SCALE 3X

Developing Management Strategies and
Tools for Samba

Jeffrey Bianchine
jjbianchine@earthlink.net

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