Mac OS Best Practices

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This document outlines the standard settings for Apple's Mac OS X with the Nasuni Filer for general configuration and for performance.

General Configuration

Support for the SMB2 protocol for Mac OS X clients

The following are best practices for supporting the SMB2 protocol for Mac OS X clients:

- Ensure that the Nasuni Filer is running version OS7 of the Nasuni Filer base operating system. Only create volumes on OS7 Nasuni Filers.
- Ensure that, if Remote Access is enabled for the volume, only OS7 Nasuni Filers access the volume.
- Contact Nasuni Technical Support and request a one-time backend operation on the Nasuni Filer owning the volume in order to grow the space allocated to extended attributes on the Nasuni Filer. If the backend settings are not done by Support, Mac users see no improvement in folder browsing performance: browsing folders using the Finder is very slow. In addition, some applications, particularly Microsoft Office and Adobe applications, can encounter issues when saving files, including missing files, corrupted file names, or corrupted file contents.
- When creating or editing a share, select **Enhanced Support for Mac OS X**. *Optional*. Request that Nasuni Technical Support perform a one-time operation to grow the space that is allocated for extended attributes on the volume for that Nasuni Filer. This one-time operation can help immensely in directory folder browsing.
- The setting to enable Enhanced Support for Mac OS X does not persist after performing a Disaster Recovery procedure on a Nasuni Filer. Therefore, you must re-select this setting after the Disaster Recovery.

Using Column View and Quick Look

With versions of Mac OS X older than 10.12, using Column View and the Finder's Quick Look feature can cause frustrating issues including difficulty saving files. *Note*: The error message from the Finder might state that the user does not have permissions to save the file. The actual lock issues are caused by Column View and Quick Look, and are not permissions issues.

The following are best practices to use:

- The Finder's Quick Look feature can cause issues saving files. Avoid using Quick Look.
- If users are having problems saving files because the operating system or application says that the file is locked or read-only, try 1) closing all Finder

windows or 2) selecting another folder in the Finder, then try saving the file again. If this resolves the issue, have users leave the Finder window open, but use List View instead of Column View. This procedure works because Column View uses Quick Look but List View does not use Quick Look.

Permissions best practices

The following are best practices for permissions for Mac OS X clients:

- The NTFS **Full Control** permission should not be used for shares that Mac OS X clients access. The NTFS **Full Control** permission includes the "Change Permissions" right and this is the source of the problem.
- Instead, select **Advanced** permissions, and then uncheck the "Change permissions" and "Take ownership" boxes. This prevents Mac OS X clients from making files inaccessible by changing their permissions on save.
- We also recommend restricting **Full Control** permissions to a specific service account that you explicitly create to manage file permissions, rather than a general-purpose group such as Domain Admins or IT Department. That helps prevent members of these groups from accidentally corrupting permissions when creating folders and files via the Finder or an application.

Path best practices

Macs are capable of working with filenames and file paths that exceed the limits imposed by the Windows OS, and the Nasuni Filer allows Mac clients to create and edit long file names and paths without restriction. This works fine until a Windows client needs to access the file or an admin needs to use Windows Explorer or command line tools to change NTFS permissions for these folders and files. Both Windows Explorer and command line tools like `cacls` fail when setting ACLs for these items.

The following are best practices for paths for Mac OS X clients:

- In order to correctly set permissions for these paths, we recommend the use of a third-party utility such as SetACL Studio from Helge Klein.

Connecting to Nasuni shares

To connect to the Nasuni shares using the Mac OS X Finder:

- Always use `smb://fqdnOrIPofServer` to connect. Never use `CIFS://` to connect. This is because the CIFS stack of Mac OS X is old and has compatibility and performance issues.

General CIFS settings

On the NMC, under Filers → CIFS Settings → CIFS Settings dialog box, the Protocol Level should be set to "CIFS & SMB3". This is now the default for new Nasuni Filers deployed since version 7.2. The other available Protocol Level options can cause performance and stability problems for Macs.

"1984 gray items"

If the Finder is being used to transfer files, and the copy process is interrupted, some of the folders on the Nasuni volume might appear gray and be inaccessible by Mac OS clients. In addition, the date of the item in the Finder is "Jan 24, 1984, 12:00 AM". Access from Windows clients is unaffected and NTFS permissions appear correct.

This is a bug with the Mac OS X Finder. When the date is not set on a folder or is set in the future, the Finder cannot resolve the data and reports 1984 as the date modified.

Fixes for this issue include the following:

- Create new folders with correct dates, and move the content to the new folders. Even though the folder is gray on the Mac, it can be accessed by pressing command+K and entering the full path to the folder. A Windows client can also move the files.
- Change the date of the folders using a utility (an example appears in https://discussions.apple.com/thread/2713842?tstart=0).
- The Mac OS Terminal application also supports easy changing of date modified. For details, see https://hackernoon.com/how-to-change-a-file-s-last-modified-and-creation-dates-on-mac-os-x-494f8f76cdf4#.69fcvy10g

Dropbox

On Mac OS X platforms, if Dropbox is installed, Dropbox might interfere with accessing certain folders. Try disabling all other Finder Sync extensions (under System Preferences -> Extensions -> Finder).

Performance settings for Apple's Mac OS X

Updating Mac OS X to the Latest Release

The most stable version of the Finder application is part of the latest version of Mac OS X. The latest version of Mac OS X should be 10.9.5 or later.

To ensure that the Mac has the current latest version of Mac OS X, follow this procedure:

1. Click the Apple icon (), and then click "**About This Mac**" from the drop-down menu. The **About This Mac** dialog box opens.

2. The Version number should be 10.9.5 or later.
   If the Version number is less than 10.9.5, then update the Mac OS X version by following these steps:
   a. Click "**Software Update…**". The App Store opens.
   b. Save and close any open applications.
   c. In the App Store window, click **UPDATE**. The update downloads and installs. Eventually, the **Restarting Your Computer** dialog box appears.
   d. Click **Restart**. The computer restarts.
   e. Redo steps 1 and 2 above to verify that the version is now 10.9.5 or later.

Setting Finder and Other Preferences

Certain Finder and other preferences can improve performance during browsing.

To set Finder and other preferences, follow this procedure:

1. Click the **Finder** icon.

2. Then click **Preferences** on the drop-down menu. The **Finder Preferences** window opens.

3. On the **General** tab, clear the "**Spring-loaded folders and windows**" check box.
4. Close the **Finder Preferences** window.
5. Click **View**, then click **Show View Options** on the drop-down menu. The **View Options** dialog box appears.
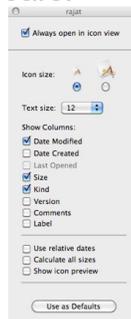
6. Clear the "**Show icon preview**" check box.
7. Clear the "**Calculate all sizes**" check box.
8. Click "**Use as Defaults**". Close this window.

Disabling the Attributes Store File Setting (.DS_Store)

Apple uses a hidden file (.DS_Store) to store the custom attributes of a folder. By default, the Finder creates a .DS_Store file in every folder that it accesses, which can affect performance in the Finder window. Disabling the .DS_Store setting can improve performance when browsing SMB shares. For further information, see http://support.apple.com/kb/HT1629.

To disable the .DS_Store setting, follow this procedure:

1. Click the **Terminal**.

The **Terminal** window opens.

2. Execute the following command:
```
defaults write com.apple.desktopservices
DSDontWriteNetworkStores true
```
3. Restart the Mac.

Note: It is also recommended to configure the Nasuni Filer volume to filter `.DS-Store` files so that they are not added to the volume.

Using UNIX extensions
Enabling UNIX extensions can also improve performance of the Nasuni Filer when browsing network shares. Note that this is only true with SMB1 protocol.

To enable UNIX extensions, add this code to the `smb.conf` file:
```
unix extensions = yes
```