IBM

Up and Running!

OS/2® WARP Version 4

Note

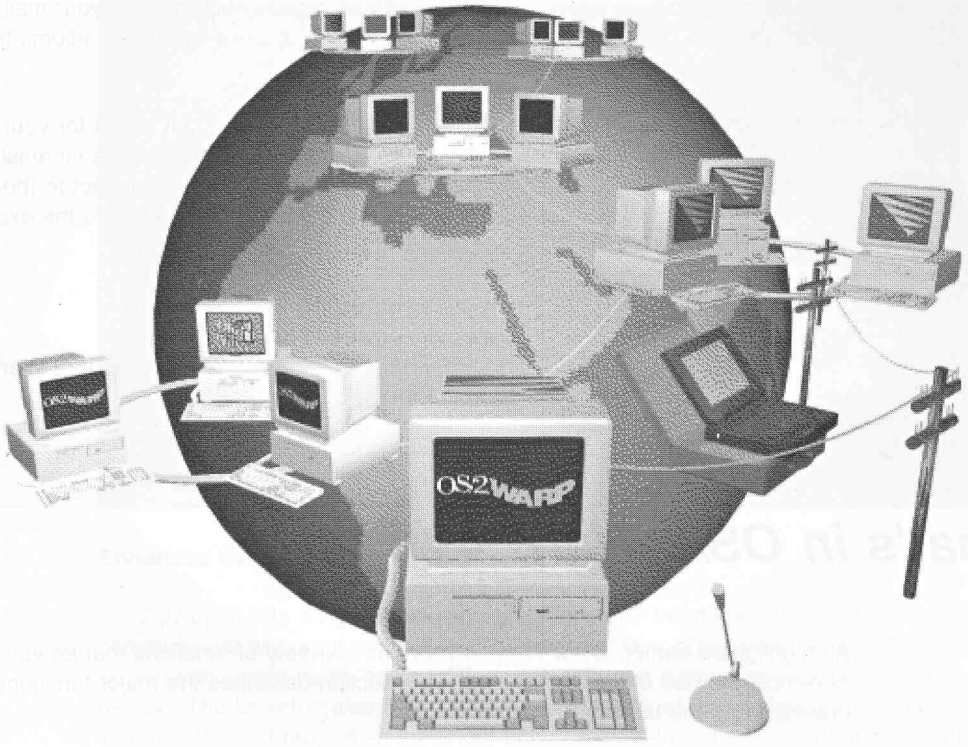
Before using this information and the service it supports, be sure to read the general information under Appendix E, "Notices" on page 113.

First Edition (September, 1996)

Contents

Chapter 1. Welcome to the World of OS/2 Warp 4

Welcome to OS/2 Warp 4! OS/2 Warp 4 consists of various products, including OS/2 Warp Version 4, BonusPak, IBM's OS/2 implementation of Sun Microsystems, Inc.'s Java technology, VoiceType for OS/2 Warp, and networking products.



OS/2 Warp 4 is an exciting new addition to the IBM OS/2 family of products. The world of OS/2 Warp 4 lets you explore numerous possibilities with your computer. Using OS/2 Warp 4, you can:

- Talk to your computer and your computer will respond
- Surf the Internet
- Connect to other computers
- Share files and printers
- Use a wide range of programming tools
- Run OS/2, DOS, Java, and most Windows 3.x and Win32S 1.25a applications

- Manage your system
- Add support for new devices using a separate CD-ROM that currently ships with OS/2 Warp 4

OS/2 Warp 4 gives you the power and capability of OS/2 Warp Connect, plus a new set of functions and enhancements. Like its predecessor, OS/2 Warp Version 4 is an advanced, 32-bit operating system that lets you run both 16-bit and 32-bit applications. This includes DOS and most Windows applications.

OS/2 Warp 4 introduces many user interface enhancements, such as a new Desktop. The Desktop's controls and visuals are improved and the initial icon placement is rearranged on the Desktop and within folders to place similar functions together and avoid cluttering the Desktop. With VoiceType for OS/2 Warp, you can navigate the Desktop or Internet using your voice, as well as dictate responses to your mail. VoiceType for OS/2 Warp lets you create common phrases or speech idioms to simplify your unique repetitive tasks.

OS/2 Warp 4 provides a variety of networking services you can select for your needs. These functions provide Internet, office, and remote access for today's increasingly connected world. With OS/2 Warp 4 TCP/IP Services, you can connect to the Internet. TCP/IP Services includes the IBM WebExplorer, which lets you explore the exciting world of the World Wide Web.

Note: Throughout this book, the terms OS/2 Warp 4 and OS/2 Warp are used interchangeably to refer to OS/2 Warp 4.

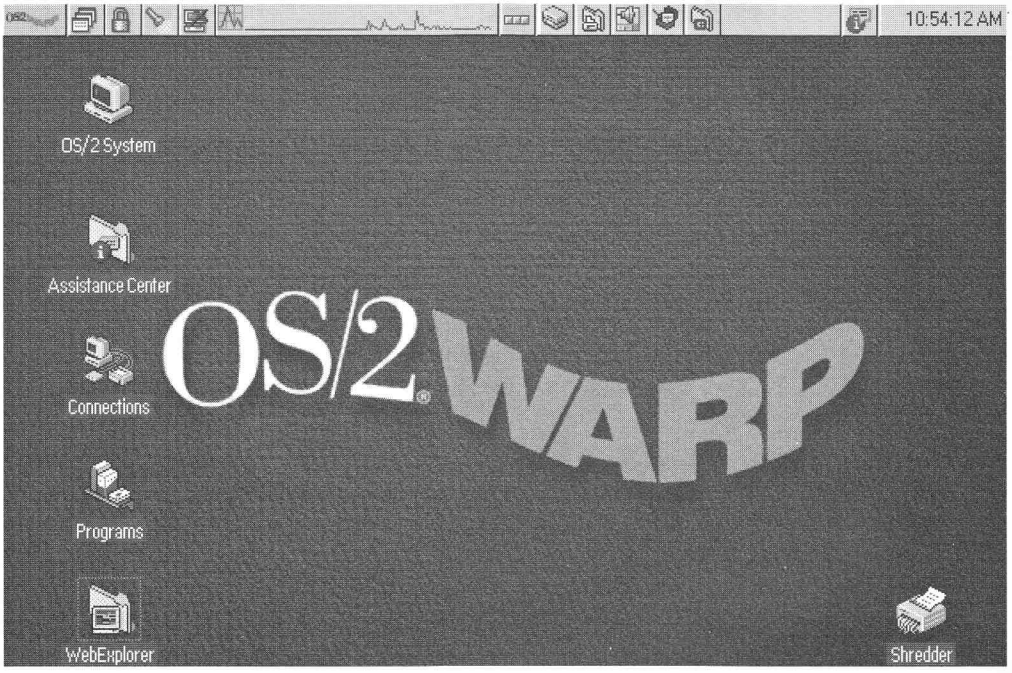
What's in OS/2 Warp 4?

As highlighted earlier, OS/2 Warp 4 provides a variety of functions that let you maximize the use of your computer. This section describes the major functions provided and the tasks you can perform.

For more details, see the online information that OS/2 Warp 4 provides in the online Information folder. The Information folder is located inside the Assistance Center folder on the OS/2 Warp 4 Desktop. The *OS/2 Warp 4 Desktop Guide* describes the Desktop and different tasks you can perform.

Enhanced Usability

OS/2 Warp 4 provides a wide range of functions that enhance the usability of the system. These functions help you use your computer more easily and accomplish your work much faster.



Enhanced Desktop

OS/2 Warp 4 has a newly designed graphical user interface (GUI) that you use to communicate with your computer. The new Desktop groups different functions together so you can locate items easily. Of course, you can customize your Desktop for your needs. The Desktop also has a new font style; use of 256 colors; three-dimensional icons; enhanced properties (settings) notebooks that are presented horizontally rather than vertically; a wide selection of fonts, colors, and sounds; and much more.

Previous Desktop: If you have a previous version of OS/2 on your computer and you install OS/2 Warp 4 over the previous version, OS/2 Warp 4 replaces your previous Desktop with the new OS/2 Warp 4 Desktop. However, OS/2 Warp 4 also stores your previous Desktop in a folder called *Previous Desktop*. You can open the Previous Desktop folder and drag and drop any of your previous icons

and folders onto the new OS/2 Warp 4 Desktop. You may want to size the Previous Desktop after you open the folder so you can more easily manipulate the objects when you drag and drop them onto the new Desktop.

VoiceType for OS/2 Warp

You can now talk to your computer and have your computer respond. This is a different and creative way to use your computer. VoiceType for OS/2 Warp contains the following components:

- Navigation—lets you use voice commands to navigate the Desktop and manage windows, files, and folders, and work with your programs.
- Dictation—lets you write documents, including letters, without using a keyboard. You dictate the words, and the system converts the words into text.

Assistance Center

The Assistance Center is your online information center. It contains objects that help you learn about the system and resolve problems. Some of these objects include the Information folder and *OS/2 Warp Tutorial*, which existed in previous OS/2 releases. Other objects are new in OS/2 Warp 4, such as WarpGuide and the Troubleshooting folder.

WarpGuide

WarpGuide is a *task mentor* that helps you complete a set of computer tasks. The WarpGuide folder contains the guidance objects for specific tasks, such as adding a printer and adding program objects. Some guidance objects display cue cards to assist you with each step of the task. Other guidance objects complete the task for you automatically.

You can set up user profiles that define users' knowledge of computers and OS/2 Warp 4. WarpGuide provides the correct type of assistance based on a specific user's profile.

Information

You will find a variety of information to help you install and use OS/2 Warp 4. In addition to *Up and Running!*, OS/2 Warp 4 provides an extensive online library of books covering a wide range of topics from the Desktop to networking services. The information is located in the Information folder, which is in the Assistance Center.

There is also an extensive online help system to assist you with the tasks you perform from the Desktop.

OS/2 Warp Tutorial

The *OS/2 Warp Tutorial* provides an interactive way to learn about different functions. The tutorial has been expanded to include more selections about different aspects of the system. You can learn about OS/2 Warp 4 basics, connectivity, VoiceType for OS/2 Warp, and online help.

Toolbar

The Toolbar is an object on the Desktop that lets you easily get to other objects and commands that you use often. You can customize the Toolbar to have it contain the items you want by using *drag and drop* to move an object to the Toolbar. The Toolbar can be used to lock up or shut down your system. There are a number of customization choices in the Toolbar properties notebook for Toolbar placement, the hidden attribute, and display types.

You can prevent the Toolbar from being hidden when you open other windows on the Desktop. Use the Toolbar object in the OS/2 System folder to display or not display (hide) the Toolbar on the Desktop.

OS/2 WarpCenter

The OS/2 WarpCenter provides most of the functions of the Toolbar, but in a slightly different manner. The WarpCenter is new for OS/2 Warp 4. After installation, it is initially displayed along the top of the computer screen, but you can move it elsewhere on the Desktop to any edge of the screen. The WarpCenter has many customization choices, helps you arrange programs, monitors system activity and disk space for all partitions, and allows quick access to folders and objects through cascading context menus.

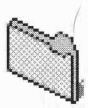
You can use the WarpCenter object in the OS/2 System folder to display or not display (hide) the WarpCenter on the Desktop. You also can customize the OS/2 WarpCenter for your needs.

Multimedia

Multimedia enhances the communication of information on your computer. OS/2 Warp 4 keeps pace with the latest multimedia technology by supporting a variety of audio and video hardware and capabilities. For example, you can record and play audio and video files, play animation files, listen to audio CDs, and play MIDI (Musical Instrument Digital Interface) files.

TrueType fonts

The OS/2 Warp 4 Presentation Manager provides support for TrueType.



OpenDoc and Multimedia OpenDoc support

OpenDoc is an object-oriented way to create documents. Using OpenDoc for OS/2, you drag and drop various components, such as text and sound, together into a single document called the *root* document. You need not be concerned about the format of each component you use. You can concentrate on the contents and looks of the document.

You can install Multimedia OpenDoc support to integrate OpenDoc for OS/2 functionality into your Multimedia support. For this support, you must install base Multimedia support and OpenDoc for OS/2 support.

Applications and Programming

Using OS/2 Warp 4, you can run OS/2, DOS, Java, and most Windows programs (see below for more information). BonusPak applications provide you with productivity features.

Java support

OS/2 Warp 4 includes support for IBM's OS/2 implementation of Sun Microsystems, Inc.'s Java technology (hereinafter Java for OS/2). OS/2 Warp 4 provides a Java for OS/2 runtime environment that lets you run Java applets from the Desktop. OS/2 Warp 4 also includes the Java Developer's Toolkit and samples, so you can develop Java applications that are customized to your system.

BonusPak

The BonusPak provides a variety of applications and utilities to increase your productivity. Some of the applications include IBM Works, FaxWorks for OS/2, AskPSP, and network printing utilities. For more information, see Appendix C, "IBM BonusPak."

OS/2 DOS support

OS/2 Warp 4 provides support for DOS sessions that let you run multiple DOS programs on your system.

WIN-OS/2 support

OS/2 Warp 4 provides WIN-OS/2 support that lets you run most Windows 3.x programs on your system, including Win32S 1.25a applications.

OpenGL 1.0 3D graphics library

OpenGL 1.0 3D graphics library is a high-quality three-dimensional graphics application programming interface (API) that you can use to develop applications for various technical and commercial fields, such as engineering, industrial design, and modeling.

REXX and Object REXX

OS/2 Warp 4 provides both versions of REXX: classic REXX and Object REXX. Object REXX is the scripting language for Workplace OS/2 and OpenDoc for OS/2. You can perform scripting and authoring of SOM objects. This capability provides for transparent access from Object REXX objects to SOM objects and vice versa.

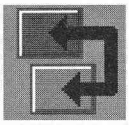
At installation, the default is classic REXX. After you install OS/2 Warp 4, you can toggle between classic REXX and Object REXX using the SWITCHRX.CMD command and then rebooting the system.

Security enablement

Security Enabling Services provides a new set of application programming interfaces (APIs) for running security applications. The applications provide enhanced file, print, and process security. You can develop your own applications or obtain them from software vendors.

Developer API Extensions for OS/2 Warp 4

OS/2 Warp 4 integrates support for IBM's Developer API Extensions for OS/2 Warp 4, known as Open32. Open32 lets you run applications that are written using the Open32 interfaces. There are a number of applications under development that use this interface, such as Lotus WordPro for OS/2 and MGI PhotoSuite.



Dedicated DOS/Windows Session

Dedicated DOS/Windows Session provides an enhanced way of performing the dual boot function to run DOS and Windows programs. You can start Dedicated DOS/Windows Session programs from icons on the Desktop. When you run DOS or Windows programs in a Dedicated DOS/Windows Session, the OS/2 Warp session you are using is not shut down as it is when you use dual boot. Instead, the OS/2 Warp session *hibernates* to disk and is resumed after you complete the Dedicated DOS/Windows Session activities. The primary enhancement of Dedicated DOS/Windows Session over dual boot is speed.

Connectivity

OS/2 Warp 4 provides various networking services that let you quickly connect to the world around you. With TCP/IP Services, you can access the Internet. Using different connectivity options, you can access information on local area networks (LANs) and use mobile office support to travel with your files.

Accessing and using the Internet

OS/2 Warp 4 provides various applications in TCP/IP Services that let you access the Internet over a LAN or by dialing in using a modem with serial line Internet protocol (SLIP) or point-to-point protocol (PPP). With TCP/IP Services, you get WebExplorer, which is a web browser you can use to access Internet information worldwide and communicate with users around the world.

OS/2 Warp 4 provides templates that let you use the Internet more easily. You can put icons for World Wide Web sites that you frequently use on the Desktop or into folders. When you double-click on the icon, you launch to an Internet home page. You use the templates to create a uniform resource locator (URL) object to point to the Web site you frequently use. You can organize the uniform resource locaters in URL folders or start them from diskettes. URL folders store a listing of your favorite Web site addresses.

You can also create HTML (HyperText Markup Language) objects for use with a web browser or editor, and FTP (File Transfer Protocol) objects for transferring files.

Network adapters and protocols

OS/2 Warp 4 provides support for LAN adapters, protocols, and programming interfaces through Network Adapters and Protocols Services (also known as IBM Multi-Protocol Transport System (MPTS)). MPTS is automatically installed even if you do not choose other connectivity options. Basically, MPTS provides a transport that enables OS/2 products to operate on a network or communicate with computers on the Internet.

Access and share files and printers

OS/2 Warp 4 provides File and Print Client, which lets you use your local area network (LAN) to access and share files and printers with workstations running IBM Peer for OS/2, OS/2 Warp Server, Microsoft NT, and Windows 95.

Access resources on Novell NetWare servers

OS/2 Warp 4 provides support for accessing files and printers on Novell NetWare servers. You can do this using Novell NetWare Client for OS/2 (also known as NetWare Client for OS/2).

Dialing in to a LAN

OS/2 Warp 4 provides Remote Access Client (also known as IBM LAN Distance Remote) to let you dial in to a LAN Distance Server or another Remote Access Client. Once you are connected to the local area network (LAN), you can use File and Print Client or other LAN applications.

Traveling with LAN files

You can take LAN-based files with you when you travel. To do this, you use Mobile Office Services (also known as IBM Mobile File Sync). When you return from traveling, the files are restored to the LAN.

Password Coordination

With Password Coordination (also known as Network SignON Coordinator/2 (NSC/2)), you can use a single menu to log on, log off, or change passwords simultaneously for multiple accounts.

Personal Communications 3270/5250 emulation

OS/2 Warp 4 integrates Personal Communications 3270/5250 emulation to let you communicate between the Desktop and a mainframe system. With this capability, a user can access data that is stored on a host computer.

Hardware Support

OS/2 Warp 4 provides enhanced support for a wide variety of hardware, such as different audio, video, and LAN cards; popular Plug and Play adapters; various printers; and enhanced IDE and SCSI hard disks. Personal Computer Memory Card International Association (PCMCIA) supports additional cards and socket services.

OS/2 Warp 4 supports current industry standards and specifications. These include Plug and Play, PCMCIA, Advanced Power Management (APM), Display Data Channel (DDC), SCSI and IDE, and Self Monitoring Analysis and Reporting Technology (S.M.A.R.T.). The Device Driver Pak contains a complete compatibility list of approximately 2700 devices that OS/2 Warp 4 supports.

Printing capabilities

OS/2 Warp 4 provides powerful printing capabilities that let you perform a variety of print tasks. You can print on printers connected to a parallel, serial, or infrared port, or a network-attached printer. You can display the progress of print jobs, and use a single window to display and manage the printer objects on the Desktop. You also can use drag and drop to move and copy jobs between printer objects and change the order of jobs in a printer object.

OS/2 Warp 4 automatically selects the OS/2 print driver to use when creating a new printer object for certain parallel attached printers, if the driver is supported and available.

You can automatically download printer drivers to the Desktop and maintain the drivers and printer properties on the Desktop.

New device support

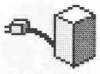
In addition to the new Device Driver Pak, OS/2 Warp 4 also includes device support for several new SCSI devices, RAID drivers, optical devices, and leading audio devices.

Support for more than 50 new printers, including the Hewlett-Packard DeskJet and Canon BubbleJet printers also has been added.

Device Driver Pak

OS/2 Warp 4 currently ships with a separate CD-ROM known as the Device Driver Pak. The Device Driver Pak is a collection of OS/2 Warp 4 device drivers that you can conveniently access in one place. The device drivers are either physically on the CD-ROM or you can download them directly from the Internet using hot links to the home pages of third-party providers. The Device Driver Pak is offered on an "as-is" basis.

For more information, see "Device Driver Pak CD" on page 76.

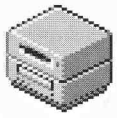


Plug and Play

Enhanced Plug and Play support in OS/2 Warp 4 automatically detects and installs supported drivers for legacy ISA devices and Plug and Play devices without your intervention. An enhanced Hardware Manager lets you view system information about physical devices and device drivers and the system resources that are in use. Hardware Manager is helpful when you are adding a device to your system or when you are having problems with any devices.

Display Data Channel Adapter/Monitor Specification

Display Data Channel (DDC) is the current industry standard for display adapters and monitors. OS/2 Warp 4 supports DDC2-enabled monitors when used with DDC2-compliant systems, such as the IBM ValuePoint 350. This support provides for the automatic recognition of enabled monitors and the automatic setting of the highest refresh rate, which reduces screen flicker.



S.M.A.R.T. Specification

The OS/2 Warp 4 PCI IDE driver conforms to the Self Monitoring Analysis and Reporting Technology (S.M.A.R.T.) specification and is enhanced to include a user interface that warns users of impending hard drive failure.

Enhanced IDE support

For systems that have the Direct Memory Access (DMA) capability, which is a hardware capability, OS/2 Warp 4 enables you to use this capability. The use of DMA increases the data transfer rates for IDE PCI hard drives.

Graphics Adapter Display Driver (GRADD)

The new 32-bit Graphics Adapter Display Driver (GRADD) model improves Presentation Manager performance and substantially reduces an Independent Hardware Vendor's development effort for display drivers.

PCMCIA support

OS/2 Warp 4 provides software support for various Personal Computer Memory Card International Association (PCMCIA) hardware (also known as PC Cards). PCMCIA is the standard for PC card adapters for portable computers, such as laptops and notebooks. Enhancements include new card and socket services, CardBus support, and support for new Ethernet and LAN cards and adapters.

Advanced Power Management Specification

The implementation of the Advanced Power Management (APM) specification helps users of mobile systems minimize power consumption and manage battery life. OS/2 Warp 4 supports the APM 1.1 specification for enabled drivers, including displays.

Docking support

OS/2 Warp 4 provides docking support, which allows devices resident in the docking station to be configured and reconfigured dynamically when the ThinkPad is docked or undocked. OS/2 Warp 4 support for docking is for the IBM ThinkPad models with Dock II support. Note that only docking-station resident devices are supported.

Ultra Bay device swapping

Ultra Bay device swapping lets you boot specific IBM ThinkPad models with a diskette drive, replace the diskette drive with a CD-ROM while the system is suspended, and then resume without rebooting. Ultra Bay device swapping is supported after you complete OS/2 Warp 4 installation.

Managing Your System

Managing your enterprise systems is made much easier with OS/2 Warp 4.

System Management Client

System Management Client (also known as TME 10 NetFinity and SNMP Agent) lets a network administrator remotely manage the hardware and software on workstations from a central location using IBM SystemView Managers or other Simple Network Management Protocol (SNMP) managers.

Systems Management

Systems Management is designed for system administrators. It provides the means to collect data about system and application errors. The data is collected when system or application code calls an API (First Failure Support Technology/2 (FFSTProbe)) indicating an error has occurred. The error data is saved in the error log and can be retrieved so it can be analyzed using the Systems Management tools.

Systems Management also provides the capability to collect and save trace and memory dump information related to the error. Trace information is a record of the events that were running on the system from the time that trace was turned on until the time the failure occurred. Dump information contains a snapshot of the data that was in system memory at the time of the failure.

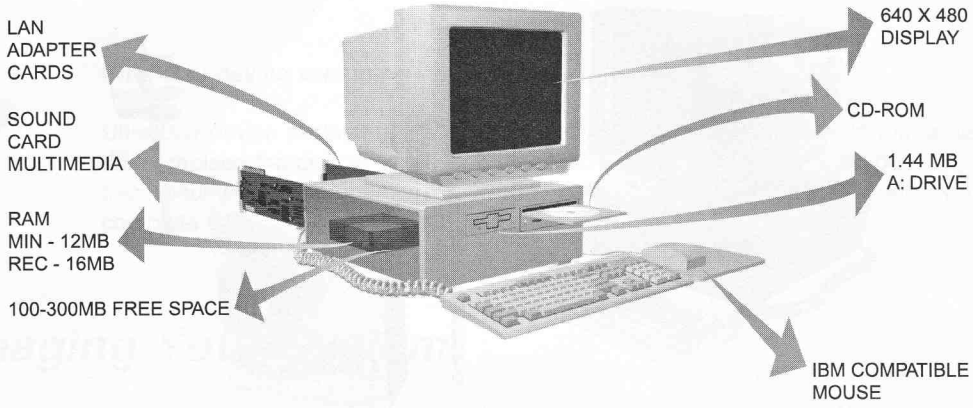
Chapter 2. Getting Started

This chapter gets you started with OS/2 Warp 4 installation. You should read this chapter before you start the installation. The chapter describes:

- The hardware requirements for OS/2 Warp 4. These requirements include such items as the processor, random access memory, and devices needed for installation and certain functions.
- The software considerations for installing and using OS/2 Warp 4 and some of its functions. The information includes the software you can install over and restrictions for different software products.
- Guidance on the two installation paths you can choose: Easy Installation and Advanced Installation. The chapter also highlights the differences between the two methods.

  If you plan to use Advanced Installation, you should also read Chapter 6, "Advanced Installation: Planning for Partitions and Boot Manager."

Hardware Requirements



To install OS/2 Warp 4, you need the following minimum hardware:

- An Intel 486 processor with a speed of at least 33 MHz.

  To use VoiceType for OS/2 Warp (navigation only), you need an Intel Pentium processor with a speed of at least 75 MHz.

  To use VoiceType for OS/2 Warp (navigation and dictation), you need an Intel Pentium processor with a speed of at least 100 MHz.

- 12MB of random access memory (RAM). However, 16MB of RAM is recommended.

  To use VoiceType for OS/2 Warp (navigation), an additional 4MB of RAM is recommended.

  To use VoiceType for OS/2 Warp (navigation and dictation), an additional 8MB–12MB of RAM is recommended.

- 100–300MB free disk space.

  In general, you need 100–300MB of free disk space, depending on whether you use the Easy Installation or Advanced Installation method and what you choose to install. Table 1 on page 20 provides information about the space requirements for OS/2 Warp 4. Using the information in the table, you need to decide what you plan to install and how much space, in megabytes, you need.

- A 1.44MB, 3.5-inch diskette drive, configured as drive A.

- An OS/2-compatible CD-ROM drive. The CD-ROM drive can be attached directly. It can also be on another workstation in the network if you plan to use remote installation.

- A 640 x 480 or higher resolution display with 16 colors minimum. IBM recommends a display with 256 or more colors for the full use of color in OS/2 Warp 4.
- An IBM-compatible mouse.
- A 14.4Kbps or higher modem or network connection (LAN access) for Internet access or other network access.
- A sound card for multimedia.

  For VoiceType for OS/2 Warp, a sound card supporting 16 bit, 11 KHz sampling is required.
- A high quality, close talking, directional microphone for VoiceType for OS/2 Warp. For optimal performance, the microphone requires noise cancellation features.
- To use File and Print Client, a LAN adapter card (Token-Ring or Ethernet).

Because OS/2 Warp 4 does not have one specific value for the disk space required to install the system, the space required depends on a number of factors, such as:

- Whether you select Easy or Advanced Installation.
- The optional networking services you select to install.
- If you use Advanced Installation, what functions you select or deselect and what functions you install on a different drive.

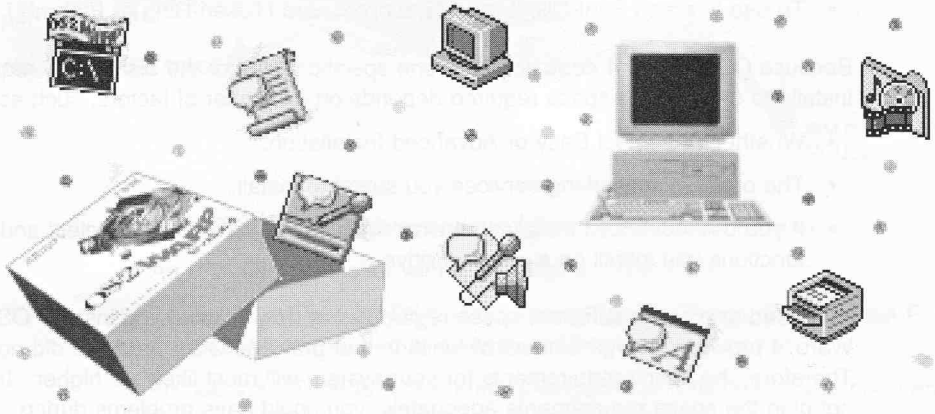
You need to plan for sufficient space regardless of how or what you install. OS/2 Warp 4 provides a large amount of function that previous OS/2 products did not have. Therefore, the space requirements for your system will most likely be higher. If you do not plan the space requirements adequately, you could have problems during installation with lack of available space. Also, you might be able to install the system, but have space problems later when using the system.

The following guidelines should help you plan your space requirements:

- The Easy Installation method requires approximately 125–200MB of space. The amount of space depends on the networking services you select to install and whether or not you install VoiceType for OS/2 Warp.
- The Advanced Installation method can require as little as 100MB if you deselect all of the options. For example, when you are asked which functions you want to install, you must deselect all of the functions, such as fonts, Assistance Center, optional system utilities, optional system components, tools and games, and so on. In addition, you cannot install any networking services. This type of installation provides you with a minimal system.
- The Advanced Installation method can require up to 300MB of space, which includes the major functions and networking services you would expect to select. For example, most users will select a number of the functions displayed on the OS/2 Setup and Installation panel, such as the ones described above. The 300MB would also include the selection of networking services.

Regardless of which method you choose, plan ahead for your space requirements and make sure you have sufficient space not only for installation, but also for running your system afterwards. If you use Advanced Installation, you can also install many functions on a different drive other than the drive on which you are installing the system.

Software Considerations and Restrictions



There are different software considerations depending on what is already installed on your system, what you plan to install for OS/2 Warp 4, and which installation path you select: Easy or Advanced Installation. You should review the following information before you begin installation.

You can install OS/2 Warp 4 over the following products:

- All OS/2 versions prior to OS/2 Warp Version 3 (OS/2 versions 1.3, 2.0, 2.01, 2.1, and 2.11)
- OS/2 Warp with WIN-OS/2 support (blue box)
- OS/2 for Windows 2.1
- OS/2 Warp for Windows 3.1 (red box)
- OS/2 Warp Connect
- OS/2 Warp Server Client
- OS/2 Warp preload software (OS/2 Warp that was preloaded on your system)

- Dual boot or Dedicated DOS/Windows Session environments:
  - DOS Version 3.1 or later, including PC DOS 7
  - Microsoft Windows versions 3.1 and 3.11
  - Microsoft Windows for Workgroups 3.1 and 3.11
  - Microsoft Windows 95

You *cannot* install OS/2 Warp 4 over the systems listed below. To install OS/2 Warp 4 over any of these products, you can reformat the partition in which the product resides and then install OS/2 Warp 4.

- Any version of Microsoft Windows NT
- Any version of OS/2 for SMP
- OS/2 Warp Server 4.0

Be aware of the following software restrictions when installing OS/2 Warp 4:

- When you install OS/2 Warp 4, you have the option to install all of the networking services, a subset of the services, or none of the networking services. If you choose some or none of the networking services, you can install OS/2 Warp 4 again at a later time and choose networking services only. In this case, the installation program asks you what you want to install.

  Note: You can install only the networking services offered in OS/2 Warp 4 if you install OS/2 Warp 4. You cannot install the networking services on a previous OS/2 version.

- Dedicated DOS/Windows Session requires an IDE hard disk with a file allocation table (FAT) formatted C drive. If you have a SCSI hard disk or are installing on a high-performance file system (HPFS), Dedicated DOS/Windows Session is *not* installed.

- Java for OS/2 support consists of runtime support and the Java Developer's Toolkit and samples. Java for OS/2 runtime support is always installed during OS/2 Warp 4 installation, and it can be installed on either a FAT or HPFS formatted drive. The Java Developer's Toolkit and samples must be installed on an HPFS formatted drive. If you want to install Java for OS/2 runtime support and the Java Developer's Toolkit and samples, you must install them on the same drive, and that drive must be an HPFS formatted drive. If you want to develop Java applications, all of Java for OS/2 support must be installed on the system. For more information about Java for OS/2, see the *OS/2 Warp Desktop Guide*.

- If you have any system intrusive software, such as Desktop enhancers or security programs, you should uninstall these enhancers or programs before you install OS/2 Warp 4. If this is not done for security programs, you will not have a secure system.

- If you install OS/2 Warp 4 on a system that also has Microsoft Windows 95, any VFAT (virtual file allocation table) long file names are not visible from OS/2 Warp. However, you can still access these files from OS/2 Warp using the file's short name (that is, the file name of 1–8 characters and a file extension of 3 characters).

One of the restrictions of VFAT in Windows 95 is that if you access a file with an application or operating system that does not understand VFAT long file names, you might lose the long file name for that file.

- OS/2 Warp 4 can detect problems in applications that might cause either the application or the system to hang. This detection is enabled by default and does not require any application changes. You can enable or disable this detection by opening the System object, selecting the User Interface tab, and clicking on Asynchronous Focus Change. You can also use this page to specify how long the system should wait before identifying an unresponsive application. After the unresponsive application releases control, you can end the application.
- If you have SystemView Client from the OS/2 Warp Server product on your system, you cannot install the System Management Client service of OS/2 Warp 4. You must remove SystemView Client before you can successfully install System Management Client.

Choosing an Installation Path

There are two installation methods to install OS/2 Warp 4: Easy Installation and Advanced Installation. The method you choose depends on your computer and what functions you want to install and use.

Whether you use the Easy or Advanced Installation path, you have different options of installing OS/2 Warp 4. You can install:

- OS/2 Warp 4 without networking services.
- OS/2 Warp 4 with networking services. You can select the type of networking services you want.
- Networking services only, if you already installed OS/2 Warp 4 on your system. For example, you want to install OS/2 Warp 4, but have no need for any networking services. Later, you decide to connect to the Internet. You can then go back and install TCP/IP Services for Internet access.

The following describes the two installation methods:

Easy Installation

Easy Installation automatically installs OS/2 Warp 4 on the C drive. You do not have the option to select or format any partitions or drives.

With Easy Installation, a preselected set of functions is automatically installed. This set of functions is a subset of the OS/2 Warp 4 functions. Easy Installation does not install:

- BonusPak
- OpenDoc for OS/2
- OpenGL 1.0 3D graphics library
- Optional bitmaps
- Security application support

Table 1 on page 20 lists the functions that are and are not automatically installed during Easy Installation. In addition to these functions, you have the option to select specific networking services. Easy Installation asks you which networking services you want to install.

Advanced Installation

Advanced Installation lets you select the partition or logical drive on which you want to install OS/2 Warp 4. You can also format partitions during the installation.

Advanced Installation lets you select the functions you want to install and lets you customize your system more than Easy Installation. This method displays a selection panel that lets you choose the functions you want or do not want on the system. You can also install some of the functions on a drive other than the drive on which you are installing OS/2 Warp 4. This is helpful if you have space constraints.

To decide which installation method is best for you, review the information in Table 1 on page 20 to see which functions you want and which, if any, you do not require.

If you are installing on a LAN-attached workstation, you can use Remote Installation for either the Easy Installation path or the Advanced Installation path. See Chapter 5, "Remote Installation" for more information.

What Can I Install?

Table 1 on page 20 shows all the components that are installed in OS/2 Warp 4. To help you plan your installation, the approximate size of each component is included. Because this publication precedes the final product, the size estimates in the table may change.

Note to Double-Byte Character Set (DBCS) Users: The sizes in your country might be significantly different from the sizes listed.

The Easy Installation path was designed to make many installation decisions for you. Therefore, most components are either installed automatically or cannot be installed at all in the Easy Installation path. The exception is the networking services; during Easy Installation, you can select which networking services you want to install. The networking services are explained to you as you install through the Easy Installation path so that you install only the services you need for the activities you will be doing.

In the Advanced Installation path, most components are optional; you can select whether or not you want to install them. Initially, each component is either selected or deselected for installation. During Advanced Installation, you can select components that are initially deselected or deselect components that are initially selected. In this installation path, you have complete control over what components are installed on your system, and you can also choose the drive on which you want to install many components.

A description of all the components is provided in Appendix A, "More Information about What You Can Install."

Table 1 (Page 1 of 3). Installable Components of OS/2 Warp

Component	Easy Installation	Advanced Installation	Approximate Disk Space Required
Assistance Center	Installed	Selected	10.1MB
OS/2 Tutorial	Installed	Selected	4310KB
OS/2 Warp Command Reference	Installed	Selected	830KB
REXX Information	Installed	Selected	770KB
WarpGuide User Interface Agent	Installed	Selected	4370KB
Fonts	Installed	Selected	2.5MB
Courier	Installed	Selected	280KB
Helvetica	Installed	Selected	630KB
System Monospaced	Installed	Selected	90KB
Times Roman	Installed	Selected	600KB
Courier (outline)	Installed	Selected	320KB
Helvetica (outline)	Installed	Selected	260KB
Times New Roman (outline)	Installed	Selected	310KB
Optional System Utilities	Installed	Selected	2.3MB
Back Up Hard Disk	Installed	Selected	30KB
Change File Attributes	Installed	Selected	40KB
Display Directory Tree	Installed	Selected	40KB
Manage Partitions	Installed	Selected	230KB
Label Diskettes	Installed	Selected	40KB
Link Object Modules	Not installed	Deselected	450KB

Table 1 (Page 2 of 3). Installable Components of OS/2 Warp

Component	Easy Installation	Advanced Installation	Approximate Disk Space Required
Picture Viewer	Installed	Selected	130KB
PMREXX	Installed	Selected	150KB
Recover Files	Installed	Selected	50KB
Restore Backed-Up Files	Installed	Selected	40KB
Sort Filter	Installed	Selected	40KB
Installation Utilities	Not installed	Deselected	420KB
Create Utility Diskettes	Installed	Selected	200KB
Serviceability and Diagnostic Aids	Installed	Selected	550KB
Optional System Components	Installed	Selected	29.4MB
OpenDoc	Not installed	Deselected	5850KB
VoiceType	Installed*	Selected*	23760KB
Security	Not installed	Deselected	500KB
Dedicated DOS/Windows Session	Installed†	Selected†	350KB
High Performance File System	Installed	Selected	470KB
BonusPak	Not installed	Deselected	36.5MB
CompuServe Information Manager for OS/2	Not installed	Deselected	2740KB
HyperACCESS Lite for OS/2	Not installed	Deselected	660KB
IBM Works	Not installed	Deselected	14420KB
FaxWorks for OS/2	Not installed	Deselected	1270KB
Video IN for OS/2	Not installed	Deselected	470KB
AskPSP	Not installed	Deselected	4010KB
Remote Support for OS/2	Not installed	Deselected	1450KB
HP JetAdmin	Not installed	Deselected	560KB
HP JetAdmin Port Driver	Not installed	Deselected	1650KB
MarkVision for OS/2	Not installed	Deselected	4880KB
MarkNet Port Driver	Not installed	Deselected	5240KB
Java Development	Not installed	Deselected	6.1MB
Toolkit	Not installed	Deselected	4890KB
Samples	Not installed	Deselected	1270KB
Tools and Games	Installed	Selected	22.8MB
Enhanced Editor	Installed	Selected	1940KB
Search and Scan Tool	Installed	Selected	70KB
OpenGL 1.0 3D Graphics Library	Not installed	Deselected	8790KB

Table 1 (Page 3 of 3). Installable Components of OS/2 Warp

Component	Easy Installation	Advanced Installation	Approximate Disk Space Required
Optional Bitmaps	Not installed	Deselected	4680KB
Solitaire - Klondike	Installed	Selected	2770KB
Pulse	Installed	Selected	50KB
Chess	Installed	Selected	2830KB
Mahjongg Solitaire	Installed	Selected	2160KB
OS/2 DOS Support	Installed	Selected	1.6MB
DOS Protect Mode Interface	Installed	Selected	30KB
Virtual Expanded Memory Management	Installed	Selected	20KB
Virtual Extended Memory Support	Installed	Selected	10KB
WIN-OS/2 Support	Installed	Selected	6.2MB
Readme files	Installed	Selected	140KB
Accessories	Installed	Selected	1040KB
Screen Savers	Installed	Selected	80KB
Sound	Installed	Selected	120KB
Multimedia Software Support	Installed	Selected	22.5MB
Base Multimedia Support	Installed	Selected	19300KB
Multimedia OpenDoc Support	Not installed	Deselected	2930KB
Software Motion Video	Installed	Selected	730KB
File and Print Client	Optional	Deselected	12.4MB
TCP/IP Services	Optional	Deselected	28.4MB
Remote Access Client	Optional	Deselected	4.6MB
System Management Client and SystemView Agent	Optional	Deselected	11.6MB
NetWare Client	Optional	Deselected	5.5MB
Mobile Office Services	Optional	Deselected	3.6MB
Network Adapters and Protocols	Installed	Installed	7.9MB

Note:

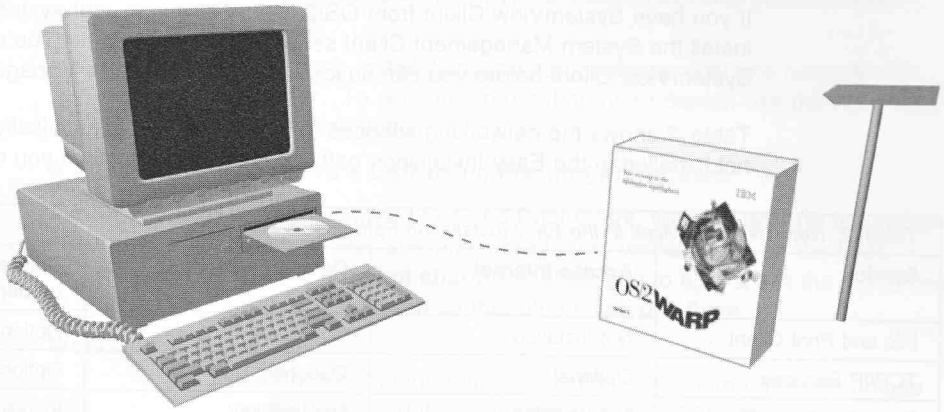
* Depends on appropriate hardware.

† Available only if:

- The C partition is on an Integrated Drive Electronics (IDE) disk and is in FAT format
- Both DOS and OS/2 are installed on the C partition

Chapter 3. Easy Installation

The Easy Installation path guides you through installation, giving you the information you need as you go. See Table 1 on page 20 for a summary of what is installed automatically through the Easy Installation path and what services you can install optionally.



Before You Begin

During Easy Installation, you are asked for information that is used to configure your workstation. Gather the information before you start installation and record it on the worksheet in "Easy Installation Worksheet" on page 94. Having this information available makes the installation process easier. If you need more information about the services you can install, see Appendix A, "More Information about What You Can Install" on page 85.

If you have a version of the LAN Distance Remote product on your system, you must remove it before you can install OS/2 Warp 4. You can install a new version of LAN Distance Remote, which is now called Remote Access Client, during OS/2 Warp 4 installation. For information on how to remove LAN Distance Remote, see "Removing LAN Distance Remote" on page 78.

Note: You might have LAN Distance Remote on your system if:

- You are installing OS/2 Warp 4 for the first time and you had a version of the LAN Distance product installed on your system.
- You are reinstalling OS/2 Warp 4 and you installed Remote Access Client when you installed OS/2 Warp 4 the first time.

If you have SystemView Client from OS/2 Warp Server on your system, you cannot install the System Management Client service of OS/2 Warp 4. You must remove SystemView Client before you can successfully install System Management Client.

Table 2 shows the networking services that are installed automatically, optionally, or not installed in the Easy Installation path for each of the choices you can make.

Table 2. Networking Services in the Easy Installation Path

Service	Access Internet	Connect directly to LAN	Connect to LAN with modem
File and Print Client	Not Installed	Optional	Optional
TCP/IP Services	Optional	Optional	Optional
Remote Access Client	Not Installed	Not Installed	Installed
System Management Client and SystemView Agent	Not Installed	Optional	Not Installed
NetWare Client	Not Installed	Optional	Not Installed
Mobile Office Services	Not Installed	Not Installed	Installed
Network Adapters and Protocols	Installed	Installed	Installed

The following section describes the information you need to supply during installation based on the types of networking activities you want to do. "Using Easy Installation" on page 28 explains how to install OS/2 Warp 4 through the Easy Installation path.

- ***No matter what you select:***

  Verify your system configuration

  The Setup and Installation program detects the hardware on your system, but you can make changes during installation in the system configuration windows. In most cases, you do not need to change any of the information.

  Default printer On the Select System Default Printer window, you are asked to select the default printer you will be using.

  This window is displayed only if the Setup and Installation program cannot identify what printer is attached to your computer.

Verify your network adapter

The Setup and Installation program detects the network adapter in your workstation, and you are asked to verify that it has detected your adapter correctly. You are also asked whether you have changed the switches on your network adapter. If you have changed the switches, you are asked to change the software configuration to match the hardware settings.

If your computer does not have a network adapter, select **No network adapter** when you are asked to verify your network adapter.

With Easy Installation, you can configure only one network adapter. To configure more than one adapter, use the Advanced Installation path.

- ***If you want to connect to a LAN using File and Print Client:***

Install sharing When you install File and Print Client, you can use the resources (such as files and printers) of other workstations on the LAN. Selecting **Install sharing** enables you to also share the resources of this workstation so that others can use them.

Workstation name

Supply a name for your workstation. The name must be unique on the LAN, and it can contain from 1 to 15 alphanumeric characters. Because the name must be unique, be sure to check with your network administrator or the other people on the LAN to make sure that no one else is using the same workstation name.

Workstation description

You can provide a description of your workstation that identifies it to other users on the LAN. The description is used as the label under the icon for your workstation in the IBM Network Resources folder. (This information is optional.)

Domain name Supply the name for your *domain*, the group of users whose resources (like files and printers) you use frequently. Check with the person who is coordinating your LAN to find out what the domain name is for your group.

User ID Supply the ID you will use to log on. The user ID can be from 1 to 20 alphanumeric characters. There must be no other user IDs or workstations using this name. The following characters are not allowed:

```
. " / \ [ ] : ; | < > + = , ? *
```

Password Providing a password when you log on prevents other people from logging on with your user ID. The password can be from 4 to 15 characters long. The following characters are not allowed:

```
. " / \ [ ] : ; | < > + = , ? *
```

Install NetWare Client?

Installing this service allows you to use resources, such as files and printers, on Novell NetWare servers.

- ***If you want to use files and printers on a Novell NetWare server:***

  Name context *Name context* is a new term in NetWare 4.x Directory Services. The directory structure created in NetWare 4.x represents a tree structure of your organization or company. The top of the tree is the organization name or company. Working down the tree are directories of departments or organizational units within the company. Users are at the bottom of the tree.

  Name context refers to where you are in the Directory tree. The context forms a complete name. The path from the object to the top of the tree forms the object's complete name, which must be unique.

  NetWare preferred server

  Supply the name of a specific Novell server to which you want to connect. If you do not specify a specific server, the software randomly connects to a Novell server.

- ***If you want to connect to a LAN using TCP/IP:***

  TCP/IP address distributed?

  If there is a Dynamic Host Configuration Protocol (DHCP) server on your LAN, your workstation can receive TCP/IP configuration information dynamically from the DHCP server and you might not have to supply it. Check with the person who is coordinating your LAN to find out if a DHCP server is available.

  If, in addition to a DHCP server, there is a Dynamic Domain Name System (DDNS) server on your LAN, DDNS can then be used to automatically register your host's name and DHCP-assigned IP address mapping information in a DDNS server. This allows other hosts in the network to discover your IP address through DDNS name queries. Check with the person who is coordinating your LAN to find out if a DDNS server is available.

  TCP/IP configuration information (for using TCP/IP on a LAN)

  If your LAN does not have a DHCP or DDNS server, you must supply TCP/IP configuration information before you can use TCP/IP Services on a LAN. The information you must supply before you can use TCP/IP is:

  - IP address
  - Subnet mask
  - Router
  - Host name
  - TCP/IP domain name
  - Name server

If you do not have all the information at installation time, you can leave these fields blank and configure TCP/IP after installation. However, you will not be able to use TCP/IP on a LAN until you configure it.

- ***If you want to use TCP/IP through a modem:***

  TCP/IP information (for using TCP/IP with a modem)
  If you want to use a TCP/IP dialup connection to an Internet provider or another TCP/IP system, no configuration information is required during installation. The first time you call your Internet provider, you will be asked for the telephone number and a modem type.

- ***If you want to connect to a LAN through a modem:***

  Modem type Be sure you know the type of modem in your workstation. You can select the modem from a list during installation.

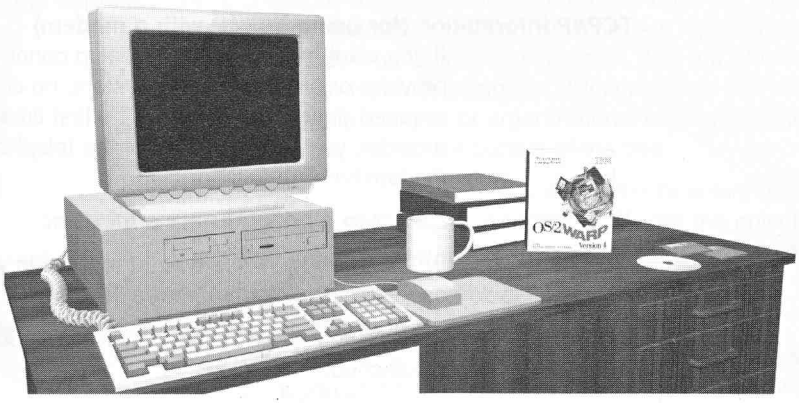
  COM port Be sure you know the communications port to which your modem is attached.

  Telephone number of the connection server
  Supply the telephone number that is used to dial in to the server.

  Type of LAN The choices during installation are **Ethernet** and **Other**.

If you select **Let me choose from all the services** in the Type of Activities window, you are given choices about all the networking services.

Using Easy Installation



If you have a question during installation, press F1 on the keyboard, or select the **Help** push button if one is displayed. This displays online help for the current window. Use the information you filled in on your worksheet during installation.

To install OS/2 Warp 4 using the Easy Installation path:

1. Insert the diskette labeled *Installation Diskette* in the diskette drive on your workstation.
2. Insert the CD-ROM labeled *Operating System and BonusPak* in the CD-ROM drive on your workstation.
3. If your workstation is already on, shut down the Desktop and restart the workstation. Otherwise, turn on your workstation.
4. Follow the instructions in the windows that are displayed. At times you will be instructed to remove the diskette in the drive and insert a different diskette. The computer also automatically restarts at times; this is a normal part of the installation process.
5. When the Welcome to OS/2! window is displayed, select **Easy Installation** and continue to follow the instructions on the windows that are displayed.
6. When the system configuration windows are displayed, either accept the information that is displayed about your system or change any information that is inaccurate. If you need more information about using the windows, select **Help**.
7. If the Default Printer window is displayed, either accept the printer that is selected or select another printer from the list.
8. When the Type of Activities window is displayed, either select the networking activities you want to use this workstation for, or select the option that lets you see

all possible choices. No matter what you select, you are guided through other windows that request the information you have filled in on your worksheet.

Note: If you do not want to install any networking services, select **Let me install services for these activities**, but do not select any of the activities below it.

9. Continue to follow the instructions on the windows, filling in the information you completed on the worksheets.

   This part of the installation process takes some time because many files are transferred from the CD-ROM to the hard disk of your workstation as it is being set up. The computer also automatically restarts at times; this is a normal part of the installation process.

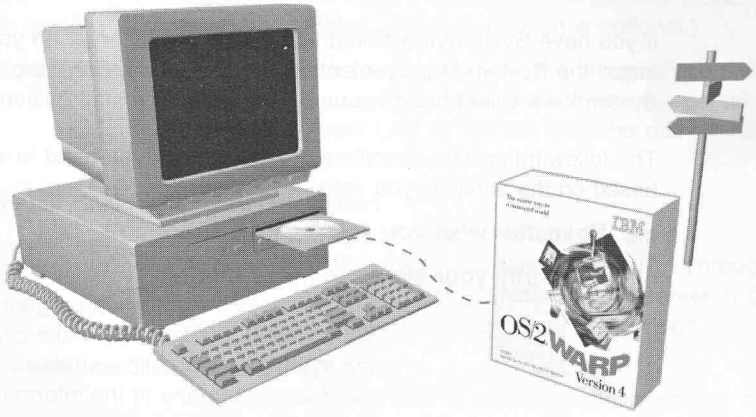
   After you successfully install OS/2 Warp 4, if your video device support has been set to VGA as a default, check the *Device Driver Pak* CD for an upgrade to your video device support. For information on using the *Device Driver Pak* CD, see "Device Driver Pak CD" on page 76.

10. When installation is complete, a window is displayed welcoming you to OS/2 Warp 4. You can begin using OS/2 Warp 4.

The online information contains instructions for using OS/2 Warp 4. See Chapter 7, "Using Online Information" for a description of the online information available and how to use it.

Chapter 4. Advanced Installation

The Advanced Installation path lets you tailor your installation to suit your needs. See Table 1 on page 20 for a summary of what is installed through the Advanced Installation path.



Before You Begin

During Advanced Installation, you have more flexibility in what you can choose to install and where you can install it than with Easy Installation. Based on the services you select, you are asked for information that is used to configure your workstation. Be sure to gather the information before you start and record it on the worksheet in "Advanced Installation Worksheet" on page 97. If you need more information about the services you can install, see Appendix A, "More Information about What You Can Install."

If you need more information about Boot Manager, partitions, file systems, or the FDISK utility program, read Chapter 6, "Advanced Installation: Planning for Partitions and Boot Manager."

If you have a version of the LAN Distance Remote product on your system, you must remove it before you can install OS/2 Warp 4. You can install a new version of LAN Distance Remote, which is now called Remote Access Client, during OS/2 Warp 4 installation. For information about how to remove LAN Distance Remote, see "Removing LAN Distance Remote" on page 78.

Note: You might have LAN Distance Remote on your system if:

- You are installing OS/2 Warp 4 for the first time and you had a version of the LAN Distance product installed on your system.
- You are reinstalling OS/2 Warp 4 and you installed Remote Access Client when you installed OS/2 Warp 4 the first time.

If you have SystemView Client from OS/2 Warp Server on your system, you cannot install the System Management Client service of OS/2 Warp 4. You must remove SystemView Client before you can successfully install System Management Client.

The following section describes the information you need to supply during installation based on the services you select to install.

- ***No matter what you select:***

  Verify your system configuration
  The Setup and Installation program detects the hardware on your system, but you can make changes during installation in the system configuration windows. You do not ordinarily need to change any of the information.

  Default printer On the Select System Default Printer window, you are asked to select the default printer you will be using and associate it with the correct port on your workstation. This window is displayed only if the Setup and Installation program cannot identify what printer is attached to your computer.

  Verify your network adapter
  The Setup and Installation program detects the network adapter in your workstation, and you are asked to verify that it has detected your adapter correctly. If your network adapter is not detected, you are asked to select your adapter from a list. You are also asked whether you have changed the switches on your network adapter. If you have changed the switches, you are asked to change the software configuration to match the hardware settings.

  If your computer does not have a network adapter, select **No network adapter** when you are asked to verify your network adapter.

- ***If you select File and Print Client:***

  Installation drive
  Name the hard disk drive on your workstation where you want to install File and Print Client.

Workstation name
Supply a name for your workstation. The name must be unique on the LAN and it can contain from 1 to 15 alphanumeric characters.

Workstation description
Provide a description of your workstation that identifies it to other users on the LAN. The description is used as the label under the icon for your workstation in the IBM Network Resources folder. (This information is optional.)

Domain name Supply a name for your *domain*, the group of users whose resources you use frequently. Check with the person who is coordinating your LAN to find out what the domain name is for your group.

Install LAN Server Administration
Selecting this option installs the full LAN Server Administration graphical user interface (GUI). Through the GUI, an administrator can administer LAN Server or OS/2 Warp Server workstations from your workstation.

Delete user ID database (NET.ACC)
If you are installing over a previous installation, this option removes the previously created information about users, groups of users, and resources on the workstation.

Install sharing When you install File and Print Client, you can use the resources (such as files and printers) of other workstations on the LAN. Selecting **Install sharing** allows you to also share the resources of this workstation so that others can use them.

User ID Supply the ID you will use to log on. The user ID can be from 1 to 20 alphanumeric characters. The following characters are not allowed:

```
. " / \ [ ] : ; | < > + = , ? *
```

Password Providing a password when you log on prevents other people from logging on with your user ID. The password can be from 4 to 15 characters long. The following characters are not allowed:

```
. " / \ [ ] : ; | < > + = , ? *
```

- ***If you select TCP/IP Services:***

Installation drive
Name the hard disk drive on your workstation where you want to install TCP/IP.

DHCP Server is available on the LAN
If there is a Dynamic Host Configuration Protocol (DHCP) server on your LAN, your workstation can receive TCP/IP

configuration information dynamically from the DHCP server and you might not have to supply it. Check with the person who is coordinating your LAN to find out if a DHCP server is available.

DDNS Server is available on the LAN

If, in addition to a DHCP server, there is a Dynamic Domain Name System (DDNS) server on your LAN, DDNS can then be used to automatically register your host's name and DHCP-assigned IP address mapping information in a DDNS server. This allows other hosts in the network to discover your IP address through DNS name queries. Check with the person who is coordinating your LAN to find out if a DDNS server is available.

TCP/IP information (for using TCP/IP with a modem)

If you want to use a TCP/IP dialup connection to an Internet provider or another TCP/IP system, no configuration information is required during installation. The first time you call your Internet provider, you will be asked for the telephone number and a modem type.

TCP/IP configuration information (for using TCP/IP on the LAN)

If your LAN does not have a DHCP server, you must supply TCP/IP configuration information before you can use TCP/IP Services. The information you must supply before you can use TCP/IP on a LAN is:

- IP address
- Subnet mask
- Router
- Host name
- TCP/IP domain name
- Name server

Your network administrator can provide you with this information.

If you do not have all the information at installation time, you can leave these fields blank and configure TCP/IP after installation. However, you will not be able to use TCP/IP on a LAN until you have configured it.

- ***If you select Remote Access Client:***

  Installation drive

  Name the hard disk drive on your workstation where you want to install Remote Access Client.

  Telephone number of connection server

  Supply the telephone number that is used to dial in to the server.

Modem type Be sure you know the type of modem in your workstation. You can select the modem from a list during installation.

COM port The communications port to which your modem is attached.

Type of LAN The choices are **Ethernet** and **Other**.

- ***If you select System Management Client:***

  Installation drive
  Name the hard disk drive on your workstation where you want to install System Management Client.

  System name This name defaults to the workstation name.

  Protocol Select from:

  - **NetBIOS**. NetBIOS is the same protocol that is often used by File and Print Sharing Services.

    If you select the NetBIOS protocol, you must also specify:

    Network Address
    The network address of the workstation on which you are installing System Management Services. The network address defaults to the first 6 characters of the workstation name plus 2 randomly generated digits such as 01. The maximum number of characters for the network address is 8. A default is provided.

    Unique Dialup Name
    The unique server name for the server with which you want to communicate.

  - **TCP/IP**. TCP/IP is the Transmission Control Protocol/Internet Protocol, which is the same protocol used to access Internet services.

  - **IPX**. IPX is the Internet Package Exchange protocol. IPX is used to connect to Novell servers, or any workstation or router that implements IPX with other workstations. Although similar to the Internet Protocol (IP), IPX uses different packet formats and terminology.

  - **Serial NetFinity**. Serial NetFinity uses a modem and telephone lines to communicate with the server.

  System Keywords
  This information is optional. You can enter the workgroup name in the **System Keywords** field. System keywords are values that you can use to sort your systems into groups. For example, to sort systems by protocol, you could create a NetBIOS group and a TCP/IP group. You could then use

NetBIOS and TCP/IP as system keywords to find that group of systems that share a common protocol.

- ***If you select NetWare Client:***

  Installation drive

  Name the hard disk drive on your workstation where you want to install NetWare Client.

  Connect to what type of Novell server?

  Bindery is a term used by Novell. In NetWare versions earlier than NetWare 4, a bindery is a network database that contains definitions for objects such as users, groups, and workgroups. In NetWare 4, the bindery has been replaced by the Directory. Bindery Services makes NetWare 4 networks that use the Directory compatible with NetWare versions that use the bindery.

  Select **Version 3.x, or 4.x in Bindery mode** if the Novell server on which you want to use LAN resources uses the bindery.

  Select **Version 4.x – Directory Services** if the Novell server on which you want to use LAN resources uses the Directory.

  Name context

  Name context is a new term in NetWare 4.x Directory Services. The directory structure created in NetWare 4.x represents a tree structure of your organization or company. The top of the tree is the organization name or company. Working down the tree are directories of departments or organizational units within the company. Users are at the bottom of the tree.

  Name context refers to where you are in the Directory tree. The context forms a complete name. The path from the object to the top of the tree forms the object's complete name, which must be unique.

  NetWare preferred server

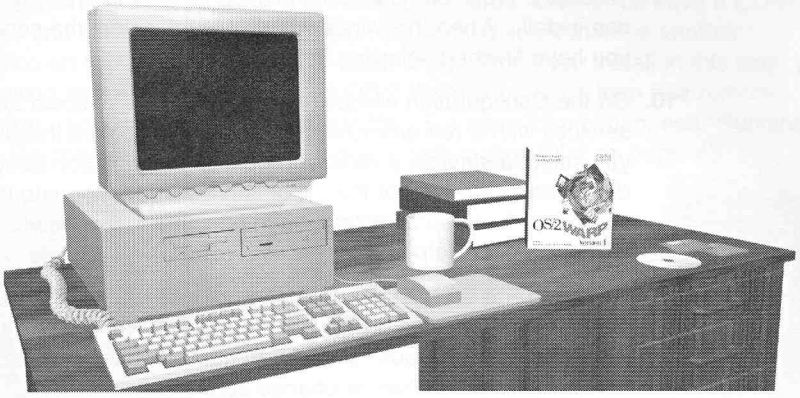
  Supply the name of a specific Novell server to which you want to connect. If you do not specify a specific server, the software randomly connects to a Novell server.

- ***If you select Mobile Office Services:***

  Installation drive

  Name the hard disk drive on your workstation where you want to install Mobile Office Services.

Using Advanced Installation



If you have a question during installation, press F1 on the keyboard, or select the **Help** push button if one is displayed. This displays online help for the current window. Use the information you filled in on your worksheet while you install.

To install OS/2 Warp 4 using the Advanced Installation path:

1. Insert the diskette labeled *Installation Diskette* in the diskette drive on your workstation.
2. Insert the CD-ROM labeled *Operating System and BonusPak* in the CD-ROM drive on your workstation.
3. If your workstation is already on, shut down and restart the workstation. Otherwise, turn on your workstation.
4. Follow the instructions in the windows that are displayed. At times you are instructed to remove the diskette in the drive and insert a different diskette. The computer also automatically restarts at times; this is a normal part of the installation process.
5. When the Welcome to OS/2! window is displayed, select **Advanced Installation** and continue to follow the instructions on the windows that are displayed.
6. When the system configuration windows are displayed, either accept the information that is displayed about your system or change any information that is inaccurate. If you need more information about using these windows, select **Help**.
7. When the System Default Printer window is displayed, either accept the printer that is selected or select another printer from the list.
8. The OS/2 Setup and Installation window lists all the selectable components of the operating system. Click on the check box beside a component to select or

deselect the component. Select the **More** button beside a component to select or deselect the subcomponents of that component.

You can also use the menu bar at the top of the window if you want to specify a different drive for your swap file or modify your CONFIG.SYS file.

9. The OS/2 Warp Setup and Installation window lists all the networking services you can install. When this window is displayed, select the services you want. When you have finished selecting services, select **Next**.

10. On the Configuration window, the services you selected are listed on the left. The services with a red arrow must be configured before installation can continue. As you select a service, a window requesting information about that service is displayed to the right of the list of services. Use the information you filled in on your worksheets to complete the information. If you need more help to use the window, select **Help**.

    If you want to add or change a network adapter or protocol or if you have changed the hardware settings on the adapter, select **Network Adapters and Protocol Services**. Use the push buttons on the Network Adapters and Protocol Services window to add, remove, or change adapters or protocols. If you need help to use the window, press F1 to see online help information, or refer to "Adding, Changing, or Removing an Adapter or Protocol" on page 76.

    Note: HP JetAdmin, HP JetAdmin Port Driver, MarkVision for OS/2, and MarkNet Port Driver, which are components of the BonusPak, require the 802.2 protocol. Therefore, if you are installing any of these features, you must add the 802.2 protocol.

11. When you have configured all the services, select **Install**.

    This phase of the installation process takes some time because many files are transferred from the CD-ROM to the hard disk of your workstation as it is being set up. The computer also automatically restarts at times; this is a normal part of the installation process.

12. Continue following the instructions on any windows that are displayed.

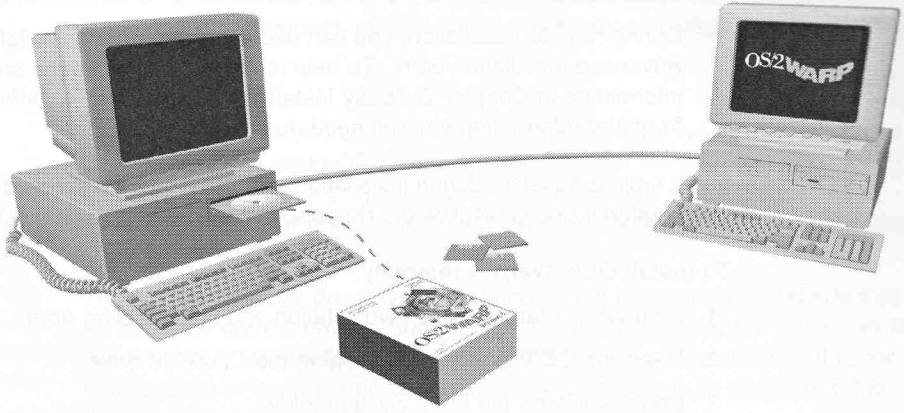
    After you successfully install OS/2 Warp 4, if your video device support has been set to VGA as a default, check the *Device Driver Pak* CD for an upgrade to your video device support. For information on using the *Device Driver Pak* CD, see "Device Driver Pak CD" on page 76.

13. When installation is complete, a window is displayed welcoming you to OS/2 Warp 4. You can begin using OS/2 Warp 4.

The online information contains instructions for using OS/2 Warp 4. See Chapter 7, "Using Online Information" for a description of the online information available and how to use it.

Chapter 5. Remote Installation

If a workstation on which you want to install OS/2 Warp 4 does not have a CD-ROM drive, you can still install OS/2 Warp 4 on the workstation if there is another workstation on the LAN that has a CD-ROM drive. When you install in this way, you are installing *remotely*. You can install OS/2 Warp 4 on more than one remote workstation using the same configuration file. For more information, see "Running Multiple Remote Installations from a Single Configuration File" on page 43.



Before you start:

- Have three blank, 1.44MB, 3.5-inch diskettes ready.
- Make sure the workstation you are installing *to* meets the hardware requirements listed in "Hardware Requirements" on page 14, except that the workstation does not need a CD-ROM drive.
- Make sure the workstation you are installing *from* meets the following requirements:
  - A minimum of 12MB of RAM; 16MB is recommended
  - 16MB free hard disk space
  - An OS/2 compatible CD-ROM drive
  - A LAN adapter card supported by OS/2 Warp 4
  - OS/2 Warp 4 installed
- You can install all of OS/2 Warp 4 remotely, or you can install only networking services if you have already installed the operating system portion of OS/2 Warp 4 on the system you are installing *to*.
- If there is a version of the LAN Distance Remote product on the workstation you are installing *to*, you must remove it before you can install OS/2 Warp 4. You can install a new version of LAN Distance Remote, which is now called Remote Access Client, during OS/2 Warp 4 installation. For information on how to remove LAN Distance Remote, see "Removing LAN Distance Remote" on page 78.

Note: You might have LAN Distance Remote on your system if:

- You are installing OS/2 Warp 4 for the first time and you had a version of the LAN Distance product installed on your system.
- You are reinstalling OS/2 Warp 4 and you installed Remote Access Client when you installed OS/2 Warp 4 the first time.

- If you have SystemView Client from OS/2 Warp Server on your system, you cannot install the System Management Client service of OS/2 Warp 4. You must remove SystemView Client before you can successfully install System Management Client.
- During remote installation, you can use either the Easy Installation path or the Advanced Installation path. To help make the installation go smoothly, use the information in Chapter 3, "Easy Installation" or Chapter 4, "Advanced Installation" to gather information you will need during the installation.

If you have a question during installation, press F1 on the keyboard, or select the **Help** push button if one is displayed. This displays online help for the current window.

To install OS/2 Warp 4 remotely:

1. Start OS/2 Warp 4 on the workstation you are installing *from.*
2. Insert the OS/2 Warp 4 CD-ROM in the CD-ROM drive.
3. Double-click on the OS/2 System folder.
4. Double-click on the System Setup folder.
5. Double-click on the Install/Remove folder.
6. Double-click on the OS/2 Warp 4 Remote Install icon.
7. When the Remote Installation Diskettes window is displayed, do one of the following:

   - *If you have never initiated a remote installation from this workstation before*, you need to create new remote installation diskettes, which are necessary to start the other workstation.

     The remote installation diskettes you create are different from the OS/2 Warp 4 installation diskettes that came with OS/2 Warp 4. The OS/2 Warp 4 installation diskettes cannot be used to install across the LAN.

     Select **Next** and continue with step 8 on page 41.

   - *If you have initiated a remote installation from this workstation before*, you might need to create new remote installation diskettes or you might be able to use the ones you have already created.

     Remote installation diskettes created earlier are probably suitable if you are installing from the same workstation, and if the workstation on which you are installing has the *same adapter type* as the previously installed workstation.

- If you need to create new remote installation diskettes, which are necessary to start the other workstation, select **Yes**. Then select **Next** and continue with step 8 on page 41.
- If you already have suitable remote installation diskettes, select **No**. Then select **Next** and go to step 9 on page 42.

8. If you determined that you needed to create new diskettes in step 7 on page 40, follow these steps. Otherwise, go to step 9 on page 42.
   a. If the Diskette Creation window is displayed, select **OK**.
   b. In the Select Network Adapter window, verify that the highlighted LAN adapter type is the same as the network adapter installed in the other workstation. If it is not, select the correct adapter for the workstation to which you are installing.

      Note: If you cannot find the correct adapter type in the displayed list, you need to obtain OS/2-compatible drivers for the adapter. The drivers might be on a diskette that came with the workstation or the adapter card. Refer to the adapter documentation or ask the manufacturer for help locating OS/2-compatible drivers.

      To install an adapter driver type that is not in the list, insert the diskette that contains the correct drivers, and then select the **Other adapter** button. In the window that is displayed, type the drive letter, and then select **OK**. If more than one driver is on the diskette, select the correct type to install from the displayed list and select **OK**.

      If the adapter type is PCMCIA, select PCMCIA, and then select  to select the type of computer you are installing *to*. Select **OK** to continue.

      If you have changed hardware settings on the adapter for the workstation you are installing *to*, select **Settings** and configure the corresponding software settings to match the adapter settings. For example,

      - The IBM ThinkPad 760CD requires a PCMCIA Token-Ring card with the interrupt level set to 11.
      - To avoid IRQ conflicts, the IBM ThinkPad 701C requires the PCMCIA Token-Ring memory I/O to be set to D400 to avoid video conflicts at memory address CC00.
      - To use Audio (Sound Blaster emulation), it is frequently required that you change the audio I/O address from 220 to 240 to avoid conflicts with the IBM PCMCIA Token-Ring card.

   c. The Create Installation Diskettes window is displayed asking you to insert a blank, 1.44MB, 3.5-inch diskette into a drive. Insert the diskette, and then select the diskette drive that you are using. Select **OK**.
   d. On the windows that display, you are prompted to insert and label three diskettes. Follow the instructions on the windows.

9. When the Remote Workstation Installation Steps window is displayed, select **OK**. Then, take the remote installation diskettes to the computer where you want to install OS/2 Warp 4.

Note: Do not close the Remote Installation Status window on the workstation you are installing *from* until you have finished installation on the other workstation. The window must remain open to install OS/2 Warp 4 on the other workstation.

10. At the remote workstation, use the remote installation diskettes to install OS/2 Warp 4 as if the OS/2 Warp 4 CD-ROM were in a CD-ROM drive on this workstation. The necessary files are actually loaded across the network.

    You can install all of OS/2 Warp 4 remotely, or you can install only networking services if you have already installed OS/2 Warp 4 on the system you are installing *to*.

    You can use either the Easy Installation path, described in Chapter 3, "Easy Installation," or the Advanced Installation path described in Chapter 4, "Advanced Installation," with the following exceptions:

    - Do not insert the OS/2 Warp 4 CD-ROM labeled *Operating System and BonusPak* at the remote workstation (the workstation you are installing *to*). The CD-ROM must remain inserted at the workstation where you started this remote installation procedure (the workstation you are installing *from*).
    - Do not use the installation diskettes that came with OS/2 Warp 4. Use the remote installation diskettes you created earlier in this procedure.

11. When the installation is complete, return to the workstation with the CD-ROM drive where you started this remote installation procedure.
12. In the OS/2 Warp Remote Installation Service window, check the Status indicator to make sure the installation is complete. Then select **Close**.
13. Select **End connection** to confirm that you have completed the remote installation.

Running Multiple Remote Installations from a Single Configuration File

You can generate a configuration file locally to be used to remotely install OS/2 Warp 4 on another workstation. To generate a configuration file, at an OS/2 command prompt, type:

```
\IBMINST\NPCONFIG /RSP
```

The installation program generates a file called NPCONFIG.CFG and puts the file in the directory \IBMINST\RSP\REMOTE. No files are installed locally. Be sure to check the drive letters in the configuration file because the drive letters for the local system might differ from the drive letters on the remote system where you want to install OS/2 Warp 4.

A user-specific command file named USER.CMD can also be placed in the \IBMINST\RSP\REMOTE directory. The USER.CMD file runs at the end of remote installation.

Next, use the procedure in Chapter 5, "Remote Installation" to generate remote installation diskettes. Use these diskettes to boot the remote systems.

During remote installation, you will receive the following message:

```
The Install program has discovered configuration files located on the Remote
Installation Server.  If you wish to use these configuration files, select yes.
Otherwise, you will be able to generate different ones.
```

If you select **Yes**, the remote installation program uses the configuration file you generated on the server, and no configuration input is required on the remote system. If you select **No**, the remote installation program displays configuration panels on the remote system.

Chapter 6. Advanced Installation: Planning for Partitions and Boot Manager

This chapter is for users who plan to use Advanced Installation to install OS/2 Warp 4. The chapter provides planning information about:

- Using Boot Manager if you plan to have more than one operating system on your computer
- Partitioning your hard disk and the different types of partitions you can have
- Setting up your partitions using the FDISK utility program
- Using two different file systems
- Changing system options during Advanced Installation

You can use the information in this chapter to help you plan before you install OS/2 Warp 4. You can also use this chapter during Advanced Installation for more details about the installation tasks you are doing.

Boot Manager for Multiple Operating Systems

Boot Manager enables you to install and use multiple operating systems on your computer. Each time you start your computer, the Boot Manager startup menu is displayed. From the startup menu, you select which operating system you want Boot Manager to start. Figure 1 on page 46 shows an example of the Boot Manager startup menu for a system with Boot Manager and three operating systems. In the example, three systems have been installed on your computer. From the Boot Manager startup menu, you select which of the three systems you want Boot Manager to start.

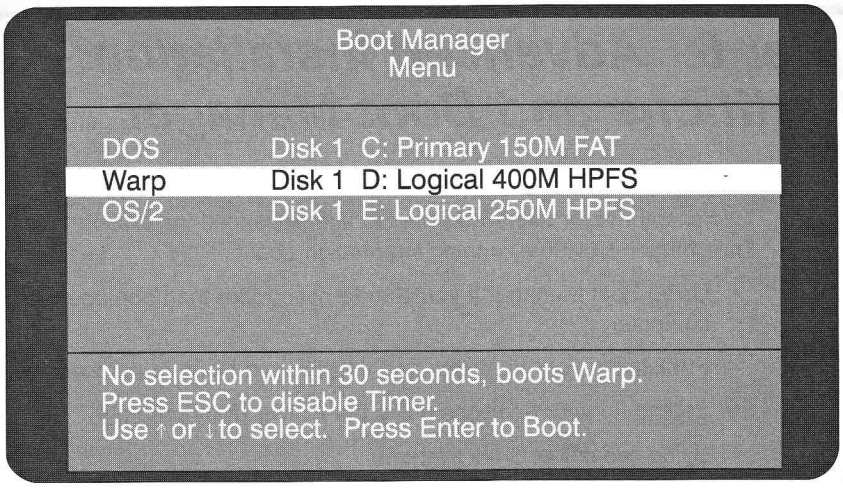


Figure 1. Example of Boot Manager Startup Menu

OS/2 Warp 4 provides the FDISK utility program that you use during Advanced Installation to install Boot Manager. The FDISK utility manages different tasks, such as creating and deleting the partitions on your hard disk. *Partitions* are divisions you create on your hard disk to use as separate storage areas.

The following is a summary of the steps you would use to set up your hard disk for multiple operating systems:

1. Install Boot Manager in its own partition (usually 1MB in size).
2. Create a partition to install OS/2 Warp 4.
3. Create partitions for other systems you are going to install. Some operating systems, such as AIX, use their own utility program to set up their installation partition. See "Hard Disk Partitioning" on page 47 for more information.
4. If you want dual boot capability or Dedicated DOS/Windows Sessions, install OS/2 Warp 4 in a partition that already contains DOS, DOS with Windows 3.x, or Windows 95.
5. If there are other systems you want to install, install them in the partitions you created for them. You can install these systems after you install OS/2 Warp 4.
6. Install OS/2 Warp 4.

Hard Disk Partitioning

Partitioning a hard disk means dividing the disk into separate and distinct areas. You use these separate areas to store specific pieces of information. The information can be programs and program data or it can be an operating system. Each area is known as a *partition*.

You can partition a hard disk in different ways. For example, your hard disk can have just one area (partition) that takes up the entire hard disk. However, if you want to install multiple operating systems on your hard disk and install Boot Manager, you must divide the hard disk into multiple areas (multiple partitions).

Note: A file allocation table (FAT) file system only supports partitions up to 2 gigabytes. A high-performance file system (HPFS) supports partitions larger than 2 gigabytes.

During Advanced Installation, you are usually asked to select the partition where you want to install OS/2 Warp 4. If you are installing on a hard disk with no data, the default choice is to set up one partition. If you are installing on a hard disk that has previously been set up, the default choice is to preserve the setup of the existing hard disk and install OS/2 Warp 4 on the first partition. If you choose to specify a different partition, the FDISK window is displayed.

From the FDISK window, you specify the number and type of partitions that you want to create. Your hard disk can be separated into at most four primary partitions or three primary partitions and one extended partition. For example, you might have a Boot Manager partition (primary), a primary partition, and an extended partition. Only one primary partition is required. Within an extended partition, you can have multiple logical drives that you can use for operating systems or data.

Primary partitions are typically used for operating systems. If you are going to install multiple operating systems on your hard disk, you must create one primary partition to contain the programs that manage the startup of multiple operating systems. This partition is referred to as the *Boot Manager partition*.

Note: There are various considerations for where partitions can reside depending on your hard disk. For more information, see "Considerations for IDE Hard Disk Drives Greater Than 528MB" on page 83.

After the Boot Manager partition is created, you can create up to three additional primary partitions (to hold three operating systems), as shown in Figure 2 on page 48.

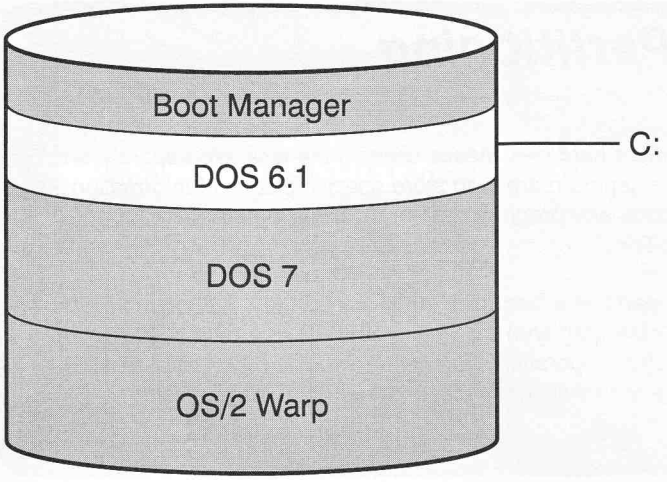


Figure 2. Hard Disk with Four Primary Partitions

An important aspect of primary partitions is that when you start your system, only one primary partition can be *active*. Any other *primary* partition on the same physical hard disk is not active and cannot be accessed. An operating system in one primary partition cannot access the data in another primary partition on the same physical disk.

Another way of subdividing your hard disk is to create up to three primary partitions and an extended partition that can have multiple logical drives. Logical drives are typically used to hold programs and data. However, you can also install OS/2 Warp 4 in a logical drive, as shown in Figure 3.

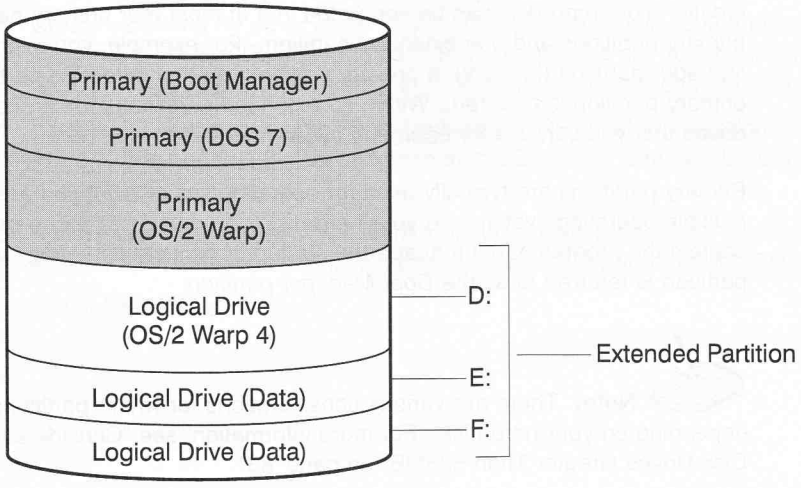


Figure 3. Hard Disk with Primary Partitions and Logical Drives

The extended partition takes the place of one of the primary partitions on your hard disk. That is, if you create logical drives within an extended partition, your hard disk can contain only three primary partitions. If you want OS/2 Warp 4 to be able to access the data in the partition of another operating system (for example, the DOS partition), install OS/2 Warp 4 in a logical drive. The number of logical drives you can have is only limited by available drive letters.

All of the logical drives exist within one partition—the extended partition. You do not explicitly create the extended partition. The extended partition is created the first time you create a logical (non primary) drive.

In Figure 3 on page 48, two logical drives have been set aside for data. The data can be shared by all the operating systems, provided the file system formats of the logical drives are compatible with the operating systems.

One of the differences between a logical drive and a primary partition is that each logical drive is assigned a unique drive letter. All primary partitions on a hard disk share the same drive letter. On the first hard disk in your system, the primary partitions share drive letter C. This means that only one primary partition on a hard disk can be accessed at one time. The Boot Manager partition is different from other primary partitions because it is not assigned a drive letter.

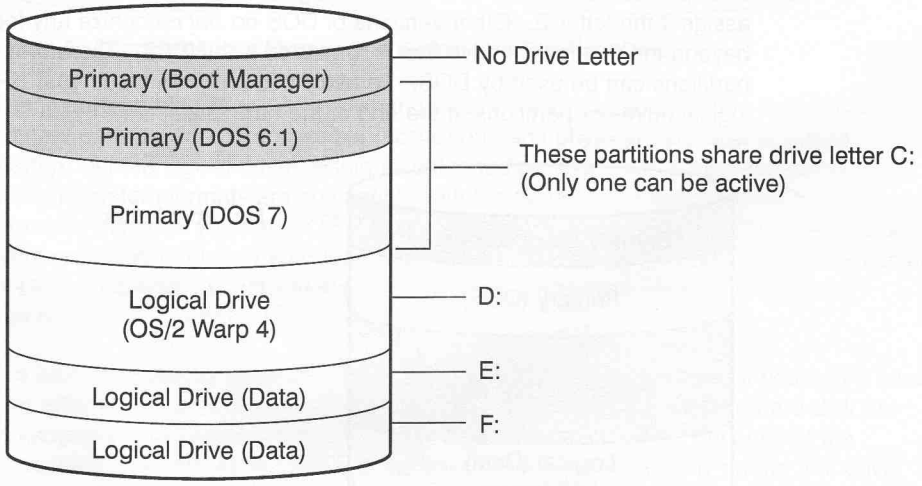


Figure 4. Drive Letter Assignment Example

Notice the drive letter assignments in Figure 4. The operating system that is active when you start the system performs a process known as *drive mapping*, in which partitions and logical drives are assigned drive letters. All the *active* primary partitions on all physical drives are mapped first and all logical drives within an extended partition are assigned subsequent drive letters, up through Z. The Boot Manager partition is never assigned a letter. Letters A and B are reserved for diskette drives, even if you have only one diskette drive. The primary partitions on the first physical drive share the drive letter C.

Attention: Only one primary partition per hard disk can be active at a time. So, only one primary partition is actually assigned the letter C at any one time. The other primary partitions on that drive are not mapped.

After the primary partitions, logical drives are assigned letters. As shown in Figure 4 on page 49, the three logical drives are assigned letters D, E, and F.

An operating system maps only those drives with a format type that it supports. For example, DOS does not support the installable file system (IFS) format. The high-performance file system (HPFS) is an example of an IFS format. Therefore, any partition or logical drive that is formatted with IFS is not mapped by DOS and is not assigned a drive letter.

In Figure 5, DOS is installed in the active primary partition. The other primary partitions (Primary (Boot Manager) and Primary (OS/2 Warp) partitions) are not mapped. Drive D is formatted for the file allocation table (FAT) file system, which DOS recognizes. However, the next logical drive is formatted with a file system that DOS does *not* recognize: the high-performance file system (HPFS). Therefore, DOS ignores this drive. The last logical drive is formatted with the FAT file system. Using this example, some versions of DOS do recognize the last partition on the hard disk and assign it the letter E. Other versions of DOS do *not* recognize any logical drives beyond the first logical drive that is formatted with HPFS. Therefore, no data in those partitions can be used by DOS. To avoid this problem, place your HPFS formatted logical drives or partitions at the end of the hard disk.

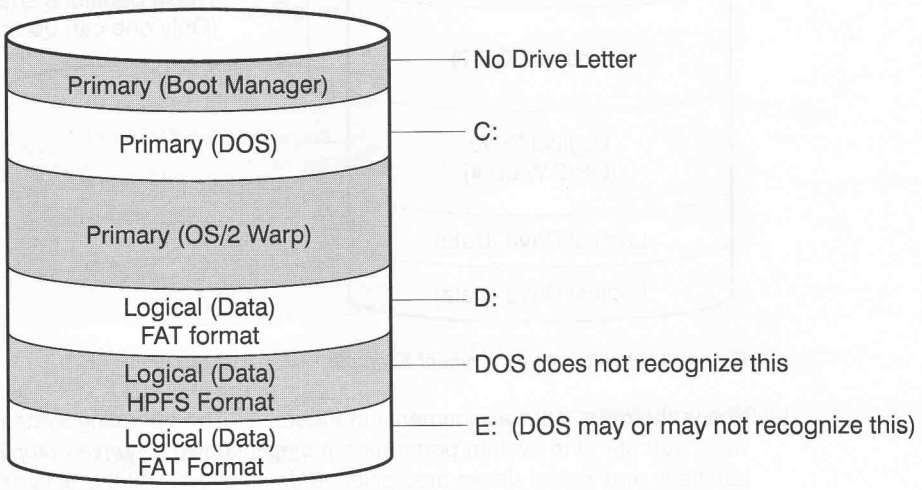


Figure 5. Example of Drive Mapping. This example illustrates the problem that can result when the operating system does not recognize a file format. You can avoid such a problem by placing the logical drive formatted for the high-performance file system (HPFS) at the end of the hard disk.

Because of the problems that can result when drives are remapped, you should avoid deleting logical drives that exist in the middle of your hard disk. For example, if you delete a logical drive from the middle of your disk, the subsequent drives are remapped. Drive G becomes drive F, drive F becomes drive E, and so on. Problems result if any programs refer to the former drive letter.

Figure 6 shows an example of how drives are mapped in a system that has two hard disks.

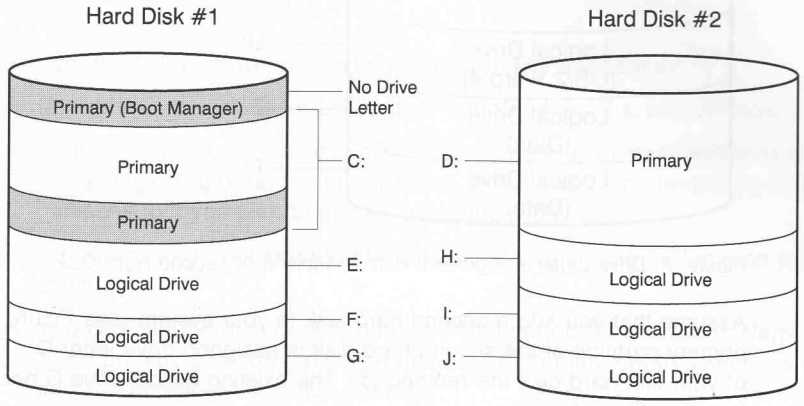


Figure 6. Example of Drive Mapping in a System with Two Hard Disks

The important thing to remember when you are setting up your system is that only one primary partition can be accessible (active) on each physical hard disk at system startup. All the logical drives within all extended partitions are accessible, provided their file system formats are compatible with the starting operating system. For example, suppose you had DOS 7 in one primary partition and OS/2 Warp 4 in another primary partition. One of your logical drives is formatted for FAT and contains a variety of DOS programs. You could start the DOS programs from either of the primary partitions (DOS 7 or OS/2 Warp 4).

It is also important to understand what happens to the drive mapping if you add a hard disk *after* you install OS/2 Warp 4. The logical drives on your existing hard disk are remapped if your second hard disk has a primary partition on it. Because of the remapping, you should consider putting your primary partitions only on the first drive. If you put primary partitions on a second drive, the remapping changes drive letters.

For example, suppose you have an existing hard disk that is set up as shown in Figure 7 on page 52.

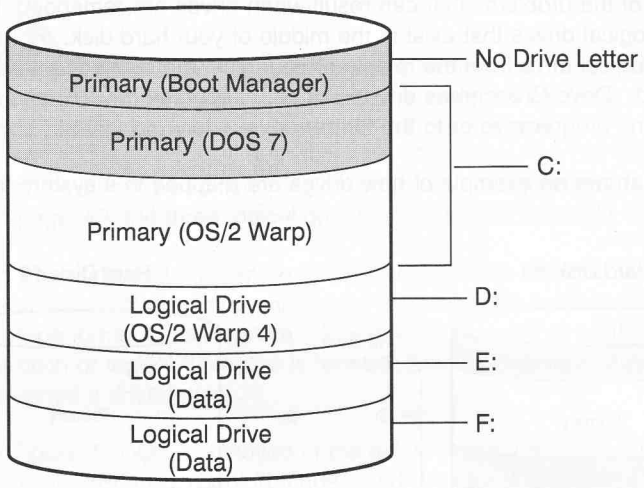


Figure 7. Drive Letter Assignment Before Addition of Second Hard Disk

Assume that you add a second hard disk to your system (see Figure 8). The *active* primary partition of the second hard disk is assigned drive letter D. The logical drives of your first hard disk are remapped. The existing logical drive D becomes E, E becomes F, and so on.

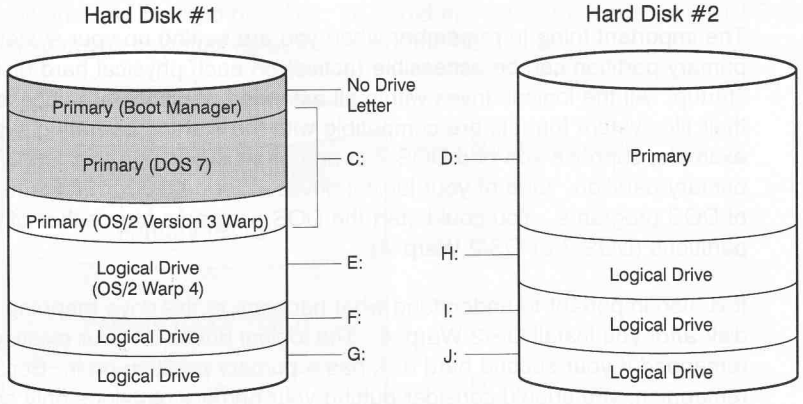


Figure 8. Example of Drive Mapping After Second Hard Disk is Added

Because a copy of OS/2 Warp 4 is now in the logical drive assigned as E, all references to all partitions except the two primary partitions (C: and D:) must be changed. This includes CONFIG.SYS file entries, system and application INI files that are used by OS/2 Warp 4 and WIN-OS/2, application-specific configuration files, DAT and CMD files, and so on. For this reason, avoid placing primary partitions on any drive except the first drive.

In Figure 8, both hard disks contain primary partitions. There is no requirement that a hard disk must have a primary partition. It is valid for a hard disk to contain only logical drives.

Planning for a Boot Manager Setup

Consider the following when planning your Boot Manager setup:

- Use primary partitions for DOS, DOS with Windows 3.x, and Windows 95.
- To prevent the loss of usable disk space, create all primary partitions contiguously, at the beginning or end of the disk free space area. The beginning is better for partitions that you plan to use for operating systems.
- Consider using Boot Manager to run all of the operating systems on your computer.
- You can use the dual boot feature to install both DOS and OS/2 Warp 4 in the same primary partition. You can then use Boot Manager to select this primary partition and boot the active partition.

  The online *Warp Desktop Guide* describes how to use dual boot to switch between DOS and OS/2 Warp 4.
- A Dedicated DOS/Windows Session requires a dual boot environment.
- For information about installing on an IDE drive, see "Considerations for IDE Hard Disk Drives Greater Than 528MB" on page 83.

The FDISK Utility Program

When you install OS/2 Warp 4 using Advanced Installation, you use the FDISK utility program to install Boot Manager and to set up the partitions on your hard disk. During Advanced Installation, the FDISK window is displayed so you can see how the partitions are currently set up on your system. The FDISK window is displayed only if you do not accept the default installation drive or partition, that is, you want to specify a different drive or partition.

Figure 9 on page 54 is an example of an FDISK window that shows a 1 gigabyte hard disk with three operating systems installed.

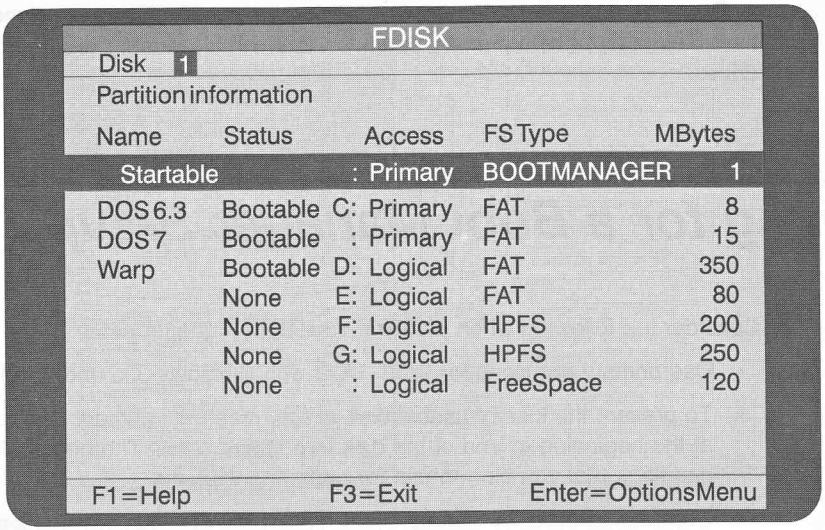


Figure 9. Example of FDISK Window

Notice the following about the example in Figure 9:

- The Boot Manager partition is marked Startable. When you start your system, Boot Manager is in control. You can then choose which operating system you want to run.
- DOS 6.3 and DOS 7 are set up in primary partitions. Notice that the drive letter, C, is displayed on the line that contains information about the DOS 6.3 partition. The placement of the drive letter indicates which of the primary partitions will be active at the next system startup. In this example, DOS 6.3 will be active.
- OS/2 Warp 4 resides in a logical drive in the extended partition (drive D in this example). Remember that OS/2 Warp 4 can reside in either a primary partition or in a logical drive within the extended partition.
- The logical drives labeled E, F, and G are set aside for common tools or programs that can be shared by the operating systems. Notice that the HPFS partitions are at the end of the disk configuration.
- 120MB of free space is available. This area can be set aside for future use. For example, you could later add a logical drive here.

The Options Menu

When you press the Enter key from the FDISK window, the Options menu is displayed. Figure 10 on page 55 shows the Options menu.

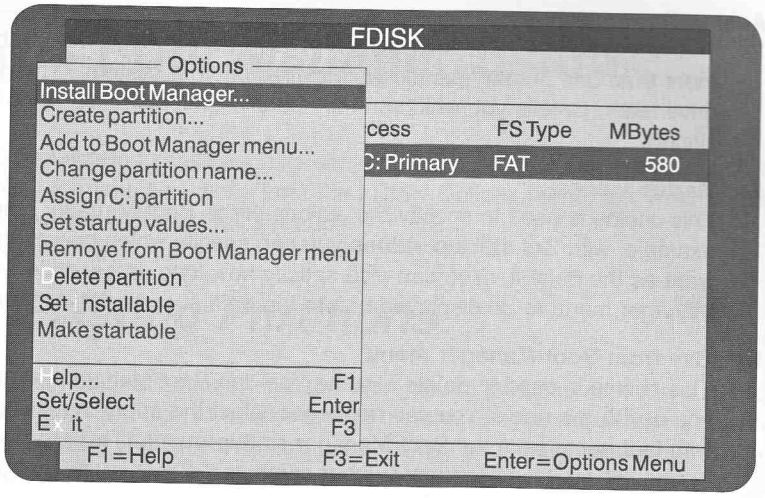


Figure 10. Example of the Options Menu

The following list describes each of the choices on the Options menu. Some choices are available only under certain conditions. When a choice is available, it appears in black on the menu. If you try to select an unavailable choice, the system responds with a warning beep.

Install Boot Manager

This choice is used only once—when you create the partition for Boot Manager. It is unavailable thereafter unless you delete the Boot Manager partition.

Create partition

This choice is used to create primary partitions or logical drives within an extended partition. You can use this choice whenever all of the following are true:

- Free space is available on the hard disk
- Free space for a partition or logical drive exists
- You have not previously used all four primary partition allocations or you have an extended partition.

The **Create partition** choice is available on the Options menu when you highlight an area of free space.

Add to Boot Manager menu

This choice is used to add the name of a partition or logical drive to the Boot Manager startup menu. You should use this choice for any operating system that you want to be able to select when you start your system. When you select this choice, the New Name window is displayed. You use the New Name window to assign a meaningful name to the partition or logical drive, which is displayed on the Boot Manager menu window.

Change partition name

This choice is used to change the name that you have previously assigned to a partition or logical drive.

Assign C: partition

This choice is used to specify which primary partition you want to be active when more than one primary partition is installed on your system. The placement of the drive letter, C, tells you which primary partition will be active when you start the system.

Set startup values

This choice is used to specify the actions of the Boot Manager startup menu. For example, with **Set startup values** you can specify which operating system you want as the default. You can also specify how long, in seconds, you want the Boot Manager menu to be displayed before the default operating system is started.

Remove from Boot Manager menu

This choice is used to delete a name from the Boot Manager startup menu. When you delete the name, you can no longer select the operating system associated with that name from the Boot Manager startup menu. This means you cannot start or use the operating system on your computer.

Delete partition

This choice is used to delete information about the Boot Manager partition, a primary partition, or a logical drive. After you exit from FDISK, all the data in the partition or logical drive is deleted.

Attention: If you want to save any of the data in a partition, be sure to back up the data before you delete the partition.

Set installable

This choice is used to mark a partition or logical drive as the target for installation. For example, during the installation of OS/2 Warp 4, you set one primary partition or logical drive as installable. This partition or logical drive is where OS/2 Warp 4 is installed. The **Set installable** choice is available only during OS/2 Warp 4 installation.

Make startable

This choice is used to determine which primary partition is activated when you start your system. When you install Boot Manager, it is automatically marked as **Startable**. This means that Boot Manager is in control when you start your system and the Boot Manager startup menu is displayed. Only one primary partition on the first hard disk can be made startable. If you set any other primary partition as startable instead of the Boot Manager partition, the Boot Manager startup menu is not displayed when you start the system.

Creating a Boot Manager Setup

The following sections describe, in detail, how to delete and create partitions, how and why to make selections from the FDISK Options menu, and how to specify options for how Boot Manager will start up.

Deleting Existing Partitions

To set up your system for installation, you must make sure there is enough free space on your hard disk to accommodate the choices you make during Advanced Installation. "Hardware Requirements" on page 14 has information about the space requirements for OS/2 Warp 4.

On your hard disk, you can have a single partition or multiple partitions. If you are likely to replace any operating systems in the future with updated versions, it is advantageous to create a Boot Manager partition and multiple partitions for your operating systems and data. If your hard disk has only one partition and that partition takes up the entire hard disk, you might need to delete the partition in order to install an operating system. When you delete a partition, any existing data in the partition is erased. You should consider this before setting up your system with a single partition. If you have a single partition on your system and you want to install OS/2 Warp 4 in its own partition, you must delete the existing partition and then create the partitions you want to have.

Attention: You must back up all information that you want to save. Changing the size of a partition deletes all information in that partition, and any software or data in that partition must be reinstalled when new partitions are created.

To delete an existing partition, follow these steps:

1. On the FDISK window, use the Up or Down arrow key to highlight the partition you want to delete.
2. Press Enter to display the Options menu.
3. Select **Delete partition** and press Enter. The information about that partition is deleted, and the words **FreeSpace** are displayed in the space formerly occupied by the partition information.
4. Repeat steps 1 through 3 for any other partitions you want to delete.

After deleting the partitions on your hard disk, you can create the Boot Manager partition and any additional partitions. If you want to use Boot Manager, create the Boot Manager partition at this point.

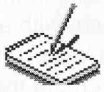
Creating the Boot Manager Partition

During Advanced Installation, you can create a Boot Manager partition. To create this partition, follow these steps:

1. Make sure that the **FreeSpace** line is highlighted on the FDISK window. If it is not, use the Up or Down arrow key to highlight it.
2. Press Enter to display the Options menu.
3. Select **Install Boot Manager** and press Enter.
4. Specify whether the Boot Manager partition will be created at the beginning or at the end of the available free space on the hard disk.

Creating a Partition or Logical Drive for OS/2 Warp 4

After you create the partition for Boot Manager, create the partition or logical drive for OS/2 Warp 4. Although you can install OS/2 Warp 4 in either a partition or logical drive, use a logical drive so you can access the data in any of the primary partitions.



Note: Some operating systems, such as AIX, require their own disk utility to set up their installation partition. These systems create the partition when you actually install the operating system. If you plan to install this type of system at a later time, you need to leave sufficient hard disk space for it.

To create the partition or logical drive for OS/2 Warp 4, follow these steps:

1. Make sure that the **FreeSpace** line is highlighted on the FDISK window. If it is not, use the Up or Down arrow key to highlight it.
2. Press Enter to display the Options menu.
3. Select **Create partition** and press Enter.
4. In the Size of Partition window, type the size, in MB, of the partition or logical drive you are creating. Remember to leave space for your swap file. See "Hardware Requirements" on page 14 for information about space requirements for OS/2 Warp 4.
5. In the Type of Partition window, highlight one of the following:
   - Primary Partition
   - Extended Logical Drive

   The **Extended Logical Drive** is a logical drive within the extended partition.

   If you have already marked three partitions as primary partitions, you might want to select **Extended Logical Drive** for OS/2 Warp 4. Your hard disk can be made up

of a maximum of four primary partitions or three primary partitions and multiple logical drives within one extended partition. Therefore, if you create a primary partition for OS/2 Warp 4 when three primary partitions already exist, you cannot create any logical drives.

6. The Location of Partition window is displayed. Specify the location of the partition or logical drive you want to create.

Note: When the size of the partition or logical drive you want to create equals the amount of free space, the Location of Partition window is not displayed.

Specifying Options for the OS/2 Warp 4 Partition

During Advanced Installation, you can use the choices on the Options menu to specify information about the OS/2 Warp 4 partition or logical drive:

1. On the FDISK window, make sure the OS/2 Warp 4 partition is highlighted. If it is not, use the Up or Down arrow key to highlight it.
2. Press Enter to display the Options menu.
3. Highlight **Add to Boot Manager menu** and press Enter.
4. Type the name you want to assign to this partition or logical drive and press Enter. The FDISK window is displayed.
5. Press Enter to display the Options menu again.
6. Highlight **Set installable** and press Enter.

Note: You must select **Set installable** for this partition or logical drive. By selecting **Set installable**, you indicate which partition or logical drive should be used for OS/2 Warp 4. You can set a partition installable only when you are actually doing an installation.

Specifying the Default Operating System

After you create all of the partitions you need, you can specify which operating system should be started by default every time you start your computer. Follow these steps:

1. Highlight the line on the FDISK window that contains the information for the operating system you want preselected at startup time. For example, if you want OS/2 Warp 4 to be the preselected choice on the Boot Manager startup menu, highlight the line on the window that corresponds to OS/2 Warp 4.
2. Press Enter to display the Options menu.
3. Select **Set startup values** and press Enter.

4. Highlight the **Default** line on the Startup Values window and press Enter. The name of the partition you chose from the FDISK window is now listed next to **Default**.
5. Press F3 to save the information and exit the window.

If you want to set the timer for how long the Boot Manager startup menu should be displayed and how information on the menu is displayed, you can do so during OS/2 Warp 4 installation or after installation. To set the timer and display mode now, continue with the following sections "Setting the Menu Display Time" and "Setting the Menu Mode." Otherwise, press F3.

Setting the Menu Display Time

To indicate how long you want the Boot Manager startup menu displayed each time you start your system, follow these steps:

1. From the FDISK window, press Enter to display the Options menu.
2. Select **Set startup values** and press Enter.
3. From the Startup Values window, you can do one of the following:
   a. If you want the Boot Manager startup menu displayed for a certain period of time before the default operating system starts, accept the value of **Yes** in the Timer field.
   b. If you want the Boot Manager startup menu to be displayed indefinitely (until you explicitly select a choice from the startup menu), highlight **Timer** and press Enter. This changes the value to **No**.
4. If you selected **Yes** for **Timer**, indicate how long you want the Boot Manager startup menu displayed before the default operating system is started. You can do one of the following:
   a. Accept the value in **Timeout**.
   b. Change the value in **Timeout** as follows:
      1) Highlight **Timeout** and press Enter.
      2) Type the amount of time, in seconds, that you want the Boot Manager startup menu displayed before the preselected operating system is automatically started.
      3) Press Enter.

Setting the Menu Mode

You can select either **normal** or **advanced** for the Boot Manager startup menu mode. If you select **advanced**, the Boot Manager menu includes additional information about your partitions.

To change the mode that is currently displayed:

1. From the FDISK window, press Enter to display the Options menu.
2. Select **Set startup values** and press Enter.
3. From the Startup Values window, highlight **Mode**.
4. Press Enter to change from advanced to normal or from normal to advanced.

When you have finished configuring your Boot Manager startup menu, press F3. Then continue with the installation of OS/2 Warp 4.

Selecting a File System

During Advanced Installation, if you choose to format an existing partition or a partition you created during installation, you are asked to select a *file system*. A file system is the part of the operating system that provides access to files and programs on a disk. You can select either the file allocation table (FAT) file system or the high-performance file system (HPFS).

- Select the FAT file system if you intend to share data in the partition with a version of DOS that is running independently of OS/2 Warp 4. For example, if you occasionally need to start DOS from a diskette and access the data in the OS/2 Warp 4 partition, the OS/2 Warp 4 partition must be formatted for the FAT file system. DOS uses the FAT file system and does not recognize files created by HPFS. Although a copy of DOS running in native mode does not recognize HPFS, this is not the case for DOS sessions that run under OS/2 Warp 4. If you plan to run your DOS programs in the DOS sessions that are part of OS/2 Warp 4, you can format for either file system. The only restriction for DOS programs running in these DOS sessions is that the programs will not recognize the longer file names supported by an HPFS partition.
- HPFS has features that make it a better choice for larger hard disk partitions. HPFS puts the directory at the seek center of the partition and is designed to allocate contiguous space for files. This feature helps prevent disk fragmentation. HPFS also handles write errors by writing to alternate space reserved for that purpose. It also supports file names up to 254 characters in length.

  Use HPFS instead of FAT on larger partitions because the savings in disk space is dramatic.

  Tip: HPFS handles space allocation much more efficiently than FAT. Consider using HPFS for OS/2 Warp 4. HPFS uses at least 200KB of system memory.

Chapter 7. Using Online Information

The *Up and Running!* book is provided in hardcopy to help you install OS/2 Warp 4. Many other types of information are installed on your system to help you use OS/2 Warp 4. Online documentation and other types of assistance for using OS/2 Warp 4 are provided in the form of:

- A *tutorial* with information about operating system activities, networking operations, and VoiceType for OS/2 Warp
- The *WarpGuide* task mentor that helps you through tasks by showing cue cards or actually completing tasks for you
- *Troubleshooting* information and utilities that help you if you experience a problem with your OS/2 Warp 4 system
- *Information from the Internet* about current and new OS/2 products
- *Online help* for the OS2 Warp command line and for graphical user interface windows
- *Online books and reference materials* for using the services in OS/2 Warp 4

The Assistance Center folder contains the online documentation and other types of assistance.

Tutorial

The *OS/2 Warp 4 Tutorial* is an interactive learning tool that introduces OS/2 Warp 4. You can select the tutorial from the Welcome window at the end of the installation process or at any time after installation from the Assistance Center on the Desktop. After you open the tutorial, you can select information about:

- **OS/2 Basics** to learn more about using the operating system.
- **Connect** to learn about the networking services that are available in OS/2 Warp 4
- **VoiceType for OS/2 Warp** to learn how to use voice commands that your computer recognizes

WarpGuide

A new feature for OS/2 Warp, in the form of intelligent help, is the WarpGuide task mentor. WarpGuide assists you with computer tasks by showing *cue cards* that give information about the task, or by actually completing the task for you.

By clicking on the  located on the upper-left corner of the window you are using, you can easily turn cue cards on or off. By default, the WarpGuide is set to automatically show cue cards. Figure 11 shows the Find Objects window displaying a cue card.

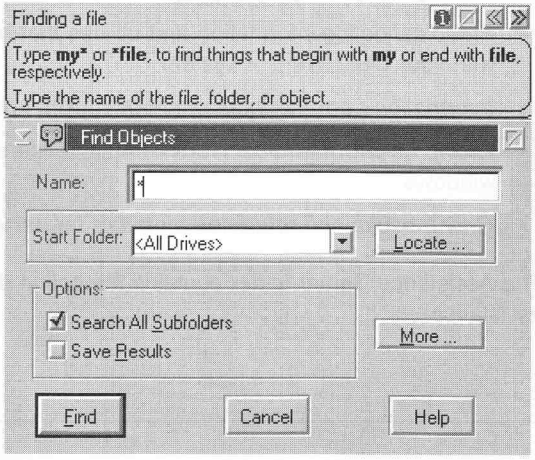


Figure 11. The Find object with a cue card

To permanently turn cue cards off:

1. Open the Assistance Center folder.
2. Display the pop-up menu for the WarpGuide folder.
3. Select **Properties**. The Appearance page is displayed.
4. Remove the check from **Assist me with selected tasks**.

Troubleshooting

The Troubleshooting folder contains books and utilities that can help you if you experience a problem with your OS/2 Warp 4 system. Utilities that are contained in the Troubleshooting folder are:

AskPSP Runs a search tool called CasePoint to open a database of common problems and questions and their solutions. (AskPSP is installed with the BonusPak.)

Problem Determination Tools
Contains programs such as a trace formatter, a dump utility, and an error log that help you analyze problems that might occur.

Support through the Internet
Connects to a World Wide Web page that provides technical and support information about OS/2 products.

Online books that are contained in the Troubleshooting folder are:

Presentation Manager Dump Formatter
Describes how to use the PM Dump Facility dump formatting tool. The tool is designed to help you debug system and application failures through the use of system dumps, process dumps, and FFST dumps. The formatting of trace data can also be started from PM Dump Facility.

TRACE Contains information about the OS/2 Trace facility, which allows specific events within software to be recorded in a System Trace buffer whenever a module reaches the state that corresponds to a tracepoint.

TRACE includes information about:

- The various static and dynamic tracepoints that are currently defined within the operating system, including the major trace codes and minor trace codes that identify the event being traced.
- Developing static and dynamic tracepoints.
- Using the TRACE and TRACEFMT utilities to collect and format trace data.

Troubleshooting Describes how to detect, locate, and eliminate errors in OS/2 Warp 4. Troubleshooting information for the operating system, System Management, and networking services is available in this guide.

Information from the Internet

The Information from the Internet icon links you to a World Wide Web page that gives information about the OS/2 family of products.

Online Help

Online help provides information about general topics, procedures, and messages.

There are several ways to access online help.

- You can view context-sensitive help for a window by pressing F1.
- You can view the help for a window by selecting the **Help** menu or push button.
- You can view command-line help by typing `HELP` at an OS/2 Warp command prompt and pressing Enter. You can also view help for a particular command by typing `HELP` followed by the command for which you want help, for example, `HELP XCOPY`.

Online Books

The OS/2 Warp 4 online books are installed when you install OS/2 Warp 4. Some of the books and reference materials, such as the *OS/2 Warp Desktop Guide*, are always installed. Others, such as the *File and Print Client Guide*, are installed only if you install the service described in the book.

Viewing Online Books

The OS/2 Warp 4 online documentation is contained in the Information folder in the Assistance Center. The following folders are contained in the Information folder.

- Help Index
- Online Information Overview
- Read Me
- Reference and Commands
- Tasks

See "The OS/2 Warp 4 Online Books and References" to see which books are in each folder and a short description of each book's contents.

To view an OS/2 Warp 4 online book, double-click on the icon that represents the book you want to view.

After you open a book, you can select links to other topics or search for specific information. Links are words that are highlighted. To select a link, double-click on the highlighted words.

To start a search for a word or phrase, select **Search** from the Services menu and type the word or phrase for which you want to search. Then select the **Search** push button to display a list of topics that contain matching text. Select the topic you want to view from the list.

If you have a default printer set up, you can print an entire OS/2 Warp 4 online book or a section of a book while viewing it. To print while viewing a book, select **Print** from the Services menu.

The OS/2 Warp 4 Online Books and References

The following books and reference materials are available if you install all of the OS/2 Warp 4 services and options. Each book is listed under the name of the folder that contains it.

- **Help Index folder**

  Help Index Contains an alphabetic list of topics to help you use OS/2 Warp 4.

- **Online Information Overview folder**

  Glossary Contains an alphabetic listing of terms that are used in the OS/2 Warp 4 books, along with their definitions.

  OS/2 Warp System Overview Gives a high level description of OS/2 Warp 4.

Using Online Information
Describes the online information available in OS/2 Warp 4.

- **Read Me folder**

The Read Me folder contains README files for many of the services that make up OS/2 Warp 4. The README file for OS/2 Warp 4 is in the OS/2 Warp Read Me folder. To view a README file, double-click on the icon for the README file you want to view.

- **Reference and Commands folder**

Multimedia with REXX
Discusses how you can enable REXX application programs to control media devices through the use of Media Control Interface string commands.

REXX Information
Describes REXX, a programming language that is included with OS/2 Warp 4. Both the object-oriented version (Object REXX) and the procedural version (classic REXX) of the language are discussed. For information on switching between the two versions of REXX, see "Activating Object REXX" on page 80.

OS/2 Warp Command Reference
Describes OS/2 and DOS commands you can issue from a command prompt for the operating system or for File and Print Client.

TCP/IP Command Reference
Provides information about TCP/IP commands and their use in the command-line environment of the operating system.

TCP/IP REXX FTP API Reference
Describes the application programming interfaces for File Transfer Protocol (FTP) provided by OS/2 TCP/IP.

TCP/IP REXX Sockets API Reference
Describes socket application programming interfaces provided by OS/2 TCP/IP.

Trademarks Contains IBM and non-IBM trademarks that are used in the OS/2 Warp 4 books.

- **Tasks folder**

File and Print Client Guide
Describes how to use File and Print Client to access resources on the LAN, share your resources with others on the LAN, send messages across the LAN, and copy and paste data between workstations on the LAN.

LAN Server Administration Guide
Tells how to administer a LAN Server or OS/2 Warp Server workstation from your workstation.

Mobile Office Services Guide
Describes how to use Mobile Office Services, which lets you take LAN-based files with you when you travel and update them on the LAN when you return.

NetWare Client Guide
Describes how to access files on a Novell NetWare server.

Network Adapters and Protocol Services Guide
Describes MPTS, the software that enables your network adapter card to send information across the LAN.

OpenDoc Guide
Introduces the OpenDoc function and gives a brief introduction to object-oriented programs. The book describes the process of creating a document using OpenDoc, demonstrates basic steps for working within each of the components or *parts* of OpenDoc, and gives examples of documents under construction.

OS/2 Warp Desktop Guide
Describes the OS/2 Warp 4 Desktop folders and the tasks you can do through the Desktop.

Password Coordination Guide
Describes the use of Network SignON Coordinator/2 to coordinate multiple passwords within your system.

Personal Communications Information Notebook
Provides information about installing, configuring, and using the Personal Communications program.

Remote Access Advanced Guide
Explains how to set up and accomplish advanced tasks associated with dialing in to a LAN.

System Management Agent Guide
Describes using the System Management Agent to access DMI-enabled components in the system and to configure the OS/2 SNMP agent.

System Management Client Guide
Contains instructions for installing and using System Management Client.

Remote Access Client Guide
Tells how to use Remote Access Client, which lets you dial in to a LAN.

TCP/IP DHCP Client and Dynamic IP Administration Guide
Provides information about automatic IP network access, including automatic parameter configuration.

TCP/IP Dynamic IP Introduction
Provides information about how to centrally define and automate configuration of IP hosts on a network, including mobile hosts.

TCP/IP Guide Provides information about TCP/IP tasks (for example: configuring TCP/IP, transferring files, sending and receiving electronic mail, remote login, printing, and transferring files).

Ultimedia Mail/2 'Lite' Guide
Describes the mail capabilities of Ultimedia Mail/2 'Lite'.

VoiceType Guide
Describes VoiceType for OS/2 Warp, which lets you use voice commands to manage the OS/2 Desktop, manage files, or dictate letters.

Chapter 8. Other Installation Tasks

This chapter addresses some special types of installation tasks that you might need to use. During installation, you might want to set up your system in ways that are somewhat unusual. For example, you might want to use more than one adapter for networking services, or you might want to configure two File and Print Client workstations to communicate through a parallel port without using a network adapter card.

After you have installed OS/2 Warp 4, you might find that you want to make adjustments. For example, you might want to add a service that you did not originally install, remove a service that you installed but do not need, or change the network adapter in your system.

Adding a Function After Installation

If you find that you need a function you did not install on your system originally, you can add it. You will need the CD-ROM labeled *Operating System and BonusPak.*

If you need to add a component of the operating system, use the procedure in "Adding an Operating System Component." Operating system components include such things as printer drivers, fonts, and multimedia support. BonusPak components are also added through this procedure.

If you want to add a networking service, use the procedure in "Adding a Networking Service" on page 72. Networking services include components such as TCP/IP Services, File and Print Client, and Remote Access Client. These services let you communicate with other computers.

Adding an Operating System Component

To add an operating system component:

1. On the OS/2 Warp 4 Desktop, open **OS/2 System**.
2. Open **System Setup**.
3. Open **Install/Remove**.
4. Open **Selective Install**.

5. On the system configuration windows, either accept the information that is displayed about your system or change any information that is inaccurate. If you need more information about using these windows, select **Help**. Select **Next** to save your selections and go to the next window.
6. The OS/2 Setup and Installation window lists all the selectable components of the operating system. Click on the checkbox beside a component to select or deselect the component. Select the **More** button beside a component to select or deselect the subcomponents of that component. Select **Install** when you have made all your selections.

Adding a Networking Service

If you want to add a networking service after installation, use the following procedure. You will need the CD-ROM labeled *Operating System and BonusPak*.

To add a networking service:

1. On the OS/2 Warp 4 Desktop, open **OS/2 System**.
2. Open **System Setup**.
3. Open **Install/Remove**.
4. Open **Selective Install for Networking**.
5. On the Installing IBM OS/2 Warp window, select the installation path you want to use. Then follow the procedure in Chapter 3, "Easy Installation" or Chapter 4, "Advanced Installation" to install the networking services you want.

Removing a Function After Installation

If you find that you do not need a function you installed on your system, you can remove it.

To remove an operating system component, use the procedure in "Removing an Operating System Component" on page 73. Operating system components include such things as printer drivers, fonts, and multimedia support. BonusPak components are also removed through this procedure.

If you want to remove a networking service, use the procedure in "Removing a Networking Service" on page 73. Networking services include components such as TCP/IP Services, File and Print Client, and Remote Access Client. These services let you communicate with other computers.

Removing an Operating System Component

If you want to remove an operating system component from your system, use the following procedure.

To remove an operating system component:

1. On the OS/2 Warp 4 Desktop, open **OS/2 System**.
2. Open **System Setup**.
3. Open **Install/Remove**.
4. Open **Selective Uninstall**.
5. The Selective Uninstall window lists all the components of the operating system that you can remove. Click on the checkbox beside a component to select a component, and then select the **More** button beside the component to select the subcomponents you want to remove. When you have made all your selections, select **Uninstall**.

   The items you selected are removed from your system.

Removing a Networking Service

If you want to remove a networking service from your system, use the following procedure.

To remove a networking service:

1. On the OS/2 Warp 4 Desktop, open **OS/2 System**.
2. Open **System Setup**.
3. Open **Install/Remove**.
4. There are icons that let you remove the various networking services in OS/2 Warp 4. Open the appropriate icon to remove the networking service you do not want.

Note: The **Remove Installation for Networking** icon removes the Networking Services installation program.

Adding Device Drivers to the CONFIG.SYS File and to Diskettes During Installation

If you have a device (for example, a CD-ROM drive or a hard drive) that is not recognized or supported by OS/2 Warp 4, you might still be able to use it by modifying the CONFIG.SYS file on the *Installation Diskette* and by adding files to one of the other two boot diskettes. The following steps guide you through this procedure:

1. Locate the device driver for your device. A good place to start looking for device drivers is on the *Device Driver Pak CD* that is shipped with OS/2 Warp 4. Some device drivers can also be downloaded from the Internet or obtained by contacting the manufacturer of the device. Be sure to read the README file, if any, that is associated with the device driver. The README file tells you whether to add a DEVICE= or a BASEDEV= statement to your CONFIG.SYS file.

   Note: If there is no README file, look for a .DDP file. The .DDP file should state whether to use a DEVICE= or a BASEDEV= statement in the CONFIG.SYS file.

2. Use a text editor to modify the CONFIG.SYS file. Add the DEVICE=*filename* or BASEDEV=*filename* statement to the bottom of the CONFIG.SYS file (where *filename* is the file name of the device driver). Also, add the following line to the CONFIG.SYS file.

   ```
   SET COPYFROMFLOPPY=1
   ```

   Be sure that word wrap is turned *off* in the editor, and then save the CONFIG.SYS file.

3. If a BASEDEV= statement is added to the CONFIG.SYS file, you must copy the specified device driver to *Diskette 1*.

   If there is no room on *Diskette 1*, you can delete files from this diskette. Be sure to make a backup copy of the diskette before you make any changes. If you are using a Micro-channel machine, you can delete all IBM1*.* files from *Diskette 1*. If you are using a non-Micro-channel machine, you can delete all IBM2*.* files from *Diskette 1*.

4. If a DEVICE= statement is added to the CONFIG.SYS file, you must copy the specified device driver to *Diskette 2*.

   If there is no room on Diskette 2, and you are NOT performing a diskette install, the BUNDLE file can be deleted from the disk. Again, be sure to make a backup copy of the diskette before you make any changes.

5. At this time, you can restart the system from the modified boot diskettes.

If you still need more space on the diskettes, you can delete the following files. Be sure to read the conditions following the name of each file:

- HPFS.IFS – Delete this file *only* if you are not using the high-performance file system (HPFS).
- TEDIT.EXE
- TEDIT.HLP

Notes:

1. If you are installing from a CD-ROM, you also can delete one or more unneeded CD-ROM drivers. Be sure to remark out (REM) the corresponding lines in the CONFIG.SYS file.
2. You can delete one or more unneeded diskette controller drivers. Be sure to remark out (REM) the corresponding lines in the CONFIG.SYS file.

If you still need more disk space, determine whether your system has an Adaptec SCSI disk controller card. If you do have an Adaptec SCSI disk controller card:

- If the card is one of the following cards:
  - AHA 2740/2742
  - AHA 2840/2842VL
  - AIC 7770 EISA/ISA SCSI chip

  delete the AIC7780.ADD file.
- If your card is not in the previous list, delete the AIC7770.ADD file.

If your system does not have a Sony CD-ROM drive, you can delete the following files:

- SONY535.ADD
- SONY31A.ADD
- SONYCDS1.FLT

If your system has a Sony CD-ROM drive and not a Philips CD-ROM drive, you can delete the LMS206.ADD file.

If you delete any files, be sure to remark out (REM) the corresponding lines in the CONFIG.SYS file.

Device Driver Pak CD

The *Device Driver Pak CD* contains additional device drivers and device information on a wide range of devices with OS/2 support from the computer hardware industry. The contents of the *Device Driver Pak CD* are set up to be viewed with a web browser or editor that formats HyperText Markup Language (HTML) text and pictures. You can use either the web browser that comes with OS/2 Warp 4 or your favorite web browser to navigate the CD. Additional OS/2 drivers that are available on the World Wide Web can be downloaded using the navigational links provided in the *Device Driver Pak CD* if you are connected to the World Wide Web.

Using the CD

The root directory of the *Device Driver Pak* CD contains the file README.1ST. You can use the system editor to read this file. This file contains detailed instructions for:

- Using the *Device Driver Pak* CD
- Installing the device drivers it contains

If you are not using the IBM WebExplorer, it is usual for other web browser programs to provide a similar capability for reading HTML files from a local disk or CD-ROM. Refer to the manual or help information for your particular web browser.

Adding, Changing, or Removing an Adapter or Protocol

During Advanced Installation, you can select the network adapters and protocols that you want to install. This section describes how to use the Network Adapters and Protocol Services window to make changes to your adapters or protocols during installation. Refer to "Using Advanced Installation" on page 37 for the steps to follow for Advanced Installation.

During Advanced Installation, on the Configuration window, select **Network Adapters and Protocol Services** on the left side of the window.

On the Network Adapters and Protocol Services page, do the following:

1. Select the drive on which to install Network Adapters and Protocol Services.

2. If the configuration displayed is correct for your workstation, select your workstation's adapter.

   If the configuration displayed is not correct for your workstation, check the following items and specify the necessary information.

   - If your adapter is not listed on the Network Adapters and Protocol Services page, you must add an adapter and a protocol for that adapter. Select **Add adapter**. The Add Adapter window is displayed. Select the network adapters that are installed in this workstation.

     Note: If you have an ISA Bus workstation and have changed the physical settings on the network adapter, you must change the software configuration of the adapter at this time. Select the adapter you have changed. Then select **Settings**, and change the settings for your network adapter.

     Select **Other adapter** from the Add adapter window to install an adapter driver that is not in the list. The Network Adapter Driver Disk window is displayed. Follow the instructions in this window. Select **OK** to return to the Add Adapter window. Select **OK** in that window to return to the Network Adapters and Protocol Services page.

     Then you must select **Add protocol**. The Add Protocol window is displayed. To install a protocol that is not in the list, select **Other protocol**. The Network Protocol Driver Diskette window is displayed. Follow the instructions in this window. Select **OK** to return to the Change Protocol window. Select **OK** to return to the Network Adapters and Protocol Services page.

   - If the adapter originally listed on the Network Adapters and Protocol Services page does not match your workstation's adapter, select **Change adapter**. The Change Adapter window is displayed. Select the network adapters that are installed in this workstation.

     Select **Other adapter** from the Change Adapter window to install an adapter driver that is not in the list. The Network Adapter Driver Disk window is displayed. Follow the instructions in this window. Select **OK** to return to the Change Adapter window. Select **OK** in that window to return to the Network Adapters and Protocol Services page.

     Then you must select **Add protocol** if the protocol displayed does not match your workstation's protocol. The Add Protocol window is displayed. To install a protocol that is not in the list, select **Other protocol**. The Network Protocol Driver Diskette window is displayed. Follow the instructions in this window. Then select **OK** to return to the Change Protocol window. Select **OK** to return to the Network Adapters and Protocol Services page.

   - Select **Add protocol** if the protocol displayed does not match your workstation's protocol. The Add Protocol window is displayed. To install a protocol that is not in the list, select **Other protocol**. The Network Protocol Driver Diskette window is displayed. Follow the instructions in this window.

Select **OK** to return to the Change Protocol window. Select **OK** to return to the Network Adapters and Protocol Services page.

- Select **Settings** to change the parameters if you changed the switches in your network adapter from the factory defaults; for example,
  - The IBM ThinkPad 760CD requires a PCMCIA Token-Ring card with the interrupt level set to 11.
  - To avoid IRQ conflicts, the IBM ThinkPad 701C requires the PCMCIA Token-Ring memory I/O to be set to D400 to avoid video conflicts at memory address CC00.
  - To use Audio (Sound Blaster emulation), it is frequently required that you change the audio I/O address from 220 to 240 to avoid conflicts with the IBM PCMCIA Token-Ring card.
- Select **Remove** to remove a network adapter or protocol driver from the Current Configuration list.
- Select **Change number** to change the logical adapter number of the protocol driver.

Select **Help** if you need more information.

If you need to modify an adapter or protocol after installation, use the Network Adapters and Protocols icon.

Removing LAN Distance Remote

If you have a version of the LAN Distance Remote product on your system, you must remove it before you can install OS/2 Warp 4.

Note: You might have LAN Distance Remote on your system if:

- You are installing OS/2 Warp 4 for the first time and you had a version of the LAN Distance product installed on your system.
- You are reinstalling OS/2 Warp 4 and you installed Remote Access Client when you installed OS/2 Warp 4 the first time.

During OS/2 Warp 4 installation, you can install a new version of LAN Distance Remote, which is now called Remote Access Client.

Use the following procedure to remove LAN Distance Remote and optionally save your configuration information.

1. At an OS/2 command prompt, type:

   ```
   LDREMOVE
   ```

   and press Enter.

   If the LDREMOVE program is not found, insert *LAN Distance Diskette 1* in the diskette drive, and type:

   ```
   a:LDREMOVE
   ```

   If you do not have REXX installed, leave Diskette 1 in the diskette drive, and type:

   ```
   a:LDREM x:
   ```

   where *x*: is the drive and path of *LAN Distance Diskette 1*.

2. On the Remove LAN Distance window, specify whether you want to archive a copy of the LAN Distance configuration files or delete the files.

   - Select **Archive configuration files** to store a backup copy of your LAN Distance configuration files.
   - Select **Delete configuration files** to remove LAN Distance configuration files.

   If you choose to archive configuration files, the following files are stored in the WAL\BACKUP directory:

WCLLOCAL.INI	Settings notebook configuration information
WCBUSRF.ISF	User account database security information (for OS/2 only)
WCLDIAL.CXD	Phone book entries
WCLNET.INI	Modem configuration information
PROTOCOL.WAL	The PROTOCOL.INI file that was active before you typed LDREMOVE.
CONFIG.WAL	The CONFIG.SYS file that was active before you typed LDREMOVE.
PROTOCOL.LPS	Configuration information for the LAN-attached environment used by the Shuttle feature
PROTOCOL.RWS	Configuration information for the LAN Distance Remote environment used by the Shuttle feature

Note: These files are not automatically restored when you reinstall or upgrade the LAN Distance product. For information on restoring your configuration information, see the online *Remote Access Client Guide* after you install OS/2 Warp 4.

3. Select **Remove** to start the removal process.
4. When you receive the message that removal is complete, shut down and restart your system.

Activating Object REXX

OS/2 Warp 4 includes an object-oriented version of the REXX programming language in addition to the procedural (or classic) version. Because only one REXX interpreter can be active at a time, the classic REXX interpreter is installed as the default.

If you want to switch between versions of the REXX interpreter, use the SWITCHRX command. The SWITCHRX command detects the version of REXX that is currently active and switches to the other version. After switching REXX interpreters you must restart your system to activate the change.

Calling the SWITCHRX command a second time before restarting gives you the opportunity to undo the previous switch. If you activated the object-oriented REXX and you want to use the Workplace Shell (WPS) support provided with this version of the REXX interpreter, you must issue the WPSINST command. The WPSINST command registers two new classes required for the WPS support. You only need to issue the WPSINST command once after activating object-oriented REXX. However, if you switch back to classic REXX, the registered classes are removed. If you switch back to object-oriented REXX and want to use the WPS features, you must issue the WPSINST command again.

Object-oriented REXX scans all REXX code before it runs. With object-oriented REXX, you can get REXX errors in programs that previously ran error-free using classic REXX. For example, an extra END statement will be flagged as an error by object-oriented REXX.

For more information about migration issues, see the chapter on Migration in the *REXX Information* online document.

Connecting Two Workstations through the Parallel Port

If you are installing File and Print Client on two workstations, you can connect them through the parallel port to establish a point-to-point *network* using existing protocol stacks. The driver used is the PMAC driver.

The PMAC driver is a Network Device Interface Specification (NDIS) compliant device driver that enables the Parallel port to emulate a Network Interface Card (NIC). The PMAC driver looks like an Ethernet adapter to the protocol stack and uses a LapLink cable for the connection.

Installing the PMAC Driver during OS/2 Warp 4 Installation

To install the PMAC driver during OS/2 Warp 4 installation, you must use the Advanced Installation path. (See Chapter 4, "Advanced Installation" on page 31 for instructions.)

During OS/2 Warp 4 installation on both workstations:

1. On the OS/2 Warp Setup and Installation window, select **File and Print Client**.
2. On the Configuration window, select **Network Adapters and Protocol Services**.
3. On the Network Adapters and Protocol Services window, select **Change Adapter**.
4. In the list of network adapters, select **SSW Parallel Port NIC-less Adapter**, and then select **OK**.
5. On the Network Adapters and Protocol Services window, be sure that **SSW Parallel Port NIC-less Adapter** is highlighted, and then select **Settings**.
6. Look at the **Parallel Port Network Driver address**. This address must not be the same on both workstations, so be sure to change at least one digit of the address on one of the workstations, and then select **OK**.

After installation, connect the two workstations with the Laplink cable. If you plan to use other devices attached to the LPT port (for example, a printer) you need to add the parameter /IRQ to the printer statement in the CONFIG.SYS file. The line should look like:

```
BASEDEV=PRINT01.SYS /IRQ
```

or

```
BASEDEV=PRINT02.SYS /IRQ
```

For more information about the PMAC driver, see the file \IBMCOM\MACS\PMAC.TXT after installation.

Using Infrared as a Network Adapter

If you are installing File and Print Client on two workstations, they can communicate through infrared. The driver used is the IBM Infrared Adapter driver.

Installing Support for Infrared as a Network Adapter during OS/2 Warp 4 Installation

To install the infrared driver during OS/2 Warp 4 installation, you must use the Advanced Installation path. (See Chapter 4, "Advanced Installation" for instructions.)

During OS/2 Warp 4 installation on both workstations:

1. On the OS/2 Warp Setup and Installation window, select **File and Print Client**.
2. On the Configuration window, select **Network Adapters and Protocol Services**.
3. On the Network Adapters and Protocol Services window, select **Change Adapter**.
4. In the list of network adapters, select **IBM Infrared Adapter**, and then select **OK**.
5. On the Network Adapters and Protocol Services window, be sure that **IBM Infrared Adapter** is highlighted, and then select **Settings**.
6. Look at the **IBM Infrared Driver address**. This address must not be the same on both workstations, so be sure to change at least one digit of the address on one of the workstations, and then select **OK**.

For more information, see the file \IBMCOM\MACS\IRDNDIS.TXT after installation.

Considerations for IDE Hard Disk Drives Greater Than 528MB

If you are installing OS/2 Warp 4 on an Integrated Drive Electronics (IDE) hard disk drive larger than 528MB, be aware of the following:

- Large IDE hard disk drives require a BIOS translation utility program to access the physical disk space beyond 528MB. This utility program might be implemented from your computer's system board, or you might have a BIOS translation utility program (such as Ontrack Disk Manager). OS/2 Warp 4 recognizes most BIOS translation utility programs (including Ontrack Disk Manager) and can be installed on a large IDE hard disk with no problems.
- If you do not have a BIOS translation utility program for your hard drive (either on the system board or a separate product such as Ontrack), the following restrictions apply:
  - All bootable or startable partitions must be completely contained within the first 528MB of your physical disk.
  - All FAT file partitions must be fully contained in the first 528MB of your physical disk.
  - HPFS partitions that are not bootable or startable have no restrictions.
  - If you want to install the Boot Manager on a computer that has Ontrack Disk Manager on it, follow these steps to install OS/2 Warp 4:
    1. Install Ontrack Disk Manager using Dynamic Mode. When prompted, select the option that creates one partition on the drive. Follow the instructions that come with Ontrack Disk Manager.
    2. Begin installing OS/2 Warp 4 using the Advanced Installation method. For instructions, refer to Chapter 4, "Advanced Installation."
    3. When the Installation Drive Selection window displays, select option 2. Specify a different drive or partition to display the OS/2 FDISK screen.
    4. When the FDISK window displays, delete the partition that was created by Ontrack Disk Manager.
    5. Continue installing OS/2 Warp 4 following the instructions in Chapter 6, "Advanced Installation: Planning for Partitions and Boot Manager" to install the Boot Manager and set up your hard disk partitions.

Removing an Online Book

You might find that you need more hard disk space on your system and that you do not need all of the online books that were installed with OS/2 Warp 4. To free disk space, you can remove unneeded online book by using the following procedure.

To remove an online book:

1. Find the icon for the book you want to remove. Most of the online books are in the Assistance Center.
2. Position the mouse pointer over the icon and press the right mouse button.
3. Select **Properties** on the pop-up menu.
4. Be sure the **Program** tab is selected. The **Optional Parameters** field usually contains the file name of the book, and it often contains the path also.

   If the path is not shown in the **Optional Parameters** field:

   a. Go to an OS/2 window and type the letter of the drive where you installed OS/2 Warp 4, for example D:.

   b. On the command line, type DIR *filename* /S where *filename* is the file name of the book.

      The path where the book is located is displayed.
5. Change directories so that you are in the directory where the book is located.
6. Type ERASE *filename*, where *filename* is the file name of the book.
7. To delete the icon for the book, drag the icon to the shredder.

Appendix A. More Information about What You Can Install

Use this appendix to decide which components of OS/2 Warp 4 you want to install. The appendix describes each of the components that you can select during Advanced Installation.

Assistance Center

Lets you select some of the Assistance Center components for installation on your system. Most of the Assistance Center components are installed automatically. You can choose from:

OS/2 Warp Tutorial

Provides an interactive overview of OS/2 Warp 4.

OS/2 Warp Command Reference

Describes OS/2 and DOS commands for the operating system and File and Print Client.

REXX Information

Describes the REXX programming language.

WarpGuide User Interface Agent

Guides you through certain tasks and provides help that is tailored to your skill level.

Fonts

Lets you select which fonts you want on your system. A *font* determines how the characters on your Desktop look. During installation, you can see sample characters using each of the fonts to help you make your selection.

The font choices are:

- Courier
- Helvetica
- System Monospaced
- Times Roman
- Courier (outline)
- Helvetica (outline)
- Times Roman (outline)

Optional System Utilities

Lets you indicate which of the system utilities you want installed on your system.

The utilities from which you can choose are:

Back Up Hard Disk

Copies files from one disk to another for safekeeping.

Change File Attributes
Displays the current state of a file. You can also use the utility to change the read-only attribute or the archive bit of a file.

Display Directory Tree
Displays files or directory paths found on a drive.

Manage Partitions
Creates, deletes, and manages partitions or logical drives.

Label Diskettes
Creates or changes the volume identification label on a disk or diskettes.

Link Object Modules
Combines program modules together to create executable programs.

Picture Viewer
Prints or displays picture or spooler files.

PMREXX Provides a windowed environment for running REXX programs and programs called by REXX. REXX is a programming language designed to make basic OS/2 programs easier to write and debug.

Recover Files
Retrieves files from an HPFS disk that contains defective sectors.

Restore Backed-Up Files
Copies one or more files that were previously backed up (copied for safekeeping) from one disk to another.

Sort Filter Reads data from a standard input device (such as the keyboard), sorts the data, and writes it to a standard output device (such as the screen).

Installation Utilities
Required for response file installation and by some installation programs.

Create Utility Diskettes
Creates utility diskettes. Utility diskettes let you:

- Start the OS/2 Warp Version 4 operating system from diskette.
- Back up and restore the entire operating system.
- Check the hard disk for potential errors or problems, if the hard disk ever becomes damaged.

Serviceability and Diagnostic Aids
Provides the means to collect data about system and application errors and save the error data in an error log. Also provides the capability to use traces and dumps for analyzing errors that occur in your system.

Optional System Components
Lets you indicate which of the following system components you want installed on your system.

OpenDoc for OS/2
OpenDoc for OS/2 is an object-oriented way to create documents. The documents can include various components, such as text and sound.

VoiceType for OS/2 Warp
Lets you use your voice to communicate with your computer. *Navigation* lets you use voice commands to move around the Desktop, to manage files, folders, and windows, and to work with your programs. *Dictation* lets you write letters and other documents without using a keyboard.

Security Installs an application programming interface (API) that enables Optional Security applications to provide enhanced file, print, and process security.

Dedicated DOS/Windows Session
Installs support that enables you to run Windows applications requiring native DOS and Windows. This option is available only if both DOS and OS/2 are installed on drive C, which is on an IDE disk and formatted for the FAT file system.

High-Performance File System
Installs HPFS, which provides fast access to large disk volumes. HPFS supports file names that can be up to 254 characters.

BonusPak Installs a collection of applications for increasing your productivity. The BonusPak includes:

CompuServe Information Manager for OS/2
Gives you access to a worldwide news service, weather forecasts, electronic mail, and other services. CompuServe Information Manager for OS/2 was developed by CompuServe to support OS/2 users.

HyperACCESS Lite for OS/2
Provides easy-to-use modem communications, 32-bit file transfer protocols, and terminal emulation. This is an entry version of HyperACCESS for OS/2.

IBM Works
A suite of 32-bit office automation applications and productivity tools, including a word processor, spreadsheet, calendar, and address book.

FaxWorks for OS/2
Lets you send, receive, and print faxes.

Video IN for OS/2
Lets you record digital video segments. To use Video IN for OS/2, you must also install Multimedia Software Support.

AskPSP Lets you run a search tool called CasePoint to open a database of common problems and questions relating to OS/2 Warp 4.

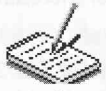
Remote Support for OS/2
Enables IBM Technical Support representatives to remotely take control, with your permission, of your OS/2 system to help you solve problems.

HP JetAdmin
Provides an advanced network printing solution that enables you to easily install, configure, query, and troubleshoot network-attached printers from your OS/2 Desktop.

HP JetAdmin Port Driver
Lets you manage and print to a Hewlett-Packard network-attached printer directly from an OS/2 Warp 4 Desktop.

MarkVision for OS/2
Provides an advanced network printing solution that enables you to easily install, configure, query, and troubleshoot network-attached printers from your OS/2 Desktop.

MarkNet Port Driver
Lets you manage and print to a Lexmark network-attached printer directly from an OS/2 Warp 4 Desktop.



Note: For more information about applications in the BonusPak, see Appendix C, "IBM BonusPak."

Java support
The software necessary to run Java applets on your Desktop is installed automatically when you install OS/2 Warp 4. You can select to install additional components that help you to develop your own Java applets. These components must be installed on an HPFS partition. You can select from:

Toolkit The Java Developer's Toolkit contains:

- The javac compiler
- C header files and libraries
- Debug versions of executable files

Samples Contains sample Java applications.

Tools and Games
Lets you select from the following tools and games for installation on your system.

Enhanced Editor
Use the Enhanced Editor to create and edit multiple files.

Search and Scan Tool
Use Search and Scan to search for files on your hard disk or to find text in files.

OpenGL 1.0 3D Graphics Library
Use OpenGL, a three-dimensional graphics application programming interface (API), to develop applications for various technical and commercial fields.

Optional Bitmaps
Installs bitmaps that are not necessary for your OS/2 Warp 4 system to work.

Solitaire - Klondike
Use Solitaire to play Klondike-style solitaire.

Pulse Use Pulse to monitor the use of system resources using a graph.

Chess Use Chess to play chess with the computer or another opponent.

Mahjongg Solitaire
Use Mahjongg solitaire to play a tile matching game.

OS/2 DOS Support
Lets you select one or more DOS environment choices for installation on your system. You can select from:

DOS Protect Mode Interface
Select DOS Protect Mode Interface if you want to run DOS programs written to the DOS Protected Mode Interface (DPMI) specification.

Virtual Expanded Memory Management
Select Virtual Expanded Memory Management if you want to run programs written to the Lotus/Intel/Microsoft Expanded Memory Specification (LIM EMS). This specification allows for up to 32MB of expanded memory.

Virtual Extended Memory Support
Select Virtual Extended Memory Support if you want to run programs written to the Lotus/Intel/Microsoft/AST Extended Memory Specification (LIMA XMS). This specification allows for the accessing of High Memory Area, Extended Memory Blocks, and Upper Memory Blocks.

WIN-OS/2 Support
Lets you select the WIN-OS/2 features you want installed on your system. You can also indicate in which partition of your hard disk the WIN-OS/2 support should reside. (The drive in which you are installing WIN-OS/2 support must be formatted.)

You can choose to install one or more of the following:

README files
Installs additional information about WIN-OS/2 support.

Accessories
Installs the following WIN-OS/2 tools:

Calculator Used to perform simple calculations and solve mathematical problems.

Calendar Used to keep track of appointments.

Cardfile Used to organize and manage information, such as names, addresses, and phone numbers.

Character Map
Used to insert into documents extended characters not found on most keyboards.

Clock Used to display the time and date.

Media Player
Used to play multimedia files, such as sound and animation, and control devices, such as videodisc players.

Notepad Used as a text editor for small text files (such as the CONFIG.SYS file).

Object Packager
Used to create icons that represent embedded or linked objects, and then insert them into documents.

Paint Brush
Used to create drawings.

Write Used to create and print documents.

Screen Savers
Displays patterns on the screen when you have not used your computer for an amount of time that you specify.

Sound Lets you assign sounds to system events if you have a sound card installed.

WIN-OS/2 Desktop Configuration
Select one of the following:

Automatic Configuration
Makes the new WIN-OS/2 Desktop look like your existing WIN-OS/2 or Windows Desktop (if one is already installed).

Advanced Configuration
Lets you change the look of your WIN-OS/2 Desktop.

Multimedia Software Support

Lets you select the multimedia features you want installed on your system. You can also indicate in which partition of your hard disk the multimedia features should reside.

You can choose to install one or more of the following:

Base Multimedia Support

Installs the OS/2 Warp 4 files that provide multimedia capabilities on your system.

Multimedia OpenDoc Support

Integrates OpenDoc functionality into your multimedia support. You must have Base Multimedia Support and Base OpenDoc Support installed in order to use this selection. (Base OpenDoc Support is selected under Optional System Components.)

Software Motion Video

Installs support for viewing high-resolution digital movies on your Desktop. You must have Base Multimedia Support installed in order to use Software Motion Video.

File and Print Client

Lets you use files and printers on other workstations on a local area network (LAN) as if they were on your own workstation.

TCP/IP Services

Lets you access the Internet over telephone lines using a modem or a LAN. With TCP/IP Services you also install services such as:

- Ultimail Lite for sending and receiving electronic mail
- WebExplorer for finding information on the Internet
- NewsReader/2 for accessing USENET newsgroups from a news server
- FTP for transferring files to a remote host
- SLIP and PPP for dialup connections

Remote Access Client

Lets you establish a telephone connection with a LAN. After you establish the connection, you can use different LAN applications as if your workstation is attached to the LAN.

System Management Client

Lets an administrator manage your workstation's software and performance from a central location. System Management Client also allows you to monitor your workstation's hardware, software, and performance.

NetWare Client

Supports a Novell LAN and lets you access files and printers on Novell NetWare servers.

Mobile Office Services

Lets you take LAN-based files with you when you travel and update them on the LAN when you return.

Network Adapters and Protocols

Allows your workstation's network adapter to send and receive data across a LAN.

Appendix B. Worksheets

The OS/2 Warp 4 installation program can automatically obtain much of the information about your workstation that it needs. Some information cannot be obtained automatically, however, so you need to supply it by making selections or typing information while the installation program is running.

To make the installation easier, make a copy of one of the following worksheets, and then fill out the copy so you have the required information handy. The worksheets are divided into sections. Fill out the sections that apply to the services you are installing.

If you want to install using the Easy Installation path, use the worksheet in "Easy Installation Worksheet" on page 94.

If you want to install using the Advanced Installation path, use the worksheet in "Advanced Installation Worksheet" on page 97.

For descriptions of the components listed in the worksheets, see Appendix A, "More Information about What You Can Install."

Easy Installation Worksheet

Use this worksheet while reading "Before You Begin" on page 23.

Table 3 (Page 1 of 3). Easy Installation Worksheet

The OS/2 Warp 4 Setup and Installation program sets the correct defaults in most cases. Unless you have an unusual setup, you can simply accept the defaults and press **Next**.

Locale Information

Specify country:

Specify keyboard:

System Information

Specify mouse:

Install serial device support? Yes No

Specify primary display:

Specify secondary display:

Peripherals

Specify CD-ROM device type:

Specify multimedia device type:

Specify printer type:

Specify SCSI adapter type:

Additional Hardware

Install advanced power management? Yes No

Install SCSI II Optical Support? Yes No

Install external floppy drive? Yes No

Install infrared support? Yes No

Specify PCMCIA system:

Install Dock II configuration? Yes No

Install UltraBay device swapping? Yes No

Table 3 (Page 2 of 3). Easy Installation Worksheet

Network Adapter

Network adapter card:

You can use the displayed default in most cases. Select **No network adapter** if you do not have a network adapter card.

In the following sections of the worksheet, you need to supply parameters for only the activities you select.

Connect to LAN using File and Print Client

Workstation Name:

Workstation Description:

Domain Name:

Install sharing? Yes No

User ID:

Password:

Install NetWare Client? Yes No

Use files and printers on a Novell NetWare server

Name context:

NetWare preferred server:

Connect to a LAN and use TCP/IP

DHCP Server available on the LAN? Yes No

DDNS Server available on the LAN? Yes No

IP address:

Subnet mask:

Router:

Host name:

TCP/IP domain name:

Name server:

Table 3 (Page 3 of 3). Easy Installation Worksheet

Connect to a LAN through a modem

Modem type:

Communication port: COM1 COM2

Telephone number of connection server:

Type of LAN: Ethernet Other

Advanced Installation Worksheet

Use this worksheet while reading "Before You Begin" on page 31.

Table 4 (Page 1 of 7). Advanced Installation Worksheet

The OS/2 Warp 4 Setup and Installation program sets the correct defaults in most cases. Unless you have an unusual setup, you can simply accept the defaults and press **Next**.

Operating System

Specify the drive on which to install OS/2 Warp Version 4:

Do you want to format the drive? Yes No

Select the type of format: FAT HPFS

Locale Information

Specify country:

Specify keyboard:

System Information

Specify mouse:

Install serial device support? Yes No

Specify primary display:

Specify secondary display:

Peripherals

Specify CD-ROM device type:

Specify multimedia device type:

Specify printer type:

Specify SCSI adapter type:

Table 4 (Page 2 of 7). Advanced Installation Worksheet
Additional Hardware
Install advanced power management? Yes No
Install SCSI II Optical Support? Yes No
Install external floppy drive? Yes No
Install infrared support? Yes No
PCMCIA support? Yes No
Install Dock II configuration? Yes No
Install UltraBay device swapping? Yes No
Install Assistance Center? Yes No
Install OS/2 Command Reference? Yes No
Install REXX Information? Yes No
Install WarpGuide User Interface Agent? Yes No
Install Fonts? Yes No
Install Courier? Yes No
Install Helvetica? Yes No
Install System Monospaced? Yes No
Install Times Roman? Yes No
Install Courier (outline)? Yes No
Install Helvetica (outline)? Yes No
Install Times Roman (outline)? Yes No

Table 4 (Page 3 of 7). Advanced Installation Worksheet

Install Optional System Utilities? Yes No

Install Back Up Hard Disk? Yes No

Install Change File Attributes? Yes No

Install Display Directory Tree? Yes No

Install Manage Partitions? Yes No

Install Label Diskettes? Yes No

Install Link Object Modules? Yes No

Install Picture Viewer? Yes No

Install PMREXX? Yes No

Install Recover Files? Yes No

Install Restore Backed-Up Files? Yes No

Install Sort Filter? Yes No

Install Installation Utilities? Yes No

Install Create Utility Diskettes ? Yes No

Install Serviceability and Diagnostic Aids? Yes No

Install Optional System Components? Yes No

Install OpenDoc? Yes No

Installation drive for OpenDoc:

Install VoiceType for OS/2 Warp? Yes No

Installation drive for VoiceType for OS/2 Warp:

Install Security? Yes No

Installation drive for Security:

Install Dedicated DOS/Windows Session? Yes No

Install High Performance File System? Yes No

Table 4 (Page 4 of 7). Advanced Installation Worksheet

Install BonusPak? Yes No

Install CompuServe Information Manager for OS/2? Yes No

Installation drive for CompuServe Information Manager for OS/2:

Install HyperACCESS Lite for OS/2? Yes No

Installation drive for HyperACCESS Lite for OS/2:

Install IBM Works? Yes No

Installation drive for IBM Works:

Install FaxWorks for OS/2? Yes No

Installation drive for FaxWorks for OS/2:

Install Video IN for OS/2? Yes No

Installation drive for Video IN for OS/2:

Install AskPSP? Yes No

Installation drive for AskPSP:

Install Remote Support for OS/2? Yes No

Installation drive for Remote Support for OS/2:

Install HP JetAdmin? Yes No

Installation drive for HP JetAdmin:

Install HP JetAdmin Port Driver? Yes No

Installation drive for HP JetAdmin Port Driver:

Install MarkVision for OS/2? Yes No

Installation drive for MarkVision for OS/2:

Install MarkNet Port Driver? Yes No

Installation drive for MarkNet Port Driver:

Install Java Development? Yes No

Installation drive for Java Development (must be HPFS):

Install Toolkit? Yes No

Install Samples? Yes No

Table 4 (Page 5 of 7). Advanced Installation Worksheet

Install Tools and Games? Yes No

Install Enhanced Editor? Yes No

Install Search and Scan Tool? Yes No

Install OpenGL 1.0 3D Graphics Library? Yes No

Install Klondike Solitaire? Yes No

Install Pulse? Yes No

Install Chess? Yes No

Install Mahjongg Solitaire? Yes No

Install Optional Bitmaps? Yes No

Install OS/2 DOS Support? Yes No

Install DOS Protect Mode Interface? Yes No

Install Virtual Expanded Memory Management? Yes No

Install Virtual Extended Memory Support? Yes No

Install WIN-OS/2 Support? Yes No

Installation drive for WIN-OS/2 Support:

Install README Files? Yes No

Install Accessories? Yes No

Install Screen Savers? Yes No

Install Sound? Yes No

Select one: Automatic Configuration Advanced Configuration

Install Multimedia Software Support? Yes No

Installation drive for Multimedia Software Support:

Install Base Multimedia Support? Yes No

Install Multimedia OpenDoc Support? Yes No

Install Software Motion Video? Yes No

Network Adapter

Network adapter card:

You can use the displayed default in most cases. Select **No network adapter** if you do not have a network adapter card.

Table 4 (Page 6 of 7). Advanced Installation Worksheet

In the following sections of the worksheet, you need to supply parameters for only the services you want to install.

File and Print Client

Installation drive:

Workstation Name:

Workstation Description:

Domain Name:

Install LAN Server Administration? Yes No

Delete user ID database (NET.ACC)? Yes No

Install sharing? Yes No

User ID:

Password:

NetWare Client

Installation drive:

Connect to what type of Novell server? (Circle one)

Version 3.x, or 4.x in Bindery mode

Version 4.x – Directory Services

Name context:

NetWare preferred server:

TCP/IP Services

Installation drive:

DHCP Server available on the LAN? Yes No

DDNS Server available on the LAN? Yes No

IP address:

Subnet mask:

Router:

Host name:

TCP/IP domain name:

Name server:

Table 4 (Page 7 of 7). Advanced Installation Worksheet

Remote Access Client

Installation drive:

Telephone number of connection server:

Modem type:

Communication port: COM1 COM2

Type of LAN: Ethernet Other

Mobile Office Services

Installation drive:

System Management Client

Installation drive:

System name:

Protocol:

- NetBIOS
  - Network address:
  - Unique dialup name:
- TCP/IP
- IPX
- Serial NetFinity

System keywords:

Appendix C. IBM BonusPak

The IBM BonusPak for OS/2 Warp 4 includes a remarkable collection of applications that can increase your productivity.

The BonusPak includes:

- CompuServe Information Manager for OS/2
- HyperACCESS Lite for OS/2
- IBM Works
- FaxWorks for OS/2
- Video IN for OS/2
- AskPSP
- Remote Support for OS/2
- HP JetAdmin
- HP JetAdmin Port Driver
- MarkVision for OS/2
- MarkNet Port Driver

To install the BonusPak, use the OS/2 Warp 4 Advanced Installation path. For more information, see Chapter 4, "Advanced Installation."

The following sections briefly describe each of the BonusPak applications.

CompuServe Information Manager for OS/2

CompuServe Information Manager for OS/2, also referred to as CIM for OS/2, is a software product developed by CompuServe to support OS/2 users.

No matter what your interests, you can find many uses for CIM for OS/2. For example, you can:

- Log on to a vast worldwide news service
- Check the local, national, and international weather forecasts
- Make travel arrangements
- Send electronic mail worldwide
- Follow your favorite newspaper columnist

HyperACCESS Lite for OS/2

HyperACCESS Lite for OS/2 is an entry version of the Hilgraeve top-selling HyperACCESS for OS/2. With HyperACCESS Lite for OS/2, you can explore the exciting world of modem communications with the power of OS/2 and the ease of the graphical user interface. With HyperACCESS Lite for OS/2, you can:

- Forget about setting parity, data bits and stop bits—CommSense sets them all for you.
- Call bulletin board systems, Internet, CompuServe, or remote systems of all kinds.
- Transfer files fast with your choice of highly efficient, 32-bit file transfer protocols—Smodem, Ymodem, Xmodem, or Kermit.
- Emulate ANSI VT 52 or VT100 terminals for communications with host computers.

IBM Works

The enhanced IBM Works is a suite of 32-bit office automation applications and productivity tools. This collection of applications and tools benefits users in corporate environments, small businesses, and home-based businesses.

The suite of applications includes:

- Word processor
- Spreadsheet
- Database
- Charting program
- Report writer
- Calendar
- Monthly planner
- Appointment book
- Phone/Address book
- Event monitor
- Planner
- Contact list
- To Do list
- Notepad

Using drag and drop, you can copy, paste, and paste link information between applications. For example, you can drag and drop:

- A document on the printer object to print a document, or on the fax object to fax a document

- An entire document or just highlighted text or objects on another document
- A document to the shredder to delete it
- One or more contacts from the Phone/Address Book or Contact List onto documents created with the word processor, spreadsheet, chart, database, or report writer
- A contact list onto a document to attach everyone in the list. The contacts are then merged with the document creating a merged set of documents
- Selected text and graphics from charts and spreadsheets to the word processor, another chart, or another spreadsheet

FaxWorks for OS/2

FaxWorks for OS/2 provides you with a *paperless* solution for handling fax documents on OS/2. With FaxWorks for OS/2, you can:

- Send and receive faxes of unlimited length
- Print faxes on any OS/2 printer
- Create and send faxes from your OS/2, DOS, and Windows applications running on OS/2
- Print and view using drag and drop
- Print in normal and fine fax resolution, portrait and landscape orientation

FaxWorks for OS/2 features include:

- Voice answering machine feature for supported voicefax hardware
- Enhanced cover sheets
- Emulation of the IBM Proprinter X24 printer for print capture from your DOS and Windows applications
- Support for fax modems that follow the Class 1, Class 2, Class 2.0 and SendFax standards

Video IN for OS/2

You can be your own producer with Video IN for OS/2, which gives you the ability to record digital video segments and edit existing videos. You can use digital video to create:

- Business presentations
- Electronic newsletters
- Training material
- Information for multimedia CD-ROMs

Note: Before you can install Video IN for OS/2, you need to install the multimedia programs included with OS/2 Warp 4.

AskPSP

Use AskPSP to obtain answers to problems and questions concerning OS/2. AskPSP can be your own personal help desk that can assist you in finding solutions.

AskPSP lets you run a search tool called CasePoint to open a database of common problems and questions relating to OS/2 Warp 4. The technical database is updated monthly and is available by subscribing to the OS/2 Technical Connection CD-ROM.

Remote Support for OS/2

When you use Remote Support for OS/2, you can authorize IBM technical support representatives to remotely take control of your OS/2 system, thereby enabling them to help resolve OS/2 software problems.

Once the IBM support representatives have your authorization, they can:

- Run programs on your machine.
- Edit files on your machine. For example, to solve a problem they can modify your system configuration files.
- See what actions create the problem.

- Upload and download files or clipboard information.
- Upload updated code, such as device drivers and applications.
- Restart your system.

HP JetAdmin

HP JetAdmin delivers an advanced network printing solution that enables you to easily install, configure, query, and troubleshoot network-attached printers from your OS/2 Desktop.

HP JetAdmin makes administrators more productive by giving them the tools to remotely manage network-attached printers from their OS/2 Desktop. Users no longer have to go to the printer or print server to determine status or to isolate problems. Users increase their productivity by receiving printer and job status on the OS/2 Desktop.

Some of the highlights of HP JetAdmin include the following:

- Users can see the true status of their jobs. All users receive true end-of-job notification.
- An administrator can centralize setup and control of network printers on the OS/2 Warp 4 print server. This enables an administrator to reduce network traffic and to control access to network printers using OS/2 Warp 4 security services.
- A user can see the status of the printer; for example, if it is out of paper or if the cover of the printer is open.

HP JetAdmin Port Driver

Use HP JetAdmin Port Driver to manage and print to a Hewlett-Packard network-attached printer directly from an OS/2 Warp Desktop. HP JetAdmin Port Driver is usually installed by the administrator who controls printing on the LAN. After installing, the administrator must define Printer objects on their OS/2 Warp Desktops. The printer object accesses the network-attached printer through local print queues. The administrator then defines access control profiles for the local print queues, thereby giving users access to the printers.

MarkVision for OS/2

MarkVision for OS/2 delivers an advanced network printing solution that enables you to easily install, configure, query, and troubleshoot network-attached printers from the OS/2 Warp 4 Desktop.

MarkVision for OS/2 makes administrators more productive by giving them the tools to remotely manage network-attached printers from the OS/2 Warp 4 Desktop. They no longer have to go to the printer or print server to determine status or to isolate problems. Users increase their productivity by receiving printer and job status on the OS/2 Desktop.

Some of the highlights of MarkVision for OS/2 include the following:

- Users can see the true status of their jobs. All users receive true end-of-job notification.
- An administrator can centralize setup and control of network printers on the OS/2 Warp 4 print server. This enables an administrator to reduce network traffic and to control access to network printers using OS/2 Warp 4 security services.
- A user can display the status of the printer; for example, if it is out of paper or if the cover of the printer is open.
- A user can collect, store, and view a summary of job statistics information including:
  - Number of pages per job
  - Time and date the job completed
  - User and workstation that submitted the job
  - Time-and-date stamped error condition recording
  - Number of duplexed pages as well as simplexed pages

MarkNet Port Driver

Use MarkNet Port Driver to manage and print to a Lexmark network-attached printer directly from an OS/2 Warp Desktop. MarkNet Port Driver is usually installed by the administrator who controls printing on the LAN. After installing, the Administrator must define Printer objects on their OS/2 Warp Desktops. The printer object accesses the network-attached printer through local print queues. The administrator then defines access control profiles for the local print queues, thereby giving users access to the printers.

Appendix D. Conventions

The following conventions are used in this book.

Highlighting

Different fonts are used to indicate various controls.

- **Boldface type** indicates the name of an item you need to select, field names, IBMLAN.INI parameters, and folder names. It also indicates controls (when used in procedures), for example:
  - Menu bar choices
  - Radio buttons
  - Push buttons
  - List boxes
  - Check boxes
  - Entry fields
  - Read-only entry fields
- *Italic type* indicates new terms, book and diskette titles, or variable information that must be replaced by an actual value. It also indicates words of emphasis and technical terms when introduced.
- `Monospace type` indicates an example (such as how to enter a command), text that is displayed on the screen, text you type, or special characters.
- UPPERCASE TYPE indicates a file and directory name, command name, or acronym.

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Program Specifications for OS/2 Warp 4

User Interface

- VoiceType for OS/2 Warp
  - VoiceType Navigation supports using voice commands to navigate the Desktop, manage windows, files, and folders, and work with programs.
  - VoiceType Dictation supports writing documents, including letters, without using a keyboard. The system converts dictated words into text.
- Assistance Center

  The Assistance Center contains objects to help users learn about the system and resolve problems.
- WarpGuide

  WarpGuide is a task mentor that helps users complete a set of computer tasks. The WarpGuide folder contains the guidance objects for specific tasks. Some guidance objects display cue cards to assist with each step of the task. Other guidance objects complete the task automatically.
- Toolbar

  The Toolbar is an object on the Desktop that provides access to frequently-used objects and commands. The Toolbar can be used to lock up or shut down the system.
- OS/2 WarpCenter

  The OS/2 WarpCenter is an object on the Desktop that can be used to lock up or shut down the system, arrange programs, monitor system activity and disk space for all partitions, and access folders and objects through cascading context menus.
- Multimedia

  OS/2 Warp 4 supports a variety of audio and video hardware and capabilities.
- TrueType fonts

  The OS/2 Warp 4 Presentation Manager provides support for TrueType.

Applications and Programming

- Java support

  OS/2 Warp 4 includes support for IBM's OS/2 implementation of SUN Microsystems, Inc.'s Java technology (hereinafter Java for OS/2). OS/2 Warp 4

provides a Java for OS/2 runtime environment that supports running Java applets from the Desktop.

- OS/2 DOS support

  OS/2 Warp 4 provides support for DOS sessions.

- WIN-OS/2 support

  OS/2 Warp 4 provides WIN-OS/2 support for running a variety of Windows 3.x programs, including Win32S 1.25a applications.

- OpenGL 1.0 3D graphics library

  OpenGL 1.0 3D graphics library is a three-dimensional graphics application programming interface (API) for running applications for various technical and commercial fields.

- REXX and Object REXX

  OS/2 Warp 4 provides two versions of REXX: classic REXX and Object REXX. Object REXX is the scripting language for Workplace OS/2 and OpenDoc for OS/2 and supports scripting and authoring of SOM objects.

  At installation, classic REXX is the default. After installation, users can toggle between classic REXX and Object REXX.

- Security enablement

  Security Enabling Services provides a set of application programming interfaces (APIs) for running security applications.

- Developer API Extensions for OS/2 Warp 4

  OS/2 Warp 4 includes support for IBM's Developer API Extensions for OS/2 Warp 4, known as Open32.

Connectivity

- Accessing and using the Internet

  OS/2 Warp 4 provides various applications in TCP/IP Services for accessing the Internet over a LAN or by dialing in using a modem with serial line Internet protocol (SLIP) or point-to-point protocol (PPP).

  WebExplorer is a web browser for accessing Internet information.

  Icons for World Wide Web sites frequently used can be placed on the Desktop or into folders, for launching to an Internet home page.

  HTML (HyperText Markup Language) objects and FTP (File Transfer Protocol) objects can be created.

- Network adapters and protocols

OS/2 Warp 4 provides support for a variety of LAN adapters, protocols, and programming interfaces through Network Adapters and Protocols Services, also known as IBM Multi-Protocol Transport System (MPTS).

- Accessing and sharing files and printers

  OS/2 Warp 4 provides File and Print Client, which supports using a local area network (LAN) to access and share files and printers with other workstations running one of the following: IBM Peer for OS/2, OS/2 Warp Server, Windows NT, or Windows 95.

- Accessing resources on Novell NetWare servers

  OS/2 Warp 4 includes Novell NetWare Client for OS/2 (also known as NetWare Client for OS/2), which supports accessing files and printers on Novell NetWare servers.

- Dialing in to a LAN

  OS/2 Warp 4 provides Remote Access Client (also known as IBM LAN Distance Remote) to support dialing in to a variety of LAN Distance Servers or other Remote Access Clients. Once connected to the local area network (LAN), the Remote Access Client workstation can use File and Print Client or other LAN applications.

- Mobile Office Services

  Mobile Office Services provided with OS/2 Warp 4 caches files used by a client while connected to a supported server for continued client use of these files when disconnected from the server. Supported servers include LAN Server 4.0, OS/2 Warp Server, IBM Peer for OS/2, NetWare 4.1 (and above) with NDS, and Windows NT.

- Password Coordination

  Password Coordination, also known as Network SignON Coordinator/2 (NSC/2), supports using a single menu to log on, log off, or change passwords simultaneously for multiple accounts.

- Personal Communications 3270/5250 emulation

  OS/2 Warp 4 provides Personal Communications 3270/5250 emulation for communicating with a variety of mainframe systems.

Hardware Support

- Printing capabilities

  OS/2 Warp 4 provides printing capabilities for a variety of print tasks. Printers can be network-attached or connected to a parallel, serial, or infrared port.

Progress of print jobs can be displayed, and print jobs can be moved and copied between printer objects to change the order of jobs.

OS/2 Warp 4 selects the OS/2 print driver to use when creating a new printer object for certain parallel attached printers, provided the driver is supported and available.

- New device support

  OS/2 Warp 4 includes device support for several SCSI devices, RAID drivers, optical devices, and leading audio devices.

- Plug and Play

  Plug and Play support in OS/2 Warp 4 detects and installs supported drivers for legacy ISA devices and Plug and Play devices. A Hardware Manager lets you view system information about physical devices and device drivers and the system resources that are in use.

- Display Data Channel Adapter/Monitor Specification

  OS/2 Warp 4 supports DDC2-enabled monitors when used with DDC2-compliant systems, such as the IBM ValuePoint 350.

- IDE support

  OS/2 Warp 4 enables use of the Direct Memory Access (DMA) capability for hardware systems with this capability.

- PCMCIA support

  OS/2 Warp 4 provides software support for various Personal Computer Memory Card International Association (PCMCIA) hardware (also known as PC Cards).

- Advanced Power Management Specification

  OS/2 Warp 4 supports the APM 1.1 specification for enabled drivers, including displays.

- Docking support

  OS/2 Warp 4 provides docking support for IBM ThinkPad models with Dock II support, allowing devices resident in the docking station to be configured and reconfigured when the ThinkPad is docked or undocked. Only docking-station resident devices are supported.

- Ultra Bay device swapping

  Ultra Bay device swapping supports booting specific IBM ThinkPad models with a diskette drive, replacing the diskette drive with a CD-ROM while the system is suspended, and then resuming without rebooting. Ultra Bay device swapping is supported after completing OS/2 Warp 4 installation.

System Management

- System Management Client

  System Management Client (also known as TME 10 NetFinity Services) provides general system management functions, including a variety of resource and performance monitoring and tracking.

  TME 10 NetFinity Services can connect to a TME 10 NetFinity Server or Manager using the following protocols: NetBIOS, TCP/IP, IPX, and Serial.

- System Management Agents

  OS/2 Warp 4 provides a common agent framework to support the management of DMTP Desktop Management Interface 1.1 compliant components and IETF SNMP Distributed Protocol Interface (DPI) 2.0 compliant subagents.

- Additional Systems Management Support

  OS/2 Warp 4 provides the means to collect data about system and application errors. Data is collected when system or application code calls an API (First Failure Support Technology/2 (FFSTProbe)) indicating an error has occurred. The error data in saved in the error log and can be retrieved for analysis.

  Systems Management support also provides the capability to collect and save a variety of trace and memory dump information related to the error. Trace information is a record of the events that were running on the system from the time that trace was turned on until the time the failure occurred. Dump information contains a snapshot of the data that was in system memory at the time of the failure.

Specified Operating Environment for OS/2 Warp 4

Machine Requirements

OS/2 Warp 4 requires the following minimum hardware:

- An Intel 486 processor with a speed of at least 33 MHz.

  VoiceType for OS/2 Warp (navigation only) requires an Intel Pentium processor with a speed of at least 75 MHz.

  VoiceType of OS/2 Warp (navigation and dictation) requires an Intel Pentium processor with a speed of at least 100 MHz.

- 12MB of random access memory (RAM); 16MB of RAM is recommended.

  To use VoiceType for OS/2 Warp (navigation), an additional 4MB of RAM is recommended.

  For VoiceType for OS/2 Warp (navigation and dictation), an additional 8MB—12MB of RAM is recommended.

- A 1.44MB, 3.5-inch diskette drive, configured as drive A.
- An OS/2-compatible CD-ROM drive.
- A 640 x 480 or higher resolution display with 16 colors minimum. IBM recommends a display with 256 or more colors for the full use of color in OS/2 Warp 4.
- An IBM-compatible mouse.
- A 14.4Kbps or higher modem or network connection (LAN access) for Internet access or other network access.
- A sound card.

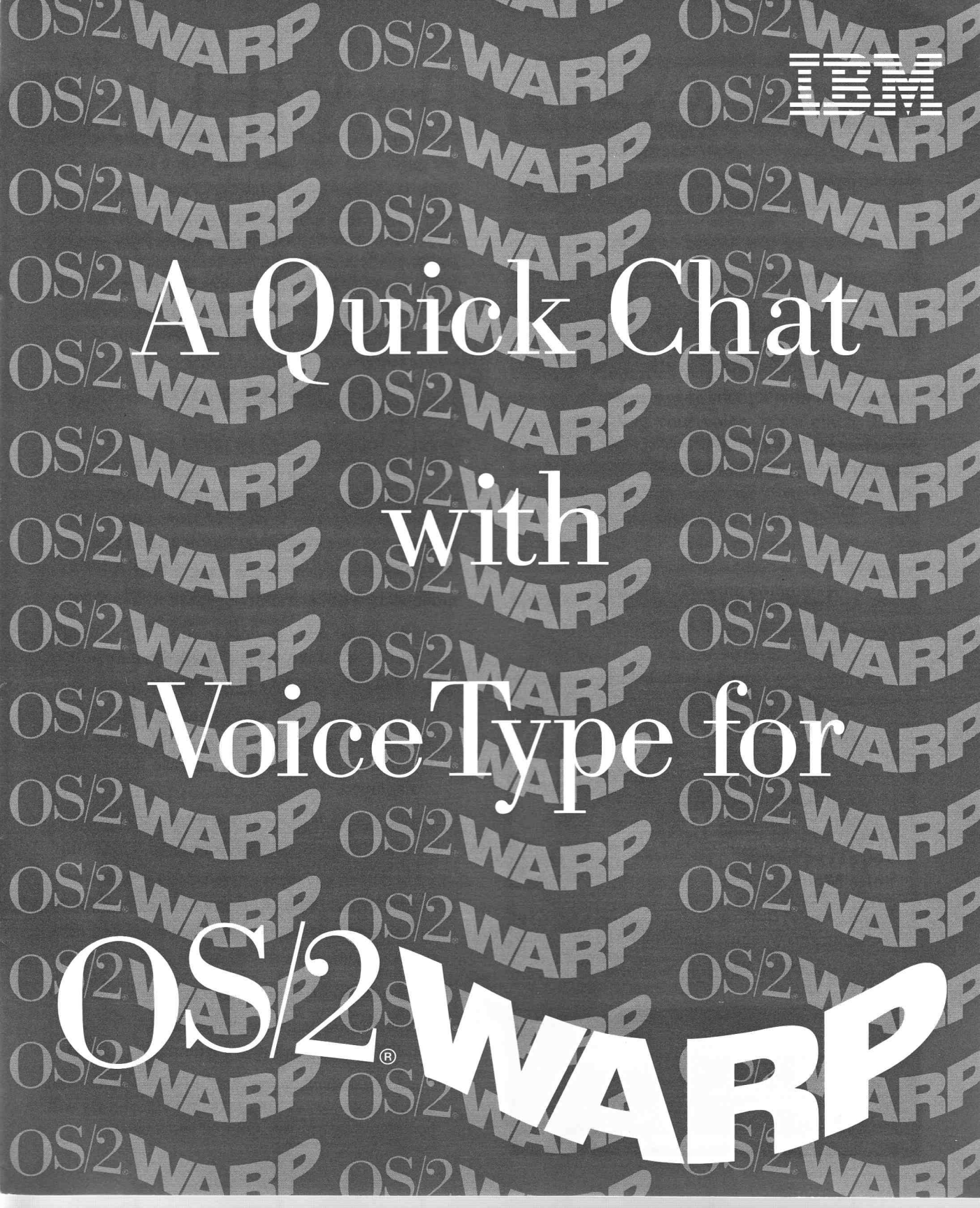
  For multimedia sound, a sound card is required.

  For VoiceType for OS/2 Warp, a supported sound card with 16 bit, 11 KHz sampling is required.

- A high quality, close talking, directional microphone for VoiceType for OS/2 Warp. For optimal performance, the microphone requires noise cancellation features.
- For File and Print Client, a LAN adapter card (Taken-Ring or Ethernet).

Disk Space Requirements

100—300MB of free disk space is required, depending on choice of Easy Installation or Advanced Installation and selections made during installation.


IBM
A Quick Chat
with
VoiceType for
OS/2 WARP

Welcome to the World of

Imagine the possibilities—a world where your voice directs the action! That's the premise behind VoiceType for OS/2 Warp, a state-of-the-art speech navigation and dictation system that puts you in charge. Many things you can do with a mouse or a keyboard can now be accomplished with spoken words—your words! Why point-and-click when you can speak?

Why type when you can talk? Speak to your computer through Voice Manager, a program that converts your speech into actions, activating push buttons and selecting menu items at your command. A single word, a simple phrase, and you're on your way to a new and better kind of productivity.

Are you talking to your computer yet? How about getting started now! Ready? Let's Go...

Task 1: Launching a Program Object

Task Overview

Starting programs is easy. Let's try a simple navigation task in which you open Voice Manager and tell it to start a program for you.

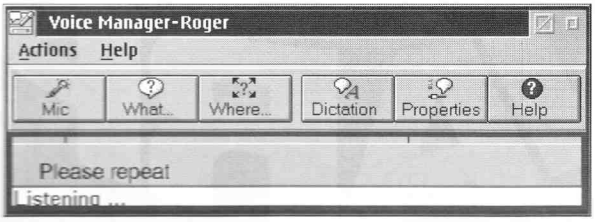
Here's How

1. Double-click on each of the following:

   Programs icon on the Desktop
   VoiceType folder
   Voice Manager icon

   Note: To avoid Desktop clutter, close the **VoiceType** and **Programs** windows after Voice Manager starts.

   This is the Voice Manager window.



   Three special areas provide helpful information:

   - The *audio level indicator* shows how loudly you're speaking. Try to keep the indicator in either the yellow or green range.
   - The *command history* shows the last recognized command. If Voice Manager doesn't understand what you said, "Please rephrase" is displayed.
   - The *status line* provides useful information, such as whether the microphone is "listening" or "asleep."

   When Voice Manager starts, the microphone is off. To get it to recognize your voice, you need to turn it on.

2. Click on the Microphone button.

   The button appearance changes, and the status line says "Listening..."

   Note: To make things easier for you, whenever you are instructed to say something, the text you say will be in uppercase letters, without punctuation.

VoiceType for OS/2 Warp

That's all there is to starting Voice Manager. Now let's navigate through the system and start a program in the Games folder.

1. Say each of the following commands:

   DESKTOP
   OPEN PROGRAMS
   OPEN GAMES
   OPEN KLONDIKE SOLITAIRE

   Problems Recognizing?
   - First, go to Check Install to verify that your hardware is working properly.
   - You can train the system so that it gets much better at understanding your voice.

   Refer to the *VoiceType Guide* for complete details.

2. Say:

   GO TO SLEEP

   This puts the microphone in an inactive state so that your voice won't be misinterpreted as a command. Now you can enjoy a brief game break.

3. When you're ready to return to learn more about VoiceType, say:

   WAKE UP PLEASE

   This tells Voice Manager to begin obeying your spoken commands again.

4. To close each open window, say:

   CLOSE

What You Did

What you did was use your voice to start a program. If you had been using a mouse or a keyboard, you would have opened folders and started programs in the usual manner. With Voice Manager, you kept your hands free while getting to the program you wanted.

By the Way

Speaking Tips

If the program doesn't start, try again and speak more clearly. Voice Manager understands most people, but you can always teach it to recognize your voice better. This is called enrolling.

"Wake Up, Please" and "Go to Sleep"

It's a good idea to get in the habit of saying "Wake up, Please" before a task and "Go to Sleep" after you finish a task. This keeps the speech recognition system from getting your commands confused with other conversations you might be having.

Task 2: Simple Navigation

Task Overview

Now that you know how to start programs, let's try something a little more productive. What could be more productive than customizing the system to suit your taste? In this example, you'll use the Desktop Properties page to change your background image. It's easy enough with a mouse or a keyboard. Using your voice, it's a cinch. Don't worry, though. If you don't like the new image, you'll easily be able to restore this one. By the way, there's also an extra bonus we'll show you as you work through the task.

Here's How

1. Say each of the following commands:

   WAKE UP PLEASE
   DESKTOP
   DESELECT ALL
   PROPERTIES NOTEBOOK

   Bonus: Notice the yellow text bubble that is displayed along with the Properties notebook. This is one of OS/2 Warp's most exciting features — WarpGuide — a proactive help system that adjusts to your needs, providing guidance for a variety of tasks. If you haven't registered, take a moment to do so now.

   Now, let's look at some great new background images that are available with OS/2 Warp.

2. Say each of the following commands:

   BACKGROUND
   TILED
   IMAGE
   DROP DOWN

   This displays a list of bitmap images that are available.

3. Say either of the following to scroll the list:

   UP **DOWN**

   Watch the background image change on your Desktop each time you say a command.

4. You can keep the new image or restore the original one.

   - To keep the new image, say:

     CLOSE

     The Desktop now has the new background you selected.

   - To restore the default image, say each of the following commands:

     UNDO
     CLOSE

5. Say:

   GO TO SLEEP

What You Did

What you did was use your voice to focus on the Desktop, open the Properties notebook, move through the pages to the Background page, and select a file. With Voice Manager and WarpGuide, it couldn't be easier.

By the Way

Why not use your voice to select menus and enter commands? You can say the name of just about anything on the screen to select it. Menu names, menu choices, push buttons—all can be activated by your voice. Any time you aren't sure about how to do something, just say, "What can I say?" or "Where can I go?" A list of available voice commands appears. Try it now:

1. Say:
   WAKE UP PLEASE
   WHAT CAN I SAY
2. Repeat this procedure for where you can go. Say:
   WHERE CAN I GO
3. When you are finished exploring, say:
   GO TO SLEEP

Hint

Remember the first time you sat down at a keyboard to type? You couldn't find the letters! You had to learn something new. Learning how to navigate through the system with your voice is like that. So be patient and take your time as you learn what you can say and where you can go.

Task 3: Integrated Task

Task Overview

Opening programs and customizing your system are quick and easy tasks that Voice Manager can help you with. It also can help you with more complex tasks, work you're used to doing every day with a mouse and a keyboard. Using your voice to accomplish your day-to-day tasks is easy, fun, and productive. It's especially effective for word processing tasks. In this example, let's try editing a memo using the OS/2 System Editor.

Here's How

1. Say each of the following:

   WAKE UP PLEASE
   JUMP TO OS/2 SYSTEM EDITOR
   GO TO SLEEP

2. Type the following sentence:

   Using my voice to accomplish tasks is great.

3. Now let's perform some basic word processing tasks. Say each of the following commands:

   WAKE UP PLEASE

HOME	The cursor moves to the beginning of the line.
NEXT WORD	The cursor moves to the next word in the line.
SELECT WORD	The selected word is highlighted.
CUT	The word is deleted from the file and copied to the clipboard.
SELECT LINE	The entire line of text is highlighted.

   Now you can set the color and change the font. Try it.

4. Say each of the following commands:

   SET COLORS
   BLUE
   SET

5. Say each of the following commands:

   SET FONT
   STYLE
   BOLD
   OK

   The text is now blue and bold.

6. Say:

   END The cursor moves to the end of the line.

7. Say:

   GO TO SLEEP

Pretty simple, isn't it? Easy and productive to navigate and edit text using your voice. You don't need the keyboard or mouse to highlight text, select fonts and colors, and move around the file. Your hands are free to focus on the task at hand—typing your text. But why type when you can dictate? If you need to add more text to a file, just speak your mind. Try it.

1. Say each of the following commands:

   WAKE UP PLEASE
   JUMP TO OS/2 SYSTEM EDITOR
   BEGIN DICTATION

   The Quick Dictation window appears, and a message says "Dictating..." Everything you say from now on is recorded as text.

> Recording Tips:
>
> - Speak slowly and clearly.
> - Pause between each word.
> - Be patient. You'll get the hang of it.

2. Say the following sentence, remembering to pause between each word:

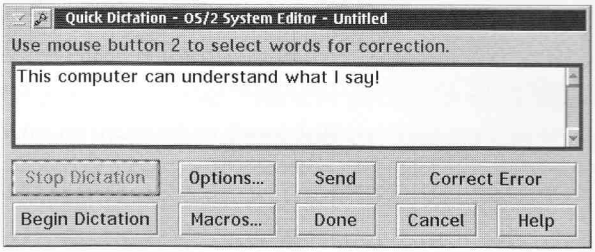
   THIS COMPUTER CAN UNDERSTAND WHAT I SAY

   Watch the Command History to ensure that your words are being recognized.

3. Say:

   EXCLAMATION POINT

   This adds the appropriate punctuation mark to the end of your sentence.



4. Say:

   STOP DICTATION

   Note: This is the time to correct any unrecognized words. Click mouse button 2 on any unrecognized words to see a list of choices you can select. Then click on the number of the choice you want.

5. Say:

   DONE

   The window closes and places your sentence in the file at the cursor location. Now you can edit the file just as you did before.

6. To exit the editor, say each of the following commands:

   CLOSE
   DISCARD
   GO TO SLEEP

> What You Did
>
> What you did was use your voice to open the OS/2 System Editor, located in the Productivity folder, which is located in the OS/2 Warp System folder.

> By the Way
>
> This is just the tip of the iceberg. There's so much more you can do—like using macros to perform a series of separate tasks. Why not read about this in the "Off You Go..." section!

Off You Go...

Now you've gotten a taste of what Voice Manager can do for you. You know how to use your voice to navigate, and you know how to use the Status bar to see what's going on. You can start programs, edit text in a word processor, and you can use the Dictation Window. And, you can say "What can I say?" to see a list of recognized words.

Say What You See

What Can I Say?

With VoiceType, you can say almost any command that you see on the screen—menu choices, push button names, items in lists, and so forth. There will be times, however, when VoiceType doesn't recognize your spoken commands.

When this happens, simply display the "What Can I Say?" window. Say:

WHAT CAN I SAY

This window lists all of the available VoiceType commands.

- If the command is listed but crossed out,

  ~~COMMAND~~

  you need to add the pronunciation.
- If a word is not displayed, VoiceType won't recognize it.

Where Can I Go?

With VoiceType, you can start any program that has a "Jump to..." associated with it. If the program is already running, VoiceType displays it. If it's not running, Voice Manager starts it.

For a complete list of "Jump to..." commands, say:

WHERE CAN I GO

Surfing the Net

Connected to the Internet?

Try these Jump To's:

JUMP TO YAHOO
JUMP TO CNN
JUMP TO IBM
JUMP TO LOTUS

In addition to these Jump To's, you can create Jump To's of your own and train VoiceType to recognize them. Let's try it now for the Alta Vista web site.

Here's How

1. Double-click on each of the following:

   Connections folder on the Desktop
   Web Site folder

2. Open the **Properties** page of the Alta Vista URL object.

3. Click on the **Speech** tab, then click on the **Create** push button.

4. Type the following in the **Name** field:

   Alta Vista

5. Type a description of the URL in the **Description** field, then click on **OK**.

6. Click on **Train word...**, then click on **Record**.

7. Say:

   ALTA VISTA

8. Click on **Stop**, then click on **Add**.

You can repeat this procedure for any object on the Desktop that you want to access by voice. For more information on creating Jump To's and training words, refer to the *VoiceType Guide*.

VoiceType Guide

For more information about Voice Manager and its related programs, read the *VoiceType Guide*. This online book is located in the Information folder, which is located in the Assistance Center.

Of course, you don't need to point-and-click your way through all of those folders. Just say:

WAKE UP PLEASE
JUMP TO INFORMATION
OPEN VOICETYPE GUIDE

The *VoiceType Guide* is displayed.

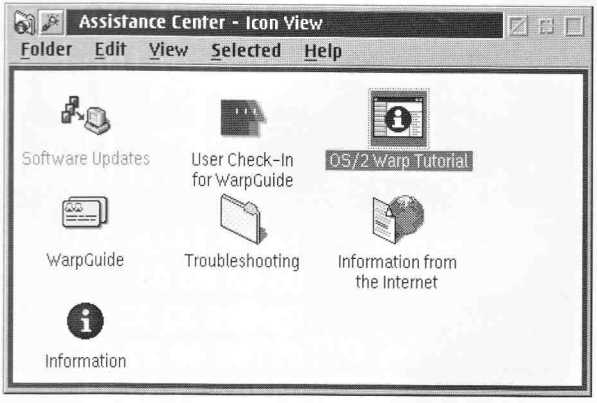
Speech Tutorial

This might be a good time to pause and take the VoiceType Tutorial. Here's how:

1. Say:

   WAKE UP PLEASE
   DESKTOP
   OPEN ASSISTANCE CENTER

   This opens the Assistance Center, which contains a wealth of information for using OS/2 Warp.



2. Say:

   OPEN OS/2 WARP TUTORIAL

3. Follow the directions in the Tutorial, and enjoy your new-found productivity.

Talk your way to even greater productivity!

We speak your language!

Enhance your power of speech by purchasing IBM VoiceType Professional Series Vocabularies—with Specialist Dictionaries for professional uses:

- Legal
- Medical
- Journalism
- And more!

In addition—
Deferred and delegated corrections!

- Come back later to edit your spoken text.
- Better yet, have someone do it for you! Even over the LAN!

Call for details:

North America	1-800-TALK-2-ME	Spain	900 100 400
France	05 03 03 03	Australia	(61)-18 226 154
Belgium	02 225 33 33	Hong Kong	852 2825 7878
UK	01705 49 22 49	Republic of Singapore	65 3201 1202
Germany	01803 31 32 33	Taiwan	886 2 776 7965
Switzerland	01 643 43 43	Mexico	52 5627 1972
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