp4' requested 'ArchiveToCache'	Files
admin	ArchiveToCache	Ashwin Reveals How Sehwa Mocked Him.mp4	t 'Ashwin Reveals How Sehwa Mocked Him.mp4' requested iveToCache'	Files
admin	ArchiveToCache	ElonMusk_2017-480p.mp4	t 'ElonMusk_2017-480p.mp4' requested 'ArchiveToCache'	Files
admin	Abort	JavedAkhtar.mp4	dAkhtar.mp4 requested for assetAbort	Files
admin	Abort	Ashwin Reveals How Sehwa Mocked Him.mp4	11/03/2020 Ashwin Reveals How Sehwa Mocked Him.mp4 requested for assetAbort	Files
admin	Abort	ElonMusk_2017-480p.mp4	11/03/2020 ElonMusk_2017-480p.mp4 requested for assetAbort	Files
admin	Abort	04-CS50 2017 - Lecture_16012020.mp4	11/03/2020 04-CS50 2017 - Lecture_16012020.mp4 requested for assetAbort	Files
admin	ArchiveToCache	JavedAkhtar.mp4	11/03/2020 Asset 'JavedAkhtar.mp4' requested 'ArchiveToCache'	Files

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GRA ITY Deep

Workspace

Jobs

Inventory

Pools

Workflow

Reports

Settings

Metadata

Users

Bins

Controls

Devices

Cache

Config

Categories

Tags

Custom Metadata

Custom Metadata List

Add

Name	Type
author	Text
created_date	Date
episode	Integer
cameraman	Text

Add Custom Metadata

Name

Dae of Telecast

Type

Date

☒ Range Based Search

Cancel

Create

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