

CHAPTER 1

Corporate Implementation Strategy

This chapter contains details on the phases and tasks for rolling out Windows 95 that are summarized in Chapter 1, “Corporate Deployment Guide.” If you are comfortable with the early planning phases of deployment, you can skip ahead to “Introduction: Specify the Preferred Network Client Configuration: The Details” later in this chapter.

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Review Windows 95: The Details

This is the first phase of the deployment process, which entails reading about Windows 95 features and benefits. In this phase, those responsible for planning and conducting the rollout learn how Windows 95 helps reduce support costs and increase business profitability.

Read *Introducing Microsoft Windows 95*

Introducing Microsoft Windows 95 (ISBN 1-55615-860-2), available from Microsoft Press, provides information about Windows 95 features and functionality. This book discusses the changes and enhancements made to the Microsoft Windows operating system to provide easier management and support in a network environment. To order this or other Microsoft Press® titles, call (800) MSPRESS (or (800) 677-7377).

The information contained in *Introducing Microsoft Windows 95* is also provided in electronic form as the *Windows 95 Reviewer's Guide*. For online access to the *Reviewer's Guide* or other current information on Windows 95, connect to the Microsoft WinNews forum at any of the following electronic locations.

Online service	How to access
The Microsoft Network	From the Windows 95 desktop, click the Microsoft Network icon. Then click Microsoft and, in the Microsoft menu, select Windows 95. Click WinNews.
America Online®	Use the keyword winnews
CompuServe®	Type go winnews
FTP on the Internet	Type ftp://ftp.microsoft.com

	/PerOpSys/Win_News
GENie™	Download files from the WinNews area under the Windows 95 RTC.
Prodigy™	Type jump winnews
World Wide Web on the Internet	Type http://www.microsoft.com

Review the Business Case for Windows 95

Many leading industry analysts have developed independent assessments of the impact of Windows 95 on corporate operations. The reports of two firms, Gartner Group, Inc. and Usability Sciences Corporation, are discussed in this section, to assist rollout planners in understanding specifically how Windows 95 reduces the total cost of ownership for a personal computer in your organization.

Gartner Group, Inc. Reports

Two published reports are available, describing the cost of migrating to Windows 95 from Windows 3.x and the effect of Windows 95 on the total cost of ownership of a personal computer. This section summarizes key findings of the reports. To receive the complete report, contact Gartner Group, Inc. at (203) 967-6700 and ask for the Total Cost of Ownership study (reference Personal Computing Service K-820-1094) and the report entitled "GUI Operating System Migration: How Sticky Will It Be?" (August 22, 1994).

Highlights of these reports include the following.

Payback period is short. Gartner Group projects that a typical organization will earn back the cost of migrating to Windows 95 within three to six months, based on support cost savings alone. Assuming that, on an annual basis, Windows 95 costs \$1180 less per user to run than Windows 3.1, over five years, Gartner Group estimates that organizations will save nearly \$6000 per user. Notice that, even if organizations do not realize this precise reduction in costs, the support-cost savings should substantially exceed the cost of migration.

Migration is justified even when only using 16-bit applications.

Gartner Group recommends that organizations migrate to Windows 95 "if only to run 16-bit Windows applications on a more stable, easier to use platform."

Planning Windows 95 deployment increases potential savings. In its "Cost of Migration" study, Gartner Group demonstrates that organizations benefit substantially through decreased costs by planning their deployment of Windows 95. In fact, by planning the traditional labor-intensive operations (for example, the installation process) an organization could realize costs of migrating

to Windows 95 that are less than the average upgrade cost from Windows 3.0 to Windows 3.1.

Although not cited in these reports, additional payback should result from increased user productivity due to features such as Dial-Up Networking, multitasking, multithreading, and so on.

Usability Sciences Corporation Report

Usability Sciences Corporation, an independent usability testing group, performed a study on how users are affected by moving to Windows 95. Their study included 75 existing Windows 3.1 users with varied levels of skill in performing common tasks. Details of the study and its findings are available from the WinNews electronic forum.

Highlights of the study's results include the following.

Users get started quickly. After testing users as they performed specified tasks in Windows 3.1, and then allowing them a 20-minute "play" period with Windows 95, the study found that the same users were almost as fast under Windows 95 in performing comparable tasks as they were in Windows 3.1.

Users perform faster. Usability Sciences reported that, within 1.5 hours of first using Windows 95, Windows 3.1 users performed operations nearly twice as fast as they did on Windows 3.1.

Extensive user training is not needed. Because all tests in the study were performed using the online tutorial that comes with Windows 95, the results demonstrate that lengthy training sessions are not necessary.

As additional reports and studies are published, they'll be placed on the WinNews online forums. Check these forums for periodic updates.

Acquire the *Windows 95 Resource Kit*

The *Windows 95 Resource Kit*, available from Microsoft Press, is a technical supplement to the Windows 95 product documentation, written to assist administrators in installing, supporting, and managing Windows 95 on corporate networks.

Each Planning and Installation team member should obtain a copy of the *Resource Kit* for review as they prepare for deployment planning.

Read *Inside Windows 95* (Optional)

For additional information about Windows 95, particularly for a background on its design and for a history of its development, team members can read *Inside Windows 95* from Microsoft Press. This book contains guidelines and tips for application developers working with Windows 95.

Assemble the Planning Team and Tools: The Details

This phase involves gathering the resources, including equipment and staff, to properly plan for testing and evaluating Windows 95. Members of the Support team should receive training during this phase.

Assign the Project Manager and Staff the Planning Team

The deployment project manager participates in the Executive team and leads the Planning team. This individual is usually the head of the Information Systems department; however, the executive committee may find another individual to be more appropriate, depending on the organization.

When setting up the Planning team, it is important to include a set of individuals representing the groups involved in the deployment process. This includes people from the Corporate Support and Employee Training departments, the Corporate Standards Committee, and key Installation team members. Individuals from the Finance and Accounting group will need to take part in planning and evaluation later on, but need not be assigned to the team for the full duration of the deployment process.

Acquire Windows 95

When you purchase Windows 95, Microsoft recommends that you purchase the compact disc version, in order to obtain the administrative software tools.

More information to be provided.

Inventory Client and Server Hardware and Software Configurations

You'll need to survey a representative sample of your network to compile an inventory of hardware and software used on client and server computers. When this inventory is compiled, you can accurately simulate the organizational

environment in the lab. Such a simulation helps you make broad decisions about your company's computing infrastructure, such as the choice of protocol or the default desktop configuration as it pertains to applications.

Software management tools can be used to query computers on the network for hardware and software configurations. For example, the Microsoft Diagnostics (MSD) tool can run a report for output to a text file, describing a computer's specific hardware and settings. For more detailed information about a large number of computers on a network, you can use system management programs, such as the Microsoft Systems Management Server, to conduct the inventory.

Set Up a Testing Lab and Equipment

To effectively evaluate and test the Windows 95 installation process, you need to set aside enough physical space and to assemble a sufficient number of computers to test everything from Server-based Setup to hand-tuning options for the local computer. In addition, if your network environment includes the use of portable computers that dial into the company, or if you use additional servers or mainframe computers for business data, you'll want to ensure that the lab computers have full access to the network and an analog phone line. It is important that you test and implement all of the Windows 95 features comprehensively in the lab with all of your business-specific applications before moving to the pilot installation.

Installation of Windows 95 on a server requires 90 MB of disk space.

Coordinate Review and Training

By reviewing specific portions of the *Windows 95 Resource Kit*, the Installation and Planning teams can gain an understanding of Windows 95 features and functionality. A review of the "Guided Tour for Administrators" and of the chapters contained in Chapter 2, "Installation," can provide the teams with the information necessary to evaluate product features for system configuration.

Support team members must become familiar with all information in the *Resource Kit* to prepare for their role in the deployment process. For more extensive training, team members can receive instruction at a Microsoft Authorized Technical Education Center and participate the Certified Professional program.

For information about authorized training offered for Windows 95 and the Certified Professional program and referral to a local Microsoft Solution Provider Authorized Technical Education Center (ATEC), call (800) SOLPROV (or (800) 765-7768). Call the Microsoft Fax Server at (800) 727-3351 and request document number 10000256 for the location of the Authorized Academic Training Program (AATP) site nearest you. Microsoft ATECs and Microsoft

AATPs offer Microsoft Official Curriculum delivered by Microsoft Certified Trainers to educate computer professionals on Microsoft technology.

For other training information, see Appendix J, “Windows 95 Resource Directory.”

Specify the Preferred Network Client Configuration: The Details

Detailed analysis is required to determine your preferred client-computer configuration. Starting with the ideal configuration, which uses the most functional and best-performing client software, you must evaluate each feature against your organization’s needs and environment to determine its appropriateness and compatibility. If you are considering different configuration alternatives, repeat this evaluation for each configuration.

The following sections describe feature options and decisions to evaluate in specifying the network client configuration.

Deciding on Your Configuration Layout

When deciding where to place Windows 95 files, consider how the computer will be used and evaluate the benefits of each placement option. If the computers are personal workstations, portable computers that occasionally connect to the network, or are used in workgroups that only share data and applications such as word processors (not operating system software), then you might want to install Windows 95 executable files and applications on the local hard disk and run these locally. Swap files and TEMP files are also located on the local hard disk. The network is used only to store commonly used data.

On the other hand, if you want to run a shared copy of Windows 95 to reduce the hardware requirements for the network computers, to allow users to access more than one computer, and to provide a central location for managing users’ system configurations, then you would install Windows 95 files so that all Windows 95 executable files and applications run from the network. All data is saved on the network. Swap files and TEMP directories are placed on network drives.

Support for diskless workstations is available for NetWare networks with the initial release of Windows 95. For information about support under Windows NT, contact your Microsoft sales support representative.

Evaluate Key Features of the Ideal Configuration

This section provides detailed discussions of the features which might be included in an ideal network client configuration.

Using a 32-bit, Protected-Mode Network Client

For best performance, select a network client that uses a 32-bit redirector for accessing servers. Windows 95 includes the 32-bit Microsoft Client for NetWare Networks and the Client for Microsoft Networks; each of these has a 32-bit redirector. The benefits of using a 32-bit, protected-mode client include the following:

- Provides for easy installation and configuration using built-in Windows 95 tools
- Uses no real-mode memory
- Provides faster data I/O across the network
- Offers greater stability than real-mode redirectors
- Allows more than one redirector to be run at one time, and thereby enables access to servers for multiple networks without having to reload the operating system for a new network client
- Makes networking seamless in the Windows 95 user interface; users can browse the server for multiple networks in Network Neighborhood, all within the same namespace — users don't need to know which type of network they are browsing

If you are using another type of network, contact your network vendor regarding the availability of a 32-bit, protected-mode network client. If a protected-mode client is unavailable, you can run a protected-mode Windows 95 client such as Client for Microsoft Networks in conjunction with a real-mode network client.

Using a 32-bit, Protected-Mode Protocol

If you select a 32-bit, protected-mode network client, then by default Windows 95 also sets up a 32-bit, protected-mode protocol. Even if you are running a real-mode client such as the Novell® 3.x workstation shell (NETX) with a real-mode implementation of IPX/SPX to access NetWare® servers, you can still load the 32-bit version of the Microsoft IPX/SPX-compatible protocol. The benefits of adding the protected-mode protocol are better performance and better stability for network communications to servers that are not running NetWare (for example, computers running Windows 95 or Windows NT).

In addition, for protocols such as TCP/IP, the Microsoft 32-bit version enables additional functionality such as the ability to use DHCP and WINS servers which dynamically set the IP addresses and resolve computer names for client computers on the network. Each protocol has a number of benefits, as discussed in Chapter 12, “Network Technical Discussion.”

Using the Latest Network Adapter Drivers

For best performance, use the latest network adapter drivers available. These should be NDIS 3.1-compatible drivers which provide Plug and Play capabilities. Such drivers take up no real-mode memory and can be loaded or unloaded dynamically as required.

The only instances in which you wouldn't use the latest drivers are:

- The newest driver isn't available for your network adapter.
- Your site requires ODI cards and drivers.

Evaluate Recommended Features for Network Clients (Optional)

The following optional features are recommended for your preferred configuration. These features define how Windows 95 will be installed and administered in your organization.

Using System Policies

For centralized administration of client computers, you must enable system policies. System policies allow you to centrally edit and control individual user and computer configurations. For example, if you want to place a custom Start menu on user desktops or to limit access to Control Panel options, system policies make it easy to do this from a central location for a large number of users.

Enabling policies creates a single file that resides on the server, and thus does not involve physically touching the client computer. In general, the policy file can be modified on the server after Windows 95 is installed; however, some types of changes, such as adding group support or a nonstandard server path for product updates, require configuration on the client computer. For information on the types of restrictions available and for details on how to implement system policies, see Chapter 15, “User Profiles and System Policies.”

Using User Profiles

With user profiles, users can use personalized desktop settings each time they log on to a computer. This is especially useful for multiple users sharing a single computer who want to customize their desktops and have those custom settings

loaded at logon. Conversely, a single user can move between computers using the same profile if the administrator stores that profile on the server. An administrator can also take advantage of profiles to require that a mandatory desktop configuration be loaded each time a user logs on. The ability to change profile settings can be controlled by the administrator. For information on how to use user profiles, see Chapter 15, “User Profiles and System Policies.”

User profiles are not needed when only one person uses the computer or when a custom desktop adds no value. By not enabling user profiles, the logon process is shortened slightly, because the system does not need to locate and load the profile.

Enabling Remote Administration

To remotely administer a computer’s Registry, you must first enable this capability. This is done on the client computer by installing the network service called Microsoft Remote Registry service, enabling user-level security, and enabling the Remote Administration feature. Remote administration capabilities allows you to conduct a variety of tasks remotely over the network such as administering the file system, sharing or restricting directories, or querying and making changes to the Registry. If you plan to do any of these tasks, be sure to enable this feature during Windows 95 installation.

You should not enable remote administration if you don’t need these services, because doing so causes unnecessary, extra processes to run on the client computer and on the network. These extra remote services could then *theoretically* be used

by individuals on the network— provided they knew the appropriate password — to access information on your client computers. However, Windows 95 comes with security capabilities to protect against unauthorized use of the Remote Registry service. For more information, see Chapter 16, “Remote Administration.”

Using Setup Scripts for Windows 95 Setup

Setup scripts (which are batch files) allow you to predefine responses to prompts that appear during Windows 95 Setup. Setup scripts go hand-in-hand with push installations to completely automate the installation process. The choice to use a setup script is very straightforward. If you need to conduct a similar installation more than five times, you should use a setup script. Begin planning for setup scripts and push installations during this phase, as you are specifying the preferred client configuration. Ensure that you document each feature needed, so that you can automate the selection of these features. For more information, see Chapter 5, “Custom, Automated, and Push Installations.”

Using Push Installations for Windows 95 Setup

You need to understand and plan in advance how the push installation process will work for a given computer. There are several alternatives for remotely initiating the installation, ranging from editing the client's login script, to sending by electronic mail a link that contains a setup script. You will want to consider how to push the installation for each computer and ensure that the client computers are configured to support this process.

For organizations with 50 or more computers, being physically present to install each client computer is not a viable option because of the cost. In that case, you may need to turn to an administrative software solution such as Microsoft Systems Management Server. When using administrative software tools, additional client-side software may be needed. Be sure to include this software in the installation plan.

For more information about using push installations, see Chapter 5, "Custom, Automated, and Push Installations."

Using Peer Resource Sharing Services

The peer resource sharing capability in Windows 95 allows your client computers to share files and printers directly from a local personal computer, instead of on a central server. Peer resource sharing may reduce the traffic and disk space required on central servers, because you are leveraging the power of individual computers.

Security for peer resource sharing services may take the form of user-level security based on the user accounts on a Windows NT or NetWare network. Notice that a Microsoft Windows NT Client Access License is required if the computer will be connecting to servers running Windows NT Server. For information, see Chapter 8, "Windows 95 on Microsoft Networks" or contact your Microsoft reseller.

If you don't have servers to provide security validation or don't want to use user-level security, you can use share-level security, with each individual implementing security and a password scheme on the local computer. Share-level security is set on a directory-by-directory basis.

If you do not want to use peer resource sharing services and want to disable the capability on each client computer, you can do so by selecting the appropriate option in system policies.

Using User-Level Security

User-level security is based on user account lists stored on Windows NT or Novell NetWare servers. The user accounts specify which users have access

rights on the network. Windows 95 passes on a user's request for access to the servers for validation. Pass-through user-level security protects shared network resources by requiring that a security provider authenticate a user's request to access resources.

User-level security is required for remote administration of the Registry and for network access to full user profiles. For information on implementing security in Windows 95, see Chapter 14, "Security."

Evaluate Other Optional Features (Optional)

The following features may be useful in your organization. Review the related discussion before making a decision.

Using Microsoft Exchange Mail

The new Microsoft Exchange feature in Windows 95 manages all messaging information in one place, with a single inbox for electronic mail, faxes, and other messages. In addition, Windows 95 comes with a complete small-business mail system — that is, a mail client and a postoffice — that allows users to exchange electronic mail through a single postoffice. This mail client integrates well into Microsoft Mail servers, and the postoffice can be upgraded to provide an enterprise mail system.

You can also use a variety of other mail or messaging systems through Microsoft Exchange as long as they use a MAPI 1.0 driver. If you have an existing mail system that doesn't use a MAPI 1.0 driver, you can continue to use that mail system without running the Microsoft Exchange Mail capability. In this case, you would install Microsoft Exchange only if you wanted to use the Microsoft Fax capability so that incoming faxes are collected by Microsoft Exchange. For more information, see Chapter 26, "Electronic Mail and Microsoft Exchange," and Chapter 27, "Microsoft Fax."

Using Microsoft Fax

Microsoft Fax provides a built-in fax capability that allows a computer running Windows 95 to send and receive faxes as bitmap and binary files without any additional software. It also allows users within a Windows 95 workgroup to share a fax modem, but if you have an existing fax server in your organization, you should probably continue to use that server for computers on the network. In that case, Microsoft Fax features would still be useful for portable computer users who travel. For more information, see Chapter 27, "Microsoft Fax."

Using Dial-Up Networking

This built-in client software allows the computer to use popular, server-based dial-in packages such as Windows NT RAS, Novell Netware Connect, and Shiva NetModem. Dial-Up Networking provides additional security for remote dial-up connections and requires some additional configuration of protocols and software. For more information, see Chapter 28, “Dial-Up Networking and Mobile Computing .”

Using The Microsoft Network

The Microsoft Network is an online service that offers chat capability, information bulletin boards, and electronic mail. It is the best place to obtain Microsoft product information and technical support. For more information, see Chapter 29, “The Microsoft Network.”

Using Disk Management Tools

Windows 95 ships with useful disk tools such as disk compression and defragmenting utilities that run from within Windows 95. The disk compression utility upgrades DoubleSpace® and DriveSpace™ programs from MS-DOS 6.2x. For details, see Chapter 20, “Disks and File Systems.”

Conduct the Lab Test: The Details

This phase in the deployment process involves four significant efforts: preparing the site, conducting the installation, testing the installation, and restoring the system.

Prepare the Test Site

Preparing the site involves ensuring that the location of each computer, the computer itself, and the hard disk in particular are all ready for Windows 95 to be installed. In terms of the physical site, ensure that you have the appropriate jacks for connecting to the network.

In terms of the computer itself, ensure that it has the appropriate hard disk space, RAM (at least 4 MB, but 8 MB is recommended), and processor (386DX or better is recommended) to run Windows 95. To review the requirements for running a shared copy of Windows 95 from a server, see Chapter 4, “Server-Based Setup for Windows 95.”

In addition, run virus detection, disk scanning, and defragmentation programs on the computer to correct any problems prior to installation. Although the computer may appear to be operating properly, software upgrades often uncover hardware

or software problems, because of the way they read and write data to the hard disk. Correct any such problems before installing Windows 95.

Lastly, when preparing the site, be sure to back up critical data and configuration files for the system, in case the installation fails or you need to revert to the previous operating system for some reason. This includes backing up INI files (such as WIN.INI and SYSTEM.INI), GRP files, AUTOEXEC.BAT, CONFIG.SYS, and all key data files. As an added precaution, create a system startup disk and back up the Windows and DOS directories and all the files in the root directory.

If you need to automate the restoration, consider using a commercial backup program, instead of copying the files by hand.

Install Windows 95 on Test Computers

Before setting up Windows 95 for the first time, verify that the computer's existing network is working properly. Then use Chapter 2, "Installation," in the *Windows 95 Resource Kit* to help you install and configure Windows 95 correctly. Chapter 5, "Custom, Automated, and Push Installations," includes instructions on how to automate the installation process using setup scripts. Take note of which options you want to predefine as entries for the MSBATCH.INF file used for the setup script.

Test the Installation

After you've set up a computer with Windows 95, you'll need to run a variety of tests to ensure that it runs correctly on your network and that you can still perform all of your usual tasks. Use your own testing methodology or test the following to verify correct system operation:

- Connect to and browse the network
- Set up a printer and test printing to local and network printers
- Open, run, and close applications both on the client computer and on the server
- Shut down completely

In addition to ensuring that the preferred client configuration works as expected, you may also want to conduct additional testing of the optional software features and components in Windows 95. This can help you determine whether you are running Windows 95 optimally. For this kind of testing, conduct side-by-side evaluations on two computers, changing individual features on each one, to determine the following:

- Performance in terms of responsiveness and throughput

- Ease of use
- Stability
- Compatibility
- Functionality

To evaluate network client software for Novell NetWare, run your network performance tests in the following configurations:

- Windows 95 installed with an existing 16-bit, Novell-supplied workstation client (NETX), using ODI drivers
- Windows 95 added to an existing installation of Windows 3.x and NetWare, using Client for NetWare Networks and protected-mode networking support components (NDIS adapter drivers)
- Windows 95 as a new installation using all protected-mode components, including both Client for NetWare Networks and Client for Microsoft Networks, plus peer resource sharing support

Perform several common tasks such as connecting to the network, administering a remote NetWare server, and so on, to test for ease of use. Similarly, you'll want to run any business-specific NetWare applications under Microsoft Client for NetWare Networks to ensure that they run compatibly. Any stability issues should become apparent during this testing.

See Chapter 3, "Networking," in the *Windows 95 Resource Kit* to understand the differences in functionality between network clients.

Test the Restoration Process

Having thoroughly tested the preferred network client, completely restore one of the test computers to the previous client configuration and document the process. The degree to which you need to test and restore the computer depends on the tools at your disposal. Chapter 6, "Setup Technical Discussion," documents how to restore the previous operating system manually.

Plan the Pilot Rollout: The Details

This phase involves three major efforts: automating the installation, documenting the logistics of the pilot installation, and preparing the user training plan. These efforts are a combination of planning and lab-testing work.

Install the Source Files for Setup

You need to designate a network server that will be used as the source file installing Windows 95 over the network using custom setup scripts. Then use Server-based Setup to install Windows 95 source files on a server. This program is available

only on the Windows 95 compact disc (in the ADMIN\NETTOOLS\NETSETUP directory).

You must make choices based on your client configuration, including whether client computers will run a shared copy of Windows 95 from the server, or run Windows 95 locally from the hard disk.

See Chapter 4, “Server-Based Setup for Windows 95,” for step-by-step instructions. Document any changes to this process.

Automate the Installation

Automating the installation consists of creating a setup script, setting up Windows 95 on the server, and creating a push installation process.

With a setup script you can perform a “hands-free” installation, so that the user need not respond to any prompts or even touch the computer during Windows 95 Setup.

Setting up Windows 95 on the server requires the Server-based Setup program (NETSETUP.EXE) from the Windows 95 compact disc. Installing Windows 95 source files on the server is a separate and distinct process from the Windows 95 Setup program (SETUP.EXE) that you ran in the initial lab installation.

Not e Depending on the common network configuration at your site, you may determine that you need to remove a line from one or more configuration files as a global procedure before starting Windows 95 Setup. For example, you may want to use a protected-mode protocol such as Microsoft TCP/IP during Setup instead of the real-mode version of TCP/IP currently being using on the target computers. In addition, users may be running certain TSRs or applications that should be closed before running Windows 95 Setup. In these cases, you can modify NETDET.INI on NetWare networks as described in Chapter 9, “Windows 95 on NetWare Networks.” On other networks, including Microsoft networks, modify the [Install] section of MSBATCH.INF to automate these changes. (For more information, see Appendix D, “MSBATCH.INF Parameters.”)

When you run Server-based Setup to install source files on the server, you can also create a default setup script, and you can specify whether the Windows 95 source files on the server will be used to set up Windows 95 to run locally from a single computer or to run a shared copy from the server for client computers that

require
a shared installation.

In addition, you may want to manually add other files to the shared directory on the server, such as custom bitmaps for screens or a predefined WKGRP.INI file for workgroup organization, so that client computers are fully configured when Windows 95 is installed.

Creating a push installation process involves doing some final work on the server, such as editing the login script for the user, or sending a link in electronic mail to a batch file that runs Windows 95 Setup, so that the user only needs to log on or double-click an icon to start the installation. System management software such as Microsoft Systems Management Server can also be used to start the installation centrally.

For more information, see Chapter 5, “Custom, Automated, and Push Installations.”

Document the Logistics of a Pilot Installation

This involves determining the timing and the process for pilot installation, choosing the pilot user group, and communicating to the group about the pilot rollout.

Although you are just testing the installation process, the first pilot sets the tone and presents an example of the final rollout, so it is important to be completely prepared with all aspects of the rollout. This requires that you determine the time it will take for installation, the personnel and tools needed to facilitate the process, and the overall schedule.

When determining the installation time for the pilot rollout, base the projections on how long it takes for installation of an individual computer; remember to schedule the downtime for each user. Also, in obtaining tools for the pilot rollout, you may want to include management software that can help automate the installation.

The following list identifies critical considerations for the pilot rollout:

- Do you have a list of the target computers?
 - Has each computer been backed up?
 - Have passwords been reset for CMOS, the network, and applications?
 - Have virus checking and disk defragmentation been performed?
 - What date, time, and location have been chosen for the rollout?
- What is the schedule for pilot installations?

- How many systems will be installed per day? Start with a conservative estimate and then increase or decrease the number, based on your experiences with the initial installations.
- At what time of day should the installations occur? You may want to schedule installations to occur on weekdays after normal business hours or on weekends.
- Who will participate in the installations? In addition to the Installation team members, be sure to assign a system administrator with full rights on the server, including the right to administer mail or database server passwords.

It's important to choose a pilot user group or department that is willing and able to accommodate the rollout. Try not to select a department that is attempting to meet a schedule deadline during the rollout, or a group that is traditionally slow in adopting new technology.

Another step at this stage is informing users about the pilot rollout plan. You can use a videotape presentation, an interoffice memo, or a company meeting as the means for communicating with users about the rollout. But, regardless of the form used, the message must explain to users the benefits of moving to Windows 95, and describe the overall plan and process by which each group or department will make the move. This makes it easier for your users to plan for and accept the migration to Windows 95 as part of their schedules.

Develop the User Training Plan

The first steps in developing a training plan are to acquire a training lab, set up computers in the lab, and appoint a team member as instructor. (If in-house resources are not available, use a vendor to develop and conduct the training.) The instructor will be responsible for creating and testing the training program.

There are a number of training approaches and a variety of tools you can use. A recommended approach is to divide the training into sessions corresponding to three distinct topics: The Basics, Corporate-Specific Applications, and Customization.

The session entitled "The Basics" includes the top 10 functions any user needs to know to accomplish daily work, such as the following:

Function	To do the function, use this
Launch programs, load documents, find a file	Start button
Change settings	Control Panel
Get help on a specific topic	F1 or Help command
Switch between applications	Taskbar

Minimize, maximize, and close windows	Window buttons
Browse your hard disk	My Computer and Windows Explorer
Connect to a network drive	Network Neighborhood
Print a document	Point and Print

The Windows 95 online tutorial and *Introducing Microsoft Windows 95* provide the information you need to train your users in the basics. Schedule training sessions of no more than 30 minutes each; in each session, users receive information that is *just enough* to be productive using Windows 95.

The “Corporate-Specific Applications” session varies by the environment and the types of applications run on the network. This session should focus on the top 5 to 10 functions that will change because of the upgrade to Windows 95.

The “Customization” session is intended for more experienced users. The purpose of this session is to provide information and guidance that will help these users learn on their own after the training, and teach them how to work more productively with Windows 95. Some of these topics could include:

- Adding items to the Start button
- Adding items to the desktop (move, copy, shortcut)
- Using options of the right mouse button
- Adding a new device (for example, a printer)
- Changing the desktop (for example, screen saver settings)

After creating and testing the program, schedule training sessions to occur immediately before the rollout so that the instruction is *just in time*, ensuring that users retain most of what they learn by putting it to use right away.

Develop the Support Plan

Similar to the training plan, the support plan must be ready to go online the first day you begin performing Windows 95 installations. Because the quality of support that’s available during the pilot rollout will be seen as an indicator of the quality of the rollout as a whole, it is important that you plan carefully to ensure effective support.

Staff the Support team for your pilot rollout with some of your best technicians dedicated solely to the pilot group for the first few weeks. The assigned technicians should carry pagers or be available by phone at all times, to give immediate assistance to users.

And, to help users help themselves, edit Windows 95 Help with company-specific information on applications or features.

Conduct the Pilot Rollout: The Details

The key areas to focus on when conducting the installation are: simulating the final installation process; testing the capabilities and performance of the system; surveying user feedback; and making adjustments as needed.

Simulate the Installation Process

The schedule for the pilot rollout should simulate — on a smaller scale — the schedule of the final rollout. As you conduct the pilot rollout, you may find that certain tasks take more or less time than expected, that some tasks need to be added, or that some tasks can be left out. Modify the pilot rollout schedule to account for such changes, and use the pilot schedule for projecting the final rollout timetable.

Test Windows 95 Performance and Capabilities

In addition to the technicians responsible for conducting the pilot installation, extra technicians should be assigned to measure, observe, and test the installation. By tracking the time per installation, handling problems that arise, and identifying areas for improvement or automation, these individuals help ensure the success of both the pilot and final rollouts by making the installation more efficient.

In addition, after Windows 95 is installed, these technicians test system capabilities, such as remote administration, for proper operation and monitor the client computers for performance, stability, and functionality, highlighting any inconsistencies with the lab configuration.

Survey Users for Feedback

The final part of the pilot rollout involves surveying the users to gauge their satisfaction and proficiency with the new installation and to evaluate the level of training and support provided. Test users' proficiency by having them perform a few common tasks or use several of the new features in Windows 95 — for example, have these users register their survey results on the server.

When collected, combine the survey results with the ideas for improvements identified during the pilot rollout. Use this information to prepare a checklist of open issues which must be resolved prior to the final rollout. Then assign team members to take the actions necessary for solving problems or making

improvements. Indicate on the checklist how and when each item was resolved, adjusting the deployment plan if appropriate.

Finalize the Rollout Plan: The Details

The final rollout plan is an extension of the pilot planning process, with the added steps of documenting, budgeting for, and carrying out the final logistics. As you perform these steps, you should also update the policies and practices guidelines governing network and computer use in your company, and create a template for a central database that tracks specific configurations and uses of each network computer.

Document, Budget, and Carry Out the Logistics

As you prepare for final rollout, estimate the length and scope of the overall installation process. Also plan for all tools needed to complete the process within the stated timeframe. If necessary, propose a formal budget for the company-wide implementation and present it to management for approval. Your budget should include the costs for personnel and resources such as system management software.

After obtaining any necessary approval, purchase the resources required to facilitate the installation. If you need additional staff, be sure to hire experienced and qualified individuals for the team, and train them extensively before getting started.

Complete your training, communication, and staffing plans for the final rollout at this time.

Update the Policies and Practices Guidelines

Prior to final rollout, update all company policies regarding the use of the network and computers by employees. Be sure to cover items such as password length and expiration requirements, and the level of approval needed to obtain remote dial-up privileges.

In addition, update the corporate standards lists for software usage; use this as a reference for bringing all computers into compliance during the rollout process. Because Windows 95 enables the use of many new 32-bit applications and of Plug and Play-compliant hardware, these new products should be added to the list, and their older counterparts should be deleted.

Create a Template for the Rollout Database

A template is used to create a central database for monitoring the progress of the rollout and to document any areas requiring further action. During preparations for the final rollout, create the template, using appropriate database management software. Complete the template with configuration information for every computer and user in the company, and place the template on the server. Then, during company-wide installation, the Installation team fills in the template for each computer and user, indicating if any additional upgrading is needed. The team can then use the template to track open items following the rollout and to measure actual progress against original objectives.

Roll Out Windows 95: The Details

Following weeks of planning, organization, testing, communication, and training, the deployment teams and your organization as a whole should be ready for full-scale rollout of Windows 95. The extensive preparation for this event may make deployment seem almost routine for the teams involved; however, that's exactly the kind of uncomplicated rollout a systems administrator dreams of. And, soon after the installations, users may not know how they got their work done without Windows 95. If this happens in your company, then you know your rollout has been a success!

The information in this chapter has been provided to assist organizations in achieving a smooth migration with Windows 95. The remainder of this *Resource Kit* contains information intended to illustrate other benefits and capabilities of your Windows 95 implementation. Following this Planning Guide, information is presented in these parts:

- Part 2, Installation
- Part 3, Networking
- Part 4, System Management
- Part 5, System Configuration
- Part 6, Communications
- Part 7, Windows 95 Reference
- Part 8, Appendix