



Lyve Cloud Object Storage Resources Guide

LYVE™
Cloud



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Contents

1	Apostrophe CMS	5
	Configure Apostrophe CMS	5
	• Sample command for listing S3 objects in the bucket	5
	• Result example	6
2	Commvault	7
	Prerequisites	7
	Download Commvault software	7
	Install Commvault	7
	Create a new database	8
	Set up an account	10
	Add cloud storage	10
	Validate backup and recovery	11
	• Run a test backup	12
	• Validate cloud upload and download	12
	• Review snapshots	13
	Troubleshooting	15
	• Cloud Storage Fails Without Region Info	15
	• Governance Lock and Compliance Issues	16
3	FileBrowser	17
	App Store links	17
	Set up Lyve Cloud Object Storage in FileBrowserGO and FileBrowser for Business	17
4	IBM Aspera with HSTS	19
	Pre-Deployment	19
	• Network Configuration	19
	• Ports	19
	• Firewall Rules	19
	• SSH Security	19
	• Configure SSH Daemon	19
	• Restart SSH Service	19
	HSTS Installation and Verification	20
	• Installation	20
	User and Environment Setup	21
	• User Creation	21
	• SSH Key Setup	21
	Configuring Transfer Parameters	22
	• Global Transfer Settings	22
	• User-specific Parameters	22
	• Reference	23
	Enable Trapd for Object Storage (Optional)	23
	S3 Configuration for Object Storage	24
	IBM Aspera Desktop Client Setup (Windows)	24
	• Installation	24

5	LucidLink	31
	Prerequisites	31
	Install LucidLink app	31
	Create a cloud storage instance	31
	Initialize and connect the filespace	33
	Filespace management	35
6	MinIO Client	37
	Configure MinIO	37
	Sample commands	37
	• List buckets	37
	• List objects in specific bucket	37
	• Upload object to bucket	38
7	Restic	39
	Configure Restic	39
	Restic Basic Commands	39
	• Backup	39
	• Result	39
	• Restore	40
	• Result	40
	• Check	40
	• Result	40
8	S3cmd	41
	Configure S3cmd	41
	Sample commands	41
	• List buckets	41
	• Result Example	41
	• Upload a file	42
	• Result Example	42
	• Download a file	42
	• Result Example	42
	• Sync a local folder to an S3 bucket	42
	• Result Example	42
9	S3FS	44
	Configure S3FS	44
10	.s5cmd	46
	Configure S3cmd	46
	Basic Commands	46
	• List buckets	46
	• Create bucket	46
	• Upload file	47
	• Download file	47
	• Sync a local folder to an S3 bucket:	47

11 .Signiant Media Shuttle	48
Pre-deployment Requirements	48
SDCX Installation	48
Launch SDCX services	50
Object Upload and Download	54
12 .Transmit	58
Configure Transmit	58

Apostrophe CMS

[Apostrophe CMS](#) can be used with Lyve Cloud.

Configure Apostrophe CMS

1. Install Required Modules:

```
npm install @aws-sdk/client-s3
```

2. Configure Lyve Cloud credentials. It's recommended that you use environment variables (.env) to define credentials.

- LC_ACCESS_KEY_ID=<access-key>
- LC_SECRET_ACCESS_KEY=<secret-key>
- LC_ENDPOINT=<s3-endpoint> for example <https://s3.us-east-1.lyve.seagate.com>
- LC_BUCKET_NAME=<bucket>

where:

- <bucket> is the name of your Lyve Cloud bucket.
- <access-key> is your access key.
- <secret-key> is your secret key.
- <s3-endpoint> is the appropriate Lyve Cloud S3 endpoint URL, for example, <https://s3.us-east-1.lyve.seagate.com>.

Sample command for listing S3 objects in the bucket

```
require('dotenv').config();
const AWS = require('aws-sdk');

// Configure AWS credentials and region
AWS.config.update({
  accessKeyId: process.env.LC_ACCESS_KEY_ID,
  secretAccessKey: process.env.LC_SECRET_ACCESS_KEY,
  region: process.env.LC_REGION,
  endpoint: process.env.LC_ENDPOINT
});

const s3 = new AWS.S3();
// List objects in a specific S3 bucket
s3.listObjectsV2({ Bucket: process.env.LC_BUCKET_NAME }, (err, data) => {
  if (err) {
    console.error('Error listing objects:', err);
  } else {
    const objects = data.Contents;
```

```
console.log(objects);
}
});
```

Result example

```
[
  {
    Key: 'Pic-1.png',
    LastModified: 2024-11-05T12:17:38.261Z,
    ETag: '"651b690ab5db93496d9ca412e8d7823a"',
    ChecksumAlgorithm: [],
    Size: 1121955,
    StorageClass: 'STANDARD'
  },
  {
    Key: 'Pic-2.png',
    LastModified: 2024-11-05T12:17:28.824Z,
    ETag: '"03685db85f0533211f4f865768e0100d"',
    ChecksumAlgorithm: [],
    Size: 479053,
    StorageClass: 'STANDARD'
  },
  {
    Key: 'Pic-3.png',
    LastModified: 2024-11-05T12:17:33.578Z,
    ETag: '"7b71081d8b7b21d6ee712692cc0d335e"',
    ChecksumAlgorithm: [],
    Size: 645935,
    StorageClass: 'STANDARD'
  }
]
```

Commvault

Prerequisites

Before configuration, ensure that the following requirements have been met:

Operating system	Windows Server 2019 or later
	Red Hat Enterprise Linux (RHEL) 8.4 or later
Recommended hardware	
Software	Ensure required licenses and packages are available.
Browser compatibility	Chrome recommended.
Region information	Your region information is required to complete the configuration.

Download Commvault software

Navigate to the [Commvault Store](#) and download the latest version of Commvault Express for your operating system. Make sure that the downloaded file is the correct release.

Install Commvault

i In the instructions that follow, Commvault is shown being installed on the C: drive. Note, however, that installing on the C: drive is not recommended. Choose another drive in your system for better performance and future scalability.

1. Launch the executable and follow the onscreen instructions to install Commvault. Complete the installation, making sure that all dependencies are resolved.
2. Reboot the system to finalize the setup.
3. After rebooting, launch the Commvault management console and configure the initial settings.
4. The following confirmation is displayed once the installation and configuration are completed:

Installation and configuration completed successfully.

Command Center URL:

<https://VBR01/commandcenter>

Metrics Reporting URL:

<https://VBR01/>



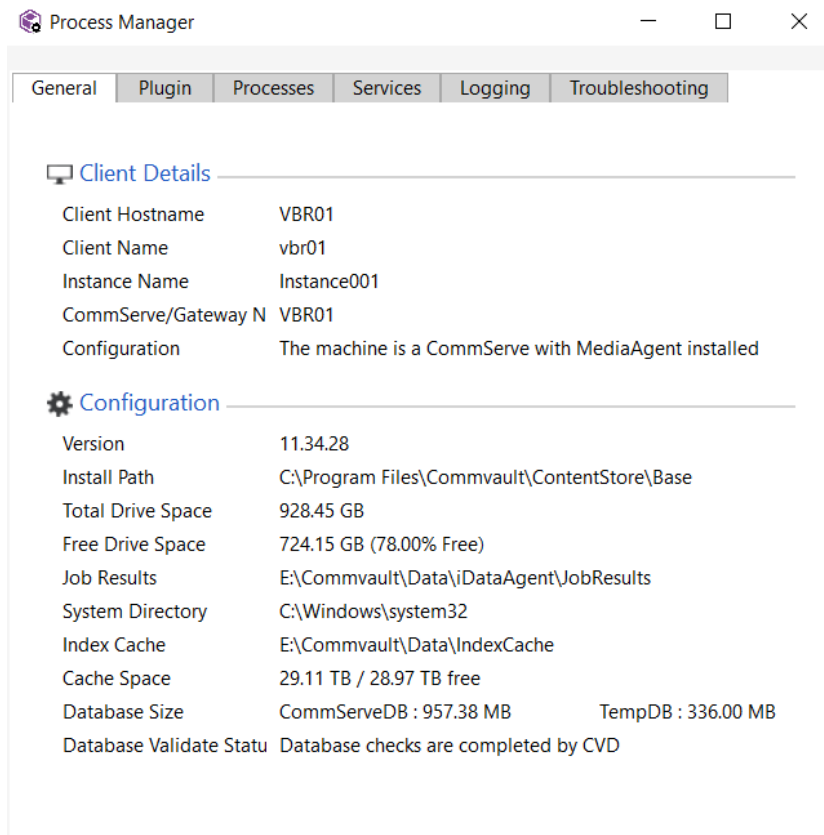
5. Select **Finish**.

Create a new database

Create a new MS SQL database (DB) for backup and recover operations (see [Getting Started with SQL Server](#)).

DB operations use a lot of system resources. Make sure that the system running the Commvault Command Center has a high-performance CPU and a large amount of local memory.

The following screenshot illustrates a typical configuration for Commvault on a Windows 2020 server with moderate performance:



Set up an account

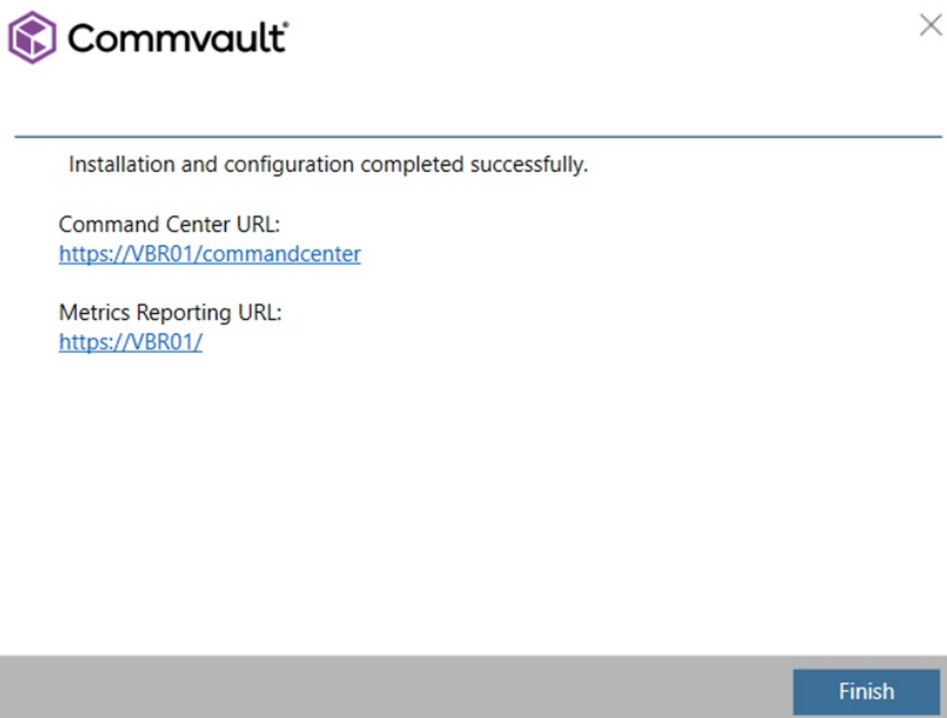
i When setting up your backup operation user or general user account, use Chrome to avoid known issues with Firefox.

1. Open your Chrome browser and create a new backup operator or general user account.
2. Once the account has been created, configure the necessary permissions and roles.
3. Log in to the management console using the newly created account.

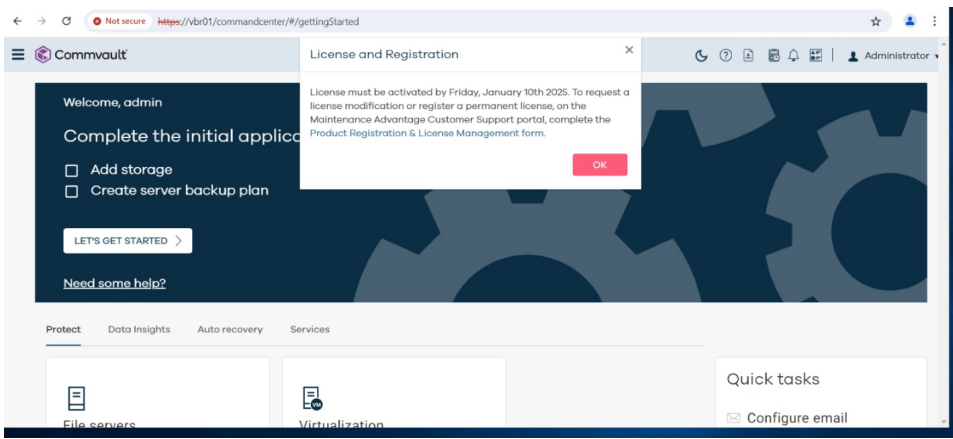
i If the login fails, ensure that the correct account permissions have been assigned to the user.

Add cloud storage

1. Launch the Commvault Command Center using the link provided after installation.

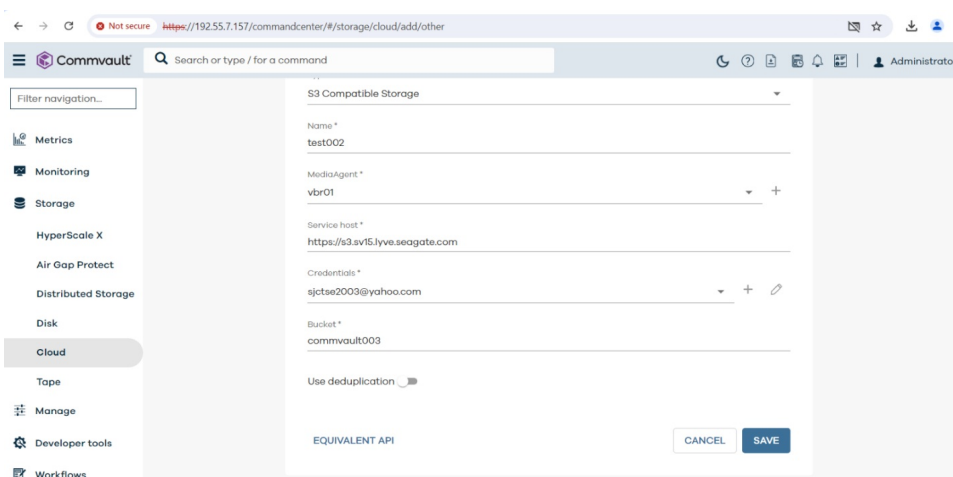


2. Select **Add storage**, and then select **LET'S GET STARTED**.



3. Select the appropriate object storage service (for example, AWS S3, Microsoft Azure Blob Storage, and so on).
4. Specify the following:

Type	S3 Compatible Storage
Name	Enter the S3 account name
Service host	https://s3.sv15.lyve.seagate.com



5. Select the Edit icon next to 'Credentials' and enter your credential name, access key ID, and secret access key.

i If your bucket is configured with a governance lock, you may encounter issues. Ensure compliance with your organization's policies for object-level governance.

6. Edit your cloud object bucket information. Ensure that the correct region information is selected.
7. Select **Save**.

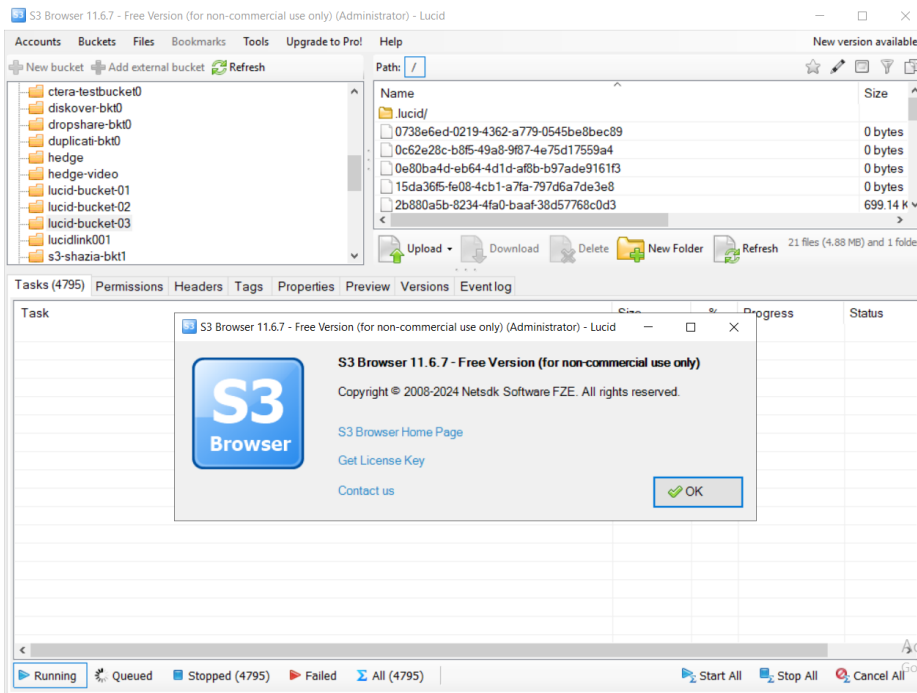
Validate backup and recovery

Run a test backup

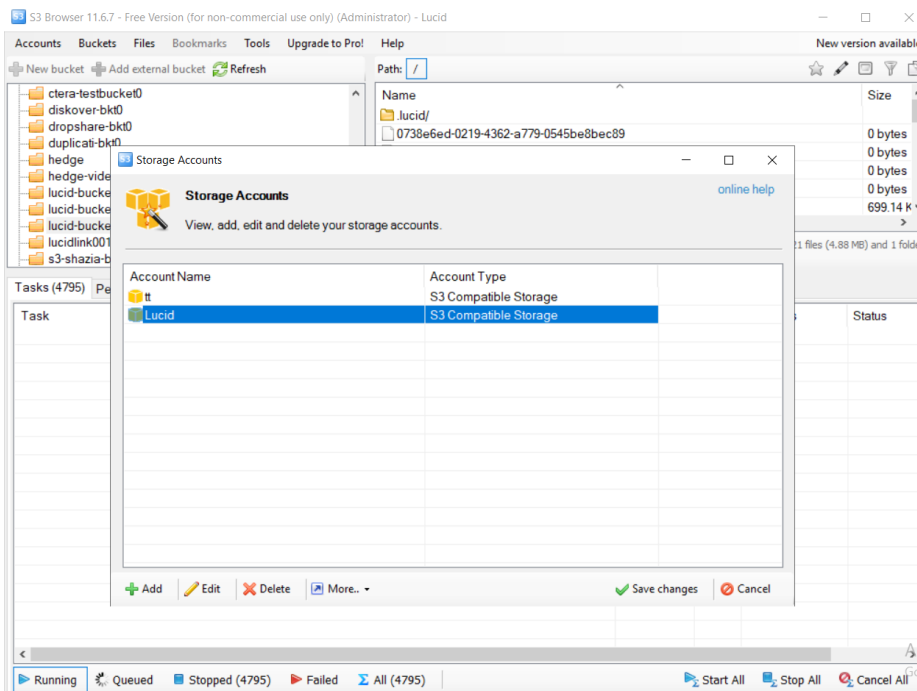
1. After setting up your cloud storage and DB instances, run a small test backup to ensure the system is working as expected (see **Validate cloud upload and download** below).
2. Verify the backup data integrity and recovery processes.

Validate cloud upload and download

1. Install a S3 browser on your local system.
2. Launch the S3 browser and verify that content is uploaded to Lyve Cloud successfully.
3. Install a S3 browser on a Windows client. (This can be a free version.)



4. Create a Cloud user account.



5. Enter the cloud user credentials.

Edit Account online help

Edit account details and click Save changes

Display name:
Lucid
Assign any name to your account.

Account type:
S3 Compatible Storage
Choose the storage you want to work with. Default is Amazon S3 Storage.

REST Endpoint:
s3.sv15.lyve.seagate.com
Specify S3-compatible API endpoint. It can be found in storage documentation. Example: rest.server.com:8080

Access Key ID:
STX12BL87Y0339UH7Y1C9J17
Required to sign the requests you send to Amazon S3, see more details at <https://s3browser.com/keys>

Secret Access Key:
.....
Required to sign the requests you send to Amazon S3, see more details at <https://s3browser.com/keys>

Encrypt Access Keys with a password:
.....
Turn this option on if you want to protect your Access Keys with a master password.

Use secure transfer (SSL/TLS)
If checked, all communications with the storage will go through encrypted SSL/TLS channel

[advanced settings](#) Save changes Cancel

6. Test the cloud user credentials. If you can see the contents stored in the bucket, the cloud operation is working properly (see below).

S3 Browser 11.6.7 - Free Version (for non-commercial use only) (Administrator) - Lucid

Accounts Buckets Files Bookmarks Tools Upgrade to Pro! Help New version available

New bucket Add external bucket Refresh

Path: /

Name	Size
BOZDCT_08.16.2024_17.48/	
EOL9OF_08.19.2024_19.12/	
OPSIFM_08.16.2024_17.57/	
RMMERN_08.19.2024_19.49/	
ZWWJYA_08.16.2024_18.25/	

Upload Download Delete New Folder Refresh 0 files (0 bytes) and 5 folders

Tasks (4795) Permissions Headers Tags Properties Preview Versions Event log

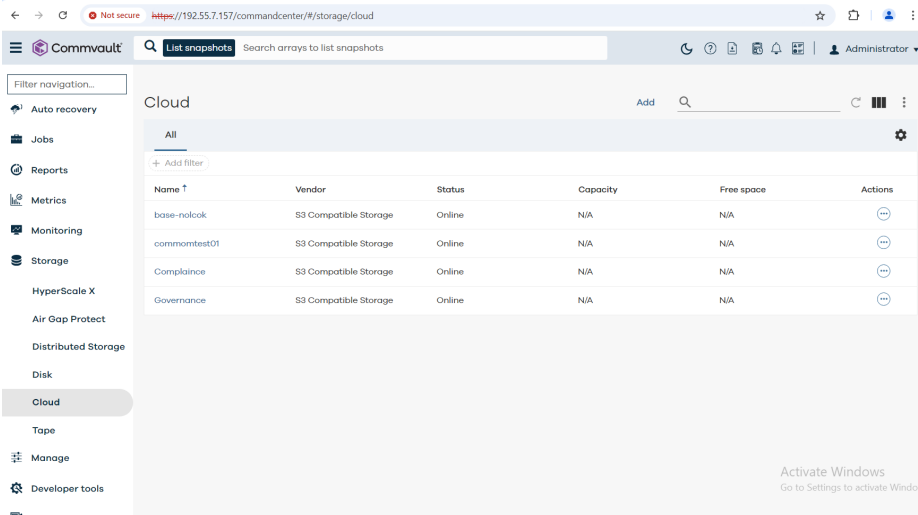
URL: <https://commvault003.s3.sv15.lyve.seagate.com/> Copy

Key	Last Modified	ETag	Size	Storage Class	Owner	Version...
BOZDCT_08.16.2024_17.48/_DIRE...						
revision # 1 (current)	8/16/2024 10:47:32 AM	"d41d8cd98f00b204e9800998...	0 bytes	STANDARD	sv15.certifica...	0QXH3...
EOL9OF_08.19.2024_19.12/_DIREC...						
revision # 1 (current)	8/19/2024 12:11:27 PM	"d41d8cd98f00b204e9800998...	0 bytes	STANDARD	sv15.certifica...	0QXMV...
OPSIFM_08.16.2024_17.57/_DIREC...						
revision # 1 (current)	8/16/2024 10:55:53 AM	"d41d8cd98f00b204e9800998...	0 bytes	STANDARD	sv15.certifica...	0QXH3...
RMMERN_08.19.2024_19.49/CV_M...						
revision # 1 (current)	8/19/2024 12:53:49 PM	"141b4d929038e45eced2b43...	252 bytes	STANDARD	sv15.certifica...	0QXM...
RMMERN_08.19.2024_19.49/CV_M...						
revision # 1 (current)	8/19/2024 12:53:49 PM	"805c503aceeb18d0e9255e0...	64 bytes	STANDARD	sv15.certifica...	0QXM...
RMMERN_08.19.2024_19.49/CV_M...						
revision # 1 (current)	8/19/2024 12:48:27 PM	"d41d8cd98f00b204e9800998...	0 bytes	STANDARD	sv15.certifica...	0QXM...
RMMERN_08.19.2024_19.49/_DIRE...						
revision # 1 (current)	8/19/2024 12:48:27 PM	"d41d8cd98f00b204e9800998...	0 bytes	STANDARD	sv15.certifica...	0QXM...
ZWWJYA_08.16.2024_18.25/_DIRE...						
revision # 1 (current)	8/16/2024 11:24:22 AM	"d41d8cd98f00b204e9800998...	0 bytes	STANDARD	sv15.certifica...	0QXH4...

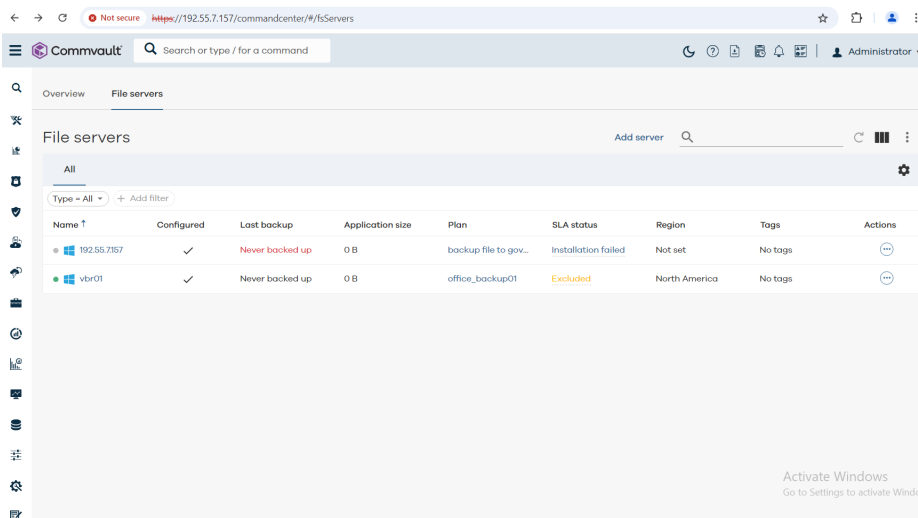
Download Restore Delete Refresh Total versions 8, delete markers 0, versions size: 316 bytes Filters

Review snapshots

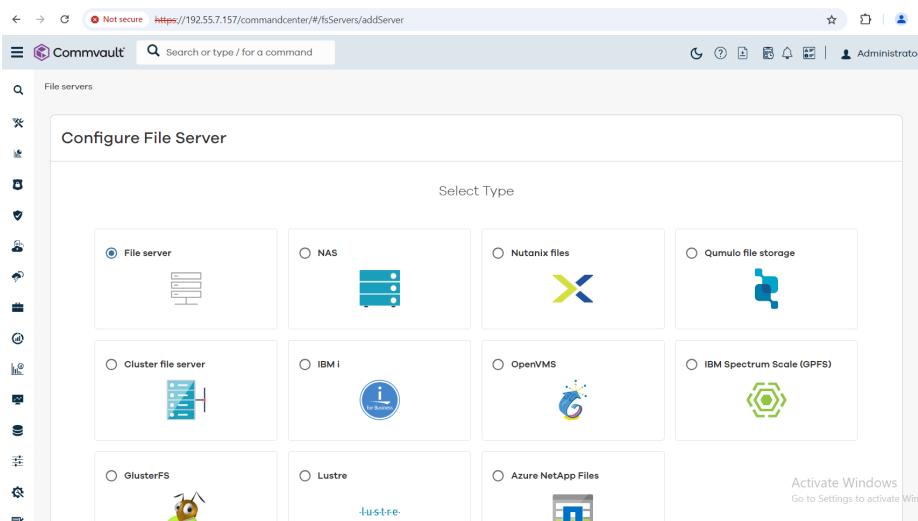
1. Use the snapshot feature to capture point-in-time backups for validation.

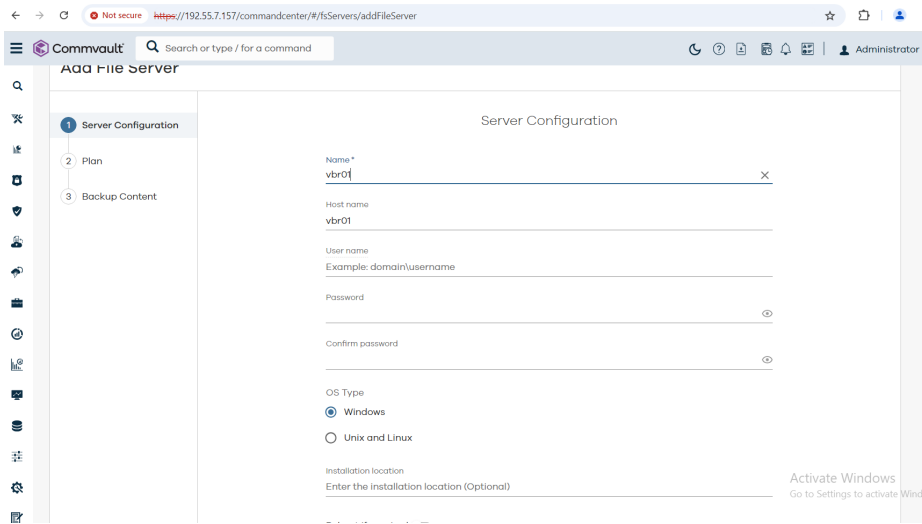


2. Mount the snapshot to ensure that it reflects the current state of your backup environment.

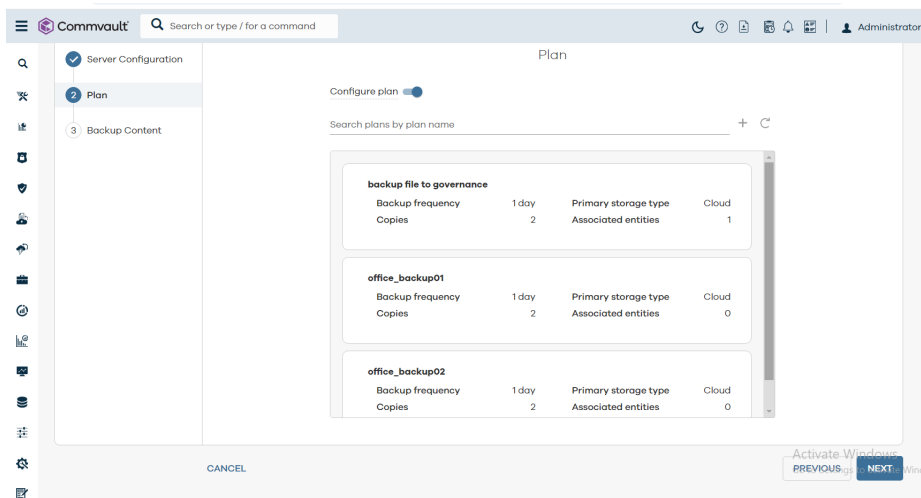


3. Configure the server.

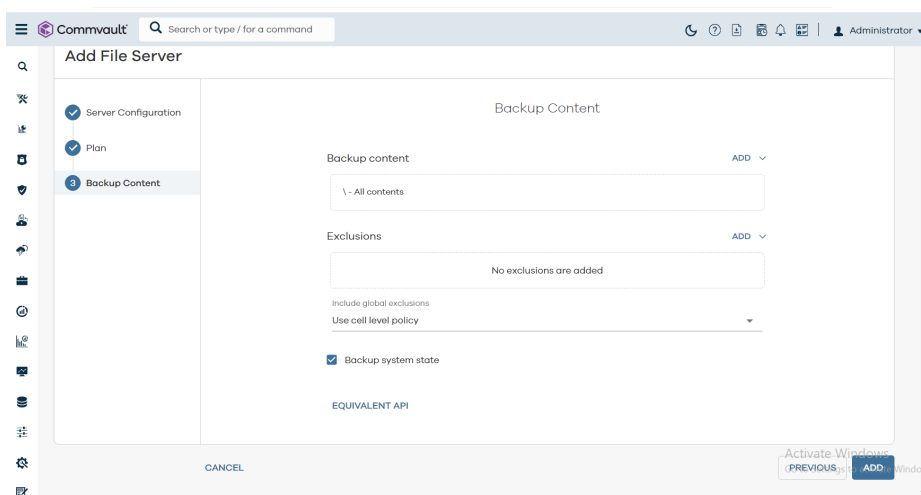




4. Select a backup plan.



5. Select your backup content and add the plan.



Troubleshooting

Cloud Storage Fails Without Region Info

Ensure that the correct region information was entered during cloud configuration. Incorrect or missing data will prevent the storage bucket from being added.

Governance Lock and Compliance Issues

If governance lock compliance is required on the object level, ensure that the configuration matches your organization's regulatory requirements.

FileBrowser

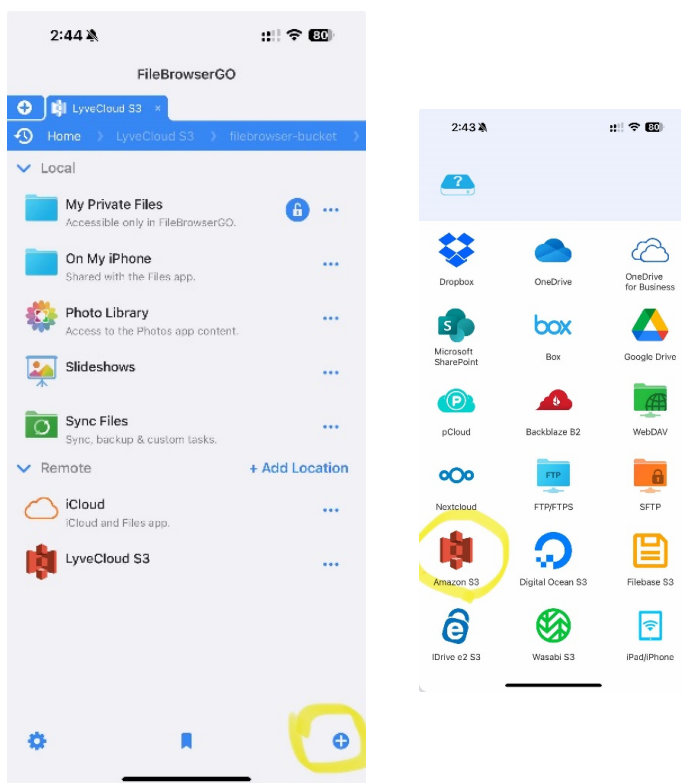
Version 14.5 of [FileBrowserGO](#) and [FileBrowser for Business](#) can be used with Lyve Cloud Object Storage by following the instructions below.

App Store links

- <https://itunes.apple.com/us/app/filebrowser-for-business/id854618029>
- <https://itunes.apple.com/us/app/filebrowsergo/id335493278>

Set up Lyve Cloud Object Storage in FileBrowserGO and FileBrowser for Business

1. Choose the Amazon S3 connector type when adding a new storage location.

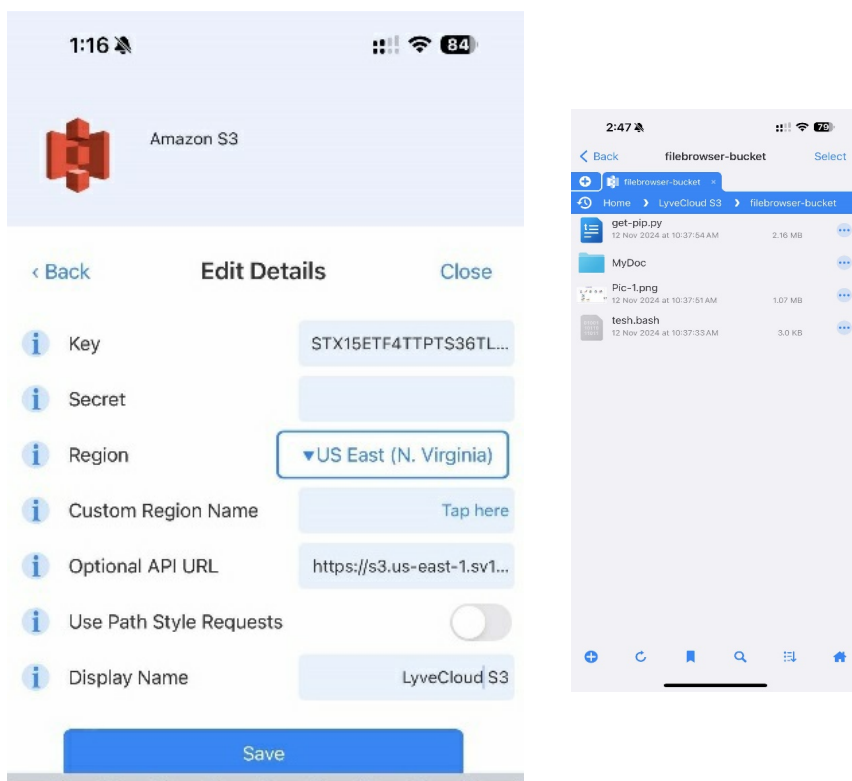


2. Paste the Lyve Cloud access key/secret key settings into the appropriate boxes.
3. Select the region or just leave it blank, as the region will be specified by the URL.
4. Enter the appropriate URL for the region you will be using, for example, `https://s3.<region>.sv15.lyve.seagate.com`

where:

<region> is the appropriate Lyve Cloud S3 endpoint URL, for example, us-east-1.

5. Set the display name to one appropriate for your connection.
6. Select **Save**. You will see a list of buckets, or objects in your bucket.



All file management features are available using FileBrowser, including copy, move, delete, rename, and create folder. Lyve Cloud Object Storage supports drag and drop. The iOS Files app can now be used to open documents in Lyve Cloud.

i Note—It's not possible to create buckets using FileBrowser.

IBM Aspera with HSTS

The following instructions are intended to provide a seamless and secure deployment of IBM Aspera with HSTS in a Windows or Linux (RedHat) environment, ensuring optimized performance for moving data to Lyve Cloud Object Storage. Adjustments may be made as needed based on specific organization policies and infrastructure.

Pre-Deployment

Network Configuration

Ports

Ensure the following are accessible:

- **Aspera TCP/UDP Port:** 33001 (default for data transfer)
- **SSH Port:** 22 (keep enabled initially to avoid accidental lockouts)

Firewall Rules

Permit inbound and outbound traffic on necessary ports. Verify the port status:

```
# netstat -na |grep 33001
```

SSH Security

Configure SSH Daemon

Open the `sshd_config` file and set:

- `AllowTcpForwarding no`
- `AllowAgentForwarding no`
- `PubkeyAuthentication yes`
- `PasswordAuthentication yes`
- `port 33001`
- `port 22`



Note—For initial test-run we do not recommend to disable TCP port 22 because it is defaulted for ssh connection on most of the ssh client and you may lock yourself out in ssh accidentally if you disable it.

Restart SSH Service

Apply changes:

```
# systemctl restart sshd.service
```

Verify that port 33001 is now listening:

```
# netstat -na |grep 33001
tcp      0      0 0.0.0.0:33001          0.0.0.0:*              LISTEN
tcp      0      0 10.0.10.242:33001     125.20.120.90:52332    ESTABLISHED
tcp      0      0 10.0.10.242:33001     125.20.120.90:57615    ESTABLISHED
tcp      0      0 10.0.10.242:33001     14.194.8.182:62305     ESTABLISHED
tcp6     0      0 :::33001               :::*                    LISTEN
```

HSTS Installation and Verification

Installation

Install HSTS on RedHat using:

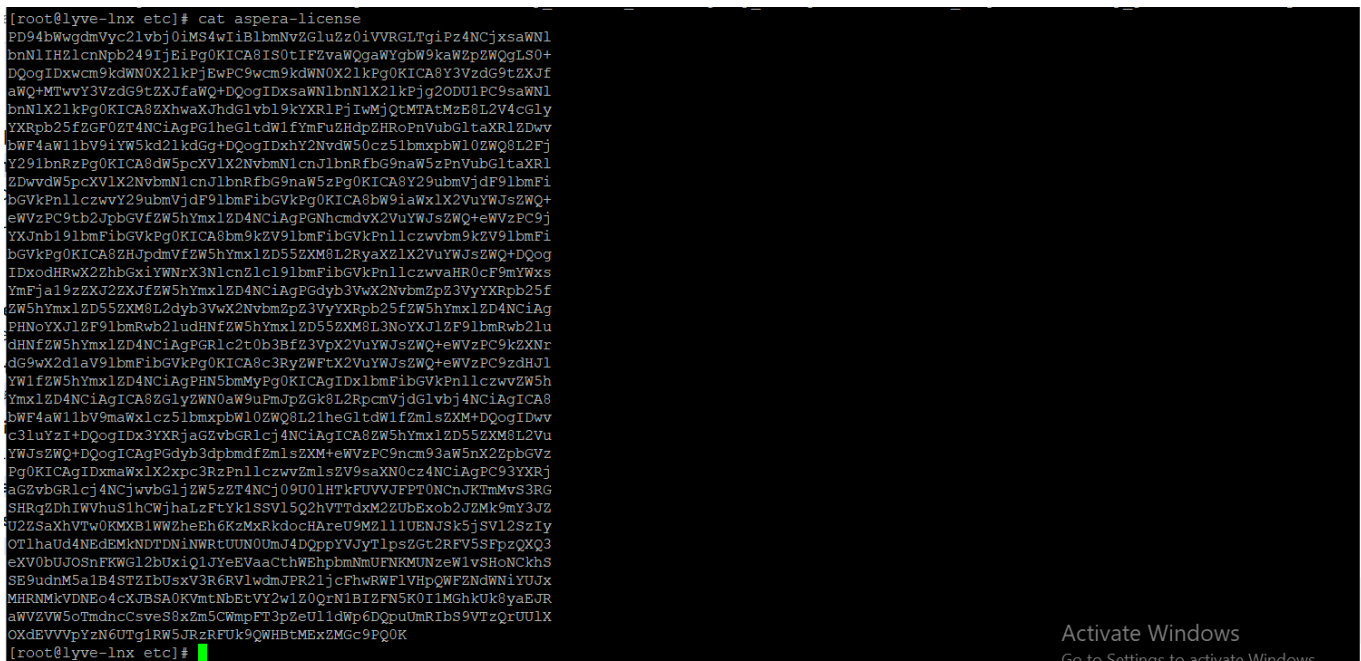
```
# rpm -Uvh ibm-aspera-hsts-<version>-linux-64-release.rpm
```

To verify the installation:

- HSTS Version: # ascp -A
- License Validation: # cat /etc/aspera-license

```
[root@localhost mnt]# rpm -Uvh ibm-aspera-hsts-4.4.4.1293-linux-64-release.rpm
warning: ibm-aspera-hsts-4.4.4.1293-linux-64-release.rpm: Header V4 RSA/SHA256 Signature, key ID 90770d18: NOKEY
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
 1:aspera-entsrv-4.4.4.1293-1 ##### [100%]
systemd enabled
Generate new SSL certificates
[root@localhost mnt]#
```

```
[root@lyve-lnx etc]# ascp -A
IBM Aspera High-Speed Transfer Server version 4.4.4.1293
ascp version 4.4.4.1293 ad92b5f
Operating System: Linux
FIPS 140-2-validated crypto ready to configure
AES-NI Supported
Connect Server License max rate=(unlimited), account no.=1, license no.=86855. Expiration date: Fri Nov 1 00:59:59 2024
Enabled settings: connect, mobile, cargo, node, drive, http_fallback_server, group_configuration, shared_endpoints, desktop_gui, stream and sync2
[root@lyve-lnx etc]#
```



User and Environment Setup

User Creation

Create and configure a default user (svcAspera):

```
# useradd svcAspera
# su svcAspera
# sudo chsh -s /bin/ash shell svcAspera
```

SSH Key Setup

Establish user SSH credentials:

```
# sudo mkdir /home/<username>/.ssh
# sudo chmod 700 /home/<username>/.ssh
# sudo touch /home/<username>/.ssh/authorized_keys
# sudo chmod 600 /home/<username>/.ssh/authorized_keys
```

Verify ssh and network ports are open for Aspera and HSTS:

```
# systemctl restart sshd.service
# netstat -hna |grep 33001
# default TCP/UDP ports Aspera uses.
```

```
[root@lyve-lnx ssh]# diff sshd_config sshd_config.old
18d17
< Port 33001
00,51d48
< PubkeyAuthentication yes
<
107d102
< AllowAgentForwarding no
109d104
< AllowTcpForwarding no
[root@lyve-lnx ssh]#
```

```
[root@lyve-lnx ssh]# systemctl restart sshd.service
[root@lyve-lnx ssh]# systemctl status sshd.service
● sshd.service - OpenSSH server daemon
   Loaded: loaded (/usr/lib/systemd/system/ssh.service; enabled; vendor preset: enabled)
   Active: active (running) since Mon 2024-10-14 20:14:25 MDT; 18s ago
     Docs: man:sshd(8)
           man:sshd_config(5)
   Main PID: 21702 (sshd)
     Tasks: 1 (limit: 2465573)
    Memory: 1.1M
   CGroup: /system.slice/ssh.service
           └─21702 /usr/sbin/sshd -D -oCiphers=aes256-gcm@openssh.com,chacha20-poly1305@openssh.com,aes256-ctr,aes256-cbc,aes128-gcm@openssh.com,aes128-ctr

Oct 14 20:14:25 lyve-lnx systemd[1]: Starting OpenSSH server daemon...
Oct 14 20:14:25 lyve-lnx sshd[21702]: Server listening on 0.0.0.0 port 33001.
Oct 14 20:14:25 lyve-lnx sshd[21702]: Server listening on *: port 33001.
Oct 14 20:14:25 lyve-lnx systemd[1]: Started OpenSSH server daemon.
Lines 1-15/15 (END)
```

```
[root@lyve-lnx ssh]# netstat -na |grep 33001
tcp        0      0 0.0.0.0:33001        0.0.0.0:*            LISTEN
tcp6       0      0 :::33001            :::*                  LISTEN
[root@lyve-lnx ssh]#
```

Configuring Transfer Parameters

Global Transfer Settings

To enforce security policies on data transfers, configure the following:

```
# sudo asconfigurator -x "set_node_data;authorization_transfer_in_value,deny"
# sudo asconfigurator -x "set_node_data;authorization_transfer_out_value,deny"
```

User-specific Parameters

Set specific transfer permissions and bandwidth for user=svcAspera:

```
# sudo asconfigurator -x
"set_user_data;user_name,svcAspera;authorization_transfer_in_value,allow"
# sudo asconfigurator -x
"set_user_data;user_name,svcAspera;transfer_in_bandwidth_flow_target_rate_default,96000"

# sudo asconfigurator -x "set_node_data;authorization_transfer_in_value,deny"
# sudo asconfigurator -x "set_node_data;authorization_transfer_out_value,deny"

# sudo asconfigurator -x
"set_user_data;user_name,test_aspera;authorization_transfer_in_value,allow"
user_name: svcAspera
# sudo asconfigurator -x
"set_user_data;user_name,test_aspera;authorization_transfer_out_value,allow"
success
user_name: svcAspera
# sudo asconfigurator -x "set_user_data;user_name,test_aspera;absolute,s3:// s3.us-west-1.sv15.lyve.seagate.com/aspera-test-bucket"
success
user_name: svcAspera
```

```
# sudo asconfigurator -x
"set_user_data;user_name,test_aspera;transfer_in_bandwidth_flow_target_rate_cap,unlimited"
success
user_name: svcAspera
# sudo asconfigurator -x
"set_user_data;user_name,test_aspera;transfer_out_bandwidth_flow_target_rate_cap,unlimited"
success
user_name: svcAspera
# sudo asconfigurator -x
"set_user_data;user_name,test_aspera;transfer_in_bandwidth_flow_target_rate_default,96000"
success
user_name: svcAspera
# sudo asconfigurator -x
"set_user_data;user_name,test_aspera;transfer_out_bandwidth_flow_target_rate_default,96000"
success
user_name: svcAspera
```

Reference

ascp is IBM Aspera's version of the UNIX tool – scp, and async is IBM Aspera's version of the UNIX tool rsync. Many of the arguments are similar but the internals of how the files are transferred are very different. More information about the tools can be found at:

- **ascp:** <https://www.ibm.com/docs/en/ahts/4.4.x?topic=atfcl-ascp-command-reference>
- **async:** <https://www.ibm.com/docs/en/ahts/4.4.x?topic=ra-async-command-reference>

Enable Trapd for Object Storage (Optional)

Trapd is the Aspera service that enables it to write to the object storage (including Hadoop Distributed File System (HDFS)). Trapd is supported in HSTS for Linux 64-bit and Windows 64-bit. HSTS should be in close proximity to the object storage to minimize latency.

Note—Trapd is disabled by default in HSTS.

- **Enable Trapd:** # /opt/aspera/bin/astrap-config.sh enable
- **Disable Trapd (if switching to another storage configuration):** # /opt/aspera/bin/astrap-config.sh disable

When switching from virtual node to pvcl_cloud or use another option, link the pvcl_cloud kernel to ensure Trapd is indeed disable.

```
#/opt/aspera/bin/astrap-config.sh disable
#ln -s /opt/aspera/lib/pvcl/libpvcl_cloud.so /opt/aspera/lib/libpvcl_cloud.so
```

Use a text editor to open the s3.properties file (/opt/aspera/etc/trapd/s3.properties) and make the following changes:

```
s3service.https-only=true
s3service.s3-endpoint=s3.sv15.lyve.seagate.com    ## for example
s3service.s3-endpoint-https-port=443
s3service.disable-dns-buckets=true
s3service.use-path-style-url=true
```

Restart the trapd service:

```
# sudo systemctl restart asperatrapd
```

S3 Configuration for Object Storage

Edit the `s3.properties` file (`/opt/aspera/etc/trapd/s3.properties`) to configure your S3 endpoint for secure, path-style URL usage:

```
s3service.https-only=true
s3service.s3-endpoint=<s3-endpoint>
s3service.s3-endpoint-https-port=443
s3service.use-path-style-url=true
```

where `<s3-endpoint>` is your S3 endpoint URL.

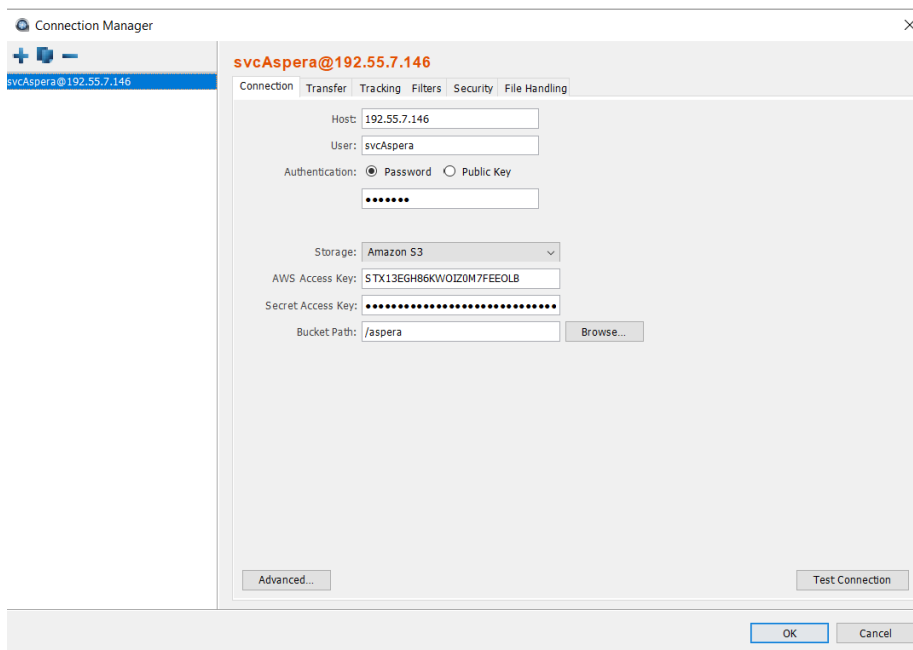
Restart trapd to apply these settings:

```
# sudo systemctl restart asperatrapd
```

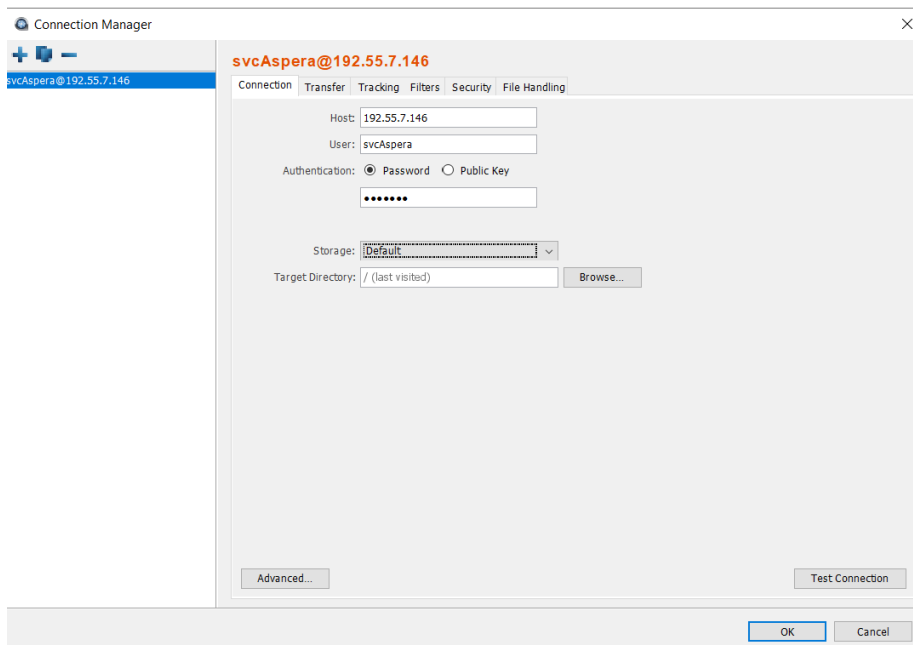
IBM Aspera Desktop Client Setup (Windows)

Installation

1. Install the IBM Aspera Desktop Client on Windows using the provided installer, for example, **IBMAsperaDesktopClient-ML-4.4.3.891-win-v143-64-release.exe**. Proceed through the setup wizard steps.
2. When the installation is complete, launch Aspera Desktop Client on Windows.
3. Configure your S3 Connection parameters:



When using the default user:



The user credential and S3 endpoint access URL can be configured on either HSTS server side or alternatively on the Windows client side.

To configure the user credential on the Windows client side, the user credentials and S3 endpoint URL information need to be commented out in aspera.conf.

For configuration on the HSTS, the user credential and S3 access endpoint information are added in aspera.conf, following this format:

```
s3://<access-key>:<secret-key>@<s3-endpoint>
```

where:

- <access-key> is your access key.
- <secret-key> is your secret key.
- <s3-endpoint> is the appropriate Lyve Cloud S3 endpoint URL, for example, us-east-1.

```
[root@lyve-lnx etc]# pwd
/opt/aspera/etc
[root@lyve-lnx etc]# ll
total 876
-rw-r--r-- 1 asperadaemon aspadmins 4372 Mar 7 2024 alee.aspera-license
-rw-r--r-- 1 asperadaemon aspadmins 25830 Mar 7 2024 asconfigurator_mappings.xml
-rw-r--r-- 1 asperadaemon aspadmins 792156 Mar 7 2024 asconfigurator_trans.xml
-rw-rw-r-- 1 asperadaemon aspadmins 3389 Oct 15 15:37 aspera.conf
-rw-r--r-- 1 root root 2058 Oct 14 19:43 aspera-license
-rw-r--r-- 1 root root 2827 Oct 14 19:23 aspera_server_cert.pem
-rw-r--r-- 1 root root 1704 Oct 14 19:23 aspera_server_key.pem
drwxr-xr-x 2 asperadaemon aspadmins 49 Oct 14 19:23 conf.d
drwxr-xr-x 2 root root 25 Oct 14 19:23 faspbuffers
-rw-r--r-- 1 root root 352 Oct 14 19:23 fipsmodule.cnf
drwxr-xr-x 2 asperadaemon root 231 Oct 14 19:23 init.d
-rw-r--r-- 1 asperadaemon aspadmins 2097 Mar 7 2024 logback-admin.xml
-rw-rw-r-- 1 asperadaemon aspadmins 2765 Mar 7 2024 logback.xml
drwxr-xr-x 5 root root 56 Oct 14 19:23 MailTemplates
-rw-r--r-- 1 root root 12306 Oct 14 19:23 openssl.cnf
-rw-r--r-- 1 asperadaemon aspadmins 12292 Mar 7 2024 openssl.cnf.default
drwxr-xr-x 2 asperadaemon aspadmins 130 Oct 14 19:23 redis
drwxr-xr-x 2 root root 104 Oct 14 19:23 samples
drwxr-xr-x 2 root root 50 Oct 14 19:23 setup
drwxr-xr-x 2 root root 26 Oct 14 19:23 sudoers.d
drwxr-xr-x 2 root root 222 Oct 14 19:23 systemd
drwxr-xr-x 2 root root 4096 Oct 14 21:28 trapd
-rw-r--r-- 1 asperadaemon aspadmins 0 Mar 7 2024 user.ui.conf.default
drwxr-xr-x 2 root root 52 Oct 14 19:23 watchd
[root@lyve-lnx etc]# pwd
/opt/aspera/etc
[root@lyve-lnx etc]#
```

```
root@lyve-lnx/opt/aspera/etc
<authorization>
  <transfer>
    <in>
      <value>allow</value>
    </in>
    <out>
      <value>allow</value>
    </out>
  </transfer>
</authorization>
<file_system>
  <access>
    <paths>
      <path>
        |-- <absolute>s3://STX13EGH86KWOI20M7PEBOLB:ap01Mrt5fqmVn71s72Uc3RUvq07K5Nr+N0u7da3NfbK@s3.sv15.lyve.seagate.com/aspera</absolute> --
      </path>
    </paths>
  </access>
</file_system>
<transfer>
  <in>
    <bandwidth>
      <flow>
        <target_rate>
          <cap>unlimited</cap>
          <default>96000</default>
        </target_rate>
      </flow>
    </bandwidth>
  </in>
</out>
```

1. Ensure the TCP/UDP ports are open.

Advanced Connection Settings [Close]

Transfer Server Settings

SSH Port (TCP):

fasp Port (UDP):

Connection Timeout: seconds

S3 Settings

Host:

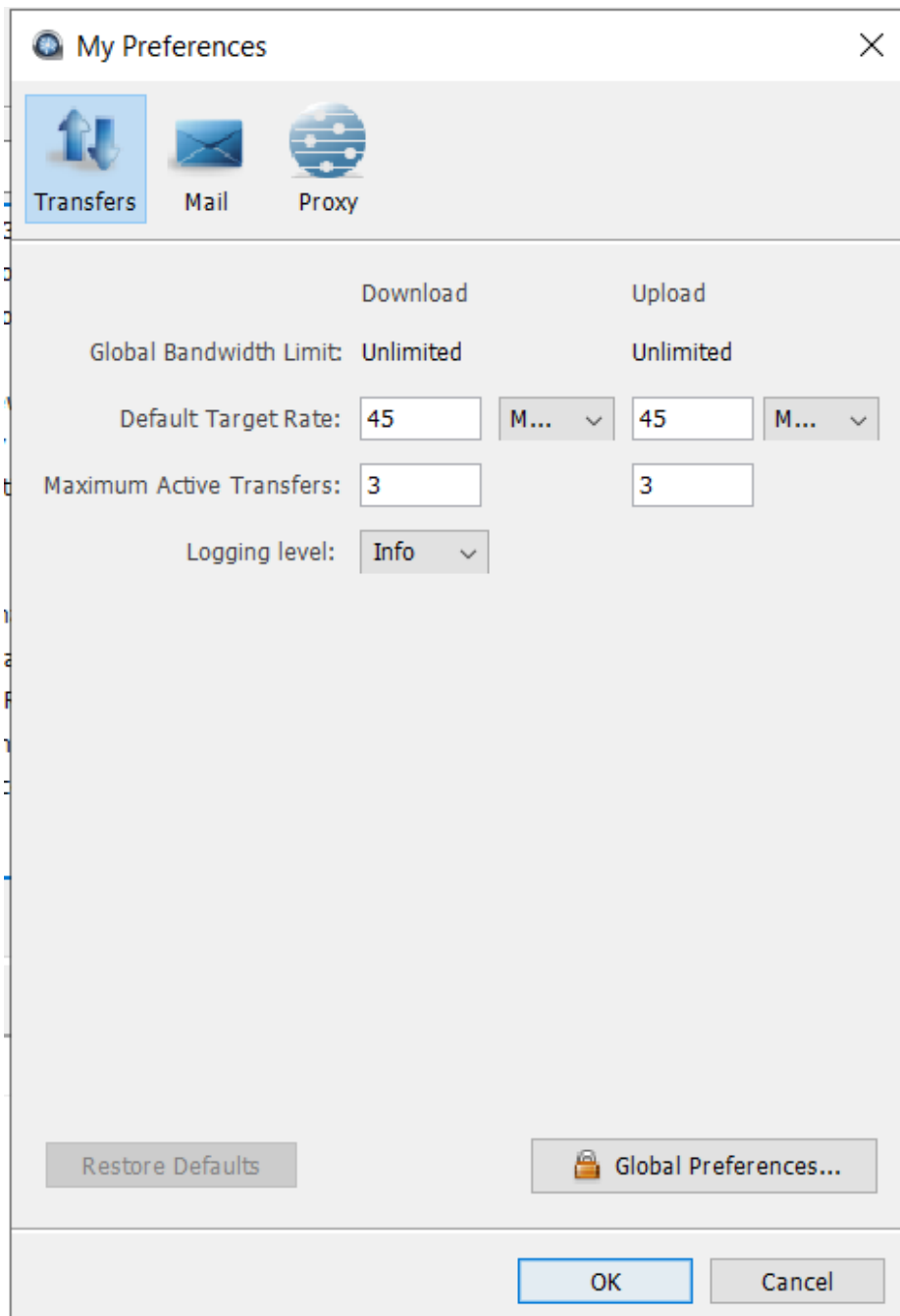
Port:

HTTPS connection for file browsing

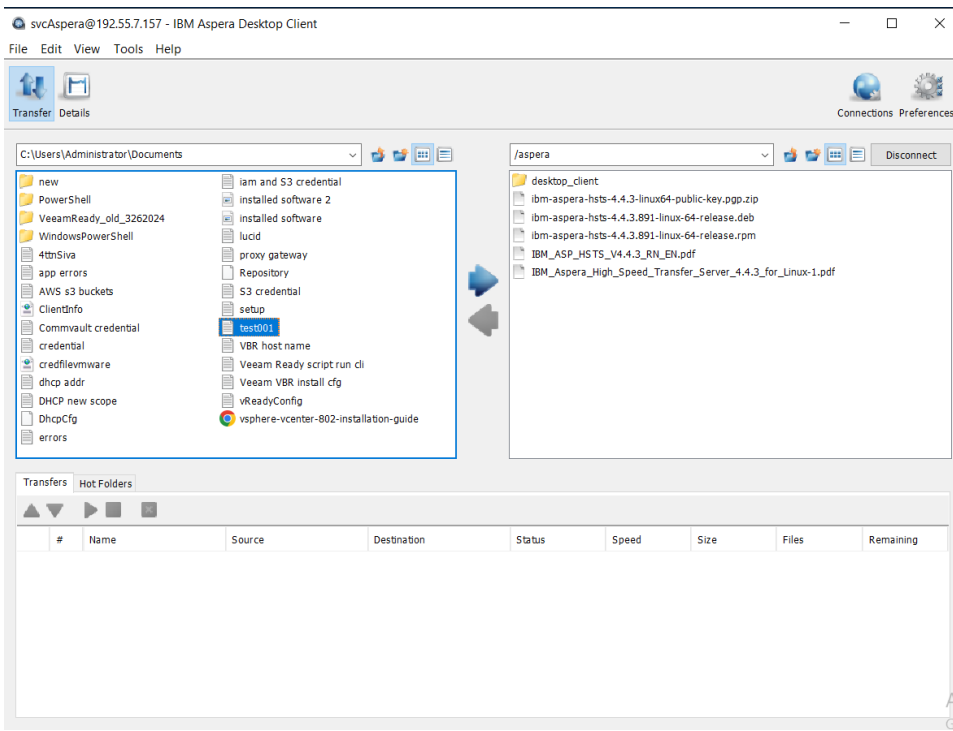
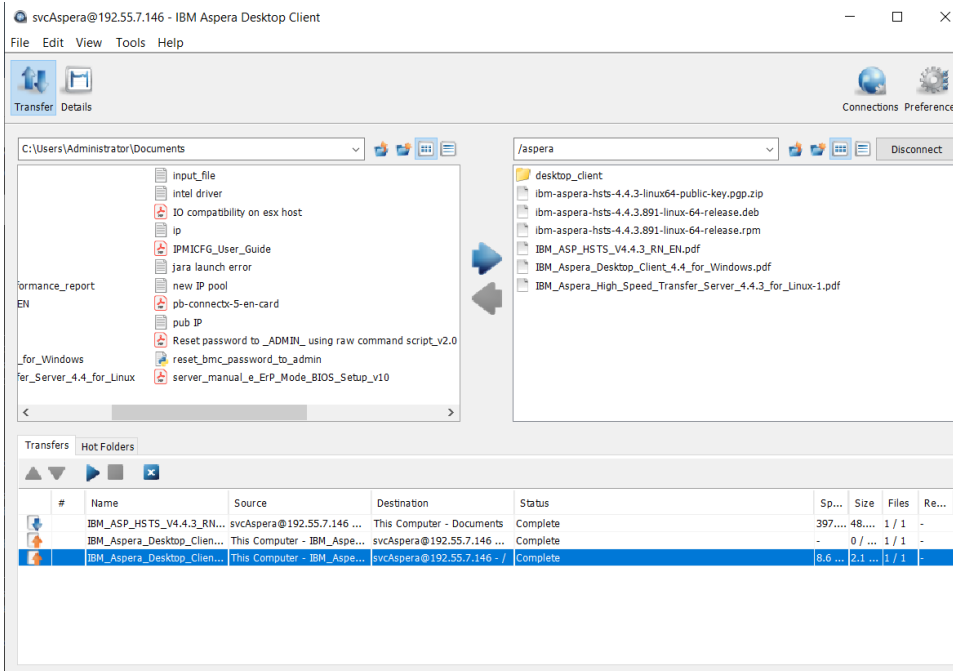
Server-side file encryption (AES256)

Reduced redundancy storage class

2. Set up initial transfer speed parameters.



3. Test the setup from an Aspera Windows Client.
4. Launch Connection Manager.
5. Send files to and receive files from S3 cloud storage.



svcAspera@10.213.101.62 - IBM Aspera Desktop Client

File Edit View Tools Help

Transfer Details Connections Preferences

test001.txt

Target Rate: 45 M... Minimum Rate: 0 M... Policy: Fair Set

45.0 Mbps

0.0 bps

Details Files

Error: Failed to open TCP connection for SSH
Occurred at 11:28 PM

Statistics

Size: -
Files: 0
Average Speed: 0.0 bps
Elapsed: 0s (started at 11:28 PM)
RTT Delay: 0 ms
Average Loss: 0 %

Transfer Information

Source: This Computer
C:\Users\Administrator\Documents\test001.txt
Destination: svcAspera@10.213.101.62

Transfers Hot Folders

#	Name	Source	Destination	Status	Speed	Size	Files	Remaining
1	test001.txt	This Computer - test001.txt	svcAspera@10.213.101.62...	Retrying in 8s	-	-	0	-
	test001.txt	This Computer - test001.txt	svcAspera@10.213.101.62...	Error: Failed to o...	-	-	0	-

Prerequisites

Before configuration, ensure that the following requirements have been met:

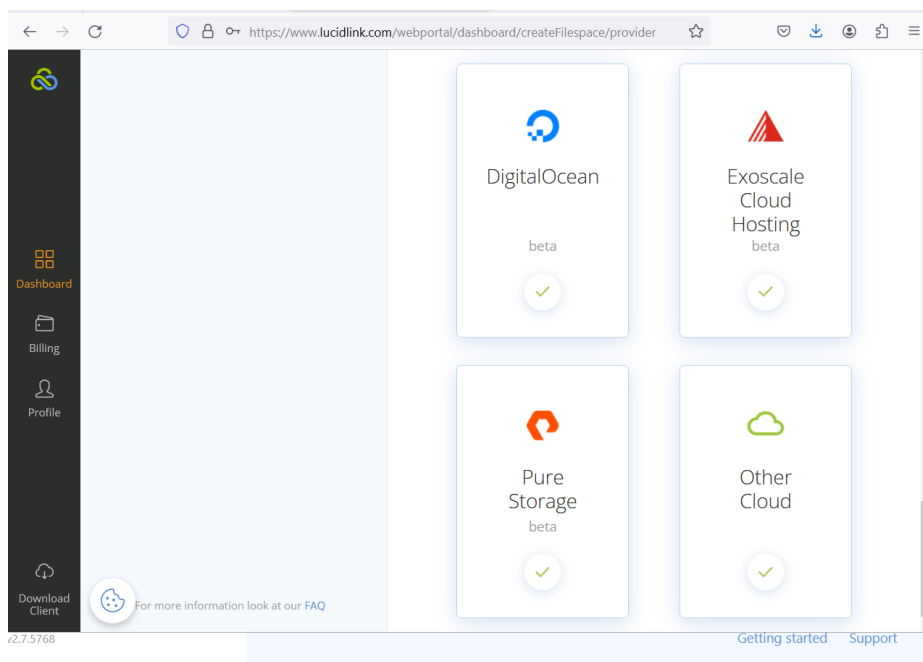
- Fully licensed Windows 2020 server.
- Active internet connection.
- Configurator must have administrative privileges on the computer hosting the LucidLink application.
- Seagate S3 cloud storage bucket access to use for your filespace.

Install LucidLink app

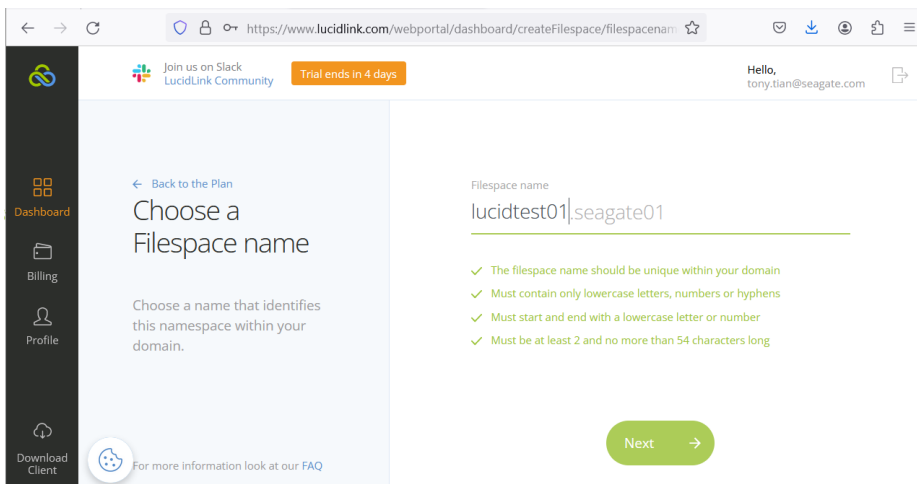
1. Open your browser and navigate to the [LucidLink download page](#).
2. Download the appropriate installer for your operating system.
3. Open the folder where you receive downloads and launch the installer.
4. Follow the onscreen instructions to complete the installation.

Create a cloud storage instance

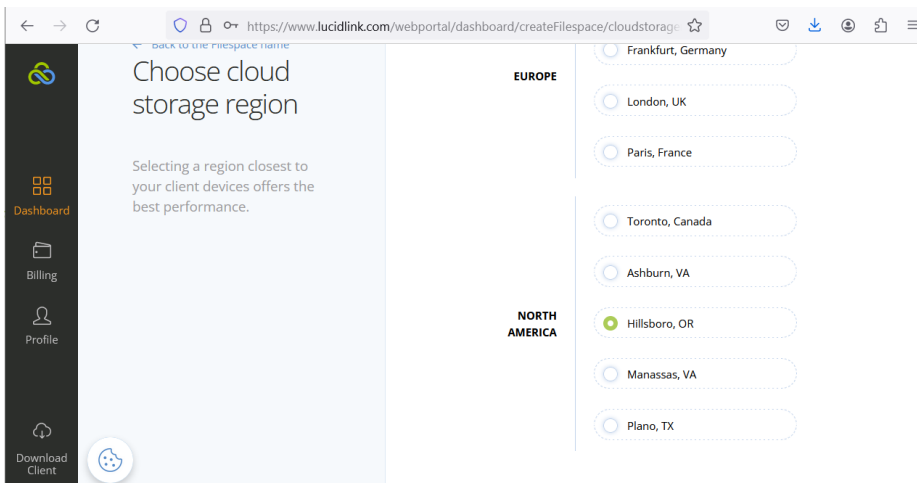
1. Open the LucidLink app.
2. Log in with your account credentials. If you don't have a LucidLink account, register and create an account by selecting the option on the login screen.
3. Create a cloud, or map the filespace to a cloud service provider. (For Seagate Lyve Cloud, select **Other Cloud**.)



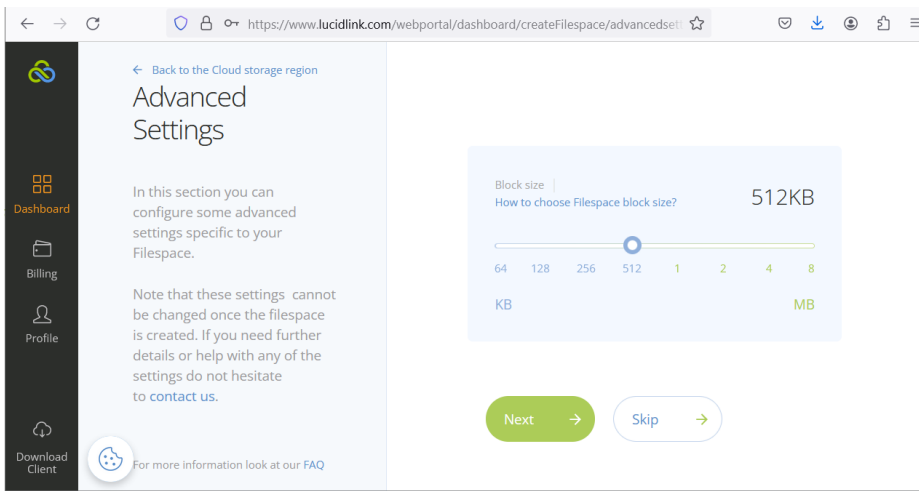
4. Select **Create a filespace**.
5. Enter a name that identifies the filespace within your domain.



6. Select a cloud storage region.

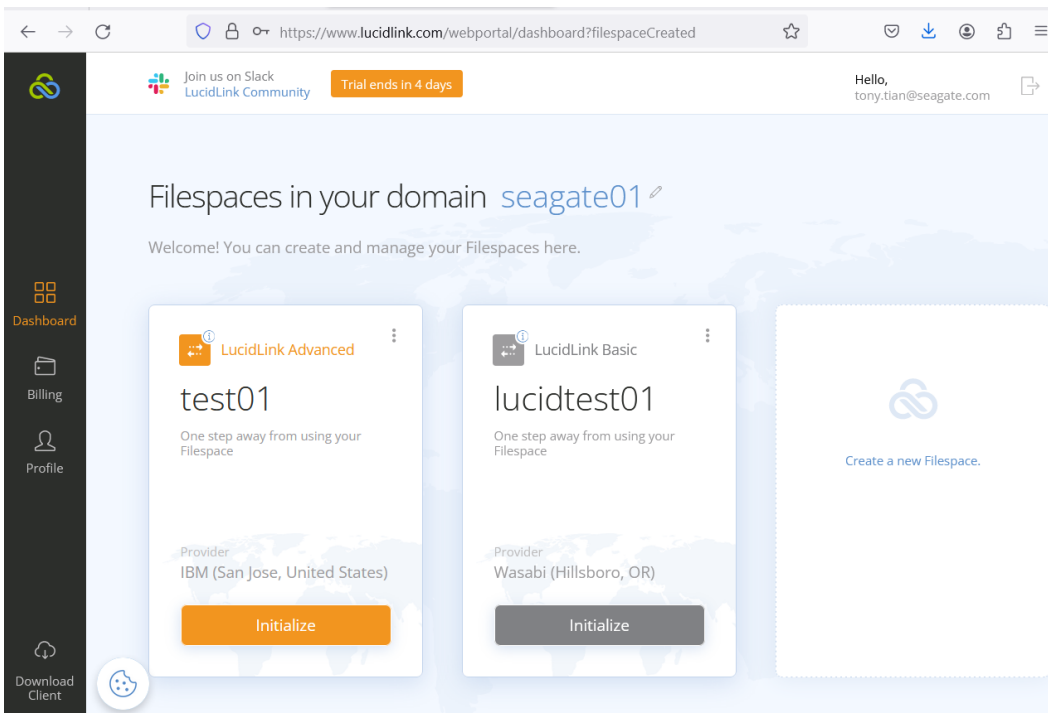


7. (Optional) If you want to change the block size for your filespace, select **configure advanced settings**. (For recommended block sizes, see [Choosing a LucidLink Block Size](#).)
8. Verify your choices and select **Create**.

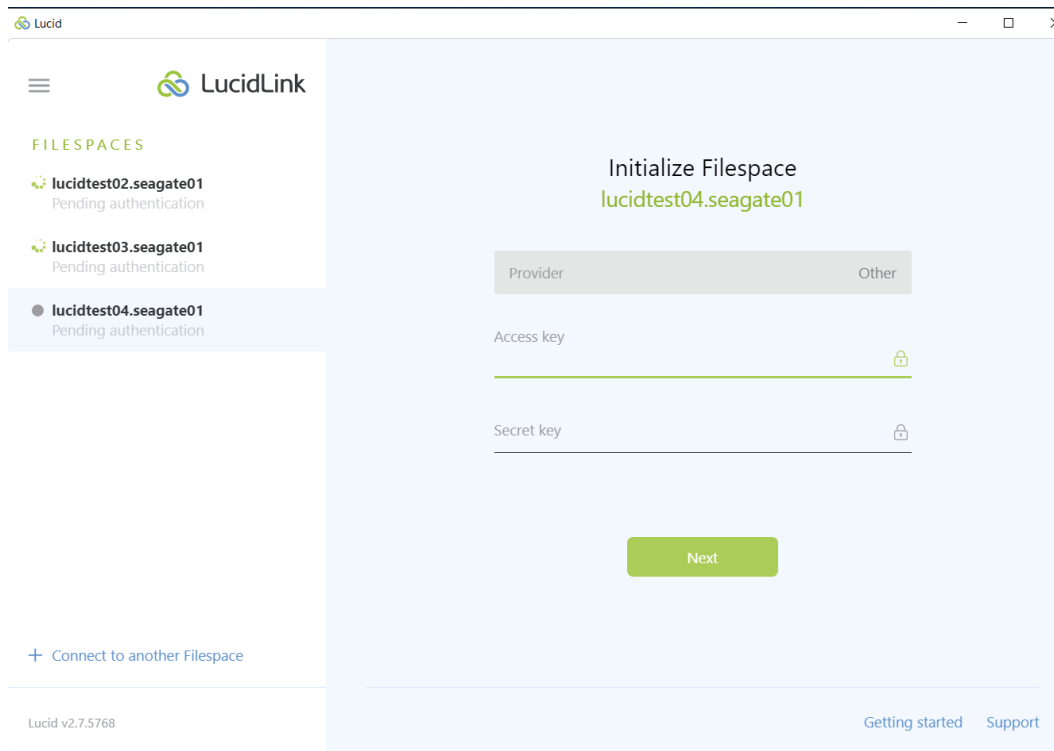


Initialize and connect the filespace

1. After your filespace has been set up, select the **Initialize** button on your filespace's card.



2. Enter your Lyve Cloud user account credentials in the LucidLink app, and then select **Next**.



3. Create a root password



Due to the robust security mechanism enforced by LucidLink, there is no password recovery option. LucidLink cannot recover a root user password. The root user can change all other user passwords at any time.

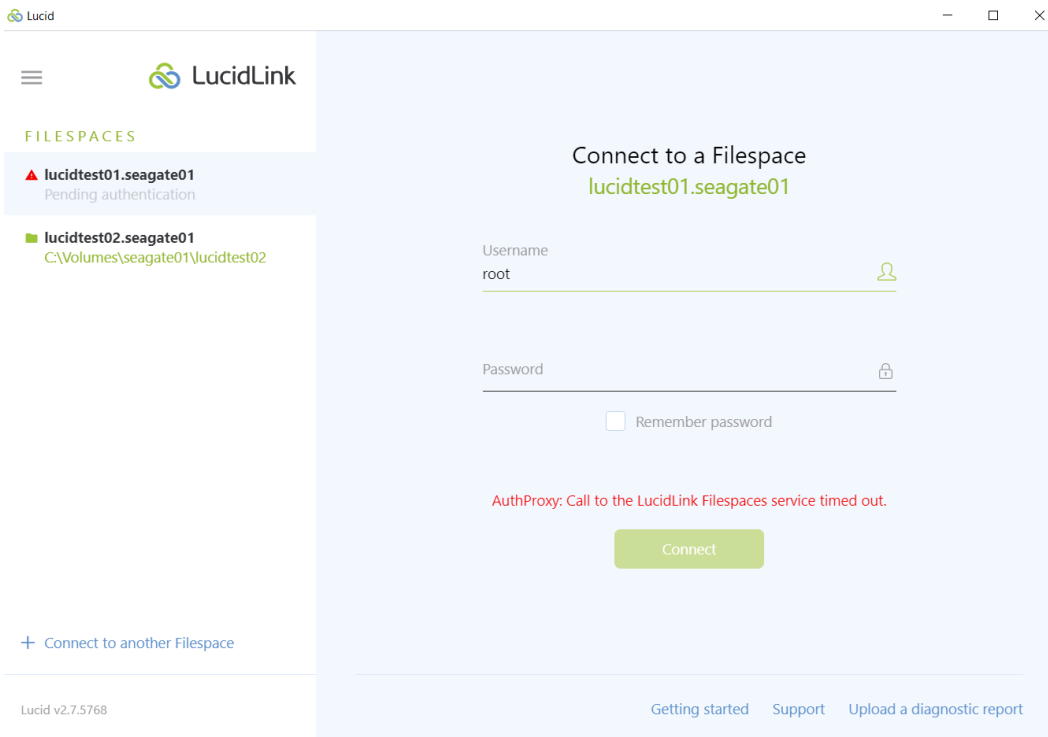
Once the filespace has been created, you must connect to it make it accessible as a local drive on your system.

1. Enter the Filespace name in the following format:

<filespace-name>.<domain>

Select **Continue**.

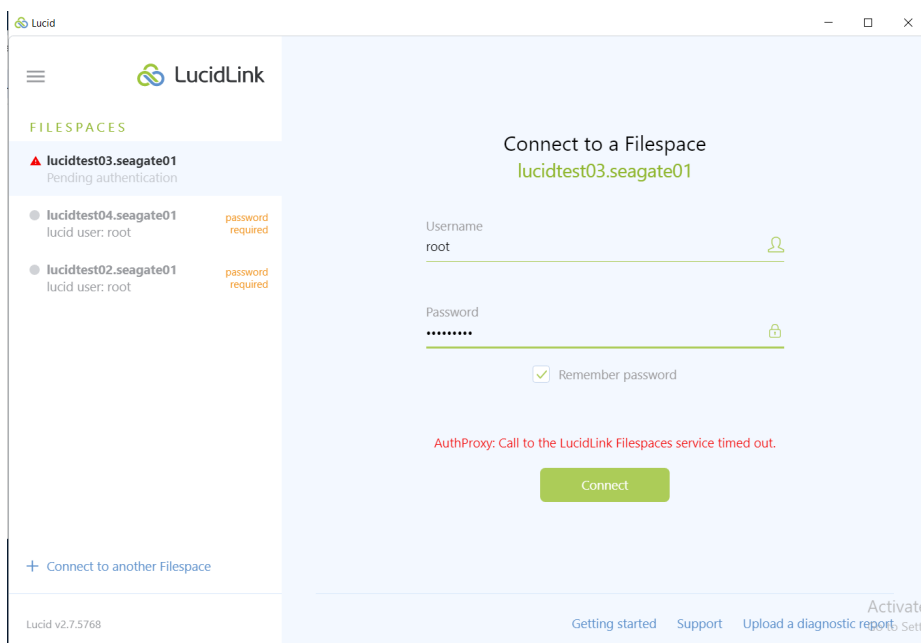
2. To connect to a filespace for the first time, enter your root credentials.



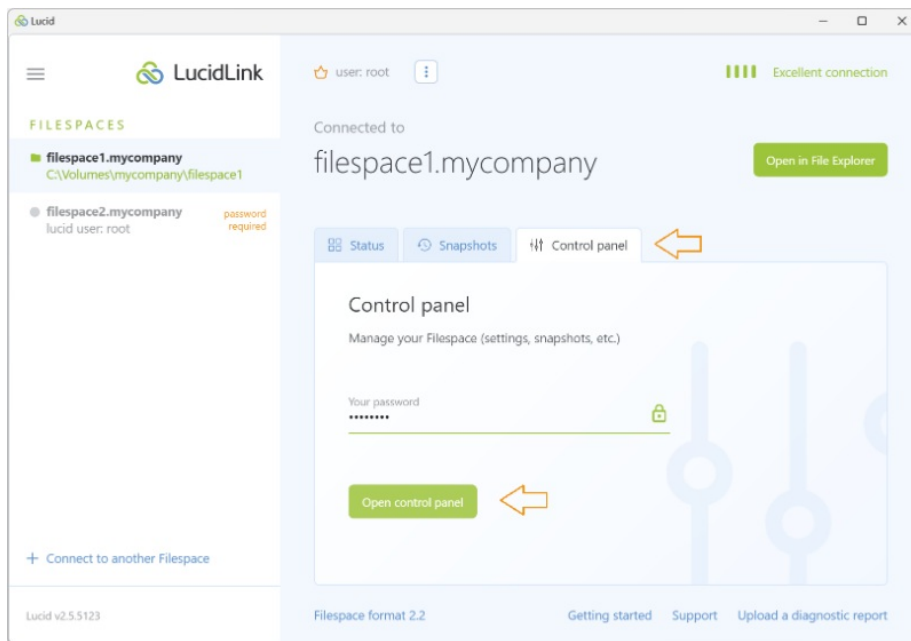
Select **Connect**.

Filespace management

You can view the current status of your filespace from the LucidLink control panel.



Once connected, the user will have an access to the control panel.



MinIO Client

MinIO Client is a S3 compatible client that allows you to connect to Lyve Cloud Object Storage and perform operations on your Lyve Cloud buckets.

Configure MinIO

To configure MinIO Client for use with with Lyve Cloud:

1. Download Minio Client and set executable permissions:
 - `wget https://dl.minio.io/client/mc/release/linux-amd64/mc`
 - `chmod +x mc`
2. Configure a Lyve Cloud alias using your Lyve Cloud credential:

```
mc alias set minio https://s3.<region>.sv15.lyve.seagate.com <access-key> <secret-key>
```

where:

- `<region>` is the appropriate Lyve Cloud S3 endpoint URL, for example `us-east-1`.
- `<access-key>` is your account access key.
- `<secret-key>` is your account secret key.

Sample commands

List buckets

```
./mc ls minio
[2024-10-02 16:41:40 CEST] 0B acronis-cloudseed/
[2024-08-28 17:48:54 CEST] 0B alluxio-test-bkt0/
[2024-10-23 09:29:33 CEST] 0B ansible-bucket/
[2024-10-24 09:47:35 CEST] 0B apache-bucket-1/
```

List objects in specific bucket

```
./mc ls minio/minio-bucket
[2024-11-07 10:29:42 CET] 541B 0R0PJTMQ9PA5V8W1GYEDEC RVBF v1 PUT clean.sh
[2024-11-07 10:29:42 CET] 131B 0R0PJTMQ9KEY65Y989H8AVEG0E v1 PUT config.json
[2024-11-07 10:29:42 CET] 0B 0R0PJTMHV4BABGHPSSBR476JXA v1 PUT mytext.txt
```

Upload object to bucket

./mc cp tesh.bash minio/minio-bucket

tesh.bash:

3.02 KiB / 3.02 KiB



2.29 KiB/s 1s

Restic

Restic is validated for use with Lyve Cloud Object Storage.

Configure Restic

To configure Restic for use with Lyve Cloud:

1. Export the variables:

- `export RESTIC_REPOSITORY="s3:s3.<region>.sv15.lyve.seagate.com/<bucket>"`
- `export AWS_ACCESS_KEY_ID="<access-key>"`
- `export AWS_SECRET_ACCESS_KEY="<secret-key>"`

where:

- `<region>` is the appropriate Lyve Cloud region, for example, `us-east-1`.
- `<bucket>` is the name of your Lyve Cloud bucket.
- `<access-key>` is your access key.
- `<secret-key>` is your secret key.

2. Initialize the repository:

- Run command: `restic init`
- Enter password for new repository

Restic Basic Commands

Backup

```
restic backup /Users/660186/desktop/PicFolder
```

Result

```
enter password for repository:
repository 91500045 opened (version 2, compression level auto)
created new cache in /Users/660186/Library/Caches/restic
no parent snapshot found, will read all files
[0:00]    0 index files loaded
```

```
Files:    4 new,    0 changed,    0 unmodified
```

Dirs: 4 new, 0 changed, 0 unmodified
Added to the repository: 2.154 MiB (2.121 MiB stored)

processed 4 files, 2.149 MiB in 0:19
snapshot 69ea64c2 saved

Restore

```
restic restore latest --target /Users/660186/documents/Restic
```

Result

```
enter password for repository:  
repository 91500045 opened (version 2, compression level auto)  
[0:00] 100.00% 1 / 1 index files loaded  
restoring snapshot 69ea64c2 of [/Users/660186/desktop/PicFolder] at 2024-11-15 09:36:30.23865  
+0100 CET by 660186@sgs-u660186i320 to /Users/660186/documents/Restic  
Summary: Restored 8 files/dirs (2.149 MiB) in 0:04
```

Check

```
restic check
```

Result

```
using temporary cache in /var/folders/56/5mhgst5d00xdtvlg3nx1gmcrmrpk1z/T/restic-check-cache-  
4112886137  
create exclusive lock for repository  
enter password for repository:  
repository 91500045 opened (version 2, compression level auto)  
created new cache in /var/folders/56/5mhgst5d00xdtvlg3nx1gmcrmrpk1z/T/restic-check-cache-  
4112886137 load indexes  
[0:00] 100.00% 1 / 1 index files loaded  
check all packs  
check snapshots, trees and blobs  
[0:00] 100.00% 1 / 1 snapshots
```


S3cmd

S3cmd is validated for use with Lyve Cloud Object Storage.

Configure S3cmd

To start using S3cmd, you'll need to configure it with Lyve Cloud Object Storage.

1. Run the configuration command:

```
s3cmd --configure
```

2. Enter your S3 credentials:

Access Key	Enter your access key.
Secret Key	Enter your secret key.
Default Region	Enter the default region for your bucket, for example,us-east-1.
S3 Endpoint	Enter s3.<region>.sv15.lyve.seagate.com, where <region> is the appropriate Lyve Cloud region, for example,s3.us-east-1.sv15.lyve.seagate.com.
host_bucket	Enter %(bucket)s.s3.<region>.sv15.lyve.seagate.com, where <region> is the appropriate Lyve Cloud region, for example,%(bucket)s.s3.us-east-1.sv15.lyve.seagate.com.

3. Test the configuration to ensure everything is set up correctly.

Sample commands

List buckets

```
s3cmd ls
```

Result Example

```
2024-10-02 14:41 s3://acronis-cloudseed
2024-08-28 15:48 s3://alluxio-test-bkt0
```

```
2024-10-23 07:29 s3://ansible-bucket
2024-10-24 07:47 s3://apache-bucket-1
2024-10-23 11:20 s3://apache-spark-bucket
2024-11-05 08:33 s3://apostrophecms-bucket
2024-02-22 19:51 s3://aspera
2024-03-04 05:44 s3://aspera-test-bucket
2024-10-01 04:45 s3://aspera01
2024-10-08 20:22 s3://bacula-bkt-0
2024-10-25 19:46 s3://calamu-bkt0
```

Upload a file

```
s3cmd put /Users/660186/documents/test-user.sh s3://s3cmd-bucket
```

Result Example

WARNING: Module python-magic is not available. Guessing MIME types based on file extensions.

```
upload: '/Users/660186/documents/test-user.sh' -> 's3://s3cmd-bucket/test-user.sh' [1 of 1]
```

```
130 of 130 100% in 2s 56.21 B/s done
```

Download a file

```
s3cmd get s3://s3cmd-bucket/config.json /Users/660186/desktop/local-config.json
```

Result Example

```
download: 's3://s3cmd-bucket/config.json' -> '/Users/660186/documents/local-config.json' [1 of 1]
```

```
131 of 131 100% in 0s 271.77 B/s done
```

Sync a local folder to an S3 bucket

```
s3cmd sync /Users/660186/desktop/PicFolder s3://s3cmd-bucket
```

Result Example

WARNING: Module python-magic is not available. Guessing MIME types based on file extensions.

```
upload: '/Users/660186/desktop/PicFolder/Pic-1.png' -> 's3://s3cmd-bucket/PicFolder/Pic-1.png' [1 of 3]
```

```
1121955 of 1121955 100% in 14s 73.53 KB/s done
```

```
upload: '/Users/660186/desktop/PicFolder/Pic-2.png' -> 's3://s3cmd-bucket/PicFolder/Pic-2.png' [2 of 3]
```

```
479053 of 479053 100% in 5s 83.06 KB/s done
```

```
upload: '/Users/660186/desktop/PicFolder/Pic-3.png' -> 's3://s3cmd-bucket/PicFolder/Pic-3.png' [3 of 3]
```

```
645935 of 645935 100% in 17s 35.10 KB/s done
```

Done. Uploaded 2246943 bytes in 38.5 seconds, 56.98 KB/s.

S3FS

[S3FS](#) (fuse) is certified for use with Lyve Cloud Object Storage.

Configuration instructions are provided below. See also: [How to Mount S3 Bucket on CentOS and Ubuntu using S3FS](#).

Configure S3FS

Your Lyve Cloud access key and secret key are required to configure S3FS.

1. Replace the `AWS_ACCESS_KEY_ID` and `AWS_SECRET_ACCESS_KEY` with your actual Lyve Cloud access key and secret key values.

```
$ <your-password-file> AWS_ACCESS_KEY_ID:AWS_SECRET_ACCESS_KEY
```

2. Make sure that the file has proper permission:

```
$ chmod 600 <your-password-file>
```

3. Run the following command to mount s3fs:

```
s3fs-bucket <your-local-folder> -o passwd_file=<your-password-file> -o url=https://s3.<region>.sv15.lyve.seagate.com
```

where:

- `<your-password-file>` is a file containing your S3 access and secret keys.
- `<your-local-folder>` is the folder containing your files where you want to sync with S3 bucket.
- `<region>` is the appropriate Lyve Cloud region, for example, `us-east-1`.

Once the mountpoint is working, sync all objects from s3fs-bucket to mount folder, for example:

```
# ls -l s3-bucket
total 2197
-rw-r-----. 1 root root 1121955 Nov 19 12:43 Pic-1.png
-rw-r-----. 1 root root  479053 Nov 19 12:43 Pic-2.png
-rw-r-----. 1 root root  645935 Nov 19 12:43 Pic-3.png
-rows-r-r--. 1 root root   1465 Nov 19 09:01 README.md
```


s5cmd

s5cmd is validated for use with Lyve Cloud Object Storage.

Configure S3cmd

To start using s5cmd, you'll need to configure it with your Lyve Cloud S3 storage service. Once s5cmd is installed, run the following commands to insert access keys into a credentials file:

1. Make sure you have the AWS directory to hold your credentials file in:

```
$ mkdir ~/.aws
```

2. Create and edit the credentials file to contain your access key pair:

```
$ vim ~/.aws/credentials
```

```
[default]
```

```
aws_access_key_id = <access-key>
```

```
aws_secret_access_key = <secret-key>
```

Basic Commands



Note—The Lyve Cloud `--endpoint-url` must appear before the command in order for the command to run.

List buckets

```
s5cmd --endpoint-url=https://s3.<region>.sv15.lyve.seagate.com ls
```

where:

- `<region>` is the appropriate Lyve Cloud region, for example, `us-east-1`.

Create bucket

```
s5cmd --endpoint-url=https://s3.<region>.sv15.lyve.seagate.com mb s3://s5cmd-bucket
```

where:

- <region> is the appropriate Lyve Cloud region, for example us-east-1.

Upload file

```
s5cmd --endpoint-url=https://s3.<region>.sv15.lyve.seagate.com cp envpod.yaml s3://s5cmd-bucket cp envpod.yaml s3://s5cmd-bucket/envpod.yaml
```

where:

- <region> is the appropriate Lyve Cloud region, for example us-east-1.

Download file

```
s5cmd --endpoint-url=https://s3.<region>.sv15.lyve.seagate.com cp s3://s5cmd-bucket/export_repo.sh /Users/660186/desktop/export.sh
```

where:

- <region> is the appropriate Lyve Cloud region, for example, us-east-1.

Sync a local folder to an S3 bucket:

```
s5cmd --endpoint-url=https://s3.<region>.sv15.lyve.seagate.com sync my-sync-folder s3://s5cmd-bucket  
cp my-sync-folder/Pic-2.png s3://s5cmd-bucket/my-sync-folder/Pic-2.png  
cp my-sync-folder/Pic-3.png s3://s5cmd-bucket/my-sync-folder/Pic-3.png  
cp my-sync-folder/Pic-1.png s3://s5cmd-bucket/my-sync-folder/Pic-1.png
```

where:

- <region> is the appropriate Lyve Cloud region, for example, us-east-1.

Signiant Media Shuttle

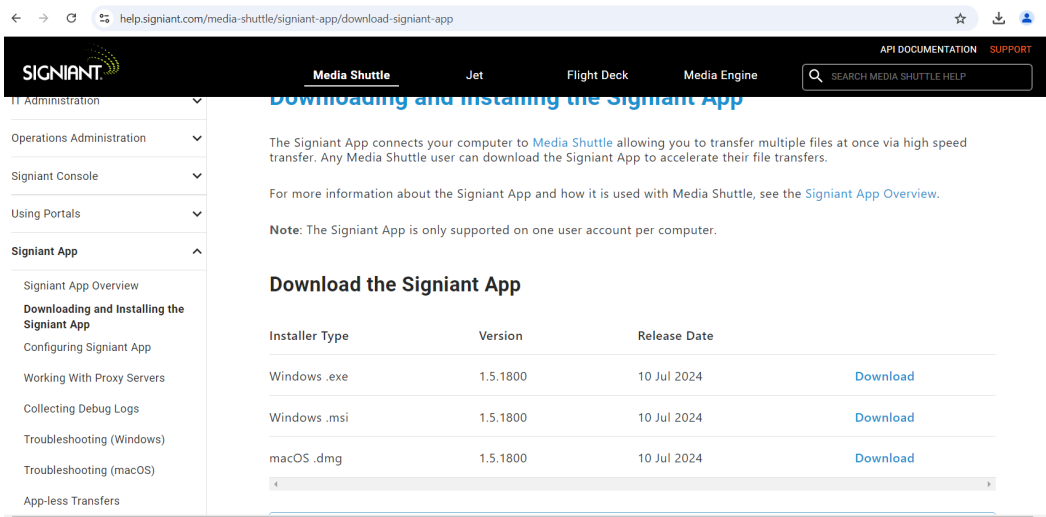
Signiant Media Shuttle is a hybrid solution that includes host-based software SDCX and the web-based Media Shuttle user interface.

Pre-deployment Requirements

Before you begin the deployment workflow, ensure that your production environment meets [Signiant's system requirements](#).

SDCX Installation

1. Download the Signiant app.



2. Install and launch SDCX server on Windows Server. It's recommended that the user restart the SDCX services after the initial installation.

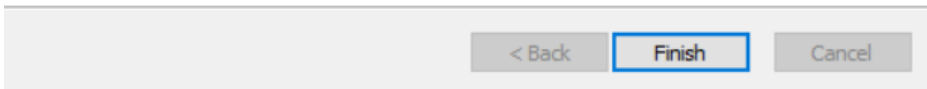
Completing the Signiant SDCX Server Setup



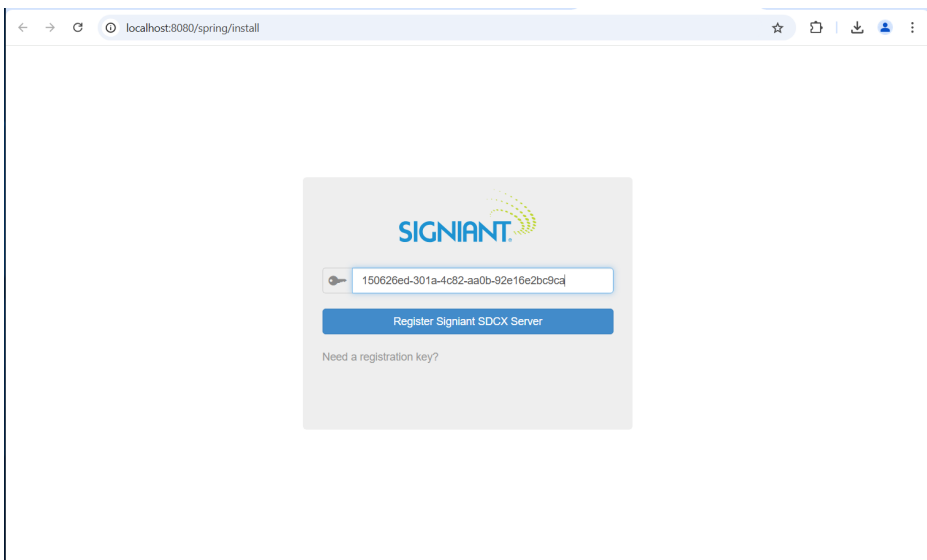
Signiant SDCX Server has been installed on your computer.

Click Finish to close Setup.

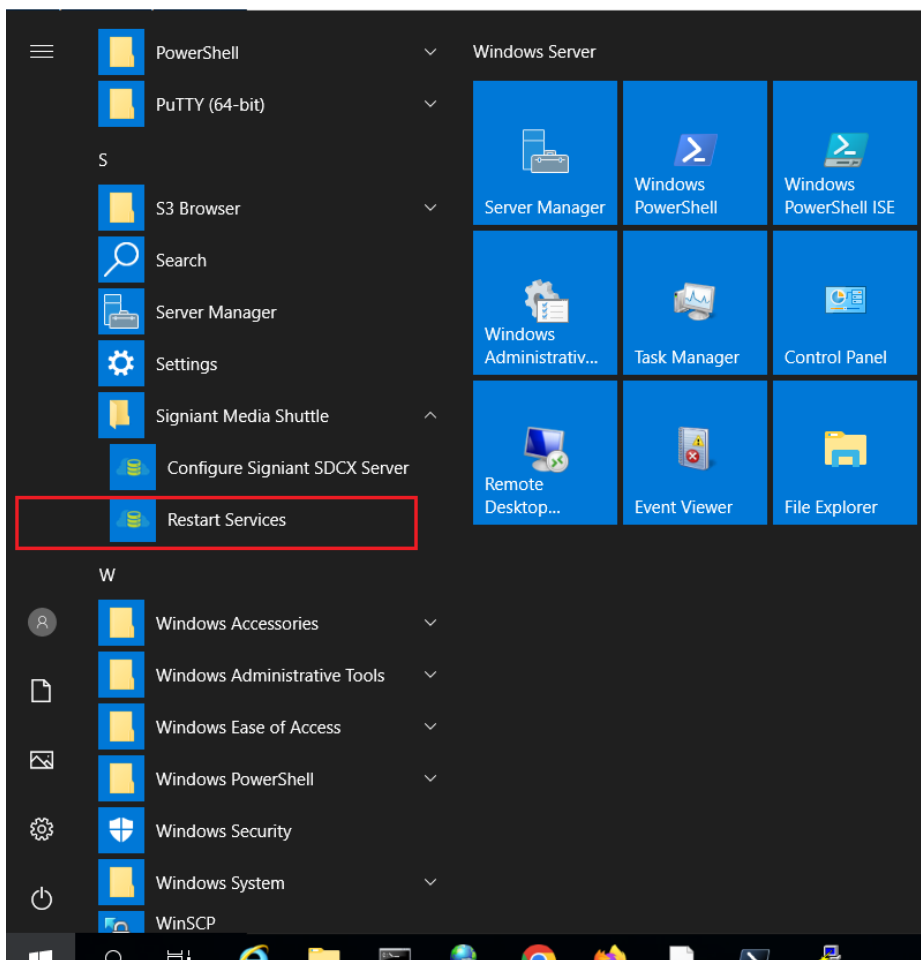
Create desktop icon



3. Register the SDCX server



4. Restart the SDCX services



Launch SDCX services

1. Once you've launch SDCX server, select **Assign Media Shuttle portals to this server** at the localhost:8080/spring/install



Note—The SDCX server is the one you installed on the host server.

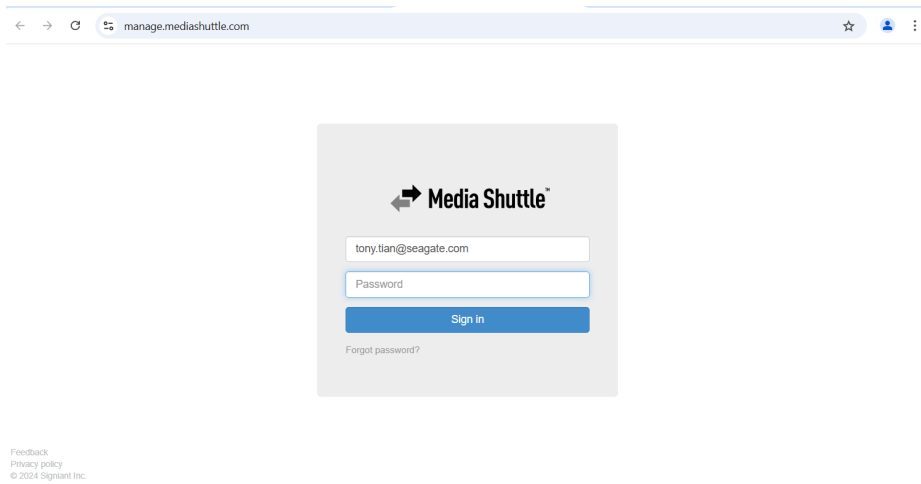
localhost:8080/spring/install



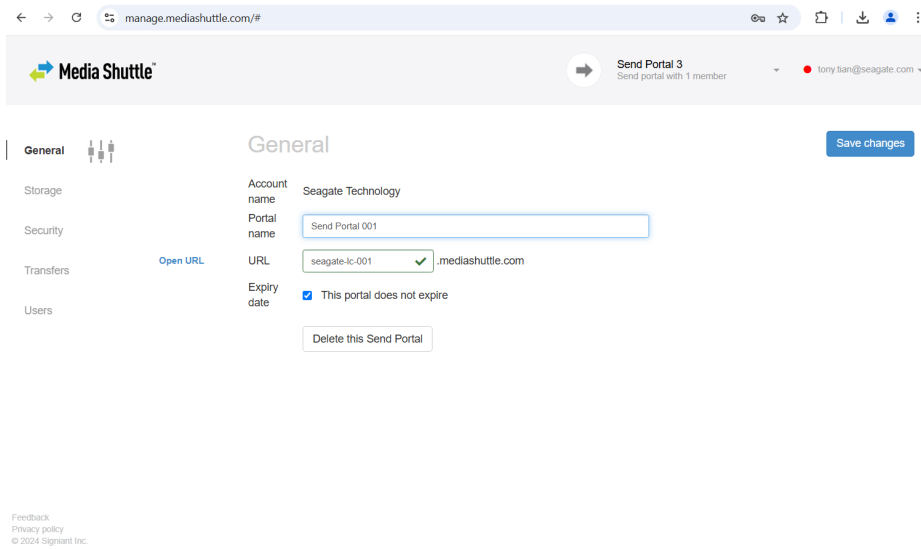
Assign Media Shuttle portals to this server

Assign Jet endpoints to this server

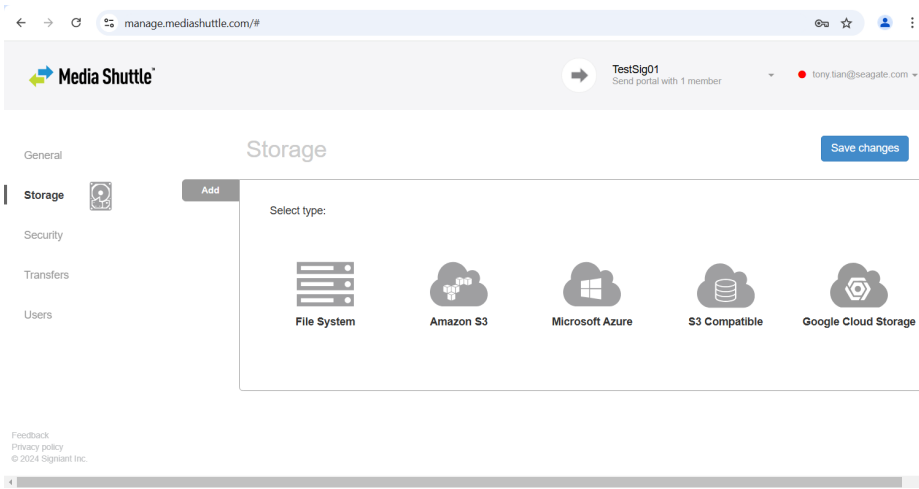
2. Enter the Media Shuttle credentials you received from Signiant Support.



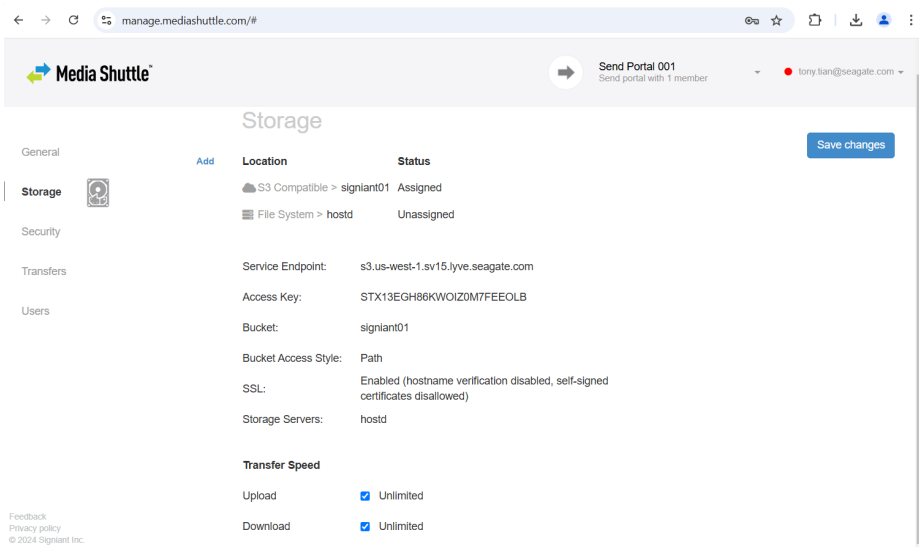
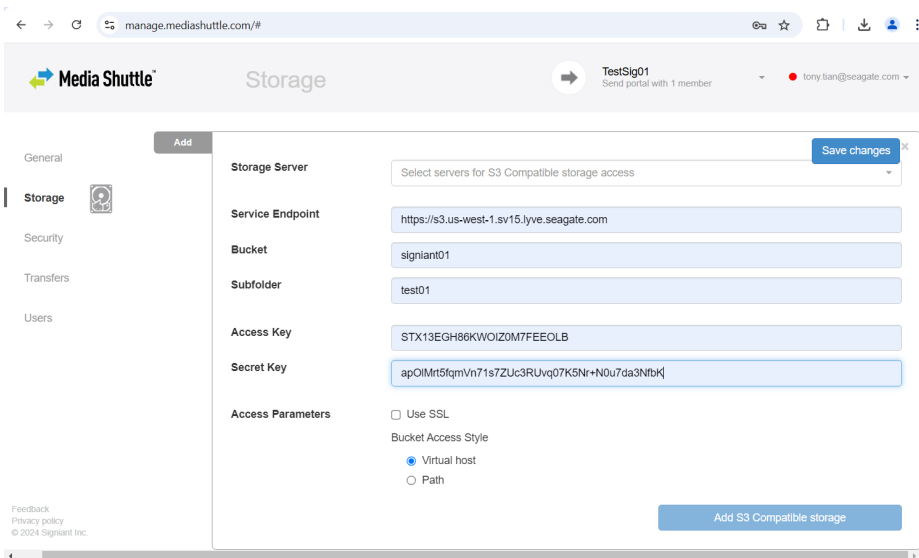
3. Create a portal at Media Shuttle. Select **Save Changes**.



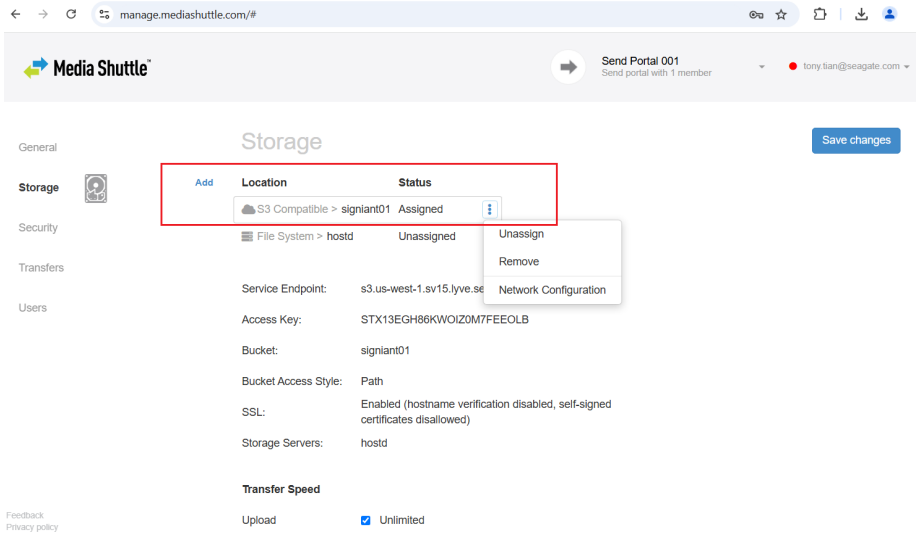
4. Add a S3 Compatible storage.



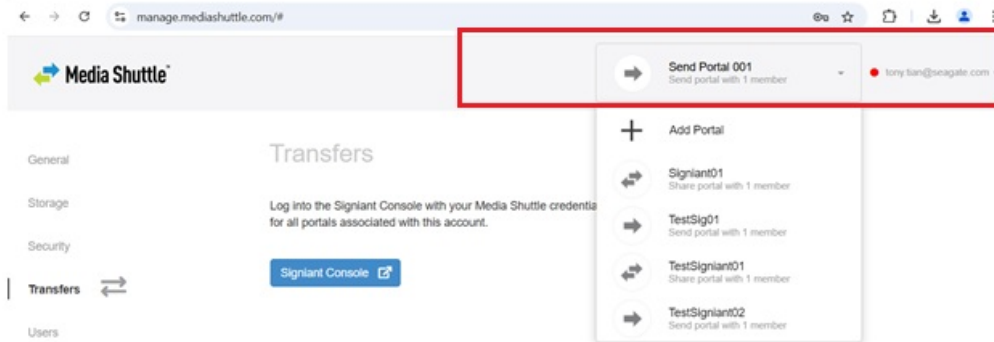
5. Create a S3 user credential in Signiant, using the Lyve Cloud credentials provided for the user account. In the example below, bucket signiant01 is created for a S3 account user at S3-us-west-1.sv15.lyve.seagate.com.



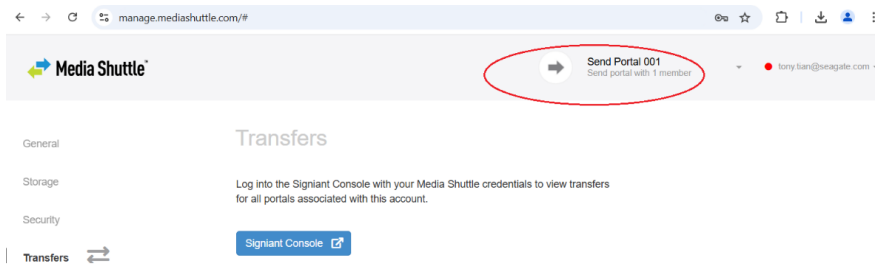
6. Assign the cloud storage to the local host. In the example below, signiant01 is assigned to hostD.



7. Send the portal that you created in the steps above.

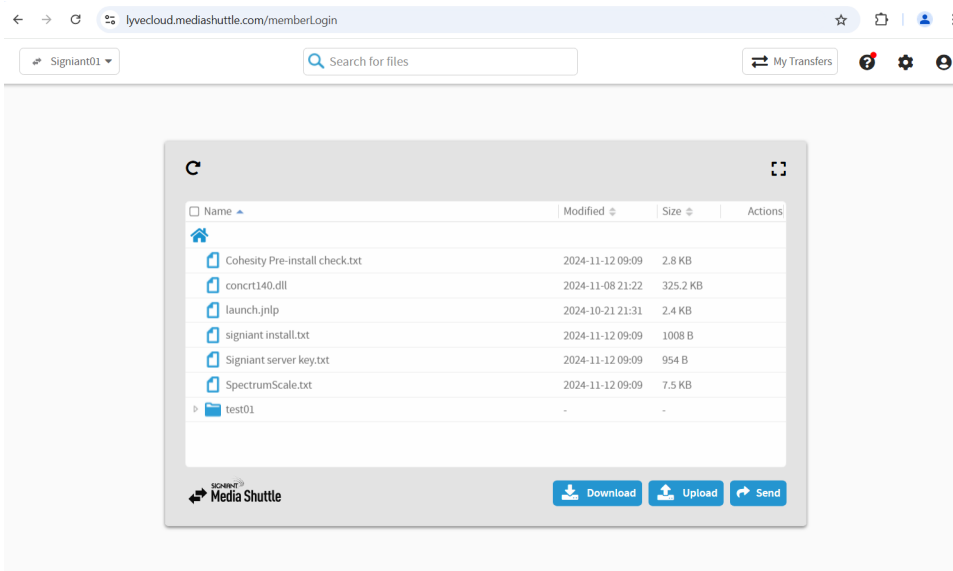


8. Select the Arrow icon to notify the web service.

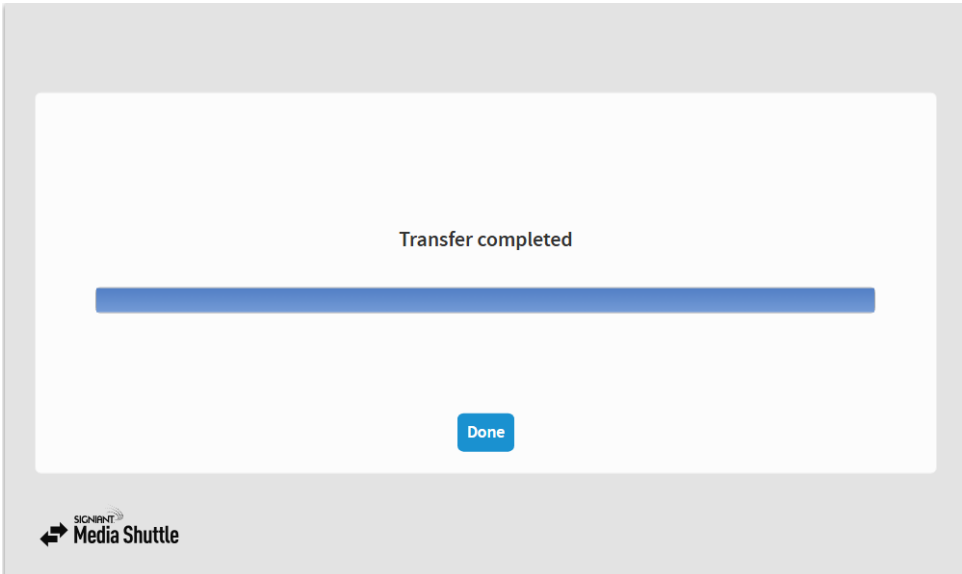
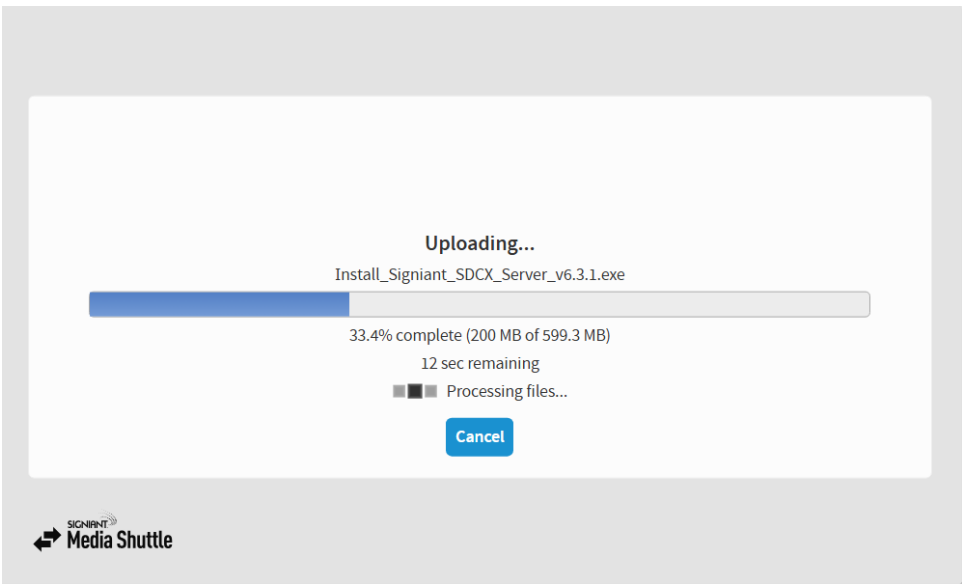
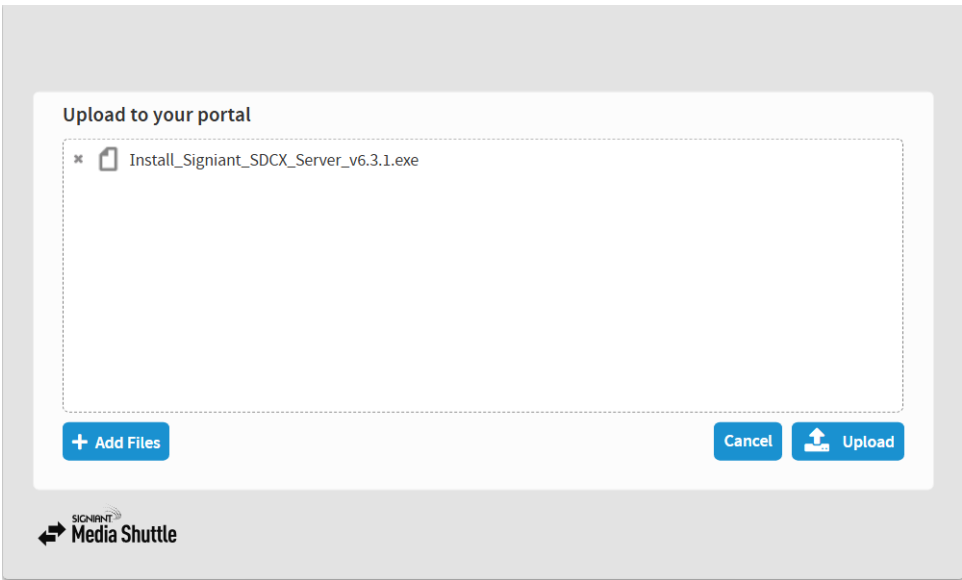


Object Upload and Download

Use Media Shuttle to upload or download file objects to and from Lyve Cloud object storage. In the following example, the cloud upload/download user interface is ready for further operations.



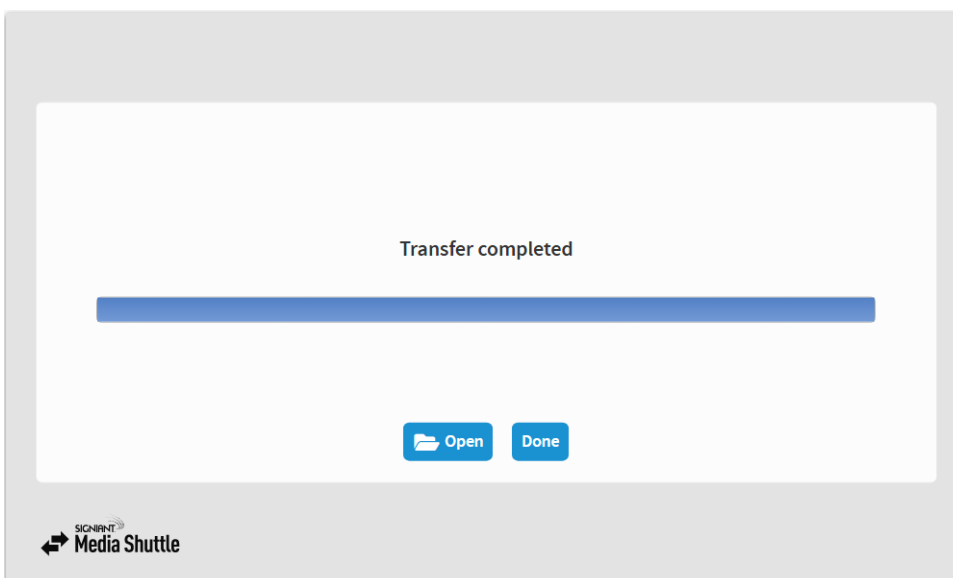
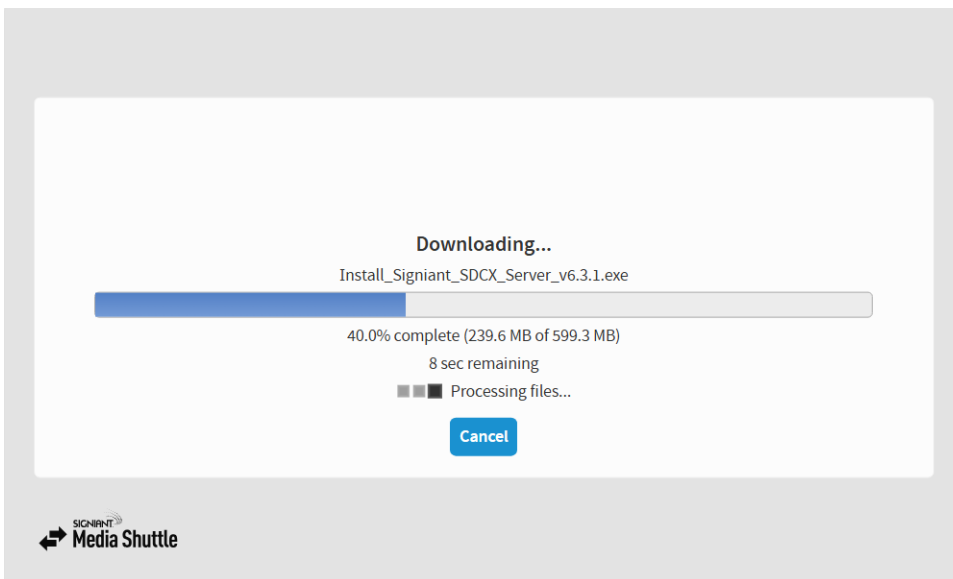
Upload example:



When uploading is completed, the registered user will receive an email alert from the Signiant service portal, notifying them that an upload has been received.



Download example:





Signiant01



Your content has been downloaded by tony.tian@seagate.com.



This delivery contains the following content:

Install_Signiant_SDCX_Server_v6.3.1.exe

Total delivery size: 599.3 MB



[Privacy Policy](#)

91 Hartwell Avenue,
Lexington, MA 02421, USA
mediashuttle.com

Transmit

Transmit is validated for use with Lyve Cloud Object Storage.

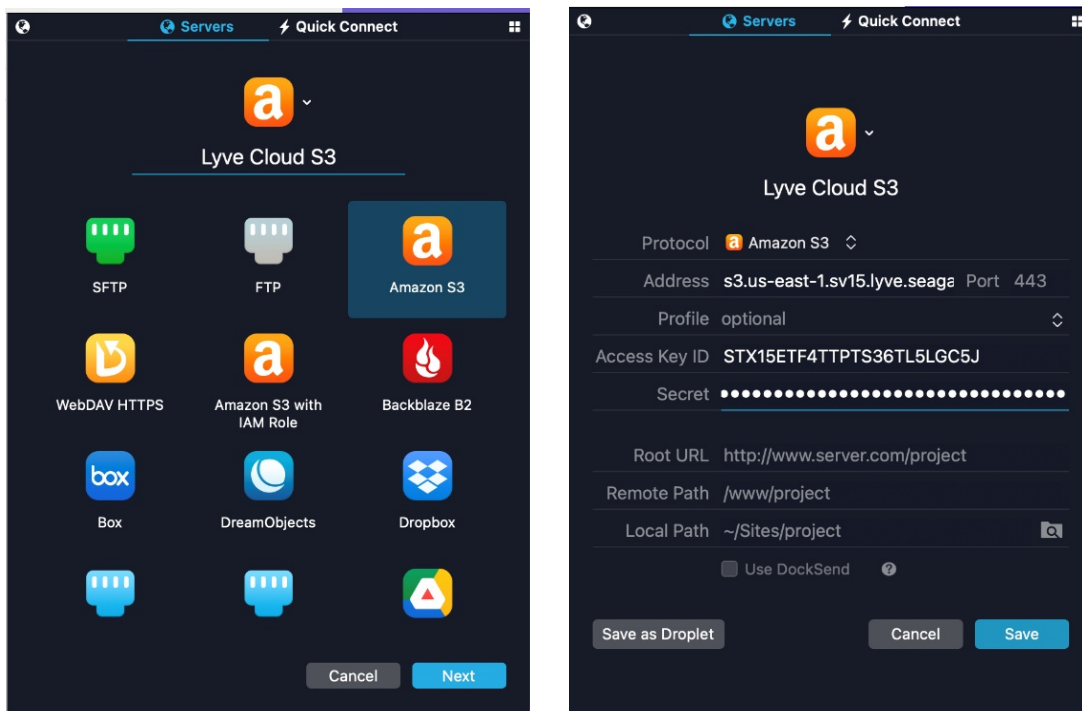
Configure Transmit

1. Download transmit from the following [link](#).
2. Add Amazon S3 Server. We are using Transmit 5.10.6.

- **Protocol:** Amazon S3
- **Address:** <region>.sv15.lyve.seagate.com
- **Port:** 443 (default)
- **Access Key ID:** <access-key>
- **Secret:** <secret-key>
- **Remote Path:** Accept default or specify another

where:

- <region> is the appropriate Lyve Cloud region, for example, us-east-1.
- <access-key> is your access key.
- <secret-key> is your secret key.



3. Drag and drop to upload or download files.

660186 > Desktop ▾				s3.us-east-1.sv15.lyve.seagate.com > transmit-bucket ▾			
Name ^	Size	Date	Name ^	Size	Date		
apache.txt	Ze...KB	30/10/24	config.json	13...es	25/11/24, 4:19 PM		
> AWS Course SS	.	12/7/23, 5:38 AM	Screenshot 2024-10-24 at 8.3...	916 KB	25/11/24, 4:19 PM		
> aws-sshkey	.	6/11/23, 4:15 AM	Screenshot 2024-10-27 at 2.5...	1.8 MB	25/11/24, 4:20 PM		
clean.sh	54...es	8/4/22, 1:34 AM					
config.json	13...es	11/4/23, 2:42 AM					
export.sh	67...es	18/11/24, 2:20 PM					
happy-diwali-2024-images-pic...	157 KB	31/10/24, 9:24 AM					
> jars	.	23/10/24, 6:52 PM					
LargeTestFile	8...GB	8/6/22, 7:19 AM					
> my-sync-folder	.	14/11/24, 5:17 PM					
mytext.txt	Ze...KB	30/10/24					
Pic-4	396 KB	20/7/24, 10:12 AM					
Pic-5	1.9 MB	20/7/24, 10:18 AM					
> python	.	23/11/24, 9:42 PM					
> Python Projects	.	23/11/24, 9:58 PM					
> Relocated Items	.	9/6/21, 9:52 AM					
> s3configutility	.	30/5/22, 9:28 AM					
> s3fs-fuse	.	19/11/24, 9:03 AM					