Windows Servers for Mac Clients

MacWorld Conference and Expo - Session M231

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Objectives

- Offer services from Windows servers to Mac clients

- Consider some best practices

- Become aware of common problems

Guiding Philosophy

- Think *Service*, not *Server*

  - Clients access services running on servers

  - Know service characteristics

  - If the next version of Windows Server implements modern AFP service, great!

   - Don't hold your breath

Topics

- Are you *sure* you can't use the AD plugin?

- Many services Just Work

- A few words about SMB Packet Signing

- Third party client and server products

- Best Practices for File Services

Why can't you use the AD Plug-in?

- Maybe you have AD issues - fix them!

- Maybe you're just not ready - get ready!

- Maybe you're just scared - get over it!

- Maybe you can't get "permission"

  - Show them the success stories

Just use the AD Plug-in

- Super simple to configure

- You get to use Kerberos!

- Much improved at 10.4.3
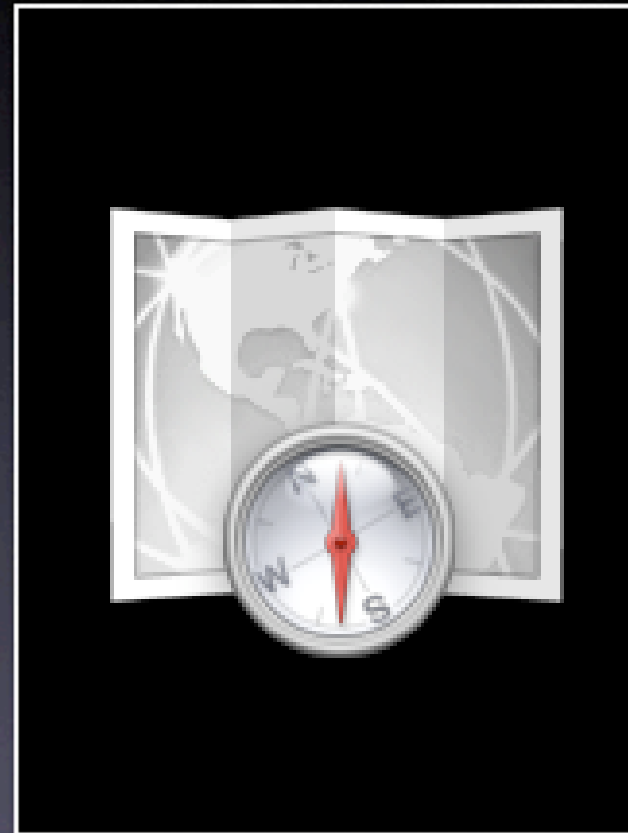
In the meantime...

- If I've convinced you to use the AD plug-in, there is no shame, you may leave now.

Many Services *Just Work*

- DNS, DHCP, PPTP VPN, SMTP, POP, IMAP...

- MS Windows Terminal Services

  - requires some configuration regardless of client platform

  - Get Remote Desktop Client for Mac from Microsoft

- I won't address Outlook/Entourage today

However, File Services...

- Windows Servers do not provide AFP
  - at least not out of the box
  - Services for Macintosh is outdated
- Mac OS X clients can use SMB natively
  - once you turn off SMB signing

Best Practices

- Do not mix AFP and SMB access
- Do not use File Services for Macintosh
  - Just use SMB, but disable packet signing
- Don't delete dot files on Windows side
- Practice safe file and folder naming

Don't mix AFP and SMB

- Pick a protocol and stick with it

- Again, think services

- Demo of what happens when you mix

  - I'll connect to Windows server via AFP

  - Then I'll connect via SMB

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Do not use
File Services for Mac

- It is so easy and tempting

- You'll be sorry

- AFP version 2.2

File Services for Mac (FSM)

- Introduced with Windows NT Server

- Available in Windows Server 2000 and 2003

- Easy to implement

  - But Not a solution appropriate for OS X clients

FSM Benefits...

- Access for pre-OS X systems

- NTFS Streams

  - Multiple data streams in a single file

  - One for Data Fork

  - One for Resource Fork

  - No confusing ._ files

...FSM Limitations

- Outdated version of AFP (2.2; latest is 3.2)
  - Filenames - 31 characters
  - Combined path and filename - 260 chars
- Mac Enabled Volume name - 27 characters
- 2GB Volume limit
- AppleTalk automatically installed

SMB Packet Signing

- NTLMv2 no longer issue: 10.4 supports it

- Windows 2003 Server AUTOMATICALLY signs all SMB communications.

- 10.4 can't do SMB packet signing

  - mount_smbfs not from the samba project

- Disable it or use a 3rd party SMB/CIFS client

Disable SMB Signing

- Use the Group Policy Object Editor:

- Computer Configuration > Windows Settings > Security Settings > Local Policies > Security Options > Microsoft Network Server:

- Digitally Sign Communications (always): *False*

Why *not* disable SMB packet signing?

- Prevents man-in-the-middle attack

- How worried are you about that on your private network?

- In the best of worlds, go ahead and use it

- In reality today, turn it off

What if you can't disable Packet Signing?

- Look to third party solutions

Third-Party Solutions

- on Windows Server: Extreme Z-IP

  - AFP service

- on Mac Client: DAVE

  - CIFS client

GroupLogic's ExtremeZ-IP

- Think service, not server

- FSM implements AFP 2.2 service on a Windows server

- ExtremeZ-IP implements AFP 3.1 service on a Windows server

- However, the latest spec for AFP is 3.2

  - adds ACL and metadata support

Thursby's DAVE

- Modifies the client, not the server

- Supports SMB signing

- Supports DFS (Distributed File System)

- Supports NTFS Streams (for forked files)

- Supports Kerberos

  - But if you're runing AD, just use AD plugin!

Can't get 3rd Party?

- You're "stuck" with:
  - Using SMB and
  - Disabling SMB packet signing
- It's not so bad

OK, so I convinced you not to use FSM

- Mac clients access Win file services via SMB

- From the Finder: Go -> Connect to Server

- smb://win2kserver.ssh22.com/

- Optional: Save password in keychain;

  - Drag volume to Login Items

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Do not harass the . files

- Shadow Files for Resource Forks

- .DS_Store

- Windows clients should hide dot files

- Make sure your Windows users are aware

  - and are able to ignore them

._ Shadow Files

- Apple has moved away from Forked Files
    - That doesn't mean your Apps care!
- Mac OS X file manager splits forked file
    - IF it thinks target can't handle forked file
    - ...Like when saving to a SMB volume
- What about FSM? nope, uses NTFS Streams

Shadow Files - just look the other way

- If an ignorant admin or user removes ._ files
  - Mac users may lose important data
- Removing other . files not so horrible
- Train Windows side users to ignore

Shadow Files
Deletion Demo

- Save ImportantFile on Windows file server
- Delete ._ImportantFile on Windows
- Try to open ImportantFile on Mac
- It's time to find the backup of ImportantFile

.DS_Store

- Stores icon placement in Icon view

- What happens if you erase .DS_Store?

  - KBase article for DS_Store: can prevent creation, but not recommended

  - Quick demo, with relaunching the Finder

Some dot files you probably will not see

- .Trash

- .Trashes

- ._.Trashes

- .Spotlight-V100

.Trash

- .Trash: Network Trash
  - Should only be in networked home folder
  - Probably won't see it in our scenarios
  - Removing it empties network trash

.Trashes and ._.Trashes

- At the root level of a volume

- Contains folder for each user who has trashed something when they had that volume directly mounted

- Why would you see these?

  - Sharing a volume that had .Trashes on it before you started sharing it

.Spotlight-V100

- Spotlight index file

- Probably won't see these

- Spotlight doesn't index networked volumes

  - Unless someone makes it so

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Practice Safe Naming

- What can the service handle?

- Just because you can have a crazy name, doesn't mean you should

- Stick to no spaces, no special characters

- Consider case sensitivity

NTFS Naming Limits (non-Unicode)

- 256 character limit for file and folder names

- Path maximum is 260 characters

- No / ? < > \ : * | " or any Control character

- No space at the end of a name

- No period at the end of a name

- Reserved: COM1-9, LPT-9, CON, NUL, PRN

Third Party Renamers

- Use *before* copying files to network volume

- Example bad name: "Notes-for-2006/01/05"

- A Better Finder Renamer

- Name Cleaner

- These don't catch the reserved words or illegally long names

Case sensitivity

- File vs FILE vs FiLe

- NetBIOS/SMB prefers UPPERCASE

- Demo: packet trace of SMB transaction

- HFS+ is case insensitive, case preserving

- NTFS is case sensitive

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In the Future

- Wait and see

- Indications MS is moving away from SMB

Some resources

- MS KB 823659: ...security settings...

- www.macwindows.com with reservation

- www.thursby.com

- www.grouplogic.com

- msdn.microsoft.com

- and, of course, www.apple.com/support

Win Servers for Mac Clients: Summary

- Use AD Plugin if you can

- Many services *Just Work*, except File Services

- Avoid FSM, Consider 3rd party solutions

  - you may need to disable SMB signing

- Decide on AFP or SMB

- Don't let anyone harass the Dot Files

- Practice safe naming

Thanks! Before you go...

- Please fill out the short evaluation

- Thank you for attending

- Thanks to Joel Rennich, Josh Wisenbaker, Michael Bartosh, Ben Levy, Steve Burke, Schoun Regan, Apple Consultants Network and the macos-x-server list

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