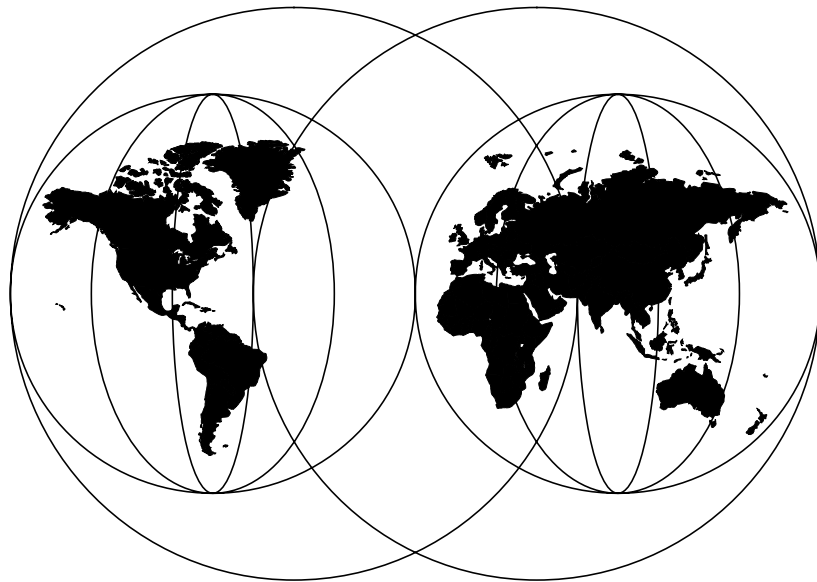**Installing OS/2 Warp Server on OS/2 Warp 4**

July 1997

IBM

International Technical Support Organization
Austin Center

International Technical Support Organization

Installing OS/2 Warp Server on OS/2 Warp 4

July 1997

IBM

┌─ **Take Note!** ───┐

Before using this information and the product it supports, be sure to read the general information in
"Special Notices" on page 145.

└──┘

First Edition (July 1997)

This edition applies to OS/2 Warp 4 and OS/2 Warp Server.

Comments may be addressed to:
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Preface

This document will help you to install, tailor and configure OS/2 Warp Server with almost all its components on top of OS/2 Warp 4.

Part 1 gives an introduction and overview explaining why you would use or not to use OS/2 Warp Server on OS/2 Warp 4. It talks about the hardware and software requirements of this configuration, as well as the known problems and limitations.

Part 2 describes how to install OS/2 Warp 4 and OS/2 Warp Server with all supported components, using the integrated installation of OS/2 Warp Server. This is the fastest way to configure and install OS/2 Warp Server on top of OS/2 Warp 4 with all the supported components.

Part 3 explains how to install the different OS/2 Warp Server components separately, without using the integrated installation as documented in Part Two. This is useful when you need to add a single component to an existing server without the overhead of the integrated installation

Part 4 describes how to upgrade an existing server with all supported components. It tells you which files you need to back up before the update and how to restore these files again. It also tells you what types of updates are possible and supported.

The Team That Wrote This Document

This document was produced by a team of international specialists working at the International Technical Support Organization, Austin Center.

Juergen Friedrichs is an Advisory Software Engineer at the International Technical Support Organization, Austin Center. He writes extensively and teaches IBM classes worldwide on all areas of OS/2 Network Computing Solutions. Before joining the ITSO, Juergen worked for 4 years in Technical Marketing Support for OS/2, Warp Server and TCP/IP for OS/2 in Germany.

Christopher Intsiful is an OS/2 system engineer and Certified Warp Engineer at IBM Germany in Munich. He is involved in the problem management of a large OS/2 customer. His previous experience includes several projects in the OS/2 and LAN Server field, and working as a LAN administrator.

Stefan Kreis is a software specialist and Certified IBM LAN Server Engineer at IBM Germany in Mainz. He has six years of experience in LAN and the LAN Server field. He has worked at IBM for sixteen years. His areas of expertise includes desktop and server machines, DOS and OS/2, and defect and non-defect support.

Lucia Ronzoni is an Information Technology specialist at IBM Italy. She has five years of experience in networking and communication software. Her areas of expertise include OS/2 and OS/2 related products such as Communication Manager/2 and LAN Server.

Figure 1. The team that wrote this document.

From left to right: Christopher Intsiful, Juergen Friedrichs, Lucia Ronzoni and Stefan Kreis.

Thanks to the following people for their invaluable contributions to this project:

Uwe Zimmermann
International Technical Support Organization, Austin Center

David Kerr
IBM Austin

Robert McClain
IBM PSP LAN Systems - Testing

Franz-Stefan Hinner
IBM Germany

Juan Martinez Gutierrez
IBM Spain

Chapter 1. General Information

1.1 What This Configuration is For

IBM's strategic PC operating system for the last 10 years has been OS/2. The software to run a Local Area Network was called LAN Server. In 1995 these two products merged together, forming OS/2 Warp Server. Other IBM products, like the LAN Distance Connection Server or Personally Safe and Sound, have been added to the package. The benefit to the customer is that he/she gets a powerful product that is easy to install because it has an integrated configuration and installation process that he or she performs.

The creation of the Warp Server package split the development process for the operating system into two different threads:

- The server thread has the goal of creating the most powerful server combination possible. This has been achieved with the OS/2 Warp Server 4 SMP for symmetric multiprocessors that is available as a free upgrade from OS/2 Warp Server Version 4 Advanced. This version not only has the availability to run on multiprocessor machines, but it also provides SMP optimized code, such as the TCP/IP protocol stack.

- The client thread evolution had to optimize usability and become the first step to Network Computing. So when OS/2 Warp 4 came to the market, it was the first operating system with built-in Java support. It also had a much improved user interface.

However, OS/2 Warp 4 came to market after OS/2 Warp Server Version 4. Although both packages have the version number 4, OS/2 Warp Server is still based on the OS/2 Warp Version 3 code. As a result, several customers raised the question of whether they could use the OS/2 Warp Server Version 4 components on OS/2 Warp 4. There have been two major obstacles:

1. This configuration had not been tested and was therefore not supported.

2. Using this configuration, you cannot get the benefits of the improved SMP server support.

Obstacle one is not valid anymore, because this configuration has now been tested (and therefore supported) and also documented with this document. Obstacle two was only a reason for those lucky customers with multiprocessor servers.

There are some advantages for the customer using OS/2 Warp Server components on OS/2 Warp 4, primarily when the server itself is also used as

a client (which is one of the promoted advantages of Warp Server compared to other server operating systems from that time). In this case, the user only has to deal with one type of user interface, which also means less educational expenses. Also, when fixing base operating system problems, you only have to deal with one base operating system level, not with different ones.

In an effort to provide customers with the possibility of running the same operating system on their clients and servers, IBM has tested the installation of Warp Server on Warp 4. This documentation gives you a basic description of all the components involved, as well as detailed installation instructions.

1.2 Benefits and Limitations

Two of the benefits of running Warp Server on Warp 4 were already mentioned above. They are:

- It has the same Workplace Shell as on the OS/2 Warp 4 clients.
- It has reduced testing requirements for clients and servers both running the same operating systems.

Furthermore, there are some technical enhancements in Warp 4 that can be utilized by the server. For example, there is a new Version of MPTS and an improved TCP/IP stack. The OS/2 Warp 4 TCP/IP stack gives some improvements that might be interesting for a server. One is the possibility of using aliases, which means you can put multiple IP addresses on a single adapter. This might be useful when one Internet Connection Server or FTP server has to take over another one for maintenance reasons. In addition, having TCP/IP clients that use the TCP protocol rather then UDP socksified is a real benefit. With a socksified telnet or ftp client, you can build a connection transparently through a firewall, provided that the firewall is running a socksd daemon and you have your socks configuration set up correctly on the client.

There are, however, some limitations. Warp Server SMP, an operating system that has been specially designed for servers. It is able to work with more than one processor simultaneously. This is not possible in the configuration described in this document because it uses the Warp 4 kernel, which is a single-processor kernel.

Other features are not supported because they have not been tested by the IBM lab. They are:

- Local Security
- PSF/2 (Advanced Print Services)

It is possible that these or other untested components may work in a Warp 4 / Warp Server environment. However, they are not supported by IBM and are therefore not documented here.

Note

Before you start planning and installing, see Appendix A, "Known Problems" on page 139.

1.3 Performance

The performance that you can expect when running OS/2 Warp Server Advanced on OS/2 Warp 4 is similar to the performance of running OS/2 Warp Server Advanced on a single processor machine.

Of course, the performance compared to OS/2 Warp Server SMP on a multiprocessor machine is much lower, because this operating system has been optimized to typical server use and multiprocessors.

If you need a very efficient server with the maximum performance possible (for example if you run a server application like Lotus Notes on it), we strongly recommend using OS/2 Warp Server SMP.

Chapter 2. Prerequisites

Before you begin the installation of OS/2 Warp Server Version 4
Entry/Advanced on OS/2 Warp 4, you should check the hardware and
software requirements. This chapter describes the minimum hardware
requirements for most components of OS/2 Warp 4 and OS/2 Warp Server 4.

2.1 Hardware Requirements

You will need an Intel-based IBM-compatible Personal Computer with the
components described in Table 1.

Table 1. Hardware Requirements

CPU	486 DX and higher
	Pentium 90 MHz and higher for the use of VoiceType
Graphic Adapter	VGA or higher
Floppy Drive	1.44 MB 3.5" or compatible as boot drive
CD ROM Drive	OS/2 supported CD-ROM drive (SCSI or ATAPI preferred)
Mouse	OS/2 compatible mouse
LAN Adapter	MPTS supported LAN adapter (with OS/2 NDIS driver)

The CD-ROM drive is not really needed if you install through the network.
However, in this documentation we assume that you are doing an installation
from CD-ROM.

In addition, you should plan to add enough memory to prevent the server from
swapping unnecessarily. You can get the memory requirements for each of
the components from Table 2 on page 26.

OS/2 Warp 4 provides functionality that performs well on a client workstation,
but is not really required on a server. Please select only those components of
Warp 4 that you think you will need on the server. For example, there is no
need to install VoiceType on a server system.

Table 2. Memory Requirements

OS/2 Warp 4 Base Operating System		4 MB
Multi Protocol Transport Services (MPTS)		2 MB
File- & Print Server		16-24 MB
TCP/IP Base Kit (with lpd, rexecd, rshd, ftpd, telnetd, and so furth, loaded)		8 MB
TCP/IP - Server related Services		5.5 MB
DHCP Server	0.8 MB	
DDNS Server	0.9 MB	
SNMP daemon	0.7 MB	
NFS Server (not included)	1 MB	
NFS Client (not included)	0.9 MB	
Internet Connection Server (not included)	1.2 MB	
Per each concurrent attached IP client		0.2 MB per client
TCP/IP - Client related Services		10.8 MB
DHCP Client	0.5 MB	
DDNS Client	0.4 MB	
Webexplorer	1.8 MB	
Newsreader	0.7 MB	
Gopher	0.5 MB	
Ultimedia Lite	3.7 MB	
PMX Server	2.2 MB	
Internet Dialer	0.5 MB	
PPP Driver	0.5 MB	
each other client (telnet, ftp and so forth.)		0.3 MB
Remote Access Server (LAN Distance)		3.3 MB

TME 10 Netfinity Server		16-48 MB
20-30 clients, without Software Distribution Server	16 MB	
100 clients, without Software Distribution Server	24 MB	
20-30 clients, with Software Distribution Server	28 MB	
100 clients, with Software Distribution Server	48 MB	
Backup and Restore PSnS		1.9 MB

The following table illustrates the hard disk requirements for installing OS/2 Warp Server and OS/2 Warp 4 components.

Table 3. Hard Disk Requirements

OS/2 Warp 4 Operating System, depending on the components that are installed		60-150 MB
Multi Protocol Transport Services (MPTS)		9.5 MB
File- and Print Server		13 MB
File- and Print Server - Memory Swapping		40 MB
TCP/IP		18.4-43 MB
TCP/IP Base	18.4 MB	
DHCP Server (from Warp Server TCP/IP)	1 MB	
DDNS Server (from Warp Server TCP/IP)	1.6 MB	
Internet Connection Server (not included)	2.6 MB	
NFS Kit (not included)	1.5 MB	
NFS TCP/IP CID Kit (not included)	0.3 MB	
X Window System Server Kit (not included)	12 MB	
X Window System Client Kit (not included)	2.4 MB	
X Window System Client Programmer's Kit (not included)	1.5 MB	
IBM Library Reader (not included)	1.4 MB	
Remote Access Server (LAN Distance)		12 MB

TME 10 Netfinity Server if Software Distribution Server is installed on the same PC		50.9 MB
System View Administrator Console	27.5 MB	
License Runtime Server	7 MB	
Licence Runtime Client	5 MB	
Software Distribution Server	4 MB	
Software Distribution Object Preparation	5 MB	
INF Versions of the manuals	1 MB	
Library Reader	1.4 MB	
TME 10 Netfinity Server without Software Distribution Server		25 MB
Backup and Restore (PSnS)		3.5 MB

2.2 Software requirements

To install Warp Server on OS/2 Warp 4, you need two products (and two licenses):

- OS/2 Warp 4
- OS/2 Warp Server Version 4 Entry or Advanced

From OS/2 Warp 4 we will use the base operating system and all components that come with it. From the networking part of OS/2 Warp 4, we will use only the Multi Protocol Transport Services (MPTS) and the TCP/IP component.

From the OS/2 Warp Server 4 package, we will use the following components:

- File and Print Server
- HPFS386
- Netfinity TME-10 Server
- Remote Access Server
- TCP/IP DHCP and DDNS Server
- PSnS

We will not use the OS/2 Warp 3 base operating system on which OS/2 Warp Server is normally based. We will also not use the PSF/2 component of Warp Server, because it is not supported on OS/2 Warp 4.

2.2.1 OS/2 Warp 4

For the normal installation from CD-ROM, you need the following media:

- 1 CD
    - OS/2 Warp 4 CD Operating System, BonusPak, and much more...
- 3 Diskettes
    - OS/2 Warp 4 Installation diskette
    - OS/2 Warp 4 Diskette 1
    - OS/2 Warp 4 Diskette 2

2.2.2 OS/2 Warp Server Version 4 Entry/Advanced

Depending on which server you want to install on top of OS/2 Warp 4, you need the installation CD from OS/2 Warp Server 4 Entry or Advanced. However, the boot diskettes and the Advanced Functions CD are not necessary.

- OS/2 Warp Server Version 4 CD 1 Entry Server/Advanced Server

2.2.3 Possible Installation Paths

There are two installation possibilities that are described in this document. After installing the OS/2 Warp 4 base operating system, you can either choose to use the integrated installation of the networking components that come with OS/2 Warp Server 4, or you use the installation procedure of each Warp Server component. Both ways are shown in Figure 2.
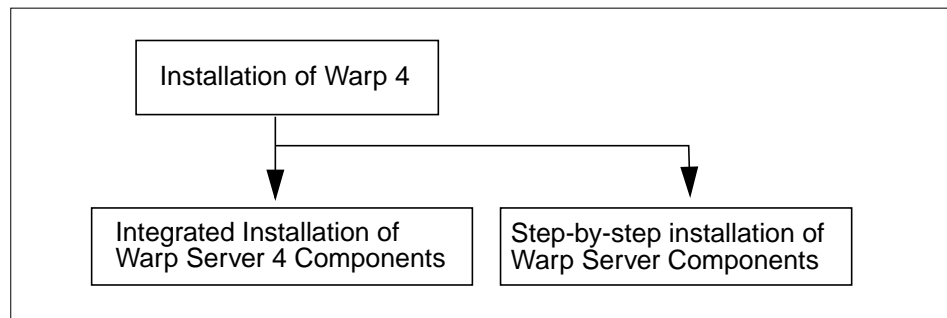
Figure 2. Installation Phases

2.3 Required FixPaks

This section gives an short overview about which FixPaks are necessarily required to install and configure this configuration.

2.3.1 Installation of OS/2 Warp Server on OS/2 Warp 4

For the installation of OS/2 Warp Server Version 4 on OS/2 Warp 4, no FixPak is required. The installation works fine with the original code.

2.3.2 Remote IPL (RIPL) of OS/2 Warp 4 Clients

Remote IPL of OS/2 Warp 4 clients is possible. To enhance OS/2 Warp Server to RIPL OS/2 Warp 4 clients, you need to install CSD 08265 for LAN Server. However, this CSD has not yet been translated for other countries and therefore at the time of writing you cannot RIPL from a NLS version of Warp Server.

2.4 Expected Support

Running most of the components from OS/2 Warp Server Version 4 on OS/2 Warp 4 has been successfully tested by IBM. Therefore, IBM is officially supporting this configuration as far as it is described in this documentation. However, OS/2 Warp Server 4 on OS/2 Warp 4 is *not* a new product, it is just a supported combination of two products.

There are no restrictions on the applications on this platform. All applications for OS/2 Warp Server Version 4 and/or OS/2 Warp 4 will be supported within the limitations described in this document.

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Chapter 3. Installing OS/2 Warp 4

OS/2 Warp 4 consists of various products, including the OS/2 Warp Version 4 base operating system, BonusPak, IBM's OS/2 implementation of Sun Microsystems, Inc.'s Java technology, VoiceType for OS/2 Warp, and networking products.

> **Note**
>
> If you are already familar with the OS/2 Warp 4 installation procedure, you may wish to skip this chapter. If you decide to do so, install OS/2 Warp 4 with all the system components that you think that are useful for a server. You should remember that the fewer features you install, the better your system will run, due to reduced resource requirements and increased stability.
>
> When you select the networking components of Warp 4, do not install the File & Print Client. We will use the File and Print Client from Warp Server instead.
>
> If you plan to use TCP/IP and/or TCPBEUI on your system, you should select and install TCP/IP Version 4 from OS/2 Warp 4. This will provide improved performance and useful functional enhancements compared to TCP/IP 3.1 from OS/2 Warp Server.

We will install the OS/2 Warp 4 base operating system, with its TCP/IP and MPTS part by following the proceeding steps.

We separated the installation procedure of the base operating system in two parts. Section 3.1, "Installation Phase I - VIO Installation" on page 34 describes the text mode installation part up to the first reboot. This includes the creation and definition of the boot partition and the selection of the file system you want to use.

Section 3.2, "Installation Phase II - GUI Installation" on page 38 describes the configuration and installation process after the first reboot. This includes the selection of system components and networking features from OS/2 Warp 4 to be installed.
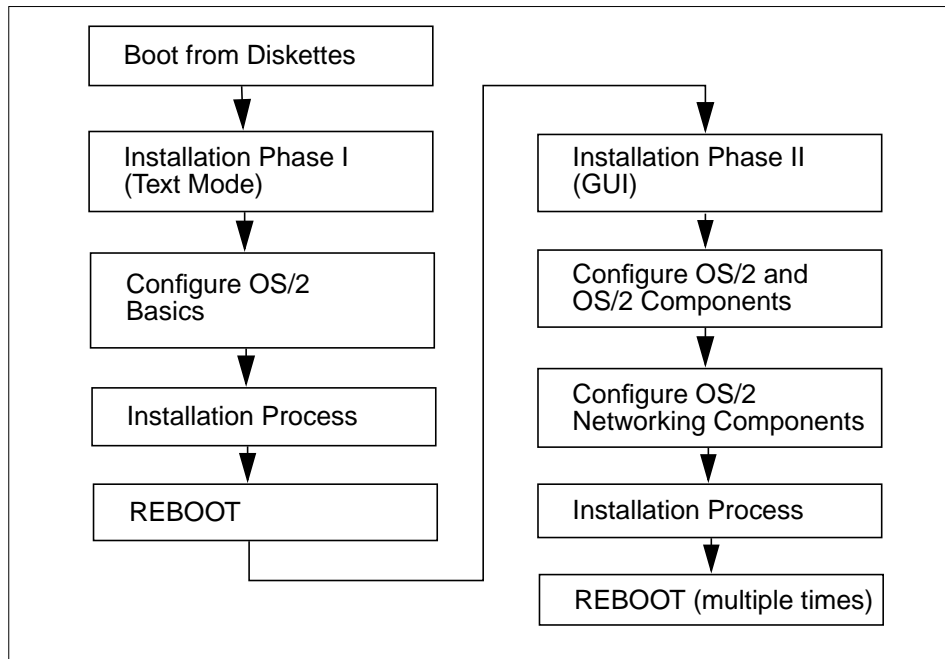
```
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                           │
│       ┌──────────────────────────┐                                        │
│       │   Boot from Diskettes    │─────────────┐                          │
│       └──────────────────────────┘             │                          │
│                    │                            │                          │
│                    ▼                            ▼                          │
│       ┌──────────────────────────┐  ┌──────────────────────────┐          │
│       │   Installation Phase I   │  │   Installation Phase II  │          │
│       │   (Text Mode)            │  │   (GUI)                  │          │
│       └──────────────────────────┘  └──────────────────────────┘          │
│                    │                            │                          │
│                    ▼                            ▼                          │
│       ┌──────────────────────────┐  ┌──────────────────────────┐          │
│       │   Configure OS/2         │  │   Configure OS/2 and     │          │
│       │   Basics                 │  │   OS/2 Components        │          │
│       └──────────────────────────┘  └──────────────────────────┘          │
│                    │                            │                          │
│                    ▼                            ▼                          │
│       ┌──────────────────────────┐  ┌──────────────────────────┐          │
│       │   Installation Process   │  │   Configure OS/2         │          │
│       │                          │  │   Networking Components  │          │
│       └──────────────────────────┘  └──────────────────────────┘          │
│                    │                            │                          │
│                    ▼                            ▼                          │
│       ┌──────────────────────────┐  ┌──────────────────────────┐          │
│       │   REBOOT                 │  │   Installation Process   │          │
│       └──────────────────────────┘  └──────────────────────────┘          │
│                                                 │                          │
│                                                 ▼                          │
│                                     ┌──────────────────────────┐          │
│                                     │  REBOOT (multiple times) │          │
│                                     └──────────────────────────┘          │
│                                                                           │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 3. OS/2 Installation Phase

3.1 Installation Phase I - VIO Installation

To install OS/2 Warp 4 on your system, follow the steps below:

  • Insert the **OS/2 WARP 4 Installation diskette** into the floppy drive.

  • Turn on your PC.

The system reads the data from diskette. After a while, the system asks you to remove the OS/2 Warp 4 Installation diskette.

  • Remove the OS**/2 Warp 4 Installation diskette** and insert the **OS/2 Warp 4 diskette 1** into the diskette drive.

  • Press **Enter**.

The system reads the data from diskette. Then it asks you to remove the OS/2 Warp 4 diskette 1.

  • Remove the **OS/2 Warp 4 diskette 1** and insert the **OS/2 Warp 4 diskette 2** into the diskette drive.

  • Press **Enter**.

The system reads the data from diskette. If the CD-ROM is *not* in the CD-ROM drive, you will be asked to insert the CD-ROM into the CD-ROM drive.

The system reads the data from CD-ROM and the OS/2 diskette 2.

- When the Welcome screen appears, press **Enter.**

The system reads the data from CD-ROM.

Hint

Sometimes there is a problem with the mouse device:

```
SYS00049: The MOUSE$ device is not functioning.
```

If this message appears you should select the line:

```
Return error code to program
```

and press **Enter**.

Frequently, this must be done twice.

The screen Installing OS/2 Warp 4 now appears. It offers you a choice between two methods of installation:

Easy Installation
    is designed for the most users. The system will be installed on drive C: and most of the installation discussions will be made for you automatically.

Advanced Installation
    is designed for experienced technical users. Selecting this option, you can customize most features of the installation.

- Select **Advanced Installation**.

- Press **Enter**.

The panel Installation Drive Selection now appears. Here you can decide on which partition the system should be installed. Default is drive C: or any other partition that has been made installable.

You can either accept the drive and use the default drive or you can specify a different drive or partition. FDISK will then be started. FDISK enables you to create or delete partitions or logical drives on a hard disk. A hard disk is divided into partitions, which define the area of the hard disk that belongs to a

particular operating system. Each hard disk can be divided into multiple primary partitions and an extended partition, or just one extended partition. Each extended partition can be further divided into one or more logical drive. However, the first hard disk must have a primary partition. If you create new partitions, then you must reboot the system and restart the installation process.

- If you have no partition or you will use a different partition, select **Specify a different drive or partition.**
- Press **Enter**.

The screen Modifying Partitions Warning appears.

- Press **Enter.**

FDISK appears. If you do not already have a partition, you must create one following the steps below. If you do not have to repartition the hard disk, select the partition on which you want to install install OS/2 Warp 4 and mark it as installable.

- Create a **partition** with size of 350 MB or more.
- Set the status of the partition as **Installable.**
- Press **F3** for exit.
- Press **F3** for Save and Exit.

The Hard disk partitioning information screen from FDISK appears. If you created a new partition, you have to reboot your system and restart the installation process:

- Remove the **OS/2 Warp 4 Diskette 2**.
- Insert the **OS/2 Warp 4 Installation diskette** into the floppy drive.
- Press **Enter.**

Then you have to restart the installation process. If you did not repartition the hard disk, you can continue with the instructions.

A screen asking you to format the installation partition appears. Do not format the partition if you already did a long format from the command prompt (see the note at the end of this section), otherwise:

- Select to format the disk.

The Select the File System screen appears. You can choose between two fie systems: HPFS or FAT.

- Select the **High Performance File System**.
- Press **Enter**.

The system starts the installation. At the end of the installation you will be prompted to remove the diskette.

- Remove the diskette from the diskette drive.
- Press **Enter**.

The system will reboot and the WorkPlace Shell (WPS) will appear.

Note

The default OS/2 behavior on formating hard disks is to perform a quick format. That means that only essential file system areas such as the directory are overwritten. The advantage of this is that the format procedure takes much less time than a normal format.

However, sometimes it makes sense to use the normal or long format instead, because it formats the whole disk and performs a media test. Do this, for example, if you think that your hard disk is not really reliable or if you simply want the previous data on the hard disk to be formatted.

At this stage of the installation you may press F3 and go to an OS/2 command prompt. There you can type:

```
X:\PATH\FORMAT Y: /FS:HPFS /L
```

where the /L parameter causes a long format, the X: stands for the drive letter of the CD-ROM drive and Y: for the partition that you want to be formatted. The /FS:HPFS parameter forces the partition to be formatted with HPFS. Afterwards, type EXIT to come back to the Welcome screen and continue with the installation without formatting the partition again.

3.2 Installation Phase II - GUI Installation

The System Configuration window appears (see Figure 4).

- Check the displayed country and hardware settings.

- If any are incorrect, change them by clicking on the assigned icon.
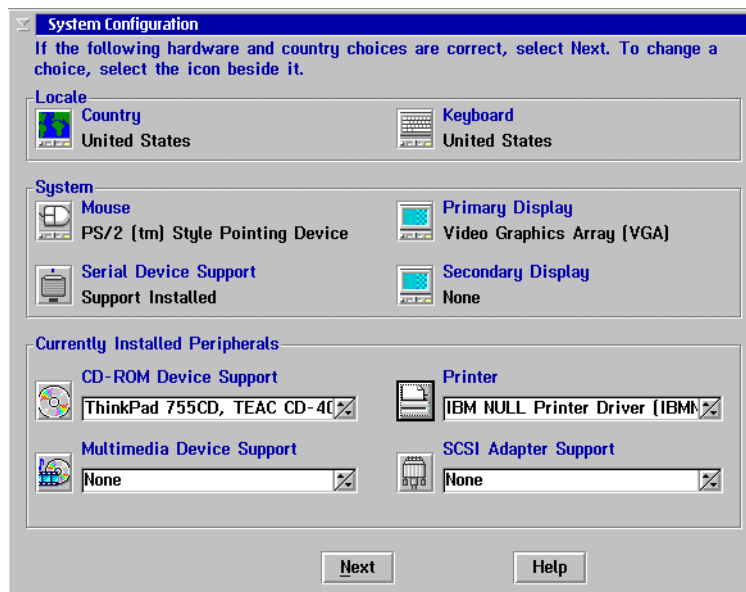
- Click on **Next**.

Figure 4. System Configuration

The System Configuration (cont.) window now appears (see Figure 5).

- Check the hardware settings.

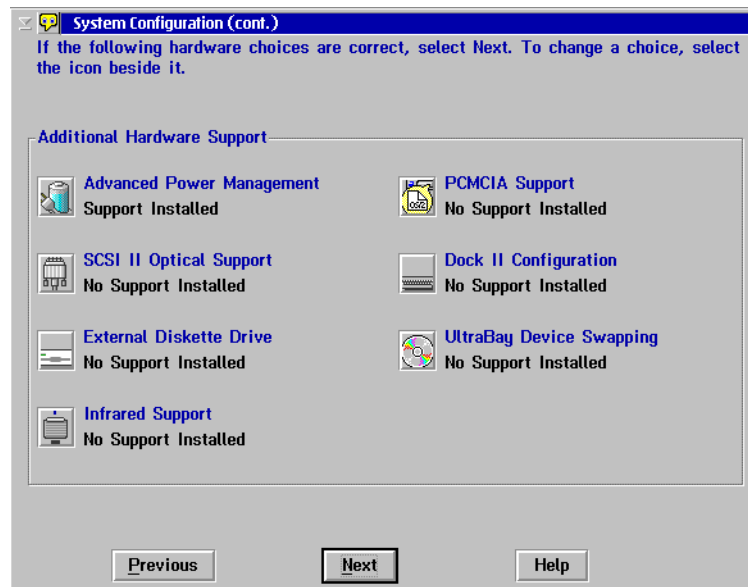- If any are incorrect, change them by clicking on the assigned icon.

- Click on **Next**.

Figure 5. System Configuration (Cont.)

If you did not already select a printer on the panel shown in Figure 4 on page 38, the Select System Default Printer window will appear as shown in Figure 6.
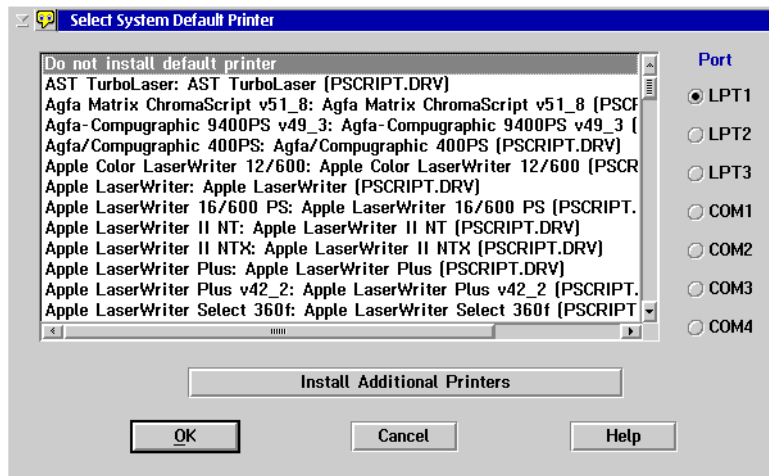
Figure 6. Select System Configuration Printer

- Select your printer and assign a port.
- Click on **OK**.

The OS/2 Setup and Installation window appears as shown in Figure 7.
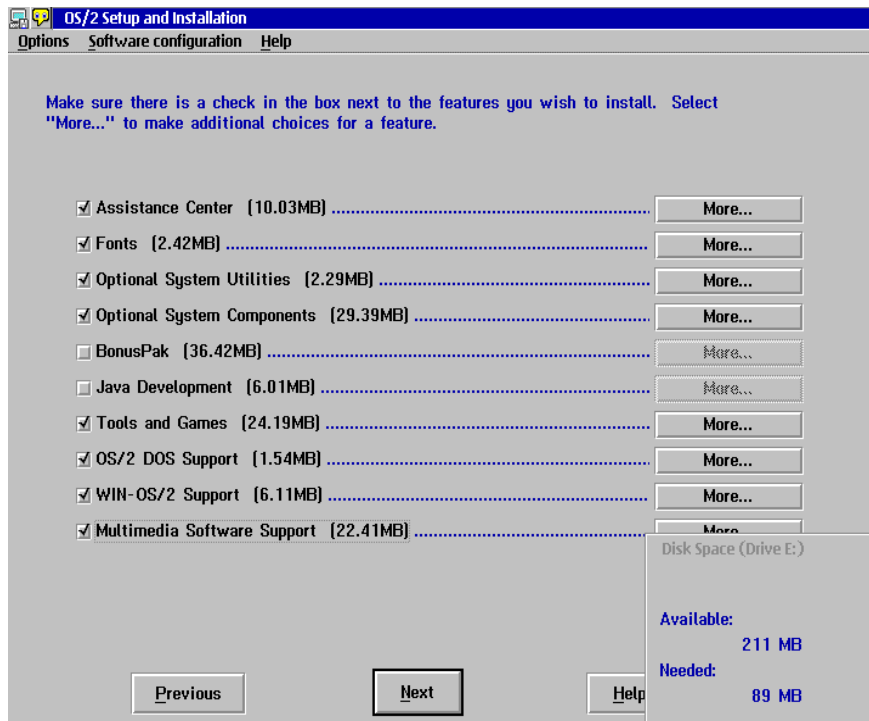
Figure 7. OS/2 Setup and Installation

- Check and/or select the software components.
- Click on **Next**.

The Advanced Options window appears.

- Click on **OK**.

The OS/2 Warp Setup and Installation window appears (see Figure 8).

- Select **TCP/IP Services**.

MPTS will be installed automatically. Do not install the File and Print Client or any networking component other than TCP/IP.
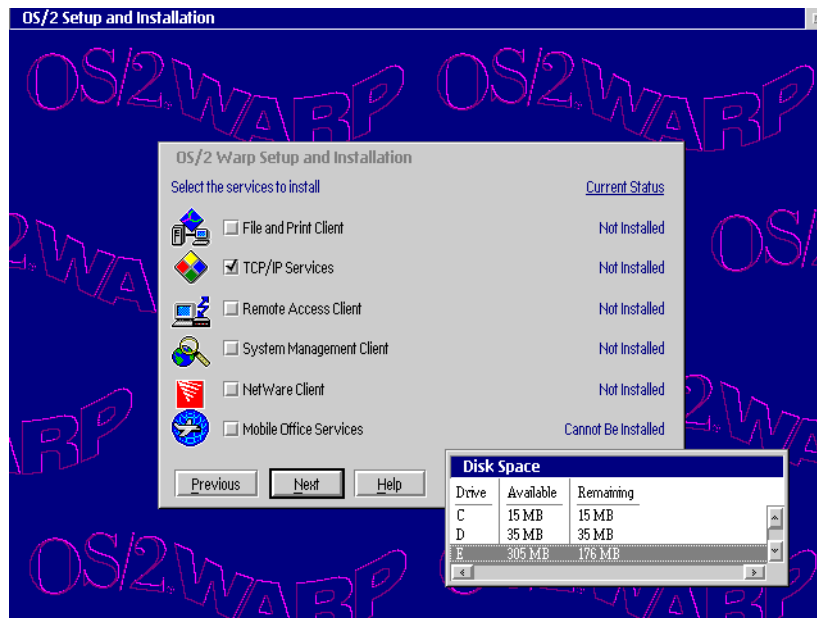

Figure 8. OS/2 Warp Setup and Installation

- Select the drive for the networking components to be installed in the Disk Space window.
- Click on **Next**.

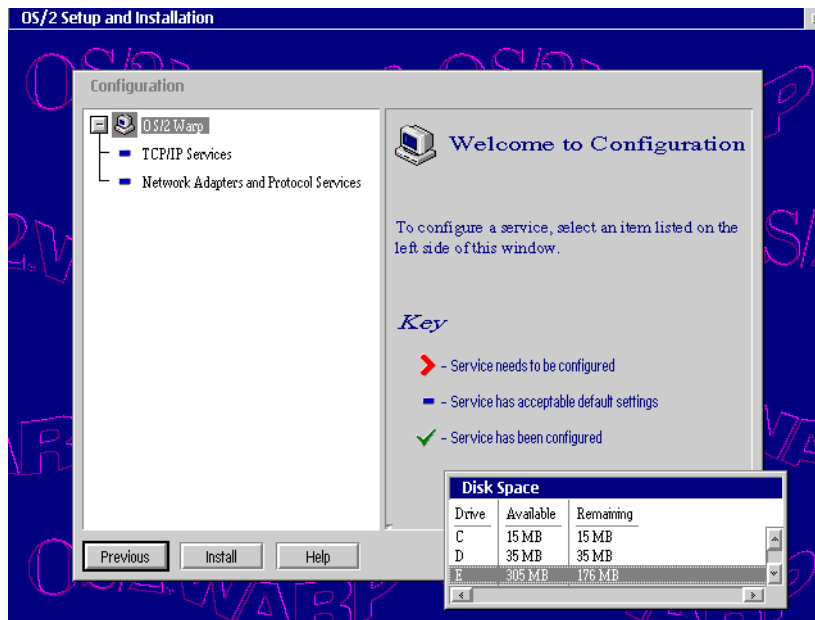The Configuration window for the networking components appears as shown in Figure 9.

Figure 9. Configuration - Welcome to Configuration

• Select **TCP/IP Services**.

The TCP/IP Services screen appears. See Figure 10.
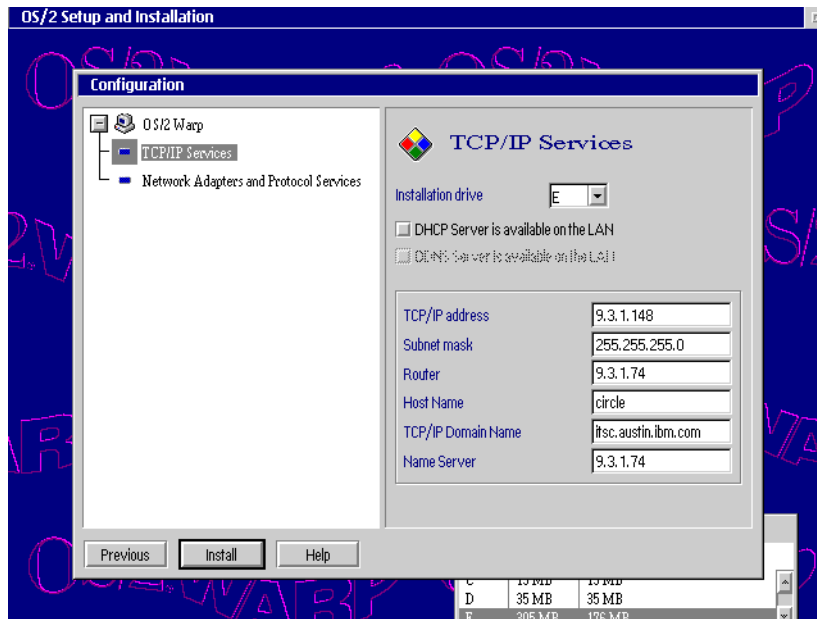

Figure 10. Configuration - TCP/IP Services

- Configure the panel.

  - If you have a DHCP Server on the LAN, click on the **DHCP Server is available on the LAN** checkbox.

  - If you have a DDNS Server in your LAN, click on the **DDNS Server is available on the LAN** checkbox.

  The followings fields can be edited, but for the most part they are covered through the DHCP Server:

  - Router

  - Host name

  - TCP/IP Domain Name

  - Name Server

  If you have no DHCP Server in your LAN you must enter data in the followings fields:

  - TCP/IP address

  - Subnet mask

- Router
- Host name
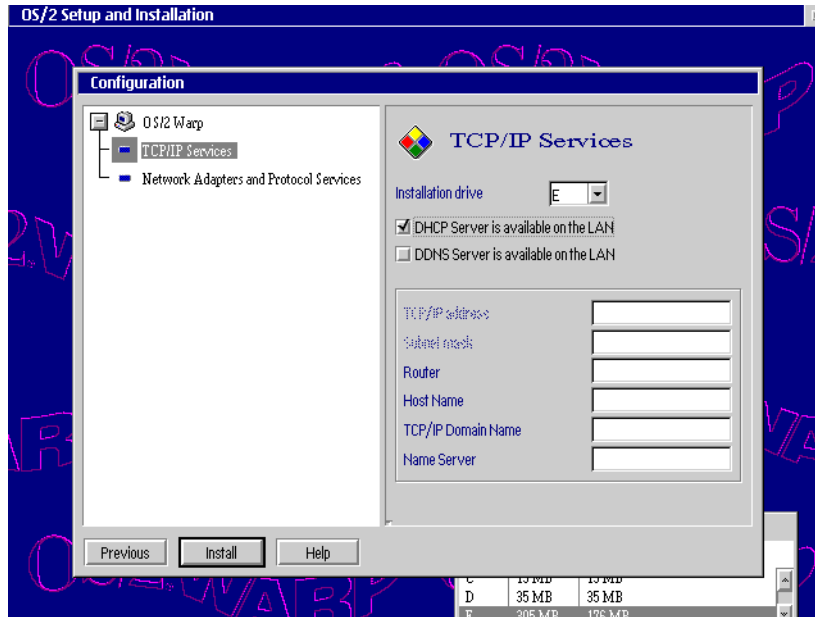- TCP/IP Domain Name
- Name Server

Figure 11. Configuration - TCP/IP Services

If you use a DHCP Server or you do not configure any TCP/IP configuration, the TCP/IP Configuration Info window will apear as shown in Figure 12.
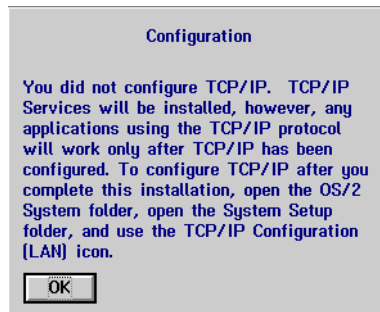

Figure 12. TCP/IP Configuration Info

- Click on **OK**.

The Network Adapter and Protocol Services screen appears (see Figure 13).
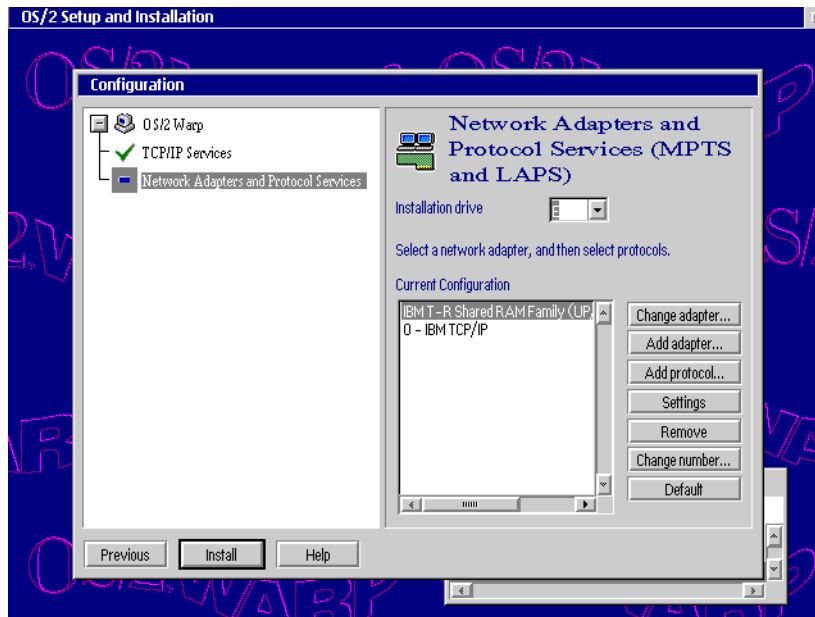

Figure 13. Configuration - Network Adapter and Protocol Services

- Check and/or edit the MPTS and LAPS settings.

The MPTS and LAPS settings are described in Chapter 6, "Installing the File and Print Server Component" on page 73.

- Click on **Install** button.

An Information window 'Configuration' appears.

- Click on **OK**.

The Transferring Files window appears. Files will be copied to the hard disk. Several information screens are displayed. Then the system reboots automatically.

The OS/2 Warp Installation window appears and indicates that files are copied to the hard disk. After a while, an information window appears and informs you that the installation is complete.

The system then reboots automatically. After the reboot, the OS/2 Warp 4 system starts and the installation is finished.

Chapter 4. The Installation of OS/2 Warp Server Version 4

This chapter describes the installation of OS/2 Warp Server Version 4 with most components on OS/2 Warp 4.
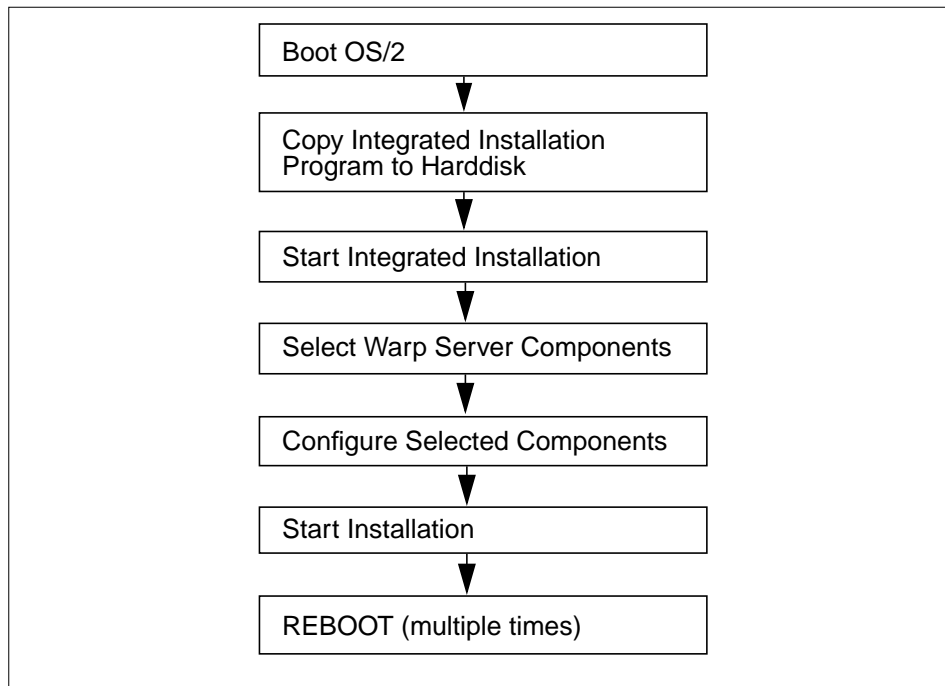
```
              ┌─────────────────────────┐
              │       Boot OS/2          │
              └────────────┬────────────┘
                           ▼
              ┌─────────────────────────┐
              │ Copy Integrated Installation │
              │ Program to Harddisk      │
              └────────────┬────────────┘
                           ▼
              ┌─────────────────────────┐
              │ Start Integrated Installation │
              └────────────┬────────────┘
                           ▼
              ┌─────────────────────────┐
              │ Select Warp Server Components │
              └────────────┬────────────┘
                           ▼
              ┌─────────────────────────┐
              │ Configure Selected Components │
              └────────────┬────────────┘
                           ▼
              ┌─────────────────────────┐
              │     Start Installation   │
              └────────────┬────────────┘
                           ▼
              ┌─────────────────────────┐
              │   REBOOT (multiple times) │
              └─────────────────────────┘
```

Figure 14. OS/2 Warp Server (Integrated) Installation Phase

MPTS and TCP/IP part is from OS/2 Warp 4 because it includes newer version of these components.

4.1 Preparation

You you can install the OS/2 Warp Server components through the integrated installation:

- Copy the \WARPSRV directory with subdirectories from the OS/2 Warp Server CD-ROM to the hard disk.

- Change to your hard disk and then to the \WARPSRV directory.

- Type WSCONFIG and press **Enter**.

The Detecting Hardware window appears. The system checks the hardware. Then, the Installing IBM OS/2 Warp Server window appears as shown in Figure 15.
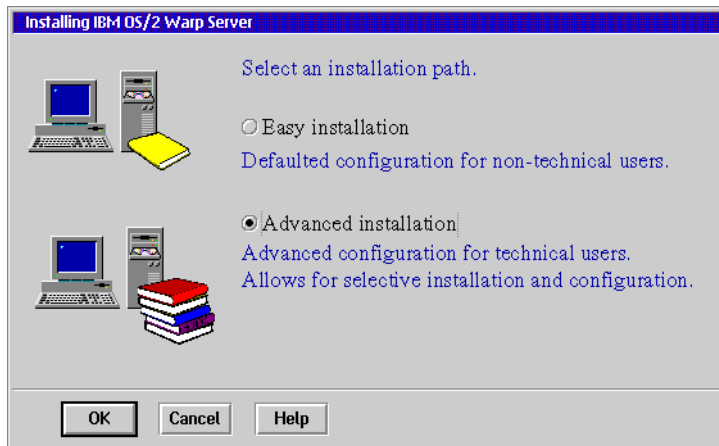

Figure 15. Installing IBM OS/2 Warp Server

- Select **Advanced Installation** and click on the **OK** button.

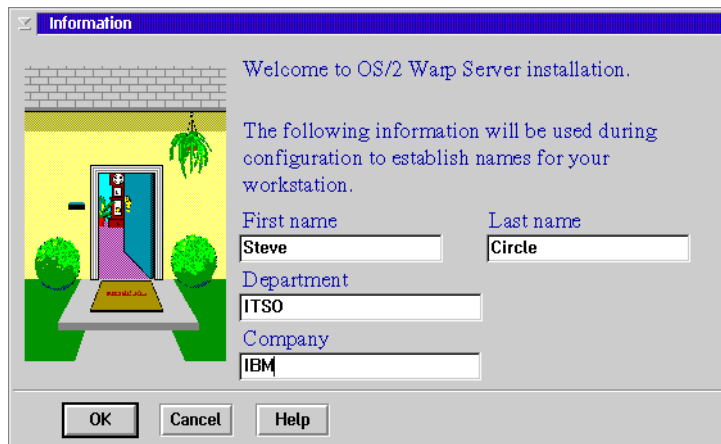The Information window appears as shown in Figure 16.

Figure 16. Information

- Type in your first name, last name, department and company.
- Click on the **OK** button.

The OS/2 Warp Server Setup and Installation window appears (see Figure 17).
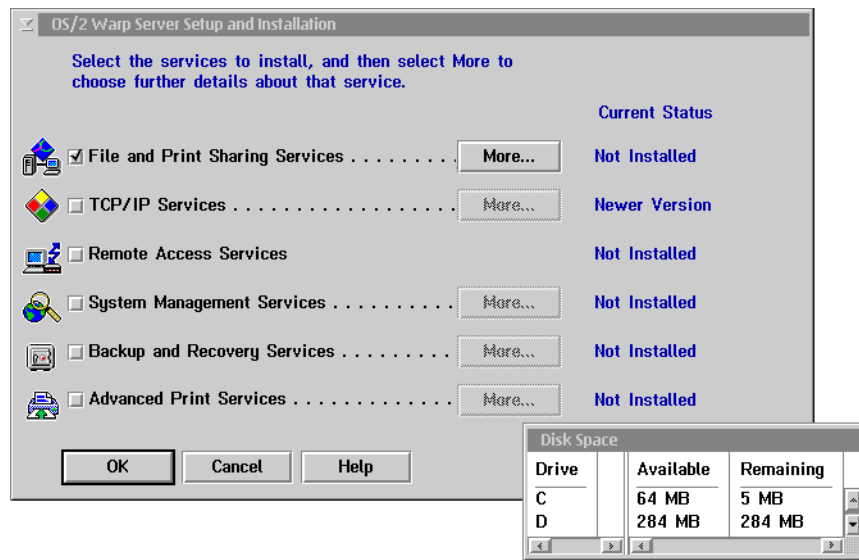
Figure 17. OS/2 Warp Server Setup and Installation

- Select all components you plan to use on the server. Do not select the Advanced Print Services option.

Attention

Do *not* select the Advanced Print Services because they are *not* supported with the configuration OS/2 Warp Server Version 4 on OS/2 Warp 4!

Also, not select TCP/IP. If you select TCP/IP services, the TCP/IP Info window appears as shown in Figure 18 on page 50 because TCP/IP from OS/2 Warp 4 has already been installed.
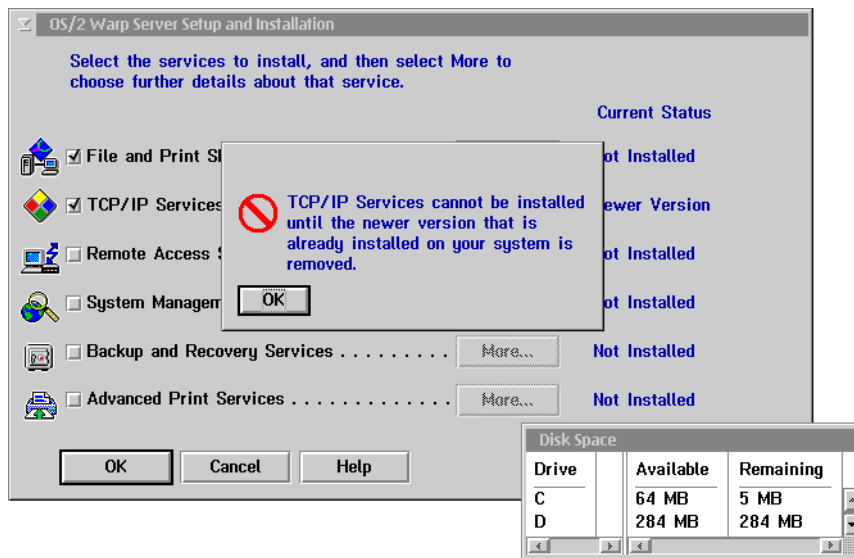
Figure 18. TCP/IP Info

Hint:

If you need the DHCP/DDNS server from OS/2 Warp Server's TCP/IP, you must install them separately as described in "Installing DHCP - / DDNS - Server" on page 66.

- Select the disk drive on which you plan to install in the Disk Space sub-window as shown in Figure 19.

- Click on the **OK** button.
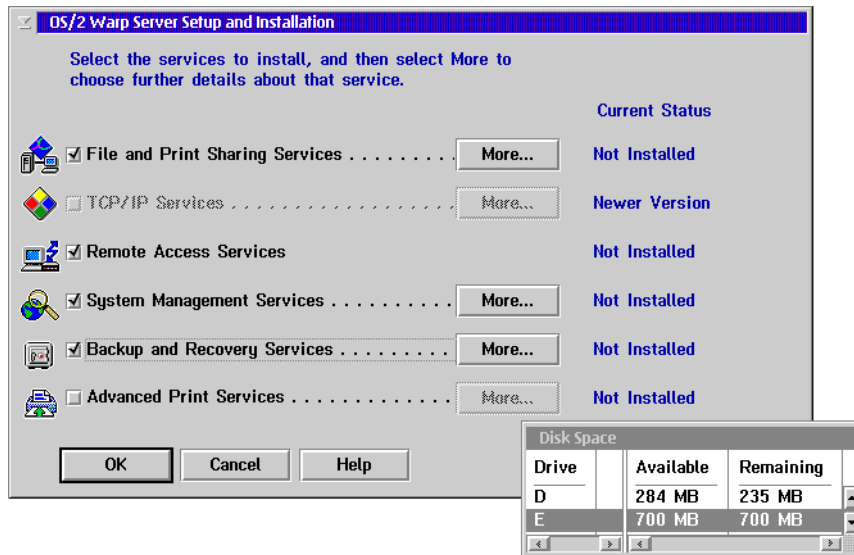
Figure 19. Disk Space

4.2 Configuring the Components

The system now generates the configuration panels. After that the Configuration - Welcome to Configuration window appears as shown in Figure 20.

The red arrows means that you need to do some configuration on that page. If a page has a white mark, it has not yet been configured, but default values will be assumed. Blue marked pages are those that you have already configured.
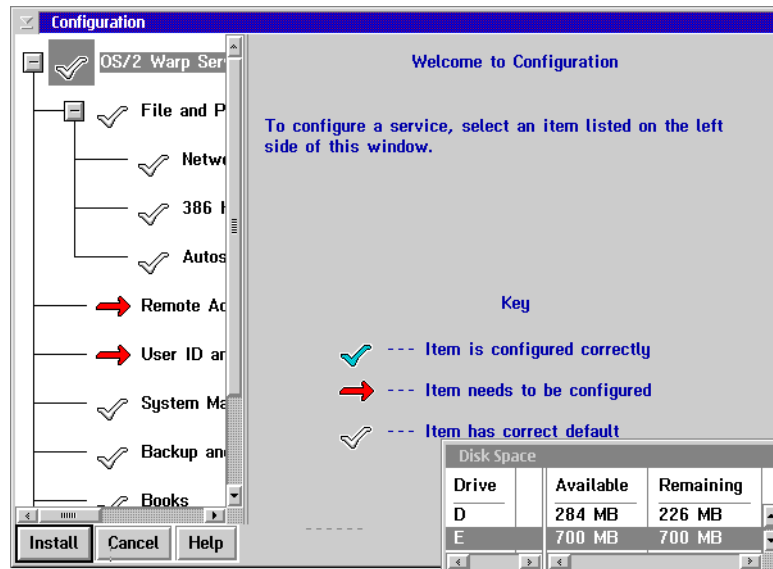
Figure 20. Configuration - Welcome to Configuration

4.2.1 File and Print Services

- Select **File and Print Services**.

The Configuration - File and Print Sharing Services screen appears (see Figure 21).
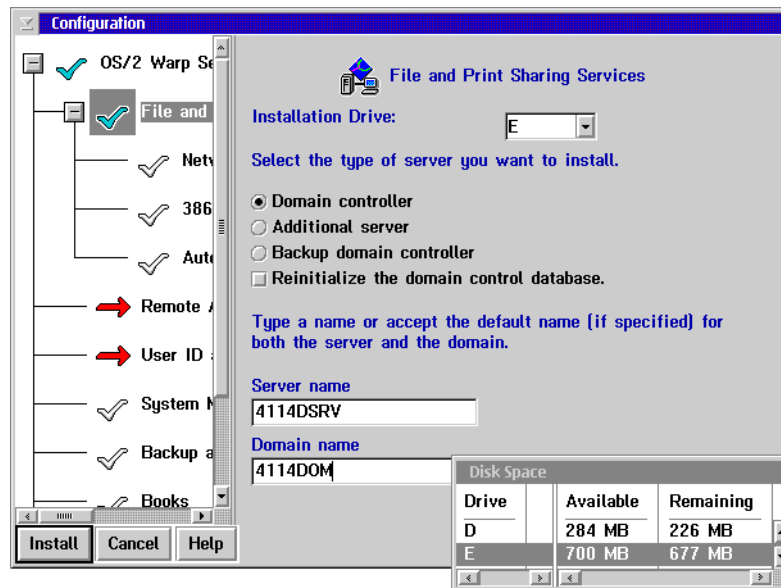
Figure 21. Configuration - File and Print Sharing Services

- Check and/or edit the following:

  - Installation drive

  - Type of server

  - Server name

  - Domain name

4.2.2 File and Print Services: Network Adapter for File and Print

- Select **Network Adapter for File and Print Sharing**.

The Configuration - Adapters for File and Print Sharing Network screen appears as shown in Figure 22.
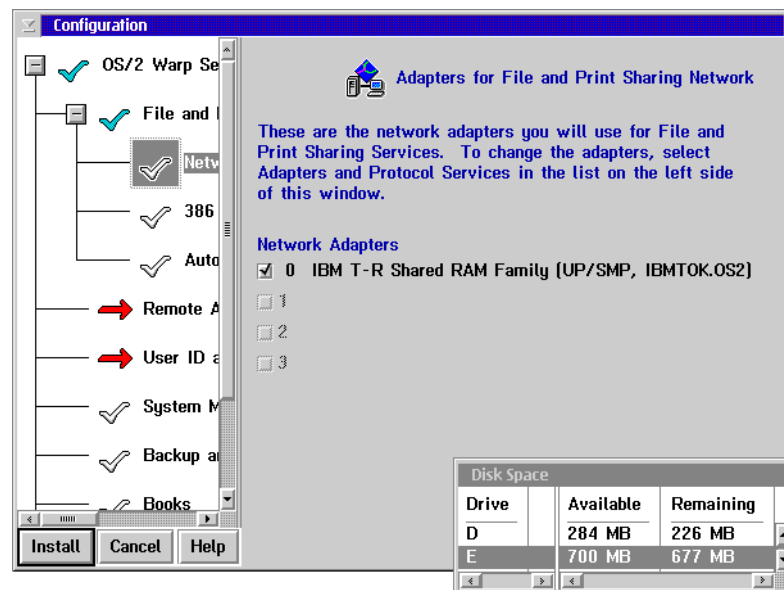
Figure 22. Configuration - Adapters for File and Print Sharing Network

- Check and/or edit the adapter settings.

4.2.3 File and Print Services: 386HPFS (only Advanced Server)

- Select **386HPFS**.

The Configuration - File and Print Sharing Services - 386HPFS screen comes up as shown in Figure 23.
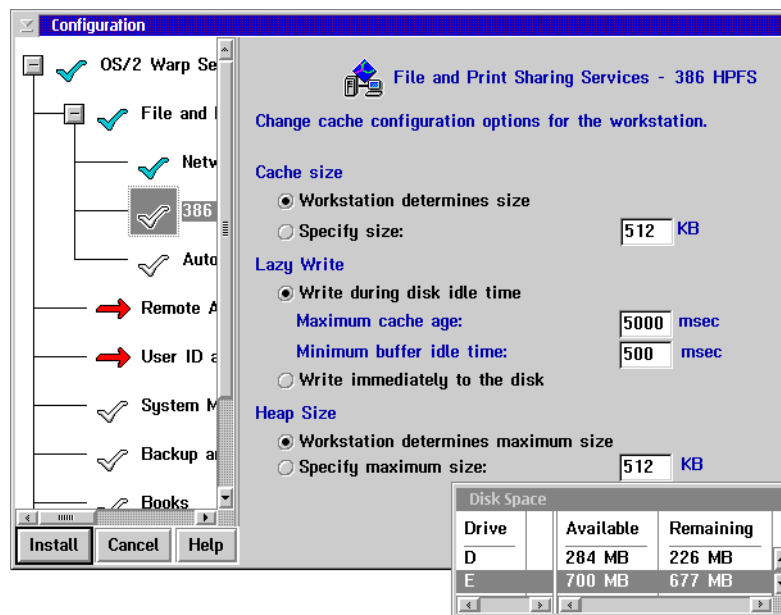
Figure 23. Configuration - File and Print Sharing Services - 386HPFS

- Check and/or edit the 386HPFS parameters.

Do not forget to start the CACHE386.EXE from your CONFIG.SYS for the HPFS386 file system after the installation, otherwise the File and Print Server will not be able to start. See Chapter 4.5, "Cache for the HPFS386 File System" on page 68.

4.2.4 File and Print Services: Autostart

 • Select **Autostart**.

The Configuration - Autostart screen appears as shown in Figure 24.
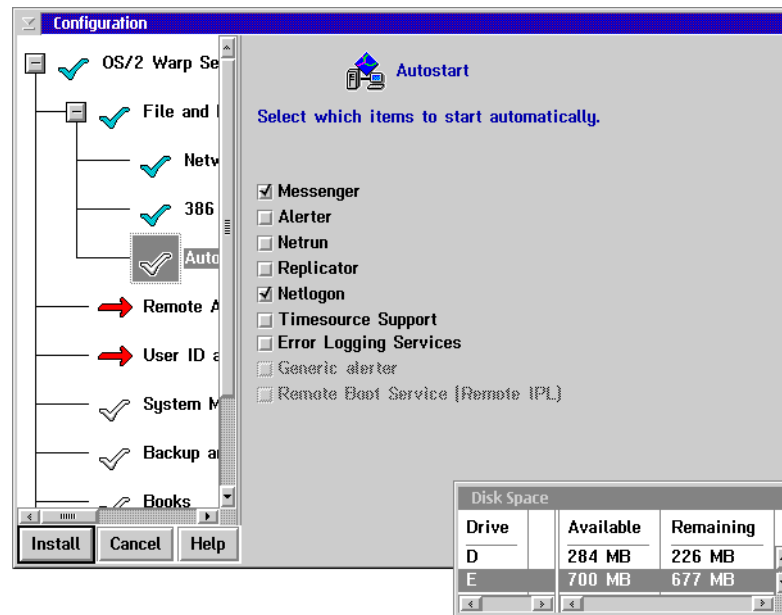
Figure 24. Configuration - Autostart

 • Check and/or edit the services for autostart.

Messenger	This service allows a workstation to send and receive network messages.
Alerter	This service sends a message to a list of users and notifies the Generic Alerter service when certain network problems are detected or anticipated.
Netrun	This service allows servers to handle requests to run programs remotely.
Replicator	This service copies subdirectories from one server to another server or requester. This allows information to be maintained simultaneously on two or more workstations.
Netlogon	This service copies the master database of user and group definition files from the domain controller to network servers. It is available only on workstations that are configured as servers.

Timesource Support

This service designates a server as a reliable source for time and date with which other workstations on the network can synchronize. Timesource does not keep time. It allows other workstations on the network to identify a server with a reliable clock.

Error Logging Services

This service is for logging all server related events.

Generic alerter

This service allows a server to build and send Systems Network Architecture (SNA) alerts to the IBM LAN Network Manager or IBM LAN NetView products. The Alerter service notifies this service when certain LAN problems occur.

Remote Boot Service (RIPL)

This service provides the Server service with support for remote initial program load (IPL) of workstations.

4.2.5 Remote Access Services

- Select **Remote Access Services**.

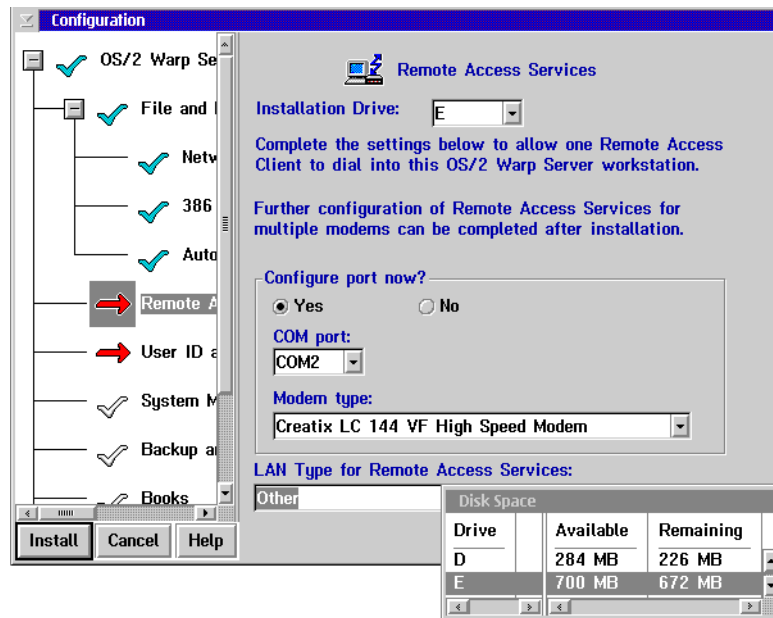The Configuration - Remote Access Services screen appears as shown in Figure 25.

Figure 25. Configuration - Remote Access Services

- Check and/or edit the following:

  - Installation drive, for example E

  - Configure port - Yes

  - Com port, for example COM2

  - Modem type, for example CREATIX LC 144

  - LAN type, for example OTHER for Token Ring.

4.2.6 User ID and Password

- Select **User ID** and **Password**

The Configuration - Administrator ID and Password screen appears as shown in Figure 26.
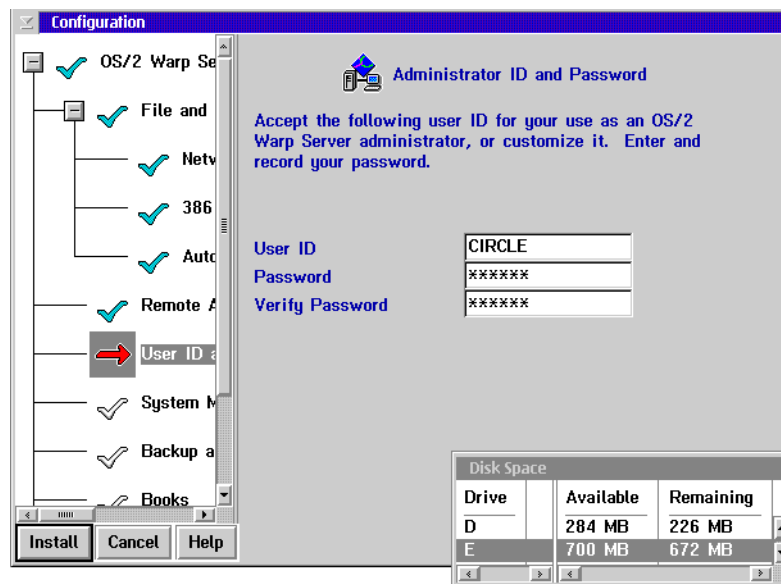
Figure 26. Configuration - Administrator ID and Password

- Type in the User ID and Password for the administrator.

4.2.7 System Management Services

- Select **System Management Services**.

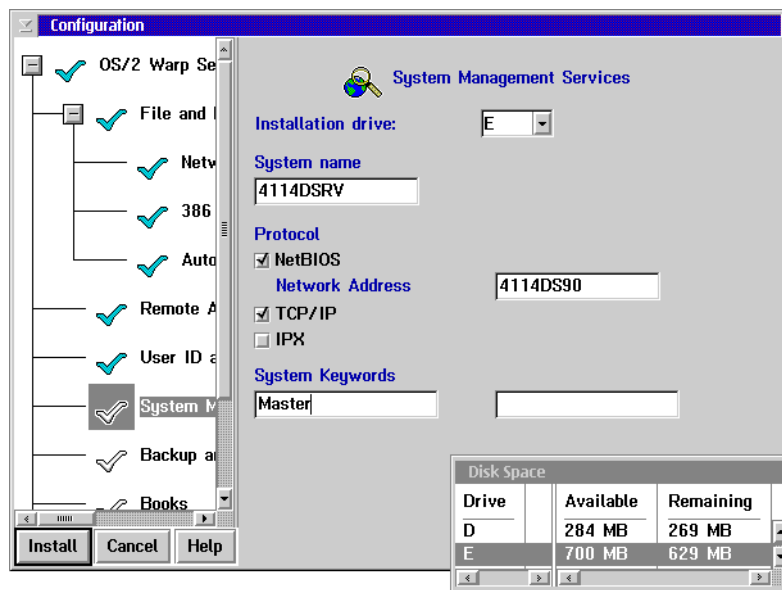The Configuration - System Management Services screen appears as shown in Figure 27.

Figure 27. Configuration - System Management Services

- Check and/or edit the following:
    - Installation drive, for example E
    - System name - to be identified
    - Protocols - which will be used by Netfinity
    - System keywords - to be assigend to a group

More keywords can be defined later.

4.2.8 Backup and Recovery Services

  • Select **Backup and Recovery Services**.

The Configuration - Backup and Recovery Services screen appears as shown in Figure 28.
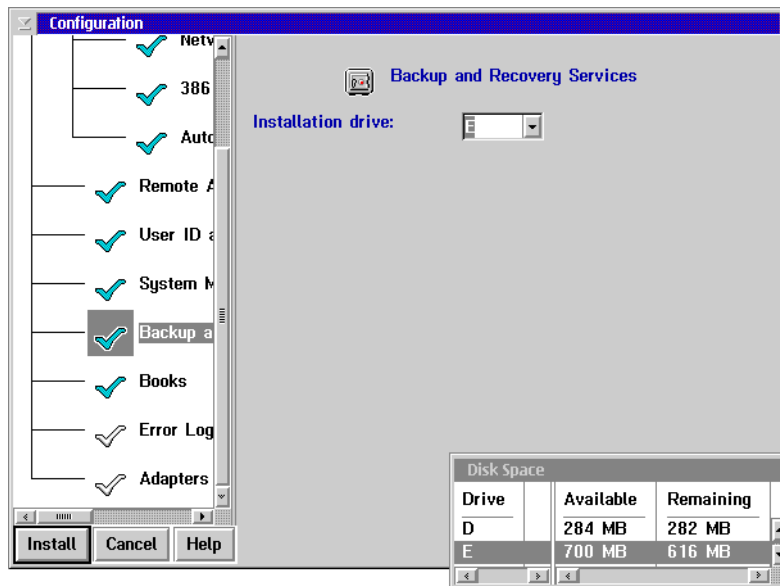
Figure 28. Configuration - Backup and Recovery Services

  • Type in the Installation drive for example E.

4.2.9 Books

- Select **Books**.

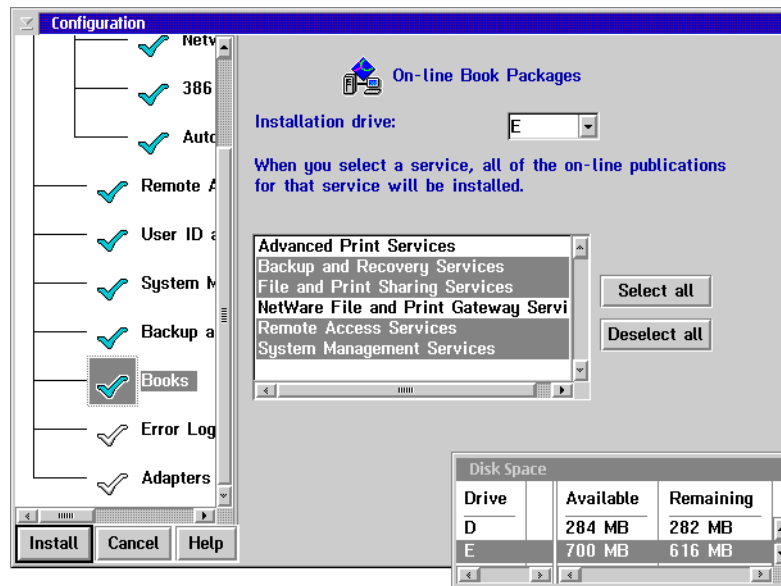The Configuration - On-line Book Packages screen appears (see Figure 29).

Figure 29. Configuration - On-line Book Packages

- Type in the Installation drive, for example E.
- Check and/or edit which books should be installed.

4.2.10 Error Logging

- Select **Error Logging Services**.

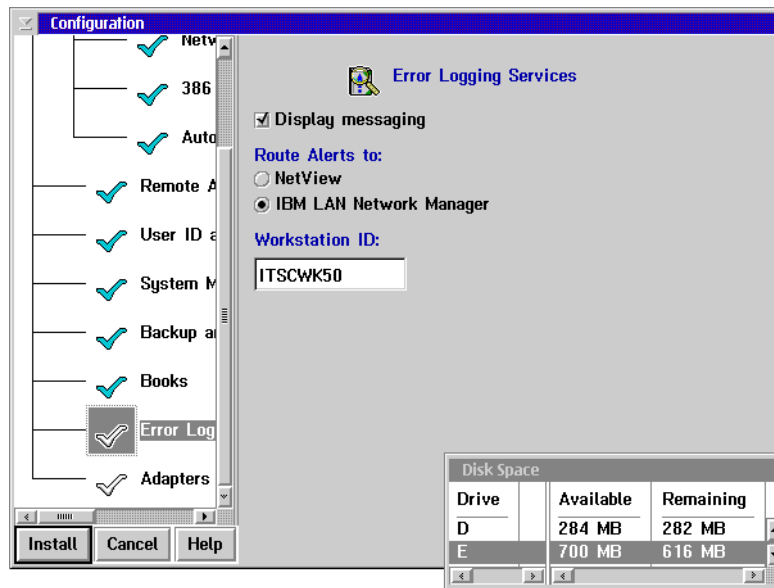The Configuration - Error Logging Services screen appears as shown in Figure 30.

Figure 30. Configuration - Error Logging Services

- Check and/or edit the panel.

4.2.11 Adapter and Protocol Services

• Select **Adapter and Protocol Services**.

The Configuration - Adapter and Protocol Services (MPTS and LAPS) screen appears as shown in Figure 31.
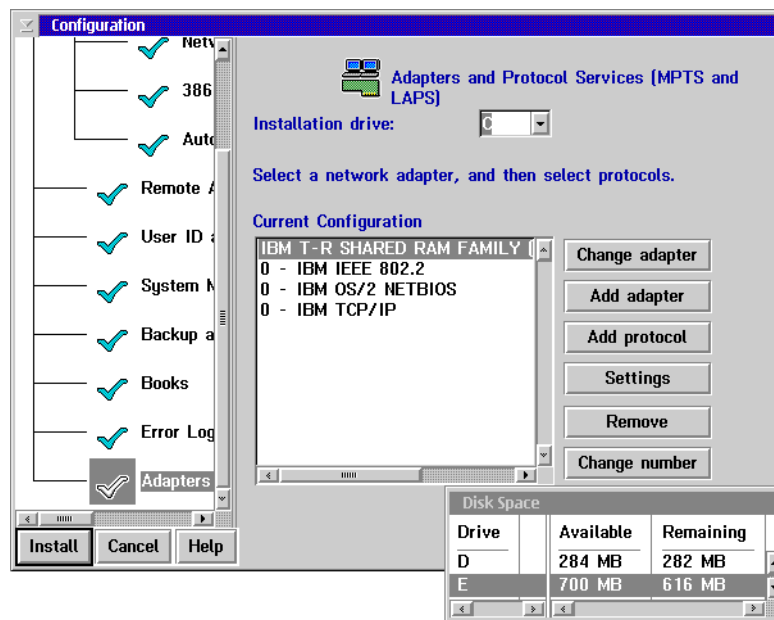

Figure 31. Configuration - Adapter and Protocol Services

• Check and/or edit the MPTS/LAPS settings.

   • Adapter - verify the adapter.

   • Protocols - verify the protocols and check the settings.

IBM IEEE 802.2	Used for RIPL or APPC connections with Personal Communications.
IBM OS/2 NETBIOS	NETBEUI protocol that is usually used for the File and Print Services on OS/2.
IBM TCP/IP	Protocol stack for the most common protocol used for intranet and internet connections.

4.3 Installing the Components

- Click on the **Install** button.

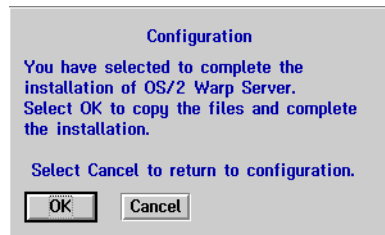The Configuration - Information window appears as shown in Figure 32.

Figure 32. Configuration - Information

- Click on the **OK** button.

The OS/2 Warp Server Tuning Assistant - NB parameters window appears and informs you about changes to your PROTOCOL.INI.
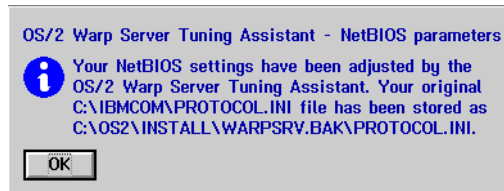

Figure 33. OS/2 Warp Server Tuning Assistant - NB parameters

- Click on the **OK** button.

The system reboots automatically. Then the system installs the selected components step by step with several reboots between the installation steps.

4.4 Installing DHCP - / DDNS - Server

DHCP (Dynamic Host Configuration Protocol) works hand in hand with DDNS **(**Dynamic Domain Name Services**)** which is explained in Chapter 7.2, "Installing DHCP - / DDNS - Server" on page 83.

It is not possible to install the DHCP/DDNS Server during the integrated installation of the Warp Server components. It must be done as described in the following steps:

- Insert the OS/2 Warp Server CD in the CD-ROM drive and open an OS/2 command prompt.
- Change to the CD drive and go to the \CID\SERVER\TCPAPPS directory.
- Type INSTALL.EXE and press **Enter**.

Figure 34. Install IBM TCP/IP V3.1 in Warp Server

The 'Install IBM TCP/IP V3.1 in Warp Server' window appears as shown in Figure 34.

- Change/overwrite the installation directory to the directory where the TCP/IP base kit from OS/2 Warp 4 is installed.

If you followed the instructions above, this will be the \MPTN directory on your boot drive.

- Click on the Options button to customize your installation.

The TCP/IP options notebook will appear as shown in Figure 35. In this notebook you can configure the TCP/IP components to be installed. At this point we only have to install the DHCP and DDNS Server.
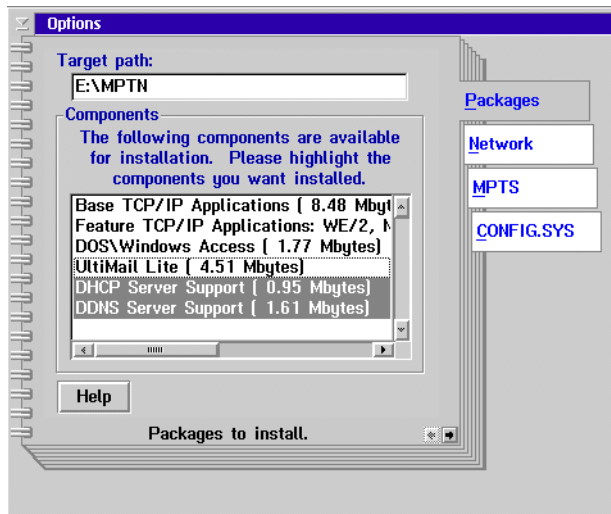
Figure 35. Install IBM TCP/IP V3.1 in Warp Server - Options

- Select DHCP Server Support and DDNS Server Support from the Packages page.

- Deselect everything except for the entries for DHCP and DDNS, because the other TCP/IP components are already installed.

- Close the Options window and you will be back at the Install IBM TCP/IP V3.1 in Warp Server window.

- Click on the **Install** button. The installation will be started.

- After the installation is completed, reboot the system.

4.5 Cache for the HPFS386 File System

This is only valid for the OS/2 Warp Server Advanced.

- Edit your CONFIG.SYS and add the CACHE386.EXE statement below, then reboot the system.

  ```
  RUN=X:\IBMLAN\NETPROG\CACHE386.EXE
  ```

  Where `x:` is your server drive.

- Save and close your CONFIG.SYS.

If you do not add this line to your CONFIG.SYS, you will get the following error whenever you start the File and Print server:

```
Net 3091: the CACHE386.exe is not running, The server cannot be started.
```

You can start CACHE386.EXE manually from a command prompt. However, it is recommended that you edit the CONFIG.SYS and add the above statement.

Part 3. Installing Single OS/2 Warp Server Components

Chapter 5. Introduction

While it is easier in most cases to perform the integrated installation of the OS/2 Warp Server components, you can also install most components separately with their own installation procedure.

This may be useful if you plan to add one of the Warp Server components afterwards, because you can launch the installation immediately from the OS/2 Warp Server CD-ROM, which is not possible with the integrated installation procedure of OS/2 Warp Server.

In some cases, it also makes sense to install the OS/2 Warp 4 base operating system and then add the different components step by step. This might be true if the integrated installation procedure does not give you the same possibilities to configure a component as the appropriate installation procedure does.

In this part of the document, we show you how to install all supported components that are included in Warp Server. Please remember that PSF/2 is not supported on OS/2 Warp 4 and therefore not documented here.

The following chapters also assume that you have already successfully installed OS/2 Warp 4 as described in "Installing OS/2 Warp 4" on page 33.

The only exception might be if you did not install any networking component from OS/2 Warp 4, which should only be TCP/IP, The installation procedure of OS/2 Warp 4 installs MPTS, but gives you no opportunity to set it up for your needs. In this case, installing network components has to be done afterwards during the installation of the File and Print Server component of OS/2 Warp Server 4.

Chapter 6. Installing the File and Print Server Component

The File and Print services component of OS/2 Warp Server is a local area network (LAN) application that is functionally very similar to OS/2 LAN Server 4.0. It allows you to share hardware and software resources on the server with the other users on the LAN. You can share directories, the applications contained in them, printers, and serial devices like modems or plotters that are connected to a server workstation. These shared resources are also referred to as network resources.

To install the File and Print Server:

• Place your OS/2 Warp Server CD in the CD-ROM drive, go to CID\SERVER\IBMLS and then type `LANINSTR /SRV`, and press **ENTER**.

You will be prompted with the 'Welcome to the Installation/Configuration' panel.

• Select **OK** to proceed.

You will be prompted with the Installation/Configuration dialog box as shown in Figure 36.
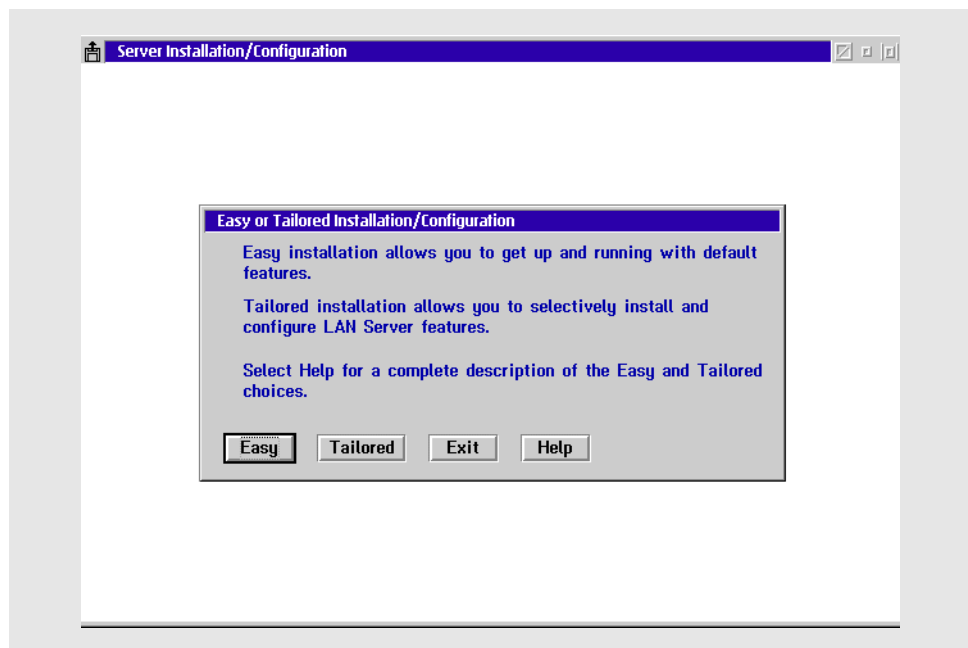

Figure 36. Installation/Configuration Dialog Box

- For the File and Print Server you must select **Tailored** .

An installation location screen will appear. You have to select a drive for installing the File and Print Server.

- Select the drive.
- Press **OK** to proceed.

You will be prompted with a Server Type screen.

- Select **Domain Controller** (or the type of server you want to set up).
- Select **OK**.

Note:

LAN Server needs you to define network adapters and protocols. This is done in MPTS (Multi Protocol Transport Services). MPTS consists of two main components:

Network Adapter and Protocol Support provides**:**

- Adapter support
- Protocol support
- Lan Virtual Device Driver support

Sockets/MPTS provides underlying protocols:

- TCP/IP
- NetBIOS
- Local interprocesses communication

Since OS/2 Warp 4 includes a later version of MPTS than Warp Server it is advisable to use the version that is automatically installed with the operating system. The installation program will detect the more recent version that is already on the system and request your confirmation to use it as shown in Figure 36 on page 73.
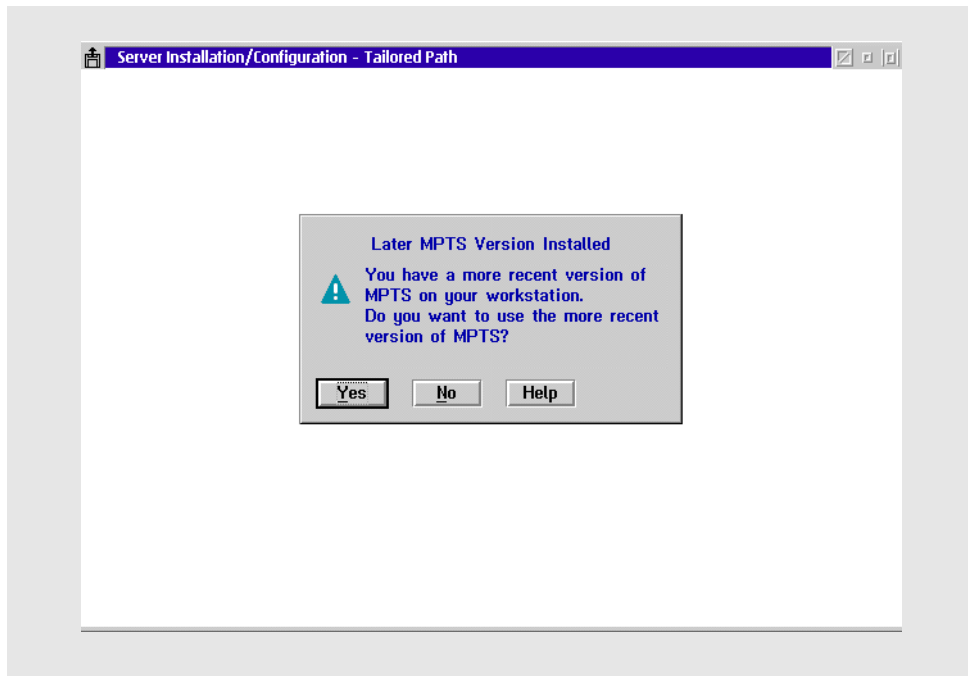
Figure 37. Dialog Box - Later MPTS Version

The Adapter and Protocol Configuration window appears (see Figure 38 on page 76).

- Choose your adapter by highlighting it.
- Press **Add** in the adapter section to add the adapter.
- Choose the protocol you need.
- Press **Add** in the protocol section to add the protocol.

The File and Print Server usually uses the IBM NETBIOS protocol (NETBEUI). It is also possible to use IBM NETBIOS over TCP/IP (TCPBEUI). If you choose this protocol, you must also install TCP/IP. You can use NETBEUI and TCPBEUI at the same time, but you have to assign them different protocol numbers.

IEEE 802.2 is only necessary if you plan to use the remote IPL services of LAN Server or for CM/2. If you do not select it, there will be a warning message upon exiting the configuration window.
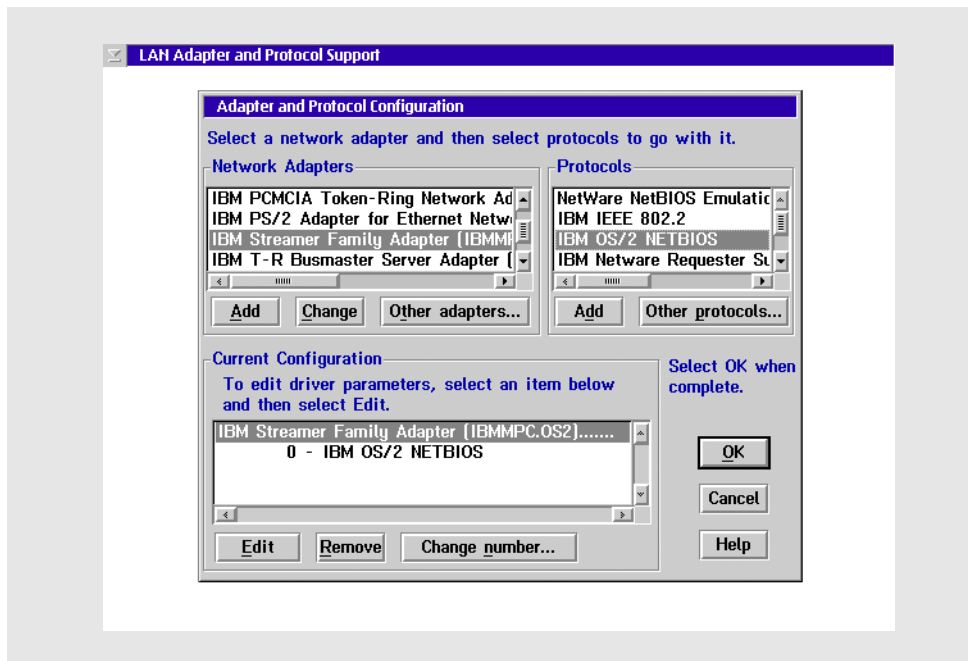
Figure 38. Adapter and Protocol Configuration

In some cases it may be desirable to define a Locally Administered Address (LAA). To do this, follow the steps below:

- Select the adapter.
- Click on **Edit**.

A configuration window appears.

- Go to the Adapter Assignment entry field and add the LAA
- Click on **OK** to end the LAA definition.

Now the MPTS configuration is finished.

- Select **OK** to apply the changes.

> **Note:**
>
> Most common adapters can be found in the window under Network
> Adapters. If your adapter is not listed here you must make it known to
> MPTS. Do this by clicking on **Other adapters...** and inserting the diskette
> with the OS/2 NDIS driver that comes with your adapter.

You will now be prompted with the 'Installation and Configuration' dialog box,
as shown in Figure 39.
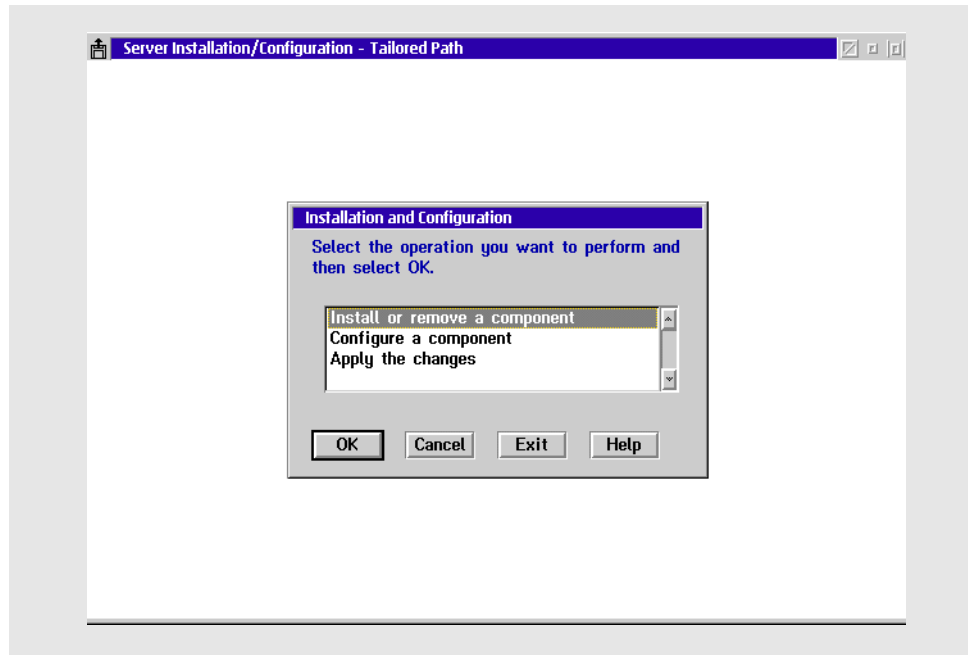
Figure 39. Installation and Configuration Panel

The Install and Remove component windows appears (see Figure 40 on page
78). In this panel you are requested to select the components that you wish to
install on your system. In the `Action` column you can see that some of these
components are mandatory.

- Select the components that you need.

- Click on **Install** to prepare them for installation.

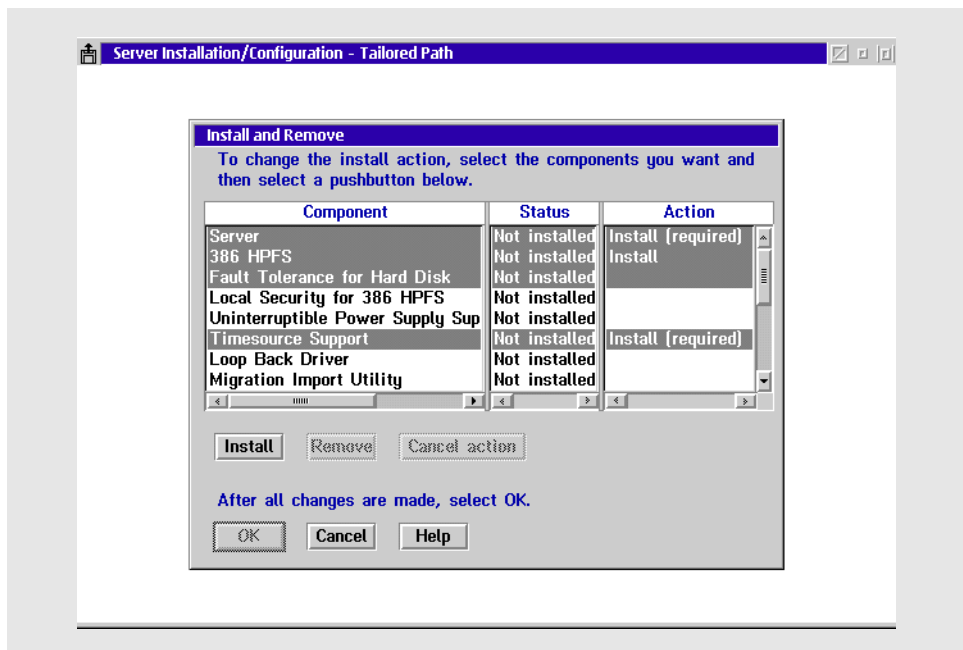- Select **OK** to proceed with the configuration.

Figure 40. Installation and Configuration of Components

You will now be positioned on the `Configure a component` selection of the window shown in Figure 39 on page 77.

- Select **Configure** to start the configuration of a component.

- Select **Server**, and then **Configure**.

- Enter a server name and the domain name.

- Select **OK** to proceed.

- Select whether or not your network adapters will use 24-bit DMA.
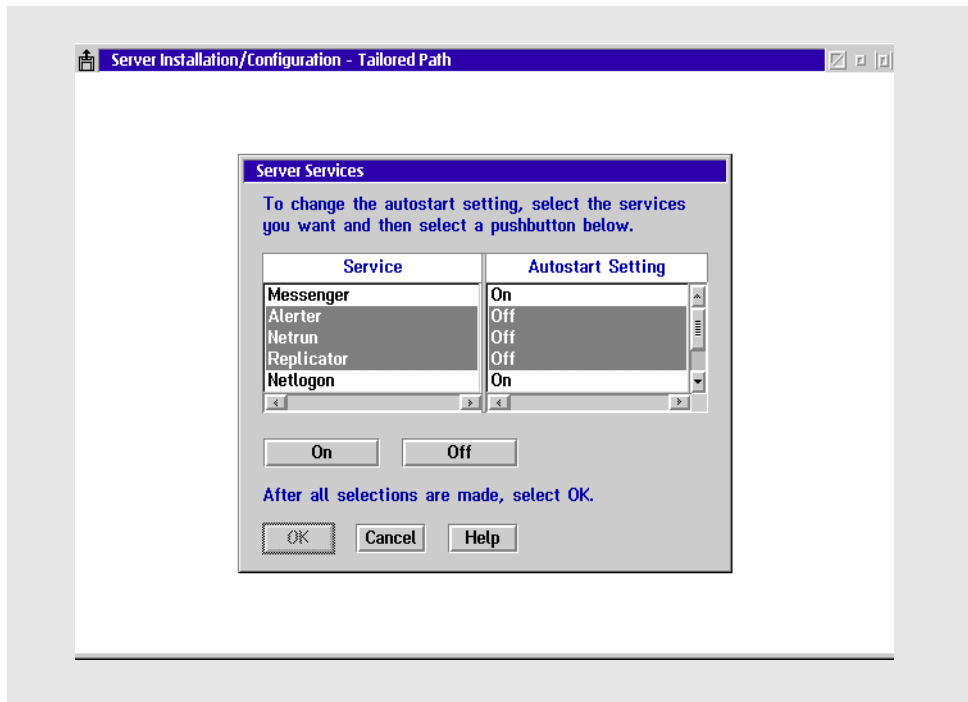
- Select **OK**.

Figure 41. Server Services

- Select the Server Services that you want to be ON or OFF as shown in see Figure 41.
- Select **OK** to proceed.
- Select the **386 HPFS** component to be configured. Accept the defaults.
- Select **OK** to proceed.
- Select **LAN Services Adapters** to be configured. Accept the defaults.
- Select **OK** to proceed.
- Select **OK** to apply the changes.

The installation and configuration process will now proceed, it will first install the requester and then the server. When it is finished, you will be prompted with a File Backup screen, with the information that the CONFIG.SYS and the PROTOCOL.INI have been backed up prior to their modification.

- Select **OK**.

The system will take a few minutes to complete the configuration.

To make the configuration effective, you must:

- Stop all running applications.
- Shutdown and restart your server system.

After rebooting, you can see that the File and Print Server is now installed.

NOTE

This is only valid for the OS/2 Warp Server Advanced!

Before you reboot your system you must edit your CONFIG.SYS and add the CACHE386.EXE statement. You must add the following line:

```
RUN=C:\IBMLAN\NETPROG\CACHE386.EXE
```

Save and close your CONFIG.SYS.

If you forget to add this line to your CONFIG.SYS you'll get the following error message when starting your File and Print Server:

```
Net 3091: the CACHE386.exe is not running, The server cannot be started.
```

Temporarily, you can start CACHE386.EXE manually from a command prompt before starting the server.

Chapter 7. TCP/IP

TCP/IP is a multi-layered network transport protocol that comes with a set of applications that can be used to communicate between computer systems, regardless of the software platforms on which those systems are based. It is not a single protocol, but a family of protocols that work together with the Transmission Control Protocol (TCP) and the Internet Protocol (IP), among others

TCP/IP can be installed during the installation of Warp 4 by clicking on the appropriate check box during the installation of the networking part (see section 3.2, "Installation Phase II - GUI Installation" on page 38).

This chapter describes how to install the TCP/IP base kit from the OS/2 Warp 4 CD. It also describes, how to install the DHCP and DDNS server from the TCP/IP package that comes with OS/2 Warp Server.

7.1 Installing the TCP/IP Base Kit

- Insert the **OS/2 Warp 4 CD**.
- At a command prompt, change the drive to that of the CD-ROM and change your directory to \CID\IMG\TCPAPPS\.
- Start **INSTALL.EXE**.

The TCP/IP installation window appears as shown in Figure 42.

Figure 42. TCP/IP Installation Window

We recommend that you change the installation directory to \MPTN. That way you do not use so many directories to hold your networking files.
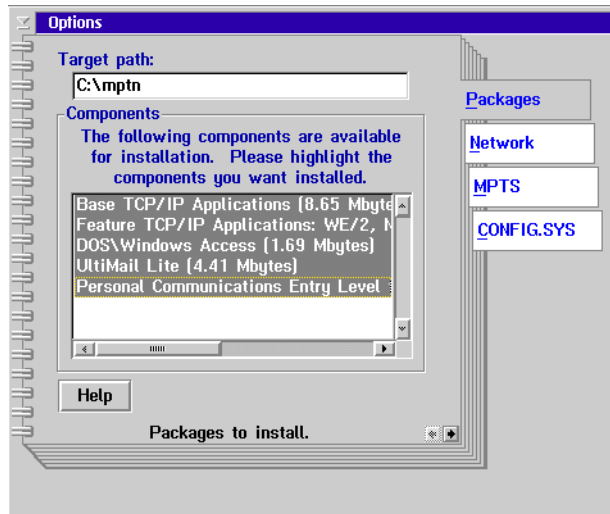
• Press **Options**.

Figure 43. TCP/IP Options - Packages

• On the first page of the Options notebook, called Packages, you can select the TCP/IP components from the base kit you want to install.

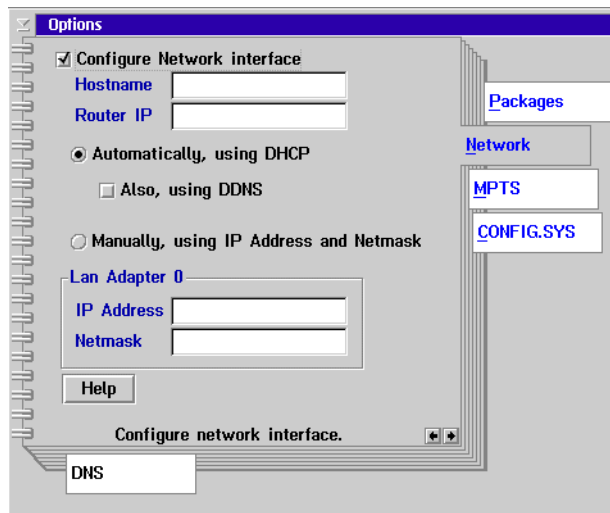• On the Network page you configure your machine for the TCP/IP network

Figure 44. TCP/IP Options - Network

If a DHCP server is available, select the appropriate check box. Otherwise you will have to perform the configuration manually by filling out the appropriate fields.

- Close the Options notebook.

- In the Installation window press **Install**.

The installation of the TCP/IP base kit is now starting.

7.2 Installing DHCP - / DDNS - Server

DHCP (Dynamic Host Configuration Protocol) provides a framework for passing configuration information to hosts on a TCP/IP network. The DHCP server supports automatic, dynamic and manual allocation of IP addresses.

DDNS (Dynamic Domain Name Services) works hand in hand with DHCP. It automatically registers the TCP/IP host names and IP address mappings of the workstations attached to the LAN. In this way, you can address a host by querying the DDNS server to obtain the current IP address that matches its domain name.

- To install, insert the **OS/2 Warp Server CD** and open an OS/2 window.

- Change to the CD drive, go to the directory \CID\SERVER\TCPAPPS, and run INSTALL.EXE.

Figure 45. Install TCP/IP - Location

The Install IBM TCP/IP V3.1 in Warp Server window appears.

- Change the installation directory to the directory where the TCP/IP base kit is installed.

If you followed the instructions above this will be the \MPTN directory on your boot drive.

- Choose **Options**.

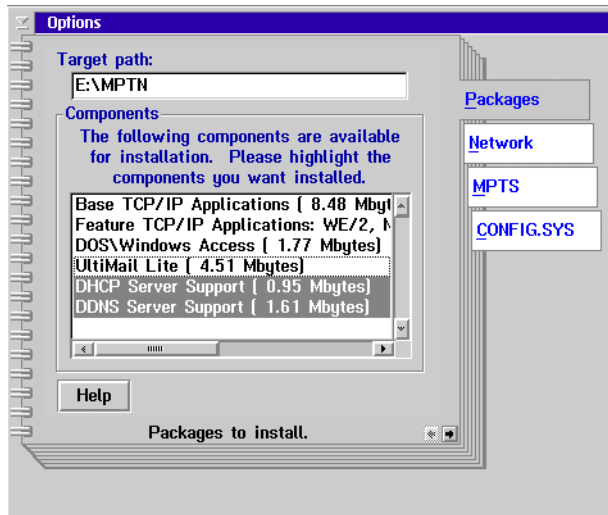In the options notebook that appears (see Figure 46) you have the opportunity to customize your installation.

Figure 46. Install TCP/IP - Additional Components

If you just want to install the DHCP and DDNS server:

- Select **Packages** from the Options notebook.
- Deselect everything except the entries for DHCP and DDNS server support.
- Close the **Options** notebook and proceed with **Install**.

The installation of the selected TCP/IP components is now starting.

Chapter 8. Remote Access

The Remote Access Server component is identical to the LAN Distance
Connection Server (LDCS) that was sold seperately before OS/2 Warp
Server.

The Remote Access Service is a software based solution to either connect a
remote workstation to a LAN or other single workstation, or to connect two
remote LANs. To build the connection, you can either use a modem attached
to your serial port (COM-port) or ISDN cards, which must provide a special
ANDIS driver that is needed to imbed the ISDN card as a LAN adapter in
Multi-Protocol Transport Services (MPTS).

Figure 47. LAN Distance Connection Server

The Remote Access connection behaves like a multiprotocol bridge. It
transports all protocols that you can bind to an adapter in MPTS. For
example, you can perform 3270 emulation using IEEE 802.2, browse the web
using Netscape with TCP/IP, or log on to a remote Warp Server.

However, the difference that you will see as a remote user is that the dialed
connection is much slower than beeing connected directly to a LAN.
Therefore, you should not try to lauch an application like Lotus Notes from a

LAN drive, when you are connected through a 28,800 baud modem connection.

The advantage of using the Remote Access Services in OS/2 Warp Server is the capability to use multiple protocols at the same time while the application is not aware that it is working remotely. The built in access security is also one of the highlights of Remote Access Services. It provides versatile capabilities such as sceduled logon times or call back.

8.1 Installing Remote Access Server

If you choose to install the Remote Access Server you must place your OS/2 Warp Server CD in the CD-ROM drive. Open a command prompt and change to the CID\SERVER\LDCS\LO319A1 directory and start INSTALL.EXE.

You will be prompted with a welcome screen.

- Select **OK** to proceed.
- You must specify a target drive on which to install the LAN Distance product.
- Select **OK** to proceed.

The LAN Distance installation process will now start, as shown in Figure 48.

LAN Distance installation in progress

**Transferring files
from diskette image 1**

0   20   40   60   80   100%

Please Wait...
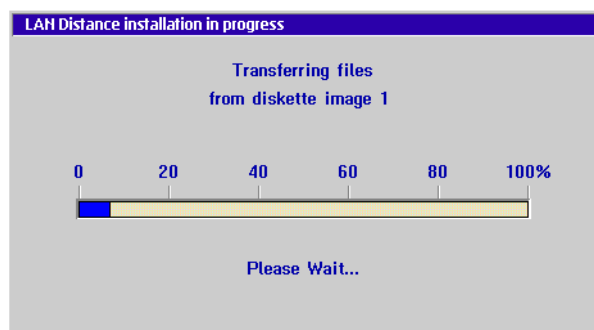
Figure 48. Lan Distance Installation Process

When this is done, you are prompted with the Installation Complete screen. You must now stop all current processes and reboot your workstation.

After the reboot, you must start the configuration process through the LAN Distance Settings notebook.

When your workstation has rebooted, you will have the IBM Remote Access icon on your desktop.

- Double click the icon.

As you can see in Figure 49, you have a `MyWorkstation` icon in the LAN Distance application folder. This is the LAN Distance default name of your workstation after installation. If you want a different name, you can change it during the configuration.
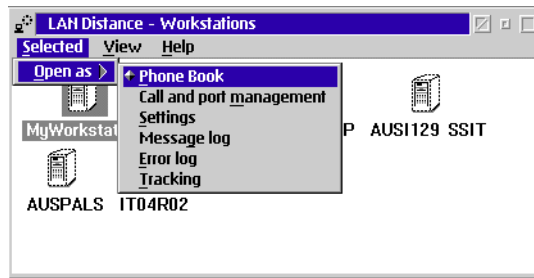

Figure 49. Lan Distance Configuration

Remote Access is now installed and ready for configuration.

8.2 Configuring Remote Access Server

The Remote Access Server can be set up for many different configurations:

- Connecting a remote workstation to another remote workstation
- Connecting a remote workstation to a LAN
- Connecting two remote LANs
- Connecting a remote workstation to a server without a LAN

Figure 47 on page 85 shows you the most typical setup for Remote Access Services; connecting a remote workstation to a LAN.

If the installation process has been successfully completed, you will have a LAN Distance Remote Access folder on the desktop. Open it to see the contents. In the folder, there is a IBM Remote Access program object. Double click on it to launch the LAN Distance Services. In the application, there is an icon representing your workstation. By default, this icon is called `MyWorkstation` (see Figure 49 on page 87).

If there are other Remote Access Servers or remote workstations on the same LAN, you will also see objects representing these other workstations. If you now select the MyWorkstation icon and click with your right mouse button, you get the context menu as shown in Figure 49 on page 87.

It contains a number of actions to manipulate the configuration of the Remote Access Service:

Phone Book:
   This option establishes connections to LANs and other workstations. If you double click directly on MyWorkstation icon, it will also open the Phone Book. The Phone Book feature is your dialing directory, so it contains phone book entries for the information needed to establish connections.

   The required privilege for this function is USER.

Call and Port management:
   This option is used to stop and start you port managers and for viewing the managed calls established through the workstation.

   The required privilege for this function is USER.

Settings:
   The settings notebooks contains other features that will be described later, such as:

   • Phone Book

   • Answer

   • Dial

   • Ports

   • Modems

   • Bridge

   • Address/LAN

   • Workstation

   • LAPS

   The settings notebook can be opened by any user. On a secure workstation, the settings notebook displays only the tabs that are granted to the user who opens the notebook. For example, the notebook includes only the information tab for a user. If an administrator opens the notebook, all of the tabs, except Security, will be available.

   You can view and work with all of your changes while the notebook is open and when you close the settings notebook, choose whether to accept or to delete the changes you made. Configuration changes that you make in the

settings notebook or in its imbedded notebooks are not saved until you close the settings notebook.

Message Log:

Allows you to view error and warning messages generated by the Remote Access Services product. This option is used to check and correct Remote Access Services configuration and connection problems.

The required privilege for this function is USER.

Error Log:

Allows you to access the OS/2 Error Log facility and view the errors logged there by the Remote Access Services product. The information in the OS/2 error log is in hexadecimal format. It is intended to help your designated support organization resolve error situations.

The required privilege for this function is USER.

Tracking:

Allows you to access information and tools for problem determination, including the audit log. The tools includes trace, dump and file retrieval facilities.

On a secure workstation, the tracking notebook displays only the tabs that are granted to the user who opens the notebook. For example, a user cannot access an audit log, so the audit tab is not displayed for a user.

Before Remote Access Services can be used, it must to be configured (see Figure 50). The following steps must be completed to configure a basic Remote Access Services server to provide access to a single remote workstation.
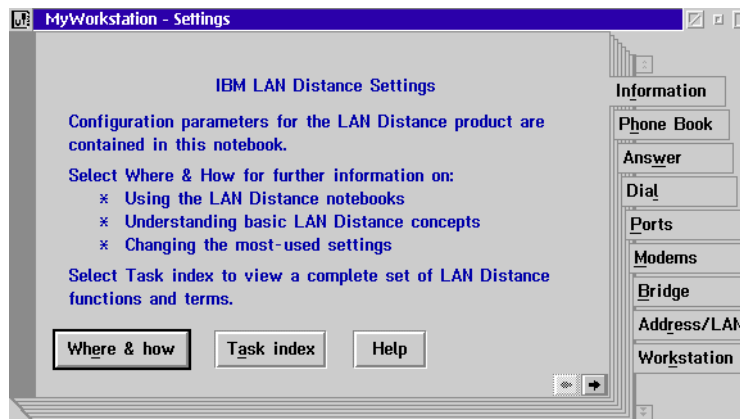
Figure 50. Lan Distance Settings Screen

- Configure the WAN Ports.

  The Wide Area Network (WAN) port is the path that Remote Access Services will use to communicate with the remote workstations. It is the access point for connections to and from a server.
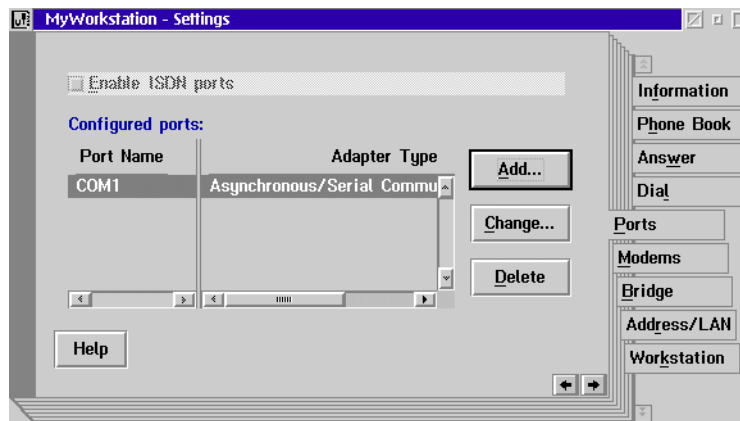
Figure 51. LAN Distance Ports Settings

- Configure the modem.

  Prior to using a modem, it must be configured and attached to a WAN port (see Figure 52).
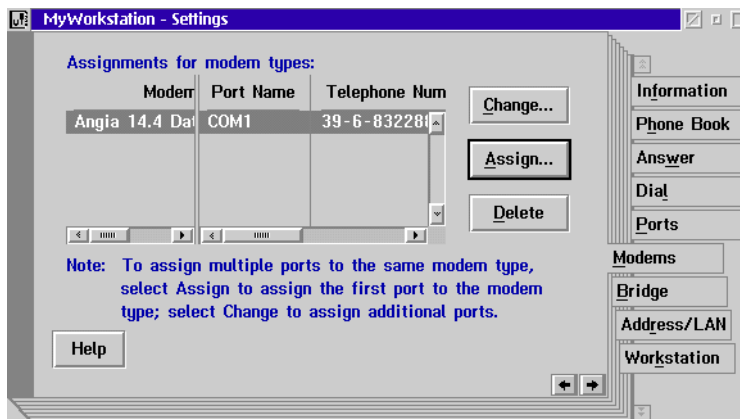
Figure 52. LAN Distance Modem Setup

- Configure the Bridge

  The Remote Access Services Bridge is located on the Connection Server and is used to route LAN frames between remote workstations in the WAN

and the LAN. In a token ring network, this bridge functions as a source routing bridge like the IBM Token-Ring Bridge Program. In a Ethernet network the bridge functions as a transparent bridge, you can only use the same type of networks together (see Figure 53).
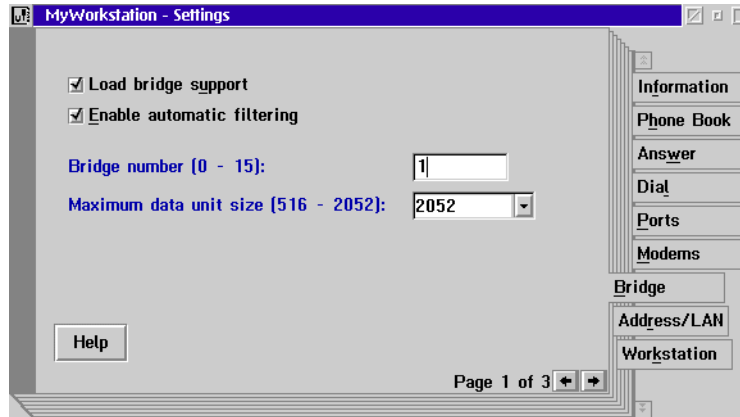
Figure 53. LAN Distance Bridge Setup

- Configure the Address/LAN

  The Remote Access Services server acts as a bridge between two LAN segments. In order for a bridge to operate, it must route frames between the two adapters connected to each LAN segment. The WAN segment and LAN adapter connected to it are logical devices. Although the adapter is a logical device, it must still have an adapter address (see Figure 54).
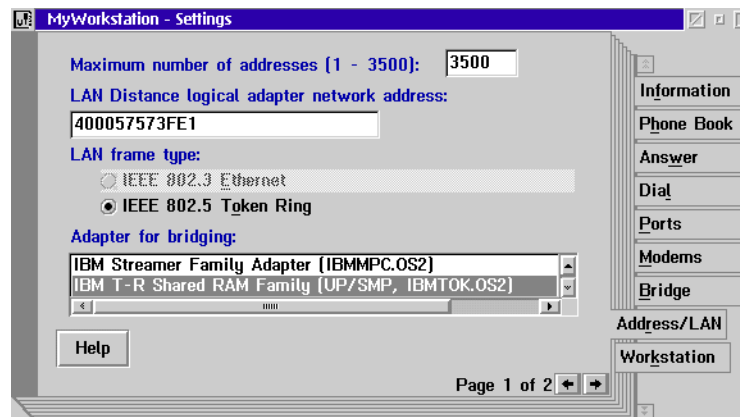
Figure 54. Address/LAN Settings for LAN Distance

• Configure the Answer Modes.

Before the Remote Access Service can start to receive incoming calls from remote workstations, it must be properly set up. Answering modes can be set up on a set of different criteria (see Figure 55).
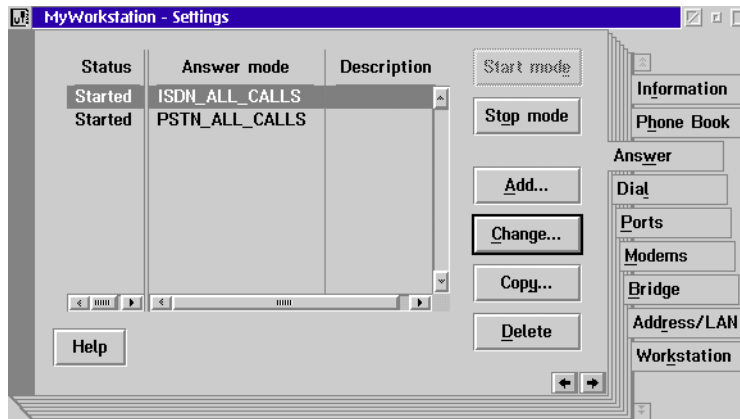
Figure 55. Answer Modes for LAN Distance

• Configure the workstation

When Remote Access Services is installed, the name that appears is MyWorkstation. This name should be changed to something that will help you to identify the server (see Figure 56).
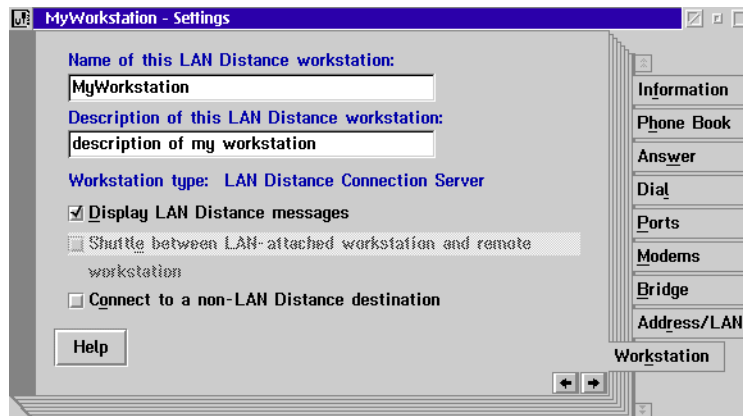
Figure 56. MyWorkstation Settings for LAN Distance

• Configure the Phone Book.

The Phone Book is normally used on a remote workstation to provide a list of Connection Servers that a remote workstation can contact. A User is defined in the Phone Book section since we need the User entry later to setup the security Callback feature. The Phone Book is also used on the Connection Server to allow call back security for users, or to call other remote workstations (see Figure 57).
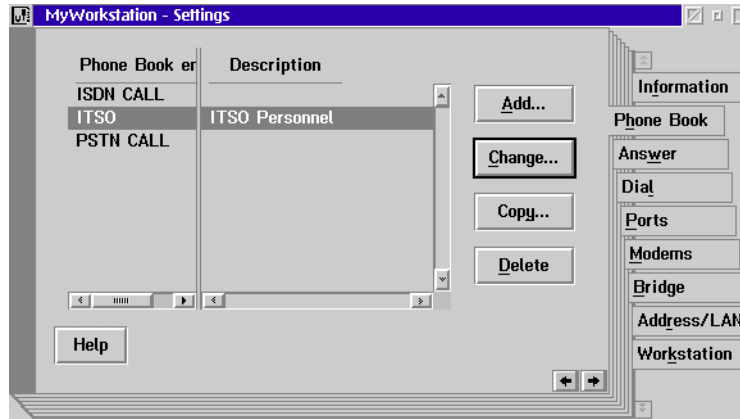
Figure 57. Lan Distance Phone Book settings

• Reconfigure MPTS.

The Remote Access Services Installation process adds both the Remote Access Services Logical Adapter for the WAN connection and the real network adapter in LAN Adapter and Protocol Support (LAPS). LAPS must to be reconfigured, as requested by the MyWorkstation setup (see Figure 58).
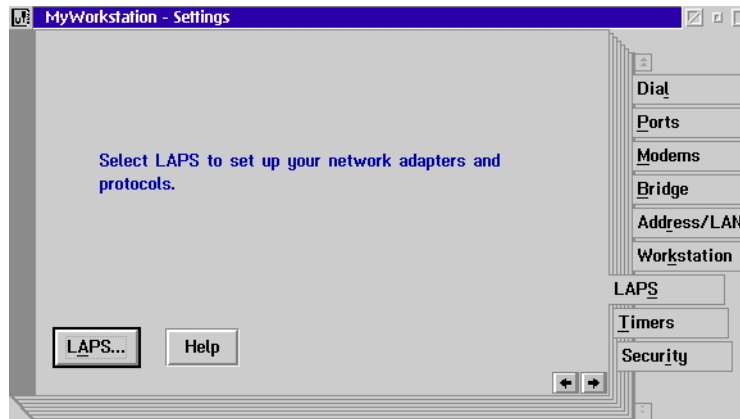
Figure 58. Lan Distance Settings

- Save and reboot your machine to make all the changes effective.

When you have properly configured all the above-mentioned processes, Remote Access Services is ready to accept incoming calls from remote workstations to the local LAN.

Some changes for Remote Access Services require you to stop and restart the service. Other changes require a complete reboot of your workstation. Please follow the instructions that you receive on your screen.

Reboot your workstation, and before starting the Connection Server, check that the modem is up and running.

Chapter 9. NetFinity

IBM NetFinity V5 is the latest version of NetFinity, formerly called TME 10 NetFinity, NetFinity or SystemView. It is a tool for systems management which covers software distribution and inventory, monitoring and remote control management of workstations, and much more.

When writing this document, we used the TME 10 Netfinity Version 4 .02 that is shipped with the OS/2 Warp Server SMP CD. However, you can also use the less recent Netfinity TME 10 version that comes with the single processor OS/2 Warp Server version.

IBM's System Validation testing was done using the version that is shipped with OS/2 Warp Server SMP. This is the first version of TME 10 that is shipped with OS/2 Warp Server. Later standalone versions of TME 10 are available, but have not been through system test. National Language Version (NLV) testing found a problem when installing TME 10 from Warp Server SMP and had to use a standalone version of TME 10 Netfinity (also 4.02) that is shipped separately.

TME 10 NetFinity Server 4.0 enhances the functions included in SystemView and provides new functions which makes TME 10 NetFinity Server a robust and easy-to-use desktop and server management tool. The following features are new with TME 10 NetFinity Server V.4.0:

- Management across the Intranet or Internet using a web browser
- Virus protection
- Forwarding of status topology information to NetView for AIX
- Connection to AIX or MVS-based software distribution managers

9.1 Installing TME 10 NetFinity

- Insert the **OS/2 Warp Server SMP CD-ROM** in the CD-ROM drive.
- Open a command prompt and change to the CD-ROM drive.
- Change to the \CID\SERVER\SYSVIEW2\SERVER_2 subdirectory.
- Type `Install` and press **Enter**.

The SystemView Installation window appears as shown in Figure 59 on page 96.

Figure 59. SystemView Installation

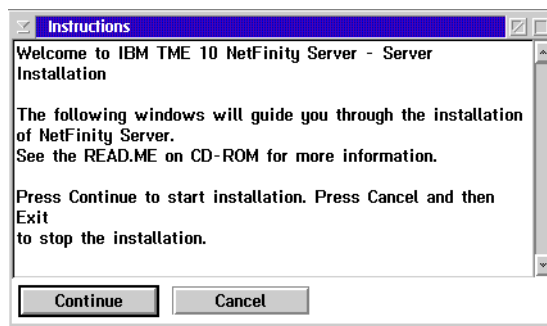The Instructions window also appears (see Figure 60).

Figure 60. Instructions

• Read the instructions in the Instructions window, then select the **Continue** button and press **Enter.**

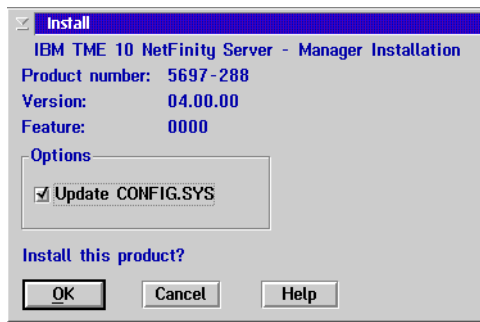The Install window appears as shown in Figure 61 on page 97.

Figure 61. Install

- Select the **OK** button and press **Enter**.

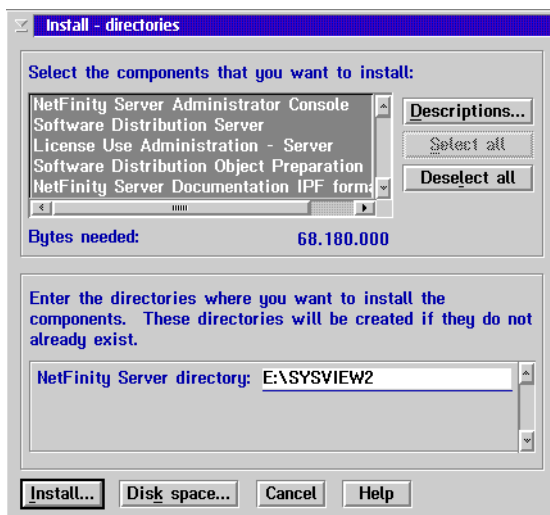The Install - directories window appears as shown in Figure 62.

Figure 62. Install - directories

- Choose the **Select all** button and check that the NetFinity Server directory is correct.

- Choose the **Install** button and press **Enter**.

The Install - progress window appears as shown in Figure 63 on page 98. The files are now transferred to the hard disk.
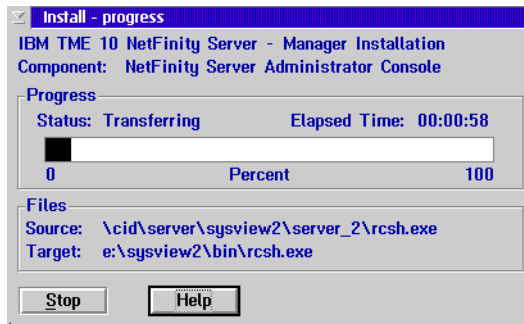
Figure 63. Install - progress

Next, the TME 10 Netfinity Server Configuration notebook appears (see Figure 64).
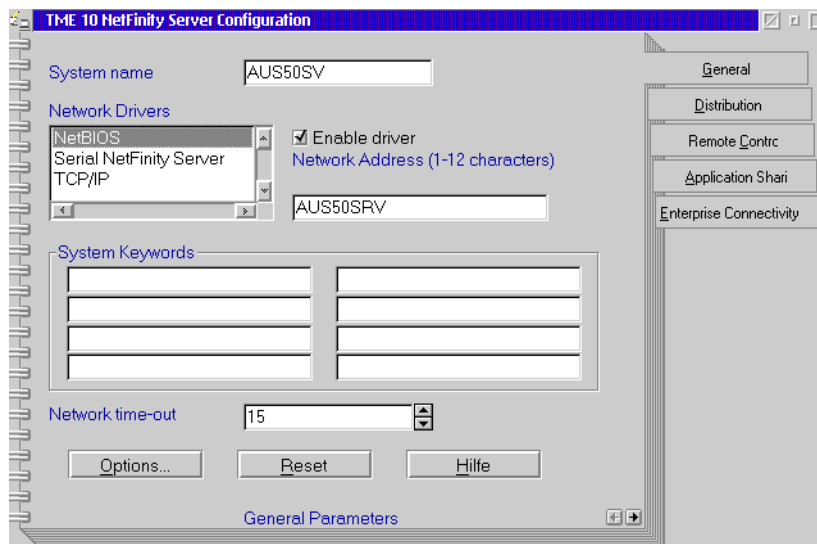
Figure 64. TME 10 Netfinity Server Configuration

- Check all the tabs: General, Distribution, Remote Control, Application Sharing, Enterprise Connectivity.

  General:

  Enter a name for this system, so that it can be addressed in the NetFinity Server environment. The name can coincide with the NetBIOS Name or the TCP/IP hostname if you desire.

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Distribution:
> The Backup area field displays the default backup directory for the Distribution component. Enter the path of your choice if you wish to change the default. The Backup directory is a functional area that stores the backup copies of software. The backup copy of a file or a software package can be used to return to the state that existed before a removable change was installed.

Remote Control:
> The Start RWC sessions in Active state check box makes Remote control sessions start up in active mode. If this option is deselected the RWC sessions will start up in monitoring mode.

Application Sharing:
> Select this checkbox to enable this workstation to access shared applications from a remote file server. When you check this box, all the other items in this page are enabled. If you select to enable your workstation for application sharing, the configuration process produces an application sharing icon and adds it to the OS/2 System Startup folder so that you can automatically logon to the file server.

Enterprise Connectivity:
> Disable the check box on this page if this server will not be connected to a remote AIX or MVS software distribution server and you do not need to define any remote servers. When you disable this check box, the server is configured as a SERVER_NO_COMMS in NVDM.CFG. The default is to have the server enabled for remote communication; the server is then defined as SERVER_WITH_COMMS in NVDM.CFG.

- On the General page in the System name field, enter a system name (such as. AUS50SV).

- Select a **Network driver** (or more) and enable it by clicking on the **Enable driver** check box.

- Enter some keywords to find this system later on and assign it to a group, such as SERVER and ITSO (or your department name)

- Close the notebook.

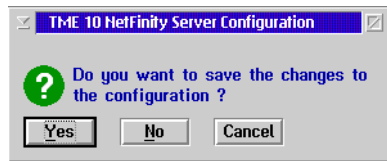An Information window appears as shown in Figure 69 on page 105.

Figure 65. TME 10 NetFinity Server Configuration Information

• Select the **Yes** button and press **Enter**.

The system saves the configuration. Then the Install - progress window appears again as shown in Figure 66 and the rest of the files are transferred to the hard disk.
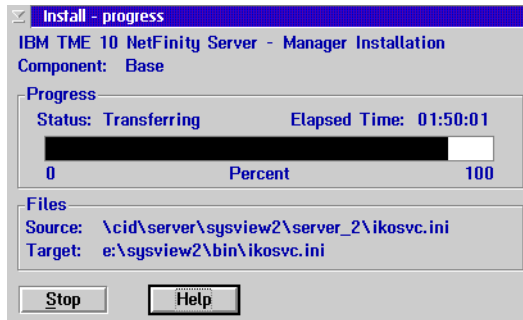

Figure 66. Install - progress

The Installation and Maintenance window appears (see Figure 67).

Figure 67. Installation and Maintenance

• Select the **OK** button and press **Enter**.

The NetFinity Server folder is created on the desktop.

- Reboot your PC.

The installation is now finished.

Chapter 10. Personally Safe and Sound (PSnS)

PSnS is a powerful backup utility that lets you safeguard your OS/2 system against loss of data. It allows you to set up a backup strategy for each activity you perform on your machine. This strategy, once employed, provides protection against all of the likely causes of data loss: user errors, hardware malfunctions, malicious damage and disasters.

Using PSnS, you can create backups for

- Local Hard Disks
- Remote Hard Disks accessed with a Logical Drive Letter

It allows you to store backups into a Backup Set which can reside on any of the following Storage Devices:

- Tape drives
- Hard Disks
- Diskette Drive
- LAN Alias Drive
- Remote Drives
- Optical Drives
- IBM ADSTAR Distributed Storage Manager (ADSM)

PSnS uses a backup method to control each backup. Backup methods contain all the information needed to execute the backup: which files and folders to back up, and where and how to store them.

You can restore data simply by selecting the files or folders you want restored. PSnS carries out all management functions necessary to retrieve data from the backups. PSnS keeps an inventory of all the files that have backups, including information about where the file is stored, its attributes, how many versions exist, and so on. This makes restoring lost or damaged data simple and easy because it does not rely on you to catalog and organize the backup media.

The program supports all the features of the OS/2 file systems, including:

- Long file names
- Extended Attributes
- Network Access Permissions

PSnS is compatible with the IBM ADSTAR Distributed Storage Manager, IBM's flagship data storage management system.

For instructions about using PSnS please refer to the PSnS online documentation, the Redbook 'Inside OS/2 Warp Server, Volume 2' (SG24-4702-00) and the web site *http://www.wdg.uk.ibm.com/psns*.

10.1 Installing PSnS

Besides creating the product diskettes and then installing them, we only found one other way to install PSnS from CD: using the integrated installation that comes with OS/2 Warp Server.

- Copy the \WARPSRV directory and its subdirectories from the Warp Server CD to your hard disk.
- Switch to the \WARPSRV directory on the hard disk and start WSCONFIG.EXE.

If you start WSCONFIG.EXE from CD, the installation procedure will try to create a response file on the read-only CD.

The Installing IBM OS/2 Warp Server window appears as shown in Figure 68.

- Choose **Advanced Installation** and press **OK**.
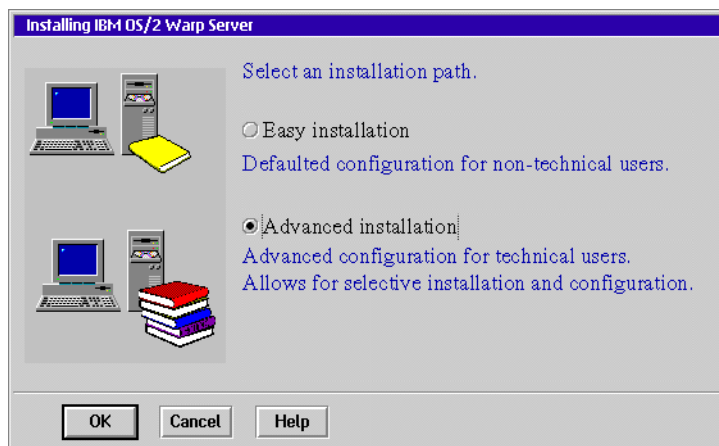
Figure 68. Installing IBM OS/2 Warp Server (PSnS)

The following window shown in Figure 69 is just for informational purposes and does not have to be filled out in order to proceed.

Figure 69. Information

- Press **OK** to continue.

The window Advanced Installation Warp Server Setup and Installation appears (see Figure 70).
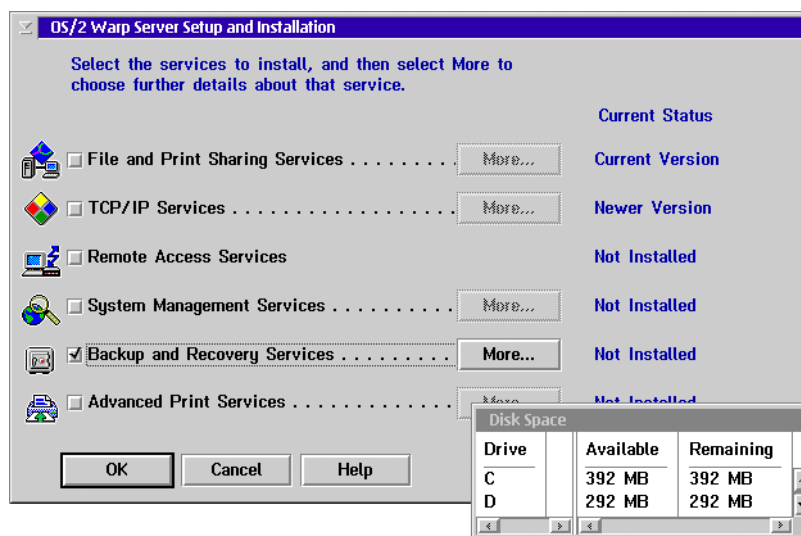
Figure 70. OS/2 Warp Server Setup and Installation

- Select **Backup and Recovery Services**.
- Click on **More** to select your desired backup media and confirm by clicking **OK**.

• Leave the Warp Server Setup and Installation window by clicking **OK.**
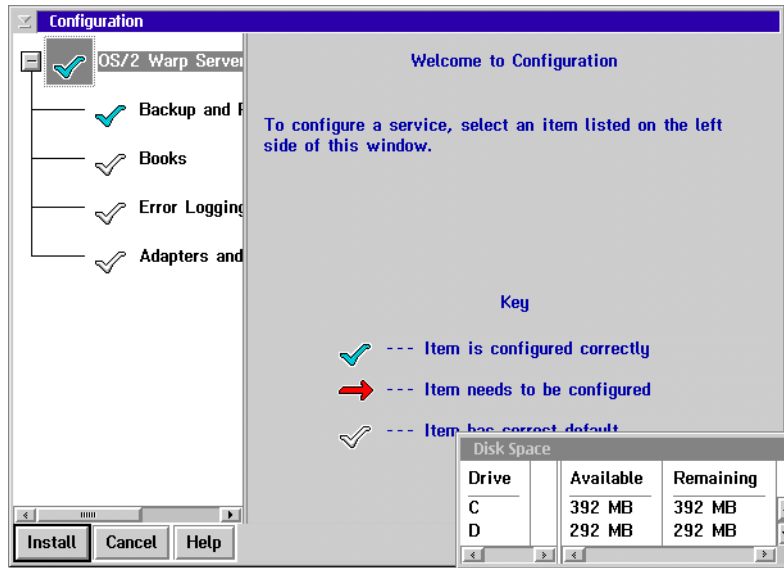
The Configuration window will apear as shown in Figure 71.

Figure 71. PSnS - Configuration

• Check every item to see if you want to accept the default settings or change them.

  • Backup and Recovery Services lets you select the installation drive.

  • Books lets you install on-line publications for different Warp Server features.

  • Error logging services allows you to specify where errors should be logged.

  • Adapters and Protocol Services lets you check the MPTS configuration and update it if necessary.

• Press **Install** to start the installation process.

Two information windows will appear that you have to confirm. Then the installation program will automatically shut down your system.

After a manual restart the installation will continue automatically and eventually perform another reboot. If you have a SCSI tape drive attached to your machine you will notice three lines about the initialization of the SCSI tape driver during startup. After startup the installation is complete.

10.2 How to Build Disaster Recovery Diskettes

Boot diskettes are used to boot a system when the boot from hard disk fails or when all the files on the hard disk need to be accessible and not in use. For a plain OS/2 system these diskettes are called utility diskettes. They can be built if you use the Icon `Create Utility Diskettes` which is found under `OS/2 System` and then `System Setup`.

On a server that uses HPFS386, these diskettes need to be modified in order to be able to access the HPFS386 file system. There is a utility called MAKEDISK stored in the \IBMLAN\NETPROG directory that allows you to easily make these modifications.

If you build Disaster Recovery Diskettes under PSnS, a combination of both processes is used. This can lead to some confusion, especially when you use Warp 4. Therefore we recommend that you read the following instructions very carefully.

You will need four diskettes. Label them as PSnS Diskette 1 to 4. They will be formatted during the process so no preparation is needed.

- Open **PSnS Backup and Recovery**, then open **Backup/Restore** as shown in Figure 72. and Figure 73 on page 108.
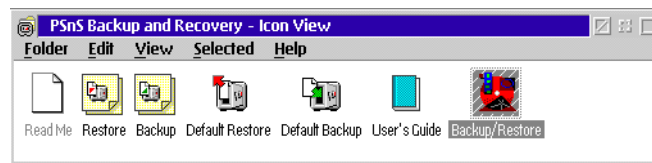
Figure 72. PSnS Backup and Recovery - Icon View

Note:

If this is the first time you are using this feature, you are asked to perform a simple test backup. You can skip this by pressing **Move on**. You then choose **Use disaster recovery guide**.

- At the OS/2 Warp Server Backup/Restore Window, select **Tools - Guides - Disaster Recovery Guide...** as shown in Figure 73 on page 108.
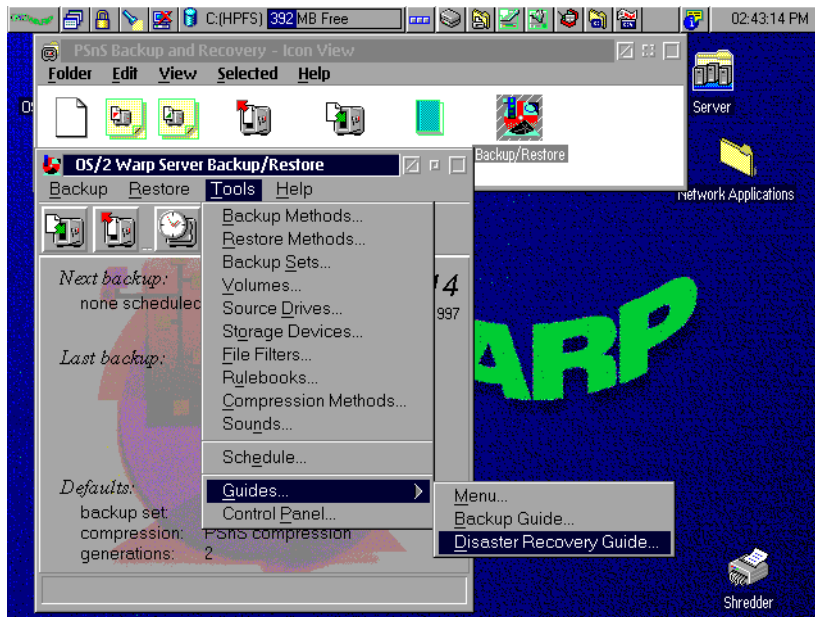
Figure 73. PSnS Tools

A notebook will be presented to you as shown in Figure 74 on page 109, where you should make the following selections:

Intro: Read the short introduction to disaster recovery.

Devices: Choose your tape drive.

HPFS386:   Check 'Include support for HPFS386'.

Diskettes: Shows the drive where the diskettes will be created.

- Press the **Create Diskettes** button.

In the following Create Utility Diskettes dialog box, you are prompted for the drive letter on which the diskettes are beeing created.

- Select the drive letter (A:).

- Press **Create**.

The next dialog box prompts you the source directory which is usually the OS2IMAGE directory on the Warp 4 CD.

- Confirm your selection by pressing **OK**.

- Insert the **PSnS Diskette 1** into your disk drive as prompted.

- Press **OK**
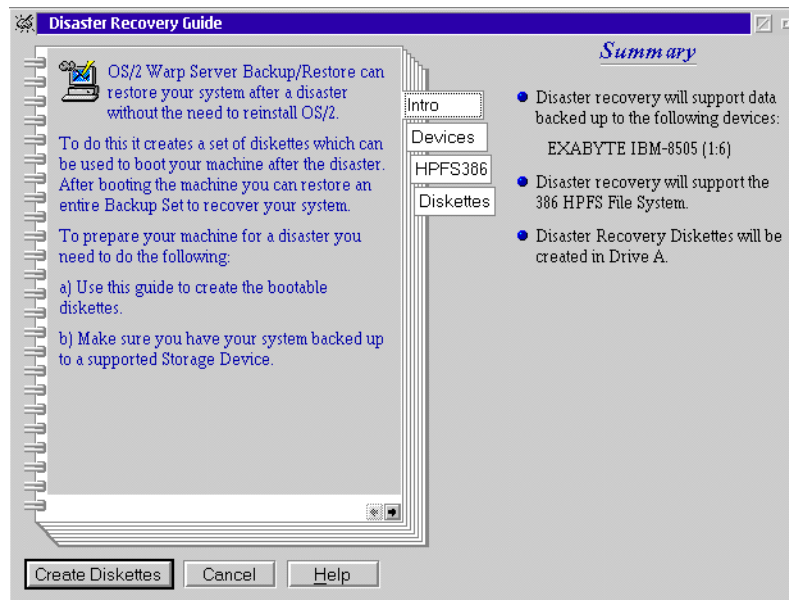
Figure 74. Disaster Recovery Guide

An information window appears, telling you that the diskette is about to be formatted.

- Confirm by selecting **Yes**.

The diskette will then be formatted. This process will be repeated for the PSnS diskettes 2, 3 and 4. The procedure after this installation step is the create utility diskettes procedure from OS/2 Warp (in this case from version 4), so the diskettes might be named differently than you labeled them in previous steps.

When completed, you are prompted to remove diskette 3. Remove the diskette.

- Press **OK**.

> **Note:**
>
> This can be a confusing issue. We recommend that you look at Figure 75 on page 111 while you read this note.
>
> OS/2 labels its diskettes starting with DISK0. OS/2 Warp V3 creates 3 diskettes, where the first one (DISK 0) contains the boot record and kernel. On the second diskette (DISK 1) OS/2 places the CONFIG.SYS, all device drivers, the drivers for the installable file system (IFS), all DLLs and other executables launched from the CONFIG.SYS. The third diskette (DISK2) contains all the tools, however it is not essential to the diskette boot process.
>
> The diskette creation process from PSnS assumes that it is modifying OS/2 Warp V3 diskettes. It modifies the CONFIG.SYS, adds the device drivers for the tape and support and adds the IFS drivers for HPFS386 support on DISK 1. On DISK 2 it copies only the restore application. However this is not relevant for the boot process.
>
> OS/2 Warp 4 is creating 4 diskettes (DISK 0 to 3) instead of 3, because the number of device drivers and the plug and play support require more drivers loaded during boot time. On a set of OS/2 Warp 4 utility diskettes, DISK 0 has the same content as on OS/2 Warp 3. DISK 1 also contains the CONFIG.SYS in addition to the device drivers (plus snooper drivers used for plug and play support). IFSs, DLLs and executabes launched from the CONFIG.SYS are placed on DISK 2. DISK 3 only contains tools that are not used during the boot process.
>
> If HPFS386 and PSnS support is added to the OS/2 Warp 4 diskettes, only the tape drivers have to be copied to DISK 1. The IFS driver for HPFS386 and all assigned DLLs has to be copied on DISK 2. The PSnS restore tool has to be placed on the last diskette, DISK 3.
>
> Another confusing issue is, that PSnS uses a different numbering scheme than OS/2 for the diskettes. The first diskette, the OS/2 DISK 0, is called PSnS Diskette 1.
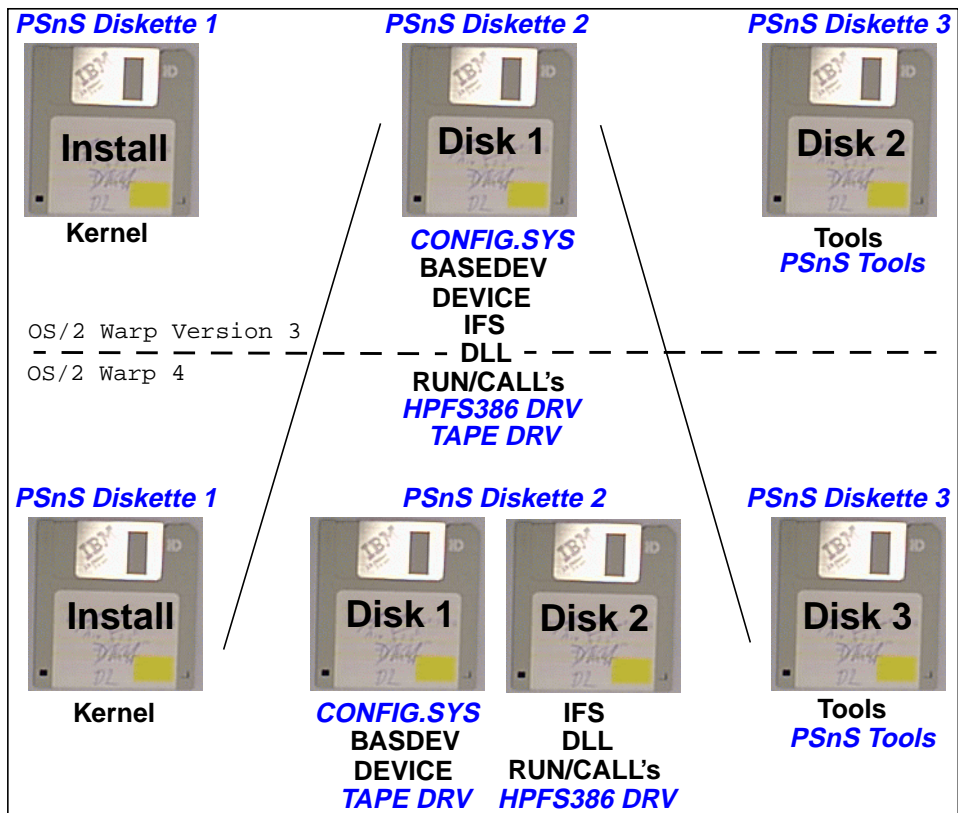
Figure 75. Contents of Disaster Recovery Diskettes

You are now prompted to insert diskette 2 as shown in Figure 76.

- Insert **PSnS diskette 2**.
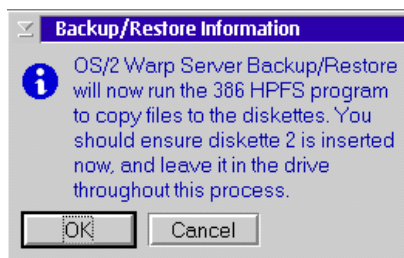
- Press **Enter**.

Figure 76. Diskette Modification for HPFS386

The MAKEDISK utility is started and asks that you insert OS/2 DISK 1 (which we labeled as PSnS diskette 2 in previous steps) as shown in Figure 77 in order to copy the HPFS386 drivers on it.
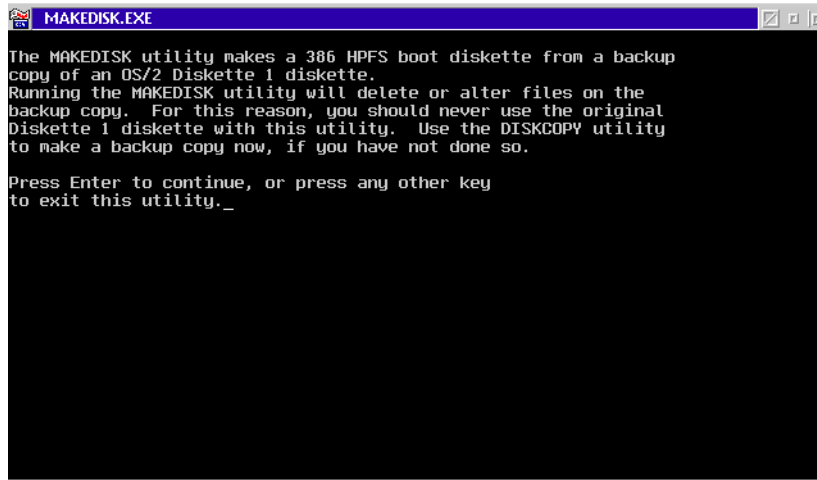

Figure 77. MAKEDISK.EXE

This is correct for OS/2 Warp V3, but as mentioned before, the HPFS386 drivers have to be on DISK 2 for a OS/2 Warp 4 system. The MAKEDISK utility is checking the diskette label in the file system to be sure that you have OS/2 DISK 1 inserted. The solution is to manipulate OS/2 DISK 2 so that MAKEDISK thinks it is OS/2 DISK 1.

- Open a command prompt.
- Insert **OS/2 DISK 2** (which we labeled PSnS Diskette 3) in drive A:.
- Change the volume label on the diskette to `DISK 1` by entering the following command:

  `LABEL A:DISK 1`

- Delete the following files from the diskette to create space for the HPFS386 diskettes:

  - CDFS.IFS
  - CDINST.EXE
  - OS2CDROM.DMD.

  All these files enable CD-ROM support that is not used for the recovery process.

- Close the command prompt and switch back to the MAKEDISK utility.

- Press **Enter** to continue with MAKEDISK.

After all the modifications for this diskette are finished, a dialog box appears prompting you to insert diskette 3.

- Insert the diskette that we have previously labeled as PSnS Diskette 3 in the diskette drive.
- Confirm with **OK**.

The diskette creation process is now copying files on the diskette. After the process of creating the diskettes is completed, you must proceed with these final modifications:

- Change the volume label of OS/2 DISK 2 (PSnS Diskette 3) back from `DISK 1` to `DISK 2`.
  - Open a command prompt.
  - Insert **PSnS Diskette 3** into the diskette drive
  - Enter the following command:
    ```
    LABEL A:DISK 2
    ```
- Edit the CONFIG.SYS on OS/2 DISK 2 (PSnS Diskette 3):
  - Delete the following entry:
    ```
    BASEDEV=PRINT01.SYS
    ```
  - Add the following entry:
    ```
    BASEDEV=IBMKBD.SYS
    ```
  - If you are using a RAID machine you also have to add the RAID driver manually.
- Copy the following files from OS/2 DISK 2 (PSnS Diskette 3) to a temporary directory on your hard disk and delete them from PSnS Diskette 3:
  - CONFIG.SYS
  - ADSMSDID.SYS
  - ADSMTAPE.SYS
  - OS2SCSI.DMD
- Copy the files from the temporary directory to OS/2 DISK 1 (PSnS Diskette 2)

To use these diskettes, boot your system from PSnS Diskette 1 and change
the diskettes as requested. When you get a command prompt, insert PSnS
Diskette 4, type GO and press **Enter** to start the recovery process.

Chapter 11. General Information

11.1 Prerequisites

An actual migration from an earlier version of OS/2 to OS/2 Warp 4 *with Warp Server* is not supported by IBM. Instead, we suggest that you back up your vital data, format the installation partition and restore your configuration. Therefore the prerequisites for the update are almost the same as for a new installation.

In addition you will need LAN Server Management Tools (LSMT), which can be found on the IBM internal OS2TOOLS tool disk. If you don't have access to OS2TOOLS, please ask your IBM representative. For our testing, we used the LSMT203 PACKAGE. Normally, you can use the tools which are shipped with the OS/2 Warp Sever product - PREPACL, BACKACC and RESTACC, but we recommend the LSMT.

11.2 Tested and Supported Update Configurations

The only supported update of an OS/2 and LAN Server to OS/2 Warp 4 with the Warp Server File & Print Server is to back up your vital configuration information, like access control lists and so on, then reinstall OS/2 Warp and Warp Server on a formatted partition and restore your configuration.

'Real' migration by directly updating the operating system from OS/2 2.11 or Warp 3 to Warp 4 has been successfully tested and may work in some circumstances. However, this path is not supported by IBM.

> **Note:**
>
> IBM only supports the installation of OS/2 Warp 4 Base Operating System on a new or formatted partition, not on a existing server.

Chapter 12. Updating An Existing File and Print Server

If you use OS/2 Warp Server Version 4 (which includes OS/2 Warp V3 as the base operating system and LAN Server 5.0) or any prior OS/2 and LAN Server configuration, such as OS/2 2.11 and LAN Server Version 3, you have to update the base operating system to OS/2 Warp 4. As you will recognize, there is no offical way to update only the base operating system.

Note:

IBM does not support the migration of any previous version of OS/2 (2.1x, 3.0 and so forth) to OS/2 Warp 4 with OS/2 Warp Server!

However, we also tested a migration of OS/2 2.11 with LAN Server 3.0 and also OS/2 Warp Server to a OS/2 Warp 4 base *without* formatting the hard disk and this also worked. We had to backup the LAN Server configuration files (like ACL's and NET.ACC's) before starting the migration. However, this kind of update is not supported by IBM. Following the proceeding steps will not take you much longer, it is definitly the safer:

- Save your Domain definitions.
- Format your partition.
- Install OS/2 Warp 4.
- Install File and Print Server from OS/2 Warp Server Version 4.
- Restore your Domain definition.
- Install/Update TCP/IP.
- Install/Update Remote Access.
- Install/Update TME 10.

12.1 Using LSMT to Save the Domain Definitions

The first step is to download LSMT (Lan Server Management Tools), from the OS2TOOLS toolsdisk disk. Since you will need to unzip the LSMT program file it is also possible to download the unzipper PKUNZIP2.EXE from OS2TOOLS.

After you download LSMT you have:

- LSMT.TXT

- LSMT203.ZIP
- LSMT.ANN
- LSMT.PAC

Use PKUNZIP2 to unzip the LSMT program file.

Hint:

If your workstation has more than one partition, we suggest that you copy the LSMT program files onto a partition that you will not format.

To create the LSMT Objects on the WorkPlace Shell:

- Open a command prompt.
- Change to the directory where the unpacked LSMT tools reside.
- Type **INSTALL**, then press **Enter**.

A folder with LSMT appears as shown in Figure 78 on page 120.

Note:

When you start the LSMT process the LAN Server must be up and running.
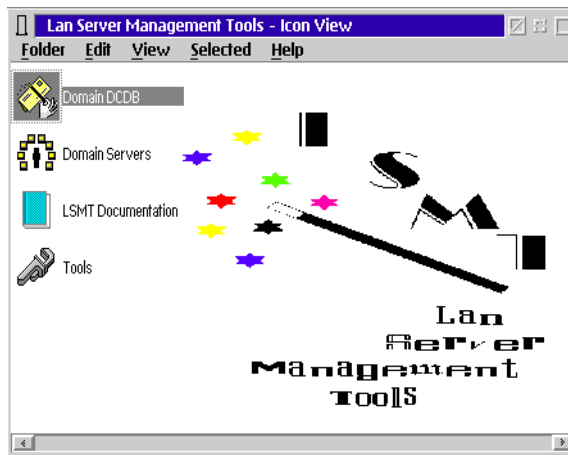
Figure 78. LAN Server Management Tools - Icon View

- Select and open Domain DCDB, Domain Control DataBase (see Figure 79).
- Open the <DCDB> from a Domain icon
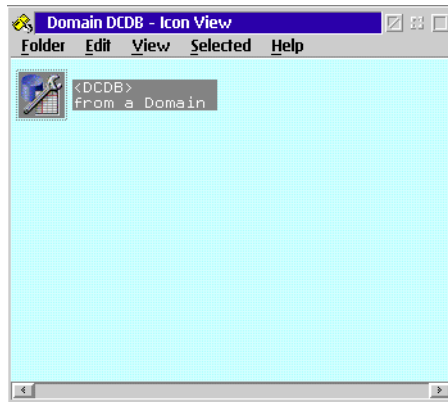
Figure 79. DomainDCDB Icon View

A dialog box appears as shown in Figure 80.

- Enter the name of the Domain Controller.
- Select and click on the **Open** button.
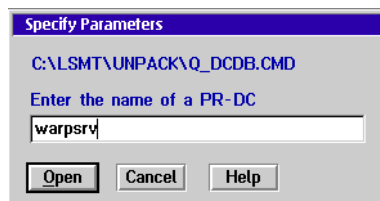
Figure 80. Specify Parameters

At this point an OS/2 window will open, and you will be prompted with a few messages. The REXX program will check the primary domain controller name, and will then create the files containing the DCDB information.
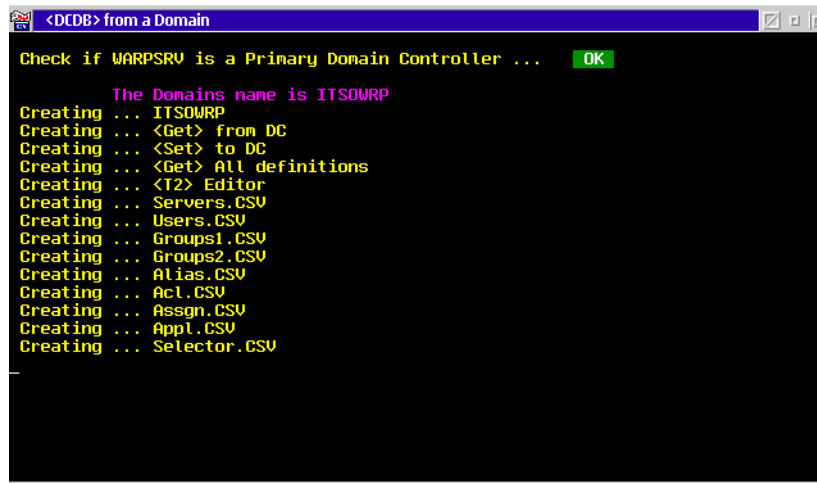
Figure 81. <DCDB> from a Domain

At the end of the process you will have the Domain Controller icon in the DCDB Icon View as shown in Figure 82.
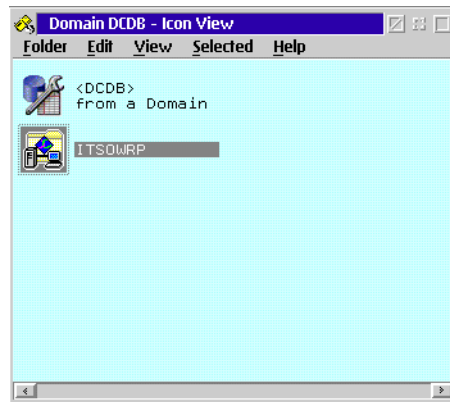
Figure 82. Domain DCDB Icon View

• Click and open the Domain Controller object.

A window with the domain action icons appears as shown in Figure 83.
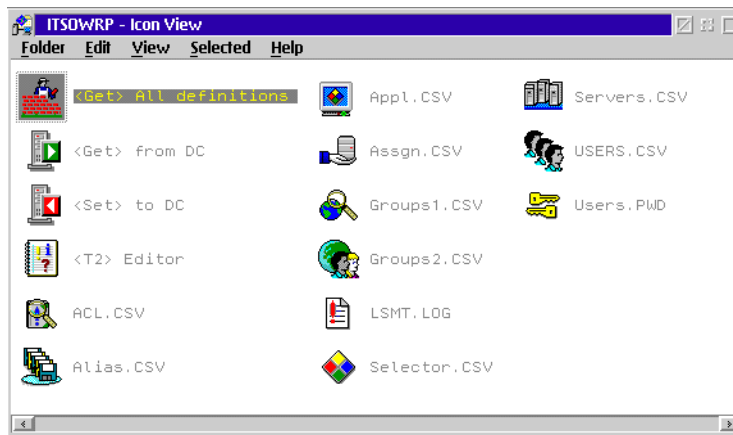
Figure 83. ITSOWRP Icon View

> **Attention:**
>
> First you must change the GETUSERS.CMD. Open the GETUSERS.CMD
> with an editor and at column 59 of this file you must replace the `"****"` with
> `"ABCD"`, where ABCD stands for a new temporary password. File and save.

- Click on the `<GET> All Definitions` icon

The Specify Parameters Dialog Box will appears as shown in Figure 84.

- Enter the computer name.
- Press on **Open**.
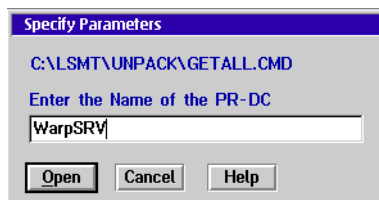
Figure 84. Specify Parameters

A REXX program will start and create files containing all domain relevant
definitions. Figure 85 shows the messages that are displayed while this
process is checking the system.

Figure 85. <Get> All definitions

When the procedure has finished, it will prompt you as shown in Figure 86.

Figure 86. <Get> All definitions

- Press **Enter**.

To save all user passwords from the domain, you have to:

- Select the `USERS.PWD` icon and drag and drop it on the `<GET> from DC` object.

You will be prompted with a Specify Parameters window:

- Type in the computer name of the Domain Controller.
- Click on **Open**.

You will get a processing window. When done,

- Press Enter.

To save all application definitions, you have to:

- Select the `SELECTOR.CSV` icon and drag and drop it on the `<GET> from DC` object.

You will be prompted with a Specify Parameters window:

- Type in the computer name of the Domain Controller.
- Click on **Open**.

You will get a processing window. When done,

- Press **Enter**.

All domain definitions such as servers, users, groups, assignments, applications, aliases and access control lists (ACL's) will be saved to the LSMT\DOMAINNAME directory, where DOMAINNAME stands for the domain name of the server. The LSMT files containing the domain informations have the following extensions:

- *.CSV
- *.PWD
- *.LOG

Attention:

If your system has only one partition, you must copy the files in the subdirectories created from the LSMT to a diskette or to a network drive.

Now you have to backup the server related data. From the LSMT folder shown in Figure 87:

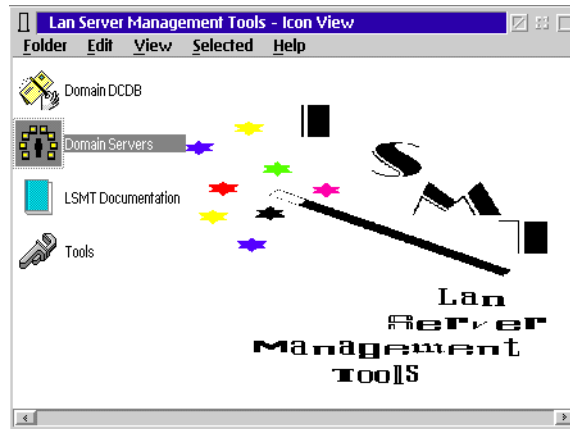- Select and open `Domain Servers` object.

Figure 87. LAN Server Management Tools Icon View

A new window appears.

- Select and open the `<Server> in a Domain` object.
- Type in the computer name of the server you want to backup.
- Press **Open**.

The REXX procedure copies all the system related configuration files to a new subdirectory called \LSMT\DOMAINNAME\COMPUTERNAME, where DOMAINNAME stands for the domain name and COMPUTERNAME for the specified name of the server.

This steps have to be repeated for each server in the domain to be updated. When done, the \LSMT\DOMAINNAME\COMPUTERNAME directory contains the following files for each server:

- CONFIG.SYS
- HPFS386.INI
- IBMLAN.INI
- LANTRAN.LOG
- PROTOCOL.INI
- QSYSTEM.OUT

> **Attention:**
>
> If your workstation has only one partition, you must copy the system-related configuration files that are under the COMPUTERNAME subdirectory to a separate diskette or to a network drive.

When this process is complete, you will have a new object with your Domain Name in the Domain Servers folder.

12.2 Preparing the Server Partition

Make a backup of all files from the server partition that you might need, because the partition will be formatted.

> **Attention:**
>
> Check the following sections to see which files have to be saved to keep the configuration of the following components:
>
> - TCP/IP - see "Updating TCP/IP" on page 132.
> - Remote Access - see "Updating Remote Access" on page 134.
> - NetFinitiy TME 10 - see "Updating NetFinity" on page 137.

12.3 Updating OS/2 Warp 4

Install the OS/2 Warp 4 Base Operating System as described in Chapter 3., "Installing OS/2 Warp 4" on page 33. Do not forget to format the installation partition.

12.4 Updating File and Print Server

Because we are not doing a real update and we are installing the File and Print Server on a newly installed OS/2 Warp 4 system. you can follow the steps either described in Chapter 4, "The Installation of OS/2 Warp Server Version 4" on page 47 or Chapter 6, "Installing the File and Print Server Component" on page 73.

12.5 Using LSMT to Restore the Domain Definitions

We are now ready to restore the files previously saved with LSMT. The first step is to reinstall the LAN Server Managment Tools (LSMT) on the server. This has to be done as described in "Using LSMT to Save the Domain Definitions" on page 119.
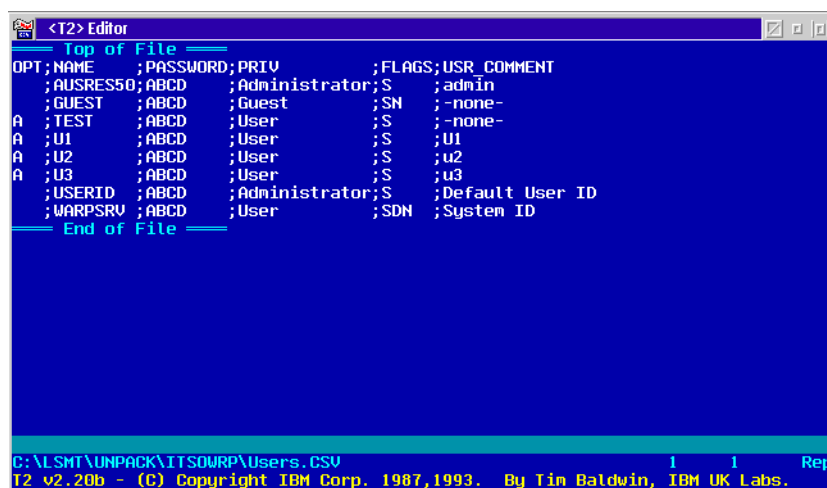
The next step is to restore the \LSMT\DOMAINNAME directory with all its subdirectories, containing the domain and server definitions used from LSMT.

Normally you will NOT need to restore the system related configuration files as CONFIG.SYS, HPFS386.INI, IBMLAN.INI, LANTRAN.LOG or PROTOCOL.INI. However, you will need to restore the domain definitions.

To restore the domain definitions you must select all the *.CSV files and drag and drop them into the `<T2> EDITOR`.

You *must* type in the OPT column an:

`A` to ADD the users, groups, ACL's, assignment, aliases and applications to the domain.

`D` to DELETE users, groups, ACL's, assignment, aliases and applications to the domain.

`U` to UPDATE users, groups, ACL's, assignment, aliases and applications to the domain.

```
<T2> Editor                                          ☑ ◻ ◻
   === Top of File ===
OPT;NAME     ;PASSWORD;PRIV        ;FLAGS;USR_COMMENT
   ;AUSRES50;ABCD    ;Administrator;S    ;admin
   ;GUEST   ;ABCD    ;Guest        ;SN   ;-none-
A  ;TEST    ;ABCD    ;User         ;S    ;-none-
A  ;U1      ;ABCD    ;User         ;S    ;U1
A  ;U2      ;ABCD    ;User         ;S    ;u2
A  ;U3      ;ABCD    ;User         ;S    ;u3
   ;USERID  ;ABCD    ;Administrator;S    ;Default User ID
   ;WARPSRV ;ABCD    ;User         ;SDN  ;System ID
   === End of File ===




C:\LSMT\UNPACK\ITSOWRP\Users.CSV                  1     1     Rep
T2 v2.20b - (C) Copyright IBM Corp. 1987,1993.  By Tim Baldwin, IBM UK Labs.
```

Figure 88. <T2> Editor

For the restore, you should proceed in the following order:

1. Define all servers.

- Select the **SERVERS.CSV** and drag and drop it on the `<T2> Editor` object.

- In the OPT column you must type in `A`, for Add.

- Save and Exit.

- Drag and drop the **SERVERS.CSV** icon to the `<SET> to DC` icon as shown in Figure 89.

- Type in the computer name of the Domain Controler in the Specify Parameters window that appears.
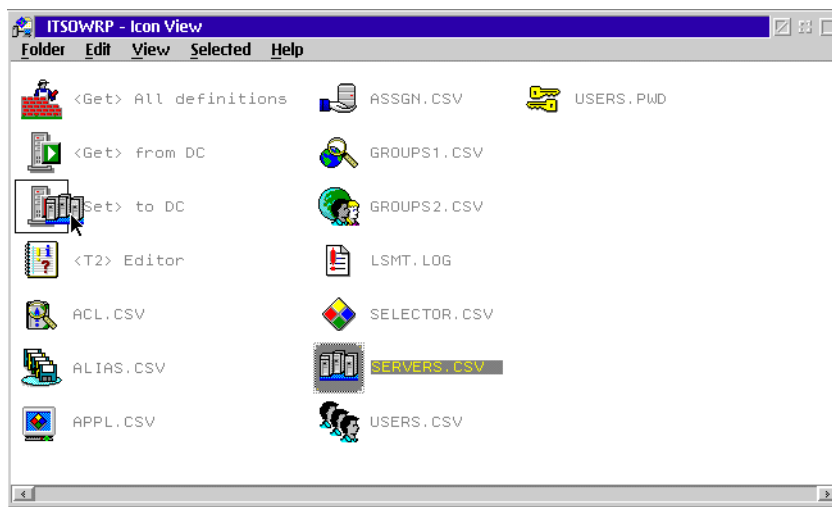
- Click on **Open**.

- A processing window appears. Press **Enter** when done.

Figure 89. ITSOWRP Icon View

2. Define all users (with initial passwords).

- Select the **USERS.CSV** and drag and drop it on the `<T2> Editor` icon.

- In the OPT column you must type in `A`, for Add.

- Save and Exit.

- Drag and drop the **USERS.CSV** icon to the `<SET> to DC` object.

- Type in the computer name of the Domain Controler in the Specify Parameters window that appears.

- A processing window appears. Press **Enter** when done.

3. Change initial passwords to the original passwords.

   - Select the **USERS.PWD** icon and drag and drop it to the `<SET> to DC` icon.

   - When you are prompted with a Specify Parameters window, type in the computer name of the Domain Controller.

   - Click on **Open**.

   - You get a processing window processing all the passwords.

   - Press **Enter** when done.

4. Define all groups.

   - Select the **GROUPS1.CSV** icon and drag and drop it `<T2> Editor` icon.

   - In the OPT column you must type in `A`, for Add.

   - Save and Exit.

   - Drag and drop the **GROUPS1.CSV** icon to the `<SET> to DC` icon.

   - When you are prompted with a Specify Parameters window, type in the computer name of the Domain Controller.

   - Click on **Open**.

   - The processing window appears.

   - Press **Enter** when done.

5. Assign users to groups.

   - Select the **GROUPS2.CSV** icon and drag and drop it on the `<T2> Editor` icon.

   - In the OPT column you must type in `A`, for Add.

   - Save and Exit.

   - Drag and drop the **GROUPS2.CSV** icon to the `<SET> to DC` icon.

   - When you are prompted with a Specify Parameters window, type in the computer name of the Domain Controller.

   - Click on **Open**.

   - The processing window appears.

   - Press **Enter** when done.

6. Define aliases.

   - Select the **ALIAS.CSV** icon and drag and drop it on `<T2> Editor` icon.

- In the OPT column you must type in A, for Add.
- Save and Exit.
- Drag and drop the **ALIAS.CSV** icon to the `<SET> to DC` icon.
- When you are prompted with a Specify Parameters window, type in the computer name of the Domain Controller.
- Click on Open.
- You will get a warning screen reminding you to apply the access permissons to the subdirectories contained in the aliases.
- Press **Enter** when done.

7. Define applications.

- Select the **APPL.CSV** icon and drag and drop it on the `<T2> Editor` icon.
- In the OPT column you must type in A, for Add.
- Save and Exit.
- Drag and drop the **APPL.CSV** icon to the `<SET> to DC` icon.
- When you are prompted with a Specify Parameters window, type in the computer name of the Domain Controller.
- Click on **Open**.
- You get a processing window.
- Press **Enter** when done.

8. Define applications selector.

- Select the **SELECTOR.CSV** icon and drag and drop it on the `<T2> Editor` icon.
- In the OPT column you must type in A, for Add.
- Save and Exit.
- Drag and drop the **SELECTOR.CSV** icon to the `<SET> to DC` icon.
- When you are prompted with a Specify Parameters window, type in the computer name of the Domain Controller.
- Click on **Open**.
- You will get a processing window.
- Press **Enter** when done.

9. Define ACL's for all aliases (with or without apply).

- Select the **ACL.CSV** icon and drag and drop it on the `<T2> Editor` icon.

- In the OPT column you must type in A, for Add.
- Save and Exit..
- Drag and drop the **ACL.CSV** icon to the <SET> to DC icon.
- When you are prompted with a Specify Parameters window, type in the computer name of the Domain Controller.
- Click on **Open**.
- You get a processing window.
- Press **Enter** when done.

10.Set the logon assignments.

- Select the **ASSGN.CSV** icon and drag and drop it on the <T2> Editor icon.
- In the OPT column you must type in A, for Add.
- Save and exit.
- Drag and drop the **ASSGN.CSV** icon to the <SET> to DC icon.
- When you are prompted with a Specify Parameters window, type in the computer name of the Domain Controller.
- Click on **Open**.
- You will have a processing window.
- Press **Enter** when done.

To check that the restore procedure has worked, go to the IBMLAN Services icon, open the LAN Server Administration icon and check your domain definitions.

12.6 Updating TCP/IP

Updating TCP/IP works the same way as the other updates described in this book. You must save your old configuration, install the new files and restore the original configuration.

Most of the TCP/IP configuration files, including the SOCKS configuration, are placed in the ETC directory. The ETC directory is the directory on which the ETC environment variable is pointing. By default, this is the \MPTN\ETC directory on which MPTS has been installed.

To check where the ETC directory on your system resides, issue `SET ETC` on a command prompt. To save most of the TCP/IP configuration files, make a backup of the ETC directory and all its subdirectories.

The DHCP configuration file does not have a fixed name or location. If your server is a DHCP server, you must find out where the configuration file is located and save it.

Two CMD files have to be saved: SETUP.CMD and TCPSTART.CMD. These are located in the directory \MPTN\BIN\.

Finally there are some TCP/IP-related environment variables defined in the CONFIG.SYS. Depending on the installed features, these are:

PASSWD	Password for the REXECD daemon.
TELNET.ID.PW	Password for the TELNETD daemon.
USER	Set Username on current system.
LPR_PRINTER	Default for remote lineprinter name.
LPR_SERVER	Default for remote lineprinter server running the LPD daemon.
HOSTNAME	Hostname of your machine.
TZ	Timezone to calculate the global time depending on your system time.
USE_HOSTS_FIRST	Use your \ETC\HOSTS file first before resolving an hostname through a name server.

If you have installed additional TCP/IP kits such as the PMX server (which is not part of the OS/2 Warp 4 or OS/2 Warp Server), then there might be additional variables set.

If you have backed up the old system with LSMT as described in 12.1, "Using LSMT to Save the Domain Definitions" on page 119, the CONFIG.SYS file is saved. It should be kept for future reference.

For the Installation of TCP/IP, see "Installing the TCP/IP Base Kit" on page 81 or Appendix B, "Another Way to Install TCP/IP" on page 141.

After installing TCP/IP you can restore your old configuration by copying the saved files to their original locations and editing the CONFIG.SYS. This must be done after the installation of TCP/IP because the installation program overwrites some of the files in the ETC directory.

12.7 Updating Remote Access

To update Remote Access, you must first follow the backup process, then reinstall LAN Distance. Finally, restore the files that the system has previously backed up.

To do so, go through the following steps:

- Type `LDREMOVE` from your OS/2 screen, and press **Enter**.
- After being prompted with a Welcome panel, select **OK**.

The Remove LAN Distance Panel appears as shown in Figure 80.
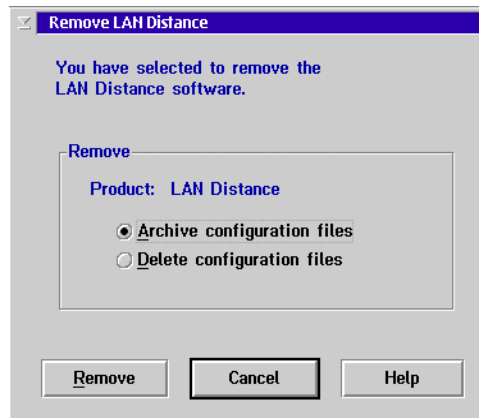
Figure 90. LAN Distance Remove screen

- Select **Archive configuration files**, then select **Remove**.

The uninstall process will take a few minutes to remove LAN Distance and backup the configuration files.

- When the process has ended you must reboot your system to make all changes effective.

LAN Distance Removal Complete

The LAN Distance product has been removed
from your workstation.

Your CONFIG.SYS file has been changed. In
order to activate the changes, you must stop
all currently active applications and restart
your workstation. For information on restarting
your workstation, select Help.

Note: Your user configuration files were copied
to the following subdirectory:
        C:\WAL\BACKUP

OK   Help

Figure 91. LAN Distance Removal complete screen

The files that are now saved in your WAL\BACKUP directory are:

- WCLNET.INI

- WCLLOCAL.INI

- WCBUSRF.ISF

- WCLDIAL.CXD (Phone Book Information)

- PROTOCOL.INI will be copied in \WAL\PROTOCOL.WAL

- CONFIG.SYS as CONFIG.WAL

- PROTOCOL.LPS (Configuration for the LAN Distance Remote workstation
  when configured for a LAN-attached environment).

- PROTOCOL.RWS (Configuration for the LAN Distance Remote
  workstation when configured for a LAN Distance Remote environments).

Note:

If your workstation has more than one partition, we suggest that you copy
the Remote Access configuration files immediately to a different partition,
so they will not be lost during the partition format.

When restoring the Remote Access Server, you must copy the files that are
under \WAL\BACKUP to the \WAL directory, and reboot your system to make
the changes effective.

To update the product, a new installation is required. To do this you must follow the installation procedure described in Chapter 8, "Remote Access" on page 85.

12.7.1 Recovering Administrator Passphrase

If the user ID or passphrase for the administrator is lost or forgotten, you must use the following procedure to recover:

- Shutdown IBM Enhanced Remote Access Services Connection Server for OS/2 Warp Server by double-clicking on the title bar.
- Open an OS/2 window and and change to the \WAL directory.
- Rename the security database \WAL\WCSBUSRF.ISF to another name, such as WCSBUSRF.BAK.
- Create a temporary directory and copy the INITRS.ZIP from \CID\SERVER\LDCS\LO319A1 directory of your OS/2 Warp Server CD-ROM to this temporary directory.
- Launch the PKUNZIP2.EXE program to unzip the INITRS.ZIP.
- Copy the WCSBUSRF.ISF to the \WAL directory.
- Delete the files from the temporary directory then remove the directory.
- Start The Remote Access Services. Logon using SECADMIN, password SECADMIN.

> **Note:**
>
> The passphrase is case sensitive.

To be able to restore all the user IDs in the security database you must:

- Open an OS/2 Window and use the merge function of the CMPROCES to recover the old security database.

For example if the WCSBUSRF.ISF file was renamed as explained above to WCSBUSRF.BAK, you must issue the following command to merge the old database to the new one:

```
CMPROCES /CT:ME /FI:WCBUSRF.BAK /FO:MERGE.TXT
```

> **Note:**
>
> A return code of 0 means the merge of this user ID completed
> successfully. It is now possible to change the passphrase.

12.8 Updating NetFinity

To update Netfinity and keep the previous configuration, you must complete
the following steps:

- Save the *.INI files from the \SYSVIEW\BIN directory:
  - ALACTION.INI
  - MONCRITF.INI
  - MONSCH.INI
  - MONTHR.INI
  - NETDOM.INI (by manager)
  - NETMGR.INI (by manager)
  - NETNODES.INI (by manager)
  - PROFILES.INI (in this case, but normally NO)
  - SECIN.INI, SECOUT.INI (by manager)
- Install NetFinity as described in Chapter 9., "NetFinity" on page 95.
- Restore the listed above INI files to their original location.
- Reboot the system.

Appendix A. Known Problems

Because testing has found some problems using OS/2 Warp Server components on the OS/2 Warp 4 operating system and we do not want you to run into these problems unprepared, here is a short list of them and how to get around them.

A.1 CACHE386

After the installation of OS/2 Warp Server Version 4 Advanced, the cache driver for the HPFS386 file system is not started automatically in the CONFIG.SYS. To run the File and Print Server, you have add a statement manually to the CONFIG.SYS.

Problem: The driver is not automatically added to the CONFIG.SYS, therefore the File and Print Server does not start.

Solution: Edit your CONFIG.SYS and add following statement:
```
RUN=X:\IBMLAN\NETPROG\CACHE386.EXE
```
where 'X:' is the drive where the File & Print Server is installed. Save and close your CONFIG.SYS.

A.2 LAN Server Management Tools (LSMT) Version 2.03

The LAN Server Management Tools are a set of very useful and powerful tools to manage a LAN Server environment. We strongly recommend that you use these tools instead of the PREPACL, BACKACC and RESTACC commands from OS/2 Warp Server when you need to update an existing server.

Problem: You cannot restore the USER. The SETUSER.CMD asks for passwords.

Solution: First you must change the GETUSERS.CMD. Open the GETUSERS.CMD with an editor and at column 59 of this file you must replace the `"****"` with `"ABCD"`. ABCD stands for a new temporary password, since the "****" that are defined by default will not be accepted if you try to import this file later. Save this file after you applied the necessary changes.

Note that the problem described here is not specific to LSMT. LSMT also behaves like this on a standard OS/2 Warp Server.

A.3 NetFinity TME 10

The problem described here is due to an error in the installation script in the national language versions of the Netfinity TME-10 installation program. Since this script is on the CD, it cannot be changed.

Problem: You cannot install the national language version (NLV) of TME 10 NetFinity that comes with OS/2 Warp Server SMP.

Solution: Do not use the Warp Server SMP CD. Use a stand-alone version of Netfinity TME 10(also 4.02) that is shipped separately.

Appendix B. Another Way to Install TCP/IP

This is an alternative way to separately install TCP/IP. It assumes that you have installed the 'Installation Utilities' from OS/2 Warp 4. If you have not installed these features, you can do this by launching the OS/2 Warp 4 installation program from the 'Install / Remove' Folder which is in the 'System Setup' folder. If you go to the third screen of the installation program, select the the 'Optional System Utilities' and then click on the appropriate'More...' button. In the appearing selection window, select the 'Installation Utilities' to install. Then continue with the installation program as described in section "Installation Phase II - GUI Installation" on page 38.

If the installation program is installed, you can continue with the following steps:

- Insert the OS/2 Warp 4 CD.
- From the 'OS/2 System' folder (or the Warp Center) choose 'System Setup' and then 'Install / Remove'.
- Select the icon for 'Selective Install for Networking'.
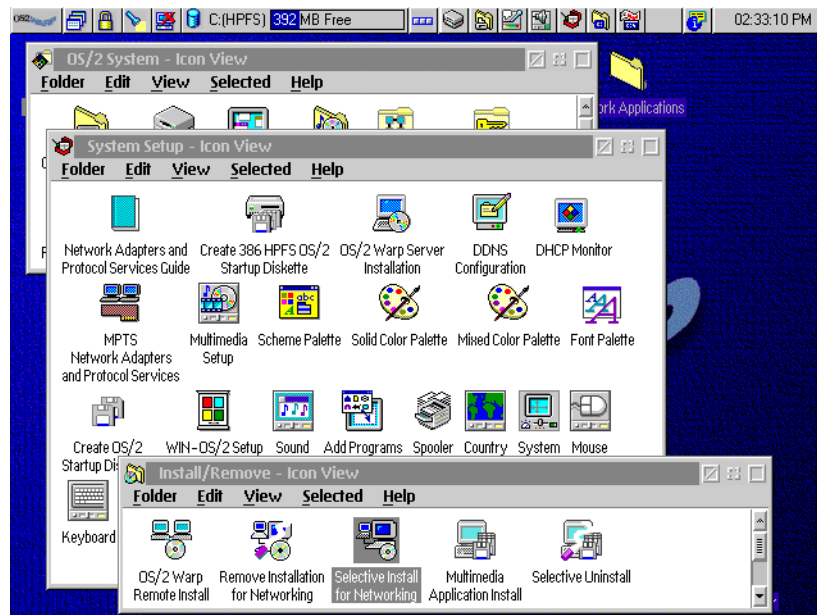
Figure 92. Selective Install for Networking

This will take you to the 'Installing IBM OS/2 Warp' window shown in Figure
93.

- Select 'Advanced Installation'
- Click on 'Next'.
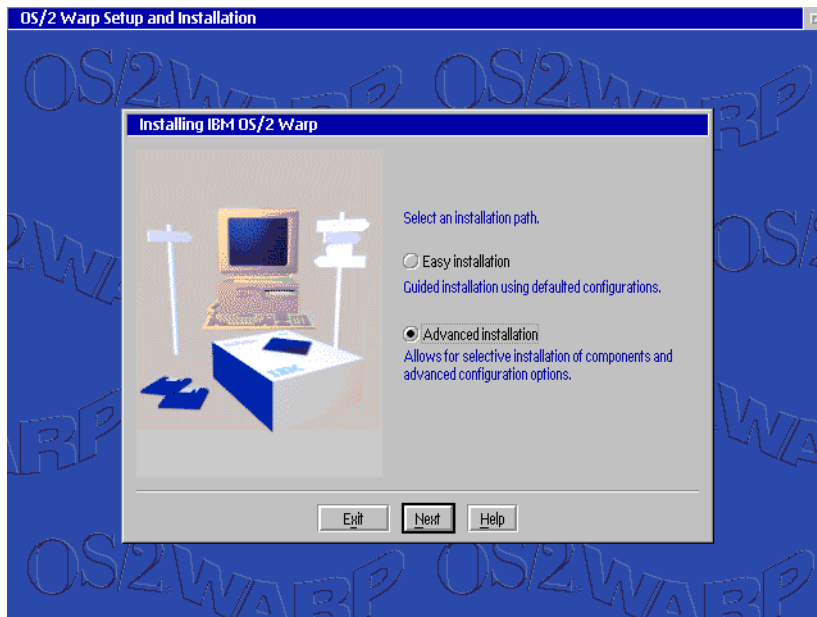
Figure 93. Advanced Installation

The next window appears as shown in Figure 94.

- Select 'TCP/IP Services'.
- Click on 'Next'.

This takes you to the 'Configuration' window chown in Figure 95.

- Select 'TCP/IP Services'.
- Select the installation drive where you want to place TCP/IP.

If a DHCP server is available simply select the appropriate check box.
Otherwise you will have to perform the configuration manually by filling out
the configuration fields. After completing all the required entry fields on this
page you:

- Click on 'Install' and confirm the installation with 'OK'.

Figure 94. Installing Networking Components - TCP/IP
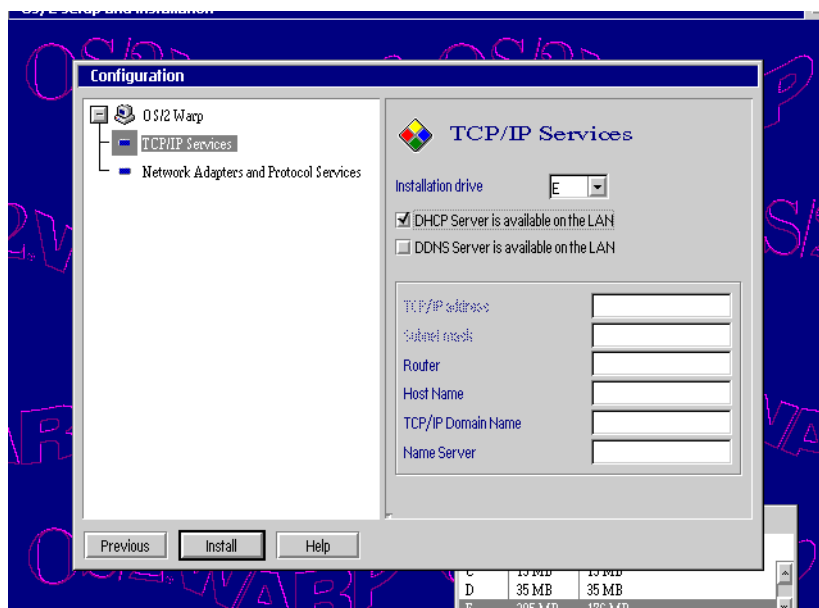
Figure 95. TCP/IP Configuration

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Appendix C. Special Notices

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