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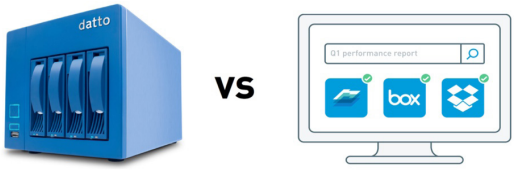
NAS vs FSS: Five factors to decide which is right for you



There is a perception of equivalence between Network Attached Storage (NAS) and File Sync and Share (FSS) services, as both offer:

- A central place for content storage and file collaboration
- Controls to allow users to have private and shared files
- Centralized administration and auditing
- A system that ensures access to the latest saved version of a file
- File-level rollback capabilities

Yet there are situations that are better suited for NAS, others for FSS, and there are even scenarios that warrant a mix of both.

Here we review NAS and FSS, and highlight five key considerations that offer guidance on when to use each.

FSS vs NAS considerations

Q1: Need seamless access to more files than a computer can store locally ?

Your laptop may have a 256GB internal drive, but the quantity of shared files that your team has may be much larger. NAS and FSS can both help address this challenge.

FSS relies upon the ability to synchronize (make a copy of) the working set of files to each computer to provide "seamless" access. However, files which are not synchronized locally need to be accessed separately through a web browser or another tool. You will not be able to search and index those files like regular files on a local hard drive. This access is not seamless, and thus may not be an alternative for large shared working sets.

NAS provides access protocols such as CIFS/SMB, AFP, and NFS. Once connected, the network storage is as full-featured as a local hard drive (aside from the network latency). Some FSS services (such as Datto Drive) have a capability to support WebDAV, where the FSS can be attached to like a NAS device, and searched like a NAS device. Unfortunately, WebDAV is quite slow compared to NFS and CIFS.

ANSWER: Choose NAS when access to a huge archive of data must be functionally seamless.

What is NAS ?

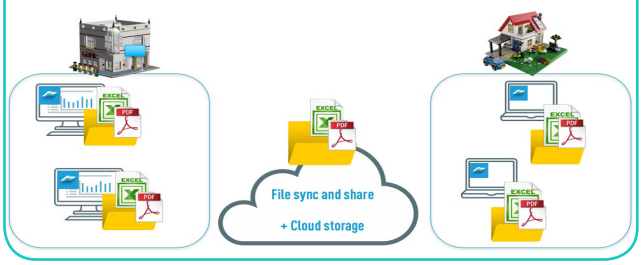
"NAS" refers to a physical Network Attached Storage device, which a business would set up on the office network for a central location to store files and folders. Users can configure their laptops and workstations to connect to a network folder(s) on the NAS device. To the end users, this network folder looks like a second hard drive on the workstation or laptop, for example `G:/fileshare` (windows) or `/volumes/fileshare` (OSX). Any time a user wants to access those folders, they access it the same as they would local storage.

When a user logs into their workstation or laptop, that computer logs into the NAS with a username and password and voila, access to files. Shared folders can be set up, allowing people to work together in an office setting more effectively.

What is File Sync 'N Share (FSS)?

If you used Dropbox, Google Drive, OneDrive, or Datto Drive, you know what FSS is all about. Regarding the basics, there is much similarity across the many FSS platforms. A file sync and share solution is about two things: access to the latest version of files across user devices, and enabling sharing of those files with others.

A FSS service is one that allows the sharing of files - between a person's own devices, or between FSS users. FSS is built around a central access and sharing point, which is typically where the FSS is hosted—usually in the cloud. The FSS "sync" capability offers the ability to keep a local copy of selected (or even all) files on all machines. (See this webinar for more details: http://www.datto.com/resources/file-sync-share-best-practices-getting-the-most-out-of-datto-drive)



Q2: Need offline access to shared files ?

With a NAS appliance, files remain on the appliance no matter where the appliance resides. Thus, NAS access requires a user to be online, and for security reasons they may sometimes need to be working within the office as well. To work offline, the user must first manually copy files and folders over to their local computer, and changes must again be manually copied back to the NAS to share when completed and back online.

A FSS solution assumes that the user can go offline at any time. The FSS "sync" may be used to maintain a copy of shared user files on all user devices. If a user device is offline and a change is made to a shared file on that device, as soon as the user comes online these files are synced and the latest copy is distributed across all devices. Most FSS systems are also configured for access both on and off a business network, so users can be productive on the road and out of the office.

ANSWER: Choose FSS when needing frequent offline access.

Q3: Running "I/O intensive" work like a SQL database or CAD software? Or hosting active virtual machines ?

FSS is a great service for sharing files, and for distributing updates to shared files. But what about files that are accessed continuously by a active servers, and require countless, small continuous updates? With FSS, any update to the file may result in the entire file being sent to the cloud, even when using differential sync. Continuous synchronization can lead to horrific network overhead.

NAS is used frequently for situations with high I/O demands. Enormous databases and even virtual infrastructures running off NAS appliances every day using NFS. And Microsoft has delivered major updates to CIFS/SMB, with advanced caching capabilities with the latest versions. (Larger and/or more expensive NAS devices may be required depending on the nature of the workload; talk to a trusted IT professional to learn more.)

ANSWER: Choose NAS for running a busy I/O workload.

Q4: Have a limited set of computers and/or a small working set ?

A top consideration when choosing between NAS and FSS should be cost. Introductory FSS services can be remarkably low priced—even free—for a small quantity of end users and data (such as 5GB of data to sync on 10 machines). But what if there are 100 laptops—and each is being synced to with 200GB of data? That is 20TB of capacity used! When considering laptop storage upgrades—or a $400 256GB SD card—that is 30,000 dollars in additional fixed cost up front, making the monthly costs of FSS insignificant in comparison!

NAS has a fixed up-front cost, but you need to consider the scalability of the system. With FSS, copying all files and folders to all devices all the time is not necessarily a good thing. Alternatively, NAS does not require all of that file synchronization. A 2TB NAS device may cost as much as a typical server, with set additional value-added monthly service fees set no matter how many users are needed. And while options such as selective sync can help mitigate local capacity used with FSS (for example, no need for everyone to sync large seldom-accessed files), that adds administrative overhead.

ANSWER: Choose FSS for low up-front cost for small environments. You can scale the capacity, and if you need a large quanity of shared storage in the future, upgrade to a NAS then.

Q5: Have files that multiple people may attempt to edit at the same time ?

With FSS, conflicts in files edited offline are detected and announced, so the users can orchestrate how to merge the changes without losing information. If necessary, action may be taken such as file renaming. Some FSS services have the ability to "lock" or "checkout" files, preventing any updates from being made by another other than the person who has checked the file out. This allows a user to be sure files won't change—even if they are offline ! There can also be problems of when file updates are pushed - Sometimes , even if a file is saved, udates may not be pushed out until the file is closed.

With NAS, there is the benefit of organic file locking. When a file is open read/write (typically the default), other people may also open the file but in a read-only mode. All of this happens automatically. Collaboration, such as with an Adobe document, is a less frustrating experience, as these tools are intended to be used on a shared file system such as NAS, not FSS.

ANSWER: Choose NAS for its native file locking when frequently collaborating on shared files.

Solutions with NAS and FSS

The choice between NAS and FSS need not be exclusively one or the other. There are situations where a little of both is needed. For example, perhaps the marketing team needs shared access to 20 TB of video that is only edited within the office, but mobile access to design documents. In this situation, a NAS appliance can host the video, and a FSS service (hosted locally or in the cloud) can serve the needs of mobile access to shared documents.

Additional options may be available with more advanced products. For example, some NAS appliances may contain their own FSS service. Or a NAS can be combined with a sync tool to serve the needs of local sync. Or some FSS solutions may integrate with a local server to meet NAS-oriented needs.

Look for future guidance from Datto where we will explore these scenarios, and best practices for implementing each of them.

Conclusion

NAS and FSS each have strengths and tradeoffs. Always start with the use case, then pick the best solution for the job. Contact Datto or your MSP is you would have additional questions.

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