

Unit OS1: Overview of Operating Systems

1.4. Microsoft Windows Roadmap

Windows Operating System Internals - by David A. Solomon and Mark E. Russinovich with Andreas Polze

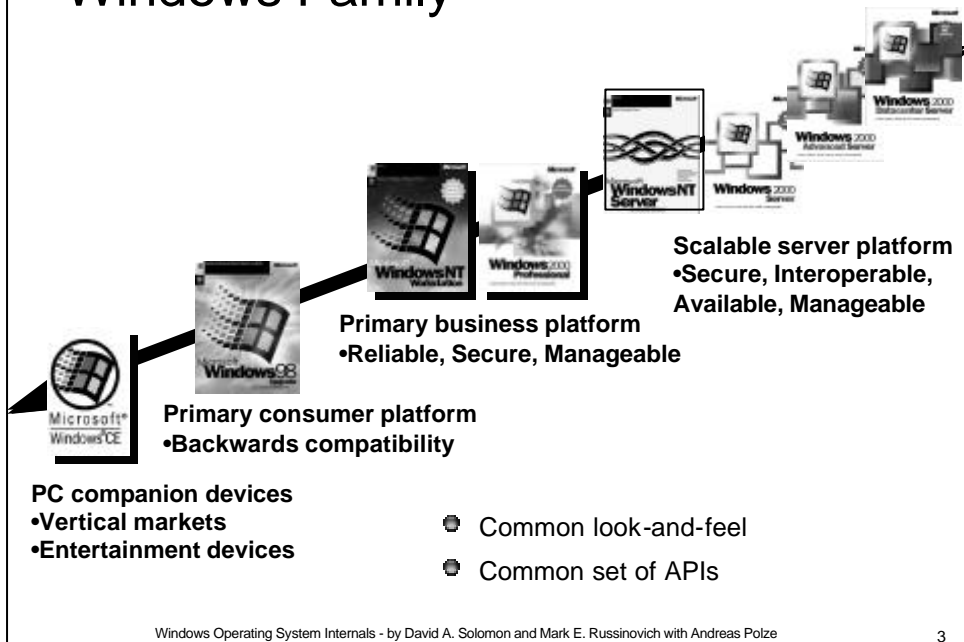
Windows 2000 Professional

The mainstream business desktop for all organizations



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Windows Family



Goals For Windows 2000



- Windows 2000 Professional
The mainstream business and mobile desktop for all organizations



- Windows 2000 Servers
Multipurpose servers that enable the widest range of business solutions



- Combined: Best Platform
Lowest cost and the next generation of applications



Customer Challenges on the Desktop

- Add Value
 - Allow users to be more productive in a variety of scenarios: mobile, work-from-home, global, web
 - Ensure highest level of security for user data
 - Deliver the functionality necessary for a new generation of apps
- Reduce Overall Costs
 - Deliver standardized desktops quickly
 - Reduce the number of “touches” to the desktop
 - Decrease number of crashes, re-boots
- Difficulties
 - Hard to install apps
 - Complexity of UI
 - Workforce is going mobile
 - DLL nightmares
 - Helpdesk overburdened

Windows 2000 Professional

The mainstream desktop OS for organizations



- Easiest Windows Yet
 - Simpler, more intelligent user interface
 - Easier to configure the system
- Power of Windows NT
 - Industrial strength reliability
 - Standards-based security
 - Faster overall performance
- Best of Windows 98
 - State-of-the-art mobile support
 - Support for next generation hardware
- Lowest TCO Desktop
 - Faster deployment options
 - Easier to support and manage

Windows 2000 Professional

Easiest Windows Yet

Make users more productive

- Simplified user interface
 - Personalized menus adapt to the way you work
 - Balloon help to make functionality discoverable
- Fewer steps to complete common tasks
 - Fewer steps to creating a new dial-up connection
 - Easy to add printers from the File/Print dialog
- Single location to access common components
 - Integrated Search of Web, Files, Network, Directory
 - All configuration tools located in Control Panel
 - All Network Connections in common folder
 - History Folder now tracks document, share history

Windows 2000 Professional

Easiest Windows Yet

Easier to configure your PC

- Wizards throughout the system
 - Add New Hardware, Map Network Drive, Add Printer
 - User Account Wizard to validate computer name and logon on first boot
- Multiple language support
 - Single binary supports over 60 languages
 - Edit, view and print multiple languages in same doc
 - Multilingual version allows for UI, Help to switch based on logon
- Easier to add or remove applications
 - Improved Add/Remove Programs applet
 - New user permissions allow for install of apps

Windows 2000 Professional

Easiest Windows Yet

Next-generation web integration

- IntelliSense automates the most common tasks
 - AutoComplete completes network shares, URLs
 - AutoCorrect fixes simple errors like http:// or http:??
 - IntelliForms recalls form data (name, address, etc)
- Making the Web easier to use
 - New Search Assistant to rotate search engines
 - Improved Favorites organization
 - Better History detail of visited Web sites
- Intelligent recognition of connection type
 - Individual proxy settings per LAN/dial-up connection
 - Auto-proxy settings based on connection

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Power of Windows NT

Industrial strength reliability

- More stable computing environment
 - Increased uptime of the system
 - 75 fewer OS reboot scenarios
 - Flagging of un-signed device drivers
 - Addressed numerous memory-leaks & blue screens
 - Better memory management
 - Devices automatically allocate IRQs
- Self-healing, protected applications
 - Windows Installer tracks applications and recognizes and replaces missing components
 - Memory protection of individual apps and processes to avoid a single app bringing the system down
 - System files & components updated only by the OS

Windows 2000 Professional

Power of Windows NT

Standards-based security

- More secure access to information
 - NTFS requires authentication to access file system
 - Encrypted File Systems protects sensitive data
 - Native support for Kerberos authentication
 - Public Key infrastructure to pass digital certificates
 - IP Security to avoid access to sensitive data traveling across the wire
- More secure access to resources
 - Latest machine access support via Smart Cards
 - Secure Virtual Private Networking (VPN) support to tunnel in to private LAN over public
 - Easier management of security settings with Security Configuration Manager

Windows 2000 Professional

Power of Windows NT

Highest level of performance

- Faster overall performance
 - Faster than Windows 9x in 64Mb of RAM
 - Scalable memory (2GB) and processor (2-SMP) support
 - Registry caching to improve access to common settings
 - Merging of process, services and thread pools to speed up loading of system services
- Faster access to information
 - Faster web page rendering with internet integration
 - Content indexing for faster searching of file contents

Windows 2000 Professional

Power of Windows NT

Interoperates with what you have today

- Supports key networking infrastructures
 - Windows Server networking client
 - Novell NetWare redirector in the box
 - Services for UNIX as an add-on for UNIX connectivity
- Broader support for high speed networking devices
 - Native ATM, cable-modem support
 - NAT provides internet/device sharing for SOHO
- Advanced Remote Access and Communications
 - TAPI 3.0 and NetMeeting integration
 - More efficient, faster TCPI stack
 - Easier, more intelligent remote dial-up

Windows 2000 Professional

Best of Windows 98

State-of-the-art mobile support

- Supports the most advanced mobile PCs
 - Latest Power Management support via ACPI
 - Stand-by and Hibernate for quick boot
 - Hot docking and undocking of laptops
 - Hot-swapping of PCMCIA Cards
- Ability to access information when disconnected
 - Offline Files allows for access to files located on network shares when disconnected from the network
 - Synchronization Manager enables one place to synchronize files, email, web pages, databases
- Support for APM and PC Cards on legacy laptops

Windows 2000 Professional

Best of Windows 98

Support for next generation hardware

- Supports the new class of devices
 - Universal Serial Bus (USB) and IEEE 1394 for greater bandwidth devices
 - Digital devices such as DVD, cameras and scanners
 - Infrared download and synchronization of data
 - Support for 9 simultaneous video cards/monitors
 - Device Bay support for hot swapping of devices
 - Windows Driver Model (WDM) allows for common driver for Win98 and Win2000Pro
- Support for high-end, multimedia workstations
 - DirectX 7.0 OpenGL 1.2, AGP, VPE
- Broader support of legacy hardware than NTW4

Windows 2000 Professional

Lowest TCO

Easier deployment options

- Built in support for disk duplication
 - System Preparation Tool to prepare disk image to be duplicated
- Automated installation tools
 - Graphical Setup Manager to easily create automated setup scripts
 - Centralized deployment via SMS
- Upgrade support from existing systems
 - Windows NTW 3.51, 4.0
 - All versions of Windows 95 and Windows 98
- Slipstreaming of Service Pack releases

Windows 2000 Professional

Lowest TCO

Increased manageability

- Support for management standards
 - Windows Management Instrumentation (WMI)
 - Web-Based Enterprise Management (WEBM)
 - More extensive scripting ability with the Windows Scripting Host
 - Single interface for all management tools with the Microsoft Management Console
 - Year 2000 and Euro tested
- Comprehensive set of supportability tools
 - Safe Mode to correct common configuration issues
 - Command Console to access NTFS, no-boot system
 - Integrated browser management via IEAK

Preparing for Windows 2000 Professional

Windows NTW 4.0 will provide the smoothest path

Hardware Considerations

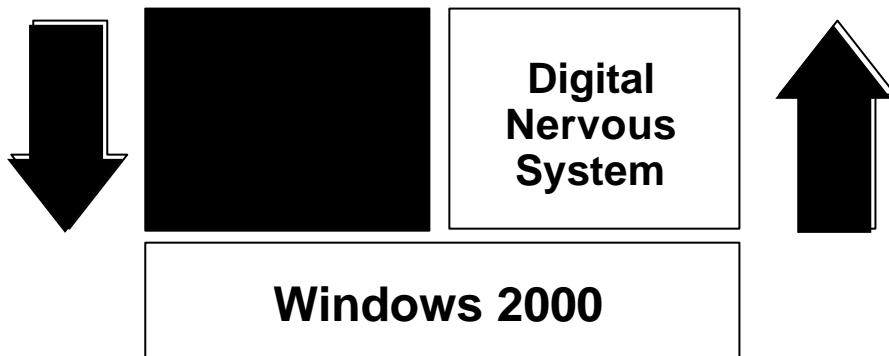
- Purchase Windows 2000-Ready PCs
 - Provides clear recommendation for today & future
 - Preinstalled with Windows NTW 4.0 & SP4
 - 64 MB RAM minimum
 - Desktops: 300 MHz PII; Notebooks: 233 MHz PII
 - ACPI-ready

Application Considerations

- Test applications on Windows NTW 4.0 today
- Upgrade from Win9x may require Migration DLL
 - Adjusts for differences based on OS
 - Top 200 will ship on Windows 2000 CD
- Utilize the Software Compatibility List (SCL)

Windows 2000 Platform

Infrastructure to drastically reduce costs and efficiently enable your Digital Nervous System



Windows 2000 Platform

- Client & Server have great standalone benefits
- Combination of the two provides most powerful platform

Windows 2000 Pro

- Easiest Windows Yet
- Power of Windows NT
- Best of Windows 98
- Lower TCO

Windows 2000 Server

- Most Manageable
- Most Comprehensive
- Best Investment
- Higher Scalability and Availability

Windows 2000 Platform

- Dramatically reduces Total Cost of Ownership
- Best platform for a new generation of applications
- Most efficient way to enable your Digital Nervous System

Windows 2000 Platform

- Provides the lowest Total Cost of Ownership
 - IntelliMirror
 - Remote OS installation
- Platform for a new generation of applications
 - Fastest client-server applications
 - “Clean”, more manageable applications
 - Directory-enabled applications
 - Best platform for distributed applications
- The most efficient way to enable your DNS
 - Most efficient, secure networking
 - Most efficient way to distribute business solutions
 - Integrated multi language support

Windows 2000 Platform IntelliMirror

- “Follow Me” is a common theme
 - My Personal Settings follow me
 - My Applications follow me
 - My Documents follow me
- IntelliMirror is the “follow me” attribute of:
 - Centralized Configuration Management
 - Centralized Software Management
 - Roaming User Management
- So, what if my PC fails?
 - Reload the OS, then IntelliMirror restores your Personal Settings, Applications, and Documents
- Requires both Windows 2000 Pro and Server

Intellimirror

Centralized Configuration Management

- Customer Requirements
 - Administrator defines settings for groups of users
 - New users automatically inherit policy of group
 - Administrator applies changes for groups of users
 - If user's PC fails, settings must be restored
 - If user moves, settings must follow user
- Customer Value
 - Provides for policy-based central administration and control
 - Provides standard client configuration across common groups

IntelliMirror

Centralized Software Management

- Customer Requirements
 - Policy-based deployment of software to users/PCs
 - Invocation of a doc (e.g.: XLS) starts / installs app
 - Administrative rights not required
 - Software lifecycle management
 - Install, uninstall, repair, rollback, upgrade
 - Resolution of shared component problems
 - Applications must follow user
- Customer Value
 - Simplified end user installation experience
 - Simplified control over software deployment for users/PCs
 - Applications are always available

IntelliMirror

Roaming User Management

- Customer Requirements
 - User settings resides on the server for mobility
 - Data resides on the server for protection
 - If user moves, data and settings must follow user
- Customer Value
 - Increased protection: via IT managed backup
 - Increased access: Use of any PC on the network
 - Increased availability: Caching maintains data on local machine even when disconnected from LAN

Windows 2000 Platform

Remote OS Installation

- Customer Requirements
 - Ability to wipe PC clean and install selected OS, image
 - Ability to install an OS on a repaired PC
 - Ability for non-IT staff to install OS without staging
- Customer Value
 - Reduced cost of deploying new hardware
 - Flexibility to setup OS based on different scenarios
 - Not limited by need for exact hardware image
 - Basic disaster recovery ability

Windows 2000 Platform

New Generation of Applications

- Client-server applications run 15-30% faster
 - Caching of both application services and security
 - Efficiency of network protocols (TCP/IP)
- “Clean”, more manageable applications
 - Windows Installer manages installations
 - Windows 2000 Logo ensures meet high standards
- Directory-enabled applications
 - Single network sign on for all applications
 - Business rules reflected in the behavior of the app
- Best platform for distributed applications
 - Distributed, component-based apps that utilize standardized based web protocols

Windows 2000 Platform

Efficiently Enable Your Digital Nervous System

- More efficient, secure networking
 - Native ATM support for higher bandwidth, faster networking
 - Integrated, easier VPN, PPTP communication support
 - IPSEC, Kerberos, Extensible Authentication Protocol, Smart-Card, Public Key support for enhanced security
 - Easy, automatic setup of networking components
- Most efficient way for sharing & distributing business solutions
 - Quality of Service to reserve network bandwidth
 - Better voice/data integration with Direct Show
 - Dfs, web services, Windows media services
- Integrated multi language support

WHERE DO YOU WANT TO
go
TODAY?

Microsoft