



R440LX

Purpose Built File/Print
Server Integration Guide



Revision History

Revision	Revision History	Date
1.0	Initial Release	10/97
1.1	Reformatted for posting on web	1/98

© Intel Corporation 1997

Information in this document is provided in connection with Intel products. This report is provided "as is". No license, express, implied, or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel products are not intended for use in medical, life saving, or life sustaining applications. Intel may make changes to specifications and product descriptions at any time, without notice.

The R440LX may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request. The hardware vendor remains solely responsible for the design, sale and functionality of its product, including any liability arising from product infringement or product warranty.

Pentium II, EtherExpress, LANDesk are registered trademarks and MMX is a trademark of Intel Corporation.

* Third-party brands and names are the property of their respective owners

Integrating a R440LX as a High-Performance File/Print Server

Getting Started Summary

1. Check your shipment
2. Select a site to put your server system
3. List out requirements for that site location
4. Review the R440LX baseboard and Chassis Integration Product Guides
5. Check the power cord
6. Add any peripherals (CD-ROM, Tape, or Floppy drives) to system chassis
7. Add R440LX server baseboard and any add-in cards into system chassis
8. Connect any external devices with appropriate cables
9. Turn on system
10. Boot and run Diagnostic software (not required, available by your local distributor)
11. Boot and run System Configuration Utility
12. Locate Microsoft Windows NT 4.0 CD-ROM and any associated diskettes.

This installation procedure assumes the reader is installing MS Windows NT 4.0 Server on a system built with an Intel R440LX Dual Processor Ready server baseboard and a Columbus-II chassis, in the configuration listed above. In addition, it is assumed four new or unformatted hard drives are being used: 1 EIDE hard drive for installation of the O/S, and 3 identical SCSI hard drives for setting up a RAID 5 disk array. The first hard drive for installing the O/S should be at least 1GB and the other three can be almost any capacity as long as they are identical. Also, it is assumed that the onboard Adaptec AIC-7880 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 82557 Ethernet adapter. Refer to NT documentation for details network protocols and other information if necessary.

Hardware Integration Overview

- ❖ Prepare the Columbus-II Chassis Sub-Assembly Kit for baseboard installation according to included instructions
- ❖ Install the Pentium II Processor(s) on the R440LX Baseboard
- ❖ Install the Memory DIMM(s) on the R440LX Baseboard
- ❖ Install the R440LX Baseboard into the Columbus-II Chassis
- ❖ Install the Floppy disk drive into the Columbus-II Chassis
- ❖ Install the IDE and SCSI Hard Disk Drives into the Internal drive bay and install the Internal drive bay into the Columbus-II Chassis.
- ❖ Install any additional necessary Add-In Boards
- ❖ Run Server Configuration Utility

Installing Microsoft Windows NT Server 4.0

NOTE: When operating under NT 4.0 it is recommended to use at least 32MB of memory for each processor installed in the system.

Pre-Installation Steps

- A) Label a blank HD formatted 3.5" floppy disk "Emergency Repair Disk" and have it available for use during the install routine.
- B) Determine what 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.

- C) Power up your system and note at the initial screen what level of BIOS is installed. Enter BIOS Set Up, Advanced Menu and confirm Multi-Processing Specification is set to 1.4

Installation Steps

1. Insert the Microsoft Windows NT 4.0 Server - Setup Disk 1 into the 3.5" floppy drive and power on the system. Insert the Microsoft Windows NT 4.0 Server CD into CD-ROM drive while the system is booting.
2. System will automatically start the installation and will prompt you for Disk 2. Insert Disk 2 and hit <Enter> to continue. An initial Windows NT screen will appear recognizing one processor (regardless of what you actually have installed), the amount of memory present, and a multi-processing kernel. This is normal at this stage.
3. After 3 to 5 minutes the "Welcome to Setup" screen will appear. Press <Enter> to continue.
4. The next screen will ask you if you want to run or skip automatic detection of mass storage devices. Press <Enter> to allow NT to auto-detect mass storage devices.
5. Insert Disk 3 when prompted and hit <Enter> to continue.
6. The next screen will indicate setup has recognized the following mass storage devices.

Adaptec AHA-294X*/AHA-394X*/AIC-78XX* SCSI Controllers.

IDE CD-ROM (ATAPI 1.2)/PCI IDE Controller

(Note: CD-ROM and any EIDE hard drives detected will vary based on the model installed.)

7. Press <Enter> to continue. **Notes:** If you have any hard drives with greater than 1024 cylinders an advisory will appear acknowledging this. Press <Enter>. If any of your hard drives are new or unpartitioned an advisory will appear telling you that continuing the installation will destroy any information on the disk(s). Press <Enter> to continue.
8. The Windows NT Licensing Agreement will eventually appear. Scroll to the bottom of the agreement by pressing the <Page Down> key and press the <F8> key if you agree with the license.

9. You should see a list of your systems components on screen. Computer, Display, Keyboard, Keyboard layout, and Pointing Device. Press <Enter> to accept if the list is correct.
10. The next step in the installation is to specify the partition on which to install NT. Verify that the unpartitioned space for Disk ID 0 is selected and press <c> to create a partition.
11. Create a partition the size of your EIDE hard disk: With Disk 0 highlighted, press <Enter>. Verify that Disk 0 at ID 0 shows: C: New (Unformatted) and press <Enter>. **Note:** If you choose not to use the entire drive for your O/S, ensure you create a “C:” partition of at least 500MB-1GB¹.
12. If an unformatted partition is selected for the install, a choice of file system formats will be presented. NTFS file system format is recommended. Select NTFS and press <Enter> to continue. The system will show a yellow status bar to indicate progress.
13. Next you will be asked to choose the directory where NT is to be installed. Choose the default of \WINNT by pressing <Enter> or type in the desired directory name and press <Enter>.
14. The next screen prompts for an exhaustive examination to be performed on your disk. The time required for the examination increases in proportion to available drive space. An examination of a 1 GB drive takes well under 1 minute. Press <Enter> to run the examination.
15. After examination the installation will copy necessary files from the CD-ROM. After this is done you will be prompted to remove any floppy or CD-ROM that may be present and press <Enter> to reboot. This completes the first stage of the install.

NOTE: At this time NT will recognize multiple processors if present. Also, the installation routine will convert the C: partition to NTFS if it was selected. This will require an additional automatic reboot of the system. This is normal.

16. When NT comes up after the second reboot, you will be prompted to re-insert the Windows NT CD-ROM disk to continue Set Up. Then you will be presented with the Windows NT Server Setup dialog box. Click <Next> to continue.
17. Enter in a username and an organization name. After entering in the names desired, click on <Next> to continue.
18. Enter in the product ID number. This number can be found on the Certificate Of Authenticity provided with the software or on the CD case. This number is either in a 10-digit or 20-digit format: 123-4567890 or 12345-MOM-67890n-nnnnnn). Click on <Next> to continue.

¹ This number indicates the capacity of the “C:” drive in which NT and associated utilities will be installed. The smallest partition size for installing NT is about 200MB. However this will leave very little room for growth and installation of other applications which default to a directory in “C:”. You must also note that this partition is used for NT’s swap space, meaning for every megabytes of RAM you install, NT will require at least 1 MB of space in “C:”. If you install 256MB of RAM then the minimum space recommended is 200+256 or roughly 500MB. Remember, there is no penalties for a large C: partition size, so a 1024 or 2048 MB is advisable.

19. This next screen is for licensing. Enter the number of concurrent connections that you have licensed. Click <Next> to continue.
20. Enter in a computer name of 15 characters or less. Click <Next> to continue.
21. Select a server type. For this example, select Stand Alone Server. Click <Next> to continue.
22. For the Administrator Account Password, use something simple to begin with as you can always change it later. Click <Next> to continue.
23. Select “No, do not create an emergency repair disk”. While this is an important step, it is more efficient to wait until you have completed the install. Click <Next> to continue.
24. At the next screen, accept the default list of components to be installed. Click <Next> to continue.
25. The installation of Windows NT networking will now start. Click <Next> to continue.
26. Verify “Wired to the network” is selected. Click <Next> to continue.
27. You may de-select “Install Microsoft Internet Information Server” if you wish. Click <Next> to continue.
28. Let NT automatically detect the network adapter installed in the system, click on “Start Search”. The Network Adapters dialog box should show the Intel 82557-based 10/100 Ethernet PCI Adapter. Once this has been detected, click <Next> to continue.
29. Select the Network protocols you wish to install. For the purpose of this install only TCP/IP need be selected, deselect all other protocols. Click <Next> to continue.
30. Next you will be presented with a dialog box that allows lists the Network Services to be installed. Click <Next> to continue.
31. NT is now ready to install the Networking Components that you selected. Click <Next> to continue. Files will be copied from the CD-ROM.
32. Since the Intel EtherExpress PRO 100B onboard adapter is being used, an “Adapter properties” dialog box is presented. Click <OK> to continue.
33. DHCP is used in large organizations where there may be a shortage of available IP addresses. Select <NO> to continue.
34. The Microsoft TCP/IP properties dialog box will eventually appear, prompting for TCP/IP information. Enter in the TCP/IP information recorded in the pre-installation steps earlier this document. After entering in the data click <OK> to continue. If a dialog box appears reporting that an adapter card has an empty WINS address, click <YES> to continue. Other TCP/IP fields should remain empty.
35. The next dialog box that appears will show the bindings that are enabled for the server being installed. Selected bindings may be disabled/enabled here. Click <Next> to continue. These can be changed after the installation if so desired.
36. The network is now ready to be started. Click <Next> to continue.
37. Enter a workgroup name. Click <Next> to continue.
38. The “Finishing Setup” dialog box will now appear. Click <Finish>.
39. Select the appropriate time zone and deselect/select “Automatically adjust clock for daylight savings changes” as appropriate.
40. Click on the Date & Time tab to verify the time and date are correct. Click <Close> to continue.

41. The detected display dialog box will be shown next. Click <OK> to continue. Adjust the Desktop Area and the Color Palette if desired, and click <Test>. Testing will begin after clicking <OK>. If the test bitmap was displayed properly and could be viewed clearly, click <Yes>, then <OK> to verify the instructions. Click <OK> to continue. Additional file copying and system setup will occur.
42. A Windows NT Set Up dialog box will be displayed stating: “Windows NT has been successfully installed.” Remove the Windows NT CD-ROM disk and click <Restart Computer> to complete the baseline installation of Windows NT 4.0.
43. After selecting Windows NT* 4.0 Server as the Operating System to start, a login screen will be presented. Press <Ctrl+Alt+Del> to login. Enter the Administrator password and press <Enter> to login.
44. When the “Welcome” screen appears, click <Close>. Windows NT 4.0 Server is now installed and running.
45. Follow the procedure “Creating An Emergency Repair Disk”.

Obtaining and Applying the latest NT Service Pack

The latest Microsoft NT Server 4.0 service pack (SP3) can be found at:

1. <http://mirrors.intel.com/ftp.microsoft.com/bussys/winnt/winnt-public/fixes/nt40/ussp3/i386/>
2. <http://www.microsoft.com/NTServerSupport/Content/ServicePacks/Default.htm>

An alternate location for Windows NT Service Packs is located at:

1. <ftp://198.105.232.37/fixes/>

Due to high demand at [ftp.microsoft.com](ftp://mirrors.intel.com/ftp.microsoft.com/bussys/winnt/winnt-public/fixes/nt40/ussp3/i386/), the alternate site will generally provide better download response. This site also includes international versions of the service packs.

Note: The NT Service Pack 3 is too large to fit on floppies. Therefore, it is recommended that nt4sp3_i.exe be copied to a high density media accessible by the server (e.g. CDROM).

1. From your Internet browser download the ReadMe.1st and nt4sp3_i.exe files from the appropriate directory.
2. To apply the patch, double click on the nt4sp3_i.exe file. The installation files will be unpacked and the Service pack installation dialogue window will be displayed.
3. Read the welcome message and Click on <Next>.
4. Read the Software License Agreement and select <Yes> if you agree with the licensing agreement.
5. Ensure that the “Install the Service Pack” option is selected and click on <Next>.
6. Ensure that the “Yes, I want to create an uninstall directory” is selected, click on <Next>.
7. Click on <Finish> and the service pack 3 installation will proceed.

8. After some files and directories are updated, the message “Windows NT 4.0 has been updated; Remove any disks from floppy disk drives and choose OK to restart your computer” will be displayed. Press <OK>.

Creating and Sharing the D: drive on your network

This disk array created by using the above procedure cannot be used by network clients until the drives are shared. There are two procedures which may be utilized to accomplish this:

1. Double-click the “My Computer” icon in the upper-left section of the desktop. Notice the D: drive icon does not have a ”hand” under it.
2. Single-right-click on the D: icon to present a menu of choices.
3. Click on ‘Sharing’.
4. Select ‘Shared As’ and enter a share name. Enter a comment if desired.
5. Click <OK>. Notice drive D: icon now has a “hand” under it and is ready to be used by the network.

-
1. Log in as administrator
 2. From the “Start” menu, select “Programs”, “Administration tools” and finally “Disk Administrator”.
 3. Select D: unformatted by clicking on the shaded area.
 4. From the Partition option, select “Create”.
 5. Select <OK> on the maximum size. Note this will select the remainder of the RAID array as one logical drive. You may wish to partition this differently depending on your specific application use.
 6. From Partition menu, select “Commit changes now”.
 7. Click on <Yes> to confirm that you wish to save changes.
 8. The message “Disks were updated successfully” is displayed, click on <OK> to confirm.
 9. From the “Tools” menu in the “Disk Administrator” window select the “Format” option.
 10. Select “NTFS” for the Partition type.
 11. Select “Quick Format” and then click on <Start>. You may enter a label such as *RAID 1* in the partition table.
 12. Click on <OK> to continue when the warning message “Formatting will erase ALL data” is displayed.
 13. “Format Complete” message is displayed after some time. Click on <OK>.
 14. Close the Format D:\ window.
 15. Double click on “My Computer” icon, select the new drive (i.e. D).
 16. In the “File” menu, select the “Properties” option to see the new drive’s parameters.

Instructions for Configuring RAID Level 5 using Disk Administrator

1. Start the Disk Administrator utility by clicking Start, Programs, Administrative Tools, Disk Administrator .
2. Click <OK> at the Disk Administrator dialog box.
3. Click <Yes> to create a signature on Disk 0 through Disk 3 if prompted.
4. Change the CD-ROM drive letter to E: drive by single-clicking on D:. Select Tools, Assign Drive letter. Click on the down arrow and select E:. Click <OK> and <Yes> to continue. Verify CD-ROM is now E: drive.
5. Select the free space on Disks 1, 2, and 3. Click on the 'Free Space' area of Disk 1. Hold down the <Ctrl> key while simultaneously clicking on the 'Free Space' area of Disk 1, 2 and 3. Select the Fault Tolerance menu, Create Stripe Set with Parity... Click <OK> after verifying that the "maximum total size for the stripe set" value is equal to the "create stripe set of total size" value.
6. Select Partition, Commit Changes Now.
7. Click <Yes> to save changes.
8. Click <Yes> to restart computer and click <OK> at the Disk Administrator dialog box.
9. After system has restarted, log on and start the Disk Administrator utility again.
10. Select the D: drive by clicking on it. Select Tools, Format. Change the File System to NTFS and click on Start in the Format D: dialog box. A blue status bar will appear at the bottom of dialog box indicating format progress. Click <OK> when finished and click <Close> .
11. Follow the procedure "Creating an Emergency Repair Disk with the RDISK utility".

Creating an Emergency Repair Disk with the RDISK utility

The Emergency Repair Disk contains data necessary to reconstruct a configuration if you NT system is no longer able to boot. The Repair Disk utility saves all of the current system settings to a floppy. You can then use this floppy disk to restore the server system in the unlikely event of the files being damaged. Depending on when you wish to create a Repair Disk, there are two different procedures which can accomplish this:

1. Insert a blank floppy disk labeled "Emergency Repair Disk" into the 3.5" floppy drive.
2. Click Start, then Run. Type <rdisk> in the Open box and press <Enter>
3. Click 'Create Repair Disk' button. Click <OK> to continue.
4. When complete, click <exit>.

Note: Microsoft recommends updating this repair disk whenever you make significant changes to the server.

-
1. Finish adding all required, value-added software and configuration modifications to the server system.
 2. Insert the floppy diskette you created and labeled *Emergency Repair Disk* into the 3.5-inch floppy drive.
 3. Click Start, then Run. Type *rdisk* in the Open box and press <Enter>.

4. Click the <Update Repair Info> button. A message box will be displayed warning you about deleting the old repair information. Click <Yes> to continue.
5. A message box will appear next warning you that all the data on the floppy will be erased. Click <OK> to continue. You will see progress indicators titled 'Formatting Floppy' and 'Saving Configuration'.
6. Click <Exit> and remove the Emergency Disk from the drive.

Network Server Configuration For File & Printer Sharing

Introduction

This document provides instructions for configuration of a small network environment that allows file and printer sharing. Network services and management are provided by an Intel Architecture server running *Microsoft Windows NT Server 4.0* operating system. Users are able to share data, applications, and file services by using PCs running *Microsoft Windows NT Workstation* or the *Windows 95* operating systems.

To keep the configuration instructions simple and easy to follow, this document refrains from explaining networking terms and concepts. A basic understanding of networking concepts and familiarity with *Windows NT Server* is helpful although not entirely necessary.

Experienced systems/network administrators may opt to utilize or enable additional network protocols and implement services such as WINS, DHCP, NT Domains and DNS as their needs dictate

For additional information please refer to Microsoft Press publications on Windows NT server 4.0, Windows NT Workstation and Windows 95. If you have access to the Internet try www.microsoft.com for product information, updates, and more information. A number of books on NT and Windows 95 administration have been published you may wish to look at:

- ❖ Microsoft Windows NT Resource Kit from Microsoft PRESS ISBN 1-57231-343-9
- ❖ Mastering Windows NT Server 4 from NETWORK PRESS ISBN 0-7821-2067-9
- ❖ Complete Guide to WINDOWS 95 From SAMS ISBN 0-672-30791-X.

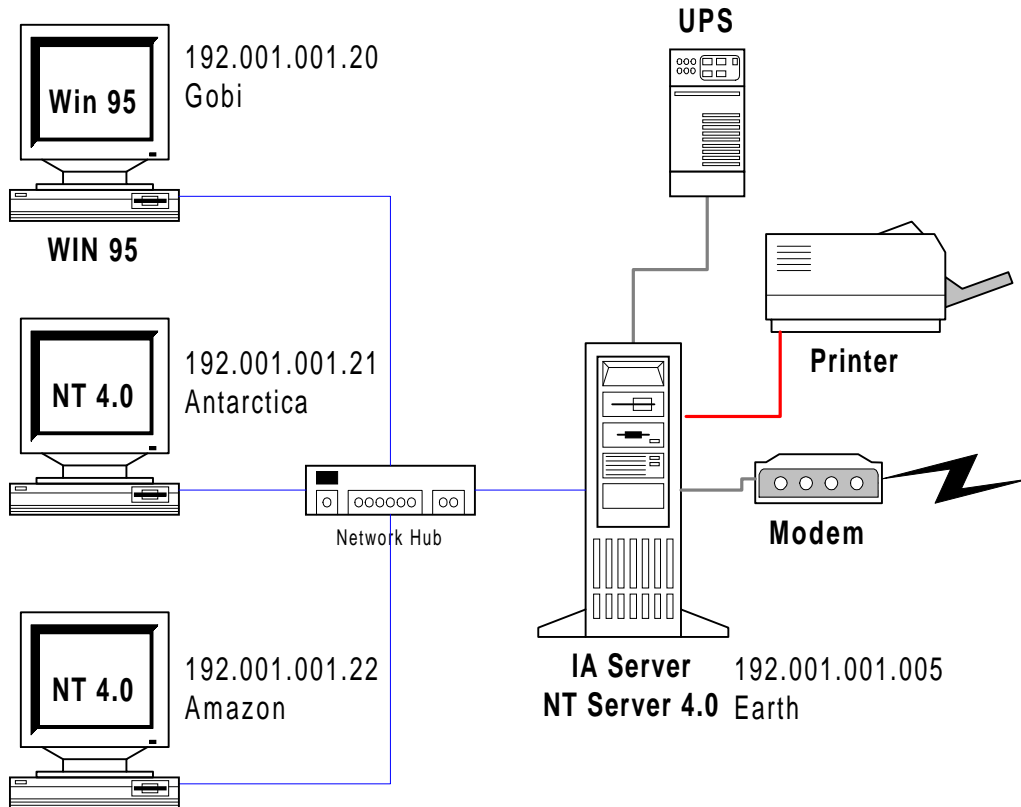


Figure 1 Small network environment with clients connected to a server via a 10/100Mbit/s network switch or hub

Pre-Installation Steps

Complete the following tables for all clients and your server:

Client Name	IP address

Server Name	IP address

Work Group Name: _____
 Network Mask: _____
 Example: refers to tables listed above

Client Name	IP address

Gobi	192.001.001.20
Amazon	192.001.001.21
Antarctica	192.001.001.22

Server Name	IP address
Earth	192.001.001.005

Work Group Name: localnet
Network Mask: 255.255.255.0

The IP addresses used in this example are invalid for access to the Internet. If you will be using this network to access the Internet you should contact an Internet Service Provider who will provide you with unique IP addresses, a network mask and instructions for connecting your network to the ISP. Please refer to the Internet Gateway Server document for further detail. If this is an isolated network the IP addresses used in this example may be used.

Machine names are limited to 15 characters; share names are limited to 12 characters; user names may be up to 20 characters.

Note: All examples will be placed in {}.

1. Install your network by connecting all PC's and the Server to your network hub.²
2. Install NT on the server as described by the Microsoft Windows NT 4.0 Server Installation guide. You may enter network configuration parameters during installation³ or follow procedure below to correct any information entered during the NT install.
3. Install your client's operating systems, allow any Network Interface Card to be identified and configured. You may enter network configuration parameters during installation or follow procedure below.

Configuring the Server:

1. Log on as Administrator.
2. From the "Control Panel" double click on the "Network" icon.
3. In the "Identification" tab enter your server's host name{earth}.
4. Highlight any work group text and click on the "Change"; Enter the workgroup name that you have selected {localnet}. Click on <OK>.
5. Welcome to workgroup message is displayed; Click on <OK> to continue.
6. Select the "Protocols" tab. You only need TCP/IP; you may remove all others.

² An Intel 10/100 Mbit Hub was used in this particular configuration. Category 5 unshielded twisted pair (UTP) Ethernet cable was used for all connections.

³ The network configuration information such as IP address and Network mask may not be known during NT install, however the NT install procedure requires them to be entered during the initial NT install. It is possible to skip network configuration during NT installation and perform the installation once the server is at final destination or when attached to a network. In such a case network services can be installed by following the instructions outlined in the network installation section of the Microsoft Windows NT 4.0 Server installation guide (from start select settings, then control panel; double click on Network to begin installation). You will need drivers for your NIC and NT 4.0 Server Installation CD.

7. From the “Protocols” dialog box, select TCP/IP and click on “Properties”. The “Microsoft TCP/IP Properties” dialog box appears.
8. Select the “Specify an IP address” entry and enter the server’s IP address {192.001.001.005}.
9. Enter your subnet mask {255.255.255.0}.
10. There is no need to enter a default gateway at this point.⁴
11. The DNS, WINS, and Routing tabs should be clear at this stage.
12. Click on <OK>.
13. A message indicating that at least one of the adapter cards has an empty WINS address will be displayed. Click on <Yes> to continue.
14. Close the network configuration window.
15. Reboot the server.

Configuring PCs running the Microsoft NT Workstation:

1. Log on as Administrator.
2. From the Control Panel double click on “Network” icon.⁵
3. In the “Identification” tab enter your workstation’s client name {Antarctica or Amazon}.
4. Highlight any work group text and click on the “Change”. Enter the workgroup name that you have selected {localnet}. Click on <OK>.
5. Welcome to workgroup message is displayed; Click on <OK> to continue.
6. Select the “Protocols” tab. You only need TCP/IP; you may remove all others.
7. Select TCP/IP and click on “Properties”. The “Microsoft TCP/IP Properties” dialog box appears.
8. Select the “Specify an IP address” entry and enter the client’s IP address {192.001.001.021 for amazon} and {192.001.001.022 for Antarctica}.
9. Enter your subnet mask {255.255.255.0}.
10. There is no need to enter a default gateway at this point.
11. The DNS, WINS, and Routing tabs should be clear.
12. Click on <OK>.
13. Close the network configuration window
14. Reboot the client.

Test point:

See if you can communicate with the server or other PCs (which have been configured and rebooted.) This can be done using the “ping” command from a DOS window {ping 192.001.002.005}. If this works you may also double click on the Network Neighborhood icon and observe that that you can see your server under the specified workgroup.

Configuring Windows 95 clients:

1. From the “Control Panel” double click on “Network”.

⁴ The instructions on connecting to the Internet will provide additional detail otherwise this information will not be required given network topology described in Fig 1.

⁵ This procedure assumes that network has been installed and configured during NT workstation install.

2. In the “Configuration” tab you only need to install “Client for Microsoft Networks”, “Intel EtherExpress PRO/100 (PCI)”⁶ and “TCP/IP” network components.⁷
3. Select the “Client for Microsoft Networks” and click on “Properties”.
4. In the “Network Logon Options” select “Logon and restore network connections”.
5. Click on <O.K.> to go back to the main “Network configuration” window.
6. Select TCP/IP and click on Properties. The “TCP/IP Properties” window appears.
7. Select the “IP Address” tab and enter the client’s IP address {192.001.001.020}. Do not select the “obtain an IP address automatically” option.
8. Enter your subnet mask. This number will be the same for all nodes on the network {255.255.255.0}. After entering the network mask Click on <O.K.>
9. Select the “WINS Configuration” tab and ensure that the “Disable WINS Resolution” is selected.
10. Select the “DNS Configuration” and ensure that the Disable DNS is selected.
11. There is no need to enter a default gateway at this point.
12. Click <O.K.> to return to the main “Network” dialog box.
13. Under the “Primary Network Logon” select “Client for Microsoft Networks”.
14. Select the “Identification” tab and enter your PC’s computer name {Gobi}. Enter the Workgroup name that you have selected {localnet}.
15. Select the “Access Control” tab. Select the Share-level access control.
16. Reboot the client.

Test point:

See if you can communicate with the server or other PCs (which have been configured and rebooted.) This can be done using the “ping” command from a DOS window {ping 192.001.002.005}. If this works you may also double click on the Network Neighborhood icon and observe that that you can see your server under the specified workgroup.

Creating Network user accounts.

1. Log on as the administrator on the server. Use the “User Administrator” interface to create user accounts, which belong to “user” group. You must create an account for each user, which will be accessing the shared resources of the server.
2. On each PC (network client) create user accounts for the users who will be using the PC. Ensure that the user names and passwords on the server and the PCs are identical.

⁶ PC’s used for this illustration were equipped with the Intel Ether Express PRO/100 Network Interface cards. If you are using a different network card you must ensure that the network card installed on your PC is listed in place of the Intel Network Interface card.

⁷ This procedure assumes that the Network services have been installed and the installed NIC identified during initial setup. The procedure outlined in this section provides instructions on the minimum steps required to quickly setup a network. If the Network configuration was skipped during initial Windows 95 installation, double clicking on the network icon will result in an interactive Windows 95 network install and configuration. You may follow the instructions and enter client’s network configuration information as prompted by the Windows 95 network services installation procedure. If this happens you will need drivers for your network card (if not found by Windows) and Windows 95 installation CD.

File Sharing:

Drives or directories are not visible on the network until they are marked “shared”. The procedure below will accomplish this for drive D: of the server.

1. Double-click the “My Computer” icon in the upper-left section of the desktop.
2. Single-right-click on the D: icon to present a menu of choices.
3. Click on ‘Sharing’.
4. Select ‘Shared As’ and enter a share name. Enter a comment if desired.
5. If desired, access rights and permissions can be assigned to individual network users by clicking on the “Permissions” button. The default is to allow “everyone” full access rights to the data on drive D:
6. Click <OK>.
7. Network clients can now use the “Network Neighborhood” to browse the server and attach to the sharable drive or directory or they can use the “Map Network Drive” option from “My Computer” browser. Users must log on to their PC with the new accounts otherwise they will be asked for user names and password every time they try to access a shared file.

Printer Sharing:

Server Instructions:

1. Install and configure your printer as instructed by the printer installation guide.⁸
2. Click on Start->Settings->Printers-><new printer>.
3. Click on the “Properties” tab and then select “Sharing”.
4. Select the “Shared” option and then provide a share name {Printer1 }.
5. Click <O.K.>
6. You have now created a network printer resource, which can be shared by users.

Note: Only the network users who have been defined/created, with sufficient permissions, on the site server may gain access or share the printer device on the server.

Client Instructions:

1. Log on to any client using an assigned user ID and assigned network password.
2. Click on Start->Settings->Printers->Add Printer.
3. Select the “Network Printer Server” option, then click on <Next>.

⁸ You must ensure that the printer is compatible with NT4.0 and Windows 95. It is recommended that Windows 95 printer drives be installed as alternate drivers. This will allow the server to provide Windows 95 drivers when a Windows 95 PC adds the printer as a network printer.

4. Enter <\\servername>\<printername> in printer field or browse the network by double clicking on the “Network Neighborhood” icon, double click on your workgroup, then the server and finally the printer.
5. Click on <O.K.>.
6. Click on <Finish>.
7. After some activity, a dialogue box asking if you want Windows to set up this printer for use on this system appears. Click on <Yes>.
8. The printer status window appears. Close it.
9. Close all windows until you get back to the Connect Network Printer Window.
10. You will be asked if you prefer to “Make this the default printer?”. Click on <Yes>.
11. Complete the installation by clicking on <Finish>.
12. You are done.

Note: Microsoft recommends updating this repair disk whenever you make significant changes to the server. For information on how to update/build a repair disk see Microsoft Windows NT 4.0 Server Creating An Emergency Repair Disk.

Installing LANDesk Server Manager (Version 2.8)

Please review the documentation in the LANDesk Server Manager Installation Guide.

1. Insert the Intel LANDesk Server Manager v2.8 CD that was bundled with the R440LX baseboard into the CD-ROM drive.
2. Click Start, then Run.
3. Enter the following in the Open box < e:\disk1\setup.exe> then click <Enter>.
4. When the LANDesk Server Manager Set Up dialog box comes up click <Continue>.
5. Deselect “Server for Netware Services,” “SMM Driver” (unless LANDesk Server Monitor Module installed), “OEM Snap-in Module,” and “SNMP;” click <Continue>.
6. Review the License agreement and click <OK> if you accept.
7. Enter the directory in which you wish to install LANDesk or accept the default of c:\smm32, click <Continue>.
8. LANDESK SERVER MANAGER will then begin copying files. If prompted about “DLLs in use by another program” click <Ignore>. For further information refer to the LANDESK SERVER MANAGER Help file.
9. If prompted to replace a file with an older version, select <No> to continue the install.
10. LANDesk Server Monitor Set Up: Choose a group type and click <Continue>.
11. LANDESK SERVER MANAGER continues with various dialog boxes that open and close. You will be asked if you want to view the “readme” file. Viewing is recommended.
12. A dialog box will open stating that LANDESK SERVER MANAGER install is complete, and will request that you reboot the computer.
13. Upon reboot, click Start, Programs, LANDesk Server Manager, LDSM Console. A dialog box will appear asking you to identify a modem to use. Check <Don’t Use a Modem> if connected to a network and click <OK>.

14. The LANDESK SERVER MANAGER menu will appear and you should see an icon for “MS Windows Network” displayed. Click on that icon and an icon should appear with your selected workgroup name. Click on the icon for your selected workgroup and an icon should appear with your selected server name.
15. Click on the icon for your server and when prompted, enter <root> as the User ID and <calvin> as the password. A tree should appear underneath your server name with icons for: DMI, Configured Thresholds, NT Performance Monitor, Historian, Server Control, and Adaptec SCSI Event Configuration. Selecting “Server Control” allows you to take advantage of the server hardware monitoring features of LANDesk.

NOTE: In order to properly configure LANDESK SERVER MANAGER 2.8 for your current configuration of the R440LX, you must first obtain a copy of the LDF Utility which can be downloaded from IPDnet:

<http://channel.intel.com/business/america/private/ipd2/>

Prepare a bootable floppy disk and download the LDF utility. Boot the system from the LDF Utility disk and when prompted, select the hardware configuration which matches the number of system fans and Active Heatsink (processor fans) in your system. Installation of LANDesk Server Manager 2.8 is now complete. For further information on configuration and implementation of LANDesk Server Manager, please refer to the LANDesk Server Manager Installation and User’s Guide