CHAPTER 1 *Introduction*

About the Author

Eric A. Kralicek has been working in a technical capacity supporting computer users both on and off networks for more then 19 years. His background includes working for San Diego City College, Olympic Computer Technology, Video Discovery, General Meters, MCI, District 11 - Colorado Spring School District, Digital Equipment Corporation, Compaq Computer Corporation, Corrigo Incorporated, Commtouch Software Corporation, and now Cal Poly. His experience covers CPM, DOS, and Windows technology from its conception up to Windows 2000 platforms with administrative experience in Sun OS, VMS, and Macintosh environments. He earned his B.S.degree in Computer Networking from Regis University in Colorado and has various industry certificates in Microsoft and other software platforms. Currently he works in the PCLAN department as a Network Analyst.

What you'll learn...

This course covers basic information that should make the user feel more comfortable working in Windows 2000. You will:

- Learn the differences between Windows 9x[1] and Windows 2000

- Find what you're looking for quicker

- Learn how to maintain your system

- Learn to troubleshoot common problems

Areas to be covered are:

- Start menu options

- The control panel

- Files and the file system

- Networking resources

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1. Windows 9x refers to both Windows 95 and Windows 98.

History

To fully appreciate the differences between Windows 9x and Windows 2000 you must first explore their roots. Although both Windows families look very much the same, they are completely different underneath. This "difference" is based on the fact that, while Windows 9x is a direct descendant from MS DOS and Windows 2/3.x; Windows 2000 (and NT technology) is a derivative of VMS (DEC mini-system technology).

Windows 9x

Windows 9x is designed primarily for home use and/or peer-to-peer networking. There is no real system security in place and the need for occasional reboots is common place. Further, Windows 9x technology does not lend itself to in depth troubleshooting resources. In other words, there are no in depth OS based tools to troubleshoot system failures or application errors. You are kind of on your own when it comes to figuring out what went wrong. This had been the networking strategy Microsoft had in place since it's entrance into the networking industry (with Windows for Workstations and LAN Manager).

Windows NT

Windows NT is based on a mainframe OS called VMS. VMS was the first OS to coin the phrase "Business Critical" by making the networking OS fail-safe - clustering many hosts together so that when one host required repair another host would step in to take up the slack. This concept maintained a constant work environment that was available 24 x 7 x 365. Windows NT used the same basic kernel[2] as that of VMS with a GUI[3] designed by Microsoft.

Dave Cutler (a former DEC VMS Engineer) was hired by Microsoft to build a stable, robust, high-end networking platform for the personal computer platform (Intel, Alpha, MIPPs, and the Macintosh). This was the first OS Microsoft produced using well defined written specifications (previous to this point Microsoft

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2. The kernel is the essential center of a computer <u>operating system</u>, the core that provides basic services for all other parts of the operating system. A synonym is *nucleus*. A kernel can be contrasted with a <u>shell</u>, the outermost part of an operating system that interacts with user commands.

had not perfected their project development tools). NT Technology not only changed the path of Microsoft's networking division, but also opened the opportunity for Microsoft to compete on a high-end level with its competitors overtaking Novell and Banyan as the PC networking leader.

Windows 2000

Windows 2000, is the next generation of NT technology operating systems. Along with all of the basic features found in Windows NT 4.0, Windows 2000 added new features such as:

- Plug & Play

- Active Directory

- Advanced Internetworking technology

- Greater stability

Windows 2000 comes in several flavors:

- Windows 2000 Professional (the workstation version)

- Windows 2000 Server (non-clusterable workgroup server)

- Windows 2000 Advanced Server (clusterable enterprise server)

- Windows 2000 Datacenter Server (data warehousing)

Plug & Play

Previous to Windows 2000, NT technology did not support plug and play devices and required the administrator to manually install hardware drivers.

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3. A GUI (usually pronounced GOO-ee) is a graphical (rather than purely textual) user interface to a computer. The term came into existence because the first interactive user interfaces to computers were not graphical; they were text-and-keyboard oriented and usually consisted of commands you had to remember and computer responses that were infamously brief. The command interface of the DOS operating system (which you can still get to from your Windows operating system) is an example of the typical user-computer interface before GUIs arrived.

Active Directory

In a direct response to Novell's NDS[4] technology, Microsoft created Active Directory. Active Directory is a centralized and standardized system that automates network management of user data, security, and <u>distributed</u> resources, and enables interoperation with other directories. Active Directory is designed especially for distributed networking environments.

Advanced Internetworking Technology

As the Internet expanded so has the need for NT to evolve and provide functionality for networks to interconnect using the Internet as a backbone. Some of the added resource are:

- **VPN** - A virtual private network (VPN) is a private data network that makes use of the public telecommunication infrastructure, maintaining privacy through the use of a tunneling <u>protocol</u> and security procedures. A virtual private network can be contrasted with a system of owned or leased lines that can only be used by one company. The idea of the VPN is to give the company the same capabilities at much lower cost by using the shared public infrastructure rather than a private one. Phone companies have provided secure shared resources for voice messages. A virtual private network makes it possible to have the same secure sharing of public resources for data. Companies today are looking at using a private virtual network for both <u>extranet</u>s and wide-area <u>intranet</u>s.

- **QoS** - On the Internet and in other networks, QoS (Quality of Service) is the idea that transmission rates, error rates, and other characteristics can be measured, improved, and, to some extent, guaranteed in advance. QoS is of particular concern for the continuous transmission of high-<u>bandwidth</u> video and multimedia information. Transmitting this kind of content dependably is difficult in public networks using ordinary "best effort" protocols.

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4. NDS (Novell Directory Services) is a popular software product for managing access to computer resources and keeping track of the users of a <u>network</u>, such as a company's <u>intranet</u>, from a single point of administration. Using NDS, a network administrator can set up and control a <u>database</u> of users and manage them using a <u>directory</u> with an easy-to-use graphical user interface (<u>GUI</u>). Users of computers at remote locations can be added, updated, and managed centrally. Applications can be distributed electronically and maintained centrally.

Greater Stability

As in all technologies, Windows 2000 continues to improve on the stability issues faced with NT 4.0. More of the system configuration became automated and no longer required administrative oversight to stabilize each system in a large network environment. Further, Windows 2000 gave greater control over recovering from "blue screen of death" boot failures -- often repairing the problem automatically upon reboot.

Windows XP

In fall 2001, Microsoft will unveil their next NT technology upgrade Windows XP. Windows XP (code named Whistler by Microsoft) is the latest and as-yet officially unreleased version of the Windows desktop operating system for the PC. Microsoft and trade publication writers view Windows XP as the most important version of Windows since Windows 95. Windows XP is built on the Windows 2000 kernel but brings a new, more personalized look to the desktop that will also make it easier for users to scan or import images and to acquire music files on the Web and transfer them to portable devices. The new Windows will allow different family members to use their own desktop and personal sets of files. In addition to the "My Computer" and "My Documents" views provided in Windows 2000, Windows XP users see "My Music" and "My Pictures." The Start Menu has been redesigned to make the most-used programs easiest to find. Windows XP will come in a Professional version and a Home Edition version.