Intel T440BX Purpose-Built Server Integration Guide

Building a Multi-Purpose Server With Novell NetWare 4.11

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Revision History

Revision	Revision History	Date
1.0	Initial Release	6/98
1.1	Minor content changes	6/98

Information in this document is provided in connection with Intel products. The information is provided as a convenience to Intel's general customer base. Users of the information should posess a mimimum understanding of the functionality of elements of server systems, including but not limited to electromechanical connectors, power supplies, electronics bays, and cooling requirements, or should seek the advice of a competent expert.

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Building a multi-purpose server with a T440BX server board and Novell* NetWare*4.11

Background Information and Assumptions

This installation procedure assumes the reader is installing Novell NetWare 4.11 on a system built with an Intel T440BX uni-processor server baseboard and a chassis selected off the tested chassis list. In addition, it is assumed one or more new/unformatted hard drive are being used. The first hard drive for installing the operating system should be at least 1GB. Also, it is assumed that the onboard Symbios* 53C875 SCSI controller is used for controlling the SCSI devices. The networking protocol assumed for this installation is TCP/IP and the network adapter used is assumed to be the onboard Intel 82558 Ethernet* adapter. The Intel 82558 on-board NIC is functionally equivalent to the Intel EtherExpress™ PRO/100+ network interface controller. Refer to your NetWare documentation for details on network protocols and other information if necessary.

No tape drive was integrated into the server system. Intel strongly recommends integrating a backup device and running routine backups on any server that is put into production use by customers. In addition, no UPS (uninterruptible power supply) was integrated. As with tape drives it is also strongly recommended that a UPS be used with any server that contains critical customer data.

Hardware Integration Overview

- ❖ Prepare the chassis sub-assembly kit for server board installation according to instructions included with the chassis.
- ❖ Install the Intel T440BX Server board into the chassis.
- ❖ Install the Intel Pentium® II Processor retention mechanism and Intel Pentium®II processor on the T440BX server board.
- ❖ Install the Memory DIMM(s) on the Intel T440BX server board.
- ❖ Install the Floppy disk drive into the chassis and connect it to the floppy port on the baseboard.
- ❖ Assuming and IDE CD-ROM is used, install the drive into one of the 5.25" external drive bays and connect it to the secondary IDE port on the server board.
- ❖ Install the SCSI hard drives into internal 3.5" drive bays and connect them to the SCSI port on the server board.

Installing Novell NetWare 4.11

Refer to your NetWare documentation for the recommended amount of memory for your server application. In this example 64MB of PC/100 compliant ECC DIMMs were used. A list of qualified memory modules for the Intel T440BX server board can be downloaded from the following web site: http://support.intel.com/support/motherboards/server/

Pre-Installation Steps

A? Create a bootable floppy that has the ability to load your CD-ROM drivers. Use the DOS drivers which should have come with your CD-ROM or are available on your CD-ROM manufacturer's internet website.

B? You will need driver disks for the Symbios SCSI controller and Intel® EtherExpress^{TM} Pro 100+ network adapter. From the software CD that ships with the Intel T440BX server board, you can create driver diskettes necessary:

    i? Boot your system using the T440BX Server Board Software Kit CD-ROM.

    ii? When the T440BX Server Board CD-ROM menu appears, highlight the "Create Diskettes" menu at the top and press <ENTER>

    iii? Using the arrow keys, select the "Create Disk Sets by Operating System" option and press <ENTER>

    iv? Highlight the "NetWare" option and press <ENTER>

    v? A dialogue box will appear stating a need for 2 diskettes. Press any key to begin creating the disks.

    vi? Insert a blank, high-density floppy into the drive and press <ENTER>. Your progress is indicated by a counter which counts the percent complete. Once 100 percent is displayed, eject the diskette and label it "Symbios SCSI Drivers for NetWare"

    vii? Insert the next blank, high-density diskette and press <ENTER>. Once the extraction process is completed, eject the disk and label it "Intel EtherExpress Pro 100+ drivers for NetWare"

    viii? Press the <ESC> key until all the sub-menus are closed.

    ix? Using the arrow keys, highlight the "Quit to DOS" menu

    x? Press <ENTER> to display the sub-menu options.

    xi? Highlight "Quit Now" to leave the menu utility and exit to ROM-DOS. To reenter the menu program, simply type 'menu' at the prompt (without the quotes) and press <ENTER>.

C? Determine what network protocol(s) this server will be running. Assuming TCP/IP record information below.

        IP Address   _____

        Subnet Mask   _____

        Default Gateway _____

        Machine Name   _____

NOTE: It is not recommended to use DHCP to assign the IP information of a server.

D? Power up your system and note at the initial screen what level of BIOS is installed. The latest BIOS can be found at
http://support.intel.com/support/motherboards/server/t440bx/software.htm

E? Before you begin to install NetWare 4.11 you should use the built-in BIOS Setup Utility to review the motherboard configuration options. To use the BIOS Setup Utility press <F2> during POST.

      1? For NetWare 4.11 installation it is recommended that the **Advanced/Plug & Play O/S** option should be set to **No**, and the **Boot/Boot Device Priority**

order should be set to Removable Devices, ATAPI CD-ROM and Hard Drive.

2? When you have finished reviewing the motherboard configuration options and made any changes use <F10> to save the configuration options and exit the BIOS Setup Utility.

Note: The T440BX Server Board Resource CD also contains the System Setup Utility and the product manual. This CD can also be launched from within Win95 or NT to run the graphical user interface (GUI). The GUI provides more product and support information along with links to various Intel web sites.

Novell NetWare 4.11 Installation Steps

1? Boot the system with the DOS bootable disk created in step A above.
2? Insert Novell NetWare Server 4.11 CD into the CD-ROM drive. Change drives to your CD-ROM drive. Type **INSTALL** at the prompt and press <Enter>.
3? The first installation of NetWare will prompt you with the following message: "Config.sys needs "FILES=12" and "BUFFERS=15." Use the DOS Edit command to create a file named config.sys and save it to the root of your C:\ drive. You will need to add the following two lines:

> FILES=12
> BUFFERS=15

4? At the next screen, select the appropriate language.
5? Read the displayed licensing agreement.
6? At the next screen, select 'NetWare Server Installation' and press <Enter>.
7? At the next screen, select 'NetWare 4.11 *(For a single machine running NetWare)*' and press <Enter>.
8? At the next screen, select 'Simple Installation of NetWare 4.11' and press <Enter>.
9? At the next screen, enter the name the server will be referred to as on the network. This will be the name that appears on the Novell NetWare command prompt.
10? Next, NetWare will go through a series of automated steps that should not be interrupted.
11? Select a locale configuration for the server (keyboard).
12? After this the NetWare installation scans for the hard disk controllers and network adapters. It will then try to automatically supply a driver for the found hardware. If it cannot find a driver, it will ask you to either choose one from a list, or to provide one from the manufacturer.
13? Press <F3> to continue without selecting.
14? Again press <F3> to continue without selecting.
15? Again press <F3> to continue without selecting.
16? Again press <F3> to continue without selecting. At this point 'IDEATA in DISK & CD-ROM Drivers' will automatically be installed.
17? Next 'Select additional or modify selected Disk/LAN drivers'.
18? Press <Enter> in 'DISK & CD-ROM Drivers'.
19? At the next screen, "Select an Additional Driver".
20? Press <Ins> to Install an unlisted driver

21? Press <F3> to define a path.

22? Insert the Symbios SCSI Drivers for NetWare diskette created in the pre installation steps above, type **A:\NETWARE\NWPA** in the space provided and press <Enter>.

23? Select the 'SYM8XXNW.HAM Symbios Logic NetWare HAM Driver (SYM8XXNW-2.03.00)'

24? Select 'No' when asked "Save Existing file C:\NWSERVER\SYM8XXNW.HAM?"

25? Select 'No' when asked "Save Existing file C:\NWSERVER\SYM8XXNW.DDI?"

26? Select 'No' when asked "Save Existing file C:\NWSERVER\NWPALOAD.NLM?"

27? Set the Slot number of the card to 10002

28? Set the parameters as you require, and then select 'Save Parameters and Continue'

29? Select **No** when asked 'Do You Want to Select an Additional Disk Driver?

30? Select 'Continue Installation'

31? Next scroll down to 'Network (LAN) Drivers' & press <Enter>.

32? At the next screen, choose 'Select an Additional Driver'.

33? Press <Ins> to install an unlisted driver.

34? Insert the PRO100 LAN Drivers for Novell NetWare created in the pre installation steps above , and press <F3>. Specify the path as **A:\NWSERVER** and press <Enter>.

35? From the list select **'**E100B.LAN : Intel EtherExpress Pro PCI Adapter' and press <Enter> to continue.

36? When asked to "Save Existing file C:\NWSERVER\E100b.LAN ?," select 'No.'

37? When asked to "Save Existing file C:\NWSERVER\E100b.LDI ?," select 'No.'

38? When asked to input the correct settings, enter **10001** for the "Slot Number".

39? On the next screen, select 'Save Parameters and Continue'

40? When asked "Do you want to Select an Additional Network Driver?," enter 'No.'

41? On the next screen, select 'Continue Installation.'

42? If the NetWare auto-detect is not able to automatically detect any hardware, you can install the drivers for it manually. If you have no further hardware to add, select 'Continue Installation' and press <Enter>.

43? Ignore the message about the CD-ROM not being mounted, this will be corrected later.

44? NetWare will now copy files to the hard drive.

45? Choose 'Yes, this is the first NetWare 4 server' at the Install NDS screen.

46? After NetWare successfully finishes copying, select the appropriate Time Zone that server will reside in and press <Enter>.

47? At the next screen, enter the name of your organization and press <Enter>.

48? At the next screen, set the Administrator's password and select 'Continue the Installation'.

49? At the next screen, NetWare will present you with your setup information that you may need to record for future reference. Then press <Enter>.

50? At the next screen, NetWare will ask for your license disk. Insert the disk and press <Enter>. *(If you do not have a disk, press F9 to continue. This will default NetWare into 2 user mode.)*

51? NetWare will now copy more files to the hard drive. After it has finished, NetWare will present you with a menu of operations you may perform based on choices you may have made during the installation. One of the choices will be **'**Make Diskettes.'

You can select this option if you wish to make emergency disks. It is recommended that you do so. After you have finished, select 'Continue with Installation.'

52? You are now finished installing Novell NetWare Server 4.11. Press <Enter> to exit the installation program and you will be returned to the NetWare console.

53? You can now down the server and then exit to DOS. It is recommended that you reboot the system at this time.

Obtaining and Applying the latest Service Pack

Novell recommends that you download the latest support pack for NetWare 4.11 from their website to fix a number of known issues with the operating system. These files can be located at "http://support.Novell.com/misc/patlst.htm#nw411"
There is also a NetWare 4.11 Year 2000 patch located here.

Appendix A: Detailed Equipment List

Hardware

Chassis	Reference chassis selected off the tested chassis list. The tested chassis list is available at http://support.intel.com/support/motherboards/server/t440bx/compat.htm
Baseboard	Intel T440BX Server Board
Processor	1 Intel Pentium II microprocessor operating at 350 MHz
Memory	64MB PC/100 compliant DIMMs. Always check approved memory list before buying DIMMs for your T440BX Server Board (http://support.intel.com/support/motherboards/server/t440bx/compat.htm)
SCSI Controller	Integrated Symbios 53c875 controller
NIC	Integrated Intel 82558 controller (EtherExpress PRO/100+)
Video	Integrated Cirrus Logic* GD 5480 PCI w/2MB of Video RAM
IDE Controller	Integrated dual channel IDE controller
Floppy Cont.	Integrated floppy controller
Floppy drive	TEAC* FD235HF
CD-ROM	IDE ATAPI NEC* CDR-1600A connected as master on primary IDE channel
Hard Drives	
IDE	None
SCSI	Seagate* Cheetah, ST39173W
Monitor	15" NEC* MultiSync 4FGe
Mouse	Microsoft 2-button PS/2
Keyboard	Keytronic* 104 Key Model E03601QlPS2-C

Software

OS	Novell* NetWare* 4.11

Misc.

BIOS	NL440BX / T440BX Production Release 1.0
BMC	Revision 42