



FLOW Storage Guide

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Preface

This guide provides the installation procedures and the information used for the FLOW system.

Conventions

The following conventions are used throughout this guide:

Bold text in procedures indicates icons, buttons, links, or menu items that you click on.

Italic text indicates variables.

`Monospace text` indicates text displayed on screen.

Technical Support

For questions not addressed in our documentation, contact EditShare Technical Support. Have the exact version number of your EditShare implementation, as well as your support agreement number.

EditShare strongly recommends that you purchase a support agreement for your system.

Please contact EditShare Technical Support at the following URL:

<http://www.editshare.com/support>

Information about new features and bug fixes are available in the EditShare ReadMe for your server's version, the EditShare update web site <http://updates.editshare.com/> or your server's Landing Page.

Chapter 1: Introduction

FLOW works with a range of storage types from different vendors. The types of Storage supported by FLOW come in 4 broad categories:

1. **Mountable Storage:** EditShare EFS, SMB, NFS, Nexus etc. These types of Storage can be mounted at the filesystem level for direct access.
2. **Object Storage:** AWS S3, Wasabi, Huawei etc. Object storage (often cloud based)
3. **Tape Storage:** EditShare Ark Tape
4. **Hybrid:** MassTech, Archiware, StorIQ. These types of storage provide a front end to different types of Storage backends

This document describes how to configure FLOW to connect to the different types of Storage and then covers the capabilities of each type of Storage.

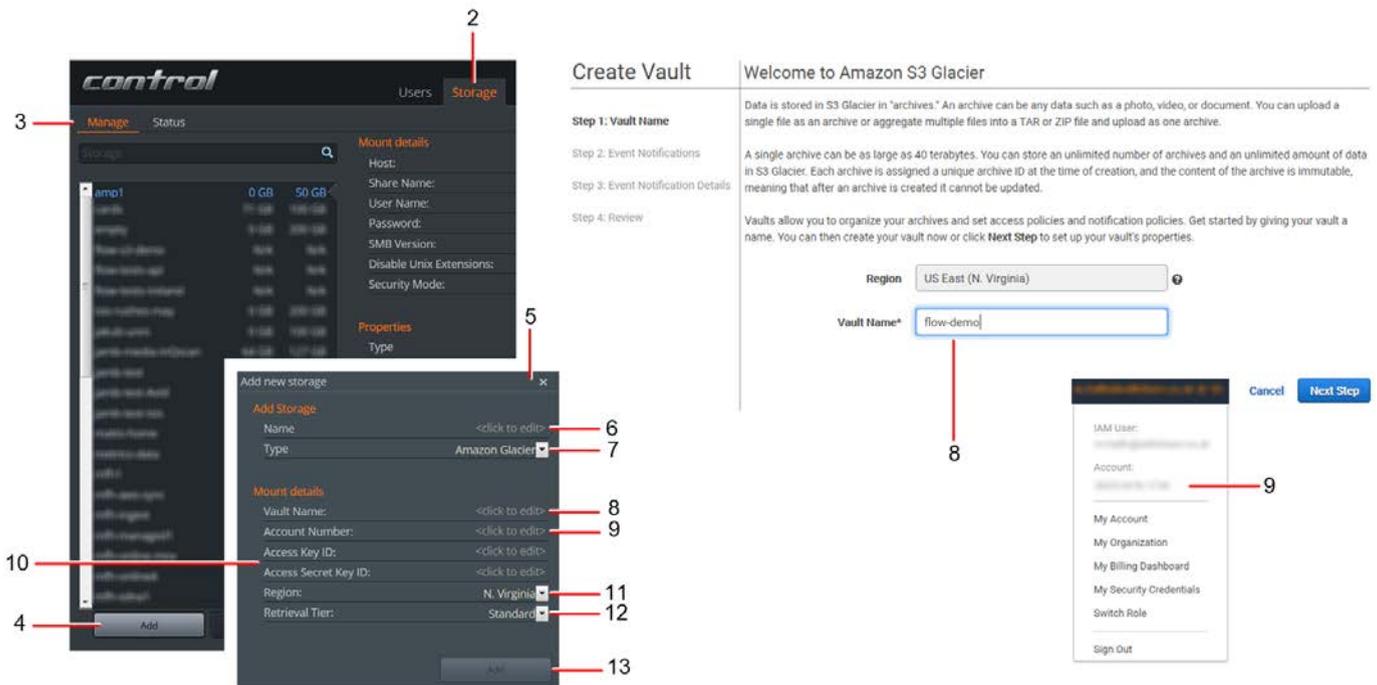
Chapter 2: Preparing Storage for Use with FLOW

You can add storage locations to FLOW. Once configured, you can use FLOW to manage the movement of material to and from this Storage. If the Storage is mountable FLOW can additionally Scan the Storage to discover new content, extract metadata and create proxy files.

The following sections describe how to configure FLOW to work with different types of Storage.

Amazon Glacier

Complete the following steps to configure an Amazon Glacier storage space. The diagram shows how the fields in the FLOW Control User Interface correspond to the fields in the Amazon Glacier User Interface:

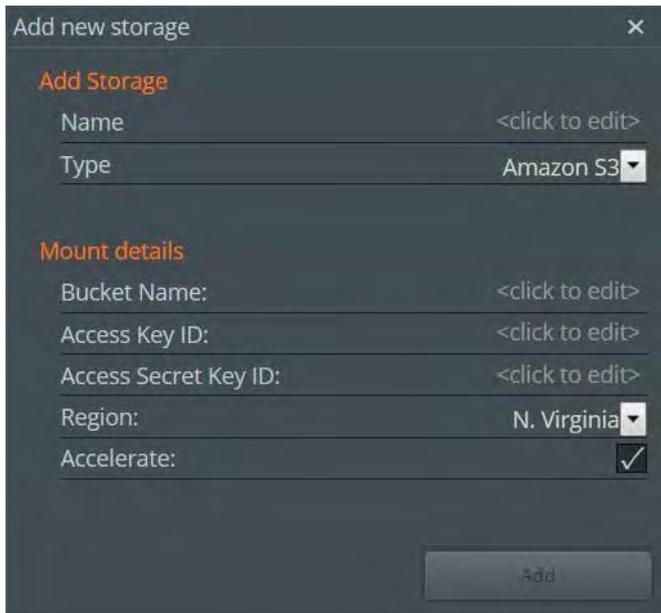


1. Login to the FLOW Control application using your credentials.
2. Click on the Storage tab.
3. Click on the Manage sub tab.
4. Click Add.
5. The Add new storage dialog is displayed.
6. Enter a name for the storage space.
7. Select Amazon Glacier from the storage type drop down list.
8. Enter the Vault Name as it appears in the vault interface (see above image).
9. Enter your account number as it appears in the vault interface (see above image).
10. Enter the Access Key ID and Access Secret Key ID as they appear in the vault interface (see above image). For more information, see [Understanding and Getting Your Security Credentials](#).

11. Select the Region from the drop down list.
12. Select the type of Retrieval Tier that you want to use. This sets the download speed and affects the cost. For more information, see [Amazon Glacier](#).
13. Click Add.

Amazon S3

Complete the following steps to configure an Amazon S3 storage space. The diagram shows how the fields in the FLOW Control User Interface correspond to the fields in the Amazon S3 User Interface:



1. Login to the FLOW Control application using your credentials.
2. Click on the Storage tab.
3. Click on the Manage sub tab.
4. Click Add.
5. The Add new storage dialog is displayed.
6. Enter a name for the storage space.
7. Select Amazon S3 from the storage type drop down list.
8. Enter the Bucket Name as it appears in the bucket interface (see above image).
9. Enter the Access Key ID and Access Secret Key ID as they appear in the vault interface (see above image). For more information, see [Understanding and Getting Your Security Credentials](#).
10. Select the Region from the drop down list.
11. If you want FLOW to use accelerated transfers, click the box to select it. For more information, see [Amazon S3 Transfer Acceleration](#).

Selecting FLOW to use accelerated transfers will affect the cost.

12. Click Create on the Amazon S3 User Interface, or click Add on the FLOW Control User Interface.

Note: If there are two Amazon S3 spaces that have the same setting for Region it is possible to copy between the two spaces using the Automation Copy task. However, if the region settings are different, attempts to copy between the two spaces will fail.

Archiware

Installing a Client on the FLOW Server

To obtain Archiware support you must install a client on the FLOW server. Complete the following steps to install an Archiware client on your FLOW server:

1. Visit the [Archiware Downloads](#) page.
2. Click New Install for Linux - deb:



3. Copy the downloaded file onto the FLOW server.
4. Install the client by running the following command:

```
sudo dpkg -i awpst561.deb
```

You can also install the client by using the following procedure:

1. Follow steps 1 and 2 above to get the URL of the download link.
2. Copy the download link by right clicking on 'click here to download' and copy the link location:



3. Download the file direct to the FLOW server:

```
wget [URL of deb file]
```

For example:

```
wget http://presstore\_downloads.s3.amazonaws.com/awpst561.deb
```

4. Install the file:

- FLOW Standalone:

```
sudo dpkg -i [path to downloaded deb file]
```

For example:

```
sudo dpkg -i awpst561.deb
```

- FLOW Integrated:

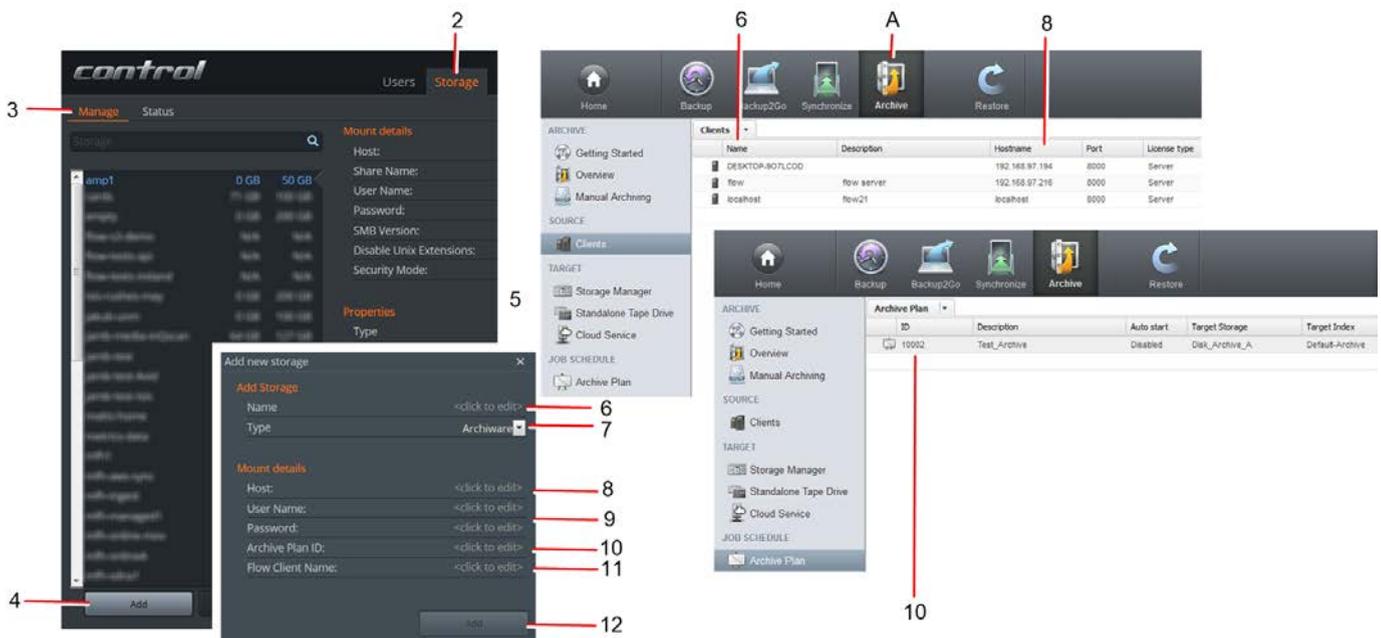
```
sudo es-updates install-deb [path to deb file]
```

For example:

```
sudo es-updates install-deb awpst566.deb
```

Configuring Archiware

Complete the following steps to configure an Archiware storage space. The diagram shows how the fields in the FLOW Control User Interface correspond to the fields in the Archiware User Interface. FLOW supports Archiware P5, the Archive module of the P5 suite, as indicated by the Archive icon labeled A.



1. Login to the FLOW Control application using your credentials.
2. Click on the Storage tab.
3. Click on the Manage sub tab.
4. Click Add.
5. The Add new storage dialog is displayed.
6. Enter a name for the storage space.
7. Select Archiware from the storage type drop down list.
8. Enter the Host name as it appears in the Archiware interface (see above image). This is the hostname or IP address of the Archiware server.

9. Enter the username and password as they appear in the Archiware interface (see above image). These are the credentials required to access the Archiware server.
10. Enter the Archive Plan ID as it appears in the Archiware interface (see above image). This is the number from the ID column for the Archive plan; in the above example the value is 10002.
11. Enter the FLOW Client Name as it appears in the Archiware interface (see above image). The FLOW Client Name is the value in the Name column in the Clients view in the Archive software. FLOW requires that the FLOW server running the FLOW Transfer service has the Archiware client software installed and that the machine is registered with the Archiware server as a client.
12. Click Add.

Archiware Issue when Integrating Archive System with FLOW

Archiware users who want to integrate their archive system with FLOW running on an EditShare platform may encounter the following error when attempting to install the Archiware client package.



This error occurs because port 8500, which is required by Archiware, is also used by EditShare Storage in certain configurations.

If this occurs, configure the Archiware client to use other ports (for example, ports 8600/9500 instead of 8000/9000). See the Archiware documentation for the correct method of changing the client ports. Also note that the client software configuration must match the corresponding client entry in the Archiware server UI.

Avid ISIS/NEXIS

If you want to use Avid ISIS or Avid NEXIS storage you must install a new kernel and supply the Avid Linux drivers.

```
AvidNEXISClient_e17.centos.x86_64_7.6.0_5.bin
```

```
AvidNEXISClient_e17.centos.x86_64_7.11.0_8.bin
```

To install software:

1. Install a kernel that supports Avid storage:
2. ssh to the FLOW server(s) and run

```
sudo python setup-flow.py
```

3. Choose 6/ Update Kernel for ISIS.
4. Choose the option that matches your kernel by the first two numbers.
5. If your current kernel starts with 4.4 then choose the 4.4 option.
6. Reboot after the installation process completes.

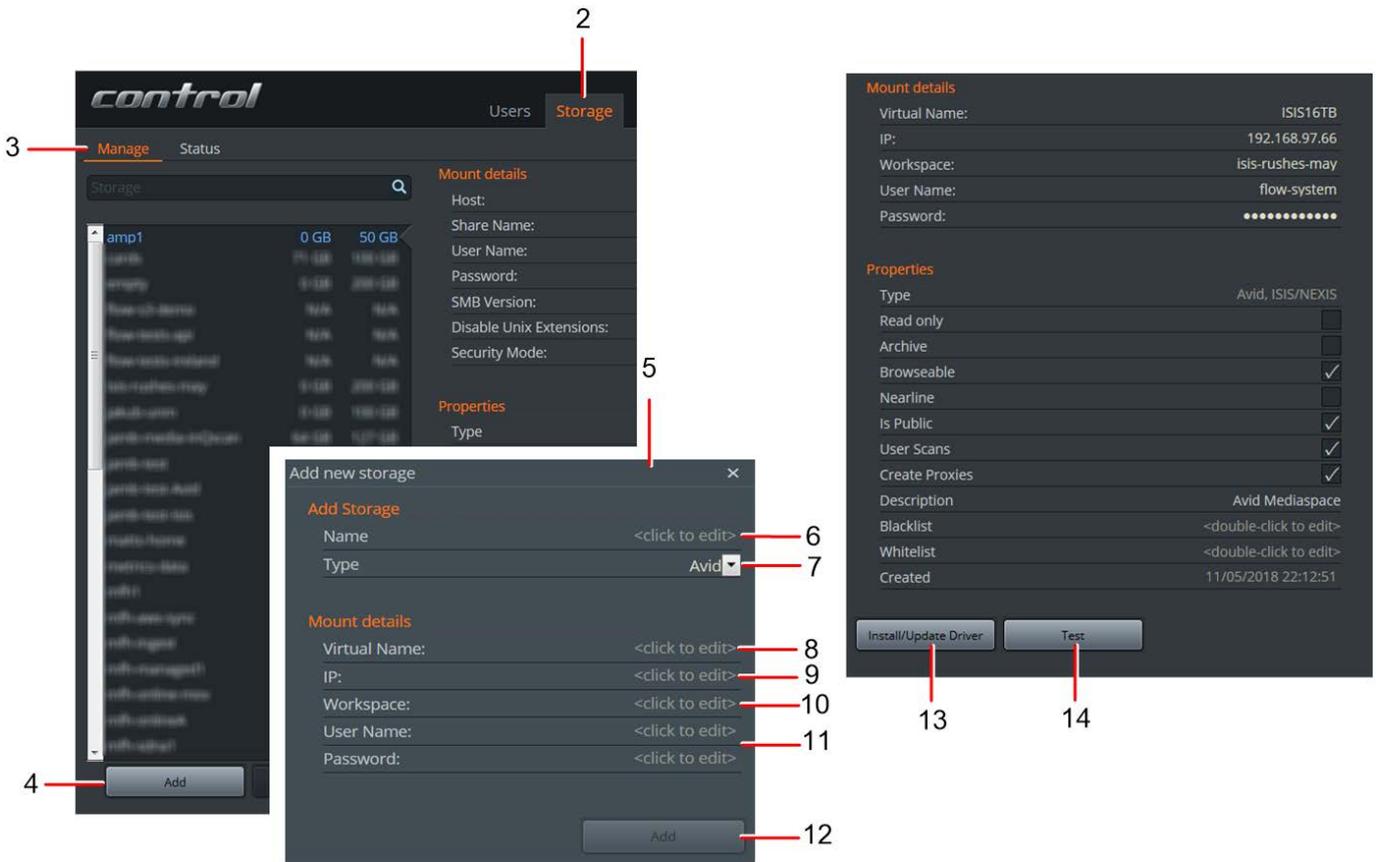
7. Login to FLOW Control and add a new Avid storage space, enter the hostname, IP address, workspace and user details and click Save.
8. Click on Install/Update Driver and browse to the Avid driver file and select it. Note that at the moment there is no feedback but you should see a message that the operation succeeded after about 30 seconds.

Note - you only need to upload the drivers once.

9. Click on the Test button and it should report a success. You can now scan the new space and add new ones as needed.

Adding Avid Storage within FLOW

Complete the following steps to configure an Avid storage space:



1. Login to the FLOW Control application using your credentials.
2. Click on the Storage tab.
3. Click on the Manage sub tab.
4. Click Add.
5. The Add new storage dialog is displayed.
6. Enter a name for the storage space.
7. Select Avid from the storage type drop down list.
8. Enter the virtual name. This is the host name of the Avid server.
9. Enter the IP address of the Avid server.
10. Enter the name of the workspace.

11. Enter the username and password. These are the credentials required to access the Avid server.
12. Click Add.
13. Click Install/Update Driver and browse to the Avid driver file and select it. Note that at the moment there is no feedback but you should see a message that the operation succeeded after 30 seconds or so.

Note: You only need to upload the drivers once.

14. Click on the Test button. A success message should be displayed.
15. You can now scan the new space and add new ones, as needed.

Azure Files

Complete the following steps to configure an Azure Files storage space. The diagrams show how the fields in the FLOW Control User Interface correspond to the fields in the Azure Files User Interface.

In Azure Files you add Files and give them access to a Storage Account.

1. Login to the FLOW Control application using your credentials.
2. Click on the Storage tab.
3. Click on the Manage sub tab.
4. Click Add. The Add new storage dialog is displayed.
5. Add a name for the storage space.
6. Select Azure Files from the storage type drop down list.
7. Enter the Host name as it appears in the Azure Files interface.
8. Enter the username and Password as they appear in the Azure Files interface (see above image).
9. Enter the name of the Share as it appears in the Azure Files interface (see above image).
10. Click Add. The connection details required can be fetched from the connection details in Azure. For example you may have a connection string similar to the following:

```
net use Z: \\flow.file.core.windows.net\media /u:AZURE\flow
z/O5DP9+w2Gd7Mg7fb9aTeCij9qvKbJ41PO2Y8Hxhgona7IxW9qwJVdvRR7f6E
ADuLD6VAkAFJr/RZLw1lsrkA==
```

You can extract the following information from the string:

- Host: flow.file.core.windows.net
- User Name: flow
- Password:

```
z/O5DP9+w2Gd7Mg7fb9aTeCij9qvKbJ41PO2Y8Hxhgona7IxW9qwJVdvRR7f
6EADuLD6VAkAFJr/RZLw1lsrkA==
```

- Share: media

BackBlaze

FLOW offers 2 methods of integration with BackBlaze:

1. Using native BackBlaze APIs
2. Using BackBlaze's S3 compatible APIs (supports Scan)

Please see BackBlaze documentation for a full description of these APIs.

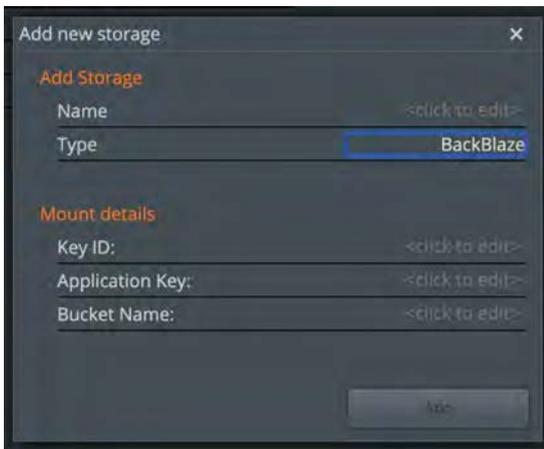
Integration with BackBlaze Native APIs

Complete the following steps to configure a BackBlaze storage space. The diagrams show how the fields in the FLOW Control User Interface correspond to the fields in the BackBlaze User Interface.

1. Login to the BackBlaze using your credentials.
2. Create a new application key. This includes which buckets that the application key grants access. It is recommended to limit the number of buckets to which a single key has access.

NOTE: make note of the keyID and applicationKey.

3. Click Add.
4. Within FLOW Control, create a new BackBlaze space and configure the "Key ID", "Application Key", and "Bucket".
5. Click Add. The Add new storage dialog is displayed.



6. Enter a name for the storage space.
7. Select BackBlaze from the storage type drop down list.
8. Enter the Key ID, Application Key, and Bucket, as it appears in the BackBlaze space previously configured.
9. Click Add.

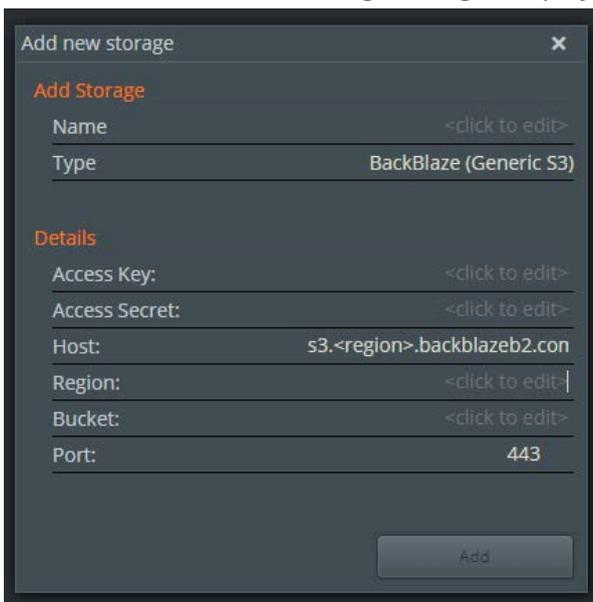
Integration with BackBlaze S3 APIs

Complete the following steps to configure a BackBlaze storage space. The diagrams show how the fields in the FLOW Control User Interface correspond to the fields in the BackBlaze User Interface.

1. Login to the BackBlaze using your credentials.
2. Create a new application key. This includes which buckets that the application key grants access. It is recommended to limit the number of buckets to which a single key has access.

NOTE: make note of the keyID and applicationKey.

3. Click Add.
4. Within FLOW Control, create a new BackBlaze space and configure the "Key ID", "Application Key", and "Bucket".
5. Click Add. The Add new storage dialog is displayed.



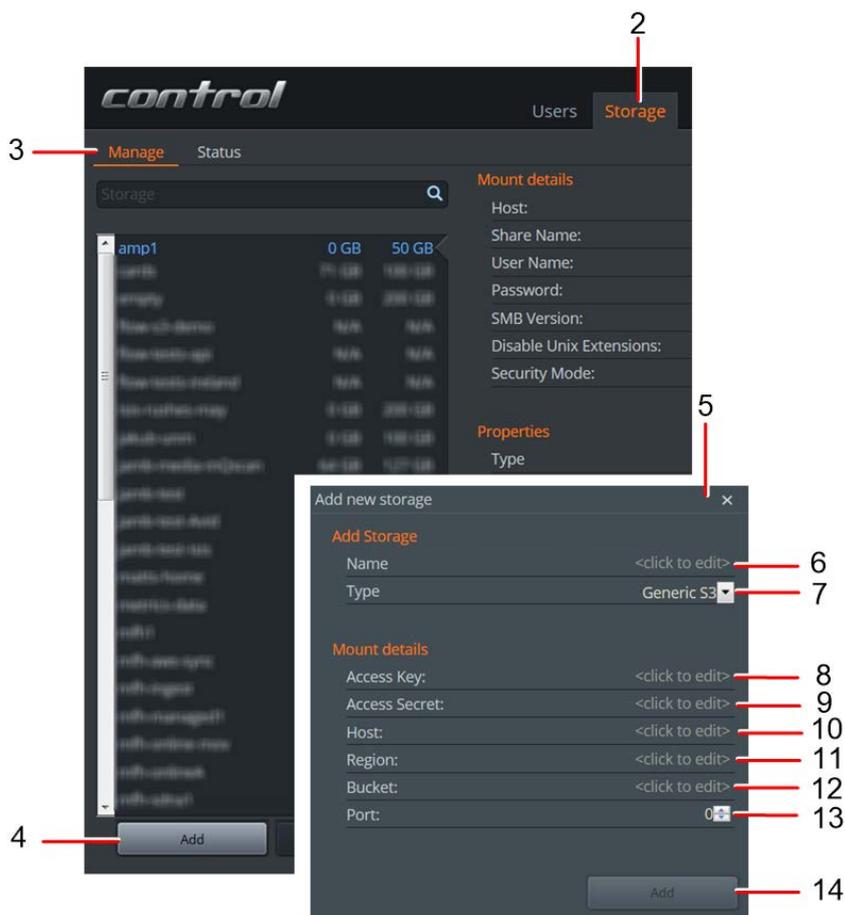
Add new storage	
Add Storage	
Name	<click to edit>
Type	BackBlaze (Generic S3)
Details	
Access Key:	<click to edit>
Access Secret:	<click to edit>
Host:	s3.<region>.backblazeb2.con
Region:	<click to edit>
Bucket:	<click to edit>
Port:	443
Add	

6. Enter a name for the storage space.
7. Select 'BackBlaze (Generic S3)' from the storage type drop down list.
8. Enter the Key ID, Application Key, Region and Bucket, as it appears in the BackBlaze space previously configured.
9. Click Add.

Generic S3

You can use Generic S3 storage to connect to S3 compatible storage systems.

Wasabi and Cloudian have been tested with FLOW. Visit <https://wasabi.com> and see the topic "[Wasabi](#)" on page 34 for information on Wasabi, and visit <https://cloudian.com> for more information about Cloudian.



1. Login to the FLOW Control application using your credentials.
2. Click on the Storage tab.
3. Click on the Manage sub tab.
4. Click Add.
5. The Add new storage dialog is displayed.
6. Enter a name for the new storage space.
7. Select Generic S3 from the storage type drop down list.
8. Enter the Access Key: This information is required from the third party system to connect.
9. Enter the Access Secret: This information is required from the third party system to connect.
10. Enter the Host: This is the Hostname or IP address of the system to connect to.
11. Enter the Region: This information is required from the third party system to connect.
12. Enter the Bucket: Name of the bucket to use.
13. Enter the Port: If a specific port is required to connect enter it here, otherwise leave as 0.
14. Click Add.

Wasabi

Complete the following steps to configure a Wasabi storage space, a generic third party storage type, which you select by using Generic S3 from the Storage Type drop down list.

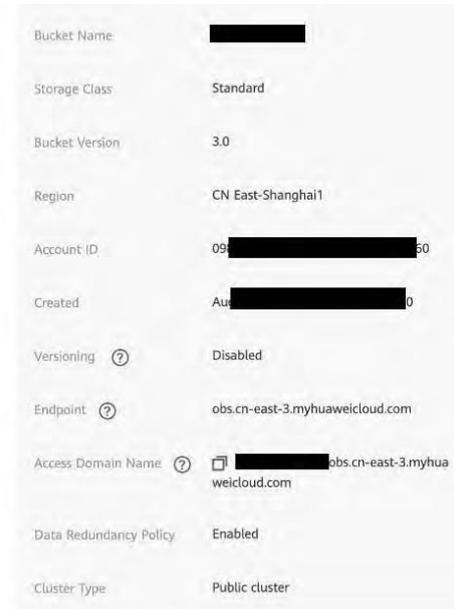
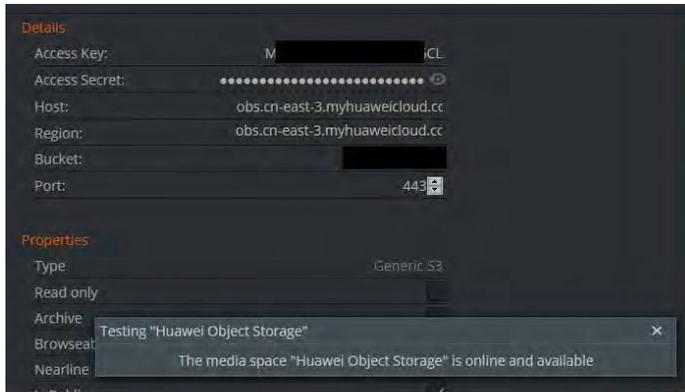
1. Login to the FLOW Control application using your credentials.
2. Click on the Storage tab.
3. Click on the Manage sub tab.
4. Click Add. The Add new storage dialog is displayed.



5. Enter a name for the storage space.
6. Select Wasabi (Generic S3) from the Storage Type drop-down list.
7. Enter your Access Key as it appears in the Wasabi interface.
8. Enter your Access Secret; this can be found when clicking 'Create New Access Key' in the Wasabi UI. This field is labeled Secret Key in the Wasabi UI.
9. Enter the name of the Region as it appears in the Wasabi interface.
10. Enter the name of the Bucket as it appears in the Wasabi interface.
11. Click Add.

Huawei

Complete the following steps to configure a Huawei storage space, a generic third party storage type, which you select by using Generic S3 from the Storage Type drop down list. The diagrams show how the fields in the FLOW Control User Interface correspond to the fields in the Huawei interface.



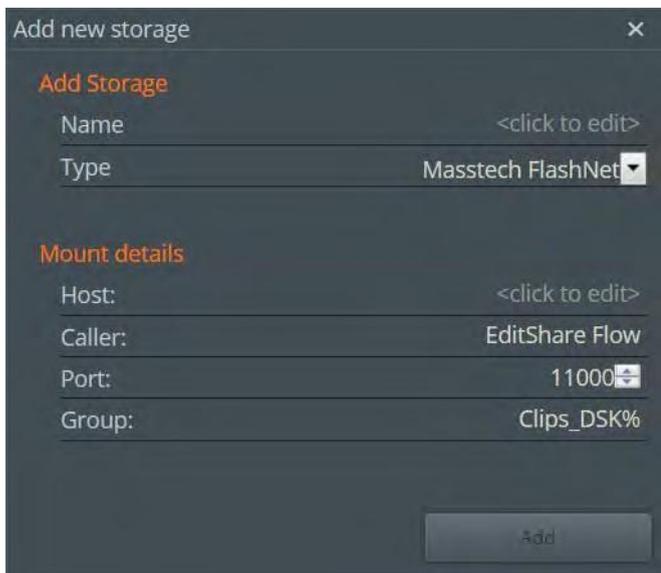
1. Login to the FLOW Control application using your credentials.
2. Click on the Storage tab.
3. Click on the Manage sub tab.
4. Click Add. The Add new storage dialog is displayed.
5. Enter a name for the storage space.
6. Select Generic S3 from the Storage Type drop down list.
7. Enter your Access Key as it appears in the Huawei interface.
8. Enter your Access Secret; this can be found when clicking 'Create New Access Key' in the Huawei UI.
9. Enter your Host name; this can be found when clicking 'Create New Access Key' in the Huawei UI.
10. Enter the name of the Region as it appears in the Huawei interface.
11. Enter the name of the Bucket as it appears in the Huawei interface.
12. Enter the Port number as it appears in the Huawei interface.
13. Click Add.

Configuring Connection to Virtual Cloud for Huawei Object Storage

When configuring the connection to Huawei Object Storage, the Host should be specified with the `http://` prefix and the port should be set to 80. For example, `http://obs.cn-central-100.api.mlsvcloud.com`. If `http://` is not specified, FLOW defaults to `https` connections, which may fail due to issues with SSL certificates within a private cloud.

Masstech FlashNet Deep Storage

Complete the following steps to configure a Masstech FlashNet storage space. The diagram shows how the fields in the FLOW Control User Interface correspond to the fields in the Masstech FlashNet User Interface.



1. Install and configure the Masstech FlashNet server according to the manufacturer's instructions.
2. Run the system to ascertain the group name, for example, if the given volume names are

`Clips_DSK1, Clips_DSK2, Clips_DSK3`, the group name is `Clips_DSK%`.

3. Click the Storage tab.
4. Click the Manage sub tab.
5. Click Add. The Add new storage dialog is displayed.
6. Enter a name for the storage space.
7. Select Masstech FlashNet from the Storage Type drop down list.
8. Enter the Host. This is the IP Address of the FlashNet server.
9. Enter the Caller. The default Caller Name is EditShare Flow, but confirm this with the administrator for your Masstech FlashNet system.
10. Enter the Port number. This is the network port for the FlashNet API. The default value is 11000.

11. Enter the Group as it appears in the Masstech FlashNet interface (see above image). This is the volume group on the Flashnet system where archives created from FLOW are to be stored. This is specific to your Flashnet system configuration, for example you can store to three different disk volumes named Clips_DSK1, Clips_DSK2, Clips_DSK3, and the group name is Clips_DSK%. Consult your administrator of your Flashnet system for the correct values.
12. Click Add.

Features and Limitations

Masstech FlashNet has the following features and limitations:

- Files can be copied to and from Masstech FlashNet spaces using FLOW Automation or the FLOW API.
- Masstech FlashNet spaces cannot be scanned, but files that have been copied to the spaces do display in FLOW.
- File ingests cannot be made directly into Masstech FlashNet spaces.
- FLOW supports partial file restoration from Masstech FlashNet but there are limitations in codec support. Contact EditShare Support for latest information..

Flashnet Storage Login

Flashnet requires a reverse SMB mount to operate; therefore you must provide the correct authorized user credentials to the storage system (EditShare or 3rd party), so Flashnet can access the storage. It is recommended that the SMB login is the Flashnet default name `sglsvc` and the password `Flashnet1`. In the case of EditShare storage, this should be setup for the required spaces using the EditShare storage manager, in the case of 3rd party storage it's user control manager should be used to add the default Flashnet user

Using FLOW Automation

FLOW can transfer files to and from Masstech FlashNet using FLOW Automation's Copy Task. The Storage Spaces to be read or written to by Masstech FlashNet must be made Public or assigned to the user account that will be running FLOW Automation jobs.

See the FLOW Automation User's Guide for further information.

MassTech MassStore Storage

The MassStore system is a media space type that is accessed through copy operations in the transfer service, which can be driven by FLOW Story, FLOW Automation, or the FLOW REST API.

This operation is similar to existing integration with FlashNet, although there is no partial file restoration support. See the Storage Capabilities table for details.

Files may be exchanged with media spaces that are accessible via SMB. MassStore pulls and pushes files from locations specified to it with UNC paths.

MassStore Configuration

MassStore is hosted on a Windows 2016 server. Refer to the MassTech website for additional information. You must be configured for FLOW, in order to use MassStore, when accessing the MMP API. There also needs to be a MassStore location, of type MMP, for FLOW to use as a target for transfer.

The following information is required for the setup from MassStore to FLOW Control:

- MassStore hostname or address, which can be resolved by the Editshare host.
- MassStore Storage location.
- MassStore Username.
- MassStore Password.

To prevent issues with file restoration, the EditShare storage location within MassStore must be configured to allow overwrites.

MassStore is provided with the UNC paths to access files in the FLOW media spaces. The credentials to access these spaces are stored in the Windows Credential Manager.

For Editshare Storage you need to be given access to the individual spaces using the Editshare Manager tools. The following should be performed to ensure proper operation:

1. Create a user profile that will handle MassStore transfers in Editshare systems and grant it access to all storage spaces.
2. Add the user above to the Windows Credential Management tool on the MassStore Host. Make sure the Editshare host can be resolved by MassStore Host and add an entry to the file.

```
<Windows>/system32/etc/hosts
```

3. Copy operations can be performed via Automation Copy tasks or via FLOW Story by right-clicking **menu** -> **Archive**.

FLOW MediaSpace Configuration

1. Ensure that MassTech MassStore storage is licensed.
2. Specify the IP address, with the port number being the default value of 16888.
3. Storage location, username, and password are as configured on the MassStore system, as mentioned above.
4. Use the Test button to ensure that FLOW is able to sign into the MassStore API.

Intelligence's StorIQ

Intelligence's StorIQ One is an archive system that can support disk and tape archiving, including LTFS.

StorIQ ONE has a web UI and a REST API that are used for the FLOW Integration. The integration with FLOW follows the lines of earlier integrations with FlashNet etc. FLOW treats StorIQ One as a storage type and it is configured through the Storage tab in FLOW Control (note that the FLOW license must include StorIQ One).

FLOW can copy to and from StorIQ One under control of the Transfer service. This allows the user to archive and restore to/from StorIQ One using FLOW Story or with FLOW Automation by using the Copy task.

It is not possible to move or delete from StorIQ One using FLOW, nor is it possible for FLOW to scan StorIQ One, so restoration from it relies on location data held in the FLOW database.

FLOW Transfer initiates operations on the StorIQ One system by making calls to the StorIQ One API, but data transfer either to or from StorIQ One is carried out by StorIQ One with SMB access on Linux paths supplied by FLOW in the API calls. This means that copies are possible only between StorIQ One and space types that are SMB mountable, and the spaces must be mounted on the StorIQ One in advance, using the correct path convention.

StorIQ One Storage Configuration

To configure StorIQ One, using FLOW Control:

1. Add a new storage area with the type Intelligence StorIQ One, with the following settings:
 - **Host** - Hostname or IP address of the StorIQ One server.
 - **Username** - StorIQ ONE username that is used for API access
 - **Password** - Password for the StorIQ One user.
 - **Api Key** - The StorIQ One Api Key value for access from FLOW (created on the StorIQ server).
 - **Pool** - The number of the StorIQ One pool that stores archives.
2. Ensure that the Archive box is checked. This enables archiving to StorIQ One from FLOW Story.
3. Using the Test button, on the FLOW Control page for the StorIQ space, confirm that it is accessible with the supplied credentials.

Mounting FLOW Storage Spaces on StorIQ One

The FLOW Storage space should be mounted as a cifs mount, with a user and password giving read and write access, using a path of the form:

```
/mnt/flow/<server-host-name>/<sharename-for-space>
```

The host name and share name refer to the server that is serving the media space, which may or may not be the FLOW server itself. For example:

```
/mnt/flow/192.168.197.27/dot89-tt-dst-tp
```

StorageDNA

Note: Storage DNA support is not currently available. Please contact EditShare Support for details.

Installing a client on the StorageDNA server

To allow integration with StorageDNA it is necessary to install a simple service on the StorageDNA server. This enables an API to allow FLOW to integrate.

Perform the following steps on the StorageDNA Linux server:

1. Verify that the storageDNA system is running Centos 6 by running:

```
lsb_release -d
```

The tested system was running CentOS release 6.7 (Final).

2. To check the python version run:

```
python -V
```

This should be v2.6.6 or a later v2.x.x is also okay.

3. Local login is as root so, as these functions are done as root user on the storageDNA machine.
4. Install pip and then flask:

```
wget https://bootstrap.pypa.io/get-pip.py  
python get-pip.py  
pip install --upgrade  
pip pip install flask
```

5. Make firewall exception:

```
iptables -I INPUT -p tcp -m tcp --dport 12274 -j ACCEPT  
service iptables save  
iptables -L
```

6. Download and setup the FLOW script:

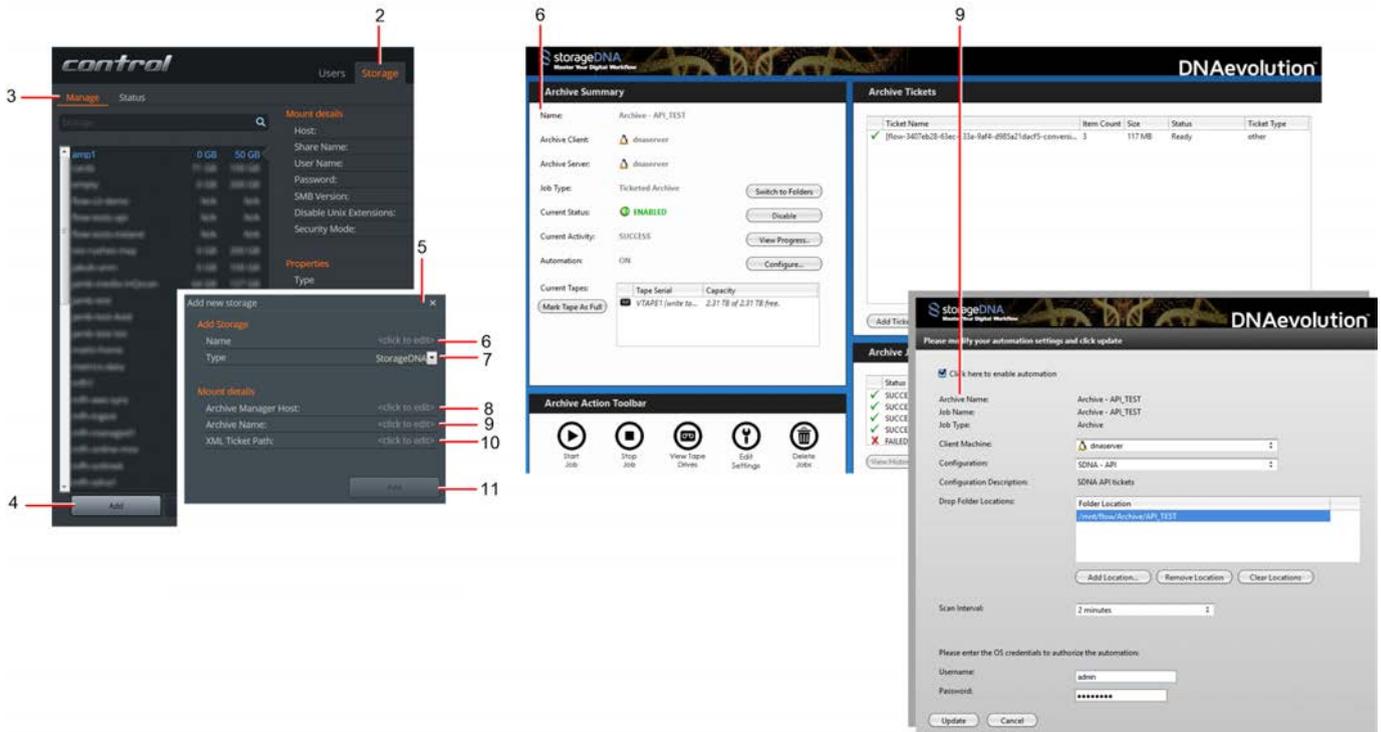
```
mkdir /root/flow  
cd /root/flow  
Wget  
http://flow-installers.editshare.co.uk/sdna/flow-sdna-server.py
```

7. Start the FLOW service:

```
./flow-sdna-server.py
```

Adding StorageDNA within FLOW

The diagrams show how the fields in the FLOW Control User Interface correspond to the fields in the StorageDNA User Interface.



1. Login to the FLOW Control application using your credentials.
2. Click the Storage tab.
3. Click the Manage sub tab.
4. Click Add.
5. The Add new storage dialog is displayed.
6. Enter a name for the storage space.
7. Select StorageDNA from the Type drop down box.
8. In the Archive Manager Host section, enter the IP address of the StorageDNA system running the FLOW script that was set up above in the Archive Manager Host section.
9. In the Archive Name section, enter the name of the StorageDNA archive that you want FLOW to use.
10. Enter the XML Ticket Path; this is the Drop Folder Location setup within StorageDNA. It is the path where XML tickets will be saved.

This path is configured in the Archive or Restore configuration pages in StorageDNA. The path required is the path to the level where the Archive and Restore folders are created. For example, when archiving, FLOW will save the XML ticket which starts the job into the following folder:

```
<XML Ticket Path>/Archive/<Archive Name>
```

and for restore:

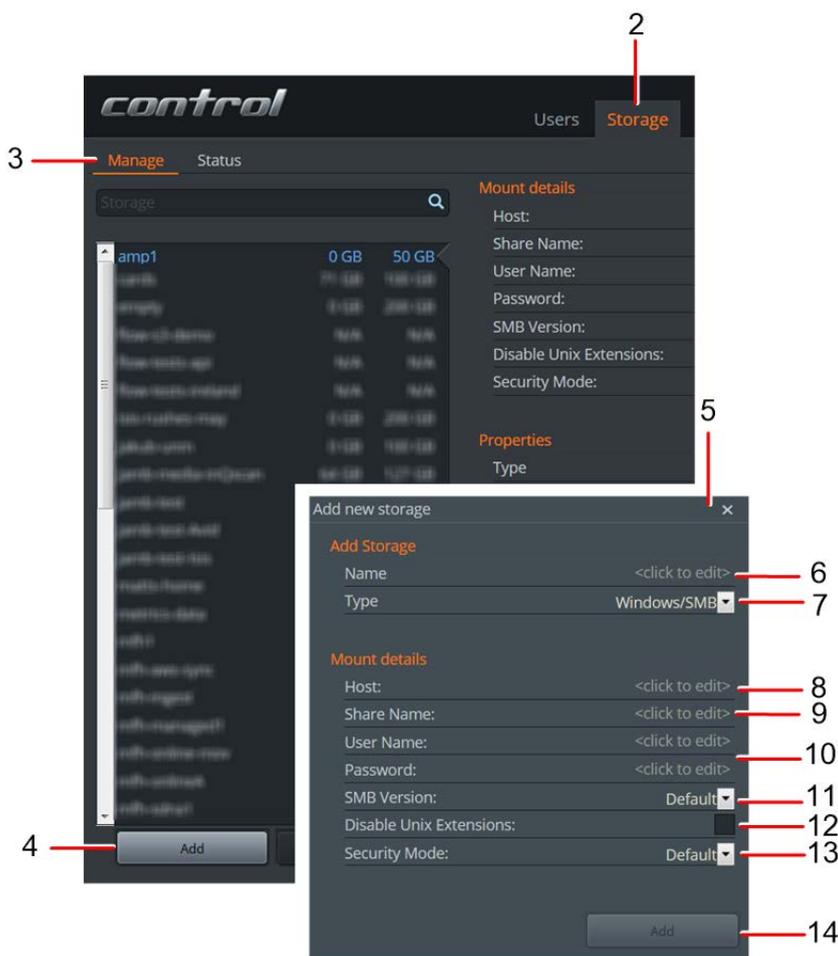
```
<XML Ticket Path>/Restore/<Archive Name>
```

These directories are created by FLOW when you test the storage space in FLOW Control. You can then configure StorageDNA to use them.

11. Click Add.
12. After adding the storage space, click the test button.
13. This will verify the connection to FLOW service on the StorageDNA machine and also create the directories where the archive and restore tickets (xml files) will be stored.
14. When you have successfully tested the storage space in FLOW you can setup the archive ticket paths in StorageDNA.

Windows/SMB

To connect to Windows/SMB shares complete the following steps:

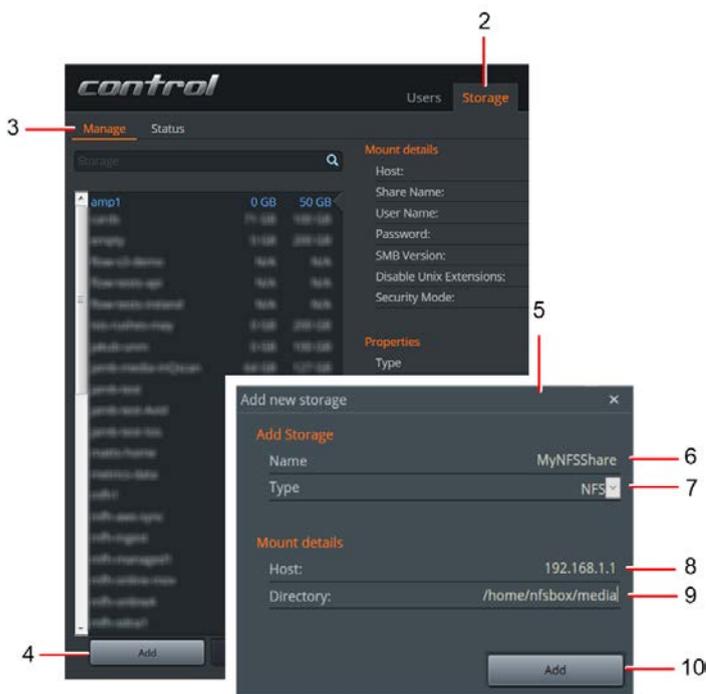


1. Login to the FLOW Control application using your credentials.
2. Click on the Storage tab.
3. Click on the Manage sub tab.
4. Click Add.
5. The Add new storage dialog is displayed.
6. Enter a name for the storage space.
7. Select Windows/SMB from the storage type drop down list.
8. Enter the Host: The IP address of the system to connect to.

9. Enter the Share Name: The name of the share to connect to.
10. Enter the Username and Password.
11. SMB Version: If you require a specific version of SMB you can set it here.
12. Disable Unix Extensions: Allows disabling unix extensions (see notes below).
13. Security Mode: If you require a specific security mode you can set it here (see notes below).
 - *Windows 10 Shares - setting SMB version to 3.0 will probably be required to make it mount.*
 - *macOS Shares - may need to specify 'disable unix extensions' to allow mounting.*
 - *When connecting to QNAP (<https://www.qnap.com>) you must set the SMB version to 2.0 to make it mount.*
 - *When connecting to Synology (<https://www.synology.com>) you must set the security mode to "ntlm" to make it mount.*
14. Click Add.

NFS

On the NFS server, make sure that the NFS share has been set up and that access is allowed for read and write access as appropriate.



To connect FLOW to a NFS share:

1. Login to the FLOW Control application using your credentials.
2. Click on the Storage tab.
3. Click on the Manage sub tab.
4. Click Add.
5. The Add new storage dialog is displayed.
6. Add a name for the storage space.

7. Select NFS from the storage type drop down list.
8. Enter the Host - The IP address of the server with the NFS share.
9. Enter the Directory - The directory being shared from the server.
10. Click Add.

Note: There are some known issues with mounting of NFS shares being slow due to authentication. If you experience this, the advice at [Fixing slow nfs mount problem](#) may be useful. Consult with your System Administrator before making any modifications to your systems.

Harmonic MediaGrid

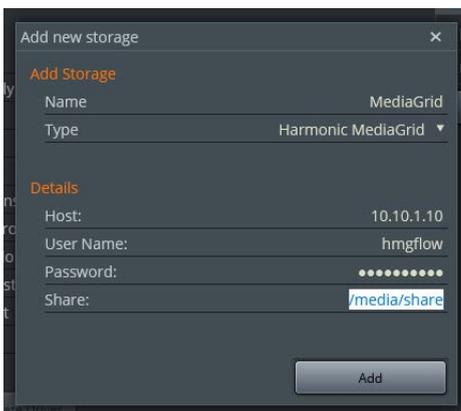
Installing Drivers

For FLOW to work with Harmonic MediaGrid the necessary File System Drivers (FSDs) should be installed on the FLOW servers. Please see Harmonic's documentation on the installation of these drivers and contact EditShare Technical Support for a driver package that is compatible with EditShare servers.

Once you have the driver package (e.g. `mediagridfsd_4.0.2.0-20200903-4.15.0-91-generic`), the install steps are

1. Install package:
`sudo dpkg -i mediagridfsd_4.0.2.0-20200903-4.15.0-91-generic`
2. Restart server:
`sudo shutdown -r now`
3. Check the drivers are loaded (there should be entries for omfs_):
`sysctl -a | grep omfs`

Configuring Storage



To connect FLOW to a Harmonic MediaGrid share:

1. Login to the FLOW Control application using your credentials.
2. Click on the Storage tab.
3. Click on the Manage sub tab.
4. Click Add.
5. The Add new storage dialog is displayed.

6. Add a name for the storage space.
7. Select Harmonic MediaGrid from the storage type drop down list.
8. Enter the Host - The IP address of the Harmonic server with the share.
9. Enter the Username and Password for access to the share
10. Enter the Share- The directory being shared from the server.
11. Click Add.

EditShare Storage

FLOW automatically integrates with EditShare Storage when purchased as part of an EditShare System that comes with Storage. All 'Media Spaces; in EditShare Storage will be available from FLOW along with users and permissions.

If you have an existing EditShare Storage system but want to run FLOW on your own hardware you can configure your 'Standalone' system to integrate with your EditShare System.

To integrate with EditShare Storage it must be enabled in your licence. Please contact EditShare Support to discuss this.

Using EditShare Storage With FLOW

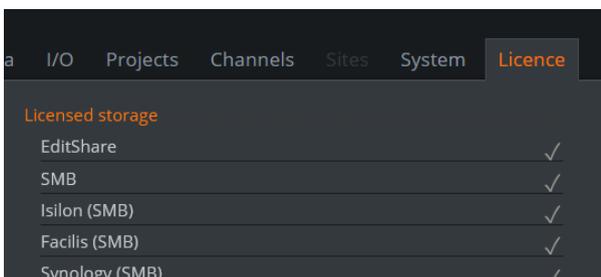
1. Open FLOW Control by clicking the Login button under Control on the FLOW Landing page:

<http://SERVER-IP-ADDRESS>

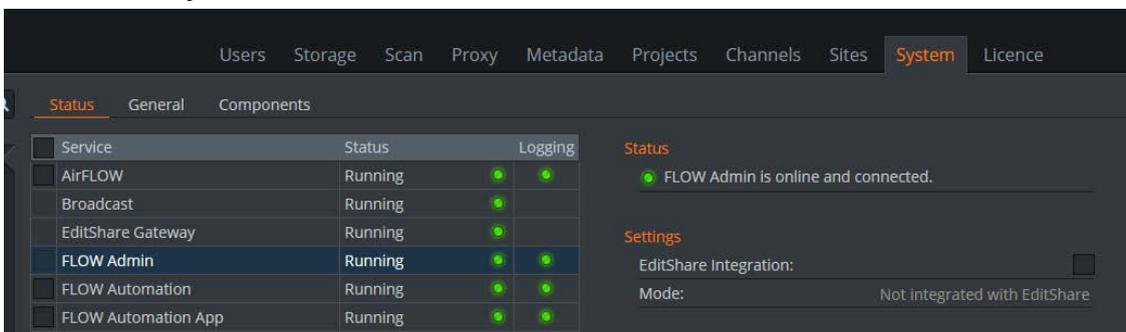
Username: admin

Password: changeme0479

2. From the 'Licence' tab, confirm that EditShare Storage is licensed



3. Switch to the 'System' tab and select the 'FLOW Admin' Service



4. Enable 'EditShare Integration' and fill in the server details:

The screenshot displays the 'System' configuration page in a dark-themed interface. At the top, there are navigation tabs: Users, Storage, Scan, Proxy, Metadata, Projects, Channels, Sites, System (selected), and Licence. Below these, there are sub-tabs: Status (selected), General, and Components. The main content is divided into two panels. The left panel is a table with columns for Service, Status, and Logging. The right panel shows the 'Status' and 'Settings' for the EditShare integration.

Service	Status	Logging
AirFLOW	Running	
Broadcast	Running	
EditShare Gateway	Running	
FLOW Admin	Running	
FLOW Automation	Running	
FLOW Automation App	Running	
FLOW Control App	Running	
FLOW Daemon	Running	
FLOW Database	Running	
FLOW File HTTP Server	Running	

Status
 FLOW Admin is online and connected.

Settings
EditShare Integration:
EditShare Server: <click to edit>
EditShare User: editshare
EditShare Password:
EditShare API Port: 8084
Mode: Integrated with EditShare (Sidec

Once connected, the EditShare Users and Media Spaces will be synchronized with your EditShare System.

Note: when a FLOW System is integrated with EditShare User Authentication is done by the EditShare System. Any existing FLOW users may need to have their passwords reset to continue to access FLOW. Additionally, the 'admin' user is replaced as 'editshare' as the default Administrator for the System and shares the same credentials as the 'editshare' administrator on the EditShare System

Chapter 3: Storage Capabilities

FLOW integrates with a range of storage types from a range of different vendors. Depending on the nature and capabilities of the storage there is some variation in what FLOW can do. The following tables describe these capabilities.

The tables have been formatted to fit the constraints of this document. You can also view these tables using the API documentation available on your FLOW system:

[https://\[IP_OF_FLOW_SERVER\]:8006/api/v2/transfer/storage/capabilities?html=true](https://[IP_OF_FLOW_SERVER]:8006/api/v2/transfer/storage/capabilities?html=true)

Table 1 - Capabilities

This table shows what capabilities FLOW supports for different types of Storage:

- **Scan** - ability to Scan storage to discover new files. In order to Scan storage FLOW needs to have direct access to a storage
- **Ingest** - ability to Ingest (SDI or File) directly into storage. If direct ingest is not supported then content should be ingested to a space that does support it, and then moved into the final destination afterwards
- **EWC** - support for 'Edit While Capture' ingests
- **Full File Transfer** - ability to copy or move whole files to and from Storage
- **Partial File Transfer** - ability to do a partial file restore. For example, to restore a small section of a longer clip creating a new clip for editing.
- **Upload** - ability to upload files directly to Storage.
- **Download** - ability to download files directly from Storage
- **Delete** - ability to delete files directly from Storage. Due to the nature of some Tape based systems it is not possible to delete files once they have been written.

Table 2 - Copy Between Storage

This table shows whether Copy operations are supported between different types of Storage. The Source storage types are listed on each row, with the columns representing Destination storage types.

Table 3 - Move Between Storage

This table shows whether Move operations are supported between different types of Storage. The Source storage types are listed on each row, with the columns representing Destination storage types.

Capabilities

Storage Type	Scan	Ingest	EWC	Full File Transfer	Partial File Transfer	Upload	Download	Delete
EditShare	True	True	True	True	True	True	True	True
SMB	True	True	False	True	True	True	True	True
NFS	True	True	False	True	True	True	True	True
Avid	True	True	False	True	True	True	True	True
Azure Files	True	True	False	True	True	True	True	True
Amazon S3	True	False	False	True	True	True	True	True
Generic S3	True	False	False	True	True	True	True	True
Masstech FlashNet	False	False	False	True	True	False	False	True
StorageDNA	False	False	False	True	False	False	False	False
Masstech MassStore	False	False	False	True	False	False	False	False
Intelligence StoriQ One	False	False	False	True	False	False	False	False
Amazon Glacier	False	False	False	True	False	False	False	False
Archware	False	False	False	True	False	False	False	False
BackBlaze	False	False	False	True	False	False	False	True
Generic SAN	True	True	False	True	True	True	True	True
Harmonic MediaGrid	True	True	False	True	True	True	True	True
Ark Disk	False	False	False	True	True	False	False	False
Ark Tape	False	False	False	True	False	False	False	False
Ark	*	*	*	*	*	*	*	*

Copy between Storage

Storage Type	EditShare	SMB	NFS	Avid	Azure Files	Amazon S3	Generic S3	MassTech FastNet	StorageDNA	MassTech MassStore	Inetique StorIO One	Amazon Glacier	Archware	BackupBlaze	Generic SAN	Harmonio MediaGrid	Ark Disk	Ark Tape	Notes
EditShare	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	False	False	
SMB	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	False	False	
NFS	True	True	True	True	True	True	True	False	True	False	False	True	True	True	True	True	False	False	
Avid	True	True	True	True	True	True	True	False	True	False	False	True	True	True	True	True	False	False	
Azure Files	True	True	True	True	True	True	True	False	True	False	False	True	True	True	True	True	False	False	
Amazon S3	True	True	True	True	True	True	False	False	False	False	False	False	False	False	True	True	False	False	Copy within the same region only
Generic S3	True	True	True	True	True	True	True	False	False	False	False	False	False	False	True	True	False	False	Copy to same region S3 only
MassTech FastNet	True	True	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	
StorageDNA	True	True	False	True	False	False	False	False	False	False	False	False	False	False	False	False	False	False	
MassTech MassStore	True	True	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	
Inetique StorIO One	True	True	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	
Amazon Glacier	True	True	True	True	True	True	True	False	False	False	False	False	False	False	True	True	False	False	
Archware	True	True	True	True	True	True	True	False	False	False	False	False	False	False	True	True	False	False	
BackupBlaze	True	True	True	True	True	True	True	False	False	False	False	False	False	False	True	True	False	False	
Generic SAN	True	True	True	True	True	True	True	False	False	False	False	True	True	True	True	True	False	False	
Harmonio MediaGrid	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	False	False	
Ark Disk	True	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	
Ark Tape	True	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	

Move between Storage

StorageType	EdiShare	SMB	NFS	AVID	Azure Files	Amazon S3	Generic S3	Massloch FlashNet	StorageDNA	Massloch MassStore	Indelique Storage One	Amazon Glacier	Archliware	BackBlaze	Generic SAN	Harmonic MediaGrid	Airx Disk	Airx Tape	Notes
EdiShare	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	False	False	
SMB	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	False	False	
NFS	True	True	True	True	True	True	True	False	True	False	False	True	True	True	True	True	False	False	
Avid	True	True	True	True	True	True	True	False	False	False	False	True	True	True	True	True	False	False	
Azure Files	True	True	True	True	True	True	True	False	True	False	False	True	True	True	True	True	False	False	
Amazon S3	True	True	True	True	True	True	False	False	False	False	False	False	False	False	False	True	False	False	
Generic S3	True	True	True	True	True	False	False	False	False	False	False	False	False	False	False	True	False	False	
Massloch FlashNet	True	True	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	
StorageDNA	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	
Massloch MassStore	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	
Indelique Storage One	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	
Amazon Glacier	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	
Archliware	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	
BackBlaze	True	True	True	True	True	False	False	False	False	False	False	False	False	False	False	True	False	False	
Generic SAN	True	True	True	True	True	True	True	False	False	False	False	True	True	True	True	True	False	False	
Harmonic MediaGrid	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	False	False	
Airx Disk	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	
Airx Tape	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	

