

5 Installing Power Console Plus

Power Console Plus is an object-oriented GUI utility that lets you efficiently configure, reconfigure, and monitor a large RAID array of disks locally or over a network with several servers. This is for servers that support Windows NT and 2000 and are capable of monitoring and being monitored, and for servers that support NetWare 4.x and 5.0, which can be monitored, but cannot monitor.

You can use Power Console Plus to control and monitor the status of each physical drive connected to the MegaRAID controller. You can use it to control and monitor the status of hard disk drives, tape drives, and CD-ROM drives. Power Console Plus can be executed from any workstation. It runs under Microsoft Windows NT and Windows 2000, with support for Novell NetWare.

Apart from the standard menu structure, the Power Console Plus user interface is object-oriented: the picture of an object on the screen truly represents a physical or logical object. You can right click the mouse on an object to display a set of options for the selected object.

Features

The Power Console Plus features include:

- a configuration wizard that guides you through the configuration process
 - FlexRAID functionality for seamless online expansion without interrupting server operations
 - on-the-fly RAID level migration
 - support for SAF-TE, SNMP, and SMART
 - Y2K-compliant
 - check consistency can be scheduled to constantly ensure that parity and mirrored data is written correctly
 - performance monitor
 - enclosure management to monitor temperature, power supply voltage, and fan status
 - virtual sizing for drive migration
 - ability to change logical drive write, read, and cache policies after the logical drive has been configured
 - ability to save the configuration option
 - ability to spin down physical drives before removal
 - ability to view actual current SCSI transfer rate
 - silent install, battery backup support
 - complete system monitoring capability
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Cont'd

Overview, Continued

Windows NT Users With some older firmware, you must use one logical drive if you have only one MegaRAID adapter in the host system. Most firmware requires only an attached device. If you have more than one MegaRAID adapter, make sure at least one physical drive is attached to each MegaRAID adapter before you access these MegaRAID adapters from Power Console Plus in Windows NT. You can alleviate this problem by attaching and configuring at least a non-disk SCSI device to each MegaRAID adapter. You can configure these logical drives using MegaRAID Configuration Utility.

Client System Requirements Client systems running Power Console Plus must:

- be running Windows NT
 - have an Intel Pentium or higher CPU
 - have at least 8 MB of system memory
 - have a network interface
 - have a 3.5" floppy disk drive
 - have at least 2 MB of free hard disk drive space
 - have a mouse or other pointing device
 - must be using the TCP/IP protocol
-

Components Power Console Plus consists of:

- Power Console Plus
 - the registration server
 - the RAID server
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Power Console Plus Client Any computer running Windows NT can run Power Console Plus. Running Power Console Plus allows this computer to access any RAID server that is registered in the Registration Server.

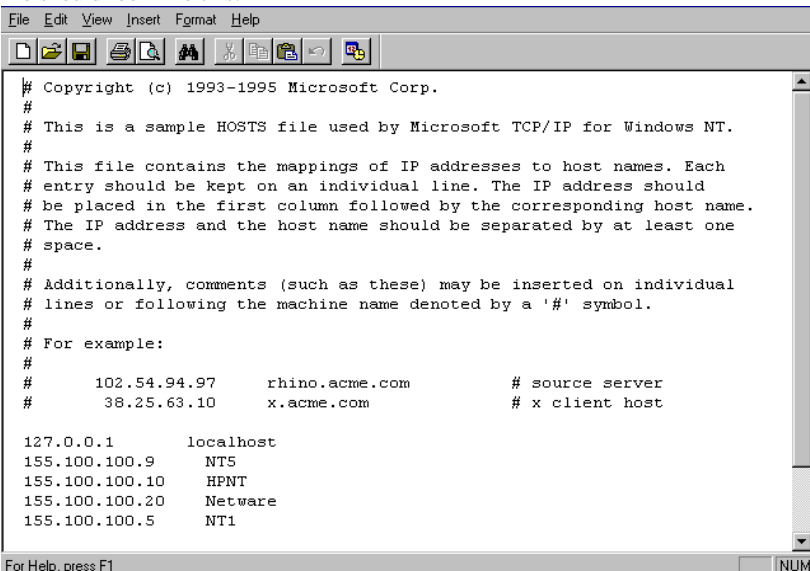
Registration Server The Registration Server contains a database of all computers that have registered as a RAID Server.

RAID Server The RAID Server software runs in any server that has one or more MegaRAID controllers and allows it to register to the Registration Server.

Installing on a Windows NT V4.x Server and Workstation

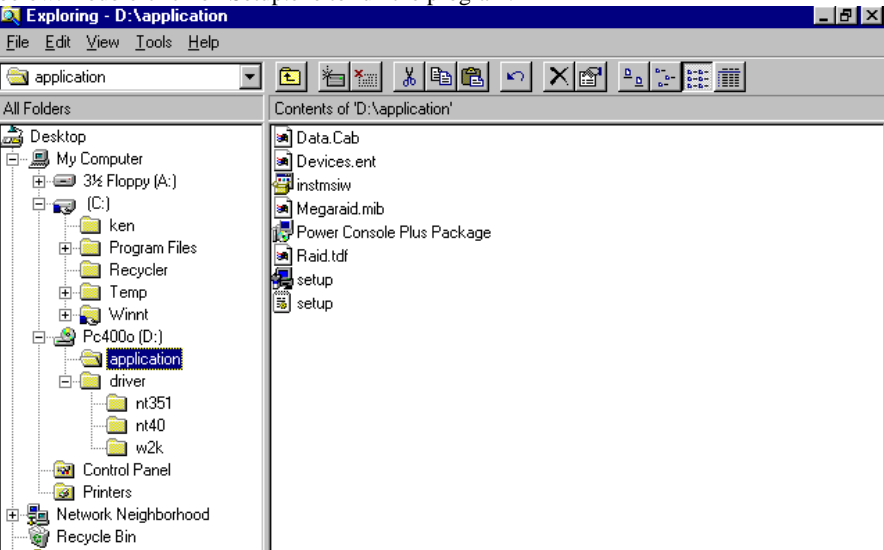
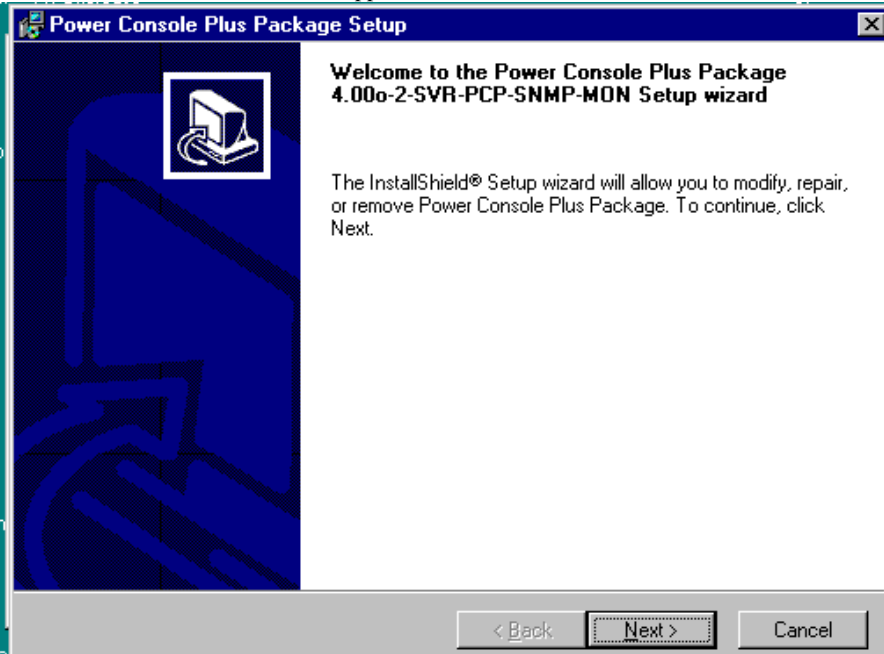
Power Console Plus can be installed and registered on a Windows NT, Windows 2000 or Novell NetWare server. See the AMI web site (www.ami.com) for additional information. Power Console Plus runs under Windows NT.

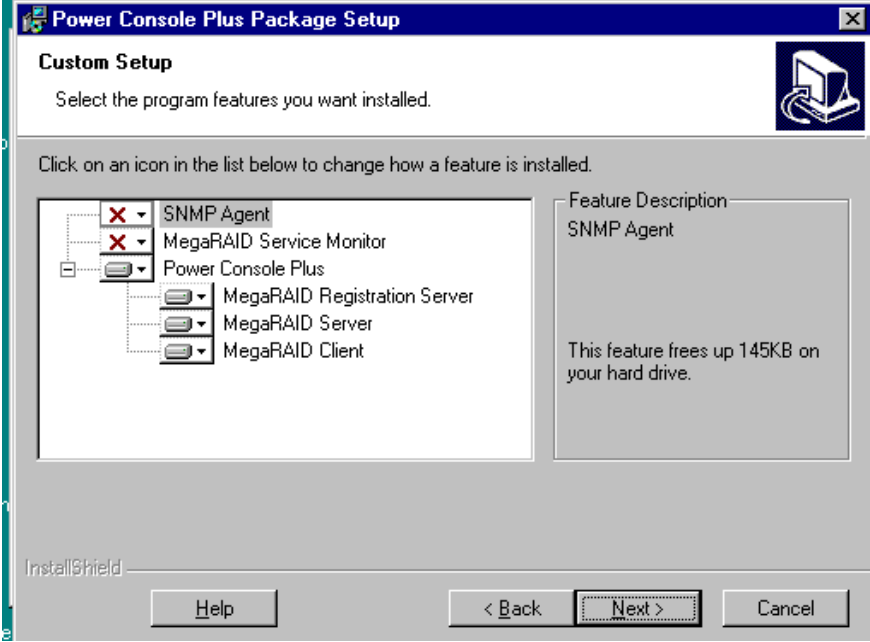
Installation Prerequisites Complete the following tasks before installing the Power Console Plus software:

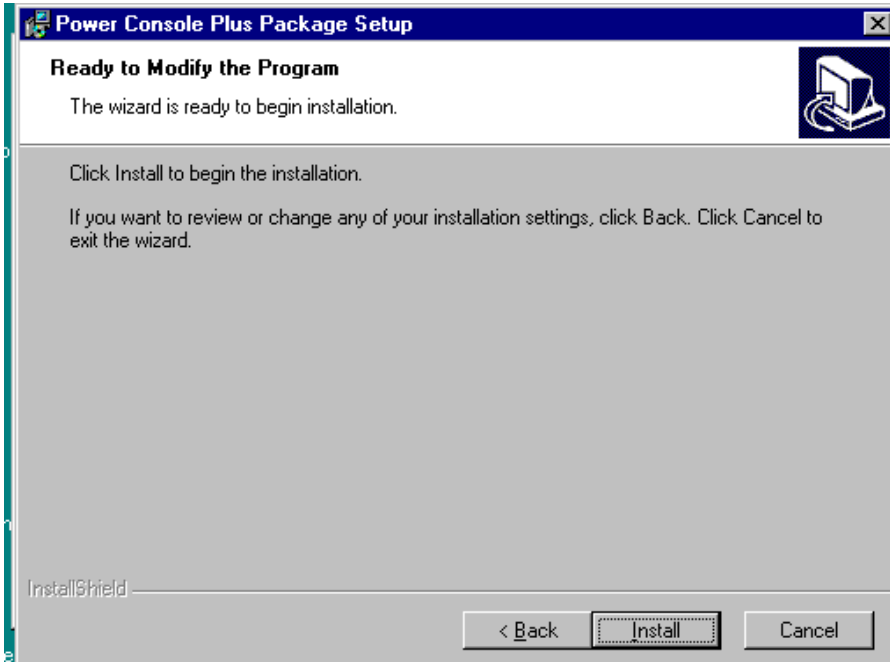
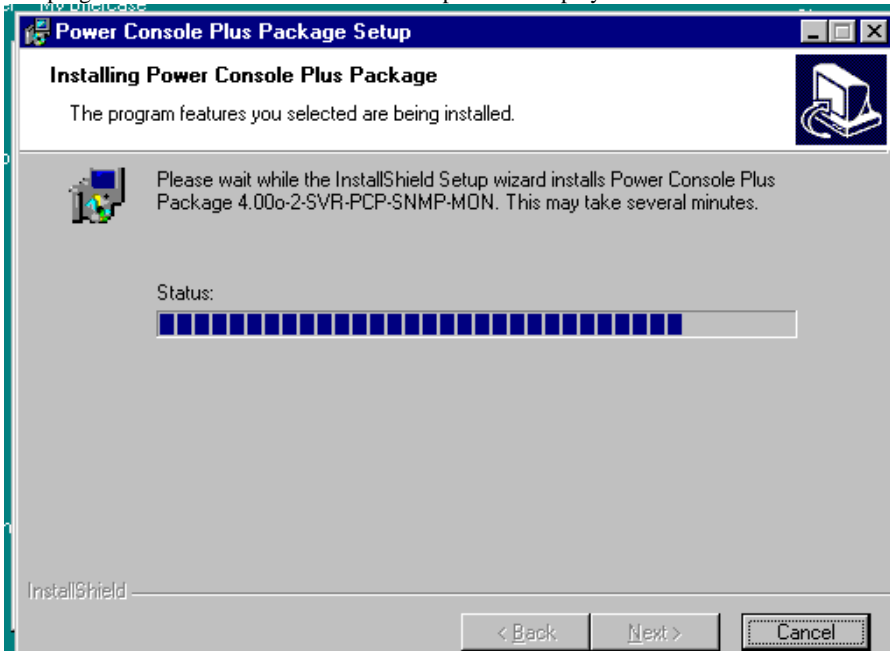
| Step | Action | | | | | | |
|---------------|---|----------|---------------|----------|---------------|---------------|---------------|
| 1 | Install the proper operating systems. | | | | | | |
| 2 | Install network cards in all computers that will need them. | | | | | | |
| 3 | Install a MegaRAID adapter card in the NT RAID server. Follow the procedures in the appropriate <i>MegaRAID Hardware Guide</i> . | | | | | | |
| 4 | Install the TCP/IP Protocol on all specified systems. | | | | | | |
| 5 | <p><i>The Power Console Plus installation process now prompts you to perform the following edit.</i> Edit the HOSTS file in c:\winnt\system32\drivers\etc. The HOSTS file should look like this:</p>  <p>The HOSTS file information varies depending on the type of installation:</p> <p style="text-align: center;">Enter the IP address and name for all MegaRAID servers including the registration server (the server you are working on).</p> <p>Press <Enter> after you type all names of the servers. If you do not, Notepad will not enter the information.</p> | | | | | | |
| 6 | <p>Specify all Sequential IP addresses for the server or servers, and the workstation. For example:</p> <table><tr><td>Server A</td><td>123.123.234.1</td></tr><tr><td>Server B</td><td>123.123.234.2</td></tr><tr><td>Workstation C</td><td>123.123.234.3</td></tr></table> <p>All specified systems must conform to the TCP/IP specification for address structures.</p> | Server A | 123.123.234.1 | Server B | 123.123.234.2 | Workstation C | 123.123.234.3 |
| Server A | 123.123.234.1 | | | | | | |
| Server B | 123.123.234.2 | | | | | | |
| Workstation C | 123.123.234.3 | | | | | | |
| 7 | Ping all systems by IP address and server name to make sure you have a proper connection. | | | | | | |

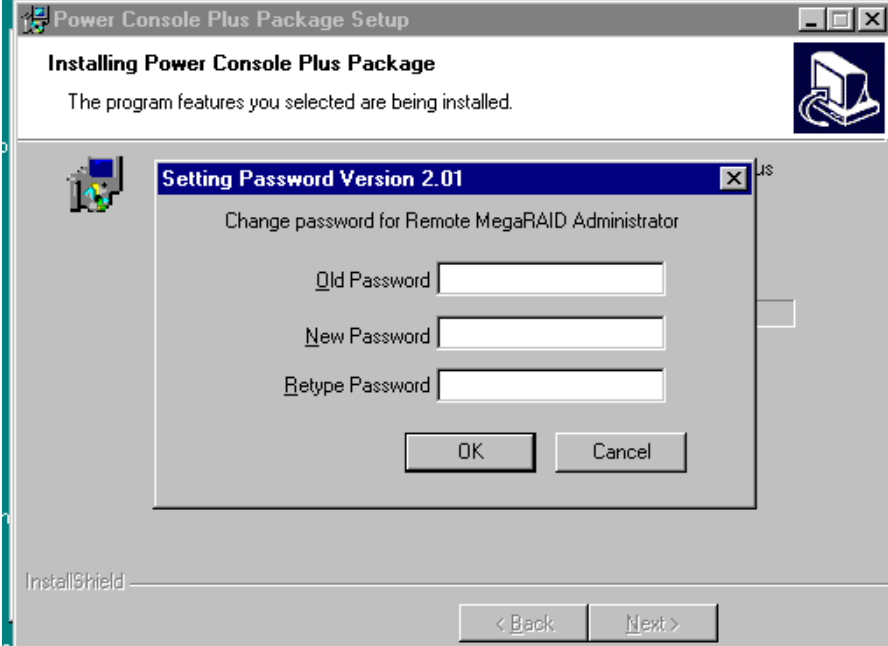
Installing on a Windows NT V4.x Server and Workstation, Continued

Installing the Power Console Plus Software

| Step | Action |
|------|---|
| 1 | <p>Insert the Power Console Plus CD in the CD-ROM drive. You can view the files in Windows Explorer. In the CD-ROM directory, select the application folder, as shown below. Double-click on Setup.exe to run the program.</p>  |
| 2 | <p>Click on Next when the first screen appears.</p>  |

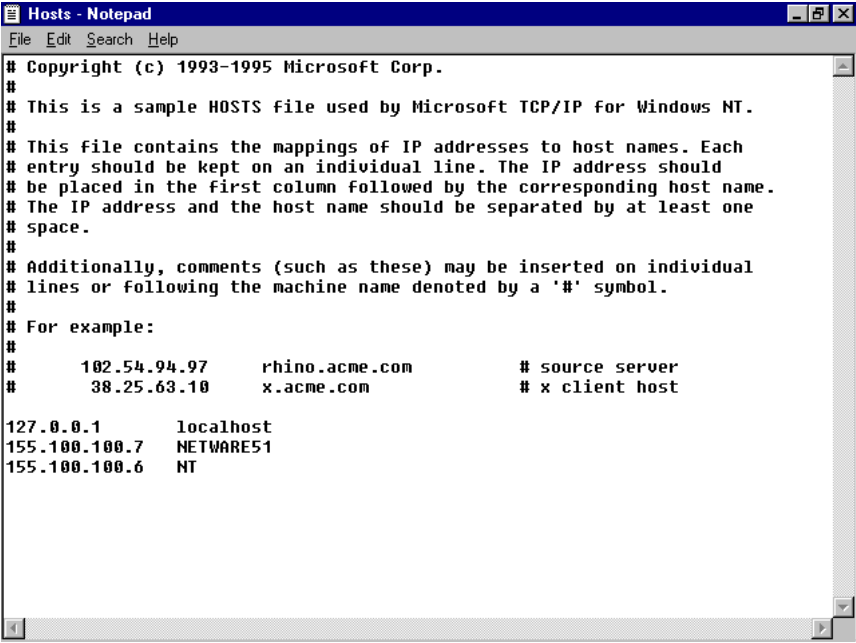
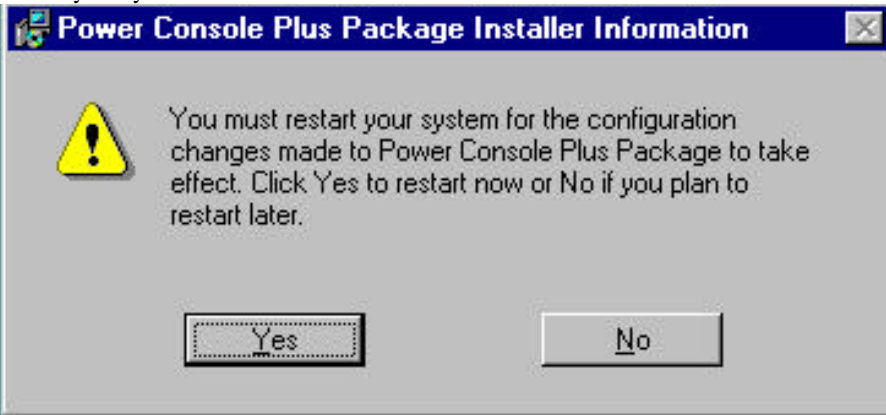
| Step | Action |
|------|---|
| 3 | <p>Type the name of the NT server and the company name. The license agreement and README screens appear. Click on Next. Choose the installation packages from the following screen. You can choose 1, 2, or all 3 packages:</p>  <p>MegaRAID Registration Server Makes the server a Registration Server.</p> <p>MegaRAID Server Allow the server to register to the Registration Server.</p> <p>MegaRAID Client Allows the server to monitor other servers with a MegaRAID adapter.</p> <p><i>Any configuration is valid. Common combinations include:</i></p> <p>MegaRAID Server only You cannot monitor any other server.</p> <p>MegaRAID Server and Client Allows you to register into the Registration server. You can monitor any other server, including the server you're currently working on.</p> <p>MegaRAID Registration Server only Allows other MegaRAID servers to register so they can be monitored by the MegaRAID client. You cannot monitor any server, including the server you're currently working on.</p> <p>MegaRAID Registration Server and Client Allows other MegaRAID servers to register so they can be monitored by the MegaRAID client. You can monitor any server, but not the server you're currently working on.</p> <p>MegaRAID Registration Server, Client, and Server Allows other MegaRAID servers to register so they can be monitored by the MegaRAID client. You can monitor any server, including the server you're currently working on.</p> <p>MegaRAID Client only Allows you to monitor any MegaRAID server. You do not have to have a RAID controller installed in this system.</p> <p>MegaRAID Sever only Allows you to register into the Registration server.</p> |

| Step | Action |
|------|---|
| 4 | <p>The rest of this table is concerned with Power Console Plus installation.</p> <p>For additional information about SNMP package installation, see page 111.</p> <p>For additional information about MegaRAID Service Monitor installation, see page 113.</p> <p>Click on Install to begin installation.</p>  |
| 5 | <p>The progress screen for the InstallShield Setup wizard displays.</p>  |

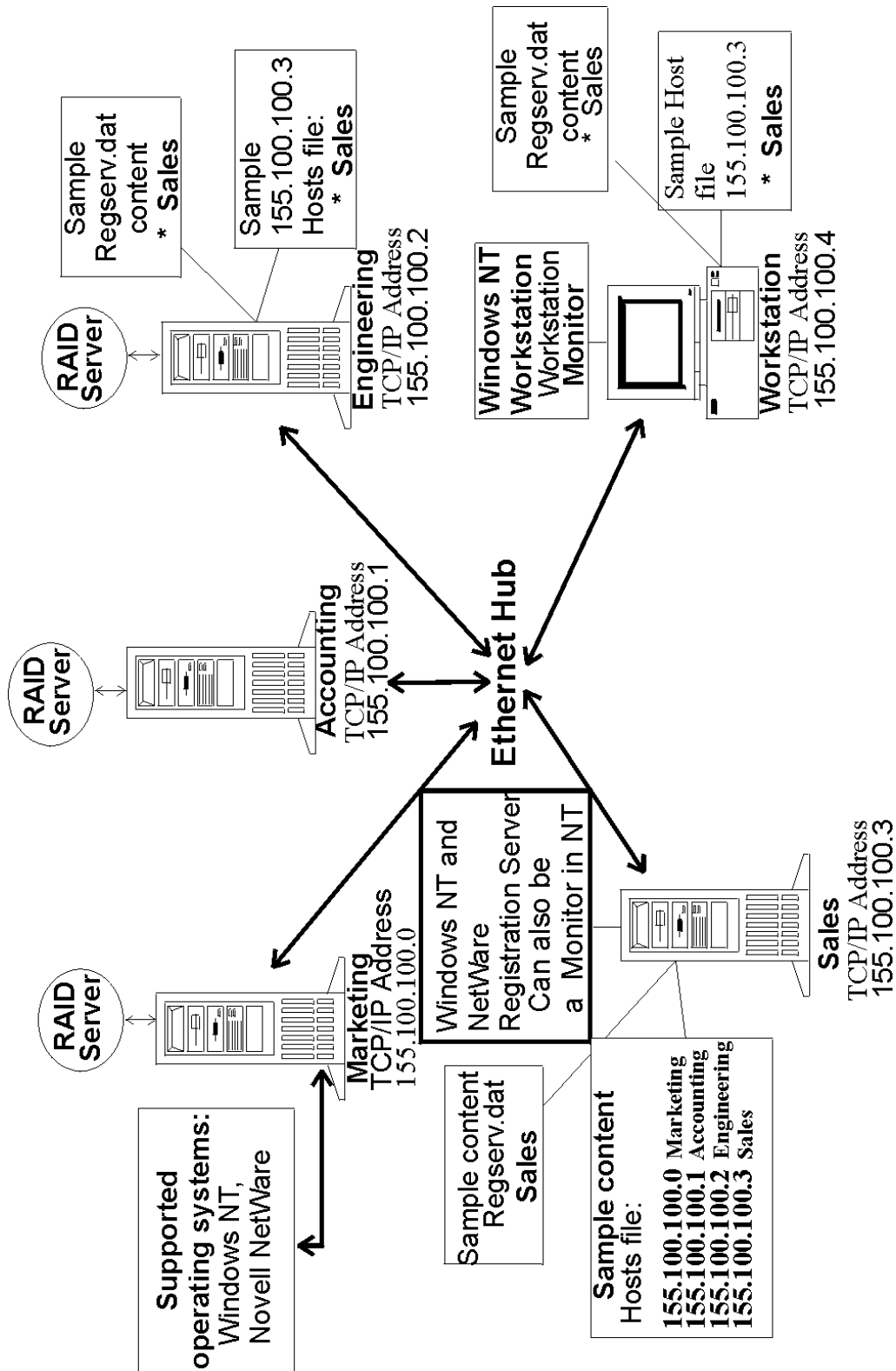
| Step | Action |
|------|--|
| | <p><i>In this example, all three components are selected. The server includes the following features:</i></p> <ul style="list-style-type: none"> the server is the primary registration server of the network the server registers to itself so it can be monitored the server can monitor other RAID servers, including itself |
| 6 | <p>Click on the Next button. Select the destination directory path. The default destination directory is C:\Program Files\MegaRAID\.</p> <p>The default Program Folder Name is MegaRAID.</p> |
| 7 | <p>The INSTALL utility creates c:\winnt\system32\drivers\etc and installs the following files in this subdirectory:</p> <p>HOSTS LMHOSTS</p> |
| 8 | <p>Set the password as prompted. Verify the password and click on the OK button.</p>  |

name, no matter what configuration you have selected, even if the Registration Server is the server you are working on.

Press <Enter> after you type the name of the Registration Server. If you do not, Notepad will not enter the information.

| Step | Action |
|------|---|
| 10 | <p>If you have not edited the HOST file yet, edit HOST in c:\winnt\system32\drivers\etc using the Notepad program. HOST should look like this:</p>  <p>The HOSTS file information varies depending on the type of installation:</p> <p>Enter the IP address and name for all MegaRAID servers including the registration server (the server you are working on).</p> <p>Press <Enter> after typing all names of the servers. If you do not, Notepad will not enter the information.</p> |
| 11 | <p>Specify all Sequential IP addresses for the server or servers, and the workstation. For example:</p> <pre> 123.123.234.1 Server A 123.123.234.2 Server A 123.123.234.3 Workstation C </pre> <p>All specified systems must conform to the TCP/IP specification for address structures.</p> |
| 12 | <p>After you enter the server name, save the file and exit. The following message displays. Reboot your system for Power Console Plus to take effect.</p>  |

Sample Power Console Plus Network Layout



Installing an AMI SNMP Agent

The following installs the AMI SNMP agent on a system running Windows NT 4.x Server and Workstation.

SNMP Installation Prerequisites You must be running Windows NT v4.x in the system where SNMP will be installed. The LAN cards must be configured with TCP/IP. Ping all IP addresses to make sure the connections are good.

Installing SNMP Services in Windows NT 4.x The following instructions install SNMP Services and verification of SNMP Services operation for Windows NT 4.x. SNMP Services must be installed before the AMI SNMP agent will work properly.

| Step | Action |
|------|--|
| 1 | Select Settings, Control Panel, and then Services from the Windows NT Start button. In Services, use the scrollbar to locate SNMP Services. |
| 2 | If SNMP TRAP SERVICES is set to –Started Automatic, go to SNMP installation on the Power Console Plus installation CD. If you do not find SNMP TRAP SERVICES listed, go to step 3. |
| 3 | From the Windows NT Start button, Select Settings, Control Panel, and then Network. Select Services from the Network workgroup. |
| 4 | Select the Add button. Scroll down and select SNMP Services. |
| 5 | Select OK. Insert the Windows NT CD as prompted. |
| 6 | After the files have transferred from the CD, select the Agent tab. Edit: Contact Name: Enter the <i>computer user name</i> Location: Enter the <i>IP address of your server</i> |
| 7 | Select the Traps tab. Edit: Community Name: Enter “PUBLIC” or desired name. Trap Destination: Enter the <i>IP address of the Server where HP Open View is installed.</i> |
| 8 | The Security Tab can remain at default. Reboot the system. |
| 9 | After reboot, go to step 1 for verification of SNMP Services installation. |

Installation of SNMP Agent

| Step | Action |
|------|---|
| 1 | Insert the first Power Console Plus CD in the CD-ROM drive. Click on Start, click on Run, and choose Browse for the CD-ROM drive. Select SETUP.EXE from Power Console Plus installation CD and click on OK. |
| 2 | Select SNMP from the menu. The SNMP agent is now installed. |

Configuring HP Open View with the AMI SNMP Agent

Complete the following procedure to configure HP Open View version D.01.00 with the AMI SNMP agent. The following instructions may not be totally accurate. See the *Hewlett Packard HP Open View Installation Guide* for additional information about adding new SNMP agents.

| Step | Action |
|------|--|
| 1 | Start the HP Open View installation from the HP CD. |
| 2 | Select –HP OpenView Work Group Node Manager. Adobe Acrobat will automatically load. Select quick install. |
| 3 | Don't worry about Gateway services unless you desire this feature. |
| 4 | After installation, run the NT Explorer. |
| 5 | Select-OVTB director from the C: root directory. |
| 6 | Select- OVFILES and edit the Devices file using NT Notepad. |
| 7 | Add the following line at the bottom of the page. Use the same syntax as that used in the other lines. Keep the text aligned in columns. "MegaRAID Controller" 1.3.6.1.4.1.3582.1.1.200 0x1331 SERVER 0x0 |
| 8 | Start HP OpenView. |
| 9 | Select Options from the menu bar. Select Customize Traps. |
| 10 | Insert the Power Console Plus CD in CD-ROM drive. |
| 11 | Highlight MegaRAID Controller under Device Class. If it is not there, add it. It should appear if you entered the information correctly in step 7. |
| 12 | Select Load and add RAID.TDF. This is the TRAP information file for MegaRAID. |
| 13 | Next add the MIB file. |
| 14 | Select Control, then SNMP Manager, and then Manage Database from the menu bar. |
| 15 | Insert then Power Console Plus CDin drive A: |
| 16 | Select –Import A: |
| 17 | Select- MegaRAID.MIB. Click on OK. |
| 18 | Highlight MegaRAID.MIB in the available column and add it to the Database column. Do not remove RFC1213.MIB. |
| 19 | To get information from the MegaRAID Controller, select Control, then SNMP Manager, and then Define Query from the HP Open View menu bar. |
| 20 | Enter the IP Address of the server you want to get information from. |
| 21 | Find MegaRAID.MIB under Variables> Available. |
| 22 | Depending on the version of HP OpenView you have, the file could be in: Iso>org>dod>internet>private>enterprise>ami>megaraid>megaraidmib |
| 23 | Select the information you wish to get and select PERFORM. |

MegaRAID Service Monitor

The MegaRAID Service Monitor Program is a Windows NT Service Process. The monitor program tracks status changes for hardware devices. The monitor program runs in the background. It polls the status of the resources connected to the MegaRAID adapters every 10 to 15 seconds.

The monitor program, MegaService Monitor, can be started automatically the same time Windows NT starts or you can start it manually after you log into Windows NT. If installed, this program logs peripheral device activities and status changes to Event Viewer. Event Viewer logs changes whether Power Console Plus is running or not. The changes are also stored in View Log, which records changes only when Power Console Plus is running. Status changes are stored in the MEGARAID.LOG file.

This filename could be different if the system has been customized. The contents of the displayable activity log include all status changes and device activities.

Contents The filename for the MegaService Monitor is:

- MEGASERV.EXE
-

Installation Installation is done through Installshield.

| Step | Action |
|------|---|
| 1 | Insert the first Power Console Plus CD in the CD-ROM drive. Click on Start, click on Run, and choose Browse for the CD-ROM. Select SETUP.EXE from Power Console Plus installation CD and click on OK. |
| 2 | Select MegaRAID Service Monitor from the menu. The MegaRAID Service Monitor is now installed. |

Starting the Monitor Program with Windows NT The monitor program is a service; it can be started automatically when set to Automatic in services. Automatic is the default setting. Go to the Windows NT DOS shell. MEGACTRL.EXE can be in any path. Type

MEGACTRL -START

and press <Enter>.

Refer to Appendix A, "MegaRAID Service Monitor Program", for more information.

Installing and Registering Power Console Plus Components in a NetWare Server 4.x

TCP/IP must be configured and operational before you begin the following procedure.

Important

The process of installing the NetWare RAID and Registration Server components overwrites RPCBSTUB.NLM in the SYS:SYSTEM directory. In servers running Novell NetWare 4.1xs, this file is a Read-Only file, so you must first change the file attribute to Read-Write before beginning installation.

| Step | Action |
|------|--|
| 1 | Insert the Power Console Plus installation CD in the CD-ROM drive. From the NetWare prompt, type: LOAD X:RAIDINST.NLM (<i>where X is the CD-ROM drive letter</i>) and press <Enter> to load the following files: RAIDSERV.NLM REG_SERV.NLM REG_MAIN.NLM |
| 2 | Select Install Package. If you are installing this package to a registration server, select YES when prompted. If there is another server on the network that is serving as the registration server, select NO. The files will be copied to the Novell server. |
| 3 | Type the password when prompted. Verify the password when prompted. |

Edit the Hosts File for a RAID Server Use the following procedure if installing Power Console Plus on a server that is not a registration server.

| Step | Action |
|------|---|
| 1 | Type LOAD EDIT at the NetWare prompt and press <Enter>. |
| 2 | Press the <Ins> key and select SYS volume. Select the ETC directory. Select the Hosts file and press <Enter>. |
| 3 | Add the TCP/IP address and name of the registration server. |

Cont'd

Installing and Registering Power Console Plus Components in a NetWare Server, Continued

Edit the Hosts File for a RAID Registration Server Use the following procedure if installing Power Console Plus on a server that is the registration server.

| Step | Action |
|------|---|
| 1 | Type LOAD EDIT at the NetWare prompt and press <Enter>. |
| 2 | Press the <Ins> key and select SYS volume. Select the ETC directory. Select the Hosts file and press <Enter>. |
| 3 | Add the TCP/IP addresses and names of all servers that are registering into the registration server. |
| 4 | Add the TCP/IP address and name of the registration server (the server you are currently working on.) |

Edit REGSERV.DAT for a RAID Server or Registration Server

| Step | Action |
|------|---|
| 1 | Type LOAD EDIT at the NetWare prompt and press <Enter>. |
| 2 | Press the <Ins> key and select SYS volume. Select the ETC directory. Select the REGSERV.DAT file and press <Enter>. |
| 3 | Add the name of the registration server (the server you are currently working on.) |

De-registering and Re-registering under Power Console Plus

If the registration server fails or is shut down, the other RAID servers or clients must log back into the registration server after the registration server has been restored to an online condition. RAID servers can register into the registration servers without resetting. The online command instructions for registering and de-registering under each operating system are:

| Operating System | De-registering | Re-registering |
|------------------------|---|---|
| Windows NT 3.x and 4.x | Select RAID Server on the taskbar using a right mouse click and select CLOSE. | Execute MegaRAID Server from the MegaRAID Console menu. |
| Novell NetWare | Type UNLOAD RAIDSERV at the console prompt and press <Enter>. | Type LOAD RAIDSERV at the console prompt and press <Enter>. |
