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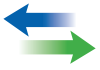
The End of Services for Mac (SFM): Evaluating Your Replacement Options

A Technical Best Practices White Paper

Group Logic White Paper | January 2011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About This Document

The purpose of this technical paper is to discuss replacement options for Services for Mac (SFM). With the release of Windows Server 2008, SFM is officially End-of-Life. Many organizations running older versions of Windows Server continue to use SFM, however Microsoft is no longer supporting it and those organizations will need to evaluate replacement options.

This white paper helps explain those options, and provides guidance for organizations that wish to move to a supported platform.

Overview

Services for Macintosh (SFM) was a file server developed by Microsoft in the 1990's based on the Apple Filing Protocol (AFP). SFM allowed Mac users to operate within a Windows network using the Mac's native file sharing protocol. SFM was built into Microsoft's Server products from Windows NT 3.1 through Windows Server 2003.

With the release of Windows Server 2008, SFM is officially dead. Many organizations running older versions of Windows Server continue to use SFM, however Microsoft is no longer supporting it and those organizations will need to evaluate replacement options.

This white paper helps explain those options, and provides guidance for organizations that wish to move to a supported platform.

Why did Microsoft End-of-Life SFM?

Microsoft had not maintained SFM for many years, and completely removed it from Windows Server 2008. More importantly, SFM had longstanding bugs and only supported version 2.2 of the AFP, which is four revisions behind what is currently used in the latest versions of Mac OS X.

SFM also lacked several features important to business users including Active Directory integration, Kerberos single-sign-on, clustering support, support for long file names and fast searching.

In short, SFM was no longer a viable business option for providing Macs access to Windows file servers.

What Now? Options for Replacing SFM

Now that SFM is dead, you need to consider a number of questions with respect to deploying the appropriate Mac/Windows file sharing solution. These questions should include:

- Is it important to provide my Mac users with a level of IT service that is on par with other users in the organization?
- Would it be better to implement a server-side solution, or manage software on the individual Macs?
- How important is it to my end users that they maintain the "Mac experience" and be able to leverage the full functionality of the Mac OS?
- How will the solution I choose affect performance, migration of existing data, help desk call volumes and/or user satisfaction?
- What are my options, and what will they really cost me (TCO) to implement?

To help you begin to answer those questions for your organization, this section will provide a brief overview of each of your options. For a more complete overview, please contact Group Logic for a pre-sales technical consultation, or download the white paper "Sharing Mac Files on Windows Servers" from our web site. This white paper provides a detailed technical overview of this topic.

Option A – Use the Mac OS X File System Client

This option is based on Microsoft's SMB/CIFS protocol and is built into Mac OS X. Microsoft designed SMB as a proprietary protocol to support Windows file sharing. In other words, SMB was not designed for the Mac.

The SMB client makes the Mac look like a Windows client, but the Mac has to make compromises because it is acting like Windows and some of the core features of Mac OS X don't map well to this protocol. For example, recent innovations in Mac OS X, including Time Machine backups and Network Spotlight, are only available over the AFP protocol. Furthermore, this option will not support many enterprise-level requirements, such as DFS.

The SMB client's approach to supporting the unique Mac file structure presents challenges. When the SMB client transfers Mac files to the Windows environment, it can separate the data file from its metadata and creates hidden "._" files that hold the Mac resource fork and Finder information in a format known as AppleDouble. This transfer method is one of the central difficulties for Mac and PC users.

Mac OS X or Mac OS 9 clients previously connecting to SFM used AFP, not the SMB client, and files transferred with AFP are stored differently. AFP servers use NTFS alternative data streams and do not create "._" files during a transfer, which means all of the legacy data on a Windows file server is in this format. The Mac OS X SMB client does not recognize this format. When the Mac OS X SMB client goes to the server to look for data, it looks for the "._" files and, when it doesn't find them, assumes they do not exist. Valuable metadata is lost. Files lose their association with applications. This is a major issue for companies with legacy data and for mixed Mac OS 9 and Mac OS X environments.

These hidden "._" files confuse Windows users and result in deleted and moved data files and the loss of critical data. Because these files are hidden, they are easily disconnected and lost from the main data file by accident when files are moved, renamed, or archived. The result is data loss for the Mac client, including the loss of association of a file to the application that created it. In addition in situations where when a user may lock a "._" file or change permissions the data file may not open.

Furthermore, since the SMB protocol was designed for Windows and not Mac clients, some Mac behaviors when executed over the SMB protocol can have significant negative performance implications on a file server. Since the Mac is acting like a Windows client, the server does not optimize for the Mac client. As a result, the high level of enumerations, metadata retrieval, and building of previews by Mac software translates to additional I/O operations on the server.

The SMB protocol has no built in support for searching for files, so when a Mac client searches with SMB it must iterate through the entire file system. This is not only a lengthy operation for the end user, but consumes valuable server resources throughout the process.

Due to the nature of the issues raised above, when evaluating this option, you will need to focus on questions related to performance, scalability, compatibility and support for enterprise-level functionality.

Key questions to consider before choosing this option include:

- How will my users react to limiting their Mac features?
- What kind of impact will performance/compatibility issues have on my support desk?
- What kind of impact will performance/compatibility issues have on my network?
- What kind of impact will performance/compatibility issues have on my internal customer satisfaction?
- How will I migrate my existing data to the new platform?
- Will this solution give me all of the enterprise support functionality that I need now?

In conclusion, while the Mac SMB client may provide a reasonable short-term solution for some smaller organizations or particular workflows, issues with performance, scalability and compatibility often make this option unfeasible.

Option B – Implement a Mac OS X Server

Apple's Xserve server line has been discontinued and will no longer be available after January 31st, 2011. Mac OS X Server will continue to be supported on Mac Mini and Mac Pro desktop hardware, but will no longer be available on a datacenter-ready rack mount server.

While the Mac OS X Server operating system provides a pure Mac file server solution, most organizations use Windows file servers. If you are migrating from SFM, you already have a Windows infrastructure. Therefore, you will need to focus on questions related to migrating to a new server infrastructure.

Key questions to consider before choosing this option include:

- Will you be able to integrate and manage desktop grade hardware in your data center?
- Who will administer the new platform? Will they need training?
- How will I migrate my existing data to the new platform?
- Will I still have integration issues between my Mac and PC users?
- If so, does that mean I will need to make additional hardware and software investments?
- Will the Mac Mini and Mac Pro scale easily to meet my future needs?
- Will the Mac Mini and Mac Pro give me all of the enterprise support functionality that I need now?
- What is the true TCO associated with the strategy?

In conclusion, existing investments in Windows technology and training, heavy usage, a high volume of users, and cluster environments often mean that changing a company's IT strategy is neither economically nor politically feasible. This can be particularly problematic when the proposed change requires adding desktop grade hardware to the datacenter. In some situations, such as a creative department within a large corporation, the Mac population is relatively small and must be able to work efficiently with the storage platform used by the majority.

Option C – Implement a 3rd Party Solution

There are a few 3rd party products available commercially for Mac/Windows file sharing, including ExtremeZ-IP from Group Logic. Just as with the previous options, before settling on any of these solutions you must first consider a number of questions.

Key questions to consider before choosing any of these options are:

- How long has this product been on the market, and how often is it updated?
- Is this vendor financially healthy, and do they have references?
- What kind of support/customer service will this vendor provide?
- What specific features does the product offer to help me manage my business, reduce downtime and TCO, and deliver compatibility across platforms?
- What kind of performance improvements can I expect with this product?
- How easy will it be to migrate my existing data from AFP/SFM with this product?
- How scalable is this product?
- Is this a client-side (SMB) or server-side (AFP) solution?
- How easy will it be to deploy and manage this solution?
- Which solution would my end-users like to see me implement?
- Does this vendor offer flexible licensing options?

Each of the above questions is critical in determining the best solution for your organization. As mentioned earlier in this paper, the Group Logic pre-sales technical support team would be happy to discuss your unique requirements and provide personalized guidance. Please refer to the title page of this document for contact information.

Conclusion

So SFM is dead, and now you need to find an effective replacement for your organization fast. Don't panic…you are not alone. A recent Group Logic survey of more than 350 IT professionals at a wide range of private, public, and non-profit organizations reported that achieving parity between Macs and Windows in IT service delivery is a business goal for 40% of survey respondents. The most pressing integration challenges respondents reported include:

- Adapting Active Directory policy to support Macs (38%)
- Help desk calls from Mac users (35%)
- Compatibility and/or data corruption issues (27%)
- Lack of IT/file naming policy enforcement tools (25%)
- Maintaining the full "Mac Experience" for their end-users (24%)

The good news is that there is a proven solution that can help you manage this transition seamlessly. As the only AFP file server that fully supports the Mac's native protocol on Windows, ExtremeZ-IP is a powerful, straight drop-in replacement for SFM. ExtremeZ-IP resolves the file sharing problems inherent in both SFM and the SMB/CIFS client, is fully compatible with Windows Server 2003 and 2008 as well as all versions of Mac OS 9 and Mac OS X, and does not require installation of client software on the Mac. Furthermore, administrators have the ability to automatically migrate file shares from SFM to ExtremeZ-IP.

Backed by Group Logic's industry-leading reputation for best-in-class support, world-class engineering, and innovative licensing options for organizations of all sizes, ExtremeZ-IP is the most effective and reliable method for sharing files between Macs and Windows servers. ExtremeZ-IP supports the protocol specifically designed for the Mac and maintains the performance and security levels that Windows administrators expect.

ExtremeZ-IP also resolves the sharing problems of file structure, naming conventions, and server performance and provides added benefits that include sophisticated authentication, the ability to set file name policies on the server so that your Mac users don't create files that PC users and back-up solutions can't work with, and caching. ExtremeZ-IP works easily with clusters and facilitates use of network home directories.

Most importantly, Group Logic maintains, updates, and supports ExtremeZ-IP so that Mac users can take advantage of all the Macintosh features and enjoy the convenience of sharing files and fast searches on Windows servers.

Whether it's security policies, Active Directory/DFS integration, performance, scalability or manageability and monitoring options, ExtremeZ-IP allows you to deliver enterprise-class services that your Mac users require. This reduces help desk calls and increases productivity - saving you time and money.

More About ExtremeZ-IP:

ExtremeZ-IP's rich feature set includes:

- Supports all releases of the Mac operating system from Mac OS 9 to Mac OS X 10.6 (Snow Leopard)
- Full support for native Mac OS X AFP protocol including long file names, large files and Unicode.
- Flexible file name policy enforcement
- Active Directory integration, including Single-sign on, full support for AD permissions and password policies
- Support for blazing search speeds without impacting the server performance
- Advanced caching to minimize the impact of Mac file operations on servers
- Support for Auto-reconnect
- Support for Time Machine
- Support for Microsoft Clustering and virtualization

How difficult is it to implement ExtremeZ-IP?

Installation of ExtremeZ-IP is simple, and does not require you to shut your server down. Installation times can range from a few minutes on a single server, to slightly longer for more complex clusters. You will also have the option to migrate existing SMB and SFM shares to ExtremeZ-IP with a single mouse click.

Is ExtremeZ-IP appropriate for both small-medium size businesses, as well as large global enterprises?

Yes! With ExtremeZ-IP, you can deliver stable file and print sharing for a handful of Mac users, to more complex services such as clustering, virtualization, service discovery and administrator controls across an entire enterprise. We currently have licenses deployed ranging in size from supporting 3 to 30,000 Macs.

How do you license your product?

ExtremeZ-IP is licensed on a per server/cluster basis based on the number of Macs connecting simultaneously. We offer a number of flexible licensing options, from single servers to enterprise and cluster licenses. We also offer innovative options for educational institutions.

At Group Logic, we differentiate ourselves by providing best-in-class pre- and post-sales support to our customers. All new licenses include a one-year Maintenance & Support contract included:

- Major Version Upgrades and Minor Version Updates
- Maintenance Releases / Hot Fixes
- Expert Telephone, Web and e-Mail Support

Can I test ExtremeZ-IP before buying it?

Yes! Simply download the 21-day trial from our web site. You will get a full-featured version of the product and access to our pre-sales technical support should you have any specific questions about deploying ExtremeZ-IP in your environment.

Where can I find out more technical information about ExtremeZ-IP?

You can visit our web site for white papers and webinars, as well as to search our Knowledge Base. You can also contact us at +1-800-471-8781 or ezipsales@grouplogic.com.

About Group Logic

Group Logic, Inc. (GLI) is a leading provider of digital content-driven collaboration solutions for the enterprise and the cloud. With over 20 years of unmatched experience, Group Logic's emphasis on customer success is the very core of its business. More than 4,500 customers trust Group Logic every day to access, share, and extend their digital content investments around the world. For more information, visit Group Logic on the Web at **www.grouplogic.com** or call **800.476.8781 / +1.703.528.1555.**

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