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Sent: Friday, November 03, 2000 1:37 PM
To: Carl Stork's Group (Exchange DL); Windows OEM NDA Communication
Cc: Iain McDonald; John Gray; Chris Jones
Subject: Whistler OEM POR III (sync w/ Beta 1)
Attachments: Whistler OEM POR III.doc; Whistler OEM POR III Introduction ppt

***** NDA Confidential *****

Technical Evangelism has completed the Whistler OEM Plan-Of-Record (POR) III document for distribution to OEM partners under strict NDA rules. Revisions to this version of the document are extremely minor in nature: for the most part, features moving to the CUT tables. The Whistler OEM POR document enables the OEMs to do their Product Planning and Development for their upcoming platforms.

It is NOT intended to be a feature guide or marketing document for the product.

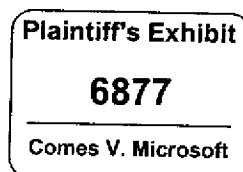
For those of you that will be presenting these materials to your customers, please be sure to accomplish the following list of activities:

1. NDA Reminder
2. Whistler OEM POR Introduction (please change the contact slide to be yourself!)
3. Whistler OEM POR document. (providing a softcopy is OK)
4. Remind/Advise the OEM to review the Beta 1 Feature Guide in coordination with the Whistler OEM POR document
5. Encourage comments and feedback

Also attached is the Whistler POR III Introduction deck to assist in communicating the goals of the document.

Thanks,
KeithHa

11/1/2004



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Windows Platform Design Notes

Designing Hardware for the Microsoft® Windows® Family of Operating Systems

Windows “Whistler” Platform: Goals and Features Plan of Record

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IMPORTANT: THE FEATURES AND PLANS DESCRIBED HERE ARE NOT FINAL.

This document describes the current direction for the platform-related features in the next Microsoft® Windows® operating system, code-named “Whistler.” This is not a specification for the product nor is there any guarantee, implied or otherwise, that these features will be included in the final product release.

A preview version of this information was provided in early 2Q2000 for review and comment purposes, representing the earliest thinking of the Windows Whistler planning team at Microsoft. This document represents the current features being considering for Windows Whistler.

NOTE: *This document assumes that the reader is familiar with Windows 2000 client and server features and services, and with the tools and services Microsoft provides for preinstallation, operating system upgrade, and customer support. For background information about Windows 2000 features and services, see the Windows web site at <http://www.microsoft.com/windows/>, or see the Windows 2000 Resource Kit, available from Microsoft Press.*

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Windows "Whistler" Goals

The new security infrastructure, directory capabilities, networking features, scalability, and reliability of Windows 2000 are providing new platform opportunities to deploy Windows 2000 across enterprises of all sizes.

Microsoft's principal goals focus on improving the foundation established with Windows 2000 and removing deployment barriers for both corporate and consumer users. These are the primary goals for Whistler:

- **Consumerize Windows 2000:** Adapt and improve on the power, reliability and functionality of Windows 2000 for Consumer/Home users by incorporating the best of Windows Millennium Edition (Windows Me) together with significant user experience improvements:
 - User excitement — New user interface designed to refresh and update the Windows look, while improving usability for both home and corporate users.
 - Application compatibility — Both Windows 2000 and Windows Me compatible apps.
 - Device compatibility — Expanded driver coverage and enhanced support for USB, IEEE 1394, PCI, and other deterministic buses.
 - Windows Me feature parity — Security/logon changes, boot/resume/suspend, and other features in Windows Me.
 - Digital media and gaming — Imaging from WIA team, audio/video from Digital Media Division, and UI improvements to support these capabilities, plus inclusion of DirectX® 8 technologies.
 - Home Networking and Online Experience.
 - PC Health — Supportability improvements, Windows Me out-of-box experience (OOBE), and more.
- **Customer Feedback:** Respond to Windows 2000 deployment feedback from corporate customers by delivering incremental improvements for deployments for both Professional and Server. Specific items include the following.
 - Headless, remote, unattended management
 - Better scriptability and enhanced command line support
 - Improving the infrastructure for visibility and control
 - Making administration simpler, both for the base platform and for platform services
- **Common Code and Features:** Build the 32-bit and 64-bit Windows Whistler products from a common code base to simplify ongoing support, enable common driver development, ensure broadest application compatibility, and deliver a uniform set of APIs to the development community.

Windows Whistler Planned SKUs

Following are the current Planned SKUs for Windows Whistler and their usage scenarios:

- "Personal" (home usage/games) – 32-bit only
- Professional (business desktop) – 32-bit and 64-bit
- Server (file/print) – 32-bit only
- Advanced Server (web sites, B2B) – 32-bit and 64-bit
- Datacenter (high availability, clustering) – 32-bit and 64-bit

NOTE: This document focuses on features and issues for the general-purpose platform, and does not provide extensive details related to issues for embedded appliances and services.

Part 1: Whistler – All SKUs

This section summarizes the goals, features, and design issues for all Whistler SKUs.

Whistler Legacy Features to be Removed

The following features will be removed from Windows Whistler:

- OS/2 Subsystem
 - Posix Subsystem
 - Internet Locator Service
 - Kodak Imaging (to be replaced with another image and fax rendering utility.)
 - Winrep (replaced by PCHealth)
 - SMS Man
 - TermSrv - Client for Handheld PC
 - Security Dynamics Acc_Agent
-

Base Platform Advances – All SKUs

These are the goals for Whistler Base issues:

- Improve user experience
 - Easy device installation
 - Simplify device installation UI and Wizards
 - Integrate installation with Windows Update
 - Improve installation performance with INF caching
 - Boot and resume performance
 - Targeting Windows Me parity on modern systems
 - Includes support for Fast Boot / Simple Boot Flag
- Incremental improvements on reliability and deployment blockers
 - Fusion v.2 (side-by-side installation of Win32 components)
 - Simplified driver interfaces for video bus mastering
 - Driver Verifier v.2
- Hardware support and device compatibility
 - New hardware technologies
 - Expanded device driver coverage

Setup/Preinstall – All SKUs

The general goal is to incrementally provide functionality to be on par with Windows 95/98 while improving the platform so still better functionality can be provided in follow-on releases. The focus for advances in the Whistler OPK include:

- Decreasing # of images
- Decreasing factory floor time
- Improving customer experience

Advances planned for Whistler Sysprep in the factory:

- Allows for updated / out of box drivers to be picked up by image at install time
- Per machine customizations applied
- Enables audit capabilities
- Takes ~1 minute to desktop for auditing vs. ~4 in Windows 2000

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- Valuable for build to plan and configure to order

Note: Sysprep will remain HAL dependent.

WinBOM drives Sysprep in the factory:

- Scriptable audit / OS customization environment
- Allows gathering of files (e.g. drivers, apps) from network
- Handles application install
- Applies information taken through order entry onto a Build To Order system:
 - Identity information
 - Machine name
 - ISP information

The updated OPK toolset is planned to include:

- WinCDM — scenario based tool for setting up preinstalls, replacing Setupmgr
- Integrated documentation

Application Compatibility – All SKUs

Whistler must provide the ability to run “essential” applications (criteria for defining ‘essential’ not yet defined). This includes providing:

- Fixes to already-shipping applications, to be incrementally added to Windows 2000
- Opportunity for ISVs to correct incompatibilities with Whistler in subsequent releases of their applications

To achieve this, the development team is undertaking activities that include:

- Identification of correct applications to target for compatibility
- Support Error Recovery for legacy-free systems
- Test/triage of applications for compatibility
- Shim/fix if necessary
- Treat the cause: Windows 95/98-to-Windows 2000 porting info provided to ISVs through usual channels

Device Compatibility – All SKUs

There will be no general driver model changes under Whistler, and no WFP/ signing changes, so that all Windows 2000 drivers will run under Whistler.

Our goal with Whistler is to provide a seamless online driver distribution channel via Windows Update and Auto Update, in which drivers are automatically downloaded and installed from Windows Update when new hardware is detected. To accomplish this, hardware vendors submitting device/driver packages for logo will need to allow Microsoft to distribute their drivers on Windows Update. Drivers can also be made available by IHVs on media provided with the device. We want to remove any manual driver installation steps where possible to provide a zero-UI device installation process. Automatic download from Windows Update will be available for:

- Critical drivers
- Application migration database
- Critical Upgrade Packs (migration DLLs)
- Hot fixes/Security issues

New and expanded hardware support (in addition to new 64-bit support) includes:

- Processor performance control
- Expanded storage support — CD-RW, native mode IDE during boot; DVD-RAM; IDE driver to support ATA100 and later changes
- USB and IEEE 1394 advances

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- IEEE 1394 61883 isochronous support for cameras: PC as 1394 target device
- USB genre descriptor
- Laptop improvements
 - Dual view; monitor switching, blanking and dimming
 - Wake On battery, CardBus wake
 - EFS-CSC-DFS interoperability (Encrypted File System-Client Side Caching-Distributed File System)
 - Selective suspend of root USB ports, including suspending idle input devices for improved battery life

Legacy-Free Design – All SKUs

Windows 2000 fully supports legacy-free design. Incremental additions for Whistler include.

- IEEE 1394 debugger solution
- Fast boot

The reference legacy-free hardware platform for Whistler is defined at <http://www.microsoft.com/hwdev/newpc/>.

Device Installation and Configuration – All SKUs

The following is a list of the proposed changes for configuration and installation of devices

- Simplify the UI for Device Install and the various Hardware Wizards
- Improve integration with Windows Update to locate and download drivers
- Improve performance/speed of driver installation
- Improve INF generation and processing tools, plus extensions to the INF file format
- Add driver versioning and driver rollback
- Enhance the existing 'last known good' feature to restore drivers
- Enhanced device support and installation for multifunction peripherals, including one prompt per peripheral (rather than one per function) and MS Dot4 channelization protocol support

Fast Boot and Power Management – All SKUs

Startup and shutdown times are a critical part of the user experience. The goals for Whistler are to achieve performance on par with Windows Me.

Hibernate and resume performance improvements are being developed to improve the availability of the system—multiple areas of the system where former delays during the boot process have been sped up or removed.

Upgrade Paths – All SKUs

IMPORTANT: This is preliminary information and subject to change.

The following list shows the current planned upgrade paths.

Upgrade for Clients:

- To: Whistler "Personal"
 - From Windows 9x: Windows 98, Windows Me
- To: Whistler Professional
 - From Windows 9x: Windows 98, Windows Me
 - From Windows NT/2000: Windows NT 4.0 Workstation, Windows 2000 Professional
 - From Whistler: Whistler "Personal"

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Upgrade for Servers:

- To: Whistler Server
 - From Server: Windows NT 4.0 Server, Windows 2000 Server
- To: Whistler Advanced Server
 - From Server: Windows NT 4.0 Server, Windows 2000 Server
 - From Advanced Server: Windows NT 4.0 Enterprise Edition, Windows 2000 Advanced Server
 - From Whistler: Whistler Server

No Upgrade Planned:

- No service pack-type upgrade or step-up
- No downgrades (Windows 2000 Professional to Whistler "Personal")

“Train Yard” for Hardware Advances – All SKUs

To track hardware advances, the Windows team has designated support for some new technologies to advance on a parallel track with core operating system development. The primary advantage of the “Train Yard” development model is that resources are invested early, independently of an operating system timeline. “Train Yard” development is aligned with the timelines for hardware availability, which may not match the timelines for operating system product releases. Train Yard changes are confined to non-core drivers. Core driver changes are planned only with operating system product releases.

Whistler Train Yard Support:

- USB 2.0
- Bluetooth 1.0
- 1394 OHCI 1.1

Release of Train Yard drivers in relation to Whistler is directly related to hardware availability for development and testing.

Part 2: Whistler Clients – Professional and "Personal"

The primary goal is to create a version of Whistler that will appeal to OEMs and their end users, to supersede Windows 98 and Windows Me on new PCs. To accomplish this, we will create value and feature differentiation between a consumer edition of Whistler and the existing Professional edition, much as we currently differentiate between Server and Advanced Server packages.

The goal of the "Personal" edition is to remove some of the business and enterprise features that most inhibit adoption of Windows 2000 Professional on home systems.

Whistler Personal Goals (32-bit only)

Note: The product name for the consumer version of Windows Whistler has not yet been determined. "Personal" is used in this document only as a placeholder for the actual product name.

Personal Features:

- Application and device compatibility
- New consumer experience (simplified logon, fast user switching, themes, simplified WebViews)
- End-to-end Digital Media
- Home Networking (configuration wizard; personal firewall),
5 PC limit for file, print and ICS sharing;
great Internet connectivity via modem, DSL or cable
- Gaming and DirectX 8 technologies
- Windows Me feature parity

Great Consumer Experience:

- Lower priced, but not a partially disabled system
- Focused on consumer needs, skipping features principally used in business

Personal Non-Features:

- No group policies or IntelliMirror features (roaming profiles, offline folders, etc.)
- No domain machine account (cannot join a domain, but can RAS in and use user's credentials to authenticate, much like Windows 95/98 today.)
- No Netware client; no remote desktop (Terminal Services); no personal web server
- No encrypting file system, no content indexing; no dynamic disks
- NT Backup service removed
- No multi-monitor support
- No MUI support or package
- No multiprocessor support

Whistler Professional Goals (32-bit and 64-bit)

Professional Features:

- Centralized management features — IntelliMirror, policies, roaming profiles, Zero Administration Windows
- Business networking (ability to join a domain; profiles; roaming user support)
- Security (EFS, ACLs, C2 certification)
- High-end features — remote desktop, multiple processors, multiple monitors, etc.

Professional Great Business Experience:

- Superset containing all Whistler client features
(Personal features included, but might not be enabled by default)

Professional Non-Features:

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- 64-bit will not have some protocols

See "[Part 4: 64-bit Platform – Server and Professional](#)" later in this document for related issues

Base Platform Advances – Client SKUs

These are the goals for Whistler Base issues:

- Improve user experience
 - Setup OOBE (described later in "Setup and Preinstallation")
-

Consumer Features and Digital Media – Client SKUs

Gaming

DirectX will allow Whistler to be a compelling consumer gaming platform. Whistler will incorporate the DirectX 8 APIs plus enhancements to address any performance and compatibility problems on the NT code base. Key goals for Whistler are:

- Support innovation in hardware for graphics, audio, and input devices.
- Performance comparable to or better than Windows 95/98 implementation.
- Simplify application development.
- Finding a game to play and someone on the Internet to play with is easier than ever.

Audio/Video

The goals for Whistler are to provide the best, most full featured audio platform for games, and to ensure that a Whistler PC delivers the best media experience by allowing our IHV and ISV customers to innovate and provide the best content for the Whistler platform.

Whistler will deliver advances on Windows Me digital audio with:

- Better overall performance with music, and "motion picture quality" music and sound effects
- Glitch reduction on all audio subsystems, and better audio quality for telephony
- Secure content: play premium and copy-protected music content

Digital TV

Whistler advances on the WebTV® for Windows support provided in Windows Me include

- Host any application for DTV viewing
- Support any analog and DTV standards
- Host third-party TV add-on features (e.g., PVR)
- Buy a cable box add-on for your PC and watch/capture premium content
- Use the DTV receiver as a 'fat pipe' for receiving broadband streaming media content

Note: No application is delivered in Whistler.

Audio/Video Playback

A key feature in Whistler is audio and video that "just work." The following goals are defined:

- Audio and video playback is of high quality, on par with the consumer electronics industry (minimal A/V glitches and tight A/V sync)
- Acquiring audio and video data just works
- A/V devices are easy to configure and use
- Whistler IEEE 1394 and USB capture solutions are much better than competing platforms

Movie Maker

Whistler will deliver advances on Windows Movie Maker for personal video and video sharing on the Internet (introduced in Windows Me) with ease of use enhancements:

- Improved appearance via customizable skins
- Improved accessibility/usability
- Application launch when plugging in a camera (shell integration)

Pictures/WIA

Windows Image Acquisition (WIA) is key to the integration of digital imaging devices in Windows. Our goal for the Whistler release is to have, at minimum, Windows Me feature parity. The four areas to focus on are: Acquisition, Content Management, Processing, and Publishing.

Windows Media™ Player

- Whistler ease of use advances to integrated experience provided in Windows Me:
 - Shell integration – web view, directory playlists
 - Portable Devices – export video, create playlists
 - Manage media rights (SDMI)
- Integrated DVD playback and CD burning
- One place to find, organize and play your media – local or streamed
- Corporate Appeal
 - Admin setup and customization
 - Full embedding support + Netscape plug-in
 - ‘Brand’ it with Skins and Visualizations
 - Personal metadata added by user

Enabling Technologies for Digital Media

These digital media-enabling technologies are delivered in Whistler

- AutoPlay
- Metadata support and other GDI+ advances
- Image Mastering API (supports CD burning)
- DirectShow® DVD and digital video device support
- DirectMusic®
- DirectX VA
- Core audio for Secure Audio Path (SAP) support
- Windows Media Format SDK—annotation of metadata for Advanced Streaming Format (ASF) streams

UI and User Features – Client SKUs

The goals UI changes for the Whistler release include:

- Visual refresh
 - Providing a cleaner, simpler visual style for Windows Professional
 - Providing a second inviting and exciting visual style for Windows Personal
 - Provide mechanisms for ISVs to synch with these new styles — i.e. Theme Manager:
 - Provides rendering support for the new controls
 - Provides information APIs to assist controls in positioning parts
 - Renders new visual style for the non-client area of all applications
- User Win32 controls and shell common controls coalesced in Comctl v.6
 - Use Theme Manager to render visuals
 - Legacy applications will continue to use Comctl v.5.5 unless they provide a manifest

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- Comnet v.6 will not ship down-level
- New logon screen and fast user switching to support home sharing of a computer

Home Networking and Universal Plug and Play

The goals for home networking capabilities in Whistler include parity with Windows Me home networking technologies (including TCP/IP over IEEE 1394) and easy-to-configure capabilities. The support in the Personal edition of Whistler would extend home networking capabilities with increased security and support for new broadband scenarios, while providing additional wizards and "zero configuration" support for wireless.

The basic UPnP capabilities in Windows—for creating a UPnP-intelligent appliance platform—is first delivered in Windows Me. The Whistler Personal version provides UPnP parity with Windows Me. The goal for Universal Plug and Play is to enable any device to transfer data to any other device on the network, under the command of any user control point on the network. For background information about UPnP, see the UPnP Forum web site (the standards organization) at <http://www.upnp.org/>.

Setup and Preinstallation – Client SKUs

Basic setup advances for Whistler include:

- Consumerized retail setup and OOBE advances
- Preinstall—improved performance and further image independence

Consumerized Retail Setup

Consumer-friendly goals include

- Plain Language
- Batch questions
- Estimate Setup time
- Hide Text mode
- Warm colors
- Unified branding
- Billboards

OOBE

OOBE is a full-screen HTML application that runs during first boot to help ensure computer is set up and configured properly, complete legal agreements and register with the OEM and Microsoft, and get connected to the Internet

The Whistler OOBE goal is to achieve parity with Windows Me OOBE and to advance LAN configuration capabilities and support Whistler-specific issues:

- Get the user ready to the Whistler Desktop in less than 5 minutes for typical OEM scenarios
- Generate excitement about Whistler, measured by usability studies
- Merge Setup UI with OOBE UI
- Enable OEMs to easily pre-populate OOBE information
- Provide OEM branding opportunities
- Provide architecture simplification, improved connectivity, machine migration over Windows Me OOBE
- Ensure easy system configuration for LAN, ICS on a home net, Internet connectivity
- Solve Whistler-specific issues, such as multi-user / logon, machine name, workgroup name, domain name, etc.
- Support user state migration when replacing old PC with a new box (proposed)

Oobe always runs for Whistler Personal setup, can be configured optionally to run for Whistler Professional setup, and *never* runs for Server, Advanced Server, or Datacenter setup.

PC Health, Supportability, and System Recovery – Client SKUs

PC Health goals in Whistler:

- Enhance user satisfaction with Windows by improving help and support experience compared to Windows 2000
- Provide superior reliability, usability and support services
- Continue to reduce support costs for OEMs and Microsoft
- Deliver 100% compatibility with PC Health features in Windows Me
- Retain multi-layered approach
 - Excellent self-help content: Help Center
 - Robust state management: System Restore
 - Easy, efficient assisted support: Support Automation Framework (SAF)
 - Improved feedback: Fault Escalation and Errors
- Improve multi-user and personalization capabilities, especially for enterprises

PC Health / Windows Help Service

The implicit goal of the Whistler Help Service Center (HSC) is to achieve feature parity with the Windows Me implementation. Explicit Whistler HSC goals, in priority order, include the following:

- "Content quality" driven -- deliver content of superior organizational and technical quality (i.e. taxonomy is logical and easily navigable, content easily found through search, content is highly usable, customer satisfaction is high, content is end-to-end, and solves problems). In addition, with the Whistler release, expect much more content available through HelpCenter from Microsoft.
- Relevant -- deliver HSC experiences that address the unique desktop and server audience requirements (i.e. IT admins find the HSC useful using search functionality and available tools, consumer confidently goes to Start | Help knowing her problems will be resolved there).
- Integrated -- deliver an experience that comprehensively brings together key help and support services and content into a singular portal (i.e. assisted support service, update service, compatibility service + Resource Kits, MS Press, microsoft.com, third-party provider content)
- Up to date (a.k.a. dynamic) -- deliver an experience that provides timely content (i.e. newest WindowsUpdate updates, recently modified help topics, newest top questions/issues)

Whistler HelpCenter features are categorized as follows:

- Feedback Requests (Group Printing, Favorites, Full Text Search, Multiple HSC Instances)
- Enhanced User Experience (Server, Desktop)
- New Features (Enhanced Search, Remoteability, Help Feedback Button (may or may not ship with this))
- New HSC Services (Update Center, Upgrade Center, Driver Referral Service, HSC Security Service)
- Assisted Support (Escalation, Tools)
- Production Tools

Feedback Requests Summary

Group Printing: In HTML Help there is a notion of group printing, which allows the user to print an entire chapter of help contents with one print command. For feature parity with HTML Help, Whistler Help and Support Center will allow users to print all topics in a specified node in the XMLTOC. The application will iteratively print all available topics in a given node. Because some topics may be unavailable due to connection issues, only the available content will be printed.

Favorites: In HTML Help there is a notion of favorites, which are bookmarks to help content. These aid the user in quickly accessing frequently visited help items. For feature parity with HTML Help, Whistler

Help and Support Center will allow users to create a list of favorites. Users will be able to mark any link in Help and Support as a favorite link. Users will be able to remove favorites from their list, as well

Full Text Search: Help and Support Center Full Text Search (FTS) enables the HelpCenter to achieve search parity with native HTML Help 1.3 Viewer FTS. It allows a user to search across the entire Windows UA CHM base, using Boolean operators, and return an aggregate list of results.

Multiple HSC Instances: Multiple HSC instances enable users to open more than one session of HSC at any given moment. Using multiple HSC sessions, a user will be able to submit an incident while at the same time viewing help or system information. Likewise, an IT professional will be able to leverage terminal services in intranet support scenarios.

Enhanced User Experience Summary

Desktop User Experience: The HelpCenter experience accompanying the Desktop Standard and Professional SKUs will be fine-tuned to address both these audience types, both from a content and functional perspective

Server User Experience: Likewise, the HelpCenter experience accompanying the Server SKUs, Server, Advanced Server, and Datacenter, will provide some additional functionality, and be specially-tailored for the IT Admin audience.

New Feature Summary

Remoteability: Whistler users will be able to access help content that resides across a network link. Content which lives on a different machine on a network, or across the Internet, will be made available consistently in HSC.

Remoteability addresses requirements from corporate networked environments and OEM-consumer relationships. For corporate users, it is important to be able to view help and information about servers and advanced servers from professional or standard workstations. Previously, it was necessary to install the help content locally and browse with HTMLHelp 1.x. Using Whistler, access to remote content will only require the installation of links and metadata into a local database. OEMs will be able to host content on their Web sites, with the structure and metadata on their customers' Whistler machines.

Search Broker, Search Results: The Extensible Search broker allows a user to query a number of different content stores using one easy-to-find interface, available in the HelpCenter.

Help Feedback: In Whistler, we will instrument the HelpCenter application to enable users and beta participants to provide feedback on HelpCenter content, focusing initially on UA content.

New HSC Services

Update Center (WU Integration): Deliver relevant updates (using WindowsUpdate infrastructure) from directly within the HelpCenter.

Upgrade Center (Compatibility Services): Provide up-to-date, comprehensive, user-friendly hardware and software compatibility information to aid customers in upgrading, making purchasing decisions, and troubleshooting support issues, right from within HelpCenter. In addition, leverage data from customer interactions to better inform MS compatibility teams as well as IHVs/ISVs how to improve their products.

Driver Referral Service (DRS): The Driver Referral Server (DRS) is a Microsoft-owned web site that Windows users are sent to in the event that new hardware is found but no driver is available. The site will have an immediate function of logging the hardware ID for the device for which no driver is found. The user would be thanked for sending their information to Microsoft and this information would be passed back to the driver teams to better determine holes in Microsoft's driver coverage.

In the Whistler RTM timeframe, the Help Center will be launched when no driver is found. The Help Center will offer users the most applicable support and help content available to this scenario, including

- Search on compatible devices (can include product status, downloadable updates, drivers available on third-party sites)

- View a list of compatible devices
- Read Knowledge Base articles related to the device for which they couldn't find a driver
- See additional Help topics related to finding and installing drivers
- Locate links to hardware vendor's sites when possible
- Submit an incident to PSS

Help Center "Security" Service: We will introduce a new program, the Help Center Service (HCS), a COM server running as a service under the SYSTEM account. This program will take the functionality of SAF objects, data Collection object, interaction with databases, plus it will incorporate the functionality now provided by HCUupdate, our mechanism to update the Help Center system.

The objects related to the user state, like Help Session ones, and interaction with the UI, will be left on the UI side. All this information will be stored on a per-user basis, in a subdirectory of the user profile. The service will allow IT Admins to delegate specific support application/content security and access privileges (in scenarios where third party outsourcers provide support content to an enterprise). Likewise, the service enables IT Admins to delegate content access privileges for end users. Anthonyc/avro can also elaborate on this.

Assisted Support

Whistler HelpCenter Assisted Support, Incident Submission and Management: We will provide an easy, highly-accessible way for users to submit and manage product support cases submitted to MS via the web. It is an enhanced version of what was delivered in Millennium.

MSInfo and MSConfig: Both these assisted support tools will be made available through the HelpCenter.

MSInfo is a troubleshooting utility used in assisted support scenarios to assess and diagnose system software and hardware information. In Whistler, this tool will be tightly integrated with the Help and Support Center.

Mconfig is a troubleshooting utility that allows modification of the system files. The most used feature is the Startup tab - PSS copies it to Windows and uses that feature to easily turn off everything in Startup. The tools evolved from just a system file editor to include one-button registry fixes used to solve specific problems discovered late in the release cycle.

Production Tools

The HelpCenter production toolset allows UA authors to easily add content to the HelpCenter. It includes drag and drop topic location in the taxonomy, keyword assigning, synonym assigning, and is fully localized.

System Recovery and Snapshots

A snapshot of a storage volume is a point-in-time copy of the original entity. The snapshot is typically used by a backup application so that it may backup even files that are open, thus creating a coherent backup.

We are implementing the following components:

- An API that uses COM infrastructure for much of its registration and configuration needs
- A COM-based "coordinator" service that drives messages between parties involved in the snapshot process, and perform discovery of applications and snapshot providers
- A storage filter driver that implements volume-based snapshots using a copy-on-write design
- Interfaces to support ISV/IHV plug-ins of other snapshotters
- Interfaces for applications and stores to ensure these snapshots are of consistent state

Interfaces will allow the ISV to perform the following operations:

- Discover and access existing snapshots of volumes
- Make new snapshots based on the current "cutting edge"
- Delete snapshots from the system

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System Restore

System Restore is a change-based monitoring solution for client systems that records and stores locally, recent incremental machine state, in the form of meaningful restore points. The goal of System Restore is two fold: increase customer satisfaction and reduce support costs.

At a minimum, System Restore in Whistler must meet feature parity with the version shipping in Windows Me, plus deliver:

- Improved performance
 - Data store per drive
 - Configurable size per drive
- Selective drive monitoring (include/exclude drive)
- Data store access to virus checkers
- Greater disk space efficiency
 - Smart backup (one copy per restore point)
 - NTFS compression
- Group Policy applies to System Restore configuration settings
- Better integration with Disk Clean-up Utility
 - Warning message when drive gets full
 - System Restore space reclaimable – remove all but latest restore point

Client Manageability, Performance, and Security – Client SKUs

Management and Performance

Whistler addresses these issues for WMI deployment in the enterprise:

- Remove deployment blockers:
 - Ability to aggregate events across the enterprise
 - Simplify the writing of scripts based on WMI/CIM schemas
 - Command line access for everything
 - Ability to cache or persist data
- Improve design: ensure that all providers conform to a standard
- Improve quality: ensure performance and co-existence of providers

Security

Security against Internet threats and simplified user experience are critical Whistler deliverables. Whistler will provide:

- Better out-of-the-box Internet threat protection than Windows 95/98 OEM installs
- User profiles which work for consumers, ISVs, and business customers
- User experience optimized for Internet clients with seamless VPN connectivity to Windows NT networks.
- A safe browsing experience at untrusted sites.

For Personal Whistler, the user security model will be updated for consumer use, together with these changes:

- Personal firewall with stateful inspection by default
- Personalized logon UI
- Administrator used only for safe-mode boots
- New users and passwords applet with support for multiple credentials

Details about manageability, performance, and security features for clients are included in the feature set described in "Part 3: Whistler Server," later in this document

Part 3: Whistler Server

See "Part 4: 64-bit Platform – Server and Professional" later in this document for related issues.

Server Design Goals

The server versions of Whistler have the following key design goals:

- **Improve manageability of the Windows environment and of servers especially.** A number of features are proposed to continue enhancing the manageability of Windows systems in corporate environments, especially for 1:many, headless, and remote management
- **Accelerate deployment for specific customer-requested scenarios.**
- **Provide comprehensive 64-bit support.** A Whistler design goal is that all server services will be 64-bit capable and optimized for 64-bit performance. Specific services may be identified as exceptions and permitted to run in 32-bit mode only.

The following are the key deployment scenarios and requirements referred to in defining Whistler features:

- E-site: Dot Com, E-commerce, On-line presence, Collaboration, Corporate Internet Portal
 - Enterprise Infrastructure: Security, directory, networking
 - Departmental Server: Branch office, Local department
 - Service Provider
 - Enterprise LOB: Application, Data Servers, Server Consolidation
 - Key Requirements: Manageability, scalability, availability
-

Base System, File, and Print – Server SKUs

A number of minor feature and performance enhancements will be added to the base Whistler system. In addition,

- **Limited Hot Plug PCI support**
PCI cards can be added to the system on the fly. PCI cards can be removed from the system on the fly by unloading the device driver stack. Whistler will only support Hot Plug PCI implemented by OEMs via ACPI 1.0b mechanisms, and will *not* support hot swap or failover.
 - **Cluster Service (MSCS):**
 - **4-node failover clusters:** Certified MSCS configurations may now include up to 4 servers.
 - **Cluster configuration wizard:** A new wizard will simplify the initial setup and ongoing management of cluster configurations. This tool will consist of a server-side agent plus a client-side component that manages and synchronizes the configuration process from a remote computer.
 - **WMI events:** A WMI provider will be provided for subscribing to MSCS events.
 - **Scriptable cluster resources:** A new scripting host will allow cluster resources to be setup using Visual Basic Scripting.
 - **Print enhancements, including print management enhancements.**
 - **Memory mirroring.**
-

Server Manageability

Headless, Remote, and Unattended Server Management

These are the key features and capabilities to be delivered in Whistler, with the intent that in a large number of situations a Whistler system should be completely remotely managed:

- **Headless and remote management**
 - **Headless Emergence Management Services (EMS)**

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- Scripting and command line
- Remote console, Remote Installation Services (RIS) for servers, Terminal Services administration mode in Professional and all server SKUs
- Management Infrastructure
 - WMI providers; XML/HTTP
 - Enterprise event log; health monitor
 - Snapshot backups
- User and System admin
 - RSOP; broader policy coverage
 - Easier cluster administration and installation
- Hardware management
 - Limited Hot Plug PCI
 - Significant Chkdsk performance improvements

WMI Infrastructure for Server Manageability

The WMI management infrastructure will be enhanced to:

- Increase scalability, robustness and performance through a number of relatively small features
- Simplify deployments and improve customer satisfaction
- Provide programmatic integration with Active Directory including adding support for a common data model and common interfaces
- Add the capability to give access to management data over Internet
- Provide a number of new WMI providers to broaden the management information available to administrators and to management applications

Some specific WMI enhancements will include:

- Allowing users to aggregate or bind their specific COM objects to CIM objects so that a QI will return the user's COM object
- Making it possible to define a custom mapping of WMI schema to a SQL database and vice versa. In addition to enabling the enterprise event log, a SQL Server repository will provide better scripting and querying of WMI data.
- Allowing the object manager to support transactional updates including API updates to support begin, commit and rollback
- More flexibility as to the processes in which providers run

In addition, an XML/WMI adapter and a CIM/XML compiler will be made available. The combination of these two features will allow WMI objects to be referenced remotely via standard Internet protocols.

Server Security

Basic goals for Whistler include the following:

- Build on Windows 2000 platform foundation
- Improve end user's security experience
- Provide flexible and high perf. access control to applications
- Continue to improve security management and monitoring
- Support large-scale deployment of PKI enabled applications

Some of the planned work includes the following:

- End User SSO Experience
 - Credential Manager
 - Simplify user logon experience
 - Multiple intranet and Internet services ⇔ Multiple credentials
 - Transparent use, automatic handling of different credentials – passwords, certificate/private keys, ..

- Per-user encrypted store
 - Common end-user UI
- Active Directory™ support for Digest Authentication protocol
- Smart cards for Administrators
 - Enable use of smart cards for administrative operations
 - Smart card credentials to "Map network drive"
 - RunAs support for smart card
 - Automatic password management for users that must logon with smart card
 - Smart card credentials for terminal server sessions
- Using Encrypted Files
 - Enable more ways to use encrypted files easily
 - Enable sharing of encrypted files
 - Encrypted client side cache
 - Performance enhancements of EFS driver
 - Support kernel-mode FIPS-compliant cryptography
 - Simplify standalone recovery model
 - Looking at ways to support encrypted files on Web drives
- Security Management
 - Remote Security Configuration Tools enabled using WMI
 - Remote configuration, analysis, and reporting capabilities
 - Secure Server Roles – Web, File/Print, Domain Controllers
 - UI to show effective permissions for an individual user
 - Active Directory access management
 - Delegation wizard improvements
 - Reset of permissions on OU subtree
- Security Management
 - Better control of distributed security infrastructure
 - Enforcement of SID validity across trust links
 - High availability offline logon capability for clusters
 - Looking at ways to enable cross-forest authentication
 - Kerberos and NTLM
- Security Monitoring
 - WMI enabled trust monitoring and self healing
 - Auditing file I/O operations (Read/Write)
 - Increased auditing in Certificate Server, Time server, others
 - Plumbing work for WMI based audit infrastructure
 - Extensible, flexible, smarter, scalable, complete
- Improve application server security
 - Least-privilege context for services
 - Local System, Local Service, Network Service, Domain service
 - Improved robustness and security
 - Application-level access check mechanism
 - Support for application-defined business rules and dynamic groups
 - High performance for distributed authorization with central control
- Large Scale PKI Deployments
 - Interoperability
 - Cross certificates for Bridge CA and Entrust interoperability
 - New cert request message types (CMC)
 - CA management
 - Better role separation, increased granularity of operational roles
 - Enrollment Agents for ECA delegation

- Delta CRLs for increased CRL freshness
- General key archive/recovery service
- Windows 2000 Common Criteria Evaluation
 - Formal evaluation of Windows 2000 security mechanisms
 - Common Criteria as evaluation process for all future evaluations
 - Security Target, Operating System Protection Profile (CAPP)
 - Subsystem by subsystem analysis and requirements verification
 - Correspondence test matrix

Windows Server Deployment Enablers

Based on customer feedback, the following areas will be addressed for enhancements in Whistler:

- Directory
 - Improved replication and deployment
 - Cross-forest management
 - Application and LDAP integration
- Server security (see "Server Security" in the previous section)
- IIS — performance, management, security
- File/base system
 - Remote HSM
 - EFS/CSC/DFS interoperability
 - File server performance
 - Remote clusters configuration and management

Base system, file, and print features are summarized in greater detail in "Base Platform Advances" earlier in this document.

- Server networking deployment enablers include:
 - DNS enhancements to add incremental features and improve manageability.
 - IP stack performance and improvements to real-time communications infrastructure.
 - Radius Proxy as an enhancement to the Radius server already shipping with IAS. With this enhancement, SPs and large companies can control authentication locally even when remote access is outsourced to a remote supplier.
 - Multicast enhancements.
 - IPv6 APIs and Internet Explorer support for IPv6.
 - Making IPSec policies more available to third-party management.
 - WinSock Direct

Part 4: 64-bit Platform – Server and Professional

The 64-bit version of Windows runs on IA-64 systems. EFI-based boot is the only boot model for IA-64 platforms (and EFI is not supported for 32-bit systems). For details, see <http://www.microsoft.com/hwdev/efi/>

The initial release of 64-bit Windows will include key Windows 2000 features:

- Directory and security services
- SMP support
- Clustering and load balancing
- Internet Information Service
- Administration and management tools, including policy support
- Networking, including RAS, TCP/IP, TAPI, QoS, and so on
- Terminal Services

ACPI support requires implementation of the 64-bit table extensions defined in ACPI 2.0.

Whistler 64-bit features, as an addition over support delivered in the initial release of 64-bit Windows, will include:

- Larger memory — system availability may drive final capacity
- Clustering (The Windows 64-bit release in conjunction with Itanium launch will support 2-node clustering. The Whistler 64-bit release will support 4-node clustering.)
- Client and Server manageability enhancements
 - Remote and command line tools; remote WSH
 - Enhanced infrastructure including: new WMI providers; XML; enterprise event log; snapshot replication; RSOP; Limited Hot Plug PCI
 - PC Health and Windows Update enhancements
- Client enhancements
 - UI/shell Enhancements
 - ClearType™
- Directory and security deployment accelerators — Interoperability, support of key scenarios
- Internet Explorer 5.5

An up-to-date list of hardware supported on 64-bit Whistler will be provided in a future draft of this document.

Design guidelines for platforms that run 64-bit Whistler are defined in *Hardware Design Guide Version 3.0 for Microsoft Windows 2000*, available at <http://www.microsoft.com/hwdev/serverdg.htm>.

Appendix A: Whistler Feature Tables

Whistler Base Platform – Planned Features

Area	Work Item	Per	Pro	Srv	64-bit
App Compatibility	SE work	X	X	X	X
	Removing MS-DOS full-screen mode	X	X	X	X
	Tool creation and consolidation	X	X	X	X
	Expand set of Terminal Server-tested apps to 50, improved security for legacy apps			X	X
	Application fixes via shims and apps help	X	X	X	X
GDI / GDI+	ClearType in GDI	X	X	X	X
	VGX - VML Rendering component for IE (renders Vector Markup Language content on web pages)	X	X	X	X
	Win32 GDI - Improve TrueType rasterizer robustness for bad fonts	X	X	X	X
	GDIPlus engine	X	X	X	X
Device Support - Devices/IO	Native Mode IDE Switch	X	X	X	X
	USB DBC support (and post-0.9 spec support pending hw availability)		X	X	X
	Dual View for laptops		X	X	X
	Memory Mirroring	X	X	X	X
	1394 Debugging	X	X	X	X
	Hot Plug PCI	X	X	X	X
	Multifunction Device Installation Improvements	X	X	X	X
Support for selective suspend of USB root ports	X	X	X	X	
Device Support - Win9x Parity	Device - Launch App	X	X	X	X
	Hardware User Interface	X	X	X	X
	INF Search Cache	X	X	X	X
	ATA Flash on desktops	X	X	X	X
	Complete support for enhanced keyboard buttons (PS/2, USB)	X	X	X	X
	Support for DirectInput genre descriptor (USB)	X	X	X	X
	1394 dynamic CROM APIs and device emulation	X	X	X	X
	61883-compliant isochronous transport driver	X	X	X	
	OHCI isochronous transmit scatter-gather support	X	X	X	X
New Generic Parent driver (Usbccgp sys)	X	X	X	X	
Misc. Language/Text Support	IME (FE) - new version	X	X	X	X
	NLS - Add support for additional locales of the CIS Kirghiz, Mongolian (Cyrillic), Galician locale, old Hangul characters for Korean sorting, rest of the Indic locales. Punjabi, Gujarati, Onya, Telugu, Kannada, Bengali, Malayalam, & Assamese	X	X	X	X
	NLS - Integrate Millennium region APIs with NLS behaviors	X	X	X	
	NLS - Integrate Millennium Regional Options control panel changes	X	X	X	
	Accessibility - SAPI 5 New speech recognition & Text-to-Speech (TTS) API	X	X	X	X
	Converters - WordPad reads Word 97-2000 & Windows Write files; IE posts RTF to clipboard	X	X	X	X
Availability (boot/resume)	Simple Boot Flag	X	X	X	

Area	Work Item	Per	Pro	Srv	64-bit
	Improve boot and hibernate performance	X	X	X	X
Power Mgmt - Battery Life	Dim display when laptop is running on battery power, turn off laptop display when the lid is closed	X	X	X	
Power Mgmt - Devices/IO	Geyserville and Gemini Support	X	X	X	
	Support for unloading of ASL tables	X	X	X	
	Support for wake on battery	X	X	X	
Power Mgmt - Supportability	CardBus Wake On LAN	X	X	X	
	Determine what event caused the system to wake	X	X	X	X
	Improve ACPI fatal instruction	X	X	X	X
	S4 and S3 support in terminal server	X	X	X	X
Printing	Cluster Print Driver Installation	X	X	X	X
	DrvDocumentEvent hookable (fax support)	X	X	X	X
	Support for inkjet duplex	X	X	X	X
	Synch up w/Adobe PostScript changes	X	X	X	X
	Unidrv pseudo vector support	X	X	X	X
	CAB install during pointnprint	X	X	X	X
	INF chaining to support MFP installs	X	X	X	X
	Dynamon enhancements for full Dot4 and 1394	X	X	X	X
	General print UI improvements	X	X	X	X
	Block Installation of Kernel Mode drivers	X	X	X	X
	Port NetCrawler for printers	X	X	X	X
	BiDi capabilities to enable IHV drivers, Win9x parity	X	X	X	X
	WMI Provider for Print Components	X	X	X	X
Storage & Filesystems	RSS - MO media support	X	X	X	X
	Simplify support of faster ATAPI transfer modes	X	X	X	X
	UDF 2.01 Read-Only	X	X	X	X
	CD-RW	X	X	X	X
	NTFS Defrag enhancements (GUI, perf, new APIs)	X	X	X	X
	CHKDSK Performance	X	X	X	X
	DVD-RAM (including Fat32 file system support)	X	X	X	X
Driver Quality	Display Packet DMA	X	X	X	X
	Driver Verifier v. 2 - device class-specific tests; better asynchronous I/O	X	X	X	X
DDK / SDK / Debugger	DDK live printer samples and doc	X	X	X	X
	ChkINF & GenINF - Support For More Device Classes	X	X	X	X
	Replaceable Debuggers	X	X	X	X
	Windows Installer - Base work	X	X	X	X
	Windows Installer - COM+ and URT application support	X	X	X	X

Whistler Base NON-FEATURE

- Ability to define no action for the power button
- Calibration support for touch screens incl CPL work (USB)

Whistler Base NON-FEATURE

- Compression on the Wire (storage & filesystems)
- Device Security
- Fibre Channel (native support)
- Hibernate more than 4GB RAM
- I2O (storage drivers)
- IEEE 1394b and 800Mbps support (per hw availability)
- IEEE1394OHCI 1.1 host controller support (per hw availability)
- InfiniBand Support
- LF - Support crash dump when booting on 1394
- Link the power policy to the machine
- Lunmasking (storage drivers)
- Multimon Undocking
- Multipathing
- New Multimedia Timer Support
- Partial Arbitration for PCI-PCI Bridges
- PCI multilevel rebalance
- Printer Administration for multilingual client
- Remote power on
- Remove reboot requirements for language packs
- Secure Docking
- Support C3 processor state even while a USB device is active
- Support for IEEE1394 1212-2000 compliant CROMs (per hw availability)
- Support hot plug memory devices
- UGA
- User option to disable all wake events
- Win32 API for Sparse Files
- ACPI 2.0 (except table enhancements for 64-bit)
- Native serial ATA
- Support for an invariant locale
- Add new NLS APIs to return Unicode general category
- Mass storage support for multi-LUN devices

Consumer Features and Digital Media Features

Whistler Personal Features and Digital Media – Planned Features

Area	Work Item	Per	Pro	Srv	64-bit
Digital Media	AEC/AGC - telephony support	X	X	X	
	Digital TV support for ATSC, DVB, and OpenCable	X	X	X	
	Movie Maker	X	X	X	
	61883/AVC for MPEG2 streaming	X	X	X	
	Digital Video Cameras Coverage at 100%	X	X	X	
	Global Effects Support (GFX)	X	X	X	
	New video renderer for improved video quality - improved rendering, windowless rendering - media playback support; HW alpha blending	X	X	X	X
	Solid multichannel audio support	X	X	X	
	USB audio class driver enhancements	X	X	X	
	USB video device coverage - Win9x parity+	X	X	X	
	Millennium kernel audio performance parity	X	X	X	
	Port of updated audio components from Millennium	X	X	X	
	DirectShow performance enhancements	X	X	X	
	Video Millennium features	X	X	X	
	1394 audio class driver	X	X	X	
Digital Imaging	MS Paint enhancements to support WIA	X	X	X	X
	My Pictures folder integration	X	X	X	X
	NT Event logging integration	X	X	X	X

Area	Work Item	Per	Pro	Srv	64-bit
	Security and SCM support	X	X	X	X
	My Pictures Screensaver	X	X	X	X
DirectX 8	DX8 - audio support	X	X	X	
	DX8 - Direct3D	X	X	X	X
	DX8 - DirectPlay	X	X	X	X
	DX8 - DirectPlay	X	X	X	X
WIA - Digital Imaging	Common open dialog camera integration	X	X	X	X
	Scanner, streaming camera, and still camera common dialogs	X	X	X	X
	Micro-driver for flatbed scanners	X	X	X	X
	STI Kernel mode drivers for USB & SCSI	X	X	X	X
	Add drivers for new scanners, cameras, and MFPs	X	X	X	X
	Port relevant Millennium drivers	X	X	X	X
	PTP 15740 (driverless model for cameras)	X	X	X	X
	Class installer programming interfaces	X	X	X	X
	Camera & Scanner explorer extensions	X	X	X	X
	Scripting for device drivers	X	X	X	X
	TWAIN compatibility layer for applications	X	X	X	X
	Add ADF UI (needed for MFPs)	X	X	X	X
	Scanner and Camera wizard	X	X	X	X
Windows Media Services	Server - WM Encoder (encodes content into WM format - built on top of WM Format SDK)	X	X	X	X
	Server - WM Format SDK (support for content encoding, playback, DRM; WM codecs)	X	X	X	X
	Server - WM Server (Streams WM content to WM players)	X	X	X	X
	Client - WM Player (plays back streamed & downloaded WM content - built on WM Format SDK)	X	X	X	X

Whistler Digital Media NON-FEATURE

- CAB install using pointnprint
- Conditional access for OpenCable & DVB
- Dynamic Plug and Play for the Parallel Port (digital imaging)
- Flash memory WIA driver
- General Print UI Changes
- IrTranP camera support
- Scan to fax from Scan Wizard (for MFPs)
- Scroll-fed scanner/MFP support in UI
- Support for headset volume and microphone mute controls (USB)
- Time shifting
- Troubleshooter for WIA devices
- UI to replace sndvol, control panel, & microphone wizard
- WIA - DOT4 integration (bi-directional comm for MFPs)
- WIA driver - Flash memory card Insert notification Integration
- WIA Installer - support for MFP scanner component
- WIA integration for DV cameras
- WIA Micro-driver enhancement for consumer scanner driver quality
- WIA namespace Integration with new shell UI framework
- WIA support for photo scanners & transparency units
- WMI integration - digital imaging
- DX8 - app man
- TV, EPG, and DVD support integrated in WMP
- Resource management for video

Whistler UI and User – Planned Features

Area	Work Item	Per	Pro	Srv	64-bit
Accessibility	Remove Wizard	X	X	X	X
Account Mgmt	Account Mgmt CPL (Users & Passwords)	X	X		X
File Management	Better sorting and order feedback	X	X	X	X
	Open/Save dialog changes: iMoniker support (SaveTo for web, ftp, zip)	X	X	X	X
	Expose common folder and file tasks dynamically in WebView	X	X	X	X
	Media folders (My Music/My Pictures)	X	X	X	X
	New folder thumbnails with 4 mini previews	X	X	X	X
	New grouping behavior, visuals, and UI (includes increasing thumbnail size)	X	X	X	X
Multilingual User Interface	New Tiles view (icon on left, text on right) (listview)	X	X	X	X
	Admin tool for install/UI restriction	X	X	X	X
	Shell Folders & Shortcuts (MUI enabling)	X	X	X	X
Security	Move UI strings from kernel to user mode for MUI	X	X	X	X
	Welcome screen	X	X	X	X
State	Consumer Migration Tool	X	X		
UI	Config UI (above basic Personal/Professional switch)	X	X	X	
	Visual excitement (animations, etc)	X	X	X	
	New WebView for CP	X	X		
	New notification behavior	X	X		
	Running tasks (glomming)	X	X		
	Browser UI Update, P3P update	X	X		
	File Associations	X	X	X	X
	Start Page	X	X		
	Printer and Fax folder w/ WebView	X	X	X	X
Win32	New input framework for FE	X	X	X	X
	Command Prompt accessibility support	X	X	X	X
	Composited painting	X	X	X	X
	Generic input	X	X	X	X
	High resolution monitor support	X	X	X	
	Implement Millennium IntelliPoint features	X	X	X	X
	Policy support	X	X	X	X
	Remove reboot for enabling IMM/IME	X	X	X	X
	Return hwnd that vetoes a PNP query	X	X	X	X
	Shell UI update	X	X	X	X
	Window class versioning – Fusion	X	X	X	X
Web Publishing & Sharing	Windows User Switching	X	X	X	X
	Web Documents - Hyperlink Navigation (hlink.dll)	X	X	X	X
	Web Folders (32 bit)	X	X		
	Burn to CD	X	X	X	
	Publish to Web	X	X	X	
Sharing (send to)	X	X	X	X	

Whistler USER / UI NON-FEATURE

- Changes to Open/Save dialog: thumbnails preferred
- CHS/CHT font license for langpack
- ClearType CPL
- Dynamic Other Places list for easier navigation
- End-user customization UI
- Links to special folders (e.g., My Docs), settings, etc.
- Merge display & themes in HTML UI, + skins picker
- My Music folder template
- My Video folder on par w/ My Pictures folder
- No reboot for adding langpack - GDI (font link, CS), USER (IMM)

Whistler USER / UI NON-FEATURE

-
- OEM customization of Start menu
-
- Online extensibility (links to online content within WebView)
-
- Option to turn off cursor blink rate (API only)
-
- Population of related apps for special media folders (use open with)
-
- Recent files list (better tracking/launching of files)
-
- Recent programs list (better tracking and launching of programs)
-
- Simple Networking UI
-
- Skinning support
-
- Start menu/desktop simplification
-
- Touch screen support
-
- WebView for Date & Time CPL
-
- Control Panel Applet (rewritten using HTML)
-
- On-Screen Keyboard rewrite
-
- Utilities - Windows Tracker
-
- New input CPL
-
- New input desktop management UI
-
- Dynamic keyboard layout switching
-

Whistler Networking — Planned Features

Area	Work Item	Per	Pro	Srv	64-bit
Device/Platform Coverage	Broadband Device Support — OS driver for PPP over Ethernet, RFC 1483, refine INS file settings	X	X	X	
	NDIS LAN Device Support	X	X	X	
	NDIS Wan Device Support	X	X	X	
	Provide New Device Support	X	X	X	
	Residential Broadband Support	X	X	X	
	Residential Broadband Client - PPPOE	X	X	X	
	Audio Streaming Enhancements	X	X	X	
Home Networking	Network Location Awareness	X	X	X	
	Stateful Packet Filter - Personal Firewall (no intrusion detection UI)	X	X	X	
Infrastructure	IGMPv3 Proxy Support - Support for Base Stack Functionality t	X	X	X	
Management	Complete unattended install of net client	X	X	X	
	Multicast source control	X	X	X	
	SNMP MMC Snap-in Update	X	X	X	
	WINS Persona Grata	X	X	X	
	Zero Configuration Wireless LAN	X	X	X	
	CMAK UI Upgrade - Corporate RAS Client Improvements	X	X	X	
	DHCP - Add MMC Task Pads	X	X	X	
	DHCP MMC to Mgmt Cookbook - Easily Managed and Configured Windows Networking Infrastructure	X	X	X	
	IAS as a Radius Proxy - Complete Networking Policy Solution				X
	IAS MMC to Mgmt Cookbook - Easily Managed and Configured Windows Networking Infrastructure				X
	Install Psched by Default - Easily Configured Client	X	X	X	
	QoS MMC to Mgmt Cookbook - Easily Managed and Configured Windows Networking Infrastructure	X	X	X	
	RAS MMC to Mgmt Cookbook - Easily Managed and Configured Windows Networking Infrastructure	X	X	X	
	Auto-discovery of TAPI Servers	X	X	X	
	Easily Managed and Configured Windows Networking Infrastructure	X	X	X	
TAPI Server Deployability Enhancements	X	X	X		
PBA	Phone Book Administrator (PBA)	X	X	X	X
Performance	Networking media bridging (includes spanning tree)	X	X	X	X
	Cancel I/O support in NDIS/TCP/IP	X	X	X	X

Area	Work Item	Per	Pro	Srv	64-bit
	ConnectEx/TransmitPackets in Winsock / TCP/IP	X	X	X	X
	ICS Discovery and control from clients	X	X	X	X
	IGMPv3	X	X	X	X
	Minimal IP LAN configuration & UI	X	X	X	X
	RFC 2684 (PVC Encapsulation)	X	X	X	X
	Secure Wireless LANs	X	X	X	X
	TCP/UDP port ownership	X	X	X	X
	Winsock Direct - DTC party	X	X		
Real-Time Comm	Call setup improvements (Fast Connect)	X	X	X	
	H 323 Gatekeeper Registration	X	X	X	
	Improved Streaming on IP service providers	X	X	X	
	TAPI Call Transfer & Forwarding	X	X	X	
	TAPI Record & Playback Terminal	X	X	X	
	USB Phone Support	X	X	X	
	Video Streaming Enhancements	X	X	X	
Legacy Support Removal	Remove Full MAC (media access Control) Net Device support	X	X	X	X
	Remove non-PNP NIC Device support	X	X	X	X
Simple Networking	Port/Modify Homenet wizard	X	X	X	
	Autoplay for hardware	X	X	X	
Supportability	Improve IPSec Monitoring Capabilities	X	X	X	
	Modem Country Select	X	X	X	
	CM Route Plumbing - Corporate RAS Client Improvements	X	X	X	
	UI for DHCP Backup and Restore	X	X	X	
Win9x Parity	Diagnostic WMI provider	X	X	X	
	IP over 1394	X	X	X	X
	3rd Party Scripting Support - Corporate RAS Client Improvements	X	X	X	
UPnP	Windows as a UPnP user control point (Win9x Parity)	X	X	X	

Whistler Networking NON-FEATURE

- Improve NLBS Configuration UI
- TAPI Speech recognition Terminal
- TAPI Text to Speech Terminal
- UPnP hosted services architecture (enables PC to be UPnP soft device)
- UPnP service provider model (enables legacy devices to show as UPnP devices)
- IAS - Add MMC task pads
- RRAS - Add MMC task pads
- Performance Enhancement for NLBS
- Remote NDIS - USB Ethernet
- TAPI DTMF terminal
- My Computer: webview & system properties enhancements
- Update Modem Diagnostics

Whistler Setup and Upgrade - Planned Features

Area	Work Item	Per	Pro	Srv	64-bit
Fusion	Support Multiple Contexts so User32 work is enabled.	X	X	X	X
	Support OLE32 & OLEAut32 redirection	X	X	X	X
General	Better logging support thru all phases of setup	X	X	X	X
	Generate a system event after clean install or upgrade	X	X	X	X
	Prevent OS downgrade	X	X	X	X
	Remove boot floppy support for installation	X	X	X	X
OOBE	Add broadband support to OOBE	X	X		
	Customer information added to unattend txt	X	X		

Area	Work Item	Per	Pro	Srv	64-bit
	Port Millennium OOBE	X	X		
	Extend OOBE beyond Millennium	X	X		
	OOBE integration into setup	X	X		
	MSN service new version, with a friendly UI for signup, web browsing, web email, instant messaging	X	X		
Preinstall	Replace mini-setup with a new process for preinstallation	X	X	X	X
	Support for encrypted passwords in answer files - base Setup/unattend change	X	X	X	X
	Sysprep modifications to handle factory floor preinstallation	X	X	X	X
	Sysprep needs to clear eventlog	X	X	X	X
	Unattended flags for crashdump options	X	X	X	X
	Unattended flags for hibernation	X	X	X	X
	WinBOM processing engine (exe that runs on factory floor to handle out of box drivers)	X	X	X	X
	Provide a mechanism to allow in-box mass storage drivers to be serviced in text	X	X	X	
Win9x Upgrade	Millennium migration work (add files to Migdb.inf)	X	X		
	Preserve autologon (Win9x has no user -> NT has autologon)	X	X		
	Support encrypted domain join/admin/user passwords		X		

Whistler Setup NON-FEATURE

FTP download of migration DLLs - all upgrade paths

Support HAL-independent preinstall images

Unattended flag for recovery console installation

Recovery - Provide a way to recreate the boot ini

Network support in Recovery Console

Multi CD install

MS Info - Winrep

Provide a single place where users can go to submit feedback on Microsoft products

Auto-starting into Safe Mode on after an unexpected shutdown of Windows

Support global and app level Policy for side-by-side install of Win32 components

Preserve user %path% ordering on upgrades

Whistler PC Health / Supportability – Planned Features

Area	Work Item	Per	Pro	Srv	64-bit
Help Center / Services	Connection detection	X	X	X	X
	Create Service and split objects between Service and UI	X	X	X	X
	Extensible Search Mechanism	X	X	X	X
	Graceful degradation based on connectivity	X	X	X	X
	Help & Support Center Full Text Search	X	X	X	X
	Help & Support Center Multiple Instances	X	X	X	X
	Help & Support Center Node Printing	X	X	X	X
	Help & Support Center User Favorites	X	X	X	X
	Programmable API for Content only pane	X	X	X	X
	Secure script engine wrapper	X	X	X	X
	Help Center - Convert from Jet Red to Jet Blue	X	X	X	X
HTML Help	HTML Help 1.3 & 2.0	X	X	X	X
Supportability	MS Info - Context Sensitive Help - Help documentation based on Context of navigation	X	X	X	X
	MS info - Enhance History View	X	X	X	X
	MS Info - New Data Items - Additional new information added to the Display	X	X	X	X
	MS Info - Opening PC Health Incident CAB Files	X	X	X	X
	MS Config - Troubleshooting tool for Support Incidents	X	X	X	X
	Product Feedback - capture /upload GPF/bluescreen events + config info. Integrate with debug/view tools	X	X	X	X

Area	Work Item	Per	Pro	Srv	64-bit
Support Automation	Add dynamic WMI config pages to device manager	X	X	X	X
	Expose ATAPI 5.0 SMART functionality via WMI	X	X	X	X
	Expose SMBIOS Eventlog and SYSID via WMI	X	X	X	X
	Move WMI Core code into Kernel mode from Services	X	X	X	X
	Port Millennium features to Whistler Support and Support Automation	X	X	X	X
System Recovery	Driver Rollback	X	X	X	X
	Driver Versioning	X	X	X	X
	Last Known Good	X	X	X	X
	WFP - Group Policy for windows source path	X	X	X	X
	User selectable keyboard layout support - Recovery	X	X	X	X
	File Associations - API, rollback, pre-registered viewers, user prompts, better open with	X	X	X	X
Storage & Filesystems	WMI Logging in DFS	X	X	X	X
	ASR - Automated System Recovery	X	X	X	x
	Fix Lazy Writer Popups	X	X	X	X
	LVM (forcing conversion, Encap changes, but not EFI)	X	X	X	X
	NTFS SetShortName for Backup	X	X	X	X
	Snapshots	X	X	X	x
Windows Update	Handle user rights - require admin privilege	X	X	X	X
	Policy to disable AutoUpdate in corporate	X	X	X	X
	Auto Notification of new drivers on Windows Update	X	X	X	X
	Logging unsupported devices to referral site	X	X	X	X
	Remove obsolete driver submission requirements	X	X	X	X

Whistler PC Health / Supportability NON-FEATURE

- Debugger - Fault data collection
- Enable WFP to support multiple versions of the same protected file
- SMART failure popup from SysTray
- Support Automation - improve content update mechanism to support registration of executable content, e.g. COM objects
- Support Automation - Improved handling of failing devices
- WFP - Component level version checking
- WFP - Updating MoveFileEx delayed file-rename operations
- WFP - Windows File Protection Browse UI - Choose dir to get files from
- WMI Diagnostic Infrastructure
- Microsoft Help 2.0 Runtime - Help Data Services (APIs for accessing Help info as data)
- MS Info - Context Sensitive Tools - Ability to launch tools based on context of navigation
- MS Info - History View - Displays System History Collected by PC Health

Whistler Server Manageability and Supportability – Planned Features

Area	Work Item	Per	Pro	Srv	64-bit
WMI - Event Log / Performance	Integration w/ GPO Services, RSOP, SOM hooks	X	X	X	X
	Add HiPerf WMI apis to support perfmon	X	X	X	X
WMI - Health Monitoring and Eventing	Distributed Event Correlation	X	X	X	X
	Distributed Event Subscriptions (Policy-based)	X	X	X	X
	Guaranteed Delivery of Events (MSMQ integration) - support not-connected env	X	X	X	X
	Policy features of EEL applicable for Health Monitoring (SOM, Policies, integration w/ GPO)	X	X	X	X
Scripting	JScript - ECMA 3 compliance (new features to support standards)	X	X	X	X
	Scripting Docs	X	X	X	X
	VB Script - Regular Expressions - Match JScripts new features	X	X	X	X
	Windows Scripting Host - Command line improvements & remote support for WMI	X	X	X	X
	Directory - WMI support	X	X	X	X

Area	Work Item	Per	Pro	Srv	64-bit
	Account Info - WMI Provider	X	X	X	X
	Printer Config - WMI Provider	X	X	X	X
	Job Objects - WMI Provider	X	X	X	X
	ICMP - WMI Provider	X	X	X	X
	DFS - WMI Provider	X	X	X	X
	Quotas - WMI Provider	X	X	X	X
	Session Status - WMI Provider	X	X	X	X
	CHKDKS - WMI Provider	X	X	X	X
	Robustness & Security & Performance	X	X	X	X
Performance	Remove registry quotas / perf	X	X	X	X
	Export PDH cooking functions for use by WMI	X	X	X	X
	Modify enable/disable event trace API	X	X	X	X
	Performance Tools	X	X	X	X
	Process log files > 1 GB in size (self standing)	X	X	X	X
	Produce log files from Perfmon display	X	X	X	X
	Provide 2 new event trace APIs	X	X	X	X
	Provide SRV/DFS/FRS Event Tracing Instrumentation	X	X	X	X
	Provide Trending Analysis in Perfmon	X	X	X	X
	Select Multiple Instance and Objects in Perfmon	X	X	X	X
	Support move of WDM/WMI to kernel	X	X	X	X
Security - ACL Editor	ACL UI – usability improvements	X	X	X	X
	First Page Additional Permissions Exist feature	X	X	X	X
	First page First page must show exact permissions. There is no complicated subtraction logic	X	X	X	X
	Review and reword all text on ACLUI (including new column and dynamic text)	X	X	X	X
	Show Effective Permissions feature	X	X	X	X
Security - Certificate Server	CA Delta CRLs	X	X	X	X
	Cross certification (certreq)	X	X	X	X
	Cross certification (certutil)	X	X	X	X
	Editable cert templates	X	X	X	X
	Key archival/recovery	X	X	X	X
	Multiple CDP (CRL Distribution Points) support	X	X	X	X
	PKI Common criteria (roles support, auditing)	X	X	X	X
	User autoenrollment	X	X	X	X
	CA snapin cleanup	X	X	X	X
Security - CryptoAPI	CryptoAPI Delta CRLs	X	X	X	X
	CryptoAPI for x-cert	X	X	X	X
	Hash db/catalog files	X	X	X	X
	Kernel-mode crypto DLL for FIPS-140 compatibility	X	X	X	X
	Vendor management (Add SC CSPs)	X	X	X	X
Security - EFS	Allow FIPS compliant alg - 3DES		X	X	X
	Client-side-caching support		X	X	X
	Misc. improvements: better exception handling, improved error reporting		X	X	X
	EFS support (copying files preserving user list)		X	X	X
Security - Key Ring UI	Key Ring	X	X	X	X
	User model changes	X	X	X	X
Security - Netlogon	New API to monitor trust links C334	X	X	X	X
	Netmon parser support	X	X	X	X
	Pseudo-domain support (Non-domain naming contexts)	X	X	X	X
Security - PSTORE	System Wide Encryption Design (pstore / syskey / LSA secrets)	X	X	X	X

Area	Work Item	Per	Pro	Srv	64-bit
	User account moves for PK creds (pstore)	X	X	X	X
Security - SCTS	Abolishment of local policy concept	X	X	X	X
	WMI Integration for RSOP, Extensibility	X	X	X	X
	Extended Regkey type support (multisiz, bitmask)	X	X	X	X
	Reasonable default values on create	X	X	X	X
Security Protocols	Digest SSP for LDAP interop requirements	X	X	X	X
	SSP shared code cleanup / logging / error reporting (NTLM / Kerb / SSL / Digest)	X	X	X	X
Security – Misc.	Operation based auditing	X	X	X	X
	Authorization APIs	X	X	X	X
	Credential Management - core cred mgmt store, win32 cred mgmt APIs	X	X	X	X
	Multiple Desktop/Fast User Switching	X	X	X	X
	Delegation Wizard	X	X	X	X
	Interop issues - Encrypting the CSC Database	X	X	X	X
	Kerberos extended errors (affects diagnosis/supportability)	X	X	X	X
	NTLM Machine account logon	X	X	X	X
	Schannel - Fix SSL client auth cert selection issues	X	X	X	X
	Services running in Services.exe to run in svchost.exe to reduce services that have TCB privilege	X	X	X	X
	Support Smartcard Logon Over a Terminal Server Connection	X	X	X	X
	Time service rewrite, hardware support	X	X	X	X
	RAS Shared Credentials (Win9X Party)	X	X	X	X
	Winlogon - Reduced privileged account for services running as local system	X	X	X	X
	Terminal Server	TS - "Connect As" feature in Admin tools, WMI integration, Terminal Services specific policies (e.g. RDP encryption strength) set via Group Policy	X	X	X
TS - Disk Redirection, COM port redirection, High Color > 256 color support, Network-based printer redirection, RDP performance enhancements		X	X	X	X
TS - ActiveX "web" client, MMC snap-in client, MSI packaged client		X	X	X	X
TS - Always on Terminal Services for the Workstation product limited to Single-user. Auto configuration of Terminal Services settings & policies. Built-in Terminal Services client. Ability to access Console from across the network		X	X	X	X
TS - Ability to load balance RDP connections across a "farm" of Terminal Services servers (server uses as meta-store) Support for handling disconnected sessions. TS Load Balancing metrics exposed via WMI		X	X	X	X
TS - Address excessive PTE usage by large kernel stacks, add dynamic adjustment of Paged Pool boundaries, and fix excessive CPU usage issues in RDP client printing		X	X	X	X
Audio Redirection for RDP Protocol on Terminal Services		X	X	X	X

Whistler Server Manageability / Supportability NON-FEATURE

Compact PCI Hot Swap (headless)
Monitor system resources
Headless Remote administration (Cmd and GUI)
Headless WMI Backup/Restore
Headless WMI Disk Management
Headless WMI Internet Connection
Headless WMI System Configuration
GPO scripting
Scripting – WMI providers
Headless Add/Remove HW info to event log
WMI XML Adapter
IntelliMirror - RSOP Framework, UI
RSM Cluster Support, Disk Mapping
HSM - Clustering Support
Provide dedicated event trace session for WMI event logging
Cluster setup pre-config verification
WMI providers: Terminal Services Licensing, Server Clustering, Directory Management, GPO, Trust Monitoring, HTTP

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Whistler Server Manageability / Supportability NON-FEATURE

Monitoring, COM+ Perf Provider, BlueScreen (Serial Redirect), Event Trace API, IIS Provider

Common criteria for security Certification and Documentation

Security Deployment Book

CA SDK update - Certificate Server

Ability to add custom delegations to the initial list in Security Delegation Wizard

Ability to generate ADSI script for a delegation operation

Cut and paste for security descriptors

WMI Trust Monitoring provider incorporated and enhanced

Option ROM check – server appliance security

Restrict Execution to Images with Specific Certs – server appliance security

SAM Fix client to allow fine grain policies in future

Dynamic Grouping of targets/Scopes of Management (Dup. Of RID 37)

Policies for collection and processing events

WMI XML Transformer

WMI HTTP/XML Protocol

Transparent Programming Access (Scriptable) over HTTP/XML protocol

ADSI/LDAP WMI Integration

PnP events - WMI Provider

MSMQ - WMI Provider

Integration w/ DS API

Whistler Server Deployment Enablers – Planned Features

Area	Work Item	Per	Pro	Srv	64-bit
IIS	FrontPage Server Extensions & SERK	X	X	X	X
	Metabase Backup / Restore	X	X	X	X
	NT Backup Snapshot writer	X	X	X	X
	Programmatic SSL Certificates	X	X	X	X
Index Server	Add language tag support for HTML Filter	X	X	X	X
	Improved Japanese support	X	X	X	X
	Move catalog support (MMC support for relocating index catalogs)	X	X	X	X
	OKAPI - improved precision free-text	X	X	X	X
	Query syntax extension for proximity	X	X	X	X
	Replace current vendor English WB XML filtering support	X	X	X	X
Service Provider	SAM APIs for removing 32 bit limit on RIDs			X	X
	SAM Install replica from media			X	X
Clustering	Remove copy files operation - cluster files always installed, cluster COM components always registered			X	X
	Cluster API Improvements (Get Volume Information only)			X	X
	Cluster Resource Scripts			X	X
	WMI Instance, Class and Event providers WMI tracing			X	X
Directory	DNS Allow storing DNS SEC records			X	X
	DNS Client by Group Policy	X	X	X	X
	DNS EDNS			X	X
	DNS Stub zone			X	X
	Don't replicate GC on partial attribute list change			X	X
	LDAP Improvements (TTL, TLS, Digest)	X	X	X	X
	No GC logon			X	X
	Non domain NC			X	X
Repl Large group			X	X	
	VLV (include table interface on DN values)	X	X	X	X
IntelliMirror	RSoP UI - Group Policy		X	X	X
	RSoP Framework - Group Policy		X	X	X

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Area	Work Item	Per	Pro	Srv	64-bit
	RSOP UI - Group Policy		X	X	X
	WQL Filter - Group Policy		X	X	X
Headless	Redirect popups to event log			X	
	Reduce Reboots during first boot and configuration			X	
	Null drivers for keyboard, mouse, video			X	
	Headless EMS	X	X	X	
	Headless RIS	X	X	X	
	IIS Management (WMI)			X	
	Set Date and Time (WMI)			X	
Management	DS Admin Exchange Support		X	X	X
	DS Admin Improvements		X	X	X
	DS Admin Saved Queries		X	X	X
	DS Replication Monitoring		X	X	X
	Object Picker UI Improvements		X	X	X
	File Systems - DFS and FRS Admin Improvements		X	X	X
	Health Mon CSE snap-in (config, RSOP, ...)	X	X	X	
	MMC - Task-Pads / Usability		X	X	X
	MMC - Common UI for RSM Clients		X	X	X
	Remote Control of console & remote sessions for all Whistler platforms	X	X	X	X
	RIS - Add support for installing servers using RIS	X	X	X	
	ACL Editor usability/correctness	X	X	X	X
	Trust Monitoring		X	X	X
	Configure Your Server (CYS)			X	X
	Improved event logging specifically in Srv			X	X
	WMI dedicated stream	X	X	X	X
	Sniffing - Troubleshooters sniff system information via WMI		X	X	X

Whistler NON-FEATURE

Directory - Infrastructure to synchronize demand dial

Directory - DNS auto delegate

Directory - Complete Notify/Dirsync unification

Directory - Repl KCC Algo improvements

Directory - Transactions with DTC

Directory - Multicast DNS for Home

Enterprise GPOs - Group Policy

Whistler 64-bit Platform – Planned Features

Area	Work Item	Per	Pro	Srv	64-bit
Clustering	Win64 Clustering				X
Device/Platform Coverage	EFI				X
	64 bit support in ACPI				X
	DirectShow ported to 64 bit				X
	DirectSound ported to 64 bit				X
	One audio PCI driver & USB Audio - 64 bit				X
	WinMM/Kernel audio components ported to 64 bit				X
Printing	Win64 Printing				X
WIA	Win64 - WIA Services (one scanner & camera.. No TWAIN compatibility layer)				X
	Win64 - WIA UI (Wizard, app dialogs)				X
Win64	Define preinstall strategy for Win64				X
	Enable Textmode to add/delete, format and recognize GPT partitions				X

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Area	Work Item	Per	Pro	Srv	64-bit
	Install WOW64 in GUI mode				X
	Modify 64-bit Setupapi to support registration of 32-bit DLLs				X
	Modify 64-bit Setupapi's SetupInstallFilesFromInfSection to post message to parent window when child requests data				X
	Modify NVRAM variables in Setup				X

64-bit Whistler NON-FEATURE

DirectMusic ported to 64 bit

Multi-CD install

Multiple-monitor display support

Recovery console in EFI environment, Remote serial console

RIS for 64-bit Windows

RIS for headless preinstall

Subsystems not supported: MS-DOS, 16-Bit, POSIX, OS/2

Windows Media Services

WinRep port to 64-bit

One USB video camera driver & DV driver - 64 bit

Modify Setupldr to boot off DVD

Microsoft Whistler OEM Plan-Of-Record III Introduction

November, 2000



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Welcome

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What is Whistler POR III?

- Easy to read Whistler goals/features
- Planned features are listed
 - Whistler developers working on these
- Planned non-features are listed
- Development status of features can be tracked

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Goals of POR III

- Same format as POR II
- Version comparison
- Booked features
- Cut features
- Better represents Enterprise and Server deliverables
- Feature List items are trackable

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Whistler POR III - Update

Whistler OEM POR III reflects changes from previous version.

Should *not* be any functionality surprises between the versions of the documents.

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Call to Action

- **Review Whistler POR III**
 - **Comments and feedback via WHPMs**
- **Whistler testing**
 - **Submit bugs via OEMRecon methods and procedures**
- **Whistler drivers**
 - **Critical to start development NOW!**
 - **Whistler DDK available via beta program**

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