Access QNAP Enterprise-Class ES NAS using Microsoft File Sharing
Thank you for choosing QNAP products! This user manual provides detailed instructions of using the Turbo NAS (network-attached storage). Please read carefully and start to enjoy the powerful functions of the Turbo NAS!

- The Turbo NAS is hereafter referred to as the NAS.
- This manual provides the description of all the functions of the NAS. The product you purchased may not support certain functions dedicated to specific models.

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Back up the system periodically to avoid any potential data loss. QNAP disclaims any responsibility of all sorts of data loss or recovery.

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You can create shared folders on the ES NAS that you can share across the network to different users and groups using Windows. This article illustrates how to create shared folders on the ES NAS and map network drives in Windows.

Enable Windows SMB (Microsoft Networking)

To allow access to the ES NAS on Microsoft Windows Network, enable file service for Microsoft networking first.

1. Log into the ES NAS as an administrator and go to “Control panel” > “Network Services” > “Microsoft Networking”.

2. Select “Enable file service for Microsoft networking”.

3. Server Description (optional): Describe the NAS so that the users can easily identify the server on Microsoft Network.

4. Workgroup: Specify the workgroup to which the NAS belongs. A workgroup name supports up to 15 characters but cannot contain: " + / \ | * ? < > ; [ ] % , `.

5. Also specify how the users will be authenticated:
   - Standalone Server: Use local users for authentication. The NAS will use the local user accounts information (created in "Privilege Settings" > "Users") to authenticate the users who access the NAS.
   - AD Domain Member: Use Microsoft Active Directory (AD) to authenticate the users. To use this option, enable Active Directory authentication in "Privilege Settings" > "Domain Security" and join the NAS to an Active Directory.
   - LDAP Domain Authentication: Use Lightweight Directory Access Protocol (LDAP) directory to authenticate the users. To use this option, enable LDAP authentication and specify the settings in "Privilege Settings" > "Domain Security". When this option is enabled, you need to select either the local NAS users or the LDAP users can access the NAS via Microsoft Networking.

6. Click “Apply” to save your settings.

For more advanced configurations such as using a WINS server, please click “Advanced Options”.
Create shared folders on the ES NAS

Please follow this procedure to create a share folder:

1. Before creating a shared folder, please create a Storage Pool first. (Log into the NAS with an administrative account, go to “Storage Manager” > “Storage Space”, and then click “Create New Storage Pool”.)
2. Go to “Control Panel” > “Shared Folder” > “Storage Space”.
3. Click “Create” > “New Shared Folder” to create a new shared folder.
4. Enter the basic folder settings for the shared folder.
   - Folder name: Enter the share name. The share name cannot contain " / [ ] : ; | = , + * ? < > ` '
   - Description: Enter an optional description of the shared folder.
   - Storage Pool: Select the storage pool where you would like to create the share folder.

5. Configure storage settings and services:
   - Storage settings:
     - Thin provision: This option will allow the storage capacity of the iSCSI Target to be dynamic and allocated on-demand. With thin provisioning, the system can allocate initialized space and increments this quantity when the used storage reaches the threshold. It allows the system to over-allocate the storage capacity regardless of the physical storage limit, and the physical disk space is used only when files are written into the share folder.
     - Folder quota: Set the quote of the shared folder. If the quota is not specified, the size of the shared folder will be equal to that of the pool.
     - Compression: The ES NAS utilizes ZFS’s inline data reduction, offering compression and deduplication options. When this option is enabled, more CPU resources of the NAS will be used but the size of the shared folder can be reduced.
     - Deduplication: ZFS deduplication is the other data reduction method available on the ES NAS. This option allows the system to reduce the amount of storage needed by eliminating duplicate copies of data. However, it must be used with caution as it can become very computationally intensive in some workloads (e.g. streaming workloads). If enabling this option, it is recommended only to use this shared folder for workloads for
which it works well and put other workloads on other shared folders that use compression instead.

- SSD cache: Enable SSD cache on this share folder. An SSD cache can be used to accelerate the performance of the NAS. Please note that at least one SSD needs to be installed to enable this function.
- Storage services: Set the sharing protocol for this shared folder from CIFS/SMB (Windows share), NFS (Linux share) or FTP/FTPS.

6. Access privileges for users: Select the way you want to specify access rights to the folder. If you select to specify the access rights by user or user group, you can select to grant read only, read/write, or deny access to the users or user groups.

7. Advanced settings
- Hidden Folder: Select to hide the shared folder or not in Microsoft Networking. When a shared folder is hidden, you have to enter the complete directory `\NAS_IP\share_name` to access the share.
- Lock File (Oplocks): Opportunistic locking is a Windows mechanism for the client to place an opportunistic lock (oplock) on a file residing on a server in order to cache the data locally for improved performance. Oplocks is enabled by default for everyday usage and should be disabled on networks that require multiple users concurrently accessing the same files.
- Synchronous I/O: Select “Always” to always use synchronous file I/O or “Standard” for the system to deploy the file I/O approach (synchronous file I/O or asynchronous file I/O) based on applications. Use the default option if you are not sure which one to choose.
- Recycle Bin: Enable the Network Recycle Bin for created shared folders. "Restrict the access of Recycle Bin to administrators only for now" will ensure that files deleted and moved to the Network Recycle Bin can only be recovered by administrators. Please note that the Recycle Bin option is only available after you enable Network Recycle Bin in "Control Panel" > "Network Services" > "Network Recycle Bin".

8. WORM (Write once read many): If a shared folder is set as WORM, data cannot be modified once it is written into that shared folder. This assures that the data cannot be tampered with. There are two choices available for WORM: Enterprise and Compliance. With “Enterprise”, users can delete the shared folder and for “Compliance”, users need to remove the entire storage pool if they want to remove the WORM shared folder. The retention period can be used to specify the period before files in the folder can be deleted. Choose to enable WORM and the retention period based on your needs.

9. Folder Encryption: Select to enable folder encryption (with 256-bit AES encryption) using a password or a key. The encryption feature protects the confidential data of the folder from unauthorized access even if the hard drives or the entire NAS were stolen.
   - Save the encryption key: Save the encryption key on the NAS to automatically unlock and mount the encrypted disk volume after the NAS restarts.
Note:

1. The password must be 8-16 characters long. Symbols (! @ # $ % ^ & * ( )_+ = ? "') are supported.
2. You can only encrypt a shared folder when creating it. If a shared folder is created unencrypted, you cannot encrypt it afterward.

10. Folder Encryption: Select to enable folder encryption (with 256-bit AES encryption) using a password or a key. Click "create" to complete the setup.
Map a network drive in Windows

Mapping a network drive to a shared folder on the ES NAS enables you to access it from a computer or Windows Explorer without having to look for it or type its network address each time.

1. Open Computer by clicking the **Start button** ☭, and then clicking **Computer**.
2. Click **Map network drive**.

![Map Network Drive dialog box](image)

3. In the “Drive” list, click a drive letter. You can choose any available letter.

4. In the “Folder” box, type the path of the folder or computer, for example, `\NAS-IP_address\share`. Or click “Browse” to find the folder or computer.

5. To connect every time you log on to your computer, select the “Reconnect at logon” check box.

6. Click **Finish**. Your computer is now connected, or mapped, to the network drive.

For each mapped drive, an icon appears in Computer and a listing appears in the left pane of Windows Explorer.

**Note:** If you can't connect to a network drive or folder, make sure that you have the correct folder permissions.