

# IO110: Open Enterprise Server 2

**Novell**<sup>®</sup>

*“Hardware you can hit with a hammer, software you can only curse at....”*

# Agenda

- OES2 in 2008 – What's in it and when to expect it
  - Timeline
  - New features
  - Enhancements
  - Lessons learned
- Where next for OES?
  - What do YOU want from OES?
  - Dynamic Storage Technology
  - NCS / BCC
  - Open Workgroup Suite updates

# Open Enterprise Server 2 – 2008 update

*“All other things being equal, the simplest solution is the best.....”*

# OES2 – Overview

- SUSE Linux Enterprise Server 10 SP2
  - OES2 update will be built on and *require* SLES10 SP2
- New features
  - 64-bit eDirectory
  - Novell-engineered AFP and SMB/CIFS protocols
  - Domain Services for Windows
- Improved features
  - Novell iFolder
  - Migration tools
  - iPrint enhancements

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# Schedule (Subject to change)

- Beta 1 – March 2008
  - Authorized Beta customers get access
- Public Beta – Late Q2 / Early Q3, 2008
  - All features fully functional, public beta
- General Availability – Q4 2008
- Worth remembering:
  - Quality is the primary driver behind the release of SP1. If quality is NOT there, these estimates will change!

# What's new in 2008 and why?

- Customers demanded (and will get) the following:
  - A full 64-bit version of eDirectory
  - A fully functional, scalable AFP stack
  - A “better” SMB/CIFS stack than SAMBA
  - Integration with Active Directory and better support for 'client-less' Windows workstations
  - Improved migration tools
  - Improved Virtual Machine performance

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# New Features

# Novell® eDirectory™ 8.8 SP4

- Native 64 bit eDirectory
  - Can utilize the entire addressable memory on an x86-64 CPU
- LDAP Auditing
- Enhanced Authentication Protocol Support
- Enhanced Directory Monitoring in the LDAP layer
- A 64 bit eDirectory also means 64 bit versions of:
  - NCP
  - PKIS
  - NMAS
- ALL OES services will now be full 64 bit

# Apple Filing Protocol (Novell AFP)

- Apple Filing Protocol support on OES 2 Linux
  - Mac clients can access files from the OES 2 server
  - Closing the gap with NetWare (part of the NFAP)
- Feature Overview
  - Support for AFP 3.1, (OS X 10.3, OS X 10.4)
  - Mac OS X 10.5 will work in AFP 3.1 'fallback' mode
    - > AFP 3.2 will be added in due course
  - Migration from NetWare
  - Multi-processor support (not available on NetWare AFP)

# Apple Filing Protocol (Novell AFP)

- Install and Configuration
  - YaST install with configuration using iManager
- Design details
  - eDirectory integrated with full support for NSS, resource forks and zAPI (Novell NSS API set) as well as Novell Cluster Services
- Identity integration
  - any eDirectory user with universal password enabled
  - user contexts can be configured to access via AFP
  - LUM not required
- Cross-protocol locking supported on NSS
  - AFP, NCP and Samba protocols all supported

# Novell CIFS

- Novell CIFS support on OES 2 SP1 Linux
- Closing the gap with NetWare
- Feature Overview
  - Support for SMB V1 and Browser protocol
    - > NTLM v2 will be added in due course
  - Support for NSS volumes (using the POSIX API)
  - Support for NetWare trustee and rights model, file locking
  - Simplified management using iManager or CLI
  - Migration from NetWare CIFS
  - Multi-processor support

# Novell CIFS

## Linux Implementation

- Install and Configuration
  - YaST install with Configuration using iManager
- Design details
  - Requires NCP Server on the same box, no local eDirectory replica required
  - Uses standard POSIX interfaces, but currently supports only NSS
- Identity integration
  - Any eDirectory user with universal password enabled
  - User contexts can be configured for CIFS Access
  - LUM not required

# CIFS and AFP – Why?

- Supporting customers upgrading from NetWare 6.x
  - Native File Access Pack (NFAP) has provided AFP, CIFS, NFS and FTP on NetWare
  - NFS and FTP are well supported on Linux
  - CIFS support with SAMBA is lacking in the areas of performance, integration and configuration
  - AFP support with NetAtalk is lacking....
- DSfW and Novell CIFS have different target audiences
  - Novell CIFS is aimed at customers that just want windows protocol access to their files
  - Domain Services for Windows is aimed at customers who want full Active Directory Integration

# Domain Services for Windows

# What is Domain Services for Windows?

- Domain Services for Windows (DSfW) is a suite of technologies in Open Enterprise Server (OES) 2 that provides login, authentication and Directory authorization for Windows workstations in eDirectory trees and integrates with existing eDirectory deployments

# Design Goals

- Provide seamless integration between Windows and OES environments while leveraging existing Novell eDirectory deployments.
- Use existing open source components for standard protocols such as Kerberos and SAMBA
- Use available Unix-Linux abstractions such as gss-api
- Do not require the replacement of eDirectory or Active Directory

# Component Architecture

- Domain Services for Windows is built on the following components
  - Novell eDirectory 8.8 SP4
  - Novell Modular Authentication Service 3.2
  - MIT Kerberos 1.6
  - An Active Directory Provisioning Handler (ADPH) built inside the eDirectory Agent
  - XAD Framework
  - RPC Subsystems required by Windows
  - SAMBA
  - BIND with GSS extensions
  - NTP with Net Logon extensions

# Domain Services for Windows – eDirectory

- DSfW will only work with eDirectory 8.8 SP4 on Open Enterprise Server 2 SP1
  - ADPH enforces the Security Accounts Manager inside the agent.
    - > Allocates Security IDs to users and groups
    - > Validates entries
    - > Enables existing eDirectory users to use AD and RFC2307 authorization.
  - Configurable interface support for LDAP server.
  - Implements Global Catalog search – port 3268 and 3269
    - > Requests will be chained to other domains

# Domain Services for Windows – Service list

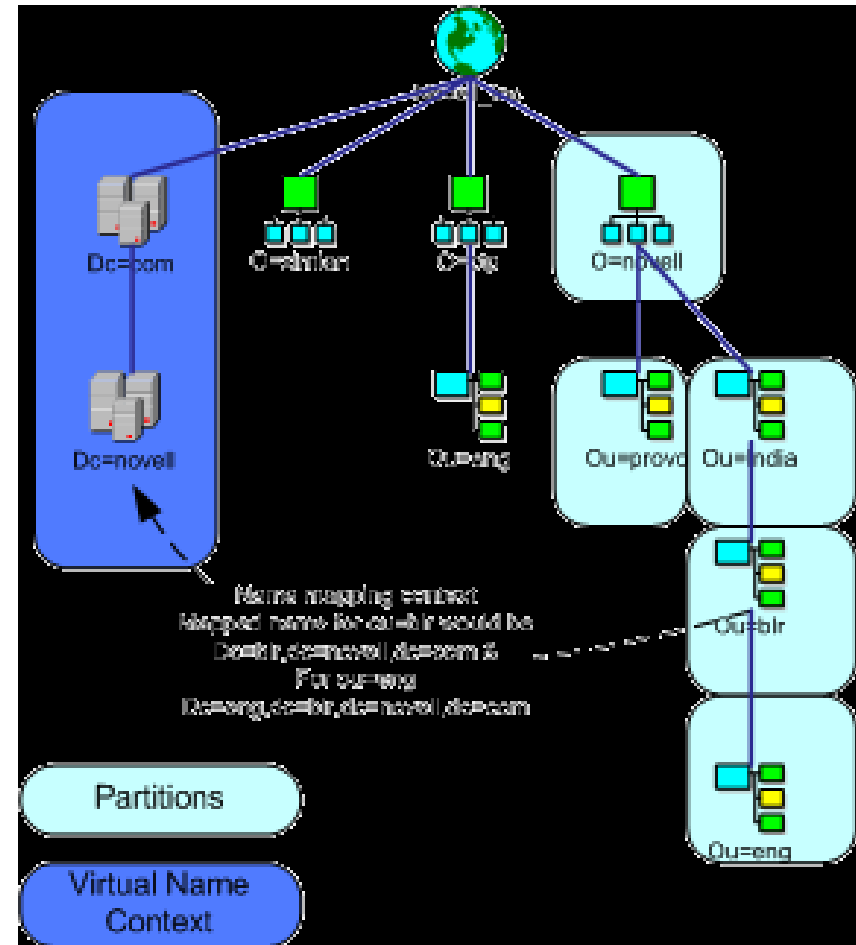
- Following services constitute Domain Services for Windows
  - /etc/init.d/named – BIND
  - /etc/init.d/ntpd - Time Service
  - /etc/init.d/ndsd - eDirectory 8.8 SP4
  - /etc/init.d/xad – rpcd, xadsd, krb5kdc etc.
  - /etc/init.d/winbindd – winbind daemon
  - /etc/init.d/nmbd – name lookup daemon
  - /etc/init.d/smb – samba daemon

# Domain Services for Windows – Provisioning Tools

- Installation
  - ndsdccinit tool provisions a new DSfW domain controller in a new or existing domain
  - Extends eDirectory schema with AD schema
  - Will be run from YaST when the DSfW pattern is selected
- Administration
  - iManager
  - MMC Active Directory Users & Computers
  - Command line tools
  - Existing LDAP and NDAP clients should “just work”

# Domain Services for Windows – eDirectory considerations

- Optional name mapping in LDAP layer
- Each DSfW server will have a single domain partition (required by AD security model)
- Installation
  - Configure eDirectory
  - Provision DSfW



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# Domain Services for Windows and Open Enterprise Server 2 Services

# Domain Services for Windows – Local services support

- Novell Backup (Storage Management Service)
- Novell eDirectory
- Novell iManager
- Novell iPrint
- Novell Linux User Management (LUM)
- Novell Remote Manager (NRM)
- Novell Storage Services (NSS)
- Novell NCP Server / Dynamic Storage Technology
- DHCP and DNS Server
- Novell Cluster Services (NCS)

# Domain Services for Windows – Remote services support

- Novell Samba
  - Integrates Samba with eDirectory using NT 4 protocols
  - Different samba backend
- Novell DNS, Novell DHCP
  - DSfW requires a DNS server in the environment
  - Can be a Windows or SLES 10 SP1 DNS server
  - Changes have not be integrated with the DNS server in OES
- Others
  - Novell iFolder
  - Novell QuickFinder
  - Novell Archive/Version Server
  - Novell FTP
  - Novell NetStorage/Xtier
  - Novell XEN Host Server

Migration, iFolder, iPrint

# Open Enterprise Server 2

## Migration Framework

- Migration tools
  - A CLI tool-chain adhering to the Linux philosophy
  - The power of an advanced migration GUI framework
- Theory of operation
  - Tools reside on the target Open Enterprise Server system
    - > Command line tools that migrate from some other source server to “this” target server
    - > Not interactive, does one job well
  - Migration GUI Framework
    - > Consolidated GUI – service UIs plug-in into this framework
    - > Supports various migration scenarios like, same tree, ID swap, consolidation

# Open Enterprise Server 2

## Migration Scenarios, Platforms and Services

- Migration Scenarios
  - Upgrade, Migration, Consolidation (**NEW**, Support added in SP1)
  - Migration
    - > Same Tree, Different Tree, Server ID swap
- Migration Platforms
  - Source: OES 1, NetWare 6.5, NetWare 5.1
  - Target: OES 2 (Linux)
- Service Migrations
  - File-System, eDirectory, Archive Version Services, DNS, DHCP, iPrint, iFolder, AFP, Novell CIFS, FTP, NTP

# OES2 SP1 Migration Enhancements

- “Server ID Swap”
  - In essence the ability to migrate the configuration of a running NetWare server to an OES2 Linux server
  - A NetWare Server called “SERVER1” can have its configuration migrated to Linux and maintain the name “SERVER1”
- Migrated configuration:
  - eDirectory configuration and objects
  - Filesystem

# Consolidated Migration GUI

- Provide a dashboard view of migration progress to the Administrator
  - Job status, overall status, throughput, timings etc.
- Integrate tasks into a single overall view
  - Single entry of eDir/server details
  - Dependant services can be migrated together or separately
- Provide a common look and feel
  - Scheduling, Logging, mail notifications, Progress

# Consolidated Migration GUI

- Addresses more than basic scenarios with the UI
  - Support identity swap, Same tree, different tree, consolidations
  - Support SCMT like features where required
  - Enhance file system migration UI
    - > Provide features like volume browser, multiple selection lists, better filtering

# “Sneak Peek” of the New UI

(Initial Design Review – NOT finalized)

The screenshot displays the OES Migration application window with the following components:

- Load/Save Project:** A text field containing "/test" with OK and Cancel buttons.
- Scheduler:** A calendar for December 2007 with "Today: 12/5/2007" highlighted. Below it is a "Time" field set to "10:00 AM" and OK/Cancel buttons.
- Mail Notification:** A section for "E-mail IDs" and "Mail Notification On:" with radio buttons for Success, Failures, Critical Errors, and Warnings, plus OK/Cancel buttons.
- View Logs:** A button labeled "View Logs" at the bottom of the left sidebar.
- Source Server:** Labeled "SERVER: TEST1" with a server icon.
- Target Server:** Labeled "SERVER: TEST2" with a server icon.
- STOP:** A button between the source and target servers.
- Services:** A central panel with several service icons:
  - 2 E directory (checked)
  - 4 ftp (checked)
  - 5 DHCP (checked)
  - 1 FS (checked)
  - AV (checked)
  - IPrint (unchecked)
- Ignore Panel:** A yellow callout box pointing to the AV service icon with the text: "Ignore This panel. Check Contents in left Miscellaneous Panel".
- Overall Migration Status:**
  - Service Logs:** Shows "FTP Status" with a progress bar of 5 arrows (3 green, 1 red, 1 light blue) and "Copy Error" below it. Start Time: 12:00 PM, Elapsed Time: 10 minutes hrs.
  - Overall Migration Status:** Shows "State Progress" with a progress bar of 5 arrows (3 green, 1 red, 1 light blue) and "Migration Failed" below it. Start Time: 9:00 PM, Elapsed Time: 4 days 2 minutes.
- Migration In progress:** A status indicator at the bottom of the main window.

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iFolder 3.7

# Novell iFolder Platforms for 2008

- OES2 32 bit and 64 bit platforms
- Client support
  - SUSE Linux Enterprise Desktop 10
  - Windows XP Professional (32 bit)
  - Windows Vista (32 bit and 64 bit)
    - > Business, Ultimate and Enterprise editions
  - Intel Mac OSX 10.4/10.5 (Intel and PPC)
  - Web Access (Firefox, Internet Explorer, Safari)

# New Features in iFolder 3.7

- Server side migration from 2.x to 3.7
  - Supports unencrypted iFolder migration for both Netware and Linux (OES1)
- Configurable User provisioning
  - LDAP Attribute based
  - Manual
  - Group based Provisioning
- Silent Install for Linux & Win clients through ZenWorks
  - Supports auto account creation

# Enhancements in iFolder 3.7

- Enhanced Conflict Resolution
- Cold Merge
- Policy Management
- Auto update of Client software
- Orphaned iFolders support
- Default iFolder
- Enhanced Web Administration console
- Better support for Multi server configuration

# Dependencies

- OES dependencies
  - eDirectory (LDAP)
  - Lib Flaim (DB)
  - iManager (User Mgmt)
  - SMS (Back up)
- Other dependencies
  - Mono (/.NET)
  - XSP (small web server)
  - Apache (/IIS)
  - GTK Library (UI)
  - log4net (Apache logging framework)

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iPrint

# iPrint Accounting API

- Enable third-party providers to develop a server module for print accounting
  - Third-party modules interacts with the Print Manager
  - Partners, including PaperCut Software and Salford Software Ltd are ready to port their accounting modules to this API
    - > STILL discussing things with A.N.D. Technologies (PCounter)
  - Flexibility of design to support needs of accounting module
  - Interaction between the third-party module and print client is apart from this API.

# Features

- Per-printer Configuration
- Configuration is stored in the Managed Object Database (MOD) of the Print Manager
- Print Manager contacts the Accounting Module at configured points of job creation / processing
- No job can print without 'approval' from the Accounting Module when configured

# Implementation

- Configuration attribute is similar to Gateway attribute
- When configured, the accounting module is loaded by the Print Manager
- The Manager contacts the accounting module at configurable points in job creation / processing
  - New job
  - Job creation complete
  - Start of job processing
  - End of job processing
- Accounting module response can cancel / hold job, set page count

# iPrint Clients

- MacOS X 10.5 support
  - Updated client being tested to enhance secure printing
- Windows Vista feature parity
  - Still working on it

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Where next for OES?

# NCS / BCC – Uncommitted

- What else needs to be done to NCS?
  - The only real thing under investigation is Virtual Machine clustering (Clustering of a VM infrastructure itself)
- Where do we go with BCC?
  - Provide BCC for vertical applications?
  - BCC for SAP
  - BCC for PeopleSoft
  - BCC for Oracle (direct contention with RAC I know)
- What do YOU need?

# Dynamic Storage Technology

- Under investigation / consideration for DST:
  - Dynamic Storage Technology for Windows / NTFS
    - > No eDirectory, no iManager, no NCP, no NSS
  - Tiered storage
    - > 3<sup>rd</sup> level of redirection migrating little used files to yet another storage device
  - redirecting files to null (AKA the “Silicon Heaven” switch)

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