Synology®

Deployment Recommendations for

Active Backup for Microsoft 365

Table of Contents

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Introduction

The recommendations in this guide are based on Active Backup for Microsoft 365 versions 2.2.0 and above.

Why back up Microsoft 365?

Although Microsoft goes to great lengths to keep your data safe, it does not guarantee the complete and quick restoration of any Microsoft 365 data that has been deleted or corrupted. The **Microsoft Services Agreement for Microsoft 365** even states:

"We recommend that you regularly backup your content and data that you store on the services or store using third-party apps and services."

If objects in Microsoft 365 (emails, files, etc.) are unintentionally deleted, they can still be restored via the recycle bin before the object expires and as long as the recycle bin was not manually emptied by other users. However, if the data removal wasn't noticed in time, then your data will not be retrievable unless you have a backup that can be restored to the cloud. This means that it is essential for you to regularly back up your Microsoft 365 data.

Why use Active Backup for Microsoft 365 on Synology NAS?

Synology NAS is a storage device that comes with a number of different backup services. Regardless of whether you are a business or an individual user, Synology NAS makes it easy to quickly set up a safe and secure backup environment.

Some of the benefits of using Active Backup for Microsoft 365 include:

- Unlimited backups at no extra cost
- Easy installation, deployment, and management
- Software and hardware integration allows you to centrally monitor multiple tasks, storage consumption, as well as data transmission history through a single console
- Flexible backups with scheduled, manual, and continuous backup modes, as well as retention policies with unlimited recovery points
- Storage efficiency is optimized via single-instancing technology and block-level deduplication
- Individual file restorations can be easily performed by users through a self-service recovery portal

Things to know for mass deployment

Large organizations should implement mass deployment meticulously in order to best enhance backup performance and to avoid throttling from Microsoft services, especially if they need to safeguard a large number of Microsoft 365 users and their data.

The deployment methods provided in this guide are particularly recommended for the following cases:

- For organizations with more than than 1,000 Microsoft 365 users and more than 5,000 accumulative objects
  - The calculation of these objects is based on the assumption that each user has at least 5 Microsoft 365 services. For example, where each user has a mailbox, an archive mailbox, OneDrive, a SharePoint site document library, and a Team.
- For service providers in multi-tenant configurations

Other than the cases above, we also suggest organizations with environments that include more than 500 Microsoft 365 users to refer to the information in this guide in order to maximize their backup performance.

Active Backup for Microsoft 365 supports the backup and restoration of the following objects:

Microsoft services	Objects
Microsoft Exchange	• User mailboxes • Shared mailboxes • Archive mailboxes • Resource mailboxes • Site mailboxes

Microsoft SharePoint	• Document libraries and lists on the following sites
	  • Collaboration sites
	  • Communication sites
	  • Personal sites

Microsoft OneDrive	• OneDrive
	  • Folders, sub-folders, and files
	  • OneNote

Microsoft Teams	• Teams (public and private)
	  • Teams channels (public and private)
	  • Teams posts
	  • Teams files
	  • Teams tabs

Choose a suitable NAS

The deployment models that should be used depends on the actual size of an environment, as well as the number of Microsoft 365 users and objects to be backed up. In this section, we provide the deployment models recommended for backing up certain numbers of users and objects.

Model limitations

It is important to choose a NAS that suits your environment. The following chart shows the maximum number of Microsoft 365 users that can be backed up for compatible models in a reasonable amount of time. We recommend you to select a model based on the number of users that need to be backed up on Microsoft 365.

These recommendations are based on the following items that can have a significant impact on overall performance:

- The average number of stored emails for each user
- The average number of concurrent visitors in the self-recovery portal

Number of Backup Users	Desktop Models	Rackmount Models
50	DS1019+, DS920+, DS918+, DS720+, DS718+, DS420+	RS422+
300	DS1618+, DS1522+, DS1520+, DS1517+	RS1219+, RS822RP+, RS822+, RS820RP+, RS820+, RS818RP+, RS818+
500	DS2422+, DS2419+II, DS2419+, DS1821+, DS1819+, DS1817+, DS1621xs+, DS1621+	RS2821RP+, RS2818RP+, RS2421RP+, RS2421+, RS2418RP+, RS2418+, RS1619xs+, RS1221RP+, RS1221+
800	DS3622xs+, DS3617xsII, DS3617xs, DS3018xs	SA3200D, RS3621RPxs, RS3621xs+, RS3618xs, RS3617RPxs, RS3617xs+, RS3617xs
1,000		RS4021xs+, RS4017xs+
1,500 or more		HD6500, SA3600, SA3400, RS18017xs+

If you have a large number of Microsoft 365 accounts, but low storage demands, we recommend selecting a low-bay model with a similar CPU and RAM as that of the respective recommended model from the chart.

Refer to **How do I select a Synology product for Active Backup for Microsoft 365?** for more detailed information.

Cache acceleration

After you have selected an appropriate model, we recommend adding SSD cache to your system to accelerate performance. Through the implementation of SSDs, the average number of Microsoft objects processed per second can be greatly improved. Results may vary depending on your devices and network environment.

Refer to **Which Synology NAS models support SSD cache?** for compatible models and the **SSD Cache White Paper** for more detailed information.

Back up with Active Backup for Microsoft 365

Create backup tasks

The Active Backup for Microsoft 365 admin console allows IT administrators to create backup tasks for Microsoft 365 accounts and monitor backup statuses from a single centralized interface.

Refer to **Create Backup Tasks** for detailed setup instructions.

Configuration recommendations

For large-scale users who have large number of Microsoft accounts, we strongly recommend that you manage your backup list by putting your Microsoft users into different Microsoft 365 groups. This will help make storage management easier and more efficient.

If you have multiple NAS, grouping your Microsoft 365 users allows you to easily back up separate Microsoft groups on each NAS. Just make sure to disable **auto-discovery** to avoid backing up duplicated data.

If you have multiple NAS but you don't want to put your Microsoft users into groups, then make sure that you only enable auto discovery on one NAS to avoid backing up duplicated data.

Initial backup time

The initial backups performed in Active Backup for Microsoft 365 may take longer to complete than succeeding backups. This depends on a number of factors.

One factor that affects the initial backup time is the amount of data. The time required to download the data will increase if you have a lot of data on Microsoft 365, especially if you have lots of small files like emails. As a result, the initial backup time may take longer.

The internet environment is another important factor that can affect the initial backup time. Apart from your own network environment, throttling on Microsoft's end may limit the number of concurrent requests to the service that you want to back up, especially if you also have a large amount of data. The backup speed will most likely be slowed down as a result.

Alleviate Microsoft 365 throttling

What is throttling?

Throttling is a process that actively controls any excessive use of server resources that could compromise service reliability and functioning in order to maintain server health and responsiveness. It does this by limiting the number of concurrent requests to a service to prevent overuse of resources.

Due to its impact on the number of concurrent requests, throttling also has the potential to degrade the performance of Active Backup for Microsoft 365 by slowing down backup and restore processes. Any Microsoft 365 service may encounter throttling issues. Also, since backup and restoration speeds sometimes depend on the active Microsoft 365 throttling policy, changing some configurations in our backup software may not completely resolve the issue if it occurs.

Exchange Online

Throttling in Exchange Online helps to ensure server reliability and up-time by limiting the amount of server resources that a single user or application can consume. Exchange Online resources, such as mailboxes and other related objects, are constantly monitored, and the Exchange Web Services (EWS) budgets assigned to each tenant or organization change accordingly.

When high-load factors are detected, EWS connections are proportionally restricted, and server performance suffers as a result. Even if a user is within their throttling limit, they may still experience slowdowns until the resource's health returns to operational levels.

SharePoint, OneDrive for Business, and Teams

Like Exchange Online, throttling is also used with SharePoint Online, OneDrive for Business, and Teams to maintain optimal performance and reliability of their respective services. With these three services, throttling uses Microsoft Graph APIs to limit the number of user actions and concurrent calls and prevent the overuse of shared resources. This guarantees a more stable and predictable performance when multiple tenants are using these services at the same time.

Ways to alleviate throttling

If you experience Microsoft's throttling while backing up or restoring large amounts of data, the following methods can help alleviate the problem.

Temporarily turn off EWS throttling in Exchange Online

By increasing the throttling limits directly via the **Microsoft 365 admin center**, you can **temporarily ease EWS throttling**. This can be especially useful for the initial full backup, when backing up multiple mailboxes, or for data migration.

Register different Azure AD applications

Registering a different Azure AD application for each backup task will result in Microsoft classifying the app as an independent device or server. Doing this means that even if throttling is encountered during one backup task, other backup tasks and times will be less affected.

For Microsoft 365 versions after 2.4.0, this is done automatically during the backup task setup process. However, on Microsoft 365 versions before 2.4.0, you can only register different Azure AD applications via commands in PowerShell. We highly recommend doing this for each task to keep throttling at a minimum and reduce the impact on bandwidth.

For instructions on how to register different Azure AD applications for each backup task, refer to **How to register an Azure AD app for ABM**.

Create a separate task for each service

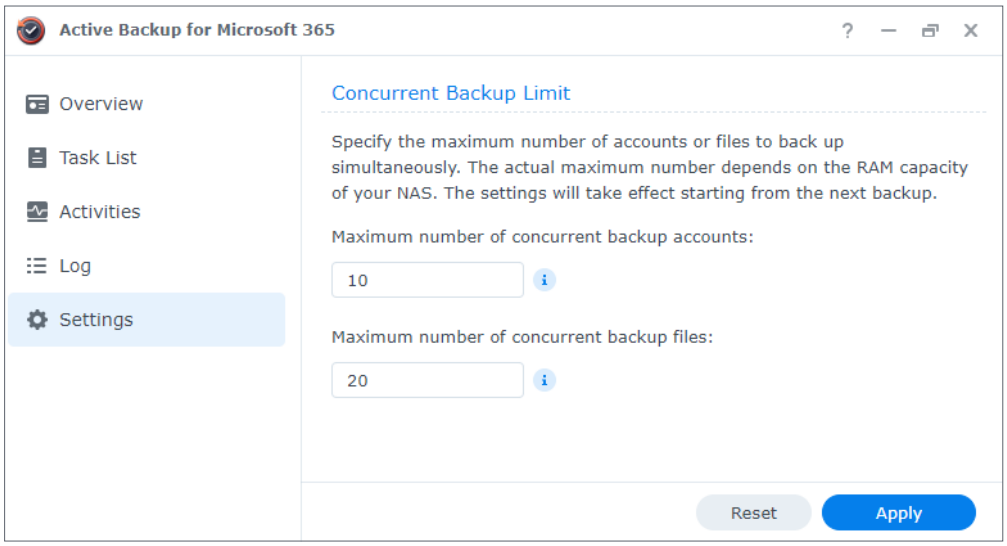
To avoid encountering throttling and longer backup times when backing up a large amount of data, we recommend assigning a separate task for each service (i.e., one task for OneDrive, one task for SharePoint, etc.). This way, even if throttling is encountered while backing up one of the services, the backup tasks and times for other services will be less affected.

Limit concurrent threads

Limiting the number of concurrent threads can also help reduce the chance of encountering throttling.

Threads are defined as the number of accounts and files that are being backed up or restored concurrently in Active Backup for Microsoft 365. The default number of accounts and files that can be concurrently backed up or restored is set to 10 or 20, respectively. This setting can be set to the maximum limit, which is determined by your RAM capacity.

If you encounter throttling on Microsoft's end during your backup or restoration, try **reducing the number of concurrent threads** to alleviate the issue.

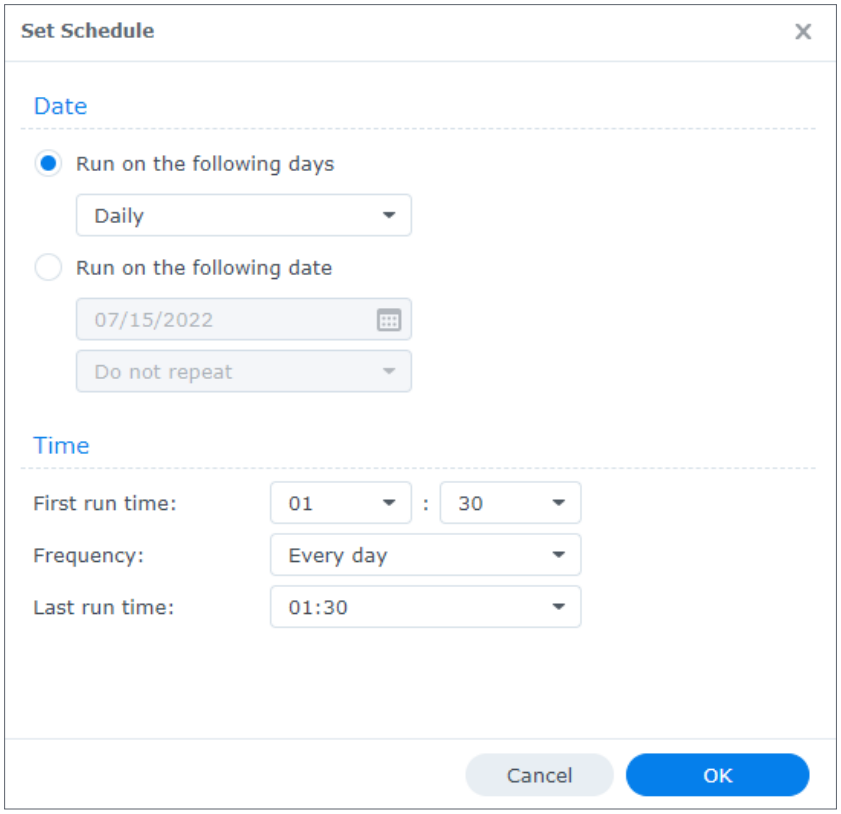


The maximum values based on the installed RAM are:

Installed RAM	Maximum concurrent tasks (accounts & files)
Less than 2 GB	20
2 GB to 4 GB	40
4 GB or more	50

Configure off-peak schedules

Running backup tasks during off-peak hours can help to avoid occupying bandwidth during high-traffic hours. You can manage scheduled backups in Active Backup for Microsoft 365 by going to **Task List**, selecting a task and clicking **Edit** > **Policy** > **Backup Policy**, and selecting **Scheduled backup** > **Set Schedule**.



Enable user self-access and recovery

Utilize single sign-on

Single sign-on (SSO) is a user authentication solution that provides a single sign-on architecture to integrate all of your web applications. Synology SSO allows organizations to protect web applications while simplifying authentication management.

You can **implement an SSO solution on Synology NAS** with Azure AD Domain Services. Please note that Synology NAS can only be joined to one AD domain at a time.

Allow users access to the recovery portal

Active Backup for Microsoft 365 Portal provides an interface not just for administrators, but also for normal users to restore data to the original tenant on their own.

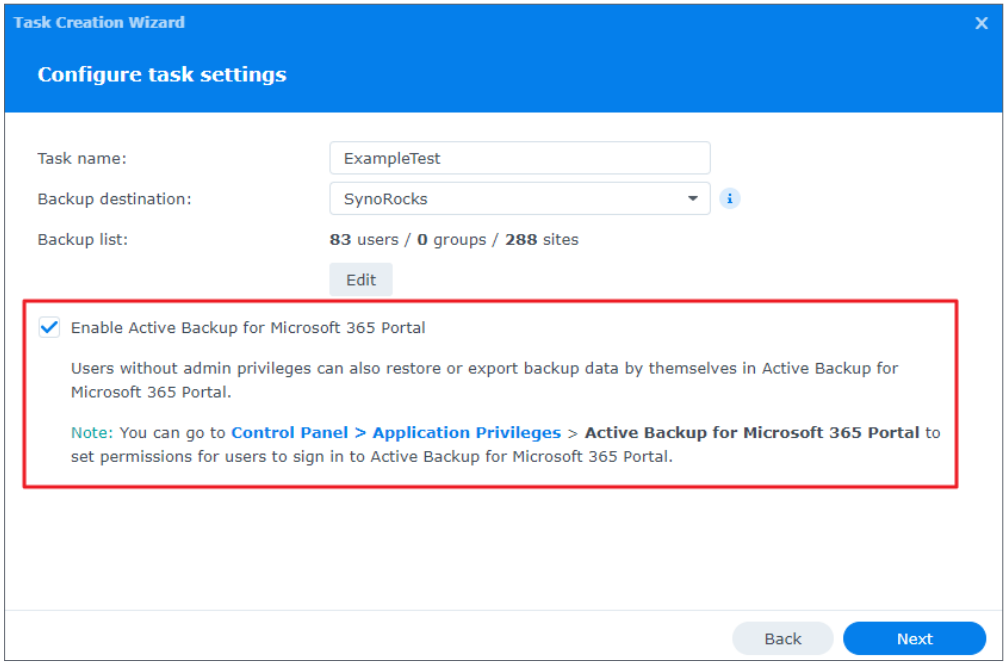
If you have the following types of users that need to restore backup data themselves, we recommend activating the recovery portal:

- Employees of an organization
- Customers of a service provider

After joining your NAS to an Azure AD Domain Service, users with administrator privileges can enable the **Active Backup for Microsoft 365 Portal** to allow others to access it.

Enable the portal

The **Active Backup for Microsoft 365 Portal** must be enabled during backup task creation in the Active Backup for Microsoft 365 package.



Users with administrator privileges can go to **Control Panel** > **Login Portal** > **Applications** > **Active Backup for Microsoft 365 Portal**. Click **Edit** to enable and customize the login portal.

Access the portal

Users with or without administrator privileges can click on **Active Backup for Microsoft 365 Portal** from the **DSM main menu**.

Make copies of your backups

Hardware or software failures, data corruption, ransomware attacks, or even accidental deletions can result in substantial loss of data. Only a well-planned backup strategy allows you to recover your data when you need it. We suggest following the **3-2-1 backup strategy**, where you have at least 3 copies of your data: 2 copies on 2 different storage mediums and 1 copy stored off-site.

Snapshot Replication

Users who have backed up a large quantity of data on Microsoft 365 should replicate their data on a daily basis. One of the best ways to do this is via **Snapshot Replication**. With **Synology Snapshot Replication**, you can easily make copies of your Active Backup for Microsoft 365 backups on a daily basis. By **replicating snapshots to a remote Synology NAS**, data kept in the snapshots are secured on the destination server even when an IT disaster strikes.

Snapshot Replication makes copying your data easy and convenient by replicating shared folders from multiple NAS to a single one. However, it's important to note that the maximum number of replication tasks for one NAS is 64 per shared folder.

Best Practices

Refer to the examples below for our recommended configurations and best practices.

Small-scale deployment

For a business with around 500 Microsoft users, we suggest the following:

1. Select a model that can support the backup of 500 Microsoft users, such as DS1621xs+.
2. Turn off **EWS throttling** in Exchange Online to ensure a smooth backup, especially for the initial full backup.
3. Create **separate backup tasks** for OneDrive, SharePoint, Exchange, and Teams to minimize the impact of throttling from Microsoft.
4. Before backing up, make sure that the number of concurrent backup threads is set to the maximum according to your RAM. However, if you encounter throttling during the backup, try **reducing the number of concurrent threads**.
5. Schedule backup tasks to **run during off-peak hours** to avoid occupying bandwidth during high-traffic hours.
6. Make sure to make backup copies using **Snapshot Replication** to keep your data safe and minimize downtime in case of sudden disaster.

Large-scale deployment

For an education institute or service provider with around 5,000 Microsoft users, we suggest the following:

1. Select a model that can support the backup of over 1,000 Microsoft users, such as SA3600.
2. Turn off **EWS throttling** in Exchange Online to ensure a smooth backup, especially for the initial full backup.
3. Split your Microsoft users into several Microsoft 365 groups for easier backup management.
4. Create **separate backup tasks** for OneDrive, SharePoint, Exchange, and Teams to minimize the impact of throttling from Microsoft.
5. Before backing up, make sure that the number of concurrent backup threads is set to the maximum according to your RAM. However, if you encounter throttling during the backup, try **reducing the number of concurrent threads**.

6. If you're backing up using multiple SA3600 devices, make sure to **disable auto discovery** to avoid backing up duplicated data.
7. Schedule backup tasks to **run during off-peak hours** to avoid occupying bandwidth during high-traffic hours.
8. Make sure to make backup copies using **Snapshot Replication** to keep your data safe and minimize downtime in case of sudden disaster.

Summary

Active Backup for Microsoft 365 offers a solution to centralize backups of your Microsoft 365 accounts to your Synology NAS, ensuring continuous access even in the event of sudden disaster. This document covers key factors that may influence the backup performance of Active Backup for Microsoft 365 on Synology NAS and offers recommendations for backup configurations.

In this guide, information is provided on how to choose a suitable NAS for the package, recommended setup configurations, how to alleviate issues like throttling, as well as how to make backups of your backed up data. With all of this information in hand, you can easily get started using Active Backup for Microsoft 365 and keep it running smoothly on your Synology NAS.

Feel free to contact our sales team via **Product Inquiries** for any of your business needs.

SYNOLOGY INC.
9F, No. 1, Yuandong Rd.
Banqiao Dist., New Taipei City 220545
Taiwan
Tel: +886 2 2955 1814

SYNOLOGY AMERICA CORP.
3535 Factoria Blvd SE, Suite #200,
Bellevue, WA 98006
USA
Tel: +1 425 818 1587

SYNOLOGY UK LTD.
Unit 5 Danbury Court, Linford Wood,
Milton Keynes, MK14 6PL
United Kingdom
Tel.: +44 (0)1908048029

SYNOLOGY FRANCE
102 Terrasse Boieldieu (TOUR W)
92800 Puteaux
France
Tel: +33 147 176288

SYNOLOGY GMBH
Grafenberger Allee 295
40237 Düsseldorf
Deutschland
Tel: +49 211 9666 9666

SYNOLOGY SHANGHAI
200070, Room 201,
No. 511 Tianmu W. Rd.,
Jingan Dist., Shanghai,
China

SYNOLOGY JAPAN CO., LTD.
4F, No. 3-1-2, Higashikanda,
Chiyoda-ku, Tokyo, 101-0031
Japan

Synology®

synology.com