A better user interface

Windows 95 introduces a new user interface that makes using the personal computer easier and more efficient for users, regardless of their expertise.

Start button

Desktop

Tips for administrators

Start button

By clicking the Start button, users have access to nearly everything they need — from starting programs and documents, to changing computer settings, and getting Help. The Start button provides an obvious starting point for the functions users perform on their computers every day —a more intuitive approach than Program Manager.

Desktop

The desktop makes it easy to find and use tasks and connections to resources. The Network Neighborhood icon provides a single namespace for viewing network servers and connections—just point and click to connect to the server you want.

Tip

You can centrally control and customize the desktop with system policies and user profiles. For the rare cases where users are more comfortable with the Program Manager and File Manager, you can install these applications through Custom Setup.

Plug and Play

Plug and Play technology provides a logical and consistent way for devices to identify themselves and for their settings to be configured on the computer. With Plug and Play, Windows 95 makes it easier to set up new hardware and software.

- Plug and Play hardware
- Legacy devices
- On-the-fly configuration for PCMCIA
- Tips

Plug and Play Hardware

Windows 95 enables many new hardware devices to automatically configure themselves on the computer. Plug and Play devices choose settings, such as IRQs or DMA channels, without requiring you to set them. And, under Windows 95, Plug and Play devices can be added to a computer that doesn't have a Plug and Play BIOS.

Legacy devices

Windows 95 simplifies setup and configuration of devices that aren't Plug and Play-compliant. The Add New Hardware wizard detects legacy devices and migrates hardware settings to the Registry during installation. This ensures that legacy device settings are not overwritten when Plug and Play devices are added.

On-the-fly configuration for PCMCIA

Support for PCMCIA and portable "hot" docking and undocking means that users can add or remove a device such as a PCMCIA card while the computer is running. The computer automatically detects that the state of the hardware has changed and adjusts the system settings accordingly.

Tips
- Whenever you can, choose Plug and Play-compliant devices and components for your computers, whether or not they are legacy computers. Look for the "Designed for Microsoft Windows 95" logo.
- Plug and Play means the system selects and assigns values to hardware devices. To override these values manually, use Device Manager.
- Check for any known hardware issues in the README file for Windows 95 and modify your installation accordingly.

32-bit operating system architecture

The 32-bit architecture and superior resource handling in Windows 95 reduce downtimeand support calls by providing a more stable operating system environment.

- 32-bit, protected-mode subsystems
- Expanded system resources
- Better application cleanup
- Tip

32-bit, protected-mode subsystems

With 32-bit support for networking and all other subsystems under Windows 95, computers continue to run, even if the server goes down. Similarly, an errant application is less likely to stop the system because 32-bit applications run in their own address space. And, for 16-bit applications, closing an errant process will not affect other programs.

Expanded system resources

Out-of-memory errors are not a practical issue in Windows 95 because the system resource constraints have been virtually eliminated. This lets your users run numerous applications without running out of memory.

Better application cleanup

Compared with Windows 3.1, Windows 95 does a better job of tracking program resources and cleaning up after an errant application stops. The freeing of system resources after an application is closed means system performance is less likely to degrade over time.

Tip

Although system components are predominantly 32-bit, for compatibility reasons Windows 95 also offers support for a variety of 16-bit component options. For example, Windows 95 supports the existing 16-bit network redirector for Novell NetWare. Read the Deployment Planning Guide to understand choices and trade-offs in detail.

Built-in networking

Windows 95 comes complete with 32-bit networking components, so it can work seamlessly with all major networks — including Novell NetWare and Windows NT Server — and other Windows 95 peer servers.

- 32-bit networking components
- Network Neighborhood
- Tips

32-bit networking components

Windows 95 support for 32-bit components includes the redirector, the protocol, the network adapter, and File and Printer Sharing services. Written to run in a multitasking environment, these components take up no real-mode memory and offer fast and stable networking.

Windows 95 comes with 32-bit versions of an IPX/SPX-compatible protocol and TCP/IP (with a DHCP client). A variety of other protocols and 16-bit network clients are also supported.

Network Neighborhood

With Network Neighborhood, users can browse network servers — even those from different network vendors — all from a single location. And, with support for universal naming convention (UNC) pathnames, it's as easy to access resources on the network as it is those on the local hard disk.

Tips

- Use 32-bit protected-mode networking software components instead of the real-mode equivalents to ensure speed and stability. You need to evaluate whether to upgrade your NetWare protocols and client software to 32-bit. Compatibility problems with certain programs might cause you to choose not to upgrade your real-mode networking components.
- You need to use Windows NT Server to take advantage of DHCP autoconfiguring options and WINS name-resolution capabilities if you are moving to TCP/IP as your strategic protocol.

Centralized security

Windows 95 supports pass-through, server-based security for NetWare and Windows NT networks, allowing each client computer to leverage the existing security scheme. This makes implementing network security easy and efficient using your existing user accounts.

- Validated logon
- User-level security
- Additional security
- Tips

Validated logon

Windows 95 supports requiring a validated logon to the server before the user can use Windows 95 in a network environment. This means users cannot get past the logon screen until they provide a correct user name and password combination. Although Windows 95 is not as secure as Windows NT Workstation on the local computer, it provides you with dependable network security through the use of validated logon and other methods of system customization.

User-level security

Using the NetWare bindery information or the user accounts on the Windows NT Server domain, you can enable security on a user-specific basis for all resources on the network, including the optional File and Printer Sharing services in Windows 95.

Additional security

Windows 95 provides added security for tasks such as Dial-Up Networking. Windows 95 supports encrypted dial-in passwords and callback options, plus hardware devices from other vendors.

Tips

As you plan your network:
- Define password requirements and access rights before installing Windows 95.
- Enable user-level security and set up a validated logon process if you are connecting computers running Windows 95 to a Windows NT or a NetWare network. Users can also synchronize the Windows password with the network password.
- Define the security needed for Dial-Up Networking.

System policies

System policies allow you to centrally define and control user access to the network and desktop functionality, such as the ability to share data and edit system settings. You can set these restrictions for the user, the computer, or the group.

System Policy Editor

System management agents

Tip

System Policy Editor

System Policy Editor is on administration tool you can use to set rights and restrictions for specific users and computers and to create policies that define general default settings. You can use system policies to control access to the network, specify desktop configuration settings, and prevent users from modifying applications or desktop settings. You can also limit users to running only a defined list of applications. System Policy Editor can be used remotely to modify Registry settings on individual computers. Policy files can be automatically downloaded when the user logs on to NetWare or Windows NT Server networks.

System management agents

In addition to System Policy Editor, Windows 95 provides support for SNMP agents to query and manage the Registry on the client computer. As a result, you can write in-house system-management software or use software from other vendors for more powerful network management.

Tip

System policies are a must for any network administrator who wants to manage access rights and permissions for system configuration. System policies are easily enabled and modified at any time. To add support for group policies, or change the default of the central policy file, enable them manually. System Policy Editor is located in the ADMIN\APPTOOLS directory on the Windows 95 compact disc.

User and hardware profiles

User profiles describe user-specific or computer-specific information, such as software preferences and settings. Hardware profiles define current hardware settings for the computer. With profiles, users can work in a consistent and customized environment, which makes it easier to use and manage computers.

- User profiles
- Hardware profiles
- Tips

User profiles

User profiles define user-specific settings, such as the icons on the desktop or the choice of screen saver.

For "roving" users who log on to different computers at different times, user profiles stored on the network server ensure that the user has the same work environment at every logon location.

For multiple users of the same computer, user profiles determine the desktop environment and the associated privileges for each user to maintain a secure and consistent environment.

Hardware profiles

Hardware profiles are known configuration states for a specific computer— such as docked or undocked, in the case of a portable computer. Hardware profiles enable Windows 95 to adjust system capabilities to match the current state of the hardware. For example, when a portable computer is undocked, Windows 95 removes the system's printing and networking capabilities.

Tips

■   User profiles are an option that you can enable at any time. They are not installed by default. A 32-bit network client is required to support user profiles when logging on to network workstations.
■   You can also define mandatory user profiles in a file called USER.MAN for all users who log on to a specific home directory of a network server. This mandatory user profile protects novice users from inadvertently making changes to their environment.

Remote administration and backup

Windows 95 includes remote administration tools — System Monitor, Registry Editor, and Net Watcher — and backup agents for popular server-based backup programs. Windows 95 also provides agents for other system-management tools.

▫   System Monitor
▫   Net Watcher
▫   Registry Editor
▫   Backup agents
▫   Tip

System Monitor

System Monitor provides graphical measurements of network traffic, file system performance, and other activity on remote computers. With these measurements, you can identify and troubleshoot problems on remote computers.

Net Watcher

Net Watcher allows you to remotely view and disconnect network connections, and to control the File and Printer Sharing services for any computer running Windows 95 with the Microsoft Remote Registry service.

Registry Editor

With Registry Editor, you can remotely edit the Registry for a particular computer. When used in combination with System Monitor and Net Watcher, Registry Editor enables you to correct computer problems for remote users without traveling to the remote site.

Backup agents

Windows 95 includes backup agents for the Cheyenne® and Arcada® server-based backup systems. With the appropriate server software, Windows 95 can be easily backed up to a NetWare server with these agents.

Tip

To manage network computers remotely, install the Microsoft Remote Registry service and Network Monitor agent, and assign remote administration privilege for each computer when installing Windows 95.

Faster computing

New 32-bit printing, graphics, and other subsystems speed up operations for common tasks.

- Faster printing
- Faster file saving and copying
- Faster networking
- Faster overall performance
- Tip

Faster printing

Printing is faster in Windows 95, both in terms of the return-to-application time, and in terms of the speed of printing output.

Faster file saving and copying

With a new 32-bit file system and caching algorithms, operations that access the hard disk, such as sorting a database and saving or copying a file, are completed more quickly than under Windows 3.1.

Faster networking

Networking is also faster in Windows 95 because the new 32-bit networking components provide raw speed improvements. In addition, new browsing and data-caching algorithms improve network responsiveness.

Faster overall performance

In general, Windows 95 is as fast or faster than Windows 3.1 on a 4-MB 386DX or better computer. In addition, as RAM is added, a computer running Windows 95 becomes comparatively faster (as measured on industry-standard benchmarks), scaling to handle the additional memory.

Tip

Wherever possible, the 32-bit subsystems are enabled by default during installation, so no additional work is required for setup. In rare cases, you can disable or use a 16-bit component alternative, such as a real-mode networking client, to maintain compatibility with certain programs.

Preemptive multitasking and multithreading for 32-bit applications

Windows 95 supports and enables a whole new class of 32-bit applications with preemptive multitasking, allowing the computer to do more than one task at a time.

- Preemptive multitasking
- 32-bit applications
- Long filenames and UNC names
- MS-DOS and Windows 16-bit applications
- Tip

Preemptive multitasking

With 32-bit applications, users do not need to wait for completion of a particular task, such as downloading a large file from the network, before they can begin work on another task.

32-bit applications

Similar to Windows NT, Windows 95 supports the Win32® API, which enables software vendors to write preemptive multitasking applications. This means more productive and more stable applications for users.

Because these applications are based on the same API as Windows NT, applications are binary-compatible between the two operating systems.

Long filenames and UNC names

Under Windows 95, 32-bit applications also support new capabilities such as long filenames and UNC paths in common dialog boxes. This makes it easier and more efficient for users to name files what they want and to find and open files without mapping drives.

MS-DOS and Windows 16-bit applications

Because of its 32-bit system components, Windows 95 provides a more stable environment than Windows 3.1 for running your Windows-based and MS-DOS –based applications.

Tip

Even though Windows 95 provides a more stable and functional environment for your existing applications, to take advantage of multitasking and long filenames, you'll want to upgrade to the latest 32-bit applications.

Dial-Up Networking

Windows 95 makes computing more efficient for remote and mobile users by supporting several capabilities such as dial-up network access and file synchronization.

- Dial-Up Networking
- Briefcase
- Tip

Dial-Up Networking

Dial-Up Networking in Windows 95 allows the user to connect to network resources, such as files and electronic mail, using Point-to-Point Protocol or server-based dial-in packages such as NetWare Connect, Windows NT RAS, or Shiva® NetModem.

Briefcase

Briefcase is a tool that allows mobile users to easily track and update copies of files stored on two or more computers— usually an office computer and a portable computer. Users put the files that need to stay in sync into Briefcase before going on the road. When users return, connect to the network, and open Briefcase, Windows 95 prompts them to synchronize the files. Briefcase then updates the file on the network to match the file on the portable computer.

Tip

Although Dial-Up Networking is a powerful productivity feature for users, it might present security and control concerns. To disable Dial-Up Networking, use system policies to centrally configure Windows 95. Also, you can use additional security, such as callback or hardware signature devices.

Built-in messaging

Windows 95 includes support for a variety of messaging services including electronic mail and fax, plus access to the Internet and online services. These services enable users to communicate more easily with others.

- Universal inbox
- Electronic mail
- Fax capability
- Internet access
- Online services
- Tip

Universal inbox

The Windows 95 Microsoft Exchange feature provides a single inbox for all messaging services that support MAPI, so that users go to only one location to retrieve their electronic mail and fax information.

Electronic mail

Windows 95 supports a wide variety of electronic mail systems and includes a simple workgroup mail system for messaging, based on MS® Mail for Windows version 3.2.

Fax capability

Microsoft Fax provides built-in fax capability to Windows 95 and supports client and server fax software from other vendors.

Internet access

Windows 95 includes all the necessary protocols and modem software for access to the Internet. Support for basic FTP and Telnet TCP/IP utilities and for advanced software such as Mosaic makes Windows 95 Internet-ready.

Online services

Similar to Windows 3.1, Windows 95 supports a wide variety of online services. For those unfamiliar with online services, The Microsoft Network introduces users to online features such as product information and chat forums.

Tip

Many of the messaging services in Windows 95 (including Microsoft Exchange, Microsoft Fox, and The Microsoft Network) are optional during installation, so you'll need to select them if you want them installed. You also need to set up the appropriate protocols and dial-up connections for access to the Internet.

Server-based setup

Windows 95 includes a setup program that automates installation and provides easy customization when installing Windows 95 from source files on the network.

- Server-based setup
- Machine directories
- Remoteboot installations
- Tip

Server-based setup

This setup program automatically copies Windows 95 files to the selected server path, so that Windows 95 can be installed on individual computers directly from the network without accessing disk or CD-ROM drives. You can manually adjust the source files on the shared directory, adding or removing files as necessary to specify those to be copied for local computer setup.

Machine directories

During Server-based Setup, you can view or add machine directories on the server for particular computers on the server. This enables you to configure and store the computer-specific information in these directories for use in installing Windows 95 in shared installations.

Remoteboot installations

For greater network security and manageability, Windows 95 can be set up to run from a server, either partially or completely (as in the case of remote booting (RIPL) from a ROM card).

Tip

Although Server-based Setup automates the copying of files to the server, you might want to customize the shared directory by adding or removing files that are specific to your network.

Custom setup batch scripts

Windows 95 supports scripting of the installation process so that predetermined settings and responses to setup prompts can be automatically read from a single file, significantly reducing the installation time.

Graphical script creation
Support for Systems Management Server
Tips

Graphical script creation

Server-based Setup has an option for creating setup scripts. By choosing this option, you can easily create scripts by clicking check boxes and typing in text strings as prompted by the program. There's no need to edit a text file for the correct syntax of every option.

Support for Systems Management Server

With Microsoft Systems Management Server commands and a Windows 95 setup script, you can install Windows 95 on a computer without having to physically visit the site. As soon as the user logs on to the network, the installation runs by itself.

Tips

■   To ensure that the batch file installs all the software correctly, define a default computer configuration and test setup from a setup script in the lab   before rolling it out to the network.

■   To automate the user and computer name entries in the setup script, either copy them from your current server or create a text file with the predefined names.

New tutorial and Help

Windows 95 includes new task-based Help and a tutorial that assists users in getting up to speed.

■   Online Help

■   New tutorial

■   Context Help

■   Tip

Online Help

Windows 95 Help is designed to make it easier for users to get the information they need to perform a specific task. Most procedures have moved out of documentation and into online Help, where they're easier to access while you're working.

Also, Help is streamlined and task-oriented, so it is easier to remember and to use.

Whenever a user wants Help for a task, a Help window appears beside the window where the task is running, or, if no task is running, Help provides a single-click shortcut to the dialog box or feature that the user needs to use to complate the task.

New tutorial

Windows 95 also introduces a new tutorial that makes it easier for users to get "up and running" on common tasks. Its graphical approach illustrates the steps for tasks, such as opening files by using the Start button. Also, to help with migration, the Introducing Windows Tutorial includes tips and examples of how common Windows 3.1 are now performed under Windows 95.

For more information, click Help on the Start menu.

Context Help

To get specific help information in a dialog box, right-click an item, and then click What Is This? Or click the question mark button in the title bar, and then click the item in the dialog box that you want to read about.

Tip

To speed up user training in Windows 95, use system policies to modify the computer's startup so that the Tutorial runs in full-screen mode in the Startup group. After training is complete, change the system policies to remove the Tutorial from the startup.