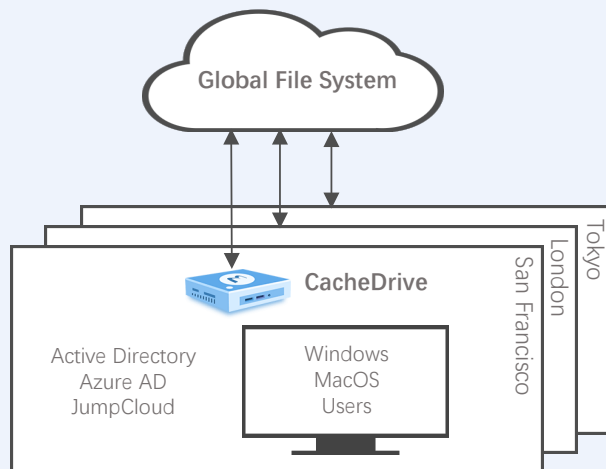# Share Types and Onboarding with Morro Migrate

Morro Data CloudNAS modernizes enterprise storage with a scalable and distributed hybrid cloud architecture. Connected through a global file system, CacheDrive caching gateways are deployed on premises to store and sync office documents and design files while presenting the fast, secure, and familiar NAS interface to users. Applications for CloudNAS include multi-site sync, cloud backup and archive, and collaboration.

CloudNAS enables data consolidation by offering multiple share types for sync, replication, archive, and collaboration. Each share type facilitates a major file service category with the simple NAS interface of a CacheDrive, presenting a single namespace with unlimited capacity. Shares are created and managed in the cloud and files are synced with CacheDrives at each site.

Global File System

Collaborate, Sync, Replicate, Transfer, and Archive

- ✔ Data in cloud
- ✔ Global namespace
- ✔ Multiple sites
- ✔ NAS interface and speed
- ✔ Multiple share types

Global File System

CacheDrive

Active Directory
Azure AD
JumpCloud

Windows
MacOS
Users

Tokyo
London
San Francisco

Types of Shares

📄	**Sync**	Files are synced to the cloud and among multiple sites, for multi-site file sync and remote team collaboration.
🔄	**Replicate**	Files are synced to the cloud and to other sites, for replication and file transfer.
⬚	**Archive**	Files are synced to the cloud only, for archive.

Cloud-based Management for Global Sites

File system, CacheDrive gateways, and users for global sites are managed in the Morro Cloud Manager. MCM also provides Apps for Data Migration, Cloud-to-Cloud Sync, Access Audit, SharePoint Sync, and Slack integration, as well as dashboard for usage statistics.

Cache and Sync Technology

Files are stored in the cloud and synced to the CacheDrive gateway at each site. Each CacheDrive keeps the most recently accessed files in the cache for fast access. Through the cache-based NAS interface, user from remote offices can access an unlimited file system with high performance as if on the same LAN.

	Sync Share	Replicate Share	Archive Share
Write Access	Multiple CacheDrives	One	One
Read Access	Multiple CacheDrives	Multiple	Cloud Only
Compression	✔	✔	✘
Deduplication	✔	✔	✘
Encryption	✔	✔	✔
Versioning	✔	✔	✔
Multi-site File locking	✔	✘	✘
Support SharePoint Sync	✔	✘	✘
Main Usage	Sync	Onboarding and Replication	Archive

Sync Share

Sync share is used to sync files among multiple CacheDrive sources. The Morro Global File System resolves file conflicts (two sites writing the same file) and manages file locking. Sync share supports deduplication, versioning, compression, and encryption. Sites can be easily added by deploying CacheDrive at new site by quickly syncing file system metadata from the cloud. Sync share supports time-shift option.

Replicate Share

Replicate share is used to move large amount of data from on premises to cloud and optionally to other sites. Replicate share does not need the sophisticated conflict checking of Sync share so it can transfer files at up to 3 times faster. For this reason, Replicate share is usually used for onboarding, among other uses. After onboarding is complete, Replicate share can be converted to Sync share if so desired. Replicate share supports deduplication, versioning, compression, encryption, sync on schedule, and manual sync.

Archive Share

Archive share stores files in the native format of the cloud provider and is ideal for archival applications. User can add optional configurations to cloud buckets per cloud provider features such as encryption, versioning, and immutability. Existing bucket can be initially synced down to the CacheDrive as metadata and files can be downloaded on demand. User can retrieve data using the cloud storage provider Web interface. Archive share functions just like a NAS share with cache acceleration but is limited to a single CacheDrive and does not support cloud-to-CacheDrive sync.

Sync Share with Remote Team Collaboration

Remote Team Collaboration is an option of Sync share with QoS and real-time file locking settings. Existing applications supported include Autodesk Revit. For details, please consult with Morro Data sales.

Onboarding with Morro Migrate

Local Server — Morro Migrate SCAN / SEED → CacheDrive — Morro Migrate UPLOAD → Cloud Storage

M O R R O M I G R A T E

Managed data migration from on premises source file server to cloud

Uploading unlimited data size managed by the CacheDrive

Continuous file access during upload through the CacheDrive

SCAN Phase

Traverse source file server, check permissions. Source file server can still be in normal use.

SEED Phase

Copy source metadata to CacheDrive. Source file server and CacheDrive share cannot be accessed.

UPLOAD Phase

Upload files to the cloud. After UPLOAD starts, all file access should cutover from the source server to the CacheDrive so any file updates after seeding can be uploaded. All files can be accessed on the CacheDrive during the UPLOAD Phase.

STEP 1 – Plan Your File System

A. Determine the number of shares, for what data and permission settings.
B. Plan your data migration on a share by share basis. Each job in Morro Migrate is defined as the pairing of a source share and a destination Replicate share.
C. It is more efficient to organize the folder structure including the correct permission settings on a local server before running Morro Migrate, to avoid the time-consuming upload of the bulk changes later.

STEP 2 – Scan Your Data

A. Define a Morro Migrate job in the Morro Cloud Manager > Morro Migrate App.
B. Use Morro Migrate SCAN to check the data on the local server for errors and data size.

STEP 3 – Migrate

A. Run Morro Migrate SEED to copy metadata from local server to CacheDrive
B. After SEED completion, proceed to Morro Migrate UPLOAD. Files will be uploaded to the cloud as a Replicate share.
C. During Morro Migrate UPLOAD phase, users should not update the source server and should read/write files from the CacheDrive only.
D. Monitor upload progress.
E. After UPLOAD is completed, the share can be converted from Replicate share to Sync share and mapped to other CacheDrives.
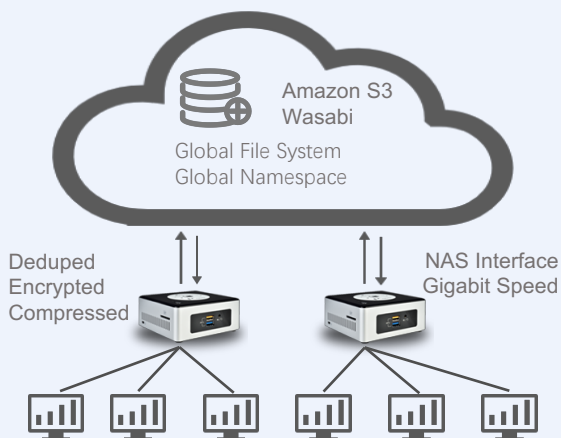
Did You Know

Morro Global File System

The Morro global file system provides multi-site collaborative file services for sync, lock, transfer, and caching. Interfaces supported include SMB (Windows, Mac) and Web with ACL. At each CacheDrive, users complete unlimited file system is presented as a single namespace.

CloudNAS Object Storage

CloudNAS supports S3 compatible object storage including AWS S3 and Wasabi. CloudNAS enables a single interface to different storage tiers and cloud providers for collaboration/sync (primary), transfer/replication, backup, and archive.

CloudNAS Multi-Site Sync

Amazon S3
Wasabi

Global File System
Global Namespace

Deduped
Encrypted
Compressed

NAS Interface
Gigabit Speed

Morro Cloud Manager

✓ Deploy	⚙ Manage	◔ Analyze
CacheDrives VM	storage shares users	usage cost Audit
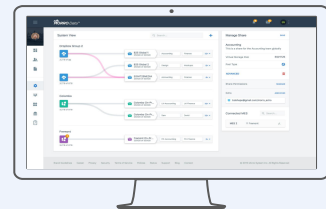
CloudNAS File Services

Consolidated Data Management
Unlimited cloud capacity
Primary + Backup in one global namespace
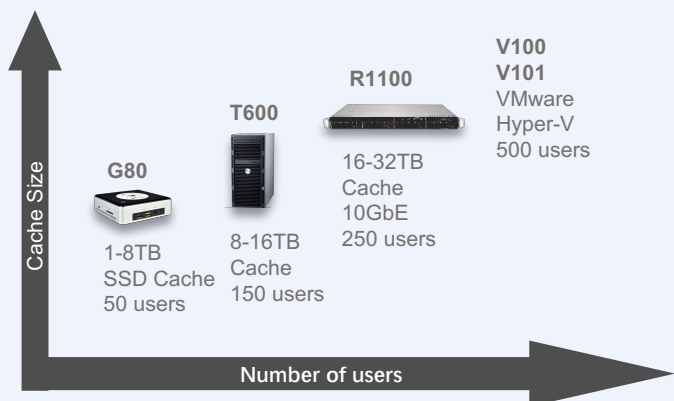Multiple cloud providers to save cost
Deduped and Encrypted

Multi-Site File Sync and Lock
NAS Interface for cloud data. No VPN.
Global file locking
Add CacheDrive for fast Disaster Recovery
Large File Transfer

Cloud-to-Cloud Sync
Sync with SharePoint
Backup to economic cloud storage
Business Continuity
User error recovery

CloudNAS Gateways

Cache Size

V100
V101
VMware
Hyper-V
500 users

R1100
16-32TB
Cache
10GbE
250 users

T600
8-16TB
Cache
150 users

G80
1-8TB
SSD Cache
50 users

Number of users

Morro Data CloudNAS Features

File Services

Consolidated Data Management	NAS access with cloud reliability for primary and secondary data
Multi-Site Sync	Store files in cloud and sync files locally with cache. Add CacheDrive for easy expansion and instant disaster recovery.
Cloud-to-Cloud Sync	Sync and backup SharePoint and other cloud files

Global File System

Global Namespace	Data in cloud and synced across gateways in a single namespace. Gateway cache enables high performance access to unlimited file system.
Unlimited Storage	Choice of Cloud Storage providers for primary and secondary data.
Storage Pool	Pool specifies where and how data is stored and synced. A pool contains multiple shares. Pool types include Sync, Replicate, and Gateway.
Share Access	Network share with user access and gateway access controls
Global File Locking	Lock Office and other application files across gateways for remote collaboration.
Disaster Recovery	Fast metadata sync for replacement gateway for full file system access.
File Versioning	Version control of 1, 30, 300, or unlimited versions.
Prefetch	Automatic download to destination gateway vs. on-demand download.
Deduplication	Files are de-duplicated to save cloud storage and upload bandwidth
Compression	Files are compressed to save cloud storage and upload bandwidth
Bandwidth Limiting	Control sync window and sync bandwidth per share
Share Mapping	Shares can be optionally mapped to gateways for security
Advanced SMB Share Controls	Options to enable oplocks and to use Extended Attributes to save streams

Security

Encryption	Files are encrypted both in transit and at rest in cloud
Location Based Access	File access based on location and on/off premises
Web Access Security	File access permission replicated from Samba access

User Management

Users and Groups	User and Group access permissions
Active Directory	Supports Microsoft Active Directory and Azure AD
User Permissions	Access permission per user/group/location (read only / RW / no access)
Location Based Permissions	File access based on Gateway (location) and on/off premises
Share Folder Security	Manage shared folder's ownership and access control list

System Interface

NAS Interface	Present shares the same as NAS, with unlimited capacity
Local Network Interface	Support SMB protocol version 2.0/2.1/3.0/3.1 working with Windows and MacOS clients
Client OS Support	Windows, MAC OSX, Linux, Major Browser
Web Interface	Team Portal for ACL-based file access and management Upload files and create folders to shares. Manage file versions, download, rename, copy, move, delete, purge files, create share link for files.

Morro Cloud Manager

Gateway Management	Globally manage all gateways on MCM
File System Management	Globally manage all shares in a Global Namespace
Dashboard	Usage analytics and system diagram
Analytics	Storage usage, User activities, and Data transfer activities
Role Based Management	Business Admin, Global Admin, Regular User
Users and Groups	Users, Primary Group, Secondary Groups
Logs	By category – team/device/file system By severity – information/warning/error

Apps	
Cloud-to-Cloud Sync	Sync CloudNAS shares with SharePoint document library, Dropbox or OneDrive
Morro Audit	Access history for retrospective investigation
Morro Migrate	Managed data migration to cloud
Gateway	
CacheDrive Models	Desktop G80, Tower T600, Rackmount R1100 Virtual Machine V100 (VMware) V101 (Hyper-V)
Device Information	CacheDrive Model number, serial number, firmware version, IP address, UUID and cache size
Cloud Caching	Files are uploaded to cloud through cache, presenting access window to unlimited file system size
Backup Target	Unlimited backup target through cache
NAS Interface	SMB network share interface same as NAS
Deduplication	Files are de-duplicated on gateway to save upload bandwidth
Compression	Files are compressed on gateway to save upload bandwidth and storage
Encryption	Files are encrypted on gateway before upload
Upload Status	Monitor upload status, speed, remaining upload and files
Prefetch Status	Monitoring prefetch files, status, speed etc.
Advanced Device Option	Hostname and SMB version selection
Device Clock	Global time zone based device clock
Device Management	Shutdown, reboot, and scheduled firmware update from centralized cloud management UI
Green Computing	Low power consumption gateway replacing traditional NAS or file server
Cloud Storage	
Amazon S3 Regions	US (Oregon), UK (London), Germany (Frankfurt), Australia, Japan (Tokyo), Singapore, China (Beijing), China (Ningxia)
Wasabi (S3 Compatible)	US (East), US (West)
Morro Connect Desktop App	
Supported OS	Windows, MacOS
Simple Connect	Auto start and login for persistent network share connection

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