
QNAP
Discover the all-new
CacheMount
The key to make NAS
a hybrid cloud server
Will be released in QTS 4.4.1
Comming soon!

Discover the all-new CacheMount

QTS 4.4.1

1. Why CacheMount and what are its problem solving abilities
2. Cache function makes the hybrid cloud more efficient
3. The key of CacheMount: Cache Volume
4. User manual on how To Start The Cache Experience
5. Live demo

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Issues you might encounter while using Private cloud

- When out of office, it is too slow to access the data in the NAS due to network issues.
- It is slow to synchronize data between different NAS in multiple site office.

Issues you might encounter while using Public cloud

- It is too slow to access the data in the cloud due to network issues in different location.
- It is slow to connect to the same cloud between in multiple site office.

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Hybrid Cloud Solution Embrace The Advantages of Both

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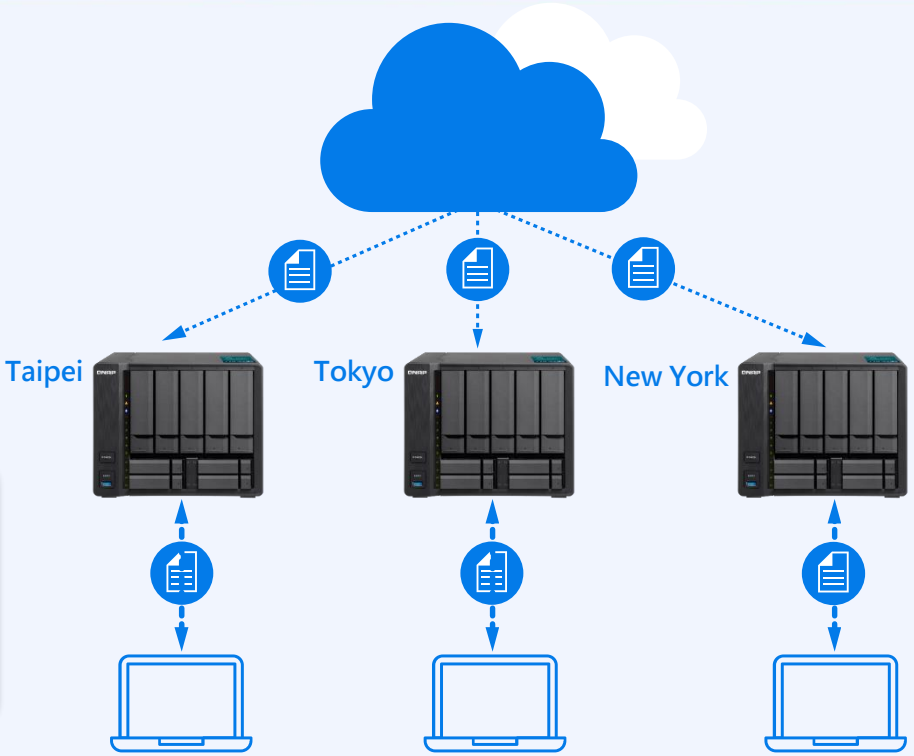
- Security
- Storage extension
- Access Speed
- Powerful computing
- Access anywhere

Hybrid cloud solution is one of the best choice of the enterprise! Keep the old service investment and get the elasticity advantage!



The previous QNAP Hybrid Cloud Solution is…

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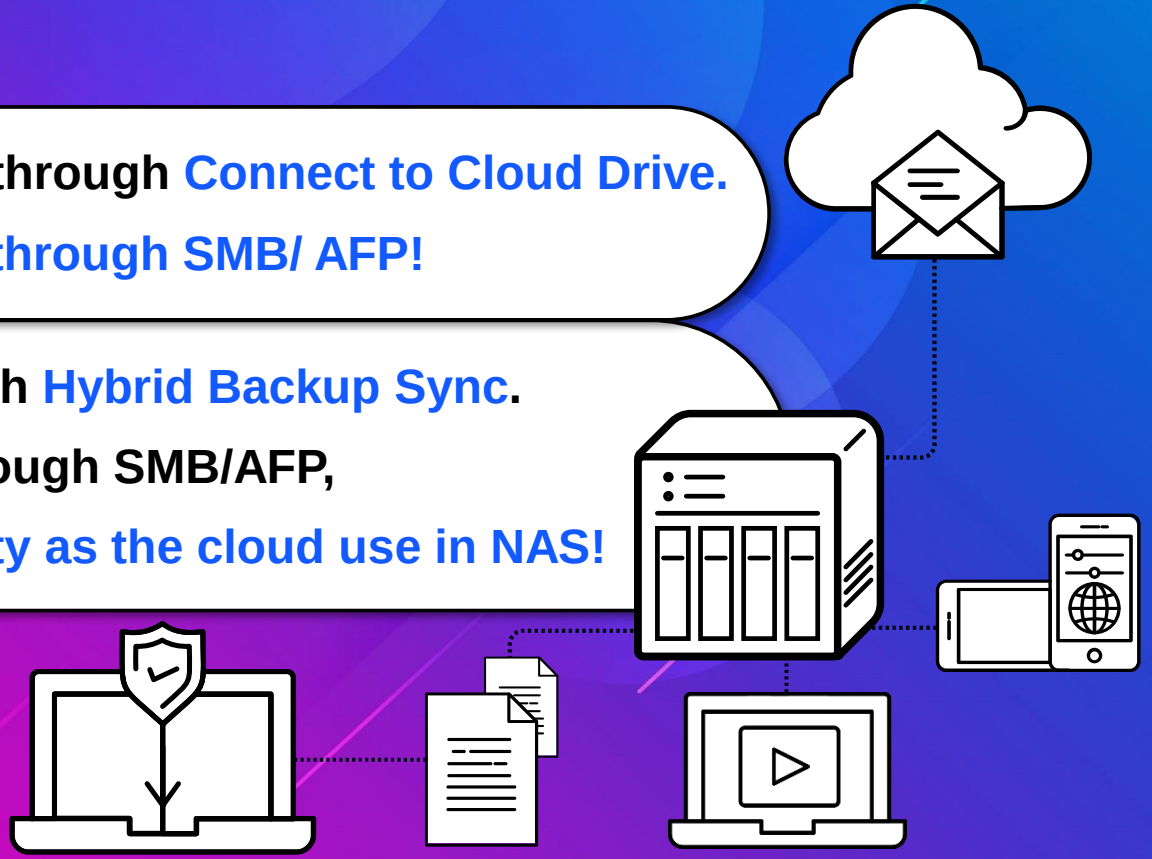
Mount the cloud storage through **Connect to Cloud Drive.**

You can not access data through SMB/ AFP!

Synchronize data through **Hybrid Backup Sync**.

You can access data through SMB/AFP,

but it takes same capacity as the cloud use in NAS!



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Now QNAP gives you A New Hybrid Cloud Solution:

CacheMount

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Allocate a part of NAS storage to enjoy the hybrid cloud!

Enjoy QTS applications at the same time.

SMB/NFS/AFP

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CacheMount

Cache function makes the hybrid cloud more efficient

A New Hybrid Cloud Solution: CacheMount

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Remote Mount
& Connect to Cloud Drive

NAS as the edge gateway
device to the cloud

CacheMount

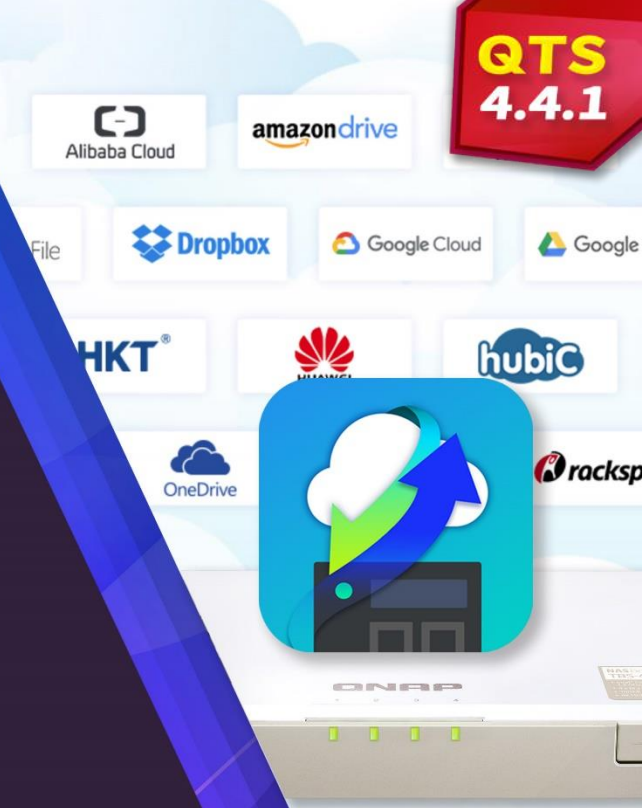
New service in QTS 4.4.1

After upgrading the firmware to QTS 4.4.1, CacheMount will replace Connect to Cloud Drive. Please install CacheMount in App Center.

CacheMount Cloud Gateway

5 features to increase cloud management

- Support 2 types, 20 cloud providers.
- Much more smoothly access cloud data.
- Access through SMB/AFP. No need PC utility for cloud service anymore.
- Share and manage files between multiple site office in time.
- Horizontally integrate QTS applications to use the cloud data.



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Support 2 types, 20 cloud providers.

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Type I: File-base Storage

- Storage data by the folder structure.
- Pricing depending on the fixed capacity.

Type II: Object-base Storage

- Storage unstructured data in the flat environment.
- Pricing depending the actual storage usage.

File Cloud Gateway Help To Access Object Storage Service

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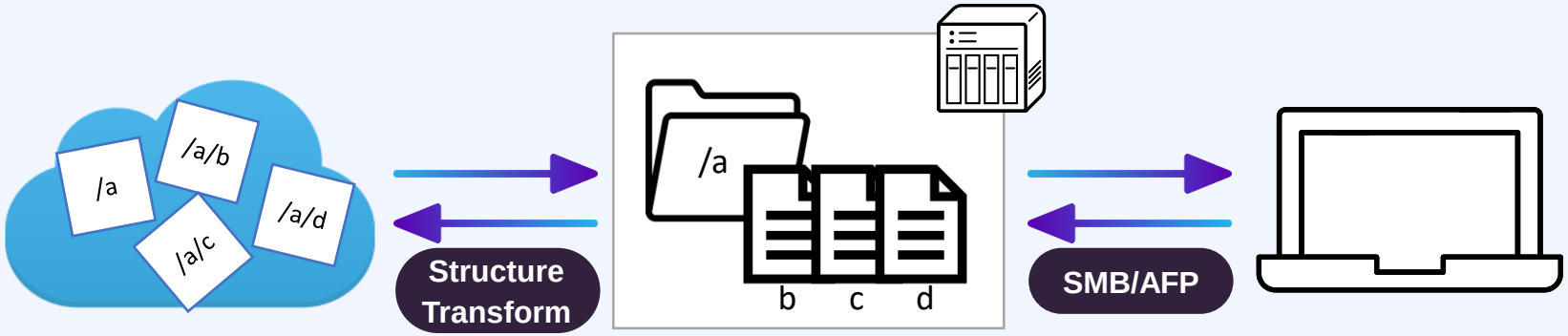
CacheMount can transform the unstructured data into file structure for easy management of object cloud storage spaces



object cloud storage spaces NAS Devices

Column

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Why you should use object storage service?

Data backup and disaster recovery

It enables you to store, back up, archive large amounts of data in the cloud and also help with disaster recovery.

Highly scalable and elastic

It can store enormous data and price by the actual storage usage.

Various computing service

Cloud vendors provide various computing such as big data analytics.

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Smoother access to cloud data

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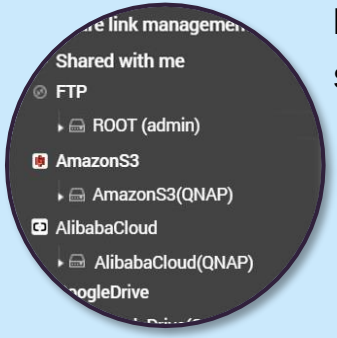
Remote Mount-Basic Function



Manage multiple cloud services in File Station.

With CacheMount, you can…

1. Create a more compact hybrid cloud with smoother data access.
2. Access through SMB/AFP. No need PC utility for cloud service anymore.

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Access through SMB/AFP

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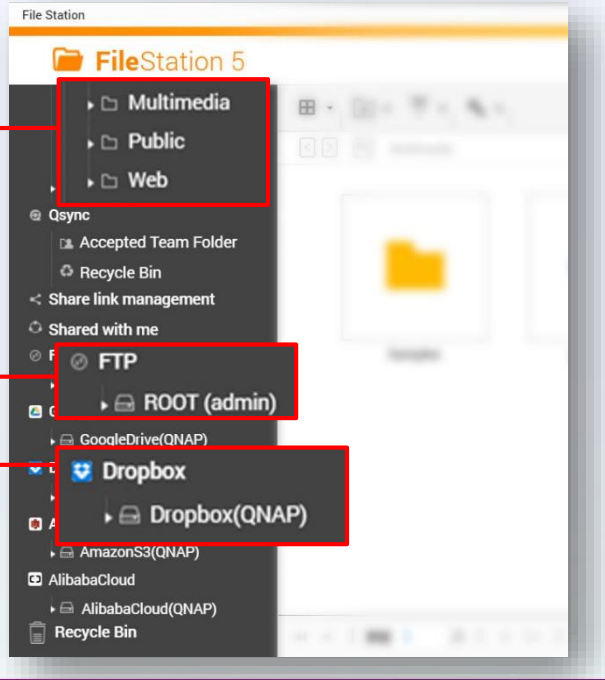
File Station

Local Storage

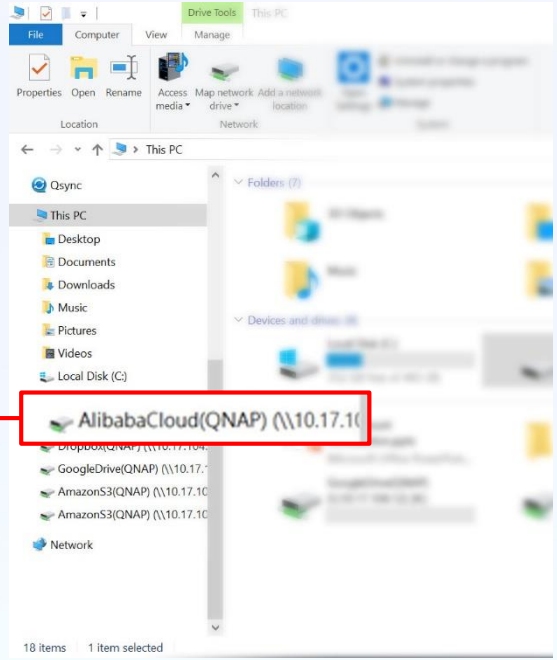
Remote NAS

Cloud Storage



PC (mounting through Samba)

Mount on PC by network protocol



Share and manage files between multiple site office in time

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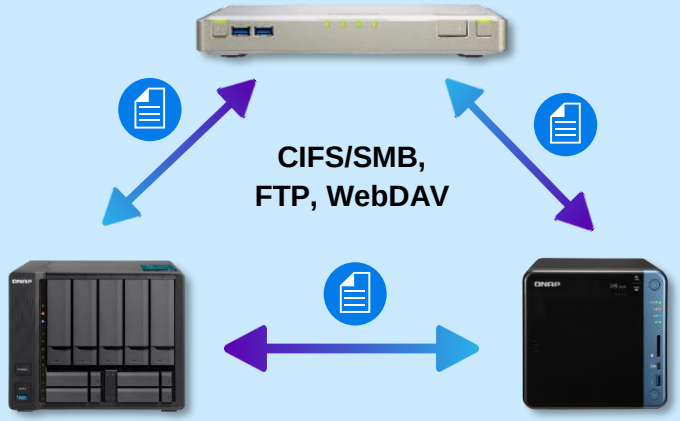
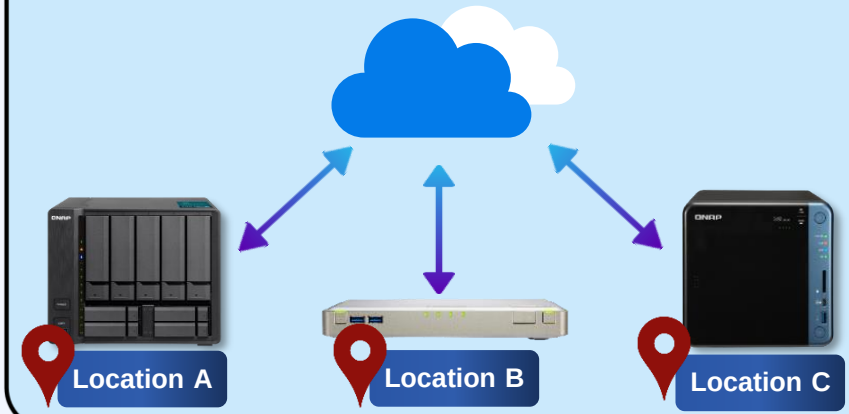
Remote Mount-Basic Function

No matter how large the file is, file transfer across NAS can be fast.



With CacheMount, you can…

With using cloud service, files sharing and management between multiple site office can be on time.



Horizontal integrate QTS applications to use the cloud data

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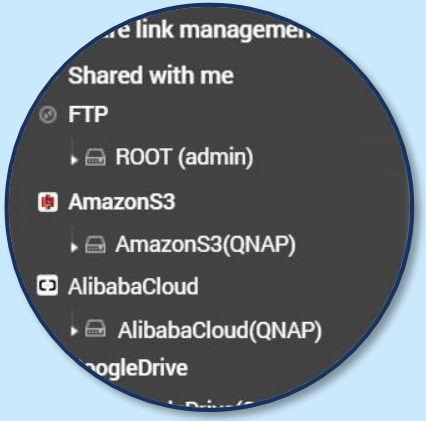
Remote Mount-Basic Function



File Station

The remote data can be managed only in File Station. Other application can not access data on the cloud.

With CacheMount, you can…

Have a same multimedia experience of data in different cloud service.

Search enormous files on the cloud fast and easily .

CacheMount Features

Enable Cache To Have Batter Cloud Experience

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Basic Functions

- **Remote Mount**
  Remote Device: Through CIFS/SMB, FTP, WebDAV
  Cloud Service: 2 types, 20 cloud providers
- **Manage Remote Data**
  Only be able to operate files in File Station
- **Manage Multiple Clouds**

NEW!! Enable Cache

- **Access Files Smoothly**
  Cache function let file access more smooth
- **Operate Cloud Data by PC**
  PC can access cloud directly through SMB/AFP
- **Cloud data usage**
  Enjoy various applications in QTS including file manager and multimedia services

Purchase License for CacheMount Solution

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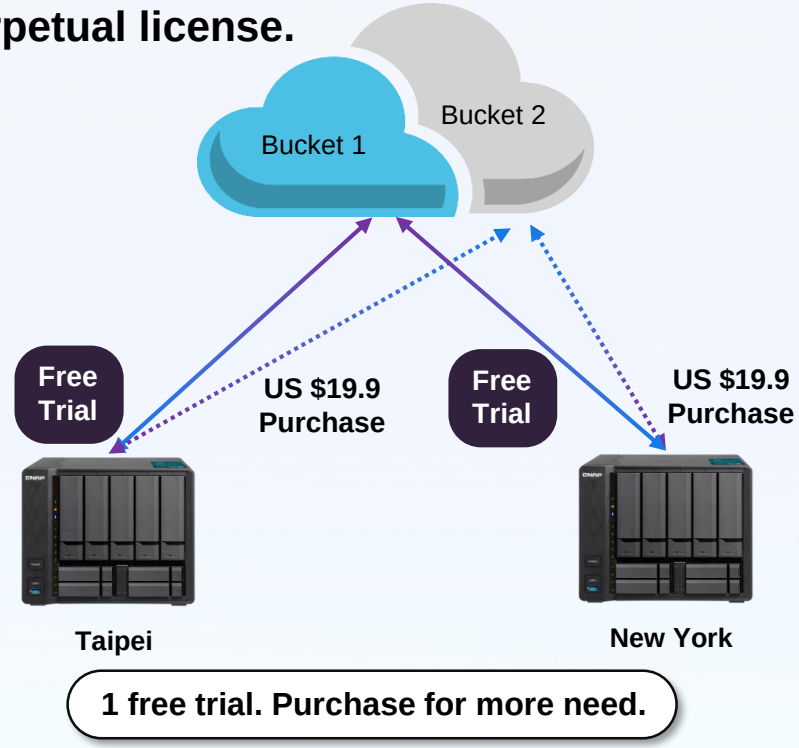
Install CacheMount and Enjoy one free and perpetual license.

Item	Price
CacheMount – 1 connection /year	US $ 19.9
CacheMount – 4 connections /year	US $ 59.9
CacheMount – 8 connections /year	US $ 99.9



To keep maintain and support every cloud services and provide you the best service.
We charge for more cache connection.

View License Status Anytime

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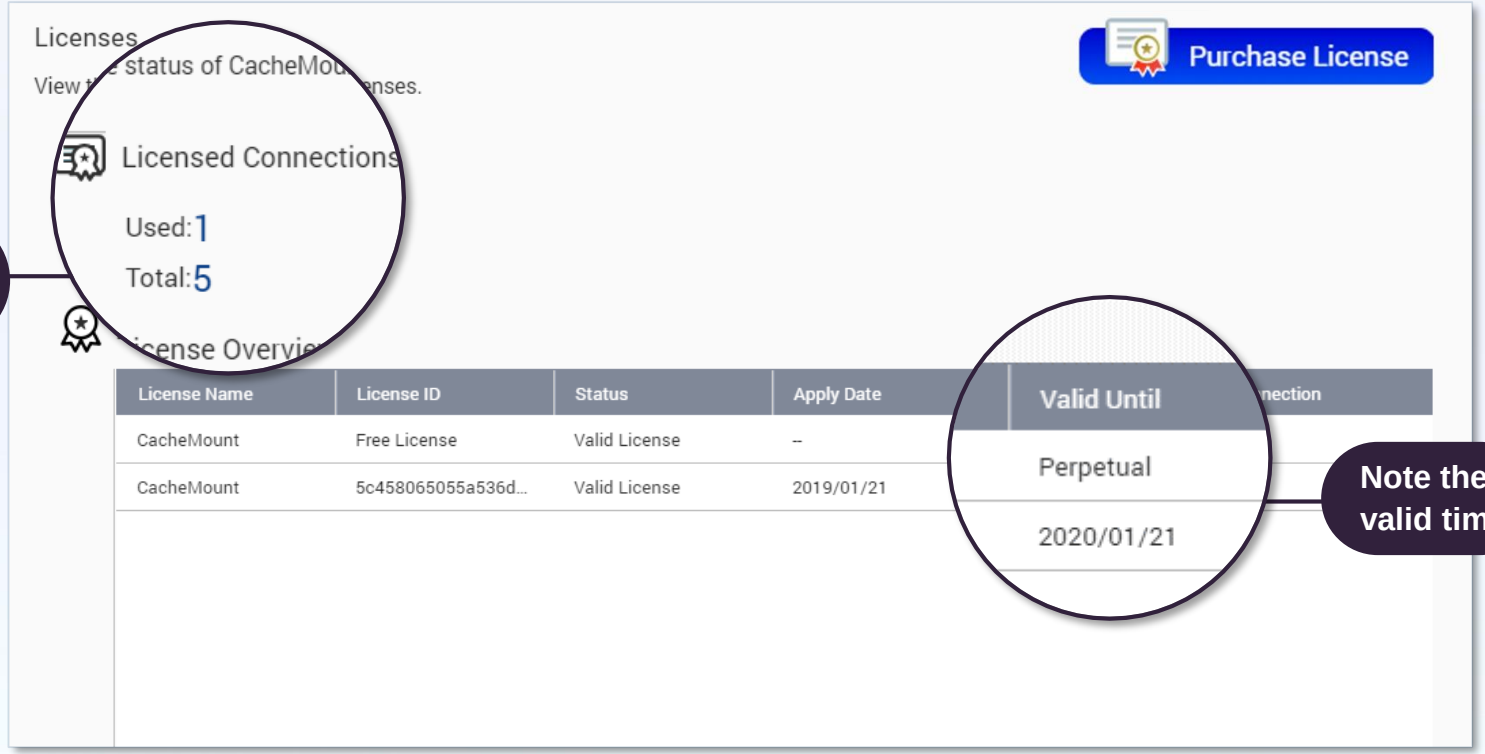

View the usage of license

Note the valid time

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CacheMount

The key of CacheMount: Cache Volume

Create a Cache Volume To Smooth Access

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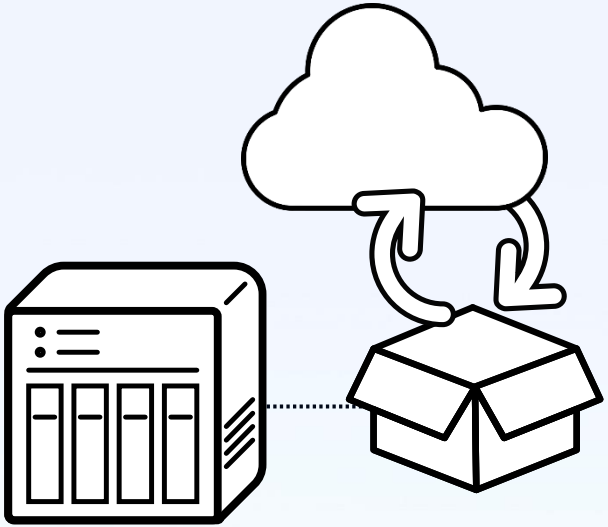
Create a proper size of cache volume to help smoothly access unlimited cloud storage like local transferring.

First Step To Enable Cache:
Create a Cache Volume



Minimize space: 200GB

Sync Metadata To Read File List Fast

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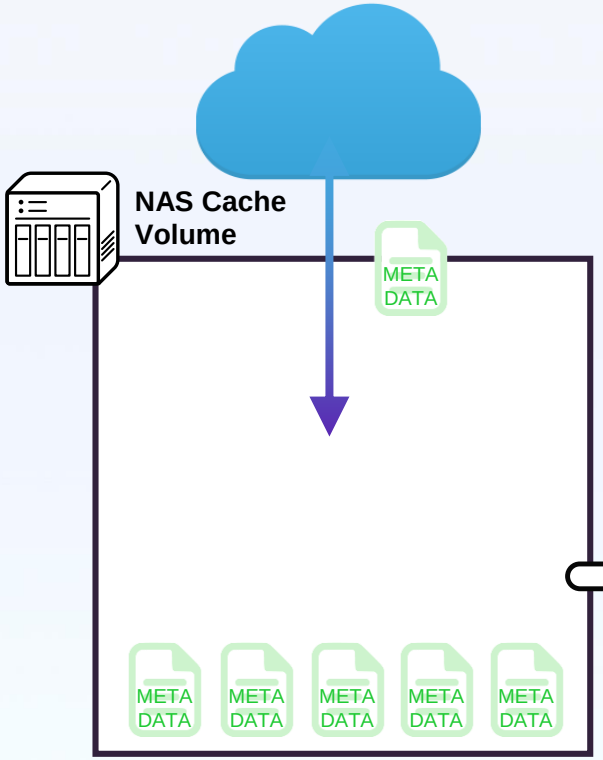


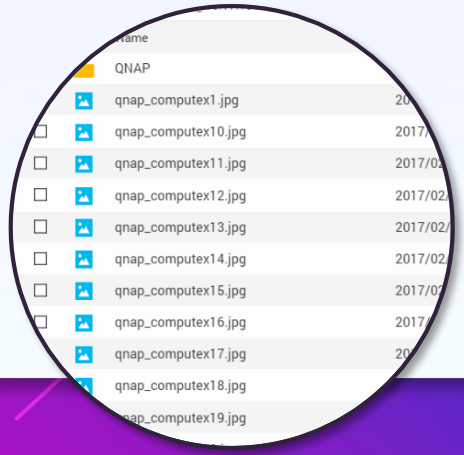
Mount and then use

With cache function, you can view all file list and operate files without download all cloud data to the local NAS.

File list synchronization

- File-base storage service: synchronize anytime
  *HiDrive, Yandex and Sharefile will synchronize by schedule or manually.
- Object-base storage service: synchronize by schedule or manually.

Create a file list by the metadata.



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Accelerate When Reading Cached Files

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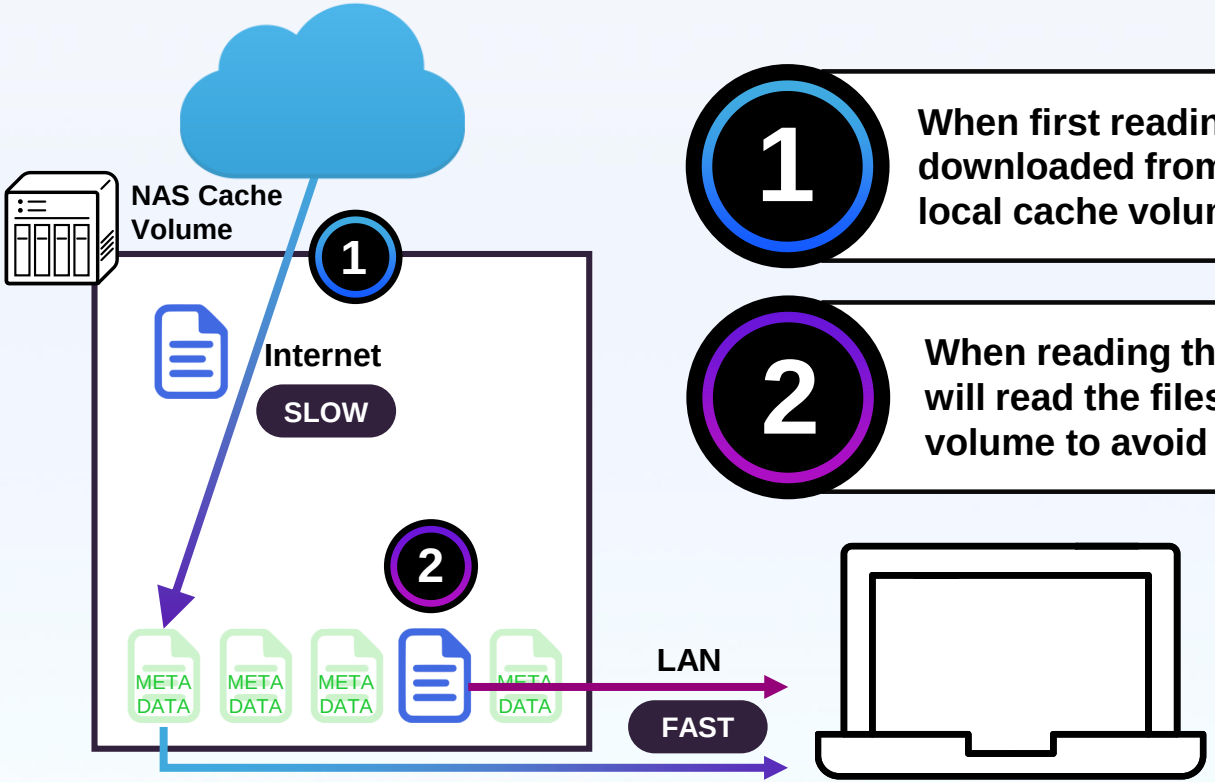

1. When first reading, the file will be downloaded from the cloud to the local cache volume and kept.

2. When reading the cached files, it will read the files in local cache volume to avoid download again.

Cache Uploading Files To Reduce Waiting Time

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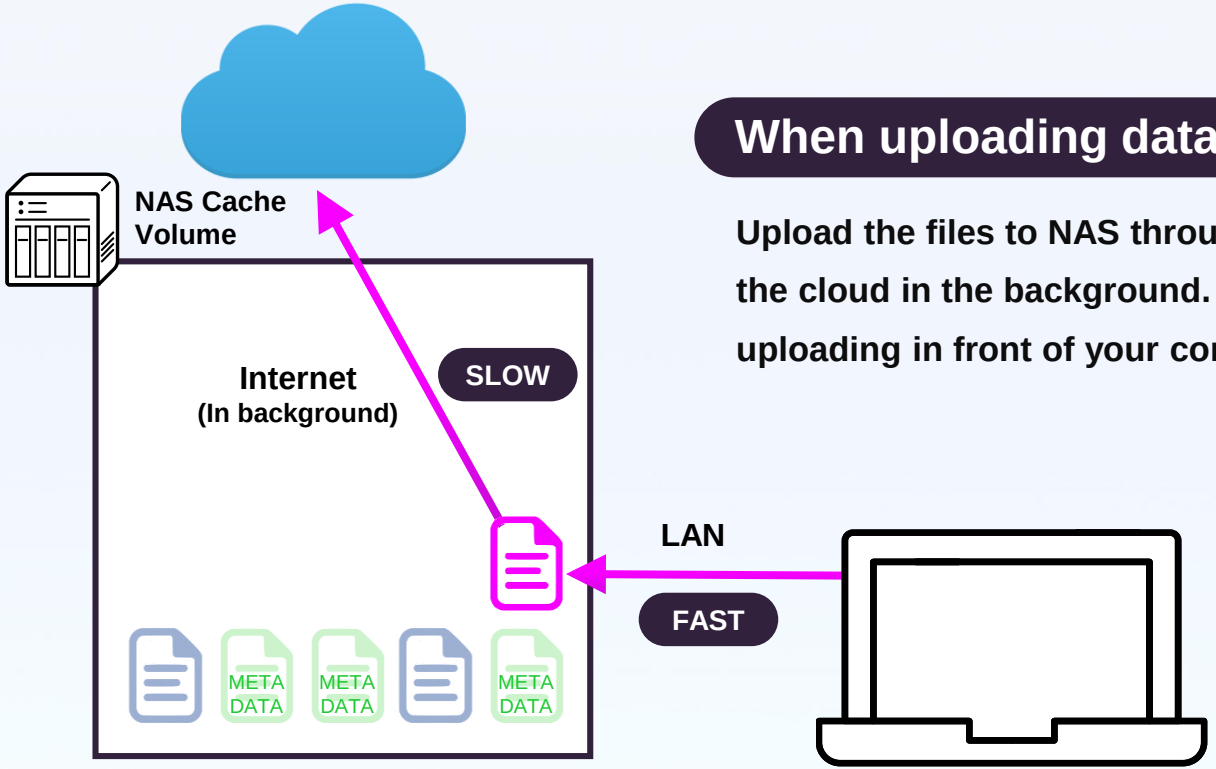

When uploading data to the cloud

Upload the files to NAS through LAN and then upload to the cloud in the background. It helps you reduce waiting uploading in front of your computer.

How Does The Cache Algorithm Work

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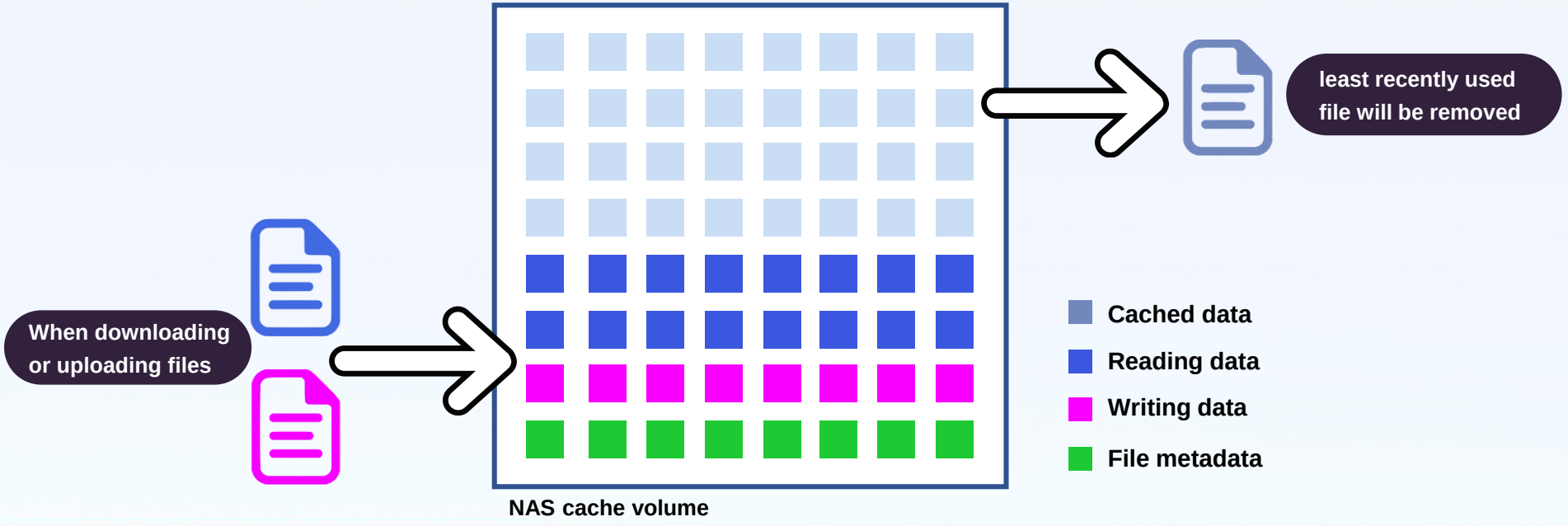
When cache volume is full and there is more file space needed, the system will remove the least recently used file and only keep its metadata.



TIP 1

How To Configure The Cache Volume

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Space

- **To meet upload / download request, you need to create at least 200GB cache volume.**
- **Adjust space by your need. The larger space can store more cached data.**

More Upload Request

A larger cache volume is needed to keep more uploading data.

More Download Request

Only need proper space. The space can be reused by removing the cached data.

Volume

Static Volume

Create the file system directly on the disk to have **better read / write performance** (20% better than other volume type.

Thick Volume

Create volume in the storage pool. The volume can be **resize** for elastic use.

TIP 2

Accelerate With Qtier And SSD Cache

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SSD cost too much?

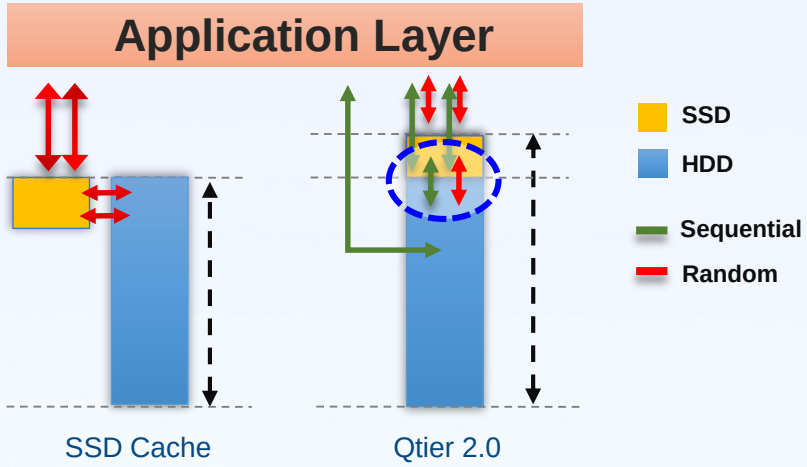
Use SSD and HDD with Qtier and SSD cache.

SSD Cache

- Cache but not store data
- Fixed bypass options

Qtier 2.0

- Tier can store data.
- IO Aware and Tiering On Demand



CacheMount As a Best Bridge To The Cloud

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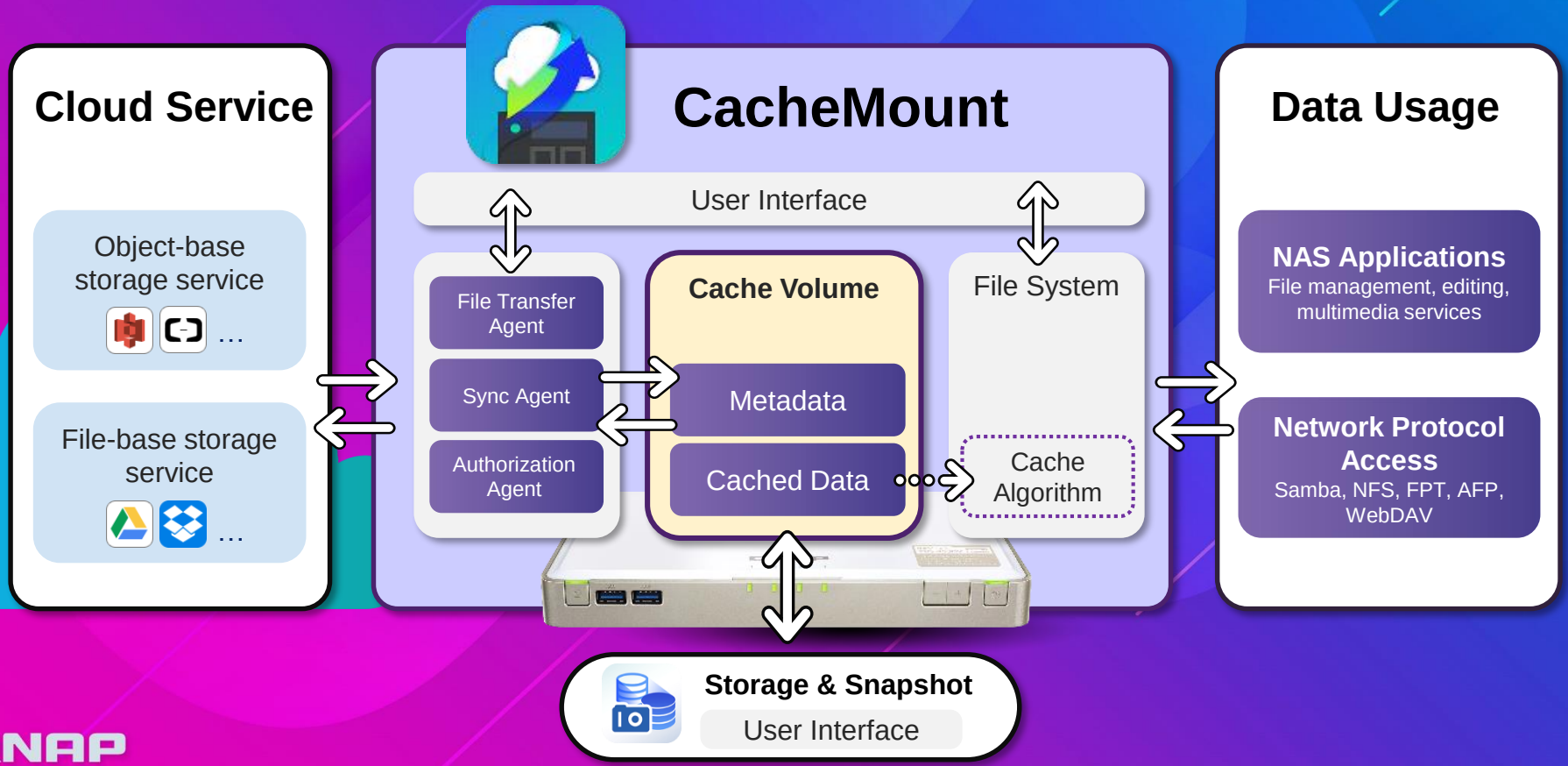

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Test Result To The Cache Function

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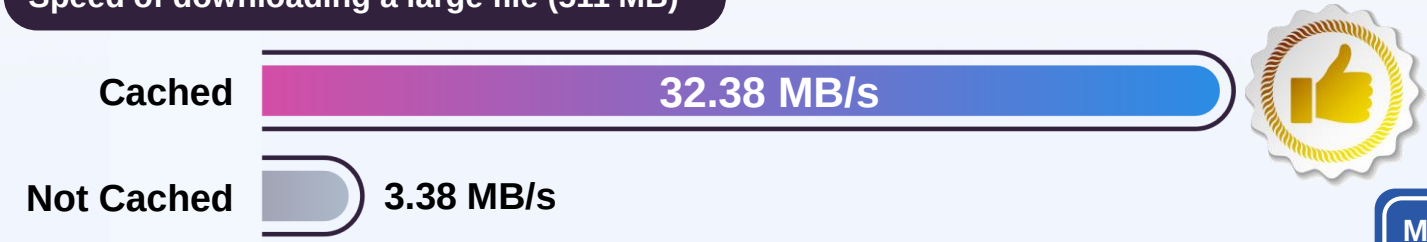
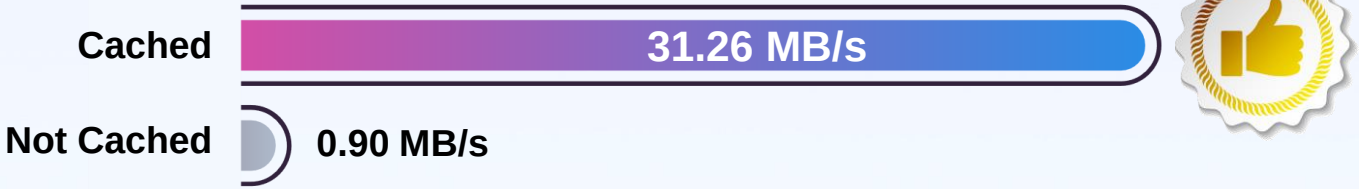
Speed of downloading a large file (511 MB)



9.6 time faster

More complicated process, more significant effect!

Speed of download 500 small files (522 MB in total)



34.7 time faster

Test Condition:

- NAS Model： TS-1685 (CPU: Intel(R) Xeon(R) CPU D-1521 @ 2.40GHz, RAM: 16GB)
- 200 GB Cache Volume: Thick volume in RAID 1 storage pool (HDD*2/SSD*1,enable Qtier)
- Cloud Service：AWS S3

Test Method: Mount the same cloud bucket, and download the cached file and the file without cache separately.

* Test in QNAP LAB, the test result will differ based on the network speed and cloud services.

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CacheMount

How To Start The Cache Experience User Manual

(take Amazon S3 as the example)

4 Ways To Enjoy Cache Experience

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1. 3 steps to create cache connections
2. 4 tips to manage cache connections
3. Visible usage status of cache volume
4. User Whitelist for CacheMount

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3 Steps To Create Cache Connections

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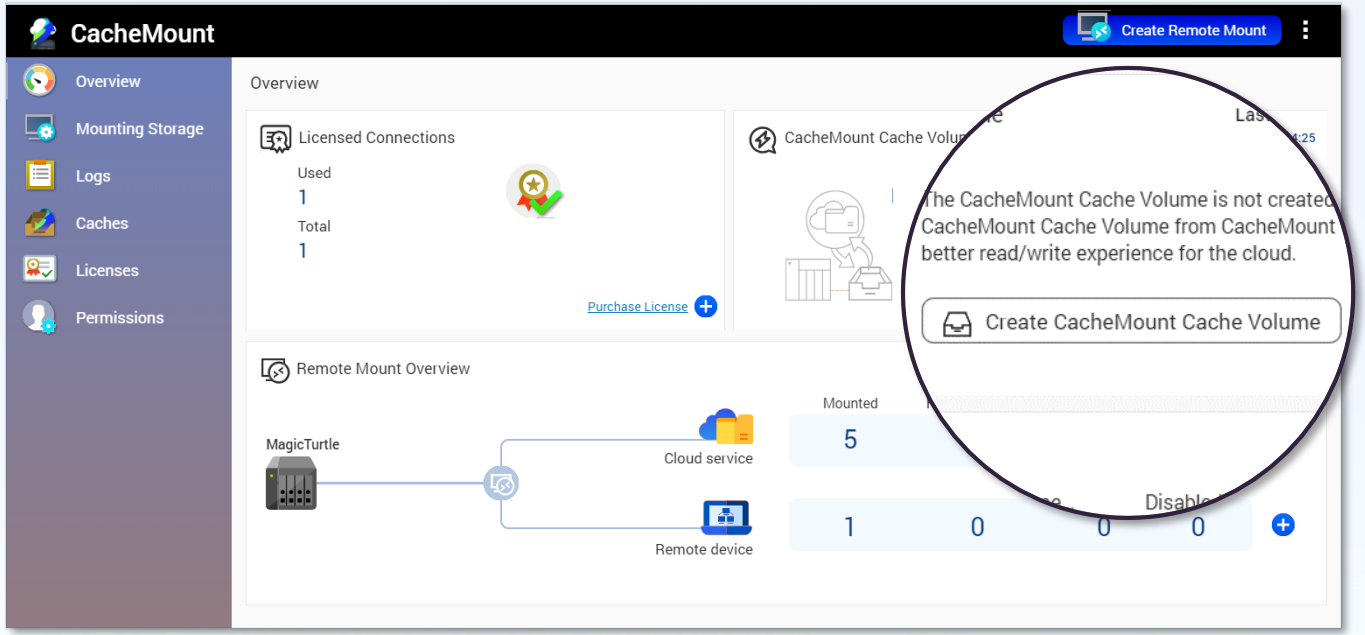
1 Create cache volume



3 Steps To Create Cache Connections

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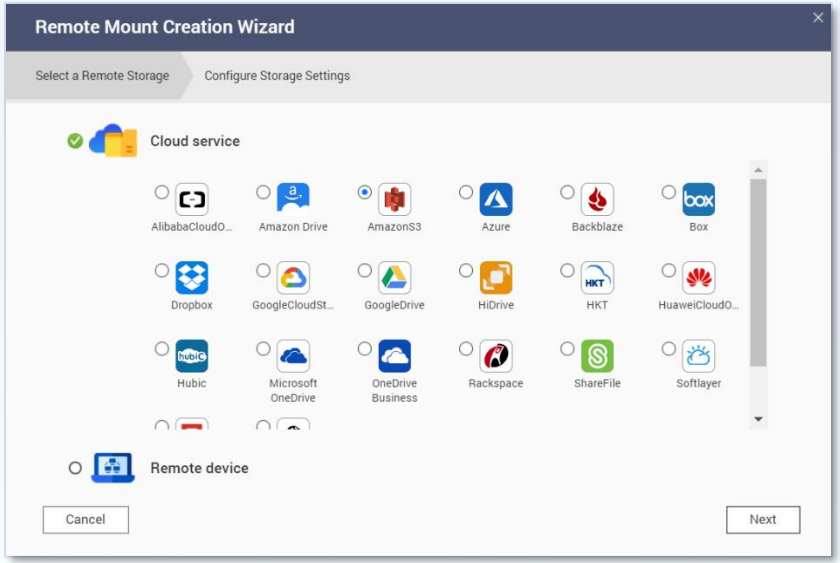
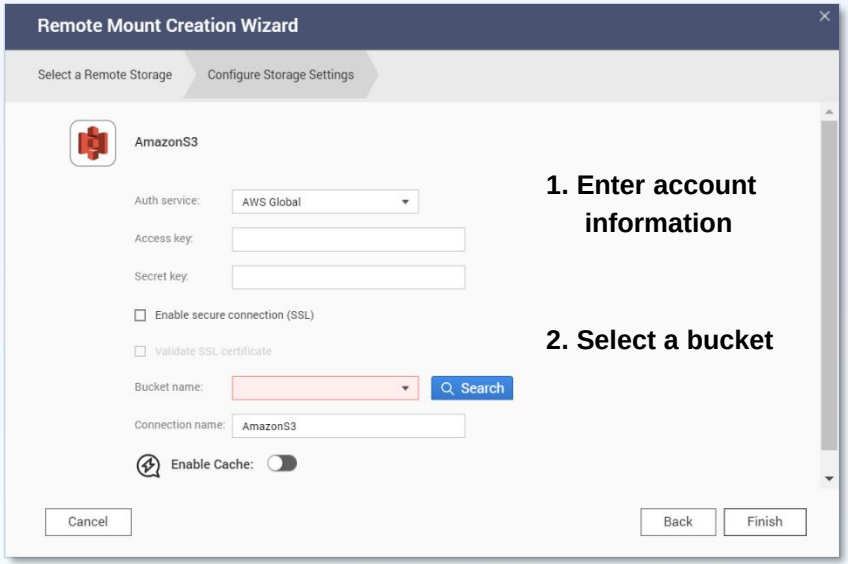
2 Mount the cloud storage

Step1: Select a cloud provider (take AWS S3 as the example)



Step2: Make configuration



1. Enter account information
2. Select a bucket

3 Steps To Create Cache Connections

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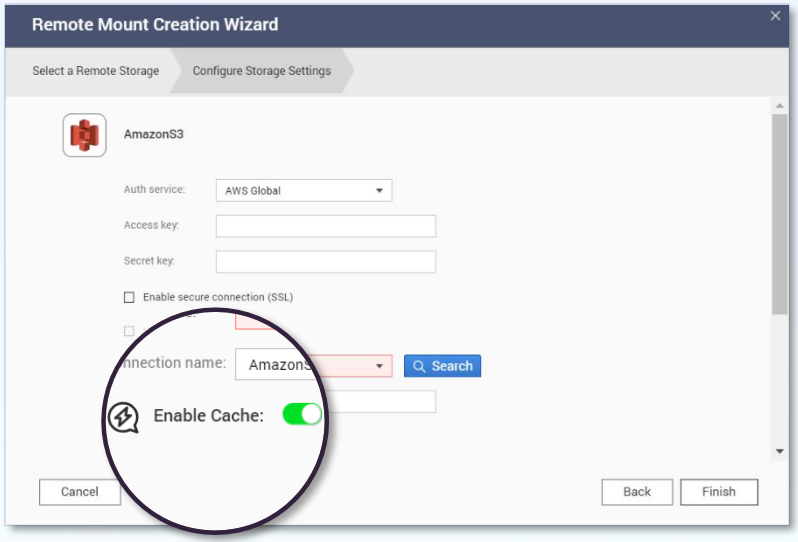
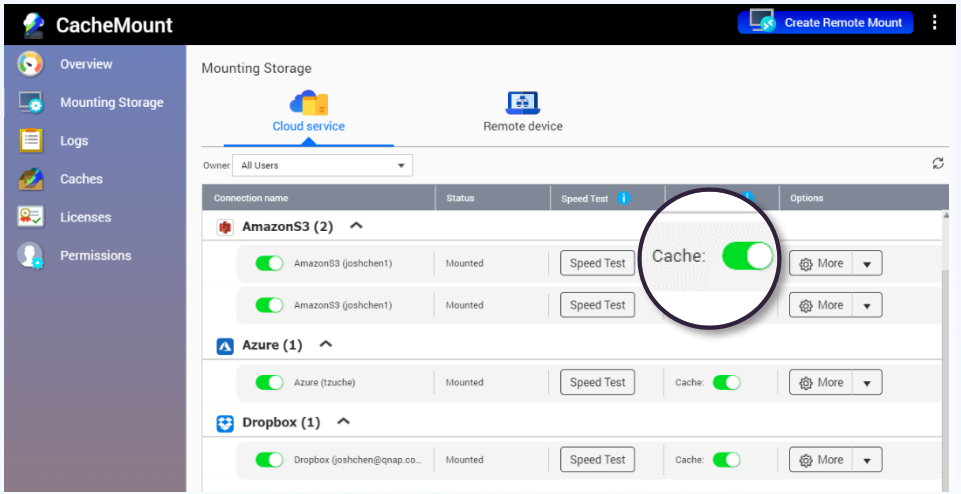
3 Enable Cache

Method 1: In the step of creation wizard



Method 2: In Mounting Storage page



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4 Tips To Manage Cache Connections

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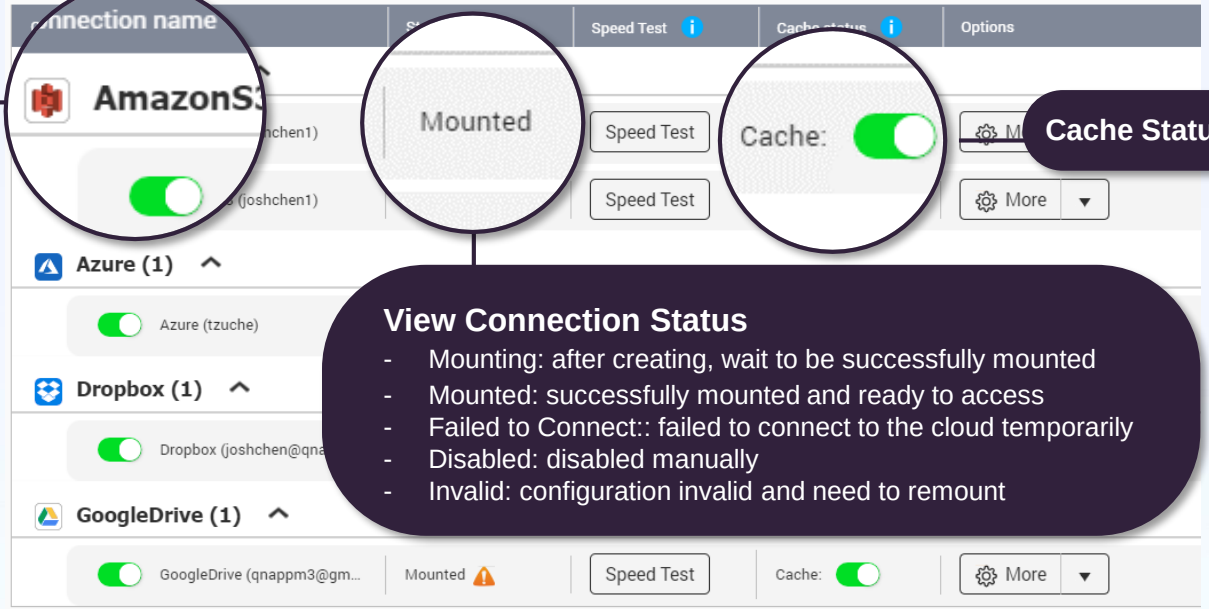
1 View all connections status

Classify by cloud providers



View Connection Status

- Mounting: after creating, wait to be successfully mounted
- Mounted: successfully mounted and ready to access
- Failed to Connect:: failed to connect to the cloud temporarily
- Disabled: disabled manually
- Invalid: configuration invalid and need to remount

4 Tips To Manage Cache Connections

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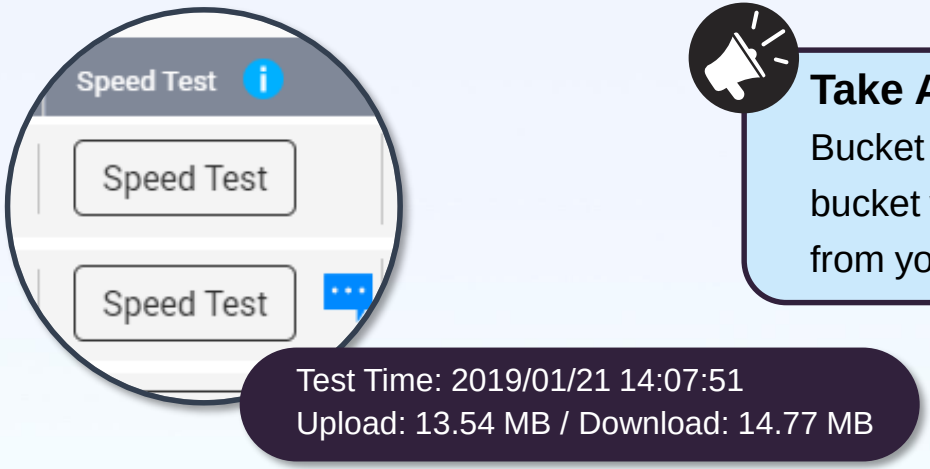
2 Speed test helps to select a bucket

Test the upload and download speed to the specific connection.



Take Amazon S3 as the example:

Bucket can be created in any region. Select a bucket with higher speed by testing the speed from your place.

4 Tips To Manage Cache Connections

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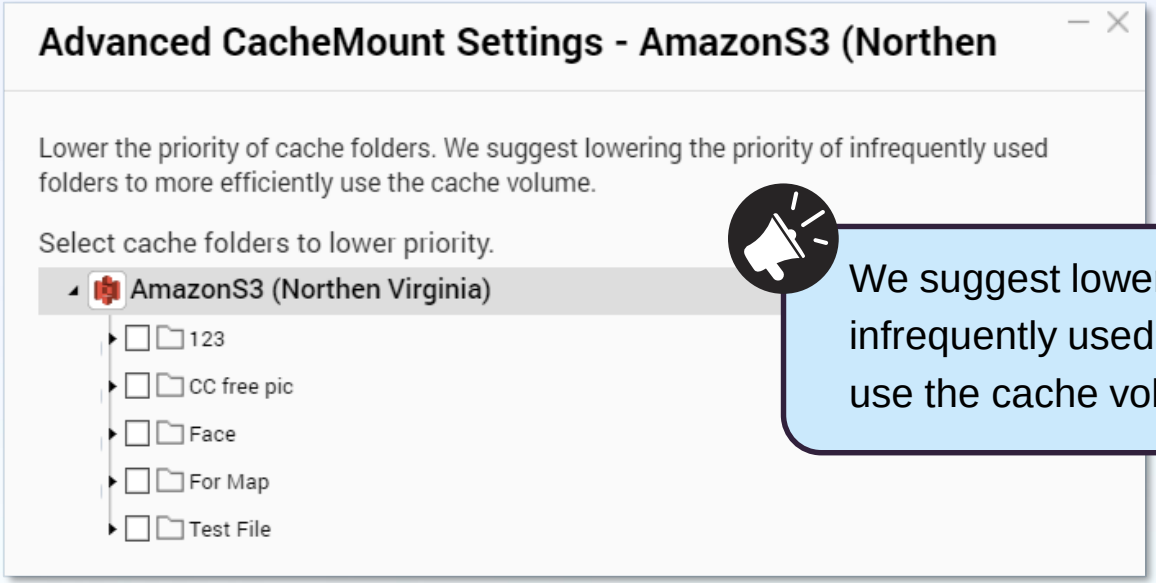
3 Customize cache folders to wisely use cache volume



We suggest lowering the priority of infrequently used folders to efficiently use the cache volume.

4 Tips To Manage Cache Connections

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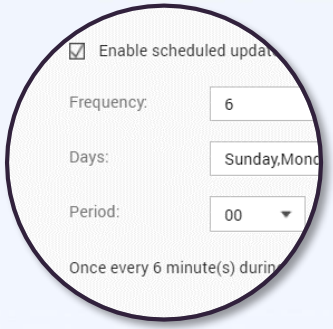
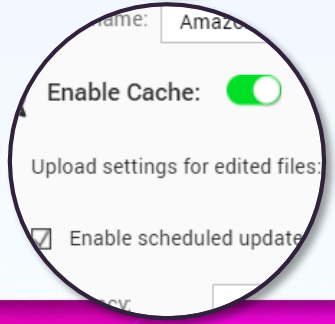
4 Manage cost of object storage service



Scheduled updates for file list

Enable scheduled updates for file metadata to control the cost form cloud request.

We suggest you only update in the time period you access frequently.



Upload settings for edited files

Select whether system checks the file version on the cloud or not when the file is edited in local to prevent accidental overwriting of files. Also help to control the cost form cloud request.

We suggest you not to check the cloud if you only access the cloud with one CacheMount connection.

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Visible Usage Status of Cache Volume

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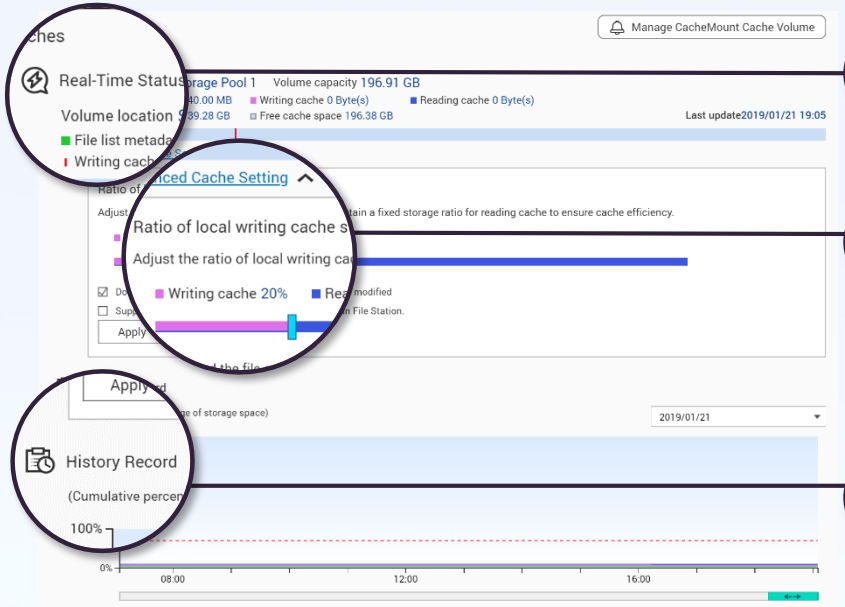
Use the usage status to help adjustment



Real-time Status

Ratio of local writing cache storage

The ratio is set to maintain a fixed storage ratio to avoid the sudden huge writing data ruling out the cache data.

➔ **We suggest you to adjust by the experience.**

History Record

QUICK TIP

How To Manage The Cache Volume?

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Frequently insufficient space may reduce cache efficiency

Situation 1

Insufficient writing cache with sufficient free cache space. ➔ cannot upload files

Suggest to higher the local writing cache ratio.

Situation 2

Insufficient writing cache free cache space. ➔ cannot upload and download files

Suggest to expanse cache volume.

Situation 3

Insufficient reading cache space. ➔ cannot upload and download files

Suggest to expanse cache volume.

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User Whitelist for CacheMount

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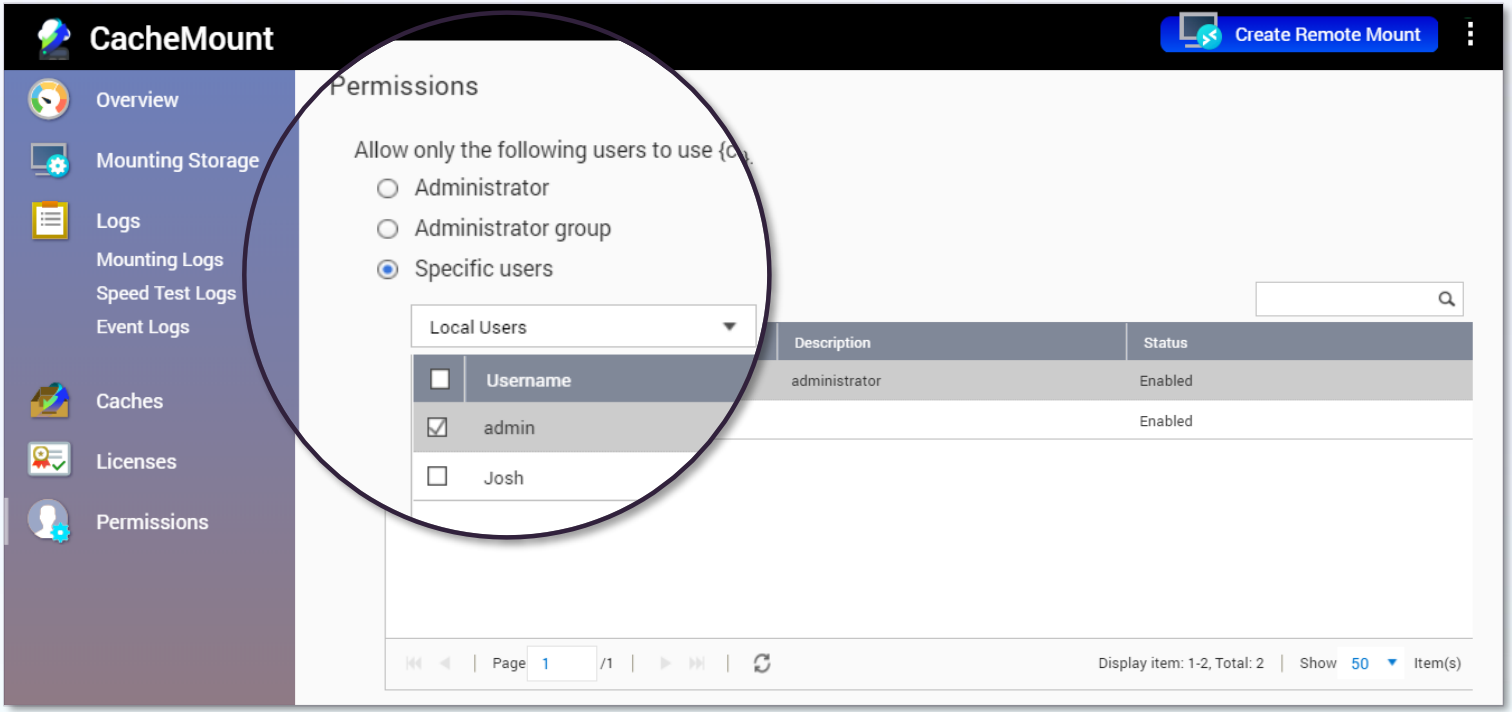

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LIVE

DEMO

Demo Environment:
NAS Model: TBS-453DX
RAM: 8GB

Storage Pool: 256GB M.2 SSD *4, RAID 5
CacheMount Cache Volume：200GB Thick Volume
Location: QNAP Headquarter in Taipei, Taiwan

A New Hybrid Cloud Solution: CachMount

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Support 20 Cloud Services

File-base Storage

Object-base Storage

4 New experiences

- Cache Function: More smoothly access
- PC can access cloud storage through SMB/AFP
- Share files between multiple site office on time
- Horizontal integrate QTS APPs to use cloud data

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Have A Batter Hybrid Cloud Experience!