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## NT4 PDC Migration to Samba-3

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SambaXP Conference 2003,  
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<http://samba.org/~jht/NT4migration>

April 10, 2003

Migration of NT4 Domain Control to Samba-3



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## Agenda

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- Understanding Site Objectives
- Know the impact of the choice to use Samba-3
- Planning Migration
- Migration Tools
- Future Outlook
- Live demo of a simple migration

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## Site Objectives

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- Why Migrate?
  - Improve manageability
  - Obtain better functionality for users
  - Cost control (reduction)
  - NT4 will soon be unsupported (reduce exposure)
  - Avoid MS License 6 implications
  - Reduce dependencies on Microsoft

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## Samba-3 is NOT MS Windows NT

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- Samba-3 offers significant reasons to migrate
  - Cost of ownership
  - Support availability with NO strings attached
  - Features that have forwards benefits
  - Stability, Reliability, Performance, Manageability
- But it is NOT MS Windows NT/200x and does NOT provide Active Directory
  - Is that important?

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## Forgoing Evolution of MS Windows

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- Migration to Samba-3 means some new features of MS Windows 200x/XP will NOT be available
  - NT4 Domains -> Win2K and Active Directory
    - Group Policies now go into ADS
      - Machine / System Policies
      - User Policies
    - Logon Scripts can be in ADS
    - Application and Menu Control in ADS
  - Software controls now in Active Directory

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## Planning Migration

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- Understand what needs to be migrated
- Read Samba-3 documentation (New HOWTO)
- Identify differences between NT4 PDC environment and Samba-3 environment
- Design BEFORE migration
  - Know how differences will be handled
  - Educate users so they know what to expect
    - Some things will change!

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## Impact of Site Size

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- There are 3 major Site Types
  - <= 50 Users
    - Want simple conversion with NO pain
  - 50 – 250 Users
    - Want new features, can manage some in-house complexity
  - Large Scale Sites
    - Solution / Implementation MUST scale well, complex needs
    - Cross departmental decision process
    - Local expertise in most areas

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## Planning for Success

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- Decide which approach is needed – 3 Choices
  - Simple Conversion (total replacement)
  - Upgraded Conversion (could be one of integration)
  - Complete Redesign (completely new solution)
- Take sufficient time
  - Avoid Panic
  - Test ALL assumptions
    - Test full roll-out program, including workstation deployment

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## Simple Conversion

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- Make use of minimal OS specific features
  - Can use *No Unix Accounts* Option
    - Suck all accounts from NT4 into Samba-3
  - Make least number of operational changes
  - Take least amount of time to migrate
- Live versus Isolated Conversion
  - Integrate Samba-3 then migrate while users are active
  - Change of control (ie: swap out)

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## Upgraded Conversion

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- Translate NT4 features to new host OS features
- Copy and improve
  - Old environment to Samba-3
  - Make progressive improvements
- Minimise user impact
- Maximise functionality
- Take advantage of lower maintenance opportunity

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## Complete Network Redesign

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- Decide
  - Authentication Regime (database locate and access)
  - Desktop Management Methods
  - Better Control of Desktops / Users
- Identify Needs for:
  - Manageability, Scalability, Security, Availability

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## Samba Implementation Choices

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- Authentication database back end
  - Winbind (external Samba or NT4/200x server)
    - Can use pam\_mkhome.so to auto-create home dirs
    - External server could use Active Directory or NT4 Domain
  - Database type
    - smbpasswd, tdbsam, ldapsam, MySQL sam
      - With local accounts of not (NUA option)

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## Samba Implementation Choice – II

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- Access Control Points
  - On the Share itself (Use NT4 Server Manager)
  - On the file system
    - Unix permissions on files and directories
      - Posix ACLs enablement in file system?
  - Through Samba share parameters
    - Not recommended – except as only resort

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## Samba Implementation Choice – III

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- Policies (migrate or create new ones)
  - Group Policy Editor (NT4)
    - Watch out for Tattoo effect
- User and Group Profiles
  - Platform specific so use platform tool to change from a Local to a Roaming profile
  - Can use new *profiles* tool to change SIDs (NTUser.DAT)
- Logon Scripts (Know how they work)

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## Samba Implementation Choices – IV

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- User and Group mapping to Unix/Linux
  - *username map* facility may be needed
  - Use *smbgroupedit* to connect NT4 groups to Unix groups
  - Use *pdbedit* to set/change user configuration
  - **NOTE:**
    - If migrating to LDAP back end it may be easier to dump initial LDAP database to LDIF, then edit, then reload into LDAP

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## Samba Implementation Choices – V

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- OS specific scripts / programs may be needed
  - Add / delete Users
    - Note OS limits on size of name (Linux 8 chars)
      - NT4 up to 254 chars
  - Add / delete machines
    - Applied only to domain members (note up to 16 chars)
  - Add / delete Groups
    - Note OS limits on size and nature
      - Linux limit is 16 char, no spaces and no upper case chars (groupadd)

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## Migration Tools

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- Domain Control (NT4 Style)
  - Profiles, Policies, Access Controls, Security
    - Migration Tools
      - Samba: *net, rpcclient, smbpasswd, pdbedit, smbgroupedit, profiles*
      - Windows: *NT4 Domain User Manager, Server Manager (NESUS)*
    - *Authentication*
      - *New SAM back end (smbpasswd, tdbsam, ldapsam, mysqlsam)*
      - With of without Unix Accounts (NUA)

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## Future Outlook

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- Third Party Management and Control Tools
- Relationship between Host OS and CIFS functions
- More extensive Windows Registry integration
- Samba ADS Implementation
  - Group Policy Object handling
  - Support for new nested group memberships
  - Machine policy implementation
- Roll-out and Deployment enhancements

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## Background Information

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- Samba-HOWTO-Collection (PDF, PS, html)
- Samba Web site
- Man pages (check)
  - `man smb.conf`
- SWAT Home page
  - Samba Web Admin Tool

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## Samba-HOWTO-Collection

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- New layout:
  - General Information
  - Installation
    - Stand-alone, Domain Control, Domain Membership
  - Advanced Configuration
    - Access Permissions, Group Mapping, Printing
    - Logon Processing, Policies, Profiles
    - Trusts, PAM, CFS modules, MSDFS, recycle bin, auditing, ++
- We need feedback: review, updates, contributions

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## Summary

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- Samba-3 is maturing rapidly
- Migration from NT4 PDC to Samba can happen now
- Samba-3 misses some Windows 200x/XP features
- Provides Samba features to compensate for forgone Windows functionality
- Planning and clean implementation will be key to deployment success

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## Demo

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- Quick Look at Samba-HOWTO-Collection
- Will do a live migration of NT4 Domain to Samba-3
  - Users and Groups
    - *Net rpc vampire* demonstration
  - Profile
    - Demo NT4 tools and *profiles* tool only

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