SCALE 3X

Developing Management Strategies and Tools for Samba

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Brief History of IT

- Centralized
  - Mainframes
  - Minicomputers
- Decentralized
  - Isolated PCs
- LAN
  - PCs connected to PC hosts
Brief History of PC LANs

- Novell NetWare
  - Achieved Market Dominance
- Microsoft Windows NT
  - Seized Market Dominance
- Linux
  - Ask your Local Penguin
NetWare & Windows

• Differences
  – NetWare
    • Lean Installation Requirements
    • No Console Possible
    • Completely Focused on Serving
      – High Uptime
  – Windows
    • Larger Installation Requirements
    • Console
    • Essentially a Workstation that could Serve
      – Easily Compromised Uptime
NetWare & Windows

• Common Deployment Results
  – NetWare
    • Lots of Individual Server Hosts
    • Lots of Individual User Logins
  – Windows
    • Lots of Individual Server Hosts
    • Lots of Individual User Logins
Linux

- Lean Installation Requirements
- No Console Required
- Can Be Completely Focused on Serving
  - High Uptime
WARNING: Without Sufficient Planning...

- Windows Replacement Replicates NetWare and Windows Deployment !!!
  - Lots of Individual Server Hosts
  - Lots of Individual User Logins

- Therefore
  - Lots of Potential Samba Configuration and Management Issues
What Does Samba Do?

- Provide Critical Resources to Microsoft Windows clients
  - Files
  - Printers
- This is Critical for Migration away from Proprietary Operating Systems
  - Targeting Server Migration First
Where Does Samba Fit?

- Server Hosts Sharing to Windows Clients
  - UNIX
  - Linux
  - xBSD
  - Mac OS X
Where Does Samba Fit?

- Client Hosts Sharing to Windows Clients
  - UNIX
  - Linux
  - xBSD
  - Mac OS X
Where Does Samba NOT Fit?

- As Per Samba Team: Whenever there is no Windows Client Involved
  - Server to Server
  - Client to Client
- NFS Preferred
- Rationale
  - Inherent Problems with Microsoft's Implementation of SMB
Versions of Samba

- Version 1
  - Deprecated
- Version 2
  - Recently Deprecated
- Version 3
  - Current
- Version 4
  - Development
Installing Samba

- Obtain Samba
  - Directly From samba.org
  - Distribution Packaging

- Install Samba
  - Manual installation
  - Distribution Packaging
Updating Samba

• Why?
  – Keep Current with Security Updates
  – DEFINITELY migrate from deprecated versions!

• When?
  – ASAP
Running Samba

- **smbd**
  - Provide Shared Resources
  - Run: smbd -D
- **nmbd**
  - Answer NetBIOS Name Requests
  - Run: nmbd -D
Configuring Samba

- `smb.conf`
  - Text file
  - Discrete sections
  - Easily edited
    - `vi` anyone?
smb.conf: Sections

- [global]
  - Settings appropriate to entire server host
- [homes]
  - Settings to generate shares from user home directories
- [printers]
  - Settings if printers are shared from the server host
- [share]
  - Settings specific to a single share
Samba Dependencies

- Users
- Groups
- Permissions
- umask
- ntpd
- dhcpd (clients)
- network
- filesystem
Managing Samba Shares

- Share at the minimum directory level within each filesystem
- Maintain home directory integrity within smb.conf for each host
- Manage valid users through group membership
- Manage permissions in deference to other applications
Testing Samba

- testparm
  - smb.conf
- Manually Test Services Defined in smb.conf
  - Files
  - Printers
  - Printer Drivers
Monitoring Samba

- ps
  - smbd
  - nmbd
- smbstatus
  - Users
  - Files in use
- tail of log file(s)
What May Be Overlooked...

- Testing smbd & nmbd for Reboot Survival (!)
- Samba packaging differences across distributions
- Log File Specifications
  - Too much data
  - Not enough data
Windows Clients

- Turn off browse master “warfare”
- Properly maintain time consistent with network
- IP addressing predictability
  - Static
  - Dynamic
Samba Management Strategies

- **smb.conf**
  - Keep minimal
    - Do NOT use default smb.conf file
      - For reference ONLY
  - Keep consistent across hosts

- Log by User for Security Analysis
  - log.%U
Current Tools

- Emphasize Syntactic Correctness within smb.conf
- Provide a portion of available options
- Focus on graphical interaction
Tool Philosophy

- Host based tools
- Command line tools
- Test beyond smb.conf syntax propriety
Tool Ideas

- smb.conf propriety analysis
- Permissions analysis
- User and group analysis
- User and group propriety by share
- Share propriety by filesystem
- Group smb.conf options by function