chapter 1

Using the NetWare Shell Files

Overview

Novell recently upgraded the NetWare shell to a new architecture referred to as NetWare DOS Requester™, replacing the NETX file series. If you want to upgrade your workstation software to use this new architecture, see Chapter 1, “About the NetWare DOS Requester,” in *Workstation for DOS and Windows*.

If you choose to use the previous architecture, this chapter provides you with a basic overview of the NetWare shell files and with the procedures for using them with your DOS and Windows workstations.

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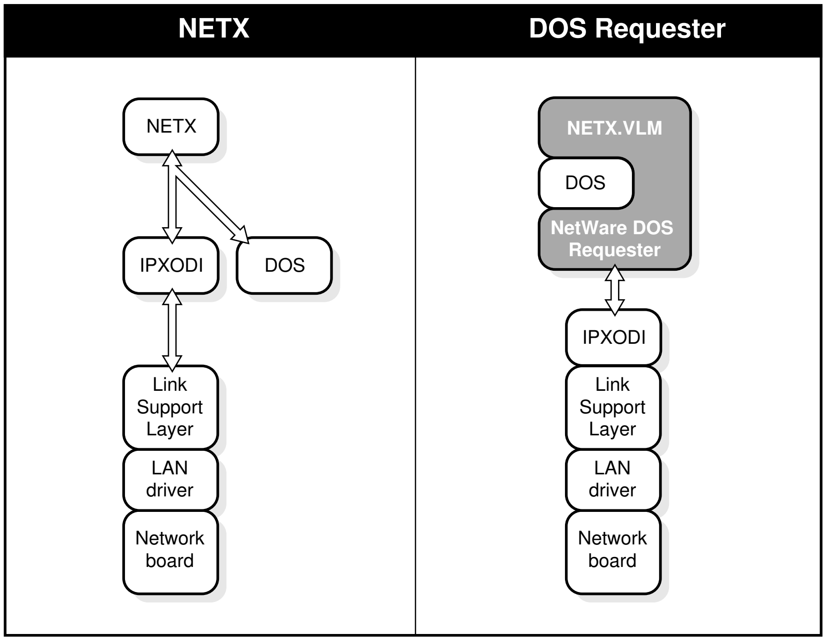
Advantages of Using the NetWare DOS Requester

The NetWare DOS Requester provides several new improvements over NETX:

- Supports NetWare Directory Services™ provided with NetWare v4.0.
- Provides a modular architecture that allows for more efficient use of memory and gives developers a more flexible platform.
- Takes advantage of memory-swapping technology and DOS redirection capability.
- Includes Packet Burst™ protocol and Large Internet Packet.
- Supports installed base of NetWare users by providing backward compatibility with NETX.

Figure 1-1 shows the difference between NETX and the NetWare DOS Requester architectures.

Figure 1-1
Comparison of NETX and NetWare DOS Requester architectures



The NetWare DOS Requester file replaces NETX.COM. It is recommended that you upgrade your workstation to use the new workstation files. Complete installation of the new workstation files by referencing *Workstation Basics and Installation* for information and procedures.

If you chose to not upgrade your workstation to use the NetWare DOS Requester, continue reading the following sections.

The Netware Shell Workstation Environment

The key components of the NetWare shell workstation environment are four terminate-and stay-resident (TSR) programs:

- LSL™ (Link Support Layer™)
- A network board driver (example: NE2000)
- IPXODI (Internetwork Packet Exchange Open Data-Link Interface)
- NETX (the network shell)

If an ODI™-compliant board driver is not available, your workstation environment will consist of two terminate-and-stay-resident (TSR) programs:

- IPX™ dedicated IPX driver (non-ODI)
- NETX (the network shell)

The LSL.COM, *network board driver*.COM and IPXODI.COM files replace IPX.COM. It is recommended that you upgrade your workstation to use the new workstation files. See Chapter 3, “Installing a NetWare Workstation,” of *Workstation Basics and Installation* for information and procedures on using a program-based installation, or install the files manually by using the procedure in the following section.

Decompressing the LSL, Network Board Driver, and IPXODI Files

The following workstation files are in compressed format on the *WSDOS_1* and *WSDRV_1* diskettes.

- LSL.COM
- *network board driver*.COM
- IPXODI.COM

You must decompress these files to use them on your workstation. If your workstation software is on CD-ROM, go to “Creating Workstation Installation Diskettes from CD-ROM” in Chapter 2 of *Workstation Basics and Installation*.

Procedure

1. Decompress and copy the LSL.COM and IPXODI.COM files from the ***WSDOS_1*** diskette to your workstation directory.

   To decompress a file, type

   ```
   NLUNPACK <filename> [destination_directory:]
      <Enter>
   ```

   For example, to expand LSL.COM, type

   ```
   NLUNPACK A:LSL.CO_ C:\NWCLIENT <Enter>
   ```

2. Decompress and copy the appropriate *network board driver*.COM file from the ***WSDRV_1*** diskette to your workstation directory.

   To decompress a file, type

   ```
   NLUNPACK <filename> [destination_directory:]
      <Enter>
   ```

   To expand NE2000.COM for example, type

   ```
   NLUNPACK A:\DOS\NE2000.CO_ C:\NWCLIENT
      <Enter>
   ```

3. Ensure that a NET.CFG file exists in the same directory as your workstation files.

   For information on how to create a NET.CFG file, see Chapter 2, “Configuring Your Workstation,” of *Workstation for DOS and Windows*.

4. Update your workstation’s NetWare shell files.

   If you want to update the workstation NetWare shell file from your login directory, go to “Updating the NetWare Shell Files from the LOGIN Directory” on page 15.

   If you want to update the workstation NetWare shell file from from diskette, go to “Updating the NetWare Shell Files from Diskette” on page 17.

Updating the NetWare Shell Files from the LOGIN Directory

This section applies only to workstations that already have a previous version of NetWare shell files installed. If you are installing a new NetWare workstation, go to “Updating the NetWare Shell Files from Diskette” on page 17.

The following checklists and procedures will help you set up your workstation for updating NetWare shell files from the LOGIN directory.

Prerequisites

Checklist ✓

□ Ensure that the server you log in to is upgraded and running NetWare v3.12

□ Ensure that a previous version of the NetWare shell files are loaded on your workstation.

□ Ensure that a copy of the following NetWare shell files exist in your LOGIN directory:

- EMSNETX.EXE
- NETX.EXE
- XMSNETX.EXE

Procedure

Procedure

1. Change to the LOGIN directory.

2. Copy the appropriate NetWare shell file for your workstation to your boot diskette or workstation directory.

   For example, to copy NETX.EXE, you would type

   ```
   COPY NETX.EXE drive_letter:\client_directory
      <Enter>
   ```

   Replace *drive_letter* and *client_directory* with the drive letter and directory containing your workstation files. For example, if your workstation files are copied to the NWCLIENT directory on drive C:, you would type

   ```
   COPY NETX.EXE C:\NWCLIENT <Enter>
   ```

   or, for a boot diskette, you might type

   ```
   COPY NETX.EXE A:\ <Enter>
   ```

   If your workstation is capable of extended or expanded memory support, replace NETX.EXE with the file which corresponds to the type of memory support you have:

   - XMSNETX.EXE (for extended memory)
   - EMSNETX.EXE (for expanded memory)

3. Reboot your workstation.

4. Load the new NetWare shell file.

   Commonly, the workstation files are loaded automatically from a batch file. If you want to load the files manually, go to “Loading the Workstation Files” on page 18.

Updating the NetWare Shell Files from Diskette

To copy files directly from diskettes, follow these steps.

Procedure

1. Format a DOS diskette.

2. Copy all the files in the LOGIN subdirectory on the NetWare v3.12 ***SYSTEM_3*** diskette to the formatted diskette by typing

   ```
   COPY source_directory:\wild_card
     destination_directory: <Enter>
   ```

   For example, type

   ```
   COPY A:LOGIN\*.* B: <Enter>
   ```

3. Label the formatted diskette “NetWare Shell Files.”

4. Insert the “NetWare Shell Files” diskette into a floppy disk drive and change to that drive.

   For example, if you have inserted the diskette into drive A:, type

   ```
   A: <Enter>
   ```

5. Copy the appropriate NetWare shell file for your workstation to your boot diskette or workstation directory.

   For example, to copy NETX.EXE, you would type

   ```
   COPY NETX.EXE drive_letter:\client_directory
     <Enter>
   ```

   Replace *drive_letter* and *client_directory* with the drive letter and directory containing your workstation files. For example, if your workstation files are copied to the NWCLIENT directory on drive C:, you would type

   ```
   COPY NETX.EXE C:\NWCLIENT <Enter>
   ```

   or, for a boot diskette, you might type

   ```
   COPY NETX.EXE A:\ <Enter>
   ```

If your workstation is capable of extended or expanded memory support, replace NETX.EXE with the file which corresponds to the type of memory support you have:

- XMSNETX.EXE (for extended memory)
- EMSNETX.EXE (for expanded memory)

6. Reboot your workstation.

7. Load the new NetWare shell file.

   Commonly, the workstation files are loaded automatically from a batch file. If you want to load the files manually, go to “Loading the Workstation Files” on page 18.

Loading the Workstation Files

You can load the NetWare workstation files from the command line or from a batch file.

Loading from the Command Line

Procedure

1. Change to your workstation directory by typing

   `CD\workstation_directory` <Enter>

2. Load the workstation files in the following order:

   LSL <Enter>

   network board driver.**COM** <Enter>

   IPXODI <Enter>

   NETX <Enter>

Loading from a Batch File

An example of a batch file using a NE2000 network board driver is as follows:

```
@ECHO OFF
C:
CD \NWCLIENT
LSL
NE2000.COM
IPXODI
NETX
CD \
```

For command options and concepts, see “Understanding NetWare Shell File Command Options and Concepts” on page 30.

Understanding the NET.CFG File for the NetWare Shell

The NET.CFG file is a specialized text file that you create with any ASCII text editor and include in your workstaion directory or on a workstation boot diskette with any other necessary boot files.

Like the DOS CONFIG.SYS file, the NET.CFG file contains configuration values that are read and interpreted when your workstation starts up. These values adjust the default operating parameter settings of the NetWare shell, IPX, or other workstation files.

Note

The NET.CFG file replaces the previous shell configuration file named SHELL.CFG. See Chapter 2, “Configuring Your Workstation,” of *Workstation for DOS and Windows* for information on the NET.CFG file.

Using a NET.CFG File

Use entries in the NET.CFG file to change the workstation's network environment or configuration. For example, you might want to change the configuration in these cases:

- You changed the default hardware settings on the network board.
- You are using multiple protocols.
- You are using Novell's LAN Workplace.

Creating and Modifying the NET.CFG File

Procedure

1. **Use a DOS text editor to type section headings and options in in an existing NET.CFG file or a NET.CFG file which you create to set up your workstation configuration.**

   See "NET.CFG Options for NetWare Shell Parameter Settings" on page 21 for descriptions of these settings.

   Use the following conventions to create or modify a NET.CFG file:

   - Type one heading or option per line.

     Headings and options are not case-sensitive. Blank lines are ignored, but they can be helpful in separating the section headings or options to make the NET.CFG file easier to read.

   - Enter section headings at the left margin of the file with no spaces before or after them.

     Each NET.CFG section heading may have several options.

   - Enter options, one per line, below the section heading to which they apply, and indent each one.

     Use <Spacebar> or <Tab> to indent options. Options *must* be indented at least one space.

   - Place a hard return at the end of every line in the file, *including the last line*.

     If you don't put a return at the end of the last line, the line is ignored.

- Precede comment lines with a semicolon.

2. Copy the NET.CFG file to the workstation boot diskette or directory.

   If all workstations use the same NET.CFG file, you can save time by copying the NET.CFG file onto a master workstation diskette. Then copy the files on the master workstation diskette to each workstation.

   If each workstation requires a unique NET.CFG file, you must copy a unique NET.CFG file to each workstation boot diskette or boot directory.

Sample NET.CFG File

Following is a sample NET.CFG file that

- Changes the IRQ on the link driver to 4
- Changes the port to 340
- Sets up F: as the first network drive when you log in to the network

```
LINK DRIVER NE2000
   ; Change the interrupt (IRQ) to 4
   INT #1 4
   ; Change the port to 340 (hex)
   PORT #1 340

NETX
   ; Set up F: as the first drive on network
   First Network Drive = F
```

You can also specify command line parameters for NETX. See “Understanding NetWare Shell File Command Options and Concepts” on page 30 for these parameters.

NET.CFG Options for NetWare Shell Parameter Settings

These NET.CFG parameter settings are for all three types of NetWare shell files:

- NETX.EXE (for conventional memory)

- EMSNETX.EXE (for expanded memory)
- XMSNETX.EXE (for extended memory)

Figure 1-2 shows the various parameter settings that you can use. Description of the settings immediately follow the figure.

Figure 1-2
NET.CFG options for NetWare Shell files

NetWare NETX Configuration Options

Options and Settings	**Defaults**
netx	
all servers [on|off]	*off*
cache buffers *number*	*5* (cache blocks)
checksum [on|off]	*off*
dos name *name*	*ms_dos*
entry stack size *number*	*10*
environment pad *number*	*17*
eoj [on|off]	*on*
file handles *number*	*40* (open files)
get local target stacks *number*	*1* (stack)
hold [on|off]	*off*
lipackets [on|off]	*off*
local printers *number*	(# of ports)
lock delay *number*	*1* (≈0.5 seconds)
lock retries *number*	*3*
long machine type *name*	*ibm_pc*
max cur dir length *number*	*64*
max path length *number*	*255*
max tasks *number*	*31*
patch *byte_offset value*	
pb buffers *number*	
preferred server *server_name*	
print header *number*	*64* (bytes)
print tail *number*	*16* (bytes)
read only compatibility [on|off]	*off*

continued ►

Figure 1-2 ***continued***
NET.CFG options for NetWare shell files

NetWare NETX Configuration Options (*continued)*

Options and Settings	Defaults
netx	
search mode *number*	*1*
set station time [on|off]	*on*
share [on|off]	*on*
short machine type *name*	*ibm*
show dots [on|off]	*off*
sign 386 mode	*1*
signature level	*1*
special uppercase [on|off]	*off*
task mode *number*	*2*
temp drive detection [on|off]	*on*

ALL SERVERS [ON | OFF]

Determines whether the End of Task is sent to all connected servers or only to those servers interacting with the task.

If this option is set to ON, End of Task is sent to all connected servers.

If this option is set to OFF, End of Task is sent to only those servers the current process has interacted with.

Default: OFF

ENTRY STACK SIZE *number*

Ensures that the code residing in expanded memory is visible in the memory page frame.

Many TSRs and other programs using expanded memory may need this parameter increased.

Default: 10
Range: 5 to 40

This parameter is used only by EMSNETX.EXE.

ENVIRONMENT PAD *number*

Defines the number of bytes that are added to a program's environment space before executing the program. Increasing this parameter allows NetWare utilities to update the path environment variable of the current environment when adding search paths.

Default: 17 bytes
Range: 17 to 512 bytes

EOJ [ON | OFF]

Specifies whether files, locks, semaphores, etc. are closed automatically at the end of a job.

Default: ON

FILE HANDLES *number*

Sets how many files a workstation can have open on the network at one time.

The setting for local files is handled through the DOS CONFIG.SYS file.

Some applications ask for more than the default of 40 open files. If you receive many error messages that indicate no available files, increase the value.

Default: 40 open files

GET LOCAL TARGET STACKS *number*

Specifies the number of stacks that should be allocated for use by IPX when processing Get Local Target requests from IPX applications. Each additional allocated stack increases IPX memory usage by 384 bytes.

The default value is normally adequate for most users. However, if you are using a multitasking DOS product—such as DR DOS 6.0—and you are running more than one IPX application in different DOS sessions, you may have to increase the number of stacks. If you experience problems getting an IPX application to communicate with another node on the network, increasing the number of stacks may alleviate the problem.

Default: 1 stack
Range: 1 to 10

HOLD [ON | OFF]

Determines whether workstation files should be held open if they have been accessed and then closed.

If this parameter is set to ON, all files opened by a program are held open until the program exits.

Older versions of certain applications that use FCB_IO may need this parameter set to ON.

Default: OFF

LIPACKETS [ON | OFF]

In the past, NetWare communicated across routers and bridges with a 576-byte maximum packet size. However, Ethernet and Token- Ring are capable of using larger packets for communication.

With this parameter set to ON, the maximum packet size negotiated between the NetWare server and the workstation, is used across routers and bridges.

Default: ON

Note Some routers and bridges have been hardcoded to use 576-byte packets. In this case, the NetWare shell can use only 576-byte packets, regardless of this parameter.

LOCK DELAY *number*

Determines the amount of time (in ticks) the shell waits before trying to get a lock.

When many users access the same file at the same time, the shell may be unable to gain access before its allotted wait time.

Use this parameter if a workstation frequently receives error messages when a file is requested.

Note This number is used for lock types that do not have a wait ability. For locks that have a wait ability, the wait time is calculated by multiplying this parameter number by the LOCK RETRIES number and then multiplying by 2. The resulting number is the time, in ticks, that the workstation waits for a lock.

Default: 1 tick (about 0.5 seconds)

LOCK RETRIES *number*

Specifies the number of times the shell attempts to get a lock on the network.

It is part of an equation that determines the total time the shell waits when attempting to access a locked file. If a workstation frequently receives error messages when a file is requested, increase the value of this parameter.

Default: 3 retries

MAX CUR DIR LENGTH *number*

Allows the number of bytes returned to be specified. DOS defines the Get Current Directory call to return 64 bytes of path.

In the past, the shell allowed 128 bytes to be returned. This parameter is now configured.

Default: 64 bytes
Range: 64 to 255 bytes

MAX PATH LENGTH *number*

Allows users to specify maximum path length, up to 255 characters. This path doesn't include NetWare server names or filenames.

Default: 255 bytes
Range: 64 to 255

PATCH *byte_offset value*

Allows any address in the shell to be patched with any specified value.

Use this parameter if a shell problem is announced and the solution is easily accomplished through changing some bytes within the programming. PATCH specifies the location of the bytes and inserts the correct values.

Default: None

SHARE [ON | OFF]

Allows a child process to inherit all the resources of its parent process.

Default: ON

SIGN 386 MODE = *number*

Allows NCP™ packet signature for workstations that load Windows from the network and run in enhanced (386) mode.

The number values are as follows

0 = enables interrupts
1 = disables interrupts and preserves 386 32-bit characters
2 = forces 16-bit signing

Default: 1

SPECIAL UPPERCASE [ON | OFF]

Used for foreign language and special characters. The shell does not translate uppercase ASCII characters above 128. Set this parameter to ON to cause the shell to call DOS for this translation.

Default: OFF

TASK MODE *number*

Determines the way the shell handles virtual machine task management.

The default works with Windows 3.0. If you are using an earlier version of Windows or a third-party multitasking program, use 1. If you are not using a multitasking program and want a little extra speed, use 0.

Default: 2

TEMP DRIVE DETECTION [ON | OFF]

Recognizes if a temporary drive is available for file-swapping.

Default: ON

Other NET.CFG Options for NetWare Shells

You can use the following NET.CFG options for your workstation. These options are not specific to the NetWare shell files.

See Appendix B, “NET.CFG File Parameters,” of *Workstation for DOS and Windows* for a description of the following parameters:

CACHE BUFFERS *number*
CHECKSUM [ON | OFF]
DOS NAME *name*
LOCAL PRINTERS *number*
LONG MACHINE TYPE *name*
MAX TASKS *number*
PB BUFFERS *number*
PREFFERED SERVER *server_name*
PRINT HEADER *number*
PRINT TAIL *number*
READ ONLY COMPATIBILITY [ON | OFF]
SEARCH MODE *number*
SET STATION TIME [ON | OFF]
SHORT MACHINE TYPE *name*
SHOW DOTS [ON | OFF]
SIGNATURE LEVEL *number*

Understanding NetWare Shell File Command Options and Concepts

An application makes requests of the operating system through predefined function calls. The NetWare shell intercepts these requests and determines if the request is for the local operating system (DR-DOS, MS-DOS, PC-DOS) or the network operating system (NetWare).

If the request should be handled by DOS, the shell hands the request off to DOS. If the request should be handled by NetWare, the shell packages the request for IPX. IPX takes the package to the destination and returns the requested information back to the shell, which then gives the information to the application.

There is a NetWare shell file for each type of DOS memory available:

- ◆ NETX.EXE (for conventional memory)
- ◆ EMSNETX.EXE (for expanded memory)
- ◆ XMSNETX.EXE (for extended memory)

You load only the shell file best suited for your particular workstation environment.

NETX.EXE (NetWare Conventional Memory Shell)

Use NETX to load the network shell, view the version of the shell, or unload the shell. This shell is for use with DOS 3.0 through 6.0.

Prerequsites

Checklist ✓

□ You must load the following NetWare shell files before loading the NETX.EXE file:

- ◆ LSL.COM
- ◆ *network board driver*.COM (NE2000.COM)
- ◆ IPXODI.COM

□ If you are using dedicated IPX, you must load the IPX.COM file before loading the NETX.EXE file.

Note

IPX.COM is generated with the WSGEN.EXE utility. The WSGEN.EXE utility is not included with NetWare versions later than v3.11.

Command Format

```
NETX [/?] | [PS = server name] | [/U]
  | [/F] | [/C=path\filename.ext]
```

Command Options

[/?]

Displays help screens.

[PS = *server name***]**

Specifies a preferred server.

[/C=*path***\***filename.ext***]**

Specifies a configuration file for NETX to use. The default configuration file is NET.CFG.

[/U]

Unloads resident NETX from memory. When you execute this option, a screen similar to the following appears:

```
You are being logged out of all servers . . .
Memory for resident shell has been released.
The NetWare shell has been unloaded.
```

[/F]

Forces the resident NETX to unload. This option is useful for unloading NETX when other programs are loaded after NETX.

Warning

Using this option may cause your system to fail if programs are still accessing NETX.

The NetWare shell file NETX.EXE captures network commands given to the workstation and redirects them to the network; if the messages were not redirected, DOS would attempt to execute them.

The NetWare shell, NETX, intercepts requests by trapping software interrupts. Trapping means that the shell takes all requests made by the application before those requests get to DOS. The interrupts trapped are the following:

- Interrupt 20h, now a seldom-used way of exiting an application
- Interrupt 21h, used to call standard DOS functions
- Interrupt 24h, used to handle critical errors
- Interrupt 27h, now a seldom-used means of making an application a TSR
- Interrupt 17h, used to send data to local printer ports

The most used of these interrupts is 21h, the interrupt that DOS uses to service applications.

After a request is inspected, the shell either passes it to the regular DOS interrupt routine, or it translates it into a request that is understood by the NetWare server and hands it to IPX for transmission to the NetWare server. When data returns from the server, the conversion of requests is handled in the same fashion but in reverse order.

Whether the request is handled by local DOS or the network server is transparent to the application and the user.

EMSNETX.EXE (NetWare Expanded Memory Shell)

Use EMSNETX to load the network shell, view the version of the shell, or unload the shell. This shell is for use with DOS 3.0 through 6.0.

Prerequsites

Checklist

□ You must load the following NetWare shell files before loading the EMSNETX.EXE file:

- LSL.COM
- *network board driver*.COM (NE2000.COM)
- IPXODI.COM

□ If you are using dedicated IPX, you must load the IPX.COM file before loading the NETX.EXE file.

Note

IPX.COM is generated with the WSGEN.EXE utility. The WSGEN.EXE utility is not included with NetWare versions later than v3.11.

Command Format

```
EMSNETX [/?] | [PS = server name] | [/U]
  | [/F] | [/C=path\filename.ext]
```

Command Options

[/?]

Displays help screens.

[PS = ***server name*****]**

Specifies a preferred server.

[/C=***path*****\*****filename.ext*****]**

Specifies a configuration file for EMSNETX to use. The default configuration file is NET.CFG.

[/U]

Unloads resident EMSNETX from memory. When you execute this option, a screen similar to the following appears:

```
You are being logged out of all servers . . .
Memory for resident shell has been released.
The NetWare shell has been unloaded.
```

[/F]

Forces the resident EMSNETX to unload. This option is useful for unloading EMSNETX when other programs are loaded after EMSNETX.

Warning

Using this option may cause your system to fail if programs are still accessing EMSNETX.

Concepts

Expanded memory refers to memory in addition to the 640KB limit of conventional memory. An expanded memory manager swaps memory that exists between the 640KB and the 1MB range into a window, or memory page. This allows DOS applications to access up to 32 KB of expanded memory.

The NetWare Expanded Memory shell moves most of the shell out of conventional DOS memory and puts it in expanded memory. This frees up 35 KB of conventional memory. The remaining 8 KB of the shell must remain in conventional memory to handle interrupts and some data.

The NetWare Expanded Memory shell was written to the specifications of LIM/EMS (Lotus/Intel/Microsoft Expanded Memory Specification) v4.0 memory manager.

Expanded memory manufacturers provide expanded memory Specification (EMS)-compatible driver programs. You must load an EMS-compatible driver before loading the NetWare Expanded Memory shell.

To install the NetWare Expanded Memory shell, you need to

- ◆ Load a third-party EMS-compatible driver
- ◆ Copy the NetWare Expanded Memory shell file, EMSNETX.EXE, to the workstation directory or boot diskette
- ◆ Include the filename EMSNETX.EXE in the AUTOEXEC.BAT file

Because this shell operates in expanded memory, larger applications can run in the conventional memory space. This approach is faster than disk swapping and overlays.

The NetWare Expanded Memory shell works with NetWare v2.15 and later.

All the shell configuration (NET.CFG) parameters work with the NetWare Expanded Memory shell.

Note

EMSNETX.EXE can be used only with DOS 3.0 and later. Do not use the expanded memory shell on a nondedicated file server.

XMSNETX.EXE (NetWare Extended Memory Shell)

Use XMSNETX to load the network shell into extended memory, view the shell version, or unload the shell. This shell is for use with DOS 3.0 through 6.0.

Prerequsites

Checklist

❑ You must load the following NetWare shell files before loading the XMSNETX.EXE file:

- ◆ LSL.COM
- ◆ *network board driver*.COM (NE2000.COM)
- ◆ IPXODI.COM

❑ If you are using dedicated IPX, you must load the IPX.COM file before loading the NETX.EXE file.

Note

IPX.COM is generated with the WSGEN.EXE utility. The WSGEN.EXE utility is not included with NetWare versions later than v3.11.

Command Format

```
XMSNETX [/?] | [PS = server name] | [/U] |
  [/F] | [/C=(path\)filename.ext]
```

Command Options

[/?]

Displays help screens.

[PS = *server name***]**

Specifies a preferred server.

[/C=(*path***\)***filename.ext***]**

Specifies a configuration file for XMSNETX to use. The default configuration file is NET.CFG.

[/U]

Unloads resident XMSNETX from memory. When you execute this option, a screen similar to the following appears:

```
You are being logged out of all servers . . .
Memory for resident shell has been released.
The NetWare shell has been unloaded.
```

[/F]

Forces the resident XMSNETX to unload. This option is useful for unloading XMSNETX when other programs are loaded after XMSNETX.

Warning

Using this option may cause your system to fail if programs are still accessing XMSNETX.

Concepts

Extended memory refers to memory above the 1MB range. Up to 15 MB of extended memory are addressable.

The NetWare Extended Memory shell moves most of the shell out of conventional DOS memory and puts it in extended memory. This frees up 35 KB of conventional memory. The remaining 8 KB of the shell must remain in conventional memory to handle interrupts and some data.

The Extended Memory shell requires the support of an XMS (Extended Memory Specification) v2.0 memory manager (or compatible), such as Microsoft's HIMEM.SYS. The memory manager makes the first 6 KB (beginning at the 1MB address) of extended memory directly available to any one DOS-based application.

To install the NetWare Extended Memory shell, you need to

- Install a third-party extended memory manager
- Copy the NetWare Extended Memory shell file, XMSNETX.EXE, to the workstation boot disk
- Include the filename XMSNETX.EXE in the AUTOEXEC.BAT file

Because this shell operates in extended memory, larger applications can run in the conventional memory space. This approach is faster than disk swapping and overlays. The NetWare Extended Memory shell works with all versions of NetWare v2.15 and later.

All the shell configuration (NET.CFG) parameters work with the NetWare extended memory shell except Entry Stack Size.

Important

XMSNETX.EXE can be used only with DOS 3.0 and later. The current VDISK.SYS from IBM is not compatible with HIMEM.SYS, so do not use the extended memory shell with VDISK.SYS. Do not use the extended memory shell on a nondedicated file server.

Only one DOS application can be loaded in the HMA. If you are using the DOS 5 DOS=HIGH command, you cannot load XMSNETX.EXE.

This shell requires a high degree of IBM compatibility. Depending on the brand of IBM compatible you are using, you may experience keyboard sluggishness or other hardware problems.