

SpEdDoc Terminal Server Deployment

FileMaker Server 9 and 10

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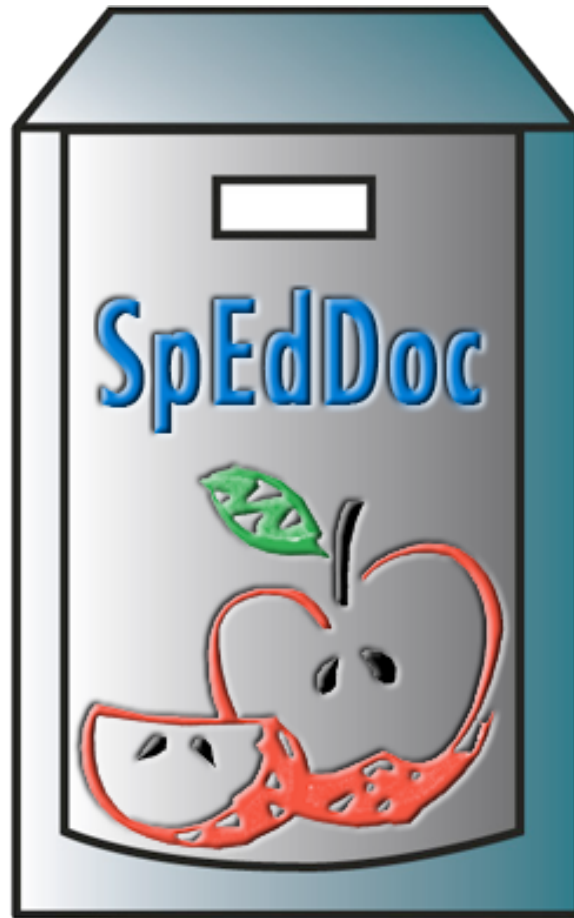


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Introduction

This manual was created to help SpEdDoc server administrators with the deployment of a fully functional SpEdDoc server for remote client data entry. It is not intended to be a complete guide to Windows 2003 Server administration or WAN/LAN design. You'll also want to view other resources (see embedded links) and this FileMaker guide:

http://www.filemaker.com/downloads/pdf/fmp9_terminal_services.pdf.

Instructions are applicable to FMS 9 and 10 (also be sure to refer to the SpEdDoc System Requirements guide).



Prerequisites

You must have all of the items/infrastructure listed in the checklist below (two servers required if running Terminal Services). Check them off for your record as you procure and reserve these items.

Two dedicated servers that are Windows 2003 ready with the following **minimum** specifications:

- Dual CPU/Core Duo
- 2GB RAM (more is better)
- 80GB RAID (5,0)

Note: Standard Windows XP Professional SP2 (not Vista), or Mac OS X, can be used for the FileMaker Server. For FileMaker 10, Windows 2008 is also an option.

Broadband internet connection with a public, routable IP address. Both servers (Terminal Services and FileMaker Server) need a static IP address.

One copy of Microsoft Windows 2003 Server Standard Edition with license.

Microsoft 2003 Terminal Server licensing, per user or per device, as applicable for your environment. (For most environments per user licensing is more economically sensible.)

WAN/LAN that is protected with a stateful firewall or other equivalent network security appliance; which can support a NAT, and Terminal Service port 3398 TCP & UDP. If FileMaker Server is being accessed from outside the LAN, using FileMaker Pro client, other ports must be opened and forwarded (see FileMaker Server installation users guide).

FileMaker 9 or 10 Server software

FileMaker Pro 9 or 10 client software

FileMaker multi-user licensing (one for each Terminal Server user/device)

SpEdDoc database

Deploy Windows 2003 Server

Perform a clean deployment of Windows 2003 Server on the dedicated FileMaker server. For information on how to do this please reference Microsoft's web site:

<http://www.microsoft.com/technet/prodtechnol/windowsserver2003/library/DepKit/c283b699-6124-4c3a-87ef-865443d7ea4b.mspx>

Deploy Terminal Server

On the second server, deploy the 2003 Terminal Server service from the Windows 2003 Server Standard install CD, and your 2003 Terminal Service licenses. For more information on how to do this reference Microsoft's web site:

<http://www.microsoft.com/windowsserver2003/techinfo/overview/quickstart.mspx>

Note: Do not install Terminal Server service on the FileMaker Server host.

Secure Terminal Environment

After installing the Terminal Server service and licensing, it is highly recommended that you secure your Terminal Server environment using the following Microsoft article for guidance:

<http://www.microsoft.com/windowsserver2003/techinfo/overview/lockdown.mspx>

Install FileMaker Server & Client

Install FileMaker Server and FileMaker Pro client software on the dedicated FileMaker Server. Install the FileMaker Pro client software on the Terminal Server. *Follow instructions included with each product.*

Install Database

To install the SpEdDoc database, copy the provided database (SpEdDoc.fp7 and SpEdDoc_Data_xxxx.fp7) to the database directory of the FileMaker program folder. The default location is *C:\Program Files\FileMaker\FileMaker Server 9\Data\Databases*. Also copy the SpEdDoc Folder (containing Transfer.fp7) to the root level of the hard drive of any machine running FileMaker Pro (*C:\SpEdDoc Folder\Transfer.fp7*). Besides the two servers, FileMaker Pro and the SpEdDoc Folder should also be installed on the machine used by the person responsible for importing and exporting records as students move to or from your supervisory union. Users connected through Terminal Services cannot use the Transfer function, but might be prompted for the file under certain circumstances.)

Group Policy

Traditionally users run the terminal server sessions as they would a normal workstation/terminal server environment. To prevent this kind of system access, have the terminal server session direct users to the FileMaker Pro client at login and only allow them to run the FileMaker Pro client.

To do this, use group policy and the Group Policy Manager to make a new group policy object (GPO) called "SpEdDoc", link this GPO to your SpEdDoc users group in Active Directory, and then enable this GPO.

Once you have the SpEdDoc GPO created, you need to edit it. Use Windows's Group Policy Editor to make the following policy edits on both the Computer and User Configurations for the SpEdDoc GPO:

Computer Configuration

- Administrative Templates...
- Windows Components...
 - Terminal Services...
 - Start a program on connection...
 - Set to: enabled
 - Program path and file name= *C:\Program Files\FileMaker\FileMaker Pro 9\FileMaker Pro.exe*
(your "FileMaker Pro.exe" location)

User Configuration

- Administrative Templates...
 - Terminal Services...
 - Start a program on connection...
 - Set to: enabled
 - Program path and file name=
 - C:\Program Files\FileMaker\FileMaker Pro 9\FileMaker Pro.exe
(or your "FileMaker Pro.exe" location)

Now when a SpEdDoc user logs into the terminal server, FileMaker Pro will launch and the user will be unable to use any other applications or make any accidental system alterations. When the user quits FileMaker Pro, they are logged off the terminal server and their session is closed.

SpEdDoc Folder Access

Users may need to read and write files to the SpEdDoc Folder on the root level of the C: drive. Go to the SpEdDoc Folder's Properties and, under the Security Tab, select the SpEdDoc users group and check Allow for all but Special Permissions. Then click the "Advanced" button and, on the next screen, check the boxes for "Allow inheritable permissions from the parent to propagate..." and "Replace permission entries on all child objects..."

Routing and Networking

You can now fully deploy SpEdDoc Server with access through Remote Desktop by setting up a NAT for your server's LAN IP address to a publicly accessible IP address and opening port 3398 on your internet's gateway interface.

Client Connection

SpEdDoc data entry personnel will now be able to access SpEdDoc from any Windows Remote Desktop client using the LAN IP address when inside the LAN/WAN or the NAT address when outside the network. Clients can use Remote Desktop Connection to enter data into the SpEdDoc database. When setting up RDC on a machine, be sure to set colors to Thousands (otherwise the display will be hard to read). There are Windows (98 or newer) and Mac OS X versions of Remote Desktop Connection available freely via download from Microsoft's website.

- Windows:

<http://www.microsoft.com/windowsxp/downloads/tools/rdclientdl.msp>

- Mac OS X Connection Client for Mac 2:

<http://www.microsoft.com/mac/downloads.mspix>

Additionally, SpEdDoc users who have a FileMaker client installed on their computer can also access SpEdDoc via FileMaker's built in hosts feature. On a WAN or over the internet, this method may result in slower performance, reduced security, and increased risk of data loss.

Printing

Users connecting directly to the FileMaker Server with FileMaker Pro client can access their usual printers. Using Remote Desktop Connection, SpEdDoc printing is best implemented using a TCP/IP network enabled HP laser printer located on the same subnet and broadcast domain as the computer initiating the SpEdDoc RDC session. Alternatively, a TCP/IP-based network printer located in a secure location on the School/District WAN/LAN could be designated for SpEdDoc printing. An IP printer is not needed if RDC is only used for home access and users always print at school while connected directly to the FileMaker Server with FileMaker Pro. Some IP printers may not work with Terminal Services, especially multi-function devices that use a DOT4 port. It has been reported that the HP 6900 series lacks drivers for printing to Windows 2003 servers.

Using Active Directory on the server, print jobs can be set to automatically route to the default printer for a Windows client during a remote session. Using this method, it is not necessary for the printers to be installed and configured on the SpEdDoc server (although the drivers do need to be installed on the server). While Active Directory cannot set the default printer for a Mac client, there is an option in the Remote Desktop Client to allow the default to be set to a locally in-

stalled IP-based printer. Currently there is a limitation with RDC software for Macs that does not allow a printer connected via USB to be recognized.

Black Ice makes a product for PC clients that simplifies the process and expands the number of printers that will work with Terminal Services:

<http://www.blackice.com/>

FileMaker Server Admin

The FileMaker Server Admin Console is installed along with FileMaker Server.

Use Admin to establish backup routines (backup at least daily). Be sure to set to back up all the files in the Databases folder, since the the SpEdDoc_data file periodically changes names. To improve performance, set Admin to share two files and set the maximum number of users who may be connected simultaneously.

Also set the idle timeout to close SpEdDoc after a period of inactivity. This promotes security and also reduces an issue that can arise when a user quits an RDC session without logging out, i.e., simply closes the RDC window while leaving SpEdDoc open. Without an idle timeout, SpEdDoc will continue to run on the server. If RDC creates a new session rather than returning the user back to the same session the next time the user logs on, then the second session doesn't allow the user to edit the same part of the student's document (because it thinks the first user is still working on it).

Solutions include:

- Ask users to log out rather than just closing the RDC window.
- Set an idle timeout in Terminal Services (so an idle session is automatically closed after, say, 60 minutes).

- Set an idle timeout in the FileMaker Server Admin application. So, for example, FileMaker Server Admin could be set to close SpEdDoc when it is idle for 55 minutes and Terminal Services could be set to end the session when idle for 60 minutes.

Other FileMaker Server Considerations

- No other programs or services should be running on the FileMaker Pro Server computer.
- Do not enable OS file-sharing.
- Do not enable automatic updates. In addition to the possibility of installing something not necessary, many updates require a restart. To have a FileMaker Server automatically restart could be problematic to the business being done on the hosted databases. Even if the update could be scheduled for off-hours, it is generally a good idea to shut down the FileMaker Server manually prior to the restart in order to reduce any possibility of the operating system shutting down before the FileMaker Server service has completed closing the database files.
- Anti-virus software is not needed. If policy dictates the use of anti-virus software, then the software should be configured to omit scanning of the live databases, especially “real time scanning” or during backup times.
- Screen saver should be disabled.
- Windows Disk Indexing and Mac OS X Spotlight indexing should be disabled.

Resources

- Microsoft TechNet: <http://www.microsoft.com/technet/default.mspx>
- Microsoft Support: <http://support.microsoft.com/kb/302361/en-us>

- FileMaker Knowledge Base:

http://filemaker.custhelp.com/cgi-bin/filemaker.cfg/php/enduser/std_alp.php

- FileMaker TechNet: exclusive access to technical information and software. For \$99 a year you get access to many technical white papers, including a required-reading 78-page detailed “server configuration guide”, a members-only online forum, FileMaker Applications, graphics and theme packs, and more.

<http://www.filemaker.com/technet/>