

User Guide

Dynamic Storage (Atmos)

Swisscom (Schweiz) AG

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1 About Dynamic Storage

This Dynamic Storage user guide corresponds to the EMC-Atmos (old Dynamic Storage) platform. For the new EMC-ECS (Elastic Cloud Storage) platform a separate Dynamic Storage user guide is available.

Dynamic Storage, the Cloud Storage of Swisscom, is a pay-per-use Object Storage optimized for storing data, e.g.: for backups, archives, storage extensions, big-data, etc.

Dynamic Storage can be accessed via a REST API (Atmos API or S3 compatible) over HTTPS. There is no other direct access like CIFS, NFS or iSCSI. In order to access Dynamic Storage from within a system, the software needs to be coded against one of the available APIs. Alternatively, a so called "Connector" or "access method" which translates the API towards the protocol needed, can be used.

Swisscom DCS (Dynamic Computing Services) users may use the Dynamic Storage Interconnect feature (i.e. direct internal connection not going through the internet).

This guide gives an overview about the connectors which are fully compatible with Dynamic Storage at Swisscom:

- EMC Atmos "GeoDrive"
- Dynamic Storage Appliance
- Atmos API, S3 API
- Firefox Plugin AtmosFox

The following picture gives an overview about these access methods:

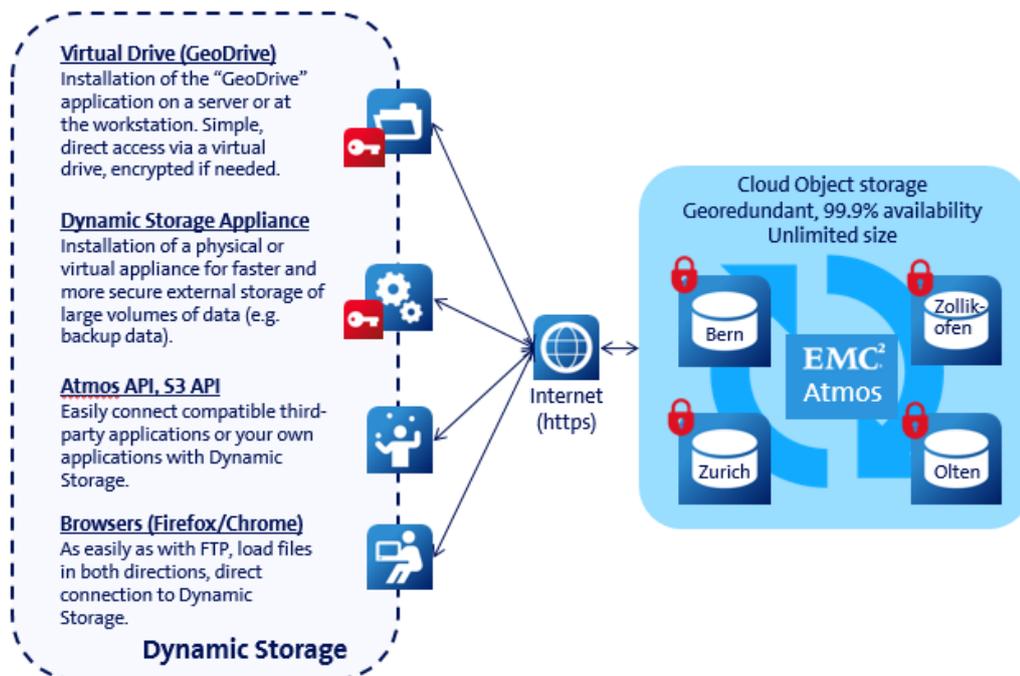


Figure 1: Dynamic Storage Connection Overview

In order to access Dynamic Storage, the following Host URLs are available:

1. Access to Dynamic Storage from outside Swisscom (over the Internet):
 - <https://ds11.swisscom.com> when using the Atmos API
 - <https://ds11s3.swisscom.com> when using the S3 API
2. Access to Dynamic Storage from DCS (DCS interconnect)
 - ds22.swisscom.com
 - ds22s3.swisscom.com

Please note: Swisscom recommends to always encrypt the data before storing to Dynamic Storage. Swisscom provides a secure data transfer (https), but does not encrypt the data at rest.

For more information about Dynamic Storage, please see our factsheet on the web: www.swisscom.com/dynamicstorage or get in direct contact with your Swisscom representative.

2 EMC Atmos “GeoDrive”

EMC Atmos “GeoDrive” is the official connector of EMC for the Cloud Storage Atmos platform (on which Dynamic Storage is based on). GeoDrive is a Software currently available for Windows Operating Systems. After installation, GeoDrive provides a virtual drive (similar to a network share) to the operating system where it is installed on, which points directly to Dynamic Storage. GeoDrive does not provide further functionality such as for example de-duplication.

However, data may be encrypted before being stored in Dynamic Storage. Whatever is being stored on the virtual drive is automatically stored to Dynamic Storage. GeoDrive supports two different modes:

- Mirror Mode: All data is stored locally and in the cloud.
- Stub Mode: After a configurable time without access, the data remains stored in the cloud and is locally represented by a pointer to this data (the “stub”). This mode minimizes the storage requirements on the local system.

The following pictures illustrates the GeoDrive user interface:

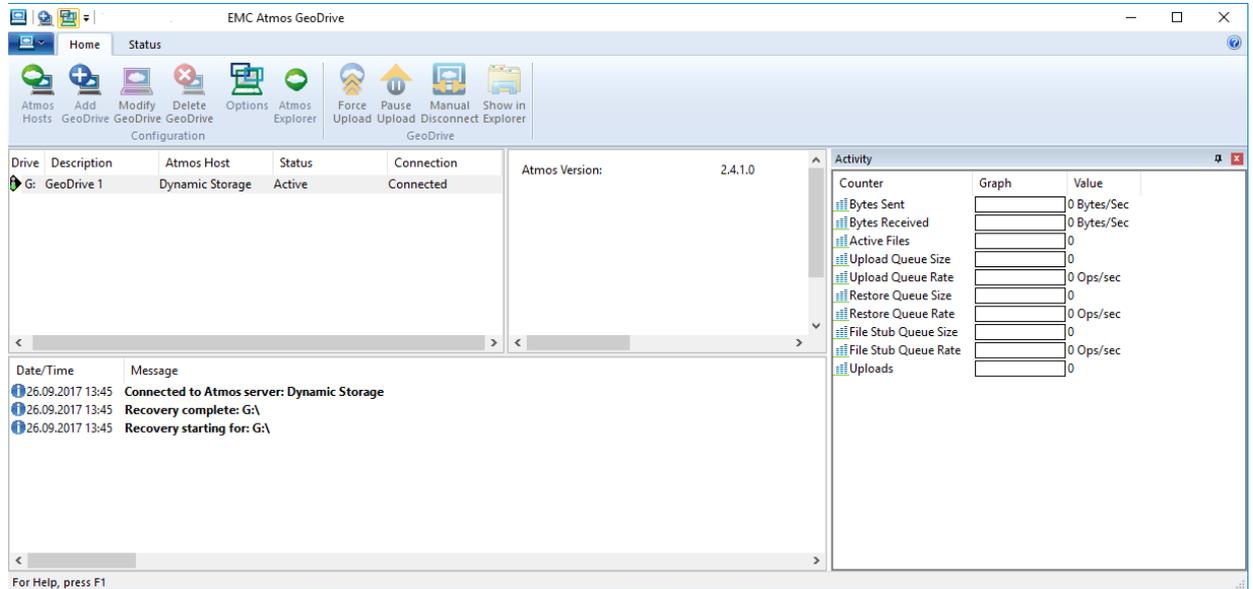


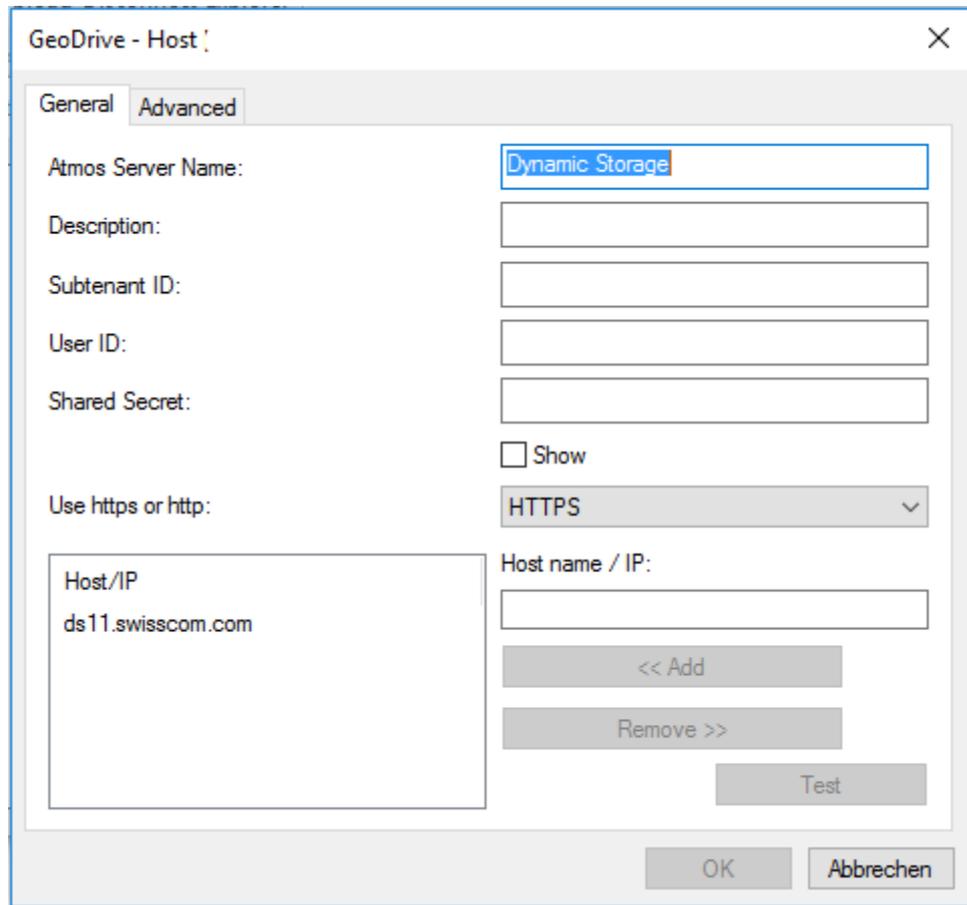
Figure 2: GeoDrive user interface

In order to connect the GeoDrive to Dynamic Storage the Atmos Host needs to be configured. The following details are necessary:

GeoDrive	Description
Atmos Server Name	A free name can be chosen; it is independent from Dynamic Storage.
Description	This field can be used for entering additional information.
Subtenant ID	The Subtenant ID of the Atmos Host
User ID	The Account Name of the respective Atmos Host
Shared Secret	The Shared Secret of the respective Account
Host name / IP	The Host URL

Table 1: Connection details GeoDrive

The following picture illustrates the GeoDrive connection tab:



The screenshot shows a configuration window titled "GeoDrive - Host". It has two tabs: "General" and "Advanced". The "Advanced" tab is active. The fields and their values are as follows:

- Atmos Server Name: Dynamic Storage
- Description: (empty)
- Subtenant ID: (empty)
- User ID: (empty)
- Shared Secret: (empty)
- Show:
- Use https or http: HTTPS
- Host name / IP: (empty)
- Host/IP list: ds11.swisscom.com

Buttons at the bottom include "<< Add", "Remove >>", "Test", "OK", and "Abbrechen".

Figure 3: Connection details of the GeoDrive

The EMC Atmos “GeoDrive” can be downloaded directly from the Swisscom customer portal of the Dynamic Computing Services (DCS) along with the necessary documentation. Its use is for free, there are no licensing cost associated with it and it can be installed on multiple (windows) systems. Further and more detailed information can also be found on the EMC support web.

Please note: GeoDrive may not be used for accessing the EMC-ECS platform.

3 Firefox Plug-in “AtmosFox”

AtmosFox is a Plug-in for the web browser Firefox and allows direct access to Dynamic Storage. Therefore, Firefox needs to be installed as a prerequisite. It’s look & feel is similar to an FTP-Client. Folders and files can be copied from and to Dynamic Storage.

The following picture illustrates the AtmosFox user interface:

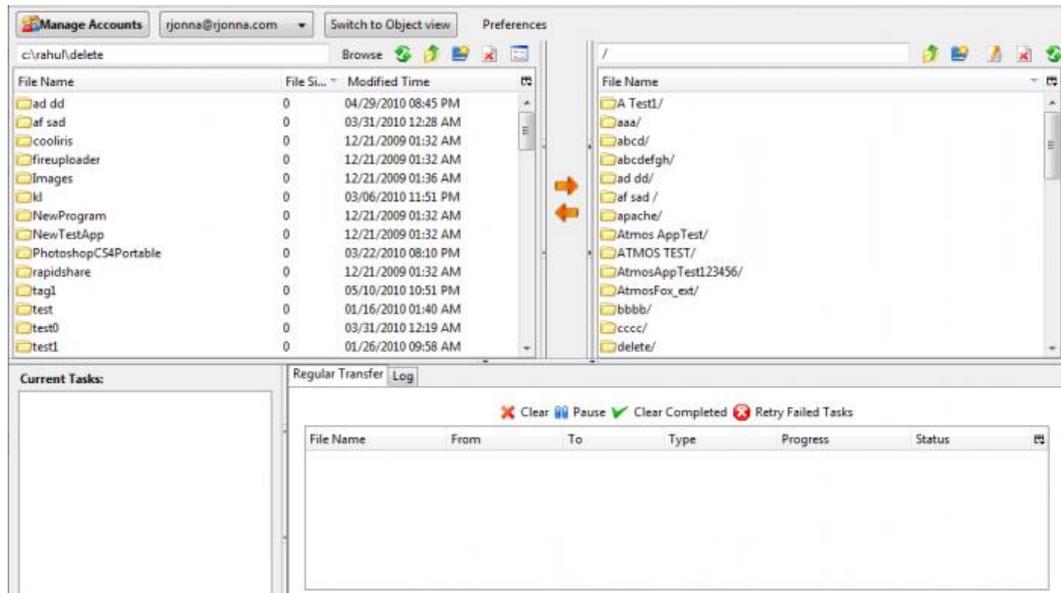


Figure 4: AtmosFox user interface

After installation, start AtmosFox within Firefox by choosing “Extras” -> “AtmosFox Explorer”.

In order to use AtmosFox and to access Dynamic Storage, an Account needs to be configured. The following details are necessary:

AtmosFox	Description
Nick Name	A free name can be chosen; it is independent from Dynamic Storage.
UID	Subtenant-ID and Account-ID need to be entered in the following format: <subtenant-id>/<account-id>
Shared Secret	Shared Secret of the respective Account
Atmos URL	The Host URL

Table 2: Connection details AtmosFox

The following picture illustrates the AtmosFox Manage Accounts display:

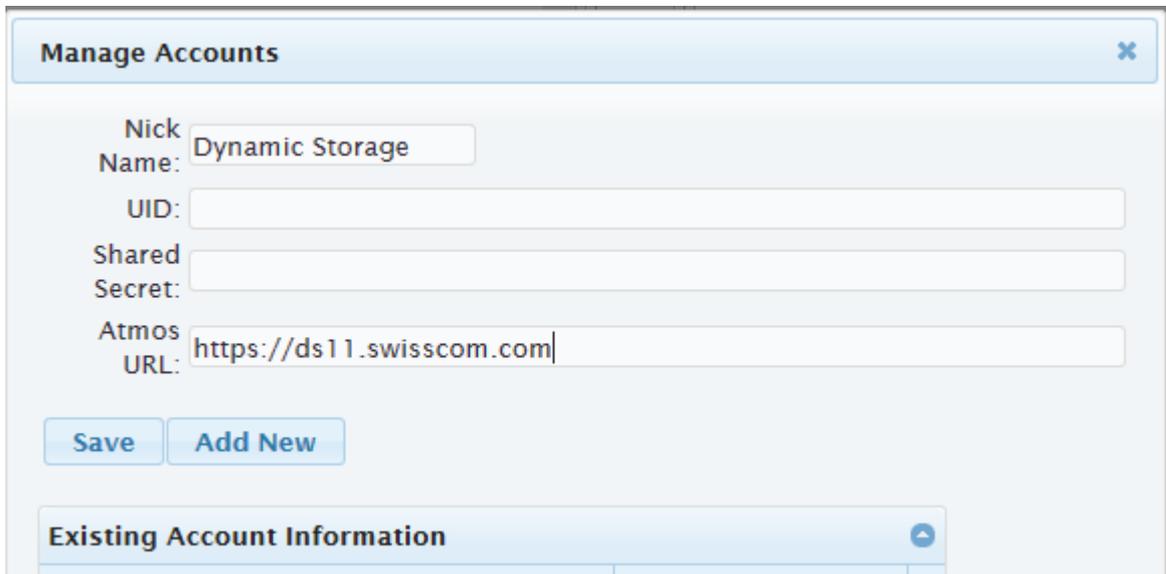


Figure 5: Connection details of the AtmosFox plug-in

AtmosFox can be downloaded from the add-on page of Firefox using the following link:

<https://addons.mozilla.org/de/firefox/addon/atmosfox/>

A similar Add-on for the Chrome browser is also available:

<https://chrome.google.com/webstore/detail/atmos-for-chrome/befopjhdclgcccimklkaheifajbcmnk>

For the S3 API a free version of the S3 Browser is available:

<http://s3browser.com/>

4 Storage Gateway Appliance

A variety of Storage Gateway Appliances are available from different suppliers. E.g. are the Cloud Array Appliance from Dell-EMC or the AltaVault Appliance from NetApp. Storage Gateway Appliances are optimized for large data sets. They offer functions like: local storage, caching, deduplication and encryption. For example: A Storage Gateway Appliance may for instance be considered as a replacement for a tape infrastructure (the backup media) replicating data to Dynamic Storage

Storage Gateway Appliances are available as a dedicated hardware appliance (for installation directly in the on premise data centre) or as a software image (VMware) with an out-of-the-box operating system (based on Linux/Unix) for virtual environments.

Swisscom provides consultancy and integration to its customers for Storage Gateway Appliances.

5 Atmos API, S3 API

Applications may use the Atmos API or the S3 API directly.

Examples:

- A free available java tool to copy large amounts of data between local or remote resources and Dynamic Storage. Can be also used to easily migrate data from Amazon S3 to Dynamic Storage: <http://code.google.com/p/atmos-java/wiki/AtmosSync2>
- A list for free libraries is provided under the following link by the Open Source community: <http://code.google.com/p/atmos-java/downloads/list>
- For further information, support and help, check out the EMC Atmos Community under: <https://community.emc.com/community/edn/atmos>

Please note that Swisscom does not grant support on self-developed applications.

6 Naming differences

The following table shows the naming differences between the Atmos API and the S3 API:

Field	Atmos API	S3 API
Subtenant Name	Atmos Host	na
User Name	Account	S3 Account
Access Credentials	Subtenant ID Account ID Shared Secret	Access Key ID Secret Access Key

Table 3: Naming differences

7 Glossary

Object Storage

A storage architecture that manages data as objects, as opposed to other storage architectures like file systems which manages data as a file hierarchy and block storage which manages data as blocks within sectors and tracks.

CIFS

In computer networking, Server Message Block (SMB), the modern dialect of which is known as Common Internet File System. CIFS operates as an application-layer network protocol mainly used for providing shared access to files, printers, serial ports, and miscellaneous communications between nodes on a network.

NFS

Network File System (NFS) is a distributed file system protocol originally developed by Sun Microsystems in 1984, allowing a user on a client computer to access files over a network much like local storage is accessed.

iSCSI

In computing, iSCSI, is an acronym for Internet Small Computer System Interface, an Internet Protocol (IP)-based storage networking standard for linking data storage facilities.

REST

Representational state transfer (REST) is an architectural style consisting of a coordinated set of constraints applied to components, connectors, and data elements, within a distributed hypermedia system.