FMT1000 Series Remote Boot Setup Guide

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Contents

About This Guide

Introduction 1
About the FMT1000 Series Computers 1
Notation Conventions 2

Chapter 1. NetWare Remote Reset

Introduction 1-1
IPX 1-1
FFRPL 1-1
NetWare 3.11 Server Setup 1-5
IPX Boot Type 1-9
FFRPL Boot Type 1-10
Create a Boot Image File: NET$DOS.SYS 1-11

Chapter 2. LANtastic 5.0 Remote Boot Setup

Network Setup 2-1
Find / Found Remote Program Load (FFRPL) 2-1
System Requirements for LANtastic 5.0 2-3
Preparing a Boot Image Diskette 2-4
Summary of Boot Image Preparation Steps 2-9
Boot Server Setup 2-10

Chapter 3. LAN Manager 2.1® Setup

Chapter 4. Demonstration Program

Appendix A. BIOS Setup

BIOS Setup Screens A-3

Appendix B. VLM Remote Booting

Server Setup B-1
Create a Boot Image File, NET$DOS.SYS, for VLM FFRPL Remote Booting B-1
Create a Boot Image File, NET$DOS.SYS, for VLM IPX Remote Booting. B-5

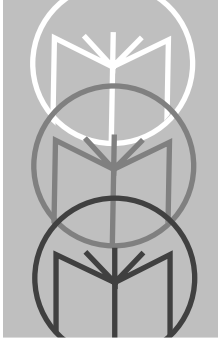
Appendix C. Personal NetWare VLM Remote Booting

Server Setup C-1
Create a Boot Image File, NET$DOS.SYS, for VLM FFRPL Remote Booting C-1

Create a Boot Image File, NET$DOS.SYS, for VLM IPX Remote Booting. C-4

Appendix D. LANtastic 6.0 Remote Booting

Single-User vs. Multi-User Licenses D-1
Working with Multiple Single-User LANtastic 6.0 Licensing. D-1
Special Note for DOS 6.0 and Higher Users: D-2



About This Guide

Introduction

This is the Remote Boot Setup Guide for FMT1000 Series computers. It is intended to provide the information necessary to setup a remote boot for FMT1000 Series computers. Using this guide, you will be able to set up and run a sample application on your system.

Refer to the *FMT1000 Series Computer Programmer's Guide* for information on programming and functions. Refer to the appropriate installation guide for physical and electrical installation guidance. Review the *TCP/IP Remote Boot Setup Guide* for network-specific connection information.

About the FMT1000 Series Computers

The FMT1000 Series are self-contained data collection stations designed to operate in a standard network environment, such as Novell NetWare™, Artisoft LANtastic™, IBM LAN Server™, or Microsoft LAN Manager™. In these environments, FMT1000 Series computers can load and run most network-aware DOS applications.

Data may be collected through bar code readers such as wands, lasers, slot readers, and CCD scanners. Additional equipment, such as scales and serial printers, may be connected to the RS-232 auxiliary port. In addition, two digital input and output lines may be used to collect status or other information from machinery associated with the data collection point.

The computer will connect directly into an Ethernet network. This network, and its server, should already be installed and operating.

This version of the *FMT1000 Series Remote Boot Setup* covers NetWare versions 3.11 and 2.2, Personal NetWare, LANtastic 5.0, LANtastic 6.0, and LAN Manager. FMT1000 Series computers will boot from the network server via RPL, IPX, FFRPL, or RIPL.

Notation Conventions

Keys and key sequences are printed in <UPPERCASE> and enclosed in broken brackets. For example:

<ENTER>	Enter or return key.
<TAB>	Tab key.
<CTRL+Z>	Key combination of <CTRL> and <Z>, the PC equivalent of holding down the control key while pressing the <Z> key.
<CTRL>-<Z>	FMT1000 key sequence equivalent of the standard IBM PC <CTRL+Z> key combination.
<F6>	F6 function key.

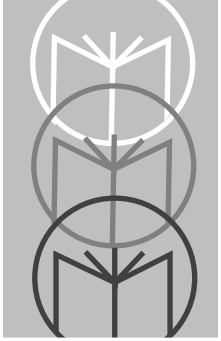
If you are using the FMT as your workstation, you must press and release the <CTRL> key, then press and release the <Z> key to achieve the same result as when using the standard IBM PC keyboard. You cannot press two or more keys at the same time in operating the FMT1000 computers.

Command lines to be entered from the keyboard will appear in **`BOLD UPPERCASE COURIER`**, e.g., **`FORMAT A`**:.

The prompt will appear in `regular courier`, e.g., `C:\>` or a simple colon (:).

Commands entered in DOS will be shown using a DOS style prompt with the correct drive and subdirectory, e.g., `F:\LOGIN>`.

Commands entered on the Novell NetWare server will be shown using the Novell prompt **:** (colon).



Chapter 1
NetWare Remote Reset

Introduction

You should have a good understanding of Novell before proceeding. More detailed information about the remote boot process may be found in the NetWare v3.11 Installation Manual, *Appendix D: Using DOSGEN to Add Remote Reset*, and NetWare v3.11 Concepts Manual, *Remote Reset*.

NetWare offers two remote reset boot type options:

- Internetwork Packet Exchange (IPX)
- Find/Found Remote Program Load (FFRPL).

Before you begin the process of attaching the computer to your network, you should consult your current system setup to determine which of these boot types is right for your system. This sample procedure assumes a single-server network.

IPX

The IPX boot procedure uses an 802.3 frame type. The Remote Program Load driver (RPLODI.COM) is loaded as part of the boot image. If your server already uses the 802.3 frame type with the IPX protocol, you should consider selecting this boot type.

FFRPL

The FFRPL boot procedure uses an 802.2 Frame Type. This method requires that both the IPX and the Remote Program Load protocols be bound to the 802.2 frame type. In addition, a remote bootstrap program (RBOOT.RPL) should be in the SYS:LOGIN directory. If your server already uses the 802.2 frame type, you should consider selecting this frame type.

In brief, the FMT1000 Series computer broadcasts a boot request upon power up. The server responds by downloading the boot image file, NET$DOS.SYS created by DOSGEN. The FMT1000 Series computer executes the first AUTOEXEC.BAT located in NET$DOS.SYS up to and including NETX. After executing NETX and attaching to the server, command processing shifts to the second AUTOEXEC.BAT file located in SYS:LOGIN. FMT1000 executes LOGIN FMT1000 in this AUTOEXEC.BAT file and logs onto the network. (You can select the login name you prefer.)

After you have logged onto the network, command processing finally shifts to the AUTOEXEC.BAT file located in the computer's HOME directory. By appending your application command lines to this third AUTOEXEC.BAT file, the FMT1000 Series computer executes your applications upon power-up. Note that the three-stage AUTOEXEC.BAT command-processing sequence is unique to remote booting and does not apply to the normal workstation attach / login sequence. See the command processing sequence below.

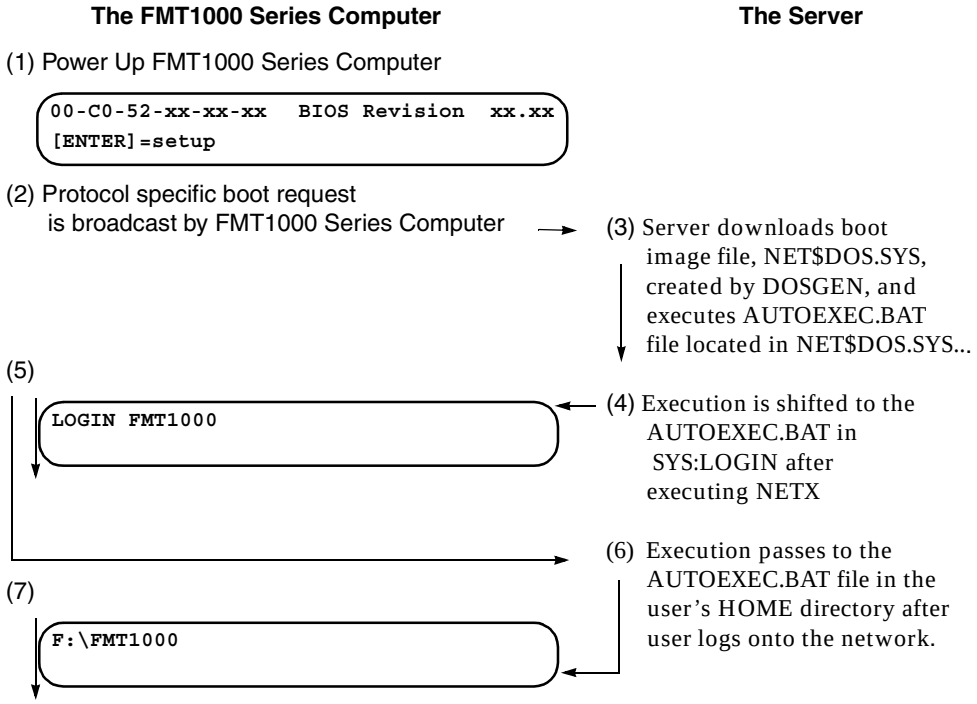
THREE-STAGE AUTOEXEC.BAT COMMAND PROCESSING SEQUENCE (FFRPL)

(1)——————————>	**(2)**——————————>	**(3)**——————————>
AUTOEXEC.BAT in Boot Image File	AUTOEXEC.BAT in SYS.LOGIN	AUTOEXEC.BAT in FMT1000 HOME directory
LSL	LSL	LSL
LPNICE	LPNICE	LPNICE
IPXODI	IPXODI	IPXODI
NETX	NETX	NETX
	LOGIN FMT1000	LOGIN FMT1000
		PROMPT pg
		.
		.
		.

THREE-STAGE AUTOEXEC.BAT COMMAND PROCESSING SEQUENCE (IPX)

(1)——————————>	**(2)**——————————>	**(3)**——————————>
AUTOEXEC.BAT in the Boot Image File	AUTOEXEC.BAT in SYS.LOGIN	AUTOEXEC.BAT in FMT1000 HOME directory
LSL	LSL	LSL
RPLODI	RPLODI	RPLODI
LPNICE	LPNICE	LPNICE
IPXODI	IPXODI	IPXODI
NETX	NETX	NETX
	LOGIN FMT1000	LOGIN FMT1000
		PROMPT pg
		.
		.
		.

REMOTE RESET BOOT PROCESS



Multiple computers may use the same boot image file. If you want your computers to use different image files, or you have other diskless nodes on your network, you need to refer to your Novell documentation regarding DOSGEN before you continue.

NetWare 3.11 Server Setup

1. Follow this step only for FFRPL boot type.

   From a workstation, log onto the system as Supervisor:

   ```
   C:\LOGIN SUPERVISOR
   ```

   Map drives to the system and login directories:

   ```
   E:\>MAP F:=SYS:SYSTEM
   E:\>MAP G:=SYS:LOGIN
   ```

   Place the driver disk in drive A and copy the files:

   ```
   E:\>COPY A:\NOVSUP\RPL.NLM F:
   E:\>COPY A:\NOVSUP\RBOOT.RPL G:
   ```

2. Check / modify the server setup. At the server, run the editor to examine the system startup batch file:

   ```
   :LOAD EDIT SYS:SYSTEM\AUTOEXEC.NCF
   ```

   For IPX boot type, you need lines similar to:

   ```
   LOAD NE2000 port=320 int=5 frame=ETHERNET_802.3
   BIND IPX TO NE2000 net=FBFB1
   ```

   For FFRPL boot type, you need to see lines similar to:

   ```
   LOAD NE2000 port=320 int=5 frame=ETHERNET_802.2
   BIND IPX TO NE2000 net=FBFB2
   LOAD RPL
   BIND RPL TO NE2000
   ```

   If you have the correct information, exit edit by pressing the <ESC> key. Proceed to Step 3.

   If you need to modify the file, add the appropriate lines to the bottom of the file using the following format.

To add an IPX PROTOCOL, add these two lines to the AUTOEXEC.NCF file:

```
LOAD <netdriver> <parameters> frame=<protocol-type>
BIND IPX TO <netdriver> [<parameters>] net=<netnumber>
```

To add an RPL PROTOCOL to an ETHERNET_802.2 frame type, add these two lines to the AUTOEXEC.NCF file:

```
LOAD RPL
BIND RPL TO <netdriver> <parameters>
```

Where:

<netdriver> is the Network Board Driver Name, e.g. NE2000;

<parameters> are board specific parameters, check your board documentation to see what is required. For example, [port=320 int=5 frame=ETHERNET_802.2];

<protocol_type> must be ETHERNET_802.2 for FFRPL and ETHERNET_802.3 for IPX;

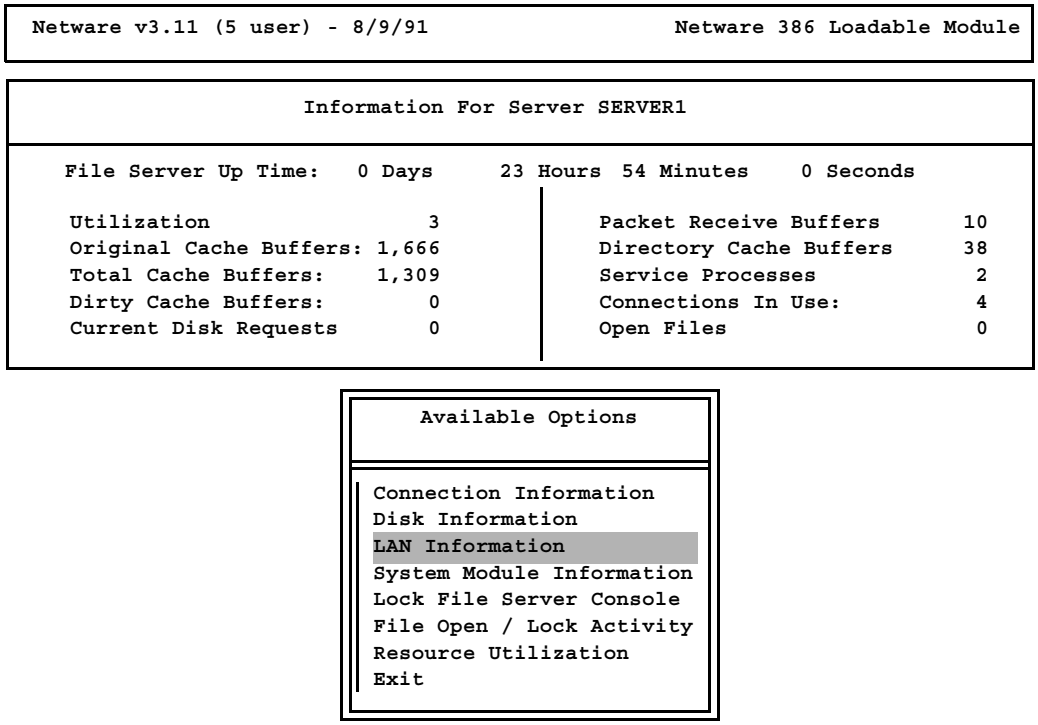
<netnumber> must be a unique sub-network number assigned to this protocol. Choose any number not used elsewhere on the Novell network.

When you have completed your changes, press <ESC> to exit the editor and press <YES> to save the changes.

To invoke your changes, you need to down the server and bring it back up.

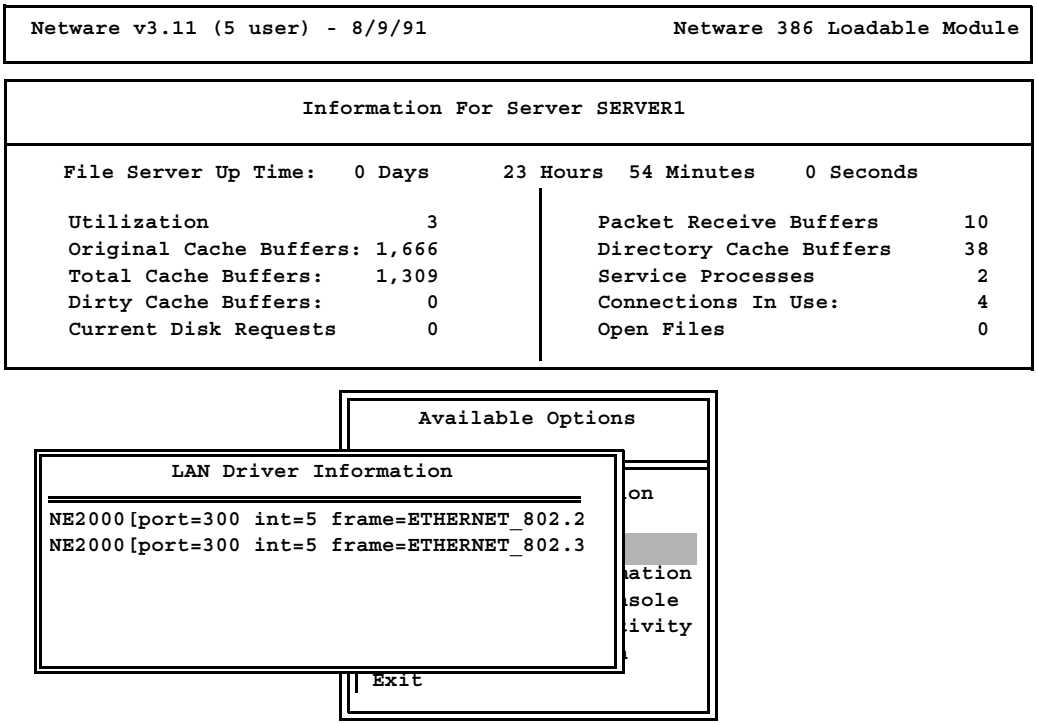
3. Use the monitor utility to confirm that the LAN information is correct for the selected frame type.

```
:LOAD MONITOR
```



First Screen in Response To The Load Monitor Command

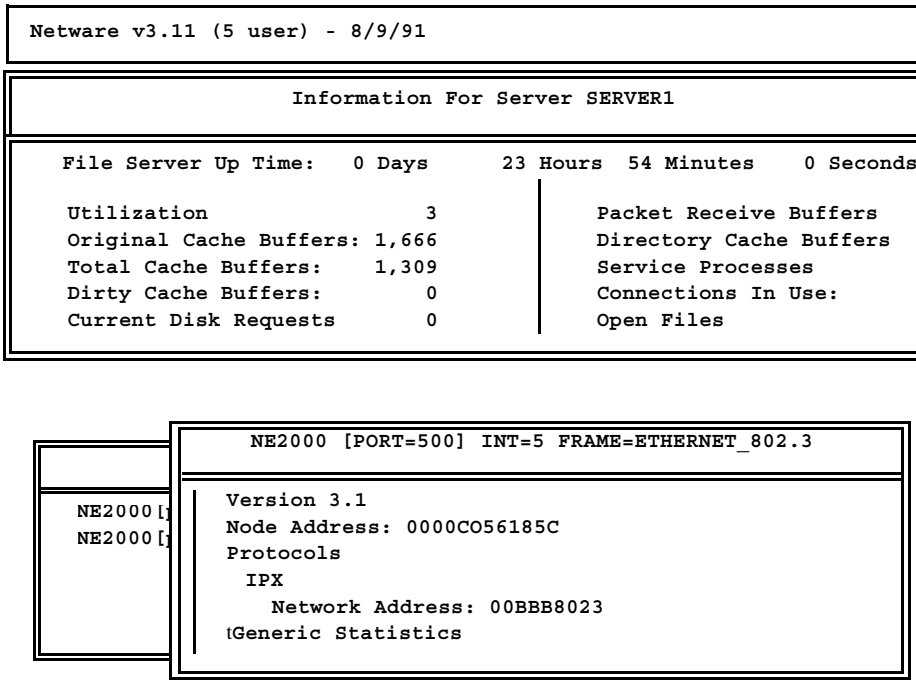
Highlight LAN Information from the Available Options menu and press **<ENTER>**.



Second Screen in Response To Selection of LAN Information

Highlight the frame type 802.2 or 802.3.

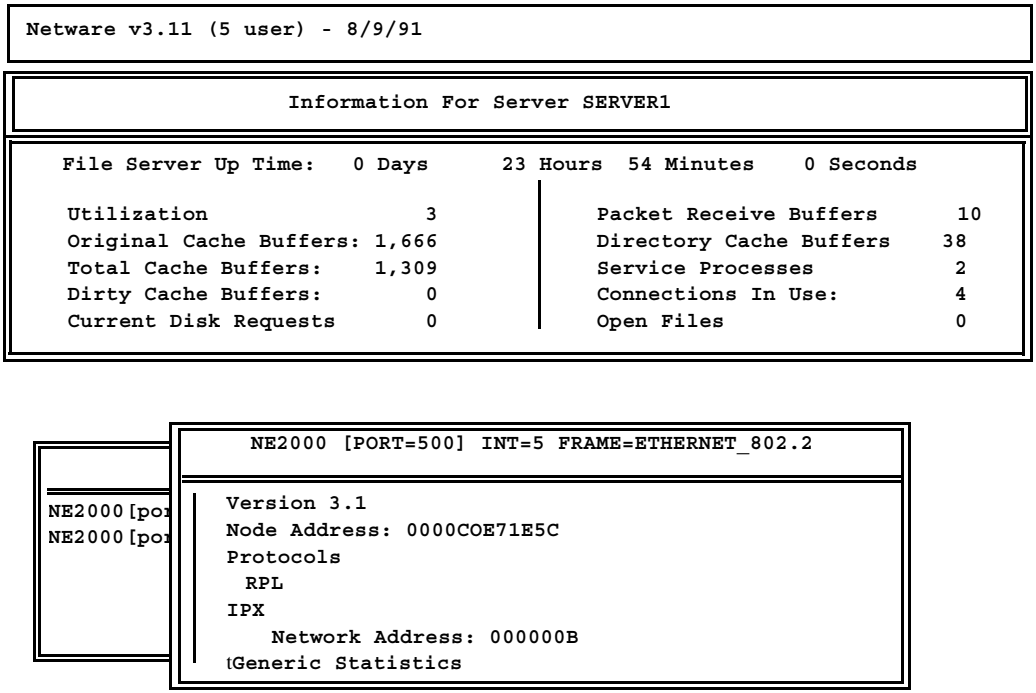
- If you choose 802.3 for IPX boot type, see page 9.
- If you choose 802.2 for FFRPL boot type, see page 10.



Third Screen in Response to Selection of ETHERNET_802.3

IPX Boot Type

As a minimum, the IPX protocol must be bound to the 802.3 frame type.



Third Screen in Response to Selection of ETHERNET_802.2 for FFRPL Boot Type

FFRPL Boot Type

As a minimum, the IPX and RPL protocols must be bound to the 802.2 frame type.

Exit the utility by pressing **<ESC>** three times or until ***Exit Monitor*** appears in the window. Select Yes and press **<ENTER>.**

Create a Boot Image File: NET$DOS.SYS

1. Create the boot disk. From a workstation on the network, insert an unformatted disk in drive A. (Your drive letter may be different.)

   From a workstation, log onto the system as Supervisor:

   Format the disk as a system disk:

   ```
   C:\>FORMAT A: /S
   ```

2. Create batch and system files on the boot disk. Using a text editor, create CONFIG.SYS, NET.CFG, and AUTOEXEC.BAT files on the boot disk.

   The contents for the CONFIG.SYS file should be:

   ```
   FILES = 20
   BUFFERS = 25
   LASTDRIVE = E
   ```

   The contents for the NET.CFG file should be:

   ```
   LINK DRIVER LPNICE
   <TAB>FRAME <protocol_type>
   ```

   Where <protocol_type> is replaced with either "ETHERNET_802.2" for FFRPL or "ETHERNET_802.3" for IPX.

   For the FFRPL boot type, the contents of the AUTOEXEC.BAT file should be:

   ```
   LSL
   LPNICE
   IPXODI
   NETX
   ```

   For the IPX boot type, the contents of the AUTOEXEC.BAT file should be:

   ```
   LSL
   RPLODI
   LPNICE
   IPXODI
   NETX
   ```

Note: The difference between the FFRPL and IPX AUTOEXEC.BAT file contents is the addition of the RPLODI as the second line for the IPX boot type in the AUTOEXEC.BAT file.

3. Copy the drivers from the network driver disk to the boot disk.

   Place the boot disk in drive A and the network driver disk in Drive B. (Your drive letters may be different.)

```
C:\>COPY B:\NOVSUP\IPXODI.COM A:
C:\>COPY B:\NOVSUP\LSL.COM A:
C:\>COPY B:\NOVSUP\NETX.EXE A:
C:\>COPY B:\ODI\LPNICE.COM A:
```

   For the IPX boot type, you will need to copy one more file.

```
C:\>COPY B:\RPLKTI\RPLODI.COM A:
```

4. Create a user account named, e.g., "FMT1000" and map directories as needed. (Choose a name appropriate to the specific FMT1000 product you are using.)

   Run the Novell SYSCON utility and create a user account “FMT1000”.

   Note: User FMT1000 should be set up as any other user on the network. It should have an assigned home directory with rights to that directory. A login script should be created with appropriate directory mappings and an appropriate COMPSPEC setting. When automatically running applications, passwords should not be assigned.

   See NetWare v3.11 Installation Manual Network Setup and Appendix A: Login Script Commands, for additional information.

5. Map drive letters for use during the DOSGEN process. Check which drive letters are available for mapping on the workstation. The drive letters to be mapped should not be in use. This example uses F: as the first unused drive letter. Depending on how your system is set up, your drive letters may be different.

```
C:\>MAP F:=SYS:SYSTEM
C:\>MAP G:=SYS:LOGIN
C:\>MAP H:=SYS:FMT1000
```

6. Copy the AUTOEXEC.BAT from the boot disk to SYS:LOGIN:

   ```
   C:\>COPY A:\AUTOEXEC.BAT G:
   ```

   Edit the AUTOEXEC.BAT file in the SYS:LOGIN directory and add the following line to the end of the file:

   ```
   LOGIN FMT1000
   ```

7. Create a NET$DOS.SYS boot image file from the boot disk. Execute DOSGEN with the command:

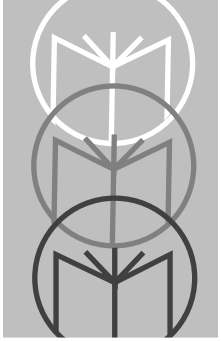
   ```
   G:\LOGIN>F:DOSGEN
   ```

8. Flag the image file as sharable:

   ```
   G:\LOGIN>FLAG NET$DOS.SYS SRO
   ```

9. Copy the AUTOEXEC.BAT file from SYS:LOGIN to the FMT1000 HOME directory.
10. Edit the file and append a command to invoke a DOS prompt pg.

The server is now ready to boot an FMT1000 Series computer. Power up the unit and enter setup. If you use FFRPL boot type, you must select FFRPL as the boot ROM type during setup. If you use IPX boot type, select IPX as the boot ROM type in setup. See Appendix B for other FMT1000 Series computer setup options.



Chapter 2 LANtastic 5.0 Remote Boot Setup

Network Setup

FMT1000 Series computers function as diskless PCs, containing only a BIOS ROM, plus selectable Boot ROMs that allow access to several types of boot servers on various networks. As a result, they require a boot server on the network to provide all necessary operating system files (DOS), as well as disk storage for applications.

Find/Found Remote Program Load (FFRPL)

LANtastic 5.0 supports the IBM standard Find/Found Remote Program Load (FFRPL) for remote booting.

When selected as part of the BIOS setup, the FMT1000 Series computer completes its Power-On Self Test (POST) and then broadcasts a “Find Server” request over the network. The boot server responds by transmitting a “boot image” to the computer; this normally requires the transmission of approximately 250 packets and typically completes in less than 2 seconds. This image appears to the computer as a RAM disk; once the entire image has been received execution proceeds as if the contents of this RAM disk were a local bootable floppy. Requisite operating system files (IO.SYS, MSDOS.SYS, COMMAND.COM) are run, as well as copies of CONFIG.SYS and AUTOEXEC.BAT.

As on a conventional PC, the AUTOEXEC.BAT file causes execution of the requisite programs that start the Network Operating System, allowing access to the boot server's disk as though it were directly connected to the FMT1000 Series computer. Generally, the last line of AUTOEXEC.BAT will chain to another batch file resident on the boot server, where cleanup actions such as reassigning COMSPEC, UNLINKing of the local RAM disk, setting an appropriate PATH, etc., are performed, and finally where the ultimate application program is invoked.

We recommend that the boot image contain only the minimum set of files to boot DOS and start the NOS (Network Operating System), allowing for most maintenance procedures to be accomplished by simply editing files on the LANtastic Boot Server.

> **Note:** On LANtastic, the redirector (REDIR.EXE) contains a unique serial number. As a result, each computer on the network must have its own boot image file. Assuming this image is made from a 320K diskette, approximately 330K of disk space is required on the boot server *per* FMT1000 Series computer for storage of the image file and related description file.

The following sections detail the steps necessary to implement remote booting of FMT1000 Series computers under LANtastic 5.0:

1) System requirements

2) Preparing a boot image diskette

3) Boot server setup

4) FMT1000 Series setup

> **Note:** As this guide is intended to supplement Artisoft's documentation on remote booting under LANtastic 5.0, you should read chapter 14 of the *Complete Guide to LANtastic* before proceeding.

System Requirements for LANtastic 5.0

To remote boot an FMT1000 Series computer using LANtastic 5.0, the following are the minimum requirements:

- LANtastic 5.0 server: this can be almost any PC (286 or better) with at least 2.5 MB free disk space. Use of an Artisoft-supplied network adapter (AE2, AE3, etc.) provides the necessary LANtastic license for the server; other vendors' network adapters may be used, but a copy of LANtastic 5.0 / AI is then required for the server. In addition, this server should have an internal 5.25-in. disk drive for use in making boot image diskettes and associated files.
- Licensed copies of LANtastic 5.0 / AI: 1 for each FMT1000 Series computer to be used on the network. It is essential that AI (Adapter Independent) is specified.
- DOS licenses: MSDOS 3.3 or higher, 1 for each FMT1000 Series computer.
- LANtastic NDIS support files.
- FMT1000 Series computer(s) with BIOS level 1.08 or higher.
- Network Drivers Disk (included with the FMT1000 Series computer).

Preparing a Boot Image Diskette

The task of preparing a boot image diskette is basically the same as making a bootable DOS floppy with a minimum set of files necessary to start up a LANtastic workstation, as follows:

1. Extract the three required files from the LANtastic distribution disk(s):
   - AILANBIO.EXE
   - NET.EXE
   - REDIR.EXE.

   Because these files are compressed on the LANtastic distribution media, you need to invoke **INSTALL** in order to access them individually. (Note that running the installation procedure may be done on any PC, even one not connected to a network.)

   Take care to avoid overwriting a currently operating LANtastic setup. This can be done by specifying a unique directory for installation (e.g., C:\FMT1000), selecting no adapter, workstation only, without automatically modifying CONFIG.SYS.

```
LANtastic (R) INSTALL - V5.00 #AADO268284    C) COPYRIGHT 1992 Artisoft Inc.

 Install Hints ...

If you are sure the parameters viewed on this menu are correct, press
the Enter key to perform the installation. This procedure will create the
resources selected and copy the necessary files from the INSTALL disk.

      LANtastic Installation Utility

                    Machine Name:FMT1020
                    Machine Type:Workstation
          Installation Directory:C:\FMT1000
  Network Startup Batch File:(None Selected)
   Network Adapter Installed:Other NETBIOS Compatible Network Adapter
  Adapter Drivers to Install:NONE
            Modify CONFIG.SYS:NO


         Perform Installation:Select to Install

Enter-Select Option. Del-Clear Option. Esc-Exit. F1-Help
```

2. Prepare a bootable 320 KB floppy diskette by using the following command (DOS 5.0 or higher):

   C:\>FORMAT A: /S /F:320

   This command formats a 5.25-in., 320 KB, double-sided, double-density, system floppy diskette on a 1.2 MB disk drive, shown as drive A. The /S switch instructs the format command to copy the operating system files to the diskette (IO.SYS, MSDOS.SYS, COMMAND.COM).

3. After formatting the diskette to 320K and before proceeding, enter the command:

```
C:\LANTASTI>CHKDSK A:
```

This command checks your formatted diskette to be sure that there are no bad sectors. The screen response is similar to the following if all sector are good:

```
Volume Serial Number is 1C4B-0FEA

322560 bytes total disk space
132096 bytes in 3 hidden files
53248 bytes in 1 user file
137216 bytes available on disk

1024 bytes in each allocation unit
315 total allocation units on disk
134 available allocation units on disk

655360 total bytes memory
565968 bytes free
```

Depending on the condition of your diskette and your system type and configuration, the resulting numbers may be different than those in the above chkdsk report. If bad sectors are found, they will be listed.

4. Copy the files listed below:

File Name	File Location
REDIR.EXE	AI LANtastic 5.0
NET.EXE	AI LANtastic 5.0
AILANBIO.EXE	AI LANtastic 5.0
AI-NDIS.EXE	Artisoft NDIS Support
PROTMAN.DOS	Artisoft NDIS Support
PROTMAN.EXE	Artisoft NDIS Support
LP_NDIS.EXE	Driver Diskette
PROTOCOL.INI	Driver Diskette
HIDOS.SYS	Driver Diskette

5. Create a CONFIG.SYS file. A sample CONFIG.SYS is included in the LANTASTI Directory of the network drivers diskette. Include the following lines (upper or lower case):

```
device=hidos.sys
dos=high
device=protman.dos /i:\
device=lp_ndis.exe
FILES=30
BUFFERS=30
LASTDRIVE=M
```

6. Create an AUTOEXEC.BAT file. Include the following lines:

```
@echo off
prompt $p$g
path=a:\
call startnet
c:
lp
```

7. Create a STARTNET.BAT batch file. Include the following lines:

```
AI-NDIS verbose bind_to=LP_NIF
AILANBIO
REDIR # LOGIN=2
NET LOGIN \\<server-name>
NET USE C: \\<server-name>\<resource-name>
NET CLOCK \\<server-name>
```

   Note the following:

   - The REDIR lines in the STARTNET.BAT files above: Use of the symbol # for the machine name assigns the node-id as the machine name.
   - **<*server-name*>** is the name of the server whose hard drive you want the diskless workstation to use.
   - **<*resource-name*>** is the name of the shared resource for the server's hard drive. See Shared Resource Management, Chapter 2, *Complete Guide to LANtastic* for more details on setting up this resource.
   - The NET CLOCK line in the STARTNET.BAT file above uses the time on the server <server-name>.

8. Label this diskette with the serial number of the REDIR.EXE file used in step 1. This number is located on the label of the LANtastic distribution disk(s).

   Repeat the above steps for each FMT1000 Series computer that will be installed in the system. If all the computers will be used identically the following shortcut may be used:

   - Perform step 1 and retrieve the serialized copy of REDIR.EXE.
   - Using DISKCOPY, make a duplicate of the previous boot image diskette, then overwrite the existing REDIR.EXE on the floppy with the one just extracted from the new distribution.
   - Again, label this disk with the appropriate LANtastic serial number.

Summary of Boot Image Preparation Steps

Step 1: Extract files from the LANtastic disk to a unique directory.

Steps 2-3: Prepare and check a bootable diskette.

Step 4: Copy the files listed to the newly formatted bootable diskette.

Steps 5-7: Create or copy the following files to the boot diskette

CONFIG.SYS

AUTOEXEC.BAT

STARTNET.BAT

Step 8: Label the boot diskette with the unique serial number of REDIR.EXE file. Each FMT1000 Series computer in the system must have a unique boot image file associated with its operation.

Boot Server Setup

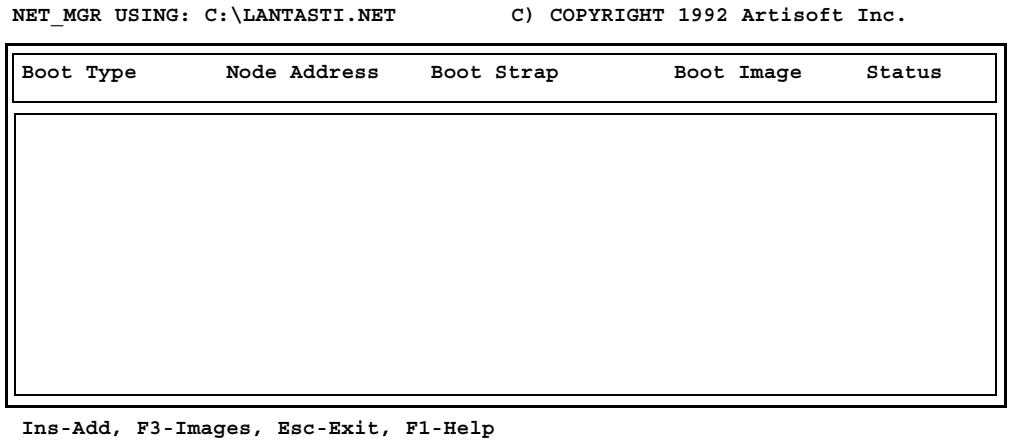
Once the boot image diskette(s) are created, they must be loaded onto the boot server to enable the boot server to respond to boot requests. These steps are covered in chapter 14 of the Complete Guide to LANtastic.

Upon entry to NET_MGR at the DOS prompt, as shown below, the main menu of the net_mgr configuration program is displayed followed by the screen displays as shown:

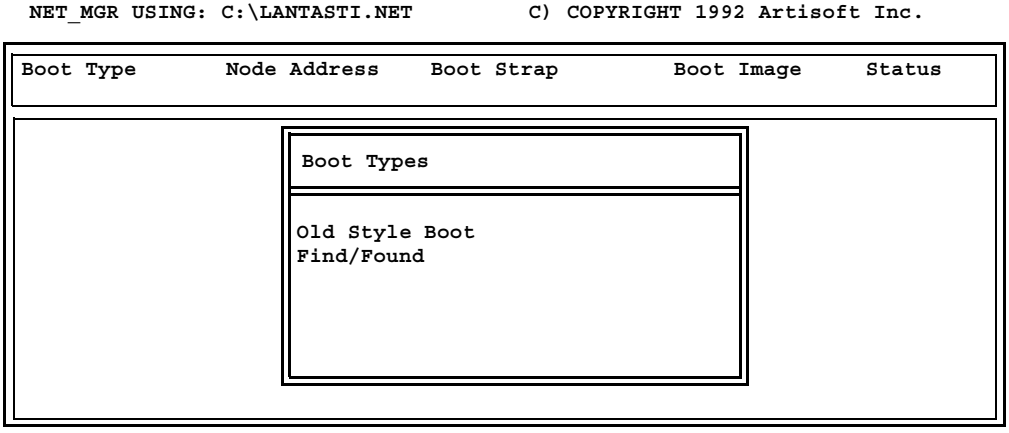
```
C:\LANTASTI>NET_MGR
```

```
LANtastic (R) Network Manager V5.00

Managing: C:\LANTASTI.NET

Individual Account Management
Wildcard Account Management
ACL Group Management
Shared Resources Management
Server Startup Parameters
Audit Trail Maintenance
Queue Maintenance
Password Maintenance
Remote Boot Maintenance
Control Directory Maintenance

Enter-Select Option, Esc-Exit, F1-Help
```

Select Remote Boot Maintenance from the Network Manager menu and press **<ENTER>**.

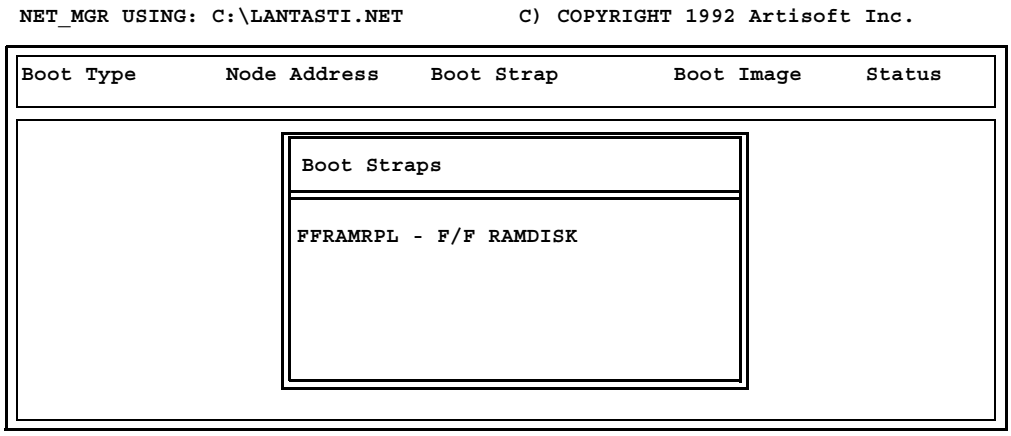


Press **<INSERT>** to select boot type from the Boot Types menu below.

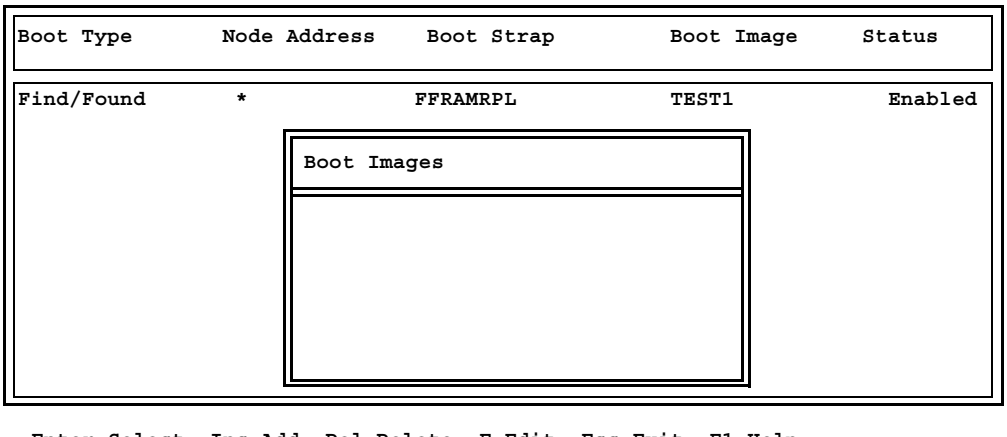


In the Boot Types popup menu, select ***Find/Found*** and press **<ENTER>**.

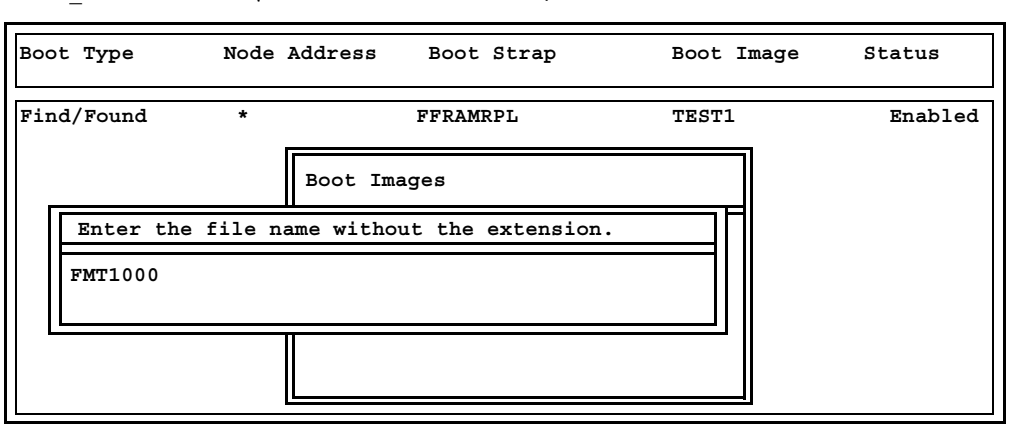
The Old Style Boot is provided to ensure compatibility with pre-version 5 DOS editions of LANtastic. Also, the Find/Found boot types are incompatible with LANtastic Z, LANtastic for NetWare, and networks using Artisoft 2Mbps, A2Mbps, or E2Mbps adapters.



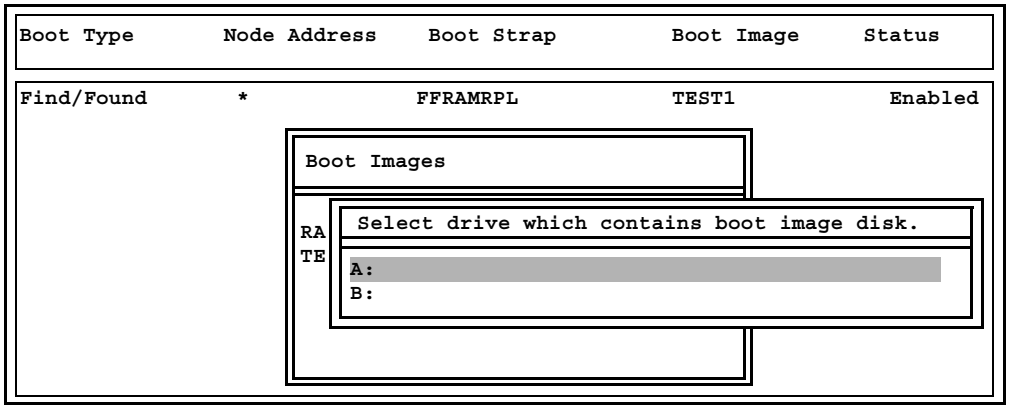
From the Boot Straps popup, select ***FFRAMRL - F/F RAMDISK*** and press **<ENTER>** to create a RAM disk out of the boot image at the workstation.



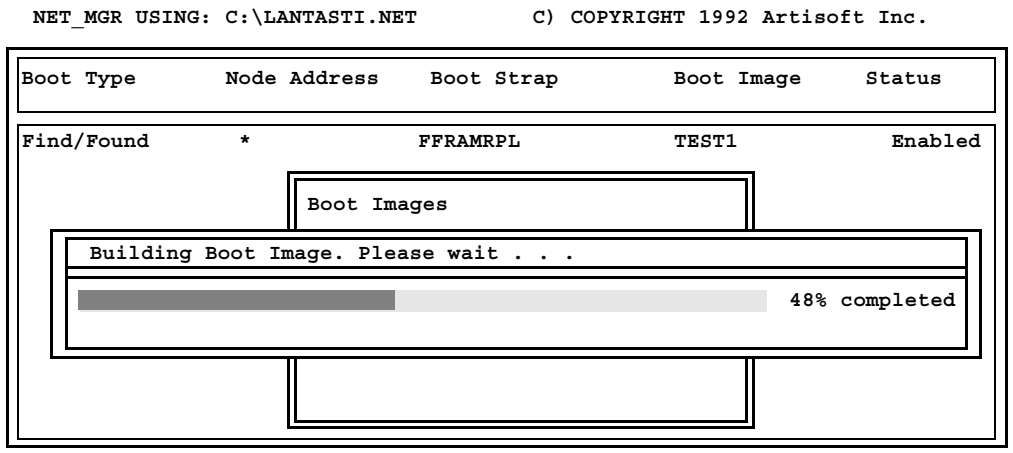
Press **<INSERT>** to bring up the next screen for boot image filename entry.



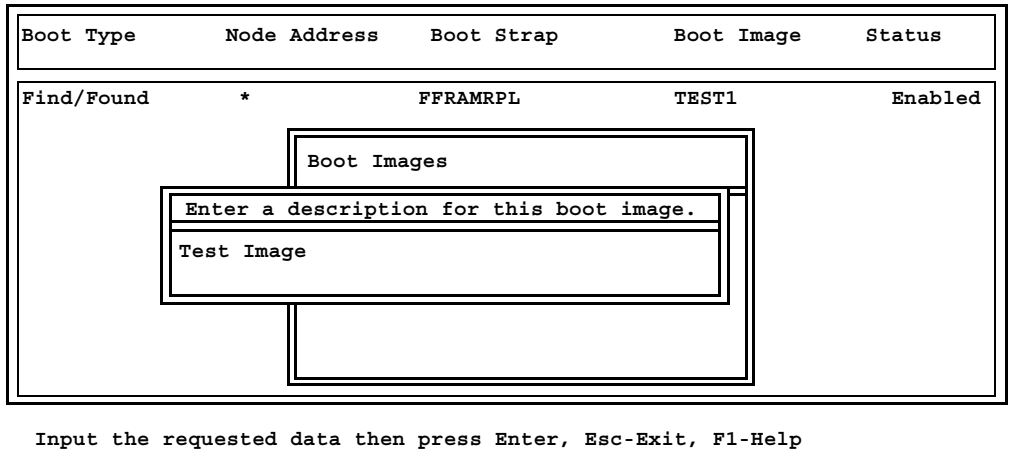
Press **<INSERT>** to add a boot image and enter the filename of the boot image *without an extension*. Press **<ENTER>** to confirm your entry.



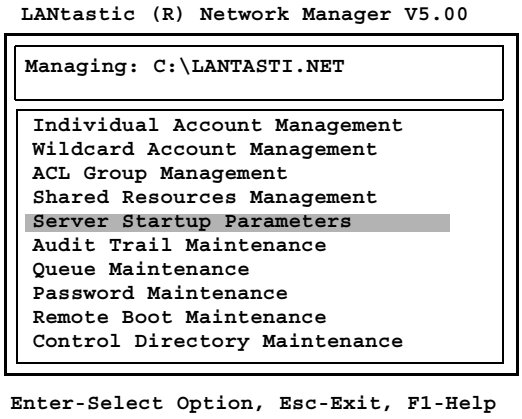
Highlight disk drive and select by pressing **<ENTER>**. A status screen, similar to the one shown below, is displayed showing the progress of the boot image building:



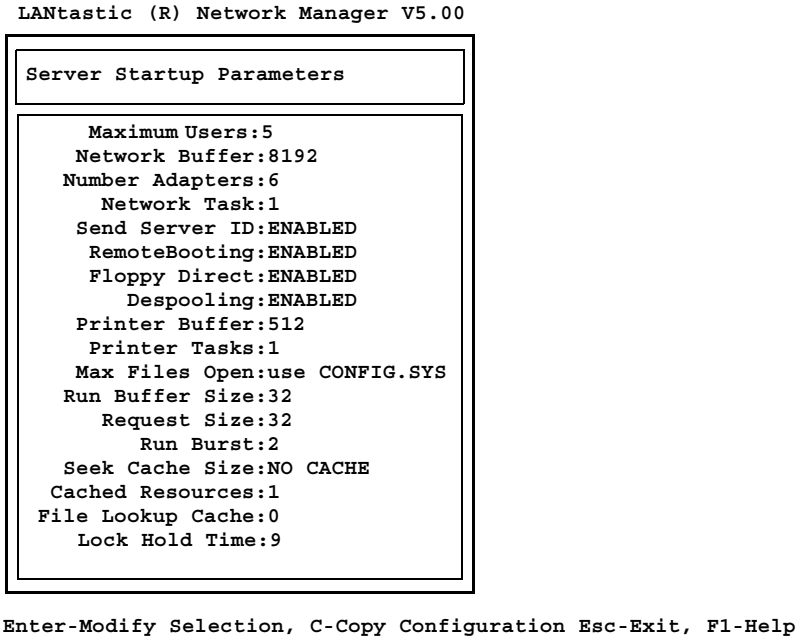
Upon completion of the boot image, the prompt screen shown below requests a boot image description. Enter the description and press **<ENTER>** when finished.



Press **<ESC>** several times to escape back to the managing screen shown below:



Highlight the Server Startup Parameters and press **<ENTER>** to select that option. The screen below will follow showing you the startup parameters:



Enable Remote Booting by highlighting that line and pressing <ENTER>. When complete, parameters should be as shown in the Server Startup Parameters screen shown directly above. Press <ESC> to escape back to the DOS prompt.

Entering “SERVER” at the DOS prompt, as shown below, causes the server configuration program to be run and the results of the FFRPL utility installation to be displayed as shown, and the DOS prompt to be redisplayed.

```
C:\LANTASTI>SERVER
```

```
LANtastic (R) Server V5.00/AI - (C) Copyright 1992 Artisoft Inc.
U.S.A. version only - NOT FOR EXPORT.
SERIAL NUMBER AAD-268284
                ---- LANtastic (R) Server Installed ----
LANtastic Find/Found RPL Server V1.03 - (C) Copyright 1992 Artisoft Inc.
                    ----FFRPL utility installed ----
```

```
C:\LANTASTI>
```

Change to the directory C:\LANTASTI\LANTASTI.NET\. This directory is our shared resource. Yours may have a different name. Refer to Chapter 2 of the Complete Guide to LANtastic for more details on setting up this resource.

Copy the following files to the C:\LANTASTI\LANTASTI.NET\ directory:

COMMAND.COM

NET.EXE

Create the batch file LP.BAT in this directory, and include the following lines:

```
SET COMSPEC=C:\
SET PATH=C:\
NET UNLINK
```

Other command lines may be added to customize the installation.

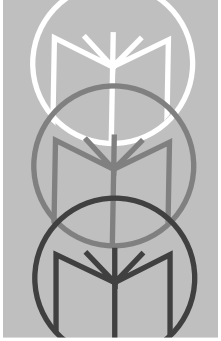
The FMT1000 Series computer is now ready for booting. Power up the unit, enter setup, and select FFRPL as the ROM boot type. When you apply power to the computer, it will begin broadcasting a Find Server frame over the network until the boot server responds by transmitting the boot image file.

As the FMT1000 Series computer boots, a screen message similar to the following appears:

```
RPL-ROM-FFC:
SFC:
SEQ: xxx
```

Where “xxx” represents the rapid display of the numbers 1 through 251.

You are now booted onto the LANtastic network.



Chapter 3
LAN Manager 2.1® Setup

Before starting the setup for the FMT1000 Series, beginning on page 3-3, the remote boot service should be installed on the server. We recommend that you read the procedures on activation of the LAN Manager server that are documented in the LAN Manager Administrator's Guide, chapter 13.

Unlike with NetWare or LANtastic, no boot image disk is generated for the LAN Manager installation. Instead, LAN Manager constructs an emulated disk on-the-fly using information about the particular workstation found in setup files on the server. Consequently, after the server setup is complete, some setup files require modification. To modify the files follow these steps:

1. Copy the NDIS driver (LP_NDIS.EXE) from the network driver disk to C:\LANMAN\RPL\BBLOCK\NDIS on the server.

   Create the directory:

   ```
   C:\LANMAN\RPL\BBLOCK\NETBEUI\FMT1000
   ```

   Under this directory, copy DOSBB.CNF and PROTOCOL.INI for the FMT1000 network driver disk.

2. Some versions of NETBEUI.EXE attempt to execute 80286 instructions, causing the computer to crash. Avoid this by using version 2.1 of NETBEUI.EXE. Contact LAN Manager for information regarding how to download NB_21.EXE from the Microsoft Developer's BBS.
3. In the directory C:\LANMAN\RPL\, make backup copies of the files RPL.MAP and RPLMGR.INI.

4. Edit C:\LANMAN\RPL\RPL.MAP by including a boot record:

```
yyyyyyyyyyyy BBLOCK\NETBEUI\FMT1000\DOSBB.CNF 2 6 A~
DOS~FMT1000~LPC3xxx 00c052 ~ ,,, ~ RDOS ~ ~ ~ ~ ~ ~
```

   and add a new default DOS workstation record:

```
00c052?????? ???????? D FITS\DEFAULT (RPL_SERVER_NAME) S ~
~ ~ ,,, ~ RDOS ~
DEFAULT *~NEW~DOS~FMT1000~*
```

   The file RPL.LP on the network driver disk contains these records.

   Note: The two lines above adding a new default workstation should be entered as one line without entering a hard return. The single line will begin with “00c052” and end with “~ RDOS ~”.

5. Edit C:\LANMAN\RPL\RPLMGR.INI so that RPLMGR can recognize the adapter. The header comments at the beginning of this file document the meaning and usage of different entries in the configuration block. Under the four configuration sections identified as:

```
name=default
name=DOS330
name=DOS401
name=DOS500
```

   add the string:

```
|00c052??????
```

   to the adapter= entry.

   Optionally, you may create new configuration sections for specific versions of DOS and allow for FMT1000 specific profiles in the event other types of diskless workstations will be supported. See the LAN Manager Administrator's Guide for more details.

6. At the OS/2 command line type RPLINST. This will activate the changes made to RPL.MAP and RPLMGR.INI.
7. At the OS/2 command line type NET START RPL. This will start RPL on the server with the new setup information.
8. Create a profile.
9. Attach a station to a profile.

   Note: See Chapter 13, LAN Manager Administrator's Guide for more details on setting up this resource.

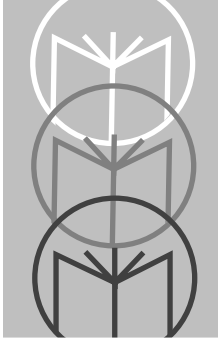
Now that the server setup is complete, power up the unit, enter setup, and select RIPL as the boot type. Upon exiting setup the unit should boot from the server. We recommend having a CGA CRT connected the first time booting is attempted. The CGA CRT will display status messages. The FMT1000 Series 2x40 LCD will not.

Assuming a CRT is connected to the FMT1000 Series computer, status lines appear on the CRT similar to:

```
Searching for DLC RPL Server,   retries = 000001

Sending file requests to DLC RPL Server, retries = 000001
Waiting for data frame with sequence number: 000044

Elapsed time: 00:00:02
```

Within a few seconds, this screen clears and informational messages appear concerning files that are being loaded from the server.

Once the unit has been successfully booted, you may wish to customize the settings in CONFIG.SYS and AUTOEXEC.BAT files to include loading of HIDOS.SYS (FMT1000 HMA driver). More information on these files is found in the *FMT1000 Series Programmer's Manual*.



Chapter 4
Demonstration Program

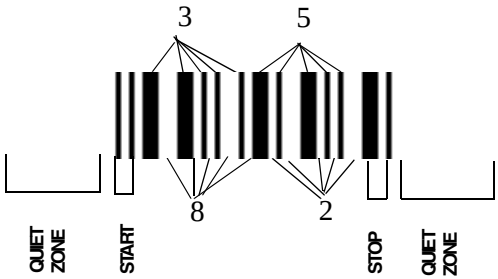
When the FMT1000 Series computer is ready for boot, apply power to the unit. After a self-test period, the computer emits three rapid beeps and attempts to boot from the network server or the floppy.

Once the system is booted, a DOS prompt appears. At this prompt, run the BASIC interpreter by typing its filename. Load the demo application and run it. This program is shipped on diskette with FMT1000 Series computers. The program listed below is written in MS-DOS QBasic. The program will work with the DOS 5.0 BASIC interpreter.

```
REM ***** Program: FMT1000 QUICK DEMO *****
REM (C) 1995 1995 Symbol Technologies Inc. All Rights Reserved
REM Modification of this program encouraged.
REM ****************************************
CLS
PRINT "Congratulations!"
PRINT "Your FMT1000 is now set up!"
PLAY "T180L802CEG03C02P8G03L2C"
SLEEP 5
CLS
PRINT "Enter your name below:"
LINE INPUT name$
CLS
PRINT "You entered:"
PRINT name$;
SLEEP 2
CLS
OPEN "COM2:9600,N,8,1,LF" FOR RANDOM AS #1
PRINT #1, "RVR"
PRINT "Press enter to continue:"
LINE INPUT ver$
CLS
PRINT "Scan barcode #1 and then press enter."
```

```
LINE INPUT bar$
CLS
IF bar$ = "3852" THEN
PRINT "Barcode scanned OK: "
ELSE
PRINT "Barcode scan error."
ENDIF
PRINT bar$;
SLEEP 2
CLS
PRINT "Scan barcode #2 and then press enter."
LINE INPUT bar$
CLS
IF bar$ = "SYMBOL" THEN
PRINT "Barcode scanned OK: "
ELSE
PRINT "Barcode scan error."
ENDIF
PRINT bar$;
SLEEP 2
PRINT "Your FMT1000 works!"
PLAY "T1808C16C8D8D7D7A"
SLEEP 2
CLOSE #1
END
```

The bar codes used in the demonstration program are found below. The first is a Two of Five Interleaved Code that shows the numbers “3852”. The second is a Code 39 that shows “Symbol.”



Interleaved Two of Five Bar Code”3852”

Barcode #2, Code 39"Symbol”

The simple example above is meant as a starting point for further exploration of the FMT1000 Series environment. Try modifying the program above to include I/O commands or disk access. For additional programming examples and information, consult the *FMT1000 Series Computer Programmer's Guide.*

Appendix A
BIOS Setup

Once the FMT1000 Series computer is booted, the Ethernet address and BIOS revision level appear on the first line of the 2-line by 40-character display. The second line displays **"[ENTER]=setup"** even if setup has been disabled. Figure A-1 shows a sample after-boot display.

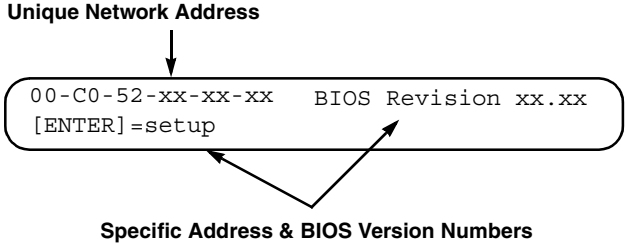


Figure A-1. First Screen Display after Bootup

A delay of a few seconds occurs before the system finishes the boot process. To enter into the setup process, the <ENTER> key must be pressed while the address and revision are displayed.

Figure A-2 shows a sample setup screen. Line 1 of the display indicates which setup screen and option are currently selected. Line 2 shows the currently saved options. The <ENTER> key accepts a setting and advances to the next setup screen.

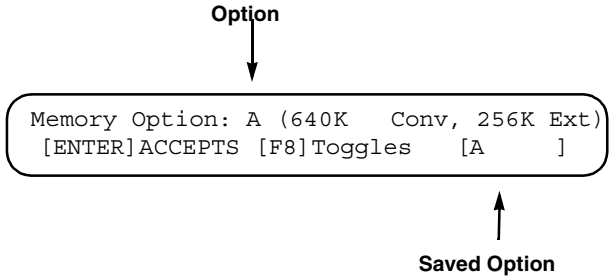


Figure A-2. Memory Options Screen Using <F8> Key To Toggle Between Options

Pressing the following keys moves you through the setup screens and their option lists:

<F5>	Moves you backward through setup screens without change.
<F6>	Moves you forward through setup screens without change.
<F7>	Moves you backward through option list.
<F8>	Moves you forward through option list.
<ENTER>	Accepts option setting and advances you to next setup screen.

BIOS Setup Screens

After pressing <ENTER> to get into the setup mode, you are presented with numerous setup screens to select options affecting display operation, memory configuration, boot type, etc. Details about the setup screens may be found on the network driver disk in a file named “Readme.txt”. After all setup screens have been viewed and choices made, the save options screen will appear as shown in Figure A-3.

```
Confirm Setup              [F1]=Exit, Save
[F2]=Abandon Changes   [F8]=Exit, No Save
```

Figure A-3. The Save Options Screen

Setup is now complete. Several options are available:

Press <F1>: Exit and save changes to EEPROM. (Changes appear every time FMT1000 Series computer boots up.)

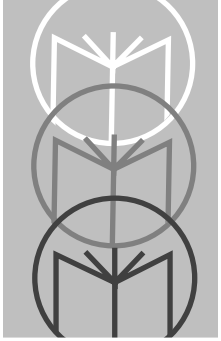
Press <F2>: Abandon changes. (Setup returns immediately to status in effect prior to entering setup.)

Press <F8> Exit without saving changes to EEPROM. (Setup returns to status in effect prior to entering setup but remains in effect for current work session.)

A confirming message is displayed, as shown in Figure A-4, and the computer proceeds with boot.

```
Confirming System
With SAVED Setup Parameters
```

Figure A-4. Confirmation Message



Appendix B
VLM Remote Booting

Server Setup

VLM Server Setup for Remote Booting is identical to Netware 3.11 Server Setup. Please refer to Chapter 1, page 5 of this manual for details.

Create a Boot Image File, NET$DOS.SYS, for VLM FFRPL Remote Booting

1. From a workstation, log into the network as SUPERVISOR and create user FMT1000. When creating the FMT1000 user, also create a home directory for FMT1000 so that the mapping in Step 2 will work properly.
2. Map the following network drive letters for use during the following steps:

   ```
   C:\>MAP F:=SYS:SYSTEM
   C:\>MAP G:=SYS:LOGIN
   C:\>MAP H:=SYS:FMT1000
   ```

   If these drive letters are already in use, you may use other unused network drive letters but remember that the following steps assume the above mappings.

3. Insert an unformatted disk in drive A and format the disk as a system disk. Although your drive letters may be different, enter the following DOS command:

   ```
   C:\>FORMAT A: /S
   ```

   All files created by you in this step and the following steps are plain DOS text files. Use the text editor of your choice when creating these files.

4. Create a CONFIG.SYS file on the boot disk in drive A containing the following lines:

```
FILES=30
BUFFERS=30
LASTDRIVE=Z
```

5. Create an AUTOEXEC.BAT file on the boot disk in drive A containing the following lines:

```
LSL
LPNICE
IPXODI
VLM
```

6. Create a NET.CFG file on the boot disk in drive A containing the following lines:

```
LINK DRIVER LPNICE
<TAB>FRAME <protocol_type>
```

   Where <protocol_type> is either “ETHERNET_802.2” or “ETHERNET_802.3” depending on which type of frame you want the FMT1000 series computer to use. Typically, your selection is dependent upon which frame types you have on your server.

7. Copy the following files from the driver disk (SWS50300) to the boot disk. The command lines below assume the boot disk is in drive A and that the driver disk is in drive B. Once again, your drive letters may be different. Note that these are the files executed by AUTOEXEC.BAT created above:

```
C:\>COPY B:\NOVSUP\LSL.COM A:
C:\>COPY B:\ODI\LPNICE.COM A:
C:\>COPY B:\NOVSUP\IPXODI.COM A:
C:\>COPY B:\NOVSUP\VLMS\VLM.EXE A:
C:\>COPY B:\NOVSUP\VLMS\*.VLM A:
```

8. Switch to drive G: (SYS:LOGIN) and create the NET$DOS.SYS boot image file from the boot disk by entering the following command:

```
G:\LOGIN>F:DOSGEN
```

This command assumes that the boot disk is in drive A and by default creates a boot image file named "NET$DOS.SYS." If you want to change these default values, please refer to Novell's documentation.

9. Copy the AUTOEXEC.BAT file from the boot disk (still in drive A) to SYS:LOGIN by entering the following command:

   ```
   G:\LOGIN>COPY A:\AUTOEXEC.BAT
   ```

10. Edit AUTOEXEC.BAT in drive G (SYS:LOGIN) and append the following line:

    ```
    LOGIN FMT1000
    ```

    After the edit, AUTOEXEC.BAT should be as follows:

    ```
    LSL
    LPNICE
    IPXODI
    VLM
    LOGIN FMT1000
    ```

11. Switch to drive H (SYS:FMT1000) and copy AUTOEXEC.BAT from drive G (SYS:LOGIN) by issuing the following command:

    ```
    H:\FMT1000>COPY G:AUTOEXEC.BAT
    ```

12. Edit AUTOEXEC.BAT in drive H (SYS:FMT1000) and append the following line:

    ```
    PROMPT $P$G
    ```

    After the edit, AUTOEXEC.BAT should be as follows:

    ```
    LSL
    LPNICE
    IPXODI
    VLM
    LOGIN FMT1000
    PROMPT $P$G
    ```

Note: The PROMPT command illustrates the linking of the AUTOEXEC.BAT files during remote boot. Typically, you invoke your application by further appending AUTOEXEC.BAT.

13. The server is now ready to boot an FMT1000 Series computer. Power up the computer, enter into setup mode, and select FFRPL as the boot type. See Appendix A for setup instructions.

Create a Boot Image File, NET$DOS.SYS, for VLM IPX Remote Booting.

1. From a workstation, log into the network as SUPERVISOR and create user FMT1000. When creating the FMT1000 user, also create a home directory for FMT1000 so that the mapping in Step 2 will work properly.
2. Map the following network drive letters for use during the following steps:

   ```
   C:\>MAP F:=SYS:SYSTEM
   C:\>MAP G:=SYS:LOGIN
   C:\>MAP H:=SYS:FMT1000
   ```

   If these drive letters are already in use, you can select other unused network drive letters, but please remember that the following steps assume the above mappings.

3. Insert an unformatted disk in drive A and format the disk as a system disk. Although your drive letters may be different, enter the following DOS command:

   ```
   C:\>FORMAT A: /S
   ```

4. All files created by you in this step and the following steps are plain DOS text files. Use the text editor of your choice when creating these files.

   Create a CONFIG.SYS file on the boot disk in drive A containing the following lines:

   ```
   FILES=30
   BUFFERS=30
   LASTDRIVE=Z
   ```

5. Create an AUTOEXEC.BAT file on the boot disk in drive A containing the following lines:

   ```
   LSL
   RPLODI
   LPNICE
   IPXODI
   VLM
   ```

6. Create a NET.CFG file on the boot disk in drive A containing the following lines:

```
LINK DRIVE LPNICE
<TAB>FRAME <protocol_type>
```

   Where <protocol_type> is either “ETHERNET_802.2” or “ETHERNET_802.3” depending on which type of frame you want the FMT1000 to use. Typically, your selection depends on which frame types you have on your server.

7. Copy the following files from the driver disk (SWS50300) to the boot disk. The command lines below assume the boot disk is in drive A and that the driver disk is in drive B. Once again, your drive letters may be different. Note that these are the files executed by AUTOEXEC.BAT created above:

```
C:\>COPY B:\NOVSUP\LSL.COM A:
C:\>COPY B:\NOVSUP\RPLODI.COM A:
C:\>COPY B:\ODI\LPNICE.COM A:
C:\>COPY B:\NOVSUP\IPXODI.COM A:
C:\>COPY B:\NOVSUP\VLMS\VLM.EXE A:
C:\>COPY B:\NOVSUP\VLMS\*.VLM A:
```

8. Switch to drive G: (SYS:LOGIN) and create the NET$DOS.SYS boot image file from the boot disk by entering the following command:

```
G:\LOGIN>F:DOSGEN
```

   This command assumes that the boot disk is in drive A and by default creates a boot image file named “NET$DOS.SYS”. If you want to change these default values, please refer to Novell's documentation.

9. Copy the AUTOEXEC.BAT file from the boot disk (still in drive A) to SYS:LOGIN by entering the following command:

```
G:\LOGIN>COPY A:\AUTOEXEC.BAT
```

10. Edit AUTOEXEC.BAT in drive G (SYS:LOGIN) and append the following line:

```
LOGIN FMT1000
```

After the edit, AUTOEXEC.BAT should be as follows:

```
LSL
RPLODI
LPNICE
IPXODI
VLM
LOGIN FMT1000
```

11. Switch to drive H (SYS:FMT1000) and copy AUTOEXEC.BAT from drive G (SYS:LOGIN) by issuing the following command:

    ```
    H:\FMT1000>COPY G:AUTOEXEC.BAT
    ```

12. Edit AUTOEXEC.BAT in drive H (SYS:FMT1000) and append the following line:

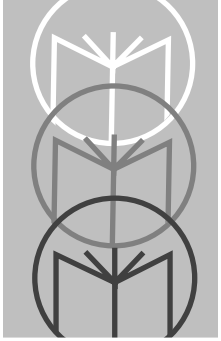
    ```
    PROMPT $P$G
    ```

    After the edit, AUTOEXEC.BAT should be as follows:

    ```
    LSL
    RPLODI
    LPNICE
    IPXODI
    VLM
    LOGIN FMT1000
    PROMPT $P$G
    ```

    Note that the PROMPT command illustrates the linking of the AUTOEXEC.BAT files during remote boot. Typically, you would invoke your application by further appending AUTOEXEC.BAT.

13. The server is now ready to boot the FMT1000 Series computer. Power up the computer, enter into setup mode, and select IPX as the boot type. See Appendix A for setup instructions.



Appendix C Personal NetWare VLM Remote Booting

Server Setup

Follow the instructions in the Personal NetWare manual for server setup.

1. Edit the STARTNET.BAT file and add the following two lines after you load VLM:

```
rpl\rpl gns
rpl\nearserv
```

2. Run the STARTNET.BAT file to start the network.

Create a Boot Image File, NET$DOS.SYS, for VLM FFRPL Remote Booting

1. Log into the network as SUPERVISOR and create user FMT1000. Create shared directories for use by user FMT1000. See the Personal NetWare manual for instructions.
2. Map the following network drives for use.

```
C:\NWCLIENT>NET MAP F:/NWCLIENT
C:\NWCLIENT>NET MAP G:/LOGIN
C:\NWCLIENT>NET MAP F:/FMT1000
```

   Reminder: These directories must be defined and sharable in NET ADMIN (see the Personal NetWare manual for instructions).

3. Insert an unformatted disk in drive A and format the disk as a system disk. Although your drive letters may de different, enter the following DOS command:

```
C:\>FORMAT A:/S
```

4. All the files created by you in this step and the following steps are plain DOS text files. Use the text editor of your choice when creating these files.

   Create a CONFIG.SYS file on the boot disk in drive A containing the following lines:

   ```
   FILES=30
   BUFFERS=30
   LASTDRIVE=Z
   ```

5. Create an AUTOEXEC.BAT file on the boot disk in drive A containing the following lines:

   ```
   LSL
   LPNICE
   IPXODI
   VLM
   ```

6. Create a NET.CFG file on the boot disk in drive A containing the following lines:

   ```
   LINK DRIVER LPNICE
   <TAB>INT 5
   <TAB>PORT 300
   <TAB>FRAME <protocol_type>
   ```

   Netware DOS Requester

   ```
   <TAB>PREFERRED WORKGROUP = <work-group-name>
   <TAB>FIRST NETWORK DRIVE = <drive-letter>
   <TAB>NETWORK PROTOCOL = PNW, bind, NDS
   <TAB>SHOW DOTS = ON
   <TAB>USE DEFAULTS = ON
   ```

   Where <protocol_type> is either "ETHERNET_802.2" or "ETHERNET_802.3" depending on which frame you want the FMT1000 to use. The name of the work group created for user FMT1000 is <*work-group-name*>. The first letter that may be used for network drive mapping is <*drive-letter*>.

7. Copy the following files from the driver disk (SWS50300) to the boot disk. The command lines assume the boot disk is in drive A and that the driver disk is in Drive B. Your drive letters may be different. Note that these are the files executed by the AUTOEXEC.BAT created above:

```
C:\>COPY B:\NOVSUP\LSL.COM A:
C:\>COPY B:\ODI\LPNICE.COM A:
C:\>COPY B:\NOVSUP\IPXODI.COM A:
C:\>COPY B:\NOVSUP\VLMS\VLM.EXE A:
C:\>COPY B:\NOVSUP\VLMS\*.VLM A:
```

8. Switch to drive G: (the login directory) and create the NET$DOS.SYS boot image file from the boot disk by entering the following command:

```
G:\LOGIN>F:DOSGEN
```

   This command assumes that the boot disk in drive A and by default creates a boot image file named "NET$DOS.SYS". If you want to change these default values, refer to Novell documentation.

9. Copy the AUTOEXEC.BAT file form the boot disk (still in drive A) to the login directory by entering the following command:

```
G:\LOGIN>COPY A:\AUTOEXEC.BAT
```

10. Edit AUTOEXEC.BAT in drive G (the login directory) and append the following line:

```
NET LOGIN FMT1000
```

    After the edit, AUTOEXEC.BAT should be as follows:

```
LSL
LPNICE
IPXODI
VLM
NET LOGIN FMT1000
```

11. Switch to drive H (the FMT1000 Series computer directory) and copy AUTOEXEC.BAT from drive G (the login directory) by issuing the following command:

```
H:\FMT1000>COPY G:AUTOEXEC.BAT
```

12. Edit AUTOEXEC.BAT in drive H (the FMT1000 directory) and append the following line:

```
PROMPT $P$G
```

After the edit, AUTOEXEC.BAT should be as follows:

```
LSL
LPNICE
IPXODI
VLM
NET LOGIN FMT1000
PROMPT $P$G
```

Note that the PROMPT command illustrates the linking of the AUTOEXEC.BAT files during remote booting. Typically, you invoke your application by further appending AUTOEXEC.BAT.

The server is now ready to boot the FMT1000 Series computer. Power up the computer, enter in setup mode and select FFRPL as the boot type. See Appendix B for setup instructions.

Create a Boot Image File, NET$DOS.SYS, for VLM IPX Remote Booting

1. Log into the network as SUPERVISOR and create user FMT1000. Create shared directories for use by user FMT1000. See the Personal NetWare manual for instructions.
2. Map the following network drives for use.

```
C:\>NWCLIENT>NET MAP F: /NWCLIENT
C:\>NWCLIENT>NET MAP G: /LOGIN
C:\>NWCLIENT>NET MAP F:/FMT1000
```

Reminder: These directories must be defined and sharable in NET ADMIN (see the Personal NetWare manual for instructions).

3. Insert an unformatted disk in drive A and format the disk as a system disk. Although your drive letters may de different, enter the following DOS command:

```
C:\>FORMAT A:/S
```

4. All the files created by you in this and the following steps are plain DOS text files. Use the text editor of your choice when creating these files.

   Create a CONFIG.SYS file on the boot disk in drive A containing the following lines:

   ```
   FILES=30
   BUFFERS=30
   LASTDRIVE=Z
   ```

5. Create an AUTOEXEC.BAT file on the boot disk in drive A containing the following lines:

   ```
   LSL
   RPLODI
   LPNICE
   IPXODI
   VLM
   ```

6. Create a NET.CFG file on the boot disk in drive A containing the following lines:

   ```
   LINK DRIVER LPNICE
   <TAB>INT 5
   <TAB>PORT 300
   <TAB>FRAME <protocol_type>
   Netware DOS Requester
   <TAB>PREFERRED WORKGROUP = <work-group-name>
   <TAB>FIRST NETWORK DRIVE = <drive-letter>
   <TAB>NETWORK PROTOCOL = PNW, bind, NDS
   <TAB>SHOW DOTS = ON
   <TAB>USE DEFAULTS = ON
   ```

   Where <protocol_type> is either "ETHERNET_802.2" or "ETHERNET_802.3" depending on which frame you want the FMT1000 to use. The work group created for user FMT1000 is <work-group-name>. The first letter that may be used for network drive mapping is <drive-letter>.

7. Copy the following files from the driver disk to the boot disk. The command lines assume the boot disk is in drive A and that the driver disk is in Drive B. Your drive letters may be different. Note that these are the files executed by the AUTOEXEC.BAT created above:

```
C:\>COPY B:\NOVSUP\LSL.COM A:
C:\>COPY B:\NOVSUP\RPLODI.COM A:
C:\>COPY B:\ODI\LPNICE.COM A:
C:\>COPY B:\NOVSUP\IPXODI.COM A:
C:\>COPY B:\NOVSUP\VLMS\VLM.EXE A:
C:\>COPY B:\NOVSUP\VLMS\*.VLM A:
```

8. Switch to drive G: (the login directory) and create the NET$DOS.SYS boot image file from the boot disk by entering the following command:

```
G:\LOGIN>F:DOSGEN
```

   This command assumes that the boot disk in drive A and by default creates a boot image file named "NET$DOS.SYS". If you want to change these default values, refer to Novell documentation.

9. Copy the AUTOEXEC.BAT file form the boot disk (still in drive A) to the login directory by entering the following command:

```
G:\LOGIN>COPY A:\AUTOEXEC.BAT
```

10. Edit AUTOEXEC.BAT in drive G (the login directory) and append the following line:

```
NET LOGIN FMT1000
```

    After the edit, AUTOEXEC.BAT should be as follows:

```
LSL
RPLODI
LPNICE
IPXODI
VLM
NET LOGIN FMT1000
```

11. Switch to drive H (the FMT1000 directory) and copy AUTOEXEC.BAT from drive G (the login directory) by issuing the following command:

```
H:\FMT1000>COPY G:AUTOEXEC.BAT
```

12. Edit AUTOEXEC.BAT in drive H (the FMT1000 directory) and append the following line:

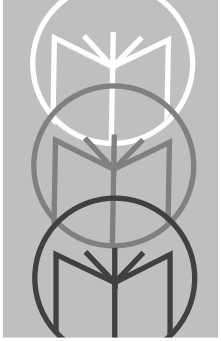
    ```
    PROMPT $P$G
    ```

    After the edit, AUTOEXEC.BAT should be as follows:

    ```
    LSL
    RPLODI
    LPNICE
    IPXODI
    VLM
    NET LOGIN FMT1000
    PROMPT $P$G
    ```

    Note that the PROMPT command illustrates the linking of the AUTOEXEC.BAT files during remote booting. Typically, you invoke your application by further appending AUTOEXEC.BAT.

13. The server is now ready to boot the FMT1000 Series computer. Power up the computer, enter in setup mode and select IPX as the boot type. See Appendix B for setup instructions.



Appendix D LANtastic 6.0 Remote Booting

The steps for creating a FFRPL boot image for use with LANtastic 6.0 are identical to those used in LANtastic 5.0 and previously detailed in this manual. This section will detail the few conceptual differences between the two versions.

Single-User vs. Multi-User Licenses

LANtastic 6.0 licensing is available in single-user and multi-user forms. If you are using single user LANtastic 6.0, each unit must have its own REDIR.EXE. That is its own license. If you are using multi-user LANtastic 6.0, the number of workstations may equal the maximum number of users allowed by your license. Similarly, the number of boot images is reflective of the licensing: one FMT1000 Series computer per boot image file for each single user license and multiple FMT 10x0s per boot image for a multi-user license.

Working with Multiple Single-User LANtastic 6.0 Licensing

You need not install the entire LANtastic 6.0 system for every FMT1000 Series computer boot image you are building. The necessary files for boot image creation may be installed in a temporary subdirectory by issuing the following command:

```
C:\>A:INSTALL /DOS/EXTRACT
```

The install routine will ask for a directory name to install the system. Be sure to select the LANtastic Core Workstation Files only.

Special Note for DOS 6.0 and Higher Users:

The larger file sizes for a system-formatted DOS 6.0 diskette, combined with the larger file sizes for LANtastic 6.0 will not fit on the 320K floppy disk used for boot image formatting. To correct this situation you will need to delete a hidden file called DBLSPACE.BIN after creating a bootable floppy disk (Chapter 2, page 5).

To delete this file you first need to change the file's attributes:

```
C:\>ATTRIB -A -S -R -H A:DBLSPACE.BIN
```

You can then delete the file:

```
C:\>DEL A:DBLSPACE.BIN
```