Microsoft Windows 2000 Installation Guide for HP Servers

NOTICE: The information in this document was last updated for the HP NetServer Navigator CD-ROM version M.04.05. If you don't have the M.04.05 version CD-ROM and you're obtaining this document from the HP web site as a reference to install an operating system, be sure to also check the HP web site for the latest available drivers.

August 26, 2002

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Introduction

This document was created by Hewlett-Packard for the purpose of helping you install Microsoft Windows 2000 on your HP Server based on procedures tested by HP. The objective of this document is to provide the information needed to achieve the following tasks.

- Install Windows 2000 from Diskette or CD-ROM

- Create boot diskettes from CD-ROM
- Configure system as Domain Controller and DNS Server
- Change IP Address
- Provide installation troubleshooting tips and tricks

Before you start installing or upgrading to Windows 2000 check the following documents and make sure you develop an action plan to complete the installation. Use the following informational resources to help you.

- read1st.txt (Windows 2000 CD-ROM)
- readme.doc (Windows 2000 CD-ROM)
- Troubleshooting Tips and Tricks at the end of this document.

Requirements

- Microsoft Windows 2000 CD-ROM.
- Target system to be tested with minimum of P166 Processor and 64Meg of RAM (128Meg Recommended).
- One or more Network Interface Cards (NIC).
- One or more hard drives.
- Latest system BIOS update. (http://www.hp.com)
- Two or more clients for testing purpose. (Optional)
- HP Driver's diskette if installing devices that have no drivers included in the Windows 2000 CD-ROM. Example: HP NetRAID-4M, HP Fiber Channel adapter (Optional), etc. (This driver’s diskette may contain updated Windows 2000 drivers for HP components.)

Process Flow (High Level View)

1. Locate and install optional components.
2. Install Windows 2000 on NetServer as stand alone system.
3. Hardware status check with "Device Manager" tool.
4. Prepare all logical drives and shared directories.

5. Configure IP address as needed.
6. Attach clients to network.
7. Test network link using the ping utility.
8. Domain controller setup.
9. Create shared directories.
10. Verify that all clients can access the shared directories.
11. Perform a file copy test.

Installation Planning Sheet

Complete the following table before you begin the installation process. You will need this information in order to answer questions that you will be asked during the installation process.

Partition Table: _____(List target partitions)

User Name: _____

Organization: _____

Licensing: _____

Computer Name: _____

Admin Password: _____

Date Time Zone: _____

Workgroup or Domain Name: _____

Registration Key: _____

Installation Methods

There are several ways of installing Windows 2000. The most popular methods are listed below. Select a method and go to the appropriate section of this guide to begin. Depending upon your system and its configuration, it may also be necessary to create a drivers diskette.

1. **Automatic Installation** – boot from the HP Navigator CD and run the Configure the Server utility.

2. **Manual Installation** – do the following:

    - Create the HP NetServer Windows 2000 drivers diskettes using the HP NetServer Navigator CD-ROM.

    - Select one of the following methods for installation:

      - Create Windows 2000 Setup diskettes. Use those diskettes to begin the installation. Insert and use the Windows 2000 CD when prompted. You may need to use this method if you have an HP NetServer LX Pro (see troubleshooting tip 5, later in this document).

      Or

      - Boot directly from the Windows 2000 CD to begin the installation. (Supported on all HP NetServer systems except the LX Pro–see troubleshooting tip 5, later in this document).

Automatic Installation – Using the HP Navigator CD

HP recommends that you follow this method to install Windows 2000. This is the easiest method because it requires less user intervention. Following are the steps to complete the installation of Windows 2000 using the HP Navigator CD.

1. Boot the system from the HP Navigator CD.

2. Select "Configure the Server" from the Navigator main menu.

3. At the next screen, select "Guided Setup".

4. Follow the on-screen prompts to complete the installation.

Manual Installation

Creating the Drivers Diskette

Before you begin, use one of the following two methods that can be used to create the drivers diskette. One method is to create the drivers diskette using a system booted from the Navigator CD. The other method is to create the drivers diskette using a system that is running Windows NT, Windows 2000, or Windows 95/98.

Creating the Drivers Diskette at the server after booting from the Navigator CD

1. Boot the system from the Navigator CD.

2. Select “Diskette Library” from the Navigator main menu and follow the on-screen instructions to create the desired diskette(s).

Create the Drivers Diskette using a system running Windows NT, Windows 2000, or Windows 95/98

1. Insert the Navigator CD in the CD-ROM drive on the Windows-based system.

   NOTE: The system's monitor must be set for at least 800 x 600 resolution.

2. Your system should auto-detect the presence of the CD and start the Navigator process. If your system does not auto-start the Navigator process, start it by executing LAUNCH32.EXE which can be found at the root level of the Navigator CD.

3. Once the Navigator process has started, select the target HP NetServer system from the drop-down menu and select "Continue".

4. From the "NetServer Navigator Select a NOS" screen, select the operating system that you will be installing. Then, select "Continue".

5. At the "NetServer Navigator Main Menu" screen, select "Diskette Library".

6. From the "Diskette Title" window, select the diskette that you want to create and then select "Create Diskette(s)". Follow the on-screen instructions to create the desired diskette(s).

Selecting the Manual Installation Method

Before using this method of installation, decide whether you want to install Windows 2000 using Setup Diskettes, or by booting directly from the Windows 2000 CD.

- If you wish to create Setup Diskettes (perhaps because you have other systems that do not support booting from CD), proceed to the following section "Creating Setup Diskettes."

- If you want to start the setup by booting directly off the Windows 2000 CD (supported for all NetServers), proceed to the following section "Installing Windows 2000."

Creating Setup Diskettes

If you opt for starting the Windows 2000 installation from Setup Diskettes, do the following:

1. You need four blank, formatted diskettes. Label them as listed below:

   Windows 2000 Setup Boot.
   Windows 2000 Setup Disk #2.
   Windows 2000 Setup Disk #3.
   Windows 2000 Setup Disk#4

2. Place the Windows 2000 CD on a system running Windows NT or Windows 95.

3. Open a command prompt and change to the d:\bootdisk directory (assuming that D: is your CD-ROM drive).

4. At the command prompt type:
   makebt a: (If using a DOS or Win 9X system)
   makebt32 a: (If using an NT system)

5. Follow the on-screen instructions provided by the utility.

Starting the Installation Windows 2000 Using Setup Diskettes

1. Boot from the "Windows 2000 Setup Boot" diskette. Follow instructions displayed, replacing diskettes as necessary.

2. When prompted for the Windows 2000 CD-ROM, place the CD in the drive and then proceed to **Step 2** in the next section "Installing Windows 2000" to continue the installation.

Special Instructions for Installing Windows 2000 on HP NetServer LH 6000 or LT 6000r Systems

The Windows 2000 installation process automatically sets “write combine” on which causes the HP NetServer LH 6000 and LT 6000r to hang under various conditions. If you are installing Windows 2000 on an LH 6000 or LT 6000r, carefully perform the following special instructions for installing Windows 2000 on an LH 6000 or LT 6000r.

1. Before you begin the installation of Windows 2000 on an LH 6000 or LT 6000r, create the “Windows 2000 Drivers Diskette.” (Created from HP Navigator CD-ROM) See the instructions for creating drivers diskettes earlier in this document.

2. Install Windows 2000 using the procedure given below.

3. On the first boot of the system following the completion of the installation of Windows 2000, shut the system down by pressing CTL-ALT-DEL, use the right arrow key to select “shutdown”. DO NOT USE THE MOUSE DURING THE SHUTDOWN PROCESS AS IT COULD CAUSE YOUR SYSTEM TO HANG.

4. When the system reboots press **F8** at the start of the Windows 2000 boot sequence.

5. Select”Enable VGA mode” from the choices listed on the display.

6. When prompted to login, press CTL-ALT-DEL and login as administrator. (You can use the mouse while you are running in VGA mode.)

7. Insert the Windows 2000 drivers diskette that you created earlier.

8. Open the **My Computer** folder.

9. Open **Drive A**: folder.

10. Open the **w2kvp** folder.

11. Double click **w2kvp.reg**. (You may not see the file extension depending upon how you have your system configured.)

    The content of the w2kvp.reg file is as follows:

    ```
    REGEDIT4

    [HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Graphics
    Drivers\DisableUSWC]
    ```

12. Click **Yes** at the popup dialog box to confirm the registry changes.

13. Click **OK** to finish the registry update.

14. Remove the diskette and perform a Shutdown, Restart.

15. Let the system boot as usual and login.

16. Test the system by changing the video resolution to 800x600 and running "Disk Administrator" to prepare the system.

Special Instructions for Installing Windows 2000 on an HP NetServer LP 1000r or LP 2000r

NOTE: There are no embedded 53C1010 Ultra 3 SCSI boot device drivers included on the Windows 2000 CD-ROM

Before you begin the installation of Windows 2000 on an LP 1000r or LP 2000r, create the "Windows 2000 Drivers Diskette for the embedded 53C1010 Ultra 3 SCSI." (Created from HP Navigator CD-ROM) See the instructions for creating drivers diskettes earlier in this document.

After the installation of Windows 2000, the Windows 2000 Device Manager will detect SDR GEM318 SCSI Processor Device as **Other Device** because Windows 2000 does not have the SAF-TE.INF file.

To solve this issue, perform the following steps:

1. Create the "HP SAF-TE.INF file Diskette." (Created from HP Navigator CD-ROM). See the instructions for creating drivers diskettes earlier in this document.

2. Install Windows 2000 using the procedure given below.

3. After the installation, go to the Device Manager, click on **Other Devices.**

4. Right click on **SDR GEM318 SCSI Processor Device**.

5. Click on the **Driver** Tab then the **Upgrade Driver** button.

6. Click Next on the **Upgrade Device Driver** Wizard menu.

7. Select the "Search suitable Driver for My Device" then click Next.

8. Insert the "HP SAF-TE.INF file Diskette" created from HP Navigator CD-ROM in the floppy drive.

9. Check the "Floppy Disk Driver" option then click Next.

10. Windows 2000 will search the floppy diskette for the INF file and then install it.

11. After this process the SDR GEM318 SCSI Processor Device will disappear from the **Other Devices** list, and display under System Devices.

Install Windows 2000 using the procedure given below.

Installing Windows 2000

NOTE: An intermittent, but critical cache manager timeout issue in Windows 2000 Server and Windows 2000 Advanced Server has been identified. To avoid potential data loss in certain situations, it is ***strongly*** recommended that you install a Microsoft fix after you install Windows 2000 Server or Windows 2000 Advanced Server.

To obtain this fix refer to Microsoft knowledgebase article Q252332 at http://support.microsoft.com/directory. Refer to the Microsoft website for any updates.

1. If you have opted **not** to use Setup Diskettes, place the Windows 2000 CD in the CD-ROM drive. Power off and on to reboot the system. You will see a message that reads "Setup is inspecting your hardware configuration.". Then the setup screen will be displayed.

   NOTE: **If you experience any hang or issue during this time, consult the Tips/Tricks section of this document for help.**

2. If you have new drivers to add then press **F6** to add OEM SCSI, DAC. Read the message that shows at the bottom of the display indicating when to press **F6**.

   NOTE: If the boot device driver is not included on the Windows 2000 CD-ROM, for example the "HP NetRAID-4M", then do the following steps after pressing F6

   a) Press **S** to select additional hardware.
   b) Select **Other** and press **Enter**.

c) When prompted to insert driver diskette, please insert the target adapter driver's diskette created with the HP Navigator CD-ROM. Press **Enter** to continue.
d) Select the target device driver from the list provided on the display. For example, if you have the "HP NetRAID-4M", select "Hewlett Packard NetRAID-4M RAID CONTROLLER".

if you have the "HP NetRAID-1M/2M", select "Hewlett Packard NetRAID-1M/2M RAID CONTROLLER".

Please repeat the above step for the "HP NetRAID-2M and 1M"

e) If you have no other drivers that you need to install, press **Enter** to continue with the installation.

3. Press **Enter** to continue at the "Windows 2000 Server Setup. Setup Notification…" screen.

4. Press **Enter** to continue at the "Windows 2000 Server Setup. Welcome to Setup…" screen.

5. Press **C** to continue Setup at the "Setup has determined that your computer's startup hard disk is new…" prompt.

6. Press **F8** to accept the licensing agreement.

7. At the drives partitioning screen, select the target drive. If you want to use the entire drive to install Windows 2000 then press **Enter**. Otherwise, press **C** to create a drive a partition.
(In this example we will create a 2GB partition. Please note that Windows 2000 does not have the 2GB partition size limitation present on NT 4.0.)

8. Type **2048** and press **Enter** at the **Create partition size** prompt.

9. HP recommends that you create all the partitions needed for each hard drive present on your system at this time.

10. Select the target drive to be used to install Windows 2000. Press **Enter**.

11. Select **Format the partition using the NTFS file system** and press **Enter**.

12. The installer will format and copy files to the hard drive. The system will then reboot.

13. Click **Next** to continue at the Setup Wizard first dialog box.

14. The **Installing Devices** screen will be shown with a progress bar on the display. This may take 10 to 15 minutes.

NOTE: If you see a dialog box titled "Digital Signature Not Found". Please click “Yes” to continue the installation and read Tip #14 in the troubleshooting section of this guide.

15. Click **Next** at the regional Settings screen.

16. At the **Personalize Your Software** screen, enter a ***name*** and ***organization***. Then click **Next**.

17. Enter the product license key.

18. Click the **Per Seat** radio button. (At the Licensing modes screen)

19. Click **Next**

20. At the **Computer Name and Administrator Password** type in your ***computer name***, ***administrator password*** and ***password confirmation***. Then click **Next**.

21. Click **Next** at the **Windows 2000 Component** screen to accept default values.

22. Enter the proper ***date*** and ***time*** and click **Next** .

23. The **Networking Setting** screen starts with a progress bar chart.

24. Click **Next** to accept the default **Typical settings**.

25. Click **Next** at the **Workgroup or Computer Domain** to accept the default:

    "No, This computer is not on a network, or is on a network without a domain…"
    and
    "Workgroup or computer domain: WORKGROUP."

    NOTE: For Windows 2000 DataCenter, you must enter either the domain or workgroup name before you can proceed to the next step.

26. The **Installing Components** screen starts with a progress bar chart. It takes about 20 minutes to complete this section. The wizard will then start the "Performing Final Tasks" section to complete the installation.

27. Click **Finish** to complete the installation. Remove the CD from the drive. The system will then reboot from the hard drive.

    NOTE: There may be a period of time with no apparent activity after it displays a message that reads "OS Loader Version 5.0". Be patient.

28. Follow screen instructions to logon. Enter ***user-id*** and ***password***.

29. Read Tip #18 to install the Windows 2000 Recovery Console to enhance the system's configuration.

Hardware Status Check

In this section you will run the "Device Manager" tool to identify any issues with the installed devices or resource conflicts.

1. Right click **My Computer**.

2. Click **Properties**. This brings up the "System Properties" panel.

3. Click **Hardware** tab.

4. Click **Device Manager…** button.

5. Verify that no devices have either a yellow band (!) or question mark (?) symbol next to it. (See following note for pointer to exceptions)
   Yellow (!) means that there is a resource issue with the device.
   Question (?) means that the device is unknown.

   NOTE: **Hewlett Packard and Microsoft have identified some devices that under normal conditions can produce (!) or (?) marks. Please see** table 5 **in the Appendix A of this document for an interpretation.**

6. If no (!) or (?) symbols are reported then you are done. Go to **step 9**. Otherwise, do the next step.

7. Double click on each of the devices with (!) or (?). Note the "Device Status" message. Or if a printer is available, use the **View**, **Print** from the menu to get a report.

8. See table 5-7 to verify any errors detected in steps 6 and 7.

9. Verify if the installed drivers are digitally signed.

   A. In the Device Manager, click on the device (e.g HP NETRAID 1M/2M) that want to verify.

   B. Right click on that device.

   C. Click Properties option.

   D. Click on Driver Tab

   E. Locate the" Digital Signer:" If the driver of that device is digitally signed then it will display "MS Windows 2000 Publisher" or " Microsoft Windows Hardware Compatibility Publisher".

      If the driver of the device is not digitally signed we recommend that you

check the HP Website www.hp.com. for the latest driver package. If available install new driver.

10. Exit device manager and system properties application.

11. Check the Event viewer to make sure that there are no errors in the log.
    Click on **Start** | **Programs** | **Administrative tools** | **Event viewer**.

12. Exit event viewer.

13. Initialize Hard Drives

To start the disk administrator use the following procedure.

1. Click **Start** | **Programs** | **Administrative Tools** | **Computer Management**.

2. If necessary click the + sign next to **Storage** to open this folder.

3. Double click **Disk Management**.

4. The "Write signature and Upgrade" wizard will start if you have new hard drives with no signatures on them.

5. Follow the instructions provided by the wizard to create the new hard drive signature.

6. Perform formatting and partitioning.

   NOTE: There are two types of hard drive configuration: **Dynamic** and **Basic**. You can select the appropriate type by right clicking on the drive icon on the screen. **Dynamic** drives are used to create volumes which can contain more than one physical hard drive. **Basic** drives are used to create primary or local partitioned drives.

Configure Server IP Address

During the installation process the system was configured to use DHCP. Also, when no DHCP server is found on the network the system will auto-configure a random IP address to start functioning. It is important that you configure the proper IP address to be able to communicate with the clients.

Configuring IP Address Steps.

1. Right click **My Network Places**.

2. Click **Properties**.

3. Double click **Local Area Connection**. There is one "Local Area Connection" icon for each Network Interface Card (NIC) present on the system. Identify the proper NIC by browsing each one.

4. Click **Properties** at the Local Area Connection Status screen.

5. Click **Internet Protocol(TCP/IP)**.

6. Click **Properties**.

7. Click **Use the following IP address**.

8. Enter appropriate IP address selected on the planning section listed above. For example 100.100.100.1.

9. Click the **OK** button to continue.

10. Open a command prompt window to verify the TCP/IP configuration. Enter the command:

    ipconfig /all

    You should get a display showing the configuration information you entered above.

11. Test the link by entering the following at the command prompt:

    ping *computername*

    Where ***computername*** is the server name. You should get four reply's from 100.100.100.1, if you don't get this result then there is a link problem which must be fixed before going any further.

12. Test the link by doing a ping to one of the clients attached to the server, for example:

    ping 100.100.100.2

    You should get four reply's from the client.

Attach Clients to Network

Follow normal procedure to patch the clients to the proper hub with the server.

Domain Controller Setup

The Windows 2000 reference guide calls this process "Promoting the server to a domain controller".

1. Click **Start** | **Run** and enter the command:

    dcpromo

2. Click **Next** at the "Active Directory Installation Wizard".

3. Click **Next** at the "Domain Controller Type" to accept default "Domain Controller for a new Domain" radio button enabled.

4. Click **Next** at the "Create Tree or Child Domain" to accept default "Create a new domain tree" radio button enabled.

5. Click **Next** at the "Create or Join Forest" to accept default "Create a new forest of domain trees" radio button enabled.

6. At the text box for "Full DNS name for new domain:" type in the assigned DNS name for your server (for example: ***hostname*.com**).

7. Click **Next**. The system will take a few minutes with the hour clock on the display before moving to next screen.

8. Click **Next** at the "NetBIOS Domain Name" dialog box to accept default "Domain NetBIOS name:"

9. Click **Next** to accept "Database and Log Locations" default values:

   Database Location: `C:\WINNT\NTDS`
   Log Location: `C:\WINNT\NTDS`

10. Click **Next** to accept default "Shared System Volume".

    Folder Location: `C:\WINNT\SYSVOL`

11. The system will display a dialog box that reads "The Wizard can not contact the DNS Server…." Confirm your DNS configuration, or install and configure a DNS server on this computer. Click **OK**.

12. Click the **Yes, Install and config DNS on this computer** radio button for this choice. Click **Next**.

13. Click the **Permissions compatible with pre Windows2000 Server** radio button. Click **Next** to continue.

14. Enter the ***Administrator password*** and click **<Next>.**

15. Review the **Summary** display and click **Next** to continue.

16. The system will start configuring the active directory display. It shows an animation of a pencil writing on a note pad. This will take a few minutes to complete..

17. If prompted, insert Windows 2000 CD-ROM and click **OK** to continue.

18. Configuring active directory display shows again. Click **Finish** to close the Wizard utility. This completes the active directory installation.

19. Click **Restart Now** to reboot the system. Remove CD-ROM if present.

20. At the login prompt type in the ***password***. Click the **Options** button and verify that the "Log on to: HOST" appears on the dialog box. Click **OK** to start the logon process.

Adding Terminal Server Services

1. Open **Control Panel**.

2. Double click **Add Remove Programs**.

3. Click **Add/Remove Windows Components**.

4. Scroll to and click **Terminal Services** checkbox.

5. Click **Next.**

6. Select the mode you want to use: "Remote administration mode" or "Application sever mode". These instructions will use "Application server mode". Click the radio button for **"Application server mode"**. Please note the licensing requirement listed on the screen for this mode. Consult with your Microsoft representative for setting the licensing server.

7. Click **Next.**

8. Select **"Permissions compatible with Terminal Server 4.0 Users".**

9. Click **Next**.

10. Click **Next** to accept support tools and administrator tools settings.

11. If prompted, insert the Windows 2000 CD-ROM.

12. Click **Finish** to close the Wizard.

13. Click **Yes** to restart the system. (Remove the CD-ROM).

14. After the system reboots, Login to system.

15. Open Control Panel.

16. Open Administrative Tools folder. You should see the following icons present "Terminal Services Client Creator", "Terminal Services Configuration" and "Terminal Services Manager".

Create Client Installation Diskettes

17. Double click "Client Services Client Creator".

18. Select **Terminal Services for 32-bit x86 windows.** (Select the appropriate client type for your environment).

19. Click **Format disk** if needed.

20. Label two diskettes as "Terminal Services for 32-bit x86 Disk1" and "Terminal Services for 32-bit x86 Disk2".

21. Click **OK.**

22. Insert diskette one when prompted and click **OK.**

23. Insert diskette two when prompted and click **OK.**

24. Click **OK** at the screen that reads "2 floppies were created….".

25. Click the **Close** button to end the "Create Installation disks" utility.

26. Install Client Utility on each workstation that you want to use to connect to Terminal Server.

27. Configure clients to connect to target Terminal Server and test for communication functionality.

Installing the Client Utility on a Workstation

28. Insert diskette 1 in the target client and run setup.exe.

29. Click **Continue.**

30. Complete the "Name and Organization Information" form. You will be prompted for this information only the first time the diskettes are used.

31. Click **OK.**

32. Click **OK** to confirm.

33. Click **I Agree.**

34. Click **Large Icon** button to start installation.

35. Click **Yes** to accept initial settings. (Make the choice you feel appropriate).

36. Insert diskette 2 when prompted and follow screen instructions.

37. Shutdown and restart workstation.

Test the Connection

38. Click **Start** | **Programs** | **Terminal Services Client**.

39. Select the target server from "Available Servers" list provided on the screen.

40. Select the appropriate screen resolution. In this case click the down arrow and select 800x600.

41. "Enable Data compression" is selected by default.

42. Click **Cache bitmaps to disk**. (Make the choice you fell appropriate)

43. Click **Connect** button.

44. Complete "UserID, Password" login form.

Installing Citrix MetaFrame Version 1.8 for Microsoft Windows 2000

The objective of this section is to assist customers with manual installation of "Citrix MetaFrame for Windows 2000 Terminal Service" on a Hewlett-Packard NetServer system.

NOTE: You Need to install Windows 2000 Terminal Service before you install Citrix MetaFrame Windows 2000 Servers.

Required Tools

Citrix 1.8 MetaFrame for Windows 2000 CD-ROM. Windows 2000 installed with Terminal Service.

1. Insert "Citrix MetaFrame Windows 2000 Servers" CD in the CD-ROM drive.

2. Click **MetaFrame Setup** button in the **Citrix MetaFrame CD-ROM** screen.

3. Click "**I agree**" in the **MetaFrame License Agreement** screen.

4. Click **Next** in the **Welcome** screen of MetaFrame 1.8 for Windows 2000 Setup.

5. Click **Next** in the **Setting Up MetaFrame** screen of MetaFrame 1.8 for Windows 2000 Setup

6. Click **Add License Packs** in the **Setting up MetaFrame** screen of MetaFrame 1.8 for Windows 2000 Setup.

7. Enter the product serial number in the **Enter License Serial Number** screen.

8. Click **OK** in the **Important Message** screen.

9. Click **No** in the **Citrix Licensing** screen.

10. Click **Next** in the **MetaFrame 1.8 for Windows 2000** screen.

11. Click **Next** in the **Network ICA Connections** screen.

12. Click **Next** in the **TAPI Modem setup** screen.

13. Click **Next** in the **Drive Mapping** screen.

14. Click **Next** in the **Server Reassignment** screen.

    (Please takes note of the original and new drive letters)

15. Click **Finish** in the **System Reboot** screen.

16. After the system reboot, click **OK** in the **Citric License Warning Notice** screen.

Installing Citrix MetaFrame XP 1.0 for Windows 2000

The objective of this section is to assist customers with a manual installation of "Citrix MetaFrame XP for Windows 2000 Terminal Service" on an HP NetServer system.

> NOTE: You Need to install Windows 2000 Terminal Service before you install Citrix MetaFrame XP.

To Install Citrix MetaFrame XP

1. Insert "Citrix MetaFrame XP 1.0" CD in the CD-ROM drive.

2. Click **MetaFrame XP Setup** button in the **Citrix MetaFrame XP CD-ROM** screen.

3. Click **I agree** in the **MetaFrame License Agreement** screen.

4. Click **Next** in the **Welcome** screen of MetaFrame XP Setup.

5. Click **Next** in the **Data Store Configuration** screen.

6. Select "Create a New Server Farm" in the **eServer Farm** selection screen. Click **Next**.

7. Select "Use a Local Database for the Data Store" in the **Data Store configuration screen**. Click **Next**.

8. Verify that "Use Default Zone Name" is selected. Click **Next** at the **Zone Name** screen.

9. Enter " new server Farm name " in the **Enter Server Farm** screen.

10. Confirm correct server Farm Name. (Note: If need to change/rename the server farm name then click **Back**, otherwise click **Next** in the **Confirm Server Farm** screen.

11. Choose default option "Operate Independently in Native IMA-Only Mode". Click **Next** in the MetaFrame Interoperability screen.

12. Enter User Name and Domain Name at the **Farm Administration** screen and then click **Next**.

13. Click **Yes** if the account name entered correct in the **Validate User Name** screen

14. Click **Next** in the **Network ICA Connections** screen.

15. Click **Next** in the **TAPI Modem setup** screen.

16. Click **Next** in the **ICA Session Shadowing** screen

17. Except default setting "Allow Shadowing of ICA sessions on this Server". Click **Next** in the **Shadowing Setup** screen.

18. Click **Next** in the **Drive Mapping** screen.

19. Click **Next** in the **Server Reassignment** screen. (Note: click the option "Remap the Server Drivers" if need to reassign server driver letter)

20. Except default setting "Share default TCP/IP port with Internet Information Server". Click **Next** in the **Citrix XML service** screen.

21. Except default setting and click **NEXT** in the **NFuse Setup** screen.

22. Click **Next** in the **Perform Installation** screen.

23. Click **Cancel** in the **Citrix ICA Client Distribution Wizard** screen.

24. Enter License Serial Number in the **MetaFrame XP 1.0 Licensing** screen then click **Add**. Click **Next** in the **MetaFrame XP 1.0 Licensing** screen.

25. Click **Next** in the **MetaFrame XP Product Code**.

26. Click **Cancel**.

27. Click **Restart** in the **System Reboot** screen.

28. After the system reboot, click **OK** in the **Citric License Warning Notice** screen.

    NOTE: when you install MetaFrame XP using the MetaFrame XP Setup option the Citrix Management console is automatically install by default.

To upgrade additional users license

1. Launch Citrix Management Console.

2. Expand the Citrix XP tree.
3. Expand Servers tree.
4. Click the Server name.
5. Click the **Licenses** tab.
6. Right click on the **License** screen.
7. Select "Add License" option.
8. Enter the serial number in the **Add License** screen. Click **OK.**

Installing the Client Utility on a Workstation

1. Insert Citrix MetaFrame CD-ROM. Click **Setup ICA Client 6.01** when the **Citrix MetaFrame CD-ROM** screen pops up
2. Click **Next** on the **Welcome** screen.
3. Click **Yes** on the **Citrix License Agreement** screen.
4. Click **Next** on the **Close Destination Location** screen.
5. Click **Next** on the **Select Program Folder** screen. Assign a Client Name.
6. Click **Next**.
7. Click **OK** on the **Information** screen. Restart the system.

Test the Connection

1. Click **Start** | **Programs** | **Citrix ICA Client** | **Citrix Program Neighborhood**.
2. Click **Add ICA Connection**.
3. Select "Local Area Network" in the drop down list of the Add New ICA connection screen. Click **Next**.
4. Enter a description for the new ICA connection. Select TCP/IP for the network protocol.
5. Type/Select the Server Name (for example: TEST) that you want to connect. Click **Next**.
6. Click **Next** on the Next screen.
7. Enter User Name, Password and Domain.

8. Click **Next** on the Next screen.

9. Click **Finish** to complete the ICA connection setup.

10. Click on the icon of the server name to establish connection with the server.

Installing Windows 2000 DataCenter from the HP-Provided CD-ROM

The following are the procedures for installing Microsoft Windows 2000 DataCenter Server from the HP-provided CD-ROM. For more information, please view the Windows 2000 DataCenter Readme file.

1. Insert the DataCenter CD and reboot the system.

2. The restore process will invoke Ghost(TM) a disk cloning application. The process will take several minutes to complete.

3. The user will be asked to specify the active partition size DataCenter is to be installed on. The minimum or default partition size is 2GB or 2048KB. The maximum (option: all) is the entire physical drive. Any remaining disk space will be unallocated.

4. Upon completion of the restore process, the DOS environment will appear.

5. Eject all CDs and diskettes and reboot the system.

6. Microsoft DataCenter will now begin its standard installation process.

7. Go to the Installing Windows 2000 section listed above to continue with the installation process, but first make a note of the following:

    - Optional components (e.g. mass storage, network adapters) and services (e.g. Terminal Services) may be added using the standard Windows 2000 procedures. However, when prompted for the location of the Windows 2000 CD-ROM enter the following path:

      c:\i386

    - Do not use the Navigator CD to install drivers. Install drivers for optional components using the Windows DataCenter installation CD only.

Troubleshooting Tips and Tricks

This section provides information about known issues, solutions and workaround.

Tip #1. Upgrading from NT 4.0 to Windows 2000

It is possible to upgrade from any edition of NT 4.0 including Terminal Server to Windows 2000. Please refer to the readme.doc on the Windows 2000 CD and the Windows 2000 Setup Guide for information on how to perform the upgrades.

Tip #2. HP NetRaid-1 Partition >8GB Not supported

Issue: You cannot install Windows 2000 on a system using an HP NetRaid-1 as the boot device and a logical drive > 8GB.

Workaround: the HP NetRAID-1 adapter has an 8 GB limit for the boot partition. If you are going to boot from devices connected to a NetRAID-1 controller, be sure that you don't set the boot partition any larger than 8 GB during the Windows 2000 installation procedure.

Tip #3. NetServer LH Pro, LD Pro and LH II with DAC present hangs during high work load

When using adapters behind the PCI bridge, HP recommends that the EISA configuration setting "PCI Bridge Timers" be changed using the following steps.

1. Boot HP Navigator.
2. Execute EISA configuration utility.
3. Press Control+A at the "OK=Enter" prompt. This will select the advanced mode.
4. Select "View or Edit Details".
5. Page down to select "PCI Bridge Timers".
6. Press <Enter> to edit this parameter.
7. Select "64 PCI Clock Cycle".
8. Press <Done=F10>.
9. Select "Save and Exit" Follow the screen instruction to exit the utility.

Tip #4. Windows 2000 Installation halts about three minutes after starting to boot from CD-ROM

Issue: When installing Windows 2000 on any X86 system with more than one hard drive it is possible to experience the following error:

```
Setup has encountered an error and cannot continue. Contact
technical support for assistance. The following status
```

codes will assist them in diagnosing the problem. (0x4, 0x1, 0x0, 0x0)

The cause of this problem is that the NTLOADER is encountering a duplicate hard drive signature. This signature is calculated by the NTLOADER code after reading a specific sector offset from the hard drive. For more information please refer to Microsoft document ID: Q226361.

The following list provides some of the things that can cause hard drive to have duplicate signatures:

1. Low-level formatting the drives. We reproduced this on two systems at HP.

2. If you run a utility to zero out track zero on more than 8 drives NTLOADER will calculate duplicate signatures.

3. When you have a set of drives previously used with a DAC and move them to a SCSI adapter.

4. Using a disk imaging utility to duplicate a hard drive will create a duplicate signature.

At this time, Microsoft has no fix for this problem

Workaround: HP recommends that you use the following workaround for this problem.

1. If you experiences this problem, remove all drives with the exception of the target boot drive. Install Windows 2000 and then add the removed hard drives to the system.

2. Run "Disk Management" tool to prepare the remainder of the drives to be used in the system.

   A. Boot the system with a Windows 98SE recovery diskette. (This version supports FAT32, which works on large hard drives.)
   B. Perform an FDISK on each drive.
   C. Install Windows 2000.

Tip #5. LX Pro, LX, LXe, LH Pro, LD Pro & LH II hang when booting from the Windows 2000 CD

Issue: If the system contains an Adaptec SCSI controller, depending upon how the controller is configured, the system can hang if you attempt to boot from the Windows 2000 CD. The hang is usually encountered within 30 seconds after the start of the boot process. The message that is displayed on the screen is “Set up is inspecting your computer’s hardware configuration …”.

- The LXPro, LX & LXe system will hang during Windows 2000 installation if you attempt to boot from the Windows 2000 CD and any Adaptec SCSI controller (including the system’s embedded SCSI controller) is configured as the 1st bootable

device on the PCI bus. Furthermore, there must be an additional storage controller configured to boot in sequence after the Adaptec SCSI controller.

- The LH Pro, LD Pro & LH II system will hang during Windows 2000 installation if you attempt to boot from the Windows 2000 CD and any Adaptec SCSI controller (including the system's embedded SCSI controller) is configured as the 1st bootable device on the PCI bus, and it is connected only to a CD ROM drive. Furthermore, there must be an additional storage controller configured to boot in sequence after the Adaptec SCSI controller.

  NOTE: The boot order is: slot 1, slot 2, slot 3, slot 4, embedded SCSI A, embedded SCSI B, slot 5 and slot 6.

Workaround:

1. To install Windows 2000 to a hard disk device attached to the embedded SCSI:

   - Fresh Windows 2000 installation:

     Install Windows 2000 using Windows 2000 Setup diskettes.

     The system will reboot once during installation.

     Make sure the Windows 2000 CD is NOT in the CD ROM drive during system reboot.

     Follow the steps outlined in the section "Starting the Installation Windows 2000 Using Setup Diskettes".

     At step #12, after set up has initialized the Windows 2000 configuration, (about 20 minutes after installation starts), you will see the following message on the screen:

     ```
     This portion of  setup is completed successfully.

     If there is a floppy disk, remove it.

     Your computer will reboot in 14 seconds.
     ```

     Remove the Windows 2000 CD from the CD ROM drive before the system reboots.

   - Upgrade from NT 4.0 to Windows 2000:

     Boot to NT 4.0, then upgrade to Windows 2000.

     The system will reboot twice during installation.

Make sure the Windows 2000 CD is NOT in the CD ROM drive during system reboot.

Follow instructions on the screen to upgrade. It will be similar to the procedures outlined in the section "Installing Windows 2000".

The 1st reboot occurs within the first few minutes after installation has started. You will see the following message on the screen:

```
Restarting the computer

This portion of Windows 2000 has completed
successfully

Your computer will restart in 15 seconds
```

The 2nd reboot occurs about 10 minutes after the installation started. You will see the following message on the screen:

```
This portion of  setup is completed successfully.

If there is a floppy disk, remove it.

Your computer will reboot in 14 seconds.
```

In both cases, remove the Windows 2000 CD from the CD ROM drive before the system reboots.

2. To install Windows 2000 to a hard disk device attached to a HP NetRAID device:

   - Fresh Windows 2000 installation:

     Disable boot priority on embedded SCSI via ECU. The HP NetRAID adapter must be placed in slots 1, 2, 3 or 4.

   - Upgrade from NT 4.0 to Windows 2000:

     Boot to NT 4.0, then upgrade to Windows 2000.

     The system will reboot twice during installation.

     Make sure the Windows 2000 CD is NOT in the CD ROM drive during system reboot.

     Follow instructions on the screen to upgrade. It will be similar to the procedures outlined in the section "Installing Windows 2000".

The 1st reboot occurs within the first few minutes after installation has started. You will see the following message on the screen:

```
Restarting the computer

This portion of Windows 2000 has completed
successfully

Your computer will restart in 15 seconds
```

The 2nd reboot occurs about 10 minutes after the installation starts. You will see the following message on the screen:

```
This portion of  setup is completed successfully.

If there is a floppy disk, remove it.

Your computer will reboot in 14 seconds.
```

In both cases, remove the Windows 2000 CD from the CD ROM drive before the system reboots.

Tip #6. Avoid using IRQ 9 on NetServer LH 4

Issue: If you configure any adapter to use IRQ9 on a NetServer LH 4, Windows 2000 will not configure the adapter. The device manager will report an error code 12, meaning no resources available. Also, if the boot drive is on a SCSI adapter with IRQ9 the system will fail to boot with a STOP 7B(0xF401b848, 0xC0000034, 0x0, 0x0).

Workaround: HP recommends that you use one of the following workarounds for this problem.

1. Do not use IRQ9. Hewlett-Packard is working on a final fix for this issue.
2. If you must use IRQ9 with an LH 4, change the BIOS "Routing Algorithm" setting from SMART to FIXED IRQ routing. The LH 4 BIOS SMART IRQ routing logic does not allow IRQ9 to be shared. The ACPI logic uses IRQ9.

   The following steps explain how to make this change.

   1. Reboot system and press F2 during initial self-test.
   2. Press right arrow to select "PCI Slot Devices".
   3. Press **Enter**.
   4. Press down arrow to select "PCI IRQ Locking".

5. Press **Enter**.
6. Routing Algorithm should be selected. Verify that it is set to SMART.
7. Press **Enter**.
8. Select "Fixed".
9. Press **F10** to save and Exit.
10. Press **Enter** to select "Yes".
11. The system will reboot.

Tip #7. Using the Windows 2000 integrated backup utility with NetServer E60 and E 50 bundled tape drives

The backup utility in w2k has a "Backup Destination" pull down menu with the following choices:

```
File

minQIC

Travan
```

The T20 tape drive shipped with the NetServer E 60 requires that you set this option to minQIC when using 20GB cartridge. If you plan to use an 8GB cartridge (read-only mode supported) then change this setting to Travan.

The T4 tape drive shipped with the NetServer E 50 requires that you set this option to Travan. The T4 tape drive only supports 8GB cartridges.

It you don't set this option properly the backup utility will report that either the tape drive is broken or the media is full.

Tip #8. Configure the Parallel (LPT) Port for ECP Mode

HP recommends that you configure the LPT port for ECP mode. Otherwise the device manager may not show this port on the list. This configuration change is made by using the following procedure:

1) Press F2 during power on self-test.
2) Select “I/O Device Configuration”.
3) Select “Parallel Port”.
4) Select “Mode”. (Notice the current setting. It may read “Output Only”.)

5) Press “Enter” and select “ECP”.

6) Press F10 and select yes to confirm to save and exit.

NOTE: Depending on your NetServer model the above steps may not read exactly the same. Please locate the I/O device Configuration section on the screen and make the change.

Tip #9. Event Viewer Error 3013 On NT Clients

Issue: An intermittent, but critical cache manager timeout issue in Windows 2000 Server and Windows 2000 Advanced Server has been found when doing a large volume of network file transfers to a server. This condition causes a reasonable amount of disk I/O stress which may potentially cause data loss in certain situations. This condition can be identified by the following error appearing on the Client/Workstation Event Log:

`Error 3013: The redirector has timed out to` *`servername`*

Solution: It is strongly recommended that you install a Microsoft fix after you install Windows 2000 Server or Windows 2000 Advanced Server. To obtain this fix refer to Microsoft knowledgebase article Q252332 at http://support.microsoft.com/directory. Refer to the Microsoft website for any updates. This fix will be released on SP1.

Tip #10. Mirror Drive Issue

Issue: Windows 2000 running with Software Mirrored system drive will not allow you to reconfigure a drive after you break the mirror. For example, you cannot delete the system volume.

After breaking the mirror of the system disk the Disk Management cannot delete the volume of the system disk. For example, add mirror for the system disk with an allocated hard disk drive (for example: Disk 0 contains Windows 2000 is mirror with Disk 1 that is unallocated). Next, break the mirror then try to delete the volume of Disk 1, but the Disk Management cannot delete the volume of Disk 1. Instead the disk Management only allows you to format Disk 1. Furthermore, the Disk Management will not allow you to mirror the system disk (Disk 0) with any other hard disk.

Workaround: In order for the Mirror feature to work again and to delete the system volume of Disk 1. Please do the following:

1. Break Mirror (from Windows 2000).

   (Use FDISK.EXE to remove the partition on Disk 1)

2. Boot the system in MS-DOS mode.

3. At the command prompt type “Fdisk /MBR”.

4. Delete the “Disk 1” partition.

5. Reboot the system.

   NOTE: After the OS boots up “Disk Management” will show Disk 1 is now “UNALLOCATED”. This means the system volume of Disk 1 is successfully mounted, and now the Mirror feature will work. But, now Disk Management will show there is one drive “MISSING”. In order to fix the drive “MISSING” problem the OS has to be reinstalled.

Solution: Apply Windows 2000 SP1 when available.

Tip #11. Upgrading Windows 2000 from Uniprocessor HAL to Multiprocessor HAL

Issue: If you have a uni-processor system running Windows 2000 and a second processor is added, the plug and play feature in Windows 2000 will not auto-detect the second processor.

Solution: Use the following procedure to configure Windows 2000 to use the second processor .

1. Click Start, select Settings, select Control Panel, and then select System.

2. Click the Hardware tab, and then click Device Manager.

3. Double-click the Computer branch to expand it. Note the type of support you currently have.

4. Double-click the computer type listed under the Computer branch, click the Drivers tab, click Update Driver, and then click Next.

5. Click "Display a list of known drivers for this device", and then click "Show all hardware of this device class".

6. Click the appropriate computer type (one that matches your current type, except for multiple CPUs), click Next, and then click Finish.

Tip #12. Installing the NetRAID-4M, 2M, or 1M Driver After Windows 2000 is Installed

   NOTE: Please consult the “HP NetRAID-4M” installation guide for instructions on doing the physical installation of the adapter.

1. Ensure that the HP NetRAID-4M controller is installed in your system, then reboot your system so that the system can recognize the controller.

   When the system is rebooted and the controller recognized, Windows 2000

automatically launches the **Found New Hardware** wizard, which you use to install the Windows 2000 drivers for the HP NetRAID-4M controller.

2. The **Found New Hardware** wizard displays a **Files Needed** dialog box, which prompts for the location on the **A** drive for the driver files for the HP NetRAID-4M controller. Insert the drivers diskette created with the Hewlett Packard Navigator CD-ROM. (See installation steps listed above for procedure on how to create this diskette.). and click **OK**. The system them installs the driver.

3. When the driver finishes installing, click **Finish** to exit the **Found New Hardware** wizard.

4. At the message Do you want to restart the computer now?, remove the diskette from the floppy drive and click **Yes** to reboot the system.

   Please use steps #1 to 4 above for installing the “NetRAID-2M” or “NetRAID-1M”

Tip #13. Windows 2000 Driver Signatures

Windows 2000 checks for digital signatures on driver files to help maintain system integrity. During the installation or update of a driver, if there is no matching signature file Windows 2000 displays a "Digital Signature not Found" box.

To expedite release of new products, drivers may be shipped by HP without signature files. All Windows 2000 drivers provided by Hewlett-Packard are submitted to Microsoft for certification testing . Upon completion of testing, Microsoft produces signature files. HP then posts the revised driver package at www.hp.com.

If a signature warning is displayed during installation of a driver, you may override the warning. We recommend that you check the HP Website for the latest driver package. If available, install the new driver.

You can elect to have Windows 2000 ignore signatures. Right-click **My Computer**; select **Properties**, **Hardware**, then **Driver Signing**. This is helpful if you are setting up multiple systems.

Digital signatures are a powerful way to ensure system integrity as you add drivers -- whether provided by Hewlett-Packard or others -- to your system.

Tip #14. Upgrading D5013B NIC Drivers for Windows 2000

Windows 2000 installation automatically detects the HP D5013 NIC and installs the driver bundled with the Windows 2000 CD-ROM. The following procedure will help you upgrade the driver using the “Drivers Diskette” created with the “Hewlett Packard Naviagator CD-ROM”. (See Manual Installation section of this document for instructions on how to create the drivers diskette.)

To update the driver for the adapter:

1. Insert the NIC driver diskette in floppy drive:A.

2. From the Control Panel, double-click the System icon, select the Hardware tab, and click the Device Manager button.

3. Select "Network Adapters" and right-click on the appropriate adapter listing to display its menu. Then click the Properties menu option.

4. From the Properties dialog box, click the Driver tab and click the Update Driver button. The Update Device Driver Wizard appears. Click Next

5. At the prompt "What do you want the wizard to do?", select the "Search for a suitable driver for my device" radio button, and click Next

6. Select the appropriate media checkbox and click next.

7. Select the "Install one of the other drivers" check box and click Next.

8. Select the driver on the floppy drive A: and click Next.

9. Restart your computer. (This is not required if you only have one NIC on your system. Otherwise, it is recommended to reboot to make sure other D5013 adapters get initialized properly.)

10. After restarting Windows, connect to your network and test for connectivity.

Tip #15. Installation Fails to Boot after First Reboot

Issue: Windows 2000 installation fails to boot after the first reboot. with an error indicating that something is wrong with the disk subsystem. This problem is usually because the BIOS does not support Int13 extensions to handle drives > 8G.

Workaround: **Create a partition of 2G or so to install Windows 2000.**

Solution: **Check http://www.hp.com to see if a new BIOS is available for the system or component providing the boot functionality.**

> NOTE: The NetServer LXr Pro 8 will experience this issue. Hewlett Packard did not roll the BIOS for this system. It is recommended that you implement the workaround listed above.

Tip #16. Installing Citrix on HP NetServer LT 6000

The following procedure was created by Citrix after using our installation guide and testing with the LT6000.

Overview

This application note describes how to install Citrix *METAFRAME* 1.8 and Microsoft Windows 2000 Advanced Server on an HP NetServer LT 6000 server.

Software Requirements

- Microsoft Windows 2000 Advanced Server
- *METAFRAME* Version 1.8 for Windows 2000
- HP Navigator CD-ROM

Pre-installation Steps

1. Verify the system bios and if necessary update to latest revision.
2. Before you begin the installation of Windows 2000 on the LT 6000r, create the "Windows 2000 Drivers Diskette." (Created from HP Navigator CD-ROM)

If you do not have the HP Navigator CD-ROM you can download the necessary file from their website: http://www.hp.com/country/us/eng/supportservices.htm

Windows 2000 and MetaFrame Installation

1. Insert Windows 2000 Advanced Server CD-ROM into the CD-ROM drive and power up the machine.
2. When prompted, press any key to boot from the Windows 2000 CD.
3. Refer to the Microsoft Windows 2000 Server Installation Guide to complete the installation.
4. On the first boot of the system following the completion of the installation of Windows 2000, shut the system down by pressing CTL-ALT-DEL, use the right arrow key to select "shutdown". DO NOT USE THE MOUSE DURING THE SHUTDOWN PROCESS AS IT COULD CAUSE YOUR SYSTEM TO HANG.
5. When the system reboots press F8 at the start of the Windows 2000 boot sequence.
6. Select "Enable VGA mode" from the choices listed on the display.
7. When prompted to login, press CTL-ALT-DEL and login as administrator.
8. (You can use the mouse while you are running in VGA mode.)
9. Insert the Windows 2000 driver diskette that you created earlier.
10. Open the "My Computer" folder.

11. Open “Drive A:\” folder.

12. Open the “w2kvp” folder.

13. Double click “w2kvp.reg”. (You may not see the file extension depending upon how you have your system configured.)

14. Click Yes at the popup dialog box to confirm the registry changes.

15. Click OK to finish the registry update.

16. Remove the diskette and perform a

17. Shutdown, Restart.

18. Let the system boot as usual and login.

19. Insert the *METAFRAME* Version 1.8 for Windows 2000 CD-ROM and choose *METAFRAME* Setup from the list of on screen options.

20. Refer to the *METAFRAME Installation Guide* and to complete the installation and setup.

21. Implement Tip #18 to install the Windows 2000 Recovery Console to enhance the system’s configuration.

Tip #17. Windows 2000 Recovery Options

In the event that the current installation of Windows 2000 fails to boot (this might happen after installing a new driver, component, software, etc), Windows 2000 provides the following recovery options to help you gain access to your windows 2000 installation to replace damaged files and services for troubleshooting purpose.

It is recommended that you install the Recovery Console as listed on this document to enhance the system configuration.

Last known good configuration

Activated by pressing F8 during the system process of Windows 2000 and selecting “Last Known Good Configuration” from the menu.

This boot mode is used in the case that the system fails to boot after installing a new software or driver. The system will use the previous registry setting to initialize and boot the system.

Safe Mode Boot

Activated by pressing F8 during the system boot. It provides minimal configuration with required drivers and services. The safe mode boot provides three options:

1. **Standard safe mode boot**. Provides no network services or drivers.

2. **Networking disabled.** Includes networks services and drivers.

3. **Directory services restore mode.** Brings system up with directory services disabled with the intent of recovering active directory. Safe mode boot is guided by the registry key hklm\CurrentControlSet\Control\SafeBoot with the use of the Minimal and Network subkeys. The IOManger and service control manager looks at the resgistry to load the driver and services. This way it will avoid loading a problematic driver or service.

4. **Command prompt.** Provides an alternate command shell CMD.EXE instead of the explorer. This is dictated by the registry key hklm\system\CurrentControlSet\Control\SafeBoot\AlternateShell.

There is a Safe-Mode boot loophole. Since NTLDR loads "Boot Load" drivers, these drivers bypass the IO Manager's safe Mode check.

Recovery Console (RC) Boot

Recovery Console can be used when safe boot fails. You can enter RC in two ways booting from Windows 2000 CD-ROM or by installing the recovery console boot on your system.

It is recommended to install the recovery console (RC) immediately after installing Windows 2000.

Start RC Booting from Windows 2000 CD-ROM

If you have a need of booting the Windows 2000 recovery console but this feature is not installed on the system, use the following procedure to boot the RC from the Windows 2000 CD-ROM.

1. Insert the Windows 2000 CD-ROM and start the reboot sequence.

2. Press any key when prompted to start booting from the Windows 2000 CD-ROM.

3. Press "F10" at the "Welcome to Setup" screen.
   Note: This is an undocumented option. The bottom of the display is asking you to press ENTER, R or F3.

4. The system will display a menu asking to select the instance of the NOS you want to boot. For example it displays:
   1: C:\WINNT

5. Type 1 <ENTER>

6. Type the administrator password when prompted.

7. At the command prompt type help and proceed to achieve your objective.

8. Type “exit” when done troubleshooting.

Installing RC

1. Insert Windows 2000 CD-ROM. If CD-ROM auto-start is enabled, click exit to close the applet.

2. Open a command prompt and type D:\I386\WINNT32 /CMDCONS <ENTER> (Where D: is the CD-ROM drive letter.)

3. Follow the screen instructions to complete the RC installation.

Booting RC

1. Shutdown and Restart system.

2. Select “Windows 2000, Recover Console” from the boot menu.

3. The system will display a menu asking to select the instance of the NOS you want to boot. For example it displays:
   1: C:\WINNT

4. Type 1 <ENTER>

5. Type the administrator password when prompted.

6. At the command prompt type help and proceed to achieve your objective.

7. Type “exit” when done troubleshooting.

   NOTE: The file access security can prevent you from getting to files.

Tip #18. Installing the HP NetRaid-4M Drivers when Upgrading to Windows 2000

Refer to the HP NetRaid-4M “User’s Guide” for information on how to installing the drivers when upgrading to Windows 2000 for a HP NetRaid-4M adapter.

Tip #19. Page Address Extension /PAE not added by Windows 2000 DataCenter installer

If your system has more than 4G of RAM edit boot.ini file to add /PAE switch at the end of the operating system string, i.e. the operating system string that declares Microsoft Windows 2000 DataCenter Server.

For example:

multi(0)disk(0)rdisk(0)partition(3)\WINNT="Microsoft Windows 2000 Professional" /fastdetect C:\="Microsoft Windows" /PAE

Tip #20. Hibernate Tab Not Available in Windows 2000 DataCenter

The hibernate tab is not available on systems with one of the following conditions:

1. **/PAE** switch is used on boot.ini to enable large memory support.

2. Terminal Server services is installed on the system.

Microsoft indicated that this is how the product was designed.

Tip #21. Windows 2000 DataCenter WINMSD.EXE utility reports wrong BIOS version

The Microsoft utility WINMSD.EXE reports the Phoenix core version number 6. The Hewlett Packard version number 8 is not reported. To obtain the proper BIOS version you need to either use the LXr 8500 LCD display or power cycle the server and view the BIOS banner displayed during the Power-On Self Test.

Frequently Asked Questions

Question: What NetServer BIOS version do I need to run Windows 2000?

Answer: Table 6, provided in Aappendix A of this document provides a list of NetServer and BIOS versions used to test with Windows 2000. HP recommends that you use the version provided in this table or a later release.

Question: What HP Disk Array BIOS/Firmware version do I need to run Windows 2000?

Answer: Table 7, provided in Aappendix A of this document provides a list of Disk Array BIOS/Firmware versions used to test with Windows 2000. HP recommends that you use the version indicated in this table or a later release.

Question: What ACPI features are supported for each NetServer running Windows 2000?

Answer: Table 8, provided in Appendix A of this document provides a list of all ACPI features tested for each NetServer running Windows 2000.

Question: Where do I get the driver's required to run Windows 2000?

Answer: The initial release of Windows 2000 includes all the drivers required to install Windows 2000 on the NetServer's and DAC's listed in table 6 & 7 of Appendix A. Except the NetRaid-4M adapter.

Future driver updates or new adapter driver's will be provided on the Hewlett Packard Navigator CD, or check http://www.hp.com.

If you have a HP Fiber Channel adapter, you will need to install the drivers provided on the HP Fiber Channel Adapter drivers diskette. You can use the HP Navigator CD to create the drivers diskette.

Question: Can I configure the HP NetRaid 3Si or LH 3 / LH 4 integrated DAC in I2O mode to run Windows 2000?

Answer: No, the first release of Microsoft Windows 2000 does not support I2O. Some magazine publication may list this technology as a new feature but it is not currently supported.

Question: How do I configure the HP D5013 Network Interface Card for NIC teaming?

Answer: NIC teaming is not supported with the D5013 Driver bundled with Windows 2000 CD-ROM. You can identify this driver by looking at "Device Manager", driver date is 10/26/1999 and driver version is 4.1.6.67.0. Hewlett Packard is working on a future driver, which will support this feature.

Question: Can I upgrade my NetServer running Windows NT 4.0 to Windows 2000?

Answer: Yes, Hewlett Packard tested with upgrade configurations. However, it is unpredictable if any application on your system will work after the upgrade.

Question: Where can I get more information on Windows 2000?

Answer: You may also use the following resources:

www.hp.com

Windows 2000 online help.

Question: How do I enable Windows 2000 to use more than 4G RAM?

Answer: You need to install Windows 2000 Advanced Server or Data Center Edition. Next, edit boot.ini and add /pae option.

The following is an example boot.ini with this change implemented. Remember to make a backup copy and remove the SHR attribute before editing this file.

```
[boot loader]

timeout=30

default=multi(0)disk(0)rdisk(0)partition(1)\WINNT

[operating systems]
```

```
multi(0)disk(0)rdisk(0)partition(1)\WINNT="Microsoft
Windows 2000 Advanced Server" /fastdetect  /pae
```

NOTE: The last line listed above should not wrap around when edited with the system ASCII editor.

Question: What is the max number of CPU's supported by each version of Windows NT?

Answer: Please check with the Microsoft web site for latest update. During beta test the following information was provided:

Windows 2000 Server, Max = 2-Way SMP.

Windows 2000 Adv. Server, Max = 4-Way SMP.

Windows 2000 Adv. Server, Upgrade from NT 4.0 Enterprise Edition, Max = 8-Way SMP.

Windows 2000 Data Center, Max = 16-Way SMP.

Appendix A

This section provides additional information to help add new components, troubleshoot, etc.

Table #1

List of NetServer platforms supported by the method called "Automatic - Boot from Hewlett-Packard Navigator CD-ROM" (see "Table #6" for a list of Windows 2000 tested and supported systems).

Model	HP Auto-Install Support	CD Boot Supported?	Win 2000 Supported?	Also see Tip #
E30	No	Yes	No	
E40	No	Yes	No	
E45	No	Yes	No	
E50	No	Yes	Yes	7,9
E60	Yes	Yes	Yes	7,9
E200	Yes	Yes	No	
E800	Yes	Yes	Yes	

Model	HP Auto-Install Support	CD Boot Supported?	Win 2000 Supported?	Also see Tip #
LC	No	No	No	
LC Plus	No	Yes	No	
LCII	No	Yes	Yes	2,8,9
LC3	Yes	Yes	Yes	2,8,9
LC2000	Yes	Yes	Yes	2,8,9
LD	No	Yes	No	
LD Pro	Yes	Yes	Yes	2,3,8,9
LF	No	Yes	No	
LH	No	Yes	No	
LH Pro	Yes	Yes	Yes	2,3,8,9
LHII	Yes	Yes	Yes	2,3,8,9
LH3	Yes	Yes	Yes	2,8,9
LH4	Yes	Yes	Yes	2,6,8,9
LH3000	Yes	Yes	Yes	2,8,9
LH6000	Yes	Yes	Yes	2,8,9
LT6000r	Yes	Yes	Yes	2,8,9
LM(All)	No	No	No	
LS(All)	No	Yes	No	
LX	Yes	Yes	Yes	2,5,8,9
LXr Pro8	No	Yes	Yes	2,8,9
LPr	Yes	Yes	Yes	2,8,9
LP1000r	Yes	Yes	Yes	13
LP2000r	Yes	Yes	Yes	13

Model	HP Auto-Install Support	CD Boot Supported?	Win 2000 Supported?	Also see Tip #
LXr8000	Yes	Yes	Yes	2,8,9
LXr8500	Yes	Yes	Yes	2,8,9
rc3100	Yes	Yes	Yes	13
rc4100	Yes	Yes	Yes	13
tc3100	Yes	Yes	Yes	13
tc4100	Yes	Yes	Yes	13
tc6100	Yes	Yes	Yes	13
tc7100	Yes	Yes	Yes	13
rc7100	Yes	Yes	Yes	13

Table #2

List of embedded SCSI chip set for each NetServer (see "Table #6" for a list of Windows 2000 tested and supported systems).

Model	SCSI Adapter	Ultra SCSI/ Channel A,B
E30	Adaptec 29xx	No/A
E40	Adaptec 29xx	No/A
E45	Adaptec 29xx	No/A
E50	Adaptec 29xx	No/A
E60	Adaptec 7895	(Wide)/A,B
E800	Symbios 896	Ultra2/ A,B
LC	Adaptec 7770	No/A
LC Plus	Adaptec 78xx	Yes/A
LCII	Adaptec 78xx	Yes/A
LC3	Adaptec 78xx	Yes/A,B

Model	**SCSI Adapter**	**Ultra SCSI/ Channel A,B**
LC2000	Symbios 897	Ultra2/A,B
LD	Adaptec 78xx	No/A,B
LD Pro	Adaptec 78xx	No/A,B
LF	Adaptec 7770	No/A
LH	Adaptec 78xx	No/A
LH Pro	Adaptec 78xx	Yes/A,B
LHII	Symbios 895	Ultra2/A,B
LH3	Symbios 895	Ultra2/A,B
LH4	Symbios 895	Ultra2/A,B
LH3000	Symbios 895/ Adaptec 7880	Ultra2/A,B Yes/C
LH6000	Symbios 896/ Adaptec 7880	Ultra2/A,B Yes/C
LT6000r	Symbios 896/ Adaptec 7880	Ultra2/A,B Yes/C
LM (All)	Adaptec 7770	No/A,B
LS (All)	Adaptec 78xx	No/A,B
LX	Adaptec 78xx	No/A,B
LXr Pro8	Symbios 975	Yes/A(6)
LPr	Symbios 895	Yes/A,B
LP1000r	Symbios 53C1010-33	Ultra 3/ A,B
LP2000r	Symbios 53C1010-33	Ultra 3/ A,B
LXr 8000	Symbios 896	Ultra2/A,B

Model	SCSI Adapter	Ultra SCSI/ Channel A,B
LXr 8500	Symbios 896	Ultra2/A,B
rc3100	Adaptec 7902	Ultra 4/ A,B
rc4100	Adaptec 7902	Ultra 4/ A,B
tc3100	LSI53C1010	Ultra 3/ A,B
tc4100	LSI53C1010	Ultra 3/ A,B
tc6100	LSI53C1010	Ultra 3/ A,B
tc7100	LSI53C1010	Ultra 3/ A,B
rc7100	LSI53C1010	Ultra 3/ A,B

Table #3

List of embedded Video Product Name and Driver Name for each NetServer (see "Table #6" for a list of Windows 2000 tested and supported systems).

Model	Video Adapter
E30	S3 Trio 64
E40	CL 5446 1M
E45	CL 5446 1M
E50	CL 5446 1M
E60	ATIRage IIC 4M AGP
E800	ATIRage XL 8M PCI
LC	Trident 9000I 512K*
LC Plus	Trident 9000I 512K*
LCII	CL 5446 1M
LC3	CL 5446 1M
LC2000	ATIRage IIC 2M

Model	Video Adapter
LD	Trident 9000I 512K*
LD Pro	Trident 9000I 512K*
LF	Trident 9000I 512K*
LH	Trident 9000I 512K*
LH Pro	Trident 9000I 512K*
LHII	Trident 9000I 512K*
LH3	CL 5446 1M
LH4	CL 5446 1M
LH3000	ATIRage IIC 2M
LH6000	ATIRage IIC 2M
LT6000r	ATIRage IIC 2M
LM (All)	WD 512K*
LS (All)	CL 5436 512K*
LX	CL5436 512K*
LXr Pro8	S3 Virge
LPr	CL 5446 1M
LP1000r	AITRage XL PCI 4MB
LP2000r	AITRage XL PCI 4MB
LXr8000	CL 5446 1M
LXr8500	CL 5446 1M
rc3100	AITRage XL PCI 8MB
rc4100	AITRage XL PCI 8MB
tc3100	AITRage XL PCI 8MB

Model	Video Adapter
tc4100	AITRage XL PCI 8MB
tc6100	AITRage XL PCI 8MB
tc7100	AITRage XL PCI 8MB
rc7100	AITRage XL PCI 8MB

* The driver is not provided by Hewlett-Packard. Users should use the driver bundled with Windows NT CD-ROM.

Note: Video adapters with 1M can be upgraded to 2M.

Table #4

This table provides a list of CD-ROM type for each NetServer (see "Table #6" for a list of tested and supported system under Windows 2000).

Model	CD-ROM Type
E30	IDE
E40	IDE
E45	IDE
E50	IDE
E60	IDE
E800	IDE
LC	SCSI
LC Plus	SCSI
LCII	IDE
LC3	IDE
LC2000	IDE
LD	SCSI
LD Pro	SCSI

Model	CD-ROM Type
LF	SCSI
LH	SCSI
LH Pro	SCSI
LHII	SCSI
LH3	IDE
LH4	IDE
LH3000	IDE
LH6000	IDE
LT6000r	IDE
LM (All)	SCSI
LS (All)	SCSI
LX	SCSI
LXr Pro8	IDE
LPr	IDE
LP1000r	IDE
LP2000r	IDE
LXr8000	IDE
LXr8500	IDE
rc3100	IDE
rc4100	IDE
tc3100	IDE
tc4100	IDE
tc6100	IDE

Model	CD-ROM Type
tc7100	IDE
rc7100	IDE

Table #5

This table provides a list of device manager events that are approved by Microsoft as acceptable.

Model	ACPI Event
Integrated RAID on NetServer	Device manager reports a (?) other devices, PCI memory controller. This error condition in only present when the integrated RAID is disabled.
NetServer LH3, LH4	(!) Intel 82371 AB/EB PCI to USB Universal Controller. (USB chipset is present but no connector available on the system.)
NetServer LC 2000, LH6000, LT6000r. HP D5989A or D5989B, RS12 Storage Cabinet	Device manager shows one of the following messages under (?) Other devices. 1. (?) HP SAF-TE;U160 BP SCSI. (SCSI pre-processor on drive card cage.) 2. (?) HP D5989A SCSI\processor… 3. (?) HP D5989B SCSI\processor… Action to fix this error: Load the HP Navigator CD-ROM, go to the library diskette section and create the INF driver diskette for the Storage cabinet. Follow the instructions on the readme.txt file on the diskette.
NetServer LH, LH Pro, LD, LD Pro	(!) Trident video controller. (No Driver available. Need to replace integrated video with a supported video controller.)

Table #6

This table provides a list of NetServers tested with Windows 2000.

Model	WHQL MID	CPU (Range)	Max RAM	Video	HP NIC	ACPI	BIOS/ Date
E50	TBD	Uni-Pentium II (300-330)	384M	CL 5446	D5013	No	4.05.08 PM 7/2/99
E60	16993	Dual Pentium III (450-550)	512M	ATIRage IIC AGP	D5013	Yes	4.06.21 PN 9/16/99
E800	TBD	Dual Pentium III (667-800)	2G	ATIRage XL PCI	D5013	yes	TBD
LCII	20008	Dual Pentium II (266-333)	512M	CL 5446	D5013	No	4.06.26 PK 8/3/99
LC3	19399	Dual Pentium II (400-550)	1G	CL 5446	D5013	No	4.06.31 PQ 8/6/99
LD Pro	TBD	Dual Pentium Pro (200)	512M	Trident 9000i	D5013	No	4.05.16 6/10/98
LH Pro	TBD	Dual Pentium Pro (200)	512M	Trident 9000i	D5013	No	4.05.16 6/10/98
LHII	20007	Dual Pentium II (266-333)	512M	Trident 9000i	D5013	No	4.05.20 PF 7/21/99
LH3	19400	Dual Pentium III (400-600)	1G	CL 5446	D5013	No	4.06.36 PL 8/6/99

Model	WHQL MID	CPU (Range)	Max RAM	Video	HP NIC	ACPI	BIOS/ Date
		600)					
LH4	16859	Quad Xeon (400-550)	4G	CL 5446	D5013	Yes	4.06.27 PS 9/7/99
LPr	19401	Dual Pentium III (450-600)	1G	CL 5446	D5013	Yes	4.06.20 PR 9/7/99
LP1000r	TBD	Dual Pentium III (867-1000)	4G	ATIRage XL PCI	D5013	Yes	TBD
LP2000r	TBD	Dual Pentium III (867-1000)	4G	ATIRage XL PCI	D5013	Yes	TBD
LX Pro	20006	Quad Pentium Pro (166-200)	4G	CL 5436	D5013	No	1.00.11. CD0L 10/29/97
Lxe Pro	20006	Quad Pentium Pro (166-200)	4G	CL 5436	D5013	No	1.00.11. CD0L 10/29/97
LXr Pro	20006	Quad Pentium Pro (166-200)	4G	CL 5436	D5013	No	1.00.11. CD0L 10/29/97
LXr Pro8	20011	Eight Pentium Pro (200)	4G	CL 5436	D5013	No	2.00PB4 .0Rel6.2 0 4/14/98

Model	WHQL MID	CPU (Range)	Max RAM	Video	HP NIC	ACPI	BIOS/ Date
LXr8000	18111	Quad Xeon (400-550)	8G	CL 5446	D5013	Yes	Rel. 12 8/23/99
LXr8500*	19643	Eight Xeon (400-550)	32G	CL 5446	D5013	Yes	Rel. 6 10/6/99
LH3000	N/A	Dual Pentium III (600-667)	4G	ATIRage IIC PCI	D5013	Yes	4.06.14 PT 11/17/99
LH6000	N/A	6-way Pentium III (550)	4G	ATIRage IIC PCI	D5013	Yes	4.06.14B
LT6000r	N/A	6-way Pentium III (550)	4G	ATIRage IIC PCI	D5013	Yes	4.06.14B
LC2000	N/A	Dual Pentium III (533-733)	4G	ATIRage IIC PCI	D5013	Yes	4.06.12 PV 10/28/99
rc3100	N/A	Pentium III 2-way	4G	ATIRage XL PCI	TBD	Yes	TBD
rc4100	N/A	Pentium III 2-way	4G	ATIRage XL PCI	TBD	Yes	TBD
tc3100	N/A	Pentium III 2-way	4G	ATIRage XL PCI	TBD	Yes	TBD
tc4100	N/A	Pentium III 2-way	4G	ATIRage XL PCI	TBD	Yes	TBD

Model	WHQL MID	CPU (Range)	Max RAM	Video	HP NIC	ACPI	BIOS/ Date
tc6100	N/A	Xeon 2-way	16G	ATIRage XL PCI	TBD	Yes	TBD
tc7100	N/A	Xeon 4-way	16G	ATIRage XL PCI	TBD	Yes	TBD
rc7100	N/A	Xeon 4-way	16G	ATIRage XL PCI	TBD	Yes	TBD

* This system supports Windows 2000 Datacenter.

Table #7A

This table provides a list of Disk Array Adapters tested with Windows 2000.

Adapter	P/N	BIOS	Firmware	Win2K Support	Max Boot Drive Size*
NetRaid 1Si	D2140A	B.02.01	F.02.02	Yes	
NetRaid 3Si	D5955A	B.02.01	C.02.02	Yes	
NetRaid 1	D4992A	A.04.03	A.04.03	Yes (1)	8G
NeRaid	D4943A	A.04.03	A.04.03	Yes(1)	8G
LH3 Integrated	N/A	B.02.01	D.03.02	Yes	8G
LH4 Integrated	N/A	B.02.01	D.03.02	Yes	
NetRaid-4M	See Table 7C				
NetRaid-2M	See Table 7D				
NetRaid-1M	See Table 7D				
Mylex DAC	N/A	N/A	N/A	No	N/A

* There is no size limitation for non-boot drives.

(1) Must install adapter in BUS 0.

Table #7B

This table indicates Windows 2000 support for HP NetRAID disk array controllers, including, where appropriate, the recommended slot in which to install the adapter.

Model	NetRAID-1	NetRAID	NetRAID-3Si	NetRAID-1Si
LH 6000	No	No	Yes	Yes
LT 6000	No	No	Yes	Yes
LC 2000	No	No	Yes	Yes
LH 3000	No	No	Yes	Yes
LXr8000	Yes	No	Yes	Yes
LXr Pro8	Yes	Yes	Yes	Yes
LH4	Yes(1)	No	Yes	Yes
LH3	Yes(1)	Yes(1)	Yes	Yes
LPr	Yes(3)	Yes(3)	Yes	Yes
LP 1000r	No	No	No	Yes
LP 2000r	No	No	No	Yes
LC3	Yes(4)	Yes(4)	Yes	Yes
E800	No	No	Yes	Yes
E60	No	No	Yes	Yes
E50	Yes	Yes	Yes	Yes

1 = slots 7,8 only
2 = Available Q299
3 = slots 1,2 only
4 = slots 5,6 only

Table #7C

List of NetServers that support the NeRAID-4M adapter with Windows 2000.

Model	Min BIOS	Max NetRAID-4M Supported	Slotting preferences

Model	Min BIOS	Max NetRAID-4M Supported	Slotting preferences
LPr	4.06.32 PR	1	Slot 1 (the top slot) because 2-3 do not get a PCI reset during a warm reboot.
LP2000r	TBD	1	
LH4	4.06.32 PS	3	Slots 7-8 because 7-8 are 64 bit slots and 1-6 are 32 bit slots.
LXr8000	Prod 12	4	Slots 7-10 because 7-10 are 64 bit slots, 1-6 are 32 bit slots, and 1-2 are typically used for the NIC and RMC.
LXr8500	Prod 7	8	Slots 3-10 because 1-2 are typically used for the NIC and RMC.
LC2000	4.06.23 PV	2	Slots 5-6 because 5-6 are 64 bit slots, 1-4 are 32 bit slots, and 3-4 have insufficient air flow.
LH3000	4.06.24 PT	4	Slots 1-6 because 1-6 are 64 bit slots and 7-8 are 32 bit slots.
LH6000	4.06.26	7	Slots 1-8 ok
LT6000	4.06.26	2	Slots 2-6 ok. Slot 1 (the bottom slot) uses a special tray that is mechanically incompatible with the NetRAID-4M.
rc4100	TBD	TBD	TBD
tc4100	TBD	TBD	TBD
tc6100	TBD	TBD	TBD
tc7100	TBD	TBD	TBD
rc7100	TBD	TBD	TBD

Table #7D

List of NetServers that support the NeRAID-2M and 1M with Windows 2000.

Model	Min BIOS	Max NetRAID-2M Supported	Max NetRAID-1M Supported	Slotting preferences
LP 1000r	TBD	1	1	Slot 1 OK
LP 2000r	TBD	1	2	Slot 1-3 OK
LH3000	4.06.24 PT	4	4	1M not supported on slot 4.
LH6000	4.06.26	4	4	1M not supported on slot 4.
LH3	4.06.36 PL 8/6/99	4	4	All slots
LH4	4.06.27 PS 9/7/99	4	4	All slots
rc3100	TBD	TBD	TBD	TBD
rc4100	TBD	TBD	TBD	TBD
tc3100	TBD	TBD	TBD	
tc4100	TBD	TBD	TBD	TBD
tc6100	TBD	TBD	TBD	TBD
tc7100	TBD	TBD	TBD	TBD
rc7100	TBD	TBD	TBD	TBD

Appendix B. Installing TopTools Agents or Instant TopTools on Windows 2000 Server/Advanced Server

This appendix describes how to perform a TopTool Agent install and/or an Instant TopTools install on a single server. This install process is similar to the TopTools install options available when installing an operating system using HP Navigator Installation Assistant program.

- **TopTools Agents:** HP NetServers have agents installed on them in order to make them manageable. Agents enable the management technologies implemented in HP hardware devices and must be installed on the devices that are to be managed. These

agents monitor the device for specific parameters such as unused disk space, memory configuration, resource utilization, temperature, fan operation, and so forth. Additionally, through interrogation of the agents, management software like TopTools Device Manager provides OS version information, remote diagnostic capabilities, BIOS flashing capabilities, distribution of HP drivers, etc.

- **Instant TopTools:** With HP Instant TopTools and a browser, you can get the latest information about an HP Netserver. Run from a client or at the server's console, Instant TopTools allows you to view alerts for that server, its status, and the status of the devices in the server (such as memory, mass storage, system environment, power and BIOS versions. Instant TopTools does not require the HP Netserver Agent software to function. However, installing the agent software allows Instant TopTools to obtain more events that describe the state of your server's installed hardware components.

System Preparations

The first step to installing TopTools is to identify which TopTools product would be right for your server needs. If you install TopTool agents you will need TopTools Device Manager, Instant TopTools or an equivalent management program to retrieve and interpret information from the agents. Loading Instant TopTools on a system with agents will increase its management capabilities. Once you decide to install one or both TopTool products, then check to make sure your system is prepared for the TopTools installation. This document will guide you through the installation of SNMP services, TopTool Agents and Instant TopTools.

NOTE: If using DHCP the following page will shows "Obtain an IP address automatically" selected and the rest of the page is grayed out.

1. First verify that your TCP/IP networking and browser is properly installed, configured and fully operational. You can review your settings on the Internet Protocol (TCP/IP) properties screen.

2. If you need to add SNMP go to the "AddRemove Program" application and add "Management and Monitoring Tools".

3. To add SNMP services and configure them, go to the **Components Services** screen under **Administrative tools | Component Services | Services (Local) | SNMP Service**.

4. Right click "SNMP Service" and select properties.

5. Selecting properties will display the SNMP Service Properties window. The tabs that you'll need to configure are the Agent, Traps and Security tabs, as follows:

   Agent tab. All you need to fill out is the your name and location. The items checked off in the Service area are the default values. Use the " ? " help system to find out additional information on all items.

Traps tab. Here you to type or select the community name shared by the SNMP Management System you are adding as a trap destination. A community name acts as a password that is shared by one or more SNMP hosts. This agent can only send trap messages to hosts with a known community name. Community names on the traps tab are used to authenticate outgoing messages only.

This screen also lists trap destinations, which are management systems that receive notification messages from the SNMP agent acting on behalf of the specified community name. The selected SNMP Management System is sent all trap messages generated by this host.

Security tab. The SNMP Service Properties screen allows you to assign rights to the community names you've chosen. It also allows you to designate which hosts you will accept SNMP packets from.

Installation

Insert the *HP Netserver Navigator CD-ROM* into your Windows NT system's CD-ROM drive and choose "Run" from the File menu in Program Manager, or the Start menu in Windows, and enter the following:

For **TopTool Agents** enter:

```
x:\hpapps\iaa\language\nt\setup
```

For **Instant TopTools** enter:

```
x:\hpapps\ia_itt\language\nt\setup
```

Where ***x:*** is the CD-ROM drive containing the *HP NetServer Navigator CD-ROM* and ***language*** is an abbreviation for your local language (US=English, FR=French, GE=German, IT=Italian, SP=Spanish, JP=Japanese).

Follow the instructions on the screen to setup the TopTools Agents and/or the Instant TopTools product.

On-Line Information and Software Sources

Microsoft World Wide Web access: http://www.microsoft.com

HP World Wide Web access: http://www.hp.com

HP Server Online Documentation CD (included with your system): includes all HP Server documentation online