Synology

Administrator's Guide for

Active Backup for Business

File Servers

Based on

Active Backup for Business 2.2.0

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Introduction

Active Backup for Business

Active Backup for Business (ABB) is a centrally managed, comprehensive office backup solution for Synology NAS.

ABB allows administrators to create different backup templates and automatically apply them to groups of Windows and Linux PCs, servers, and file servers, as well as virtual machines running on Microsoft Hyper-V and VMware vSphere platforms.

Advanced features of ABB include: forever incremental backup, agentless backup, Instant Restore physical and virtual devices to virtual machines, and a powerful deduplication mechanism that helps cut back on storage use. These features come with each installation of ABB, which is free for Synology NAS users.

ABB also offers users a wide range of backup options and restoration tools, as well as a number of optional technical and safety features.

Users who wish to make full use of the possibilities in ABB will benefit from the information in this Administrator’s Guide.

Requirements

Full specifications for Active Backup for Business can be found **here**.

NAS System requirements

Item	Requirements
Operating system	DSM 7.0 and above (ABB 2.2.0 and above) DSM 6.2 and above (ABB 2.1.0 and above) DSM 6.1.7 and above (ABB 2.0.4 and above)
CPU architecture	64-bit x86 (x64)
System memory	4 GB RAM recommended for ideal backup performance
File system	Btrfs

Supported systems

Backup type	System / version
PC	Windows 10 Creators Update (all editions), Windows 10 (all editions), Windows 8.1 (all editions), Windows 7 SP1 (all editions)
Physical Server	**Windows**: Windows 10 Creators Update (all editions), Windows 10 (all editions), Windows 8.1 (all editions), Windows 7 SP1 (all editions), Windows Server 2019, Windows Server 2016, Windows Server 2012 R2, Windows Server 2012, Windows Server 2008 R2 **Linux**: CentOS (versions 6.10, 7.8, and 8.1), RHEL (versions 6.10, 7.8, and 8.1), Ubuntu (versions 16.04, 18.04, and 20.04), Fedora (versions 30, 31, and 32), Debian (versions 8.0 to 10)
Virtual Machine	VMware free ESXi, VMware vSphere Essentials, VMware vSphere Essentials Plus, VMware vSphere Standard, VMware vSphere Advanced, VMware vSphere Enterprise, VMware vSphere Enterprise Plus (versions 5.0, 5.1, 5.5, 6.0, 6.5, 6.7, and 7.0); Windows Server Hyper-V 2019, Windows Server Hyper-V 2016
File Server	SMB protocol; rsync 3.0 and above

For a full list of requirements for backups and restorations, refer to the **Requirements and Limitations** section of the Active Backup for Business Help page.

Backup types

The following sections provide information on the types of backups that you can perform using ABB.

PC Backups

- Back up full Windows devices with features that help keep workstations, laptops, and personal devices protected, including a **Backup by event** option that backs up computers when users lock their screen, sign out, or start up their device.
- Create recovery media for bare-metal restorations or restore individual files and folders via the Active Backup for Business Portal.
- Backup restorations can only be performed by the **admin** account, users belonging to the **administrators** group, or the account owner that is logged into **Active Backup for Business Agent**. Privileges to perform restorations are not configurable.
- **Active Backup for Business Agent** can perform **Application-aware backup** on Windows PC’s with the help of Microsoft's **Volume Shadow Copy Service (VSS)**.

Physical Server Backups

- Back up Windows and Linux devices with scheduled and manual backup options.
- Create recovery media for bare-metal restorations, restore individual files and folders using the **Active Backup for Business Portal**, or instantly restore your physical device to a virtual machine in **Synology Virtual Machine Manager**, **Hyper-V**, or **VMware**.
- Privileges to perform restorations can be assigned by the **admin** account (if enabled), as well as by all other DSM users or groups.
- Active Backup for Business Agent can perform **Application-aware backup** on Windows servers with the help of Microsoft's **Volume Shadow Copy Service (VSS)**.

File Server Backups

- Back up files and folders from Windows and Linux devices using SMB and rsync file transfer protocols.
- Select a backup mode as needed:
  - **Multi-versioned**: Each time the task runs, a new version with the changes made on the source will be copied entirely to a new folder on the destination
  - **Mirroring**: Each time the task runs, any changes made in the source folder will be copied to the destination and overwrite the existing file, making the destination folder a complete mirror-copy of the source.
  - **Incremental**: Each time the task runs, newly added and modified source files will be copied to the destination, overwriting the previous version of the file.
- Set up and fully control backups from one central console.
- No need to install a backup agent or enter sensitive DSM login details on source devices.

Virtual Machine Backups

- Safely back up virtual machines directly from VMware and Hyper-V.
- Enable **Application-aware backup** on Virtual Machines to ensure data consistency with the help of Microsoft's Volume Shadow Copy Service (VSS).
- Fully restore your entire virtual machines to VMware or Hyper-V.
- Use **Instant Restore** to restore your virtual machine to Synology's native hypervisor, **Synology Virtual Machine Manager**, as well as directly to **VMware** or **Hyper-V**.
- Perform a **Guest OS Files (Windows / Linux) Restore** via **Active Backup for Business Portal** to restore specific files on your virtual machine instead of an entire virtual machine.

Backup tools

Active Backup for Business Agent

Active Backup for Business Agent must be installed on the client device before backing up your data in order to carry out backup tasks and store the back up data. Administrative privileges are required to install, update, or uninstall Synology Active Backup for Business Agent.

This tool is available for download in the **Download Center**. Refer to **this article** for installation details and other information.

Active Backup for Business Portal

The **Active Backup for Business Portal** is the affiliated restore portal dedicated to restoration use. This portal allows administrators and end-users appointed by an administrator to access, browse, download, and restore backed-up data.

This tool is automatically installed during the installation of Active Backup for Business. Refer to **this article** to learn more about how to navigate the portal, perform restores, and other settings.

Active Backup for Business Recovery Media Creator

Synology **Active Backup for Business Recovery Media Creator** is a desktop tool that can be used with Active Backup for Business. This tool is designed for administrators to create recovery media for bare-metal or volume-level restores. Administrators can use this tool if the device intended to create the recovery media is running a 64-bit version of Windows and has the same language and region settings, as well as the same Windows versions and drivers as the device intended to be restored.

Follow the instructions in the **Active Backup for Business Recovery Media Guide** to learn how to create recovery media for your device.

Technical Overview

Application-aware backup

Enabling **application-aware backup** helps to ensure that your application data is consistent. Backups with application-aware backup enabled make it easier for application data to be restored in the future by creating a snapshot of the application data when the backup is performed.

This feature uses VMware Tools and Microsoft’s **Volume Shadow Copy Service (VSS)** to make sure that the backed up data of virtual machines remain consistent and to prevent data inconsistencies from occurring when backing up actively used data.

Forever-incremental backup

Synology recommends that users enable **Forever-incremental backup** to maximize the number of available backup versions and minimize the storage used for backup retention. When this policy is enabled, a full backup is only executed the first time that a task is performed. After that point, Active Backup for Business tracks changes and backs up only modified or new data.

Forever-incremental backup significantly reduces the amount of data transferred for each backup, as well as the amount of duplicated data stored to your backup destinations.This saves time and bandwidth on the source device. ABB relies on technologies native to Microsoft Windows, Microsoft Hyper-V, and VMware vSphere to perform incremental backup.

Full backup (bandwidth and storage intensive) is available if you cannot or do not wish to enable change-tracking technologies, or if you prefer to store full sets of data each time a backup is performed.

To enable **Forever-incremental backup**, you must first enable the following, depending on what type of device you are using:

- For PC's or physical servers: **Microsoft Volume Shadow Copy Service (VSS)**
- For VMware virtual machines: **vSphere Changed Block Tracking (CBT)**
- For Hyper-V virtual machines: **Hyper-V Resilient Change Tracking (RCT)**

Personal computer and physical server

The CBT technology adopted in Active Backup for Business uses VSS to take snapshots for devices and identify changed blocks between snapshots. Make sure that Microsoft Volume Shadow Copy Service (VSS) on each protected device has been turned on to ensure that CBT is functioning properly. After the first full backup, CBT technology allows each device to transfer only changed blocks to your NAS, helping save bandwidth and speeding up the backup process.

Virtual machine

Changed Block Tracking (CBT) and **Resilient Change Tracking (RCT)** are VMware vSphere's and Microsoft Hyper-V's native technology that track the blocks of a virtual machine disk that have been changed since a certain point in time. With VMware vSphere CBT and Microsoft Hyper-V RCT enabled, the amount of data transferred after the first full backup will be greatly reduced, speeding up the backup process.

To enable CBT for a virtual machine, refer to the instructions **this article**.

Data deduplication

Active Backup for Business detects and removes any data that are identical between different files, versions, or devices when storing backups to Synology NAS. Built-in deduplication technology can help to cut back on storage use, especially when the devices share similar operating systems, software applications, or files.

To best benefit from ABB deduplication technology, you should back up similar computers or virtual machines to the same Active Backup for Business host.

Native hypervisor

The integration of ABB with Synology's native hypervisor, **Synology Virtual Machine Manager (VMM)**, powers two distinctive features of Active Backup for Business that make for a more efficient recovery after a server crash: **Backup Verification** and **Instant Restore** to virtual machines for physical or virtual servers.

If you want to use **Backup Verification** or **Instant Restore**, you must be using the **Physical Server** or **Virtual Machine** backup functionality in ABB. To switch devices from **PC backup** to **Physical Server** or **Virtual Machine backup** mode in ABB, go to **PC**, select a device, and then click **More** > **Change device type**.

Backup Verification

If **Backup Verification** is enabled, a scheduled trial run of the restoration will be performed in VMM for a configured number of seconds. This process will be recorded into a video for your reference, allowing you to confirm that the backup can be successfully restored in case of sudden failure.

Instant Restore

Instant Restore allows users to instantly run servers and virtual machines backed up with ABB as virtual machines in Synology VMM. Users can use this feature to implement rapid recoveries while continuing to use services in case of system crashes.

Backup Configuration

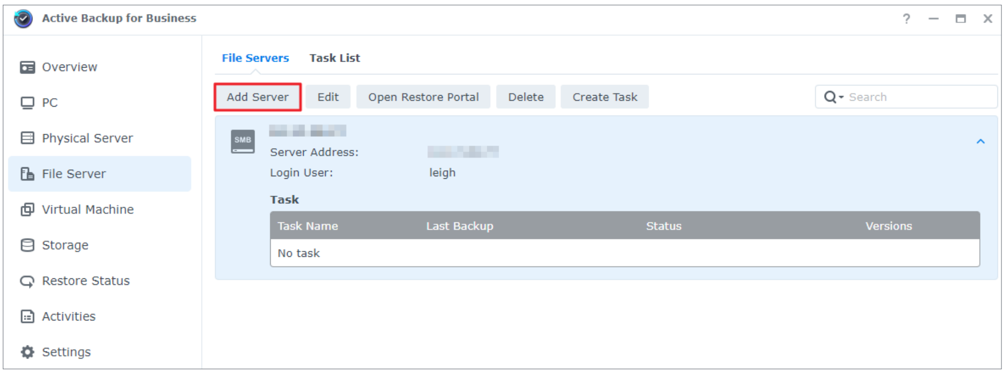
The following sections provide instructions on adding file servers, creating and executing new backup tasks, and configuring essential options and settings.

File Server Backup

Add a file server

Before creating a file server backup task, you must connect to a file server, which can be done by following the instructions below.

1. In DSM, go to **Active Backup for Business** > **File Server** > **File Servers** and click **Add Server**.



[redacted]

Server Address: [redacted]

Login User: leigh

Task

Task Name	Last Backup	Status	Versions
No task			

2. Follow the instructions in the wizard and enter the information as required to finish adding your server.

Notes:

- Make sure that **My Network Places** is enabled on the SMB server.
- Make sure that the permission settings are properly configured. Refer to **this article** for more information on the required permissions for file server.

Create a backup task

In **Active Backup for Business**, go to **File Server** > **File Servers**, select the file server that you want to back up, and click **Create Task**.

Follow the steps in the wizard to select your backup mode, select the folders you want to transfer, and select a retention policy.

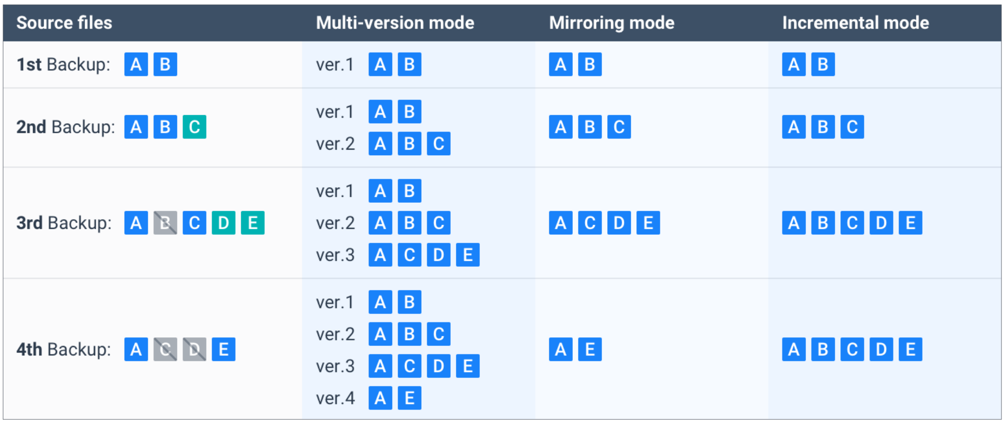
Select your backup mode

Users can select:

- **Multi-versioned**: Each time the task runs, a new version with the changes made on the source will be copied entirely to a new folder on the destination
- **Mirroring**: Each time the task runs, any changes made in the source folder will be copied to the destination and overwrite the existing file, making the destination folder a complete mirror-copy of the source.
- **Incremental**: Each time the task runs, newly added and modified source files will be copied to the destination, overwriting the previous version of the file.

> **Notes:**
> - For Linux sources, block transfers can be configured at a later stage in the setup.

Refer to the table below to learn more about final backup file variations for each backup mode.



Source files	Multi-version mode	Mirroring mode	Incremental mode
1st Backup: A B	ver.1 A B	A B	A B
2nd Backup: A B C	ver.1 A B ver.2 A B C	A B C	A B C
3rd Backup: A ~~B~~ C D E	ver.1 A B ver.2 A B C ver.3 A C D E	A C D E	A B C D E
4th Backup: A ~~C~~ ~~D~~ E	ver.1 A B ver.2 A B C ver.3 A C D E ver.4 A E	A E	A B C D E

Task settings

Indicate what you want to transfer using the following states:

□ Any subordinate folders or files in this folder will **not** be backed up.

☑ All subordinate folders and files in this folder will be backed up.

⊟ Only selected subordinate folders and files in this folder will be backed up.

▣ The files in this folder along with selected subordinate folders will be backed up.

If you are configuring **rsync backup**, you will have the option to configure **Bandwidth** as well as enable **compression** and **block transfer**.

If you selected **Multi-versioned** as your backup mode, you will have the option to set up a **Retention Policy** to manage backup versions by automatically deleting unwanted versions to potentially free up storage space.

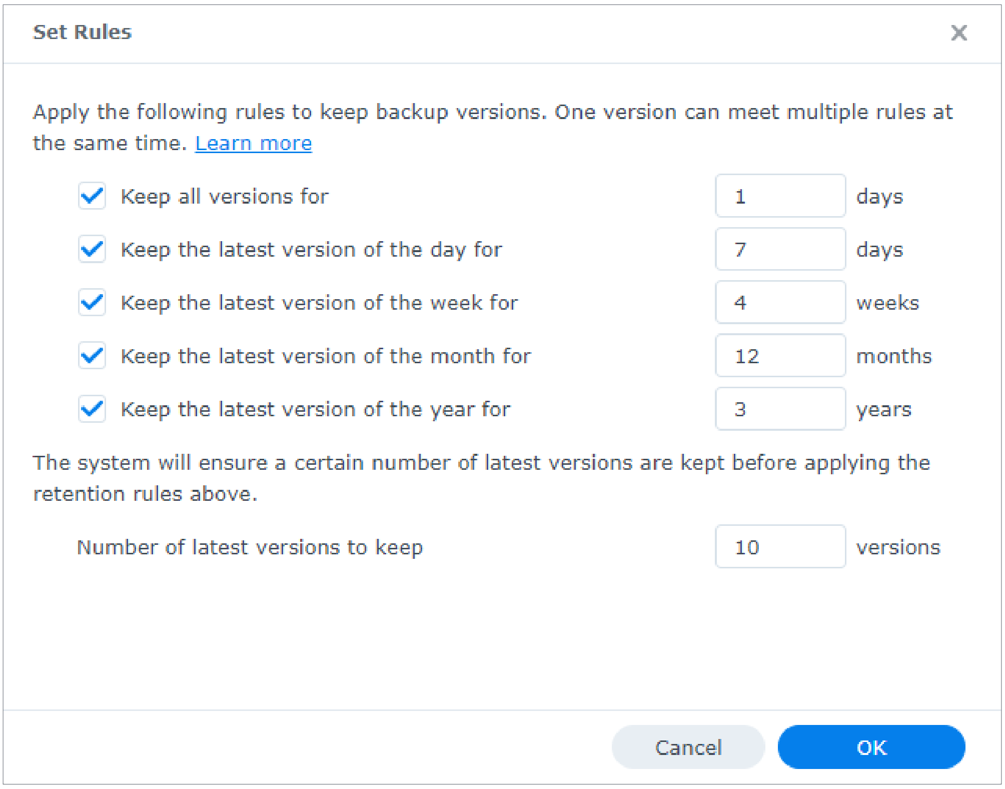
Select a retention policy

Users can choose to store all versions of their backup, limit the number of stored versions, or keep only certain versions according to a schedule.

You can choose to set rules for keeping backup versions, such as to retain the latest version of each day, week, month, or year. You can edit the retention policy at **Active Backup for Business** > **File Server** > **Task List** > select the task > **Edit** > **Retention** > **Advanced retention policy** > **Set Rules**.

Selecting the **Keep only the latest ... versions** option will store a set number of versions regardless of the time intervals set. If more than one backup version exists within a certain time range, only the latest one will be kept. For example, if you set a policy as **Keep the latest version of the day for 1 day** for a backup task that will run every hour, only the version backed up at 23:00 will be kept.

A version can meet more than one retention rule at a time. For example, a version can be retained by the weekly retention rule and daily retention rule at the same time. Advanced retention policy employs the GFS, or Grandfather-Father-Son retention mechanism.



Set Rules

Apply the following rules to keep backup versions. One version can meet multiple rules at the same time. Learn more

☑ Keep all versions for 1 days

☑ Keep the latest version of the day for 7 days

☑ Keep the latest version of the week for 4 weeks

☑ Keep the latest version of the month for 12 months

☑ Keep the latest version of the year for 3 years

The system will ensure a certain number of latest versions are kept before applying the retention rules above.

Number of latest versions to keep 10 versions

Notes:

- Files will not be backed up by Active Backup for Business under the following circumstances:
  - The file/folder path is longer than 4096 characters.
  - The file/folder name is longer than 255 characters, is " . " or " .. " , or contains *@ActiveBackup* or *target.db*.
  - The file/folder is within an encrypted shared folder and has a name that exceeds 135 characters.
- **SMB backup** does not support Microsoft accounts, and does not back up **junction points**.
- **SMB backup** supports **Windows Volume Shadow Copy Service (VSS)** to ensure data consistency. Windows VSS is supported on Windows Server 2012 and above. **By enabling VSS on the Windows server**, Active Backup for Business can create a volume shadow copy of VSS-aware server applications that store data on remote SMB file shares.
- Administrative shared folders (E.g. C$, D$) do not support Windows VSS by default.
- Authentication by SSH key will require an SSH key. Supported key types include *RSA2*, *DSA*, *ECDSA*, and *ED25519*. *RSA1* and SSH keys with a passphrase are not supported.

Apply settings

After configuring the backup settings, a backup summary will be displayed. Once you have confirmed your settings, do the following to finalize your backup:

1. Click **Done** and a pop-up window will appear.
2. Click **Yes** if you would like to run the backup immediately. If you want to run the task afterwards, go to the **Task List**, select the task you have just created, and click **Back up**.

Manage Backup Tasks

In **Active Backup for Business** > **File Server** > **Task List**, you can see a list of all of the backup tasks. You can also manage them with the actions at the top of the window.

Edit or delete backup tasks

By selecting the backup task and clicking **Edit**, you can modify the task information, adjust the backup source and file filter settings, and set the backup schedule. If you selected **Multi-versioned** as your backup mode, you can also edit backup retention settings.

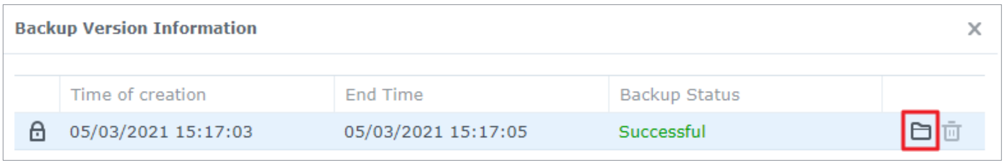
To delete backup tasks, select the backup task and click **Delete**. Doing this will remove the backup tasks and its settings, but will **not** remove your backed up data.

Details

To view information on the **Status** and **Logs** for your task, such as the source, execution time, duration, and log time of the backups, and more, select your task and click **Details**.

Versions

To view information about the backed up versions, such as the status and time of creation, select your task and click **Version**. You can also click the **folder** icon to browse your backed-up data.



Backup Version Information

	Time of creation	End Time	Backup Status	
🔒	05/03/2021 15:17:03	05/03/2021 15:17:05	Successful	

Restoration Guide

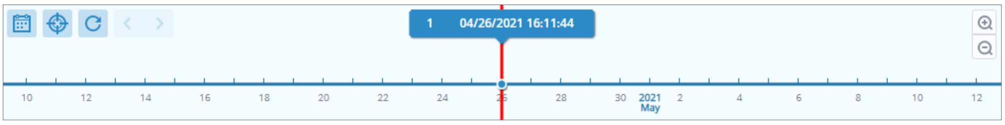
Recovery options

Granular (file or folder-level) restore: Choose a backup version, select files or folders for recovery in the Active Backup for Business Portal and automatically restore them to their original location, or download the data to a different device or location. You can also assign end users restore or download permissions via Control Panel in DSM.

Restore File Server Data

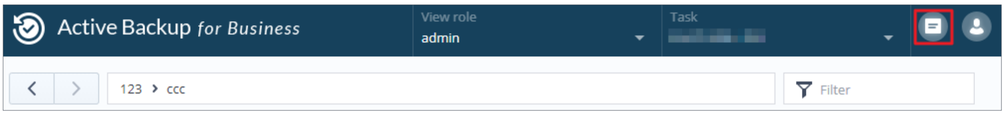
File Server backup supports granular restore (file-level) via Active Backup for Business Portal to restore backed up data.

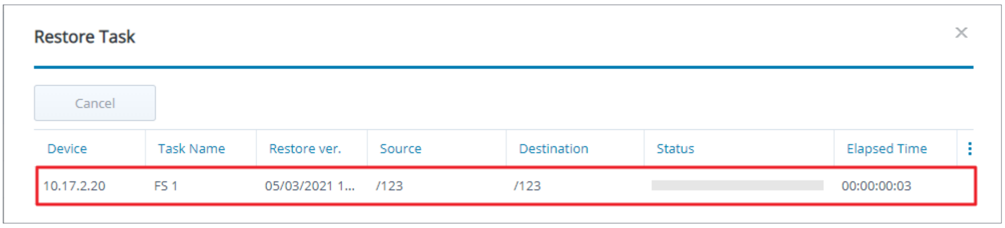
1. In **Active Backup for Business** > **File Server**, select the task and click **Open Restore Portal**.
2. Under **View role** at the top of the page, select a user with the appropriate restoration privileges.
3. Under **Task**, confirm the source device to which or from which you want to restore files.
4. Select the folders or files that you want to restore.
5. Use the slider at the bottom of the page to select a backup version from which you wish to restore folders or files, then click through the folder structure in the file explorer to select the directory or file.



6. Choose if you want to **Restore** or **Download** the data. If you select **Restore**, your backup agent will download the files or folders and restore them to the specified location on your device. You can also choose whether you want files with the same name to be skipped during the restoration by ticking the related checkbox. If you select **Download**, the selected files will be downloaded via your browser to your chosen download location.

You can view the progress of the restoration by clicking the **Restore Task** icon in the upper right-hand corner.




Restore Task

Device	Task Name	Restore ver.	Source	Destination	Status	Elapsed Time
10.17.2.20	FS 1	05/03/2021 1...	/123	/123		00:00:00:03

Notes:

- To learn how to back up and restore a Microsoft SQL or Exchange server specifically, refer to the following tutorials:
    - **For Microsoft SQL servers**
    - **For Microsoft Exchange servers**

Best Practices

The following sections provide recommendations for how you can protect your backup data against loss, ensure backup task continuity, and deploy our backup agent to many devices at once while keeping your Synology NAS and DSM secure.

Maintain remote backup copies and relink

Active Backup for Business safely stores backup data from all of your devices on your Synology NAS. However, issues that occur on one device can affect a whole infrastructure.

Natural disaster, theft, or network unavailability can prevent you from retrieving your data or slow down the recovery process. Therefore, it is strongly recommended that you keep remote copies of all of your backups on a different device and in a different location.

It is also important to always maintain three copies of all of your data (the original copy, a backup, and a copy of that backup in a different location). This is also referred to as the 3-2-1 backup strategy. Synology NAS includes software that allows you to execute this strategy.

Create remote copies

The following two DSM applications can be used to copy your Active Backup for Business data and configurations from Synology NAS to other devices, or to the public cloud.

- **Snapshot Replication**: This option is recommended if you have access to a secondary Synology NAS. You can replicate your ABB data and settings to another Synology NAS and quickly restart all of your ABB tasks on that device directly from the replica.
- **Hyper Backup**: This option allows you to back up your ABB data and settings to more locations, including portable drives, file servers, and public cloud storage. However, recovery requires you to first restore the backup to a functioning Synology NAS before relinking and restarting ABB tasks.

Relink

- After creating a replication or backup task, it is important to make sure that you know how to successfully restore or relink your existing Active Backup for Business tasks and backup data, whether they exist on a secondary NAS, in public clouds, or other storage media.
- **This tutorial** provides detailed instructions on how to back up and relink your Active Backup for Business data using **Snapshot Replication** and **Hyper Backup**. To do this, make sure that your Synology NAS has 64-bit processors, is running DSM 6.1.7 or above, is running Active Backup for Business 2.0.4 or above, and have the necessary packages installed on your Synology NAS. See the **Environment** section in the tutorial for more details.

Learn more

Related articles

- **Frequently asked questions about Active Backup for Business**
- **How do I select a suitable NAS for running Active Backup for Business?**
- **How do I back up individual files/folders on Windows PC and File Server using Active Backup for Business?**
- **How to create backup tasks with compression or encryption settings for file servers**
- **How many devices can I back up concurrently with Active Backup for Business?**

Software specs

Refer to the Active Backup for Business **software specifications** to learn more about the package's features, components, and limitations.

Other resources

For more step-by-step tutorials and visual information, feel free to also check out **Synology's YouTube channel**. There, you can find related videos by searching for "Active Backup for Business".

You can also find admin guides, brochures, technical specifications, user guides, whitepapers and more for Active Backup for Business in **Synology Documentation**.

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