



White Paper

# NetApp StorageGRID as a Storage Endpoint for SaaS Backup

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## Abstract

This document describes the configuration, best practices, and sizing guidelines for NetApp® StorageGRID® as a storage endpoint for SaaS Backup.

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# 1 Introduction

## 1.1 NetApp SaaS Backup

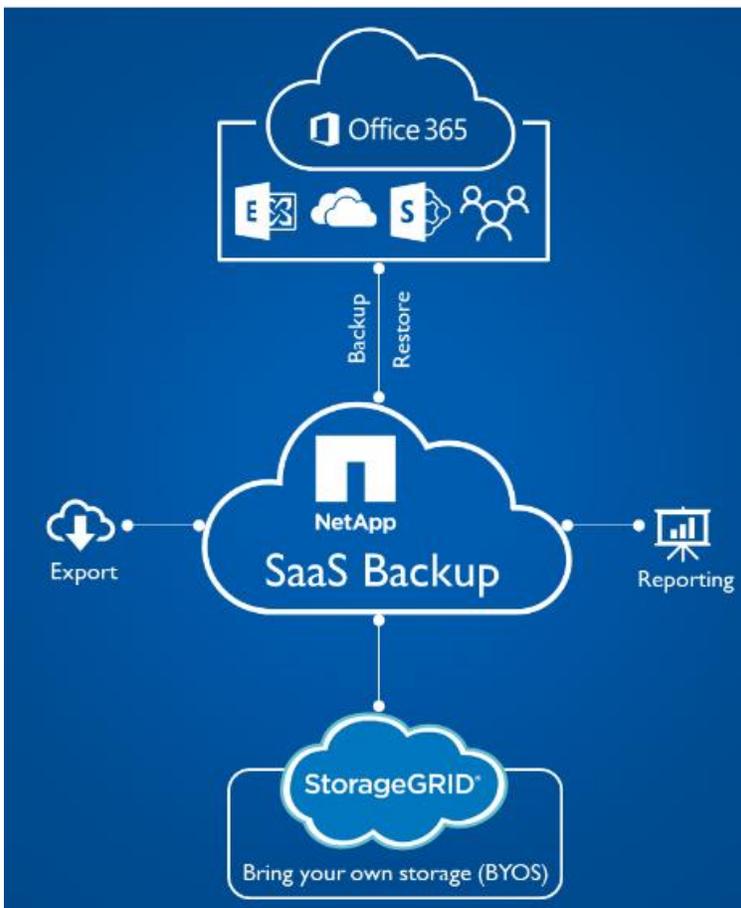
NetApp SaaS Backup (formerly Cloud Control) is a cloud-native backup solution for Microsoft Office 365 and Salesforce. It offers two storage options:

- **SaaS Backup managed storage.** NetApp is responsible for the storage endpoint where the backup data is stored.
- **Bring your own storage (BYOS).** You are responsible for the storage endpoint where the backup data is stored. Under the BYOS model, SaaS Backup can back up your Office 365 data to Amazon S3 storage, Microsoft Azure Blob storage, or NetApp StorageGRID object storage.

## 1.2 StorageGRID

StorageGRID is a software-defined object storage solution from NetApp for large datasets. StorageGRID uses intelligent, policy-driven data management to store, protect, and preserve fixed-content data over long periods of time. It moves data seamlessly between on-premises and public cloud storage to optimize availability, protection, performance, and cost. It supports the Simple Storage Service (S3) REST API, enabling you to connect applications developed for S3 web services with StorageGRID.

Figure 1) NetApp SaaS Backup with StorageGRID as BYOS.



### 1.3 Reasons to Choose StorageGRID

StorageGRID makes a superior storage endpoint under the following conditions:

- You want to keep your backup data for more than a year at more than one site.
- You want to keep your backup data in your data center so that you have more control over it.
- You want the backup data in your data center to comply with data sovereignty and other regulatory compliance requirements.
- You don't want to be stuck with cloud vendor lock-in.
- You already own a NetApp appliance and you want to use it as object storage for SaaS Backup.

### 1.4 Configuring StorageGRID in SaaS Backup

During sign up for SaaS Backup, you can select the backup storage. Choose StorageGRID under the BYOS option and enter the following details:

- **Host/IP Address.** You must have a public IP address and a domain name with a certificate (for example, webscale.netapp.com). You must also use Transport Layer Security (TLS) protocol 1.2.
- **Port:** The open port should be 8082 or 443, whichever is configured.
- **Bucket Name.** The name of the bucket in which the backup data must reside. Note that SaaS Backup does not create the StorageGRID bucket; it must already exist. So make sure that you have created a valid StorageGRID bucket before configuring the storage option in SaaS Backup.
- **Access Key.**
- **Secret Key.**

Validate the connection by clicking Test Connection, review your configuration, and then save the configuration.

Figure 2) Storage configuration in SaaS Backup.

The screenshot shows the 'Add a Service Provider' configuration interface. At the top, a blue header contains the title and a close button. Below it is a progress bar with six steps: 1. Service, 2. Add Account, 3. Services Offering, 4. Subscription, 5. Backup Destination (active), and 6. Review & Save. The main content area is titled 'Select the backup storage option' and features two primary buttons: 'SaaS Backup Provided Storage' and 'BYOS (Bring your own storage)'. Under the BYOS option, three storage type buttons are visible: 'Amazon S3', 'StorageGRID Webscale' (selected), and 'Azure Blob'. A form below these options contains five input fields: 'HOST' (with a placeholder 'Hostname or IP Address'), 'PORT', 'BUCKET NAME', 'ACCESS KEY', and 'SECRET KEY'. A 'Test Connection' button is positioned at the bottom right of the form. At the bottom of the screen, there are three navigation buttons: 'Cancel' (with a red 'x' icon), '< Previous', and 'Next >'.

## 1.5 In a Nutshell: Considerations for StorageGRID for SaaS Backup

The StorageGRID infrastructure must be externally facing, and the external SSL certificate should be a SAN certificate that covers all the relevant entries. Other considerations include:

- StorageGRID must be available on the public web.
- StorageGRID requires a domain name like `webscale.netapp.com` with a certificate.
- You must use Transport Layer Security (TLS) protocol 1.2.
- Open port 8082 or 443, depending on which port is configured.
- SaaS Backup does not create the bucket in StorageGRID; therefore, a bucket must already be present.
- SaaS Backup does not make any changes in the back end for specific customers.

## 1.6 Connectivity Requirements

- For acceptable backup performance, the RTT should be 100ms.
- From a bandwidth standpoint, each node in the grid should be able to handle at least 200MBps (as an approximation).
- There is no latency requirement for the client while writing to SG; however, NetApp recommends 100ms of latency to avoid slow data transfer.
- Firewall rules must allow traffic on the configured port (8082 or 443).

## 1.7 Capacity Sizing of StorageGRID for SaaS Backup

For capacity sizing of StorageGRID for SaaS Backup, you must account for the dataset size and the services change rate to create approximate capacity projections.

### Prerequisite Information

You need the following information for capacity sizing:

- The services you will use (Exchange Online, OneDrive for Business, SharePoint Online, O365 Groups, and Teams) and their respective dataset sizes; for example, the total amount of data in your O365 account, which includes the following:
  - The size of all Exchange Online mailboxes that require protection
  - The size of all OneDrive instances that require protection
  - The size of all SharePoint site collections that require protection
- The approximate rate of data change per day or month for each of these services
- The length of time that you plan to use SaaS Backup to protect these services

### Method

The method for capacity sizing is as follows:

1. Identify the total mailbox and OneDrive size for each user and the SharePoint storage metrics for all sites. You can get the O365 capacity information from the report section in the O365 admin portal. The following links describe how to find the relevant information:
  - [O365 Mailbox Usage Report](#)
  - [SharePoint Site Usage Report](#)
2. Add a 20% buffer to the size determined in step 1. This buffer is recommended for on-premises sizing due to MIME conversion bloating. For example, if the customer has a 28MB attachment in an email, the content length is 36.6MB after it has been downloaded from O365.

3. Add the approximate change rate of data per day or month to the calculated size. If you aren't sure, use a 0.5% change rate (1% is conservative). This constitutes the overall capacity.
4. Multiply this calculated capacity by the number of years you expect to use the system to get the total capacity.

## Example

Table 1 shows example storage metrics for O365.

Table 1) Storage metrics for O365.

Service	Size (In GB)	Users/Sites	Total Capacity (In GB)
Exchange Online	5	1000	5,000
OneDrive For Business	15	1000	15,000
SharePoint Online	100	1000	100,000
Total capacity			120,000

1. Add a 20% buffer to the total capacity (20% of 120,000 = 24,000);  $120,000 + 24,000 = 144,000$ .
2. Calculate a daily change rate of 1% (1% of 144,000 = 1,440).
3. Project the daily change rate for 1 year ( $365 * 1,440 = 525,600$ ).
4. Add this to the capacity calculated in step 1 ( $144,000 + 525,600 = 669,600$ ).

Therefore, for 1 year, you need 67TB of storage.

## Where to Find Additional Information

To learn more about the information that is described in this document, review the following documents and/or websites:

- SaaS Backup for Microsoft Office 365 document collection  
<https://fieldportal.netapp.com/collections/469881?assetComponentId=470558&languageCode=en-US>
- SaaS Backup for Office 365 online documentation  
<https://docs.netapp.com/us-en/saasbackupO365/>
- StorageGRID technical collection  
<https://fieldportal.netapp.com/collections/820968?assetComponentId=822608>
- StorageGRID online documentation  
<http://docs.netapp.com/sgws-111/index.jsp>

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