

Agilent System Protocol Tester

Installation Guide



Agilent Technologies

Notices

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Installation guides

You can find the installation guides for different components of the product on the product CD. Agilent recommends you to do not switch on the instrument before you have understood all the applicable installation instructions and have met all the installation prerequisites.

Where to find more information

You can find more information about System Protocol Tester from the following link:

<http://www.agilent.com/find/spt>

You can also look for search a local contact for assistance on the following link:

<http://www.http/agilent/find/assist>

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Indicates that antistatic precautions should be taken.



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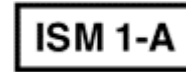
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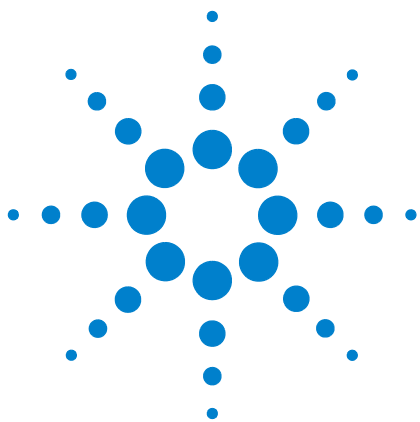
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1 System Requirements

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The System Protocol Tester platform comprises various software components that are categorized into two broad categories: Controller and Client. You can install these software components on a single PC or on multiple PCs. In the first case, both the Controller and Client software are installed on the same PC. In the latter case, the Controller software is installed on the Controller (a.k.a *Server*) PC and the Client software is installed on the Client PC.

In this chapter, you will learn about the installation requirements that you need to ensure before starting installing System Protocol Tester on the Controller PC and the Client PC.



About the Installation Requirements

Prior to starting with the installation process, ensure that all the system requirements to install the software components of the System Protocol Tester platform are in place.

In the following sections, you will learn about the requirements of the Controller and Client PCs.

Controller PC Requirements

On the Controller PC, you should ensure that:

- Windows 2000 (with Service Pack 3) or Windows XP (with Service Pack 2) operating system is installed.
- At least 256 MB RAM is installed.

For better performance, Agilent recommends you to install 512 MB RAM or higher.

- One 100BaseT LAN interface is installed.

Agilent recommends to install two 100BaseT LAN interfaces for concurrent access to the corporate network or other clients.

- At least 500 MB free disk space is available on the C drive.

Client PC Requirements

On the Client PC, you should ensure that:

- Windows 2000 (with Service Pack 3) or Windows XP (with Service Pack 2) operating system is installed.
- At least 256 MB RAM is installed.

For better performance, Agilent recommends you to install 512 MB RAM or higher.

- One 100BaseT LAN interface is installed.
- At least 500 MB free disk space is available on the C drive.
- Microsoft .NET Framework 1.1 is installed.

NOTE

If you do not have Microsoft .NET Framework 1.1, you can find it on the installation CD.



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Once all the system requirements are in place, you need to start setting up the hardware for the System Protocol Tester platform. This requires you to set up the I/O modules, set up the chassis, and establish a physical connection between the Controller PC and the chassis.



Setting Up the I/O Modules

To set up various I/O modules, you need to know how to attach as well as remove them to and from the chassis.

How to Attach an I/O Module to the Chassis

Figure 1 shows the Chassis with an empty slot. The following procedure shows you how to attach an I/O module to the chassis.

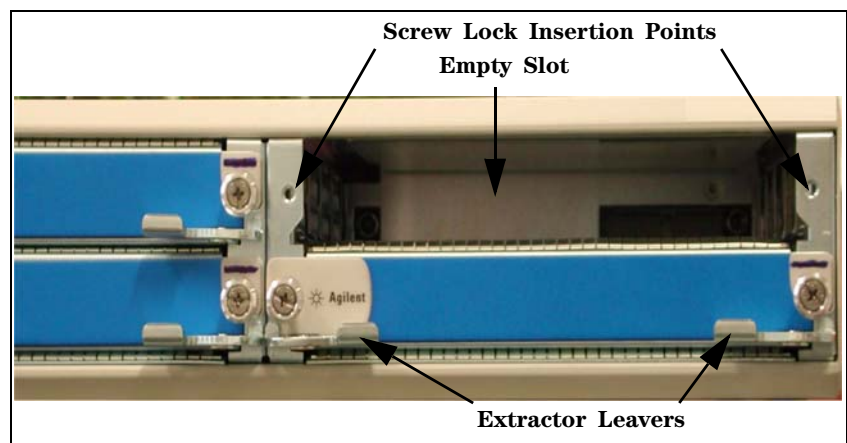


Figure 1 Chassis with an Empty Slot

To attach an I/O module to the chassis

- 1 Insert the I/O module inside the empty slot and push it to adjust it inside the empty slot.
- 2 Tighten the screw locks of the I/O module.

The I/O module is now attached to the chassis.

How to Remove an I/O Module from the Chassis

Figure 2 shows the Chassis with all I/O modules attached to it. The following procedure shows you how to remove an I/O module from the chassis.

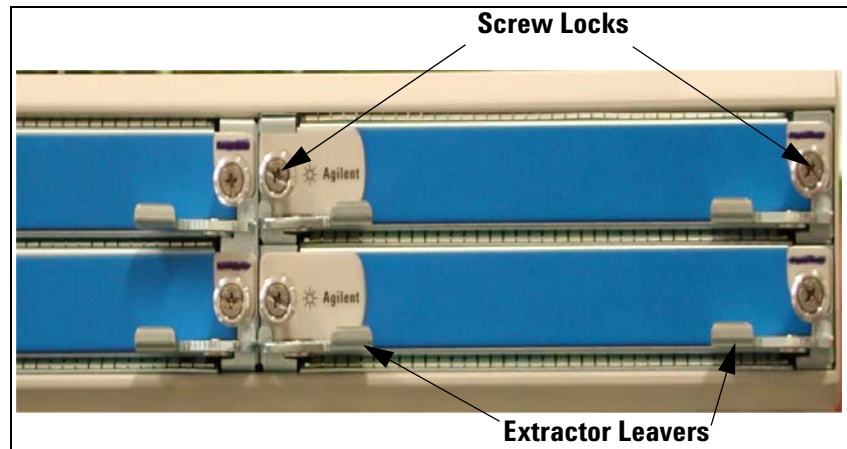


Figure 2 Chassis with I/O Modules

To remove an I/O Module from the Chassis

- 1 Unscrew the screw locks.
- 2 Pull the extractor levers outside the chassis.
- 3 Pull out the I/O module to remove it from the chassis.

Once you have removed the I/O module from the chassis, hold it by the front panel and metal case, and place it on a hard and flat surface.

WARNING

Do not directly touch any component on the I/O module. It may be hot.

CAUTION

Components on the I/O module are sensitive to the static electricity. Therefore, take necessary anti-static precautions, such as wear a grounded wrist strap, to minimize the possibility of electrostatic damage. Also, you should not operate a chassis with empty slots. Fill empty slots with blanking plates to ensure correct operation of the chassis.

Setting Up the Chassis

There are two types of chassis: the two-slot chassis and the four-slot chassis. You may require to use one or both types of chassis. You also require to connect the chassis to the Controller PC to establish a two-way communication link between the chassis and the Controller PC.

How to set up multiple chassis

A single chassis is set when you are done setting up the I/O modules in it. However, to set multiple chassis, you need to arrange them properly and ensure proper interconnections between them.

NOTE

In the multiple chassis arrangement, the distance between the chassis position and the device under test (DUT) is limited by the length of the connector/probe cable.

To set up multiple chassis

- 1 Arrange one chassis over another to form a stack of chassis. To do this:
 - a Insert the rubber feet at the bottom of the four-slot chassis. These rubber feet come as accessories with a four-slot chassis.
 - b Create a pile of the chassis, as shown in [Figure 3](#).

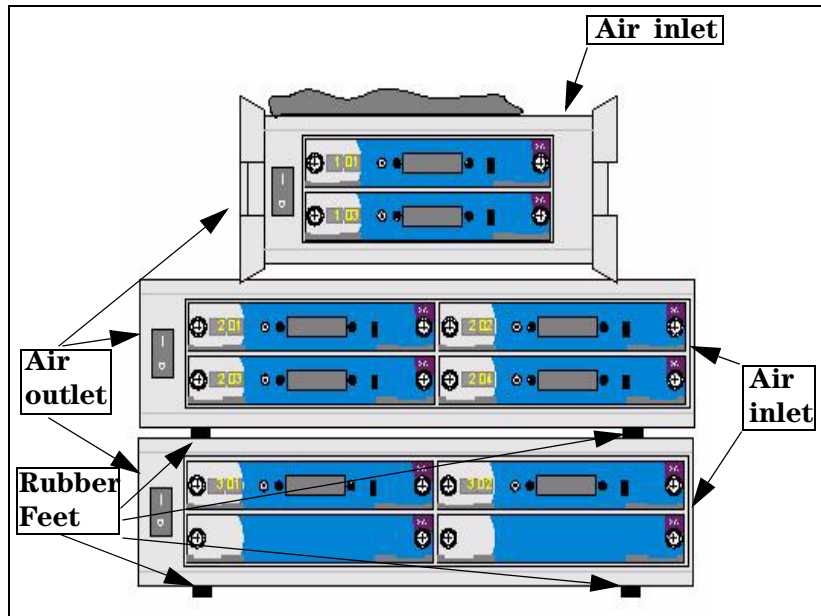


Figure 3 Pile of Chassis

NOTE

You can also mount the four-slot chassis in a standard 19-inch rack. Their accessories include two mounting brackets, screws, and clip-on hexnuts to attach them to the front posts. The rear posts of four-slot chassis are not used.

CAUTION

All chassis have ventilation holes. Do not block these holes while setting up or mounting chassis. Instead, leave at least the 50 mm (2 inches) gap free around all ventilation holes to protect the device from overheating.

- 2 Select the chassis you want to use as the *master chassis*.

- 3 Connect the master chassis with the slave chassis using the *sync* cable.

The sync cable and the sync ports are color-coded, such as the *pink* color represents *Sync OUT* and the *green* color represents *Sync IN*.

Ensure that all the chassis, connected to a single controller PC, are properly interconnected using sync cables. This allows proper enumeration and synchronization of modules. The operation fails if any two or more chassis are not interconnected

Figure 4 shows the interconnection between the master chassis and the slave chassis. Here, lower chassis is the master.

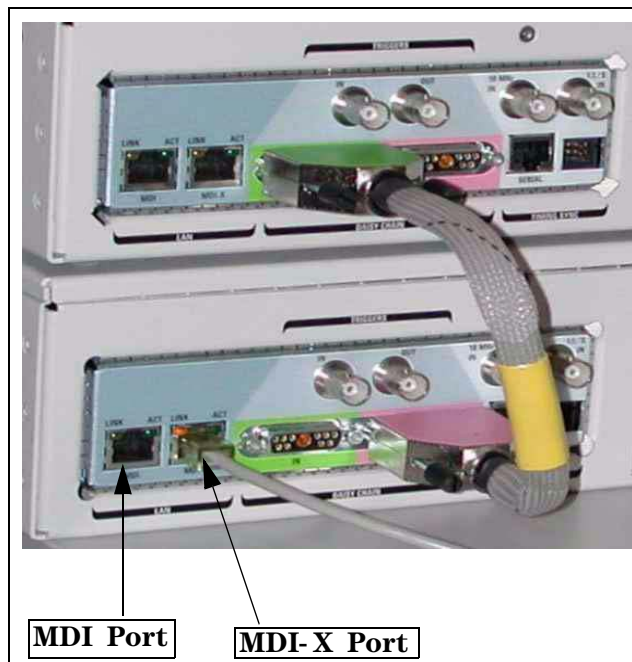


Figure 4 Interconnection between the Master and Slave Chassis

- 4 All chassis connected to a single controller PC need interconnection with the sync cables to allow proper enumeration and synchronization of modules. Operation will fail if any 2 or more chassis are not interconnected
- 5 Connect the LAN ports (MDI and MDI-X) of the chassis using the *Straight-Through* LAN cables to daisy-chain them starting from the MDI port of the master chassis to the MDI-X port of the slave chassis.

- 6 Connect all the chassis to the main power.

WARNING

Do not block the access to the power cord or the power switch. This helps you to immediately disconnect the power supply in case of emergency.

How to connect a chassis to the Controller PC

Once you are done with setting up multiple chassis, you can connect the master chassis to the Controller PC. You can use the following arrangements to connect the master chassis to the Controller PC:

- You can directly connect the Controller PC, which has only one LAN interface, to the chassis. In this arrangement, the Controller PC is connected only to the chassis and not to the network.

The advantage of this arrangement is that you can set up a test environment easily at different places. For example, you can use a mobile instrument, such as laptop, as Controller PC and connect it directly to the chassis.

- You can use a Controller PC, which has two LAN interfaces: one for the corporate LAN and the other for the private LAN. In this arrangement, connect the chassis to the Controller PC through the private LAN.

The advantage of this arrangement is that you can access the Controller PC from anywhere within the corporate LAN. For example, multiple Client PCs can access the Controller PC through the corporate LAN.

NOTE

The two-slot chassis and the four-slot chassis have the same connector assembly at the rear.

To connect the master chassis to the Controller PC

- Connect the MDI port of the master chassis to the Controller PC using the standard LAN cable.

2 Setting Up the Hardware



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Once you have set up the hardware, you can start installing the software components that come with the installation CD of the System Protocol Tester platform.

If you are planning to install these software on a single PC, then you first need to run the installation file. After this, you need to configure the Dynamic Host Configuration Protocol (DHCP) service on your Windows operating system.

However, if you are planning to install these software on multiple PCs, then you first need to configure the Controller PC to set up the FTP service, and to modify the firewall security and the DCOM server. After this, you can run the installation file and configure the DHCP service.



Configuring the Controller PC

Configuring the Controller PC is required to enable communication between the Controller and Client PCs for data interchange.

To configure the Controller PC, you need to set up the FTP service, and configure the firewall service and the DCOM server.

NOTE

You do not have to configure the Client PC if you have planned to install both the Controller and Client software on a single PC.

Setting Up the FTP

In the Windows operating systems, FTP is a part of Internet Information Services (IIS). On the Controller PC, you need to install and enable the FTP service to download firmware for various test modules.

To install FTP

- 1 Click **Start > Settings > Control Panel**.

The Control Panel window appears.

- 2 Double-click the **Add/Remove Programs** icon.

The Add/Remove Programs window appears.

- 3 Click the **Add/Remove Windows Components** button.

The Windows Components Wizard dialog box appears.

- 4 Select the **Internet Information Services (IIS)** check box in the Components list box.

- 5 Click **Details**.

The Internet Information Services (IIS) dialog box appears.

- 6 Select the **File Transfer Protocol (FTP) Server** check box in the Subcomponents of Internet Information Services (IIS) list box.

This automatically selects the **Common Files** and **Internet Information Services Snap-In** check boxes.

- 7 Click **OK**.

This saves the changes you made and closes the Internet Information Services (IIS) dialog box.

- 8 Click **Next** to install IIS.
- 9 Click **Finish** to complete the installation process.

To Enable FTP

- 1 Click **Start > Settings > Control Panel**.

The Control Panel window appears.

- 2 Double-click the **Administrative Tools** icon.

The **Administrative Tools** window appears.

- 3 Double-click the **Services** icon.

The **Services** window appears.

- 4 Select the **FTP Publishing Service** service from the Name column.
- 5 Select **Action > Start** to enable FTP.

Setting Up the Firewall

On the Controller PC, you need to configure firewall to allow the DHCP server to assign IP addresses to the serial I/O modules at the time when they load.

Windows XP (with Service Pack 2) provides a default active firewall. You only need to configure it as per your requirements. However, if you are using Windows 2000, then you have to install and configure firewall as per your requirements.

To configure firewall on Windows XP

- 1 Click **Start > Settings > Control Panel**.

The Control Panel window appears.

- 2 Double-click the **Windows Firewall** icon.

The Windows Firewall dialog box appears.

- 3 Click the **Exceptions** tab.
- 4 Click **Add Programs**.

The **Add a Program** dialog box appears.

- 5 Select **Protocol Analyzer** from the **Programs** list box.

- 6 Click **OK**.
- 7 Repeat steps 4 to 6 for Protocol Exerciser.
- 8 Click **OK**.

Configuring DCOM

You need to configure DCOM to allow the Client software to communicate with the Controller software.

To configure the DCOM server on Windows XP

- 1 Click **Start > Settings > Control Panel**.

The Control Panel window appears.

- 2 Double-click the **Administrative Tools** icon.

The Administrative Tools window appears.

- 3 Double-click the **Component Services** icon.

The Component Services window appears.

- 4 Select the **Component Services** icon under **Console Root**.

- 5 Click the **Configure My Computer** icon on the toolbar.

The My Computer dialog box appears.

- 6 Select the **COM Security** tab.

- 7 Modify access permissions to allow remote access to everyone.

To allow remote access to everyone:

- a Click **Edit Limits**. The Access Permission dialog box appears.
- b Select **Everyone** in the **Group or user names** list box.
- c Select the **Allow** check box for the **Remote Access** option in the **Permissions for Everyone** list box.
- d Click **OK**.
- e Click **Edit Default**. The Access Permission dialog box appears.
- f Repeat steps b to d.

- 8 Modify launch and activation permissions to allow remote launch and remote activation to everyone.

To allow launch and activation permissions to everyone:

- a Click **Edit Limits**. The Access Permission dialog box appears.
 - b Select **Everyone** in the **Group or user names** list box.
 - c Select the **Allow** check box for the **Remote Launch** and **Remote Activation** options in the **Permissions for Everyone** list box.
 - d Click **OK**.
 - e Click **Edit Default**. The Access Permission dialog box displays.
 - f Repeat steps b to d.
- 9 Click **OK**.

To configure the DCOM server on Windows 2000

- 1 Select **Start > Run**.

The Run dialog box appears.

- 2 Type in `dcomcnfg` in the **Open** editable drop-down list.
- 3 Click **OK**.

The Distributed COM Configuration Properties dialog box appears.

- 4 Click the **Application** tab.
- 5 Select **ResourceManager** from the Applications list box.
- 6 Click **Properties**.

The ResourceManager Properties dialog box appears.

- 7 Click the **Security** tab.
- 8 Select the **Use custom access permissions** option.
- 9 Click **Edit**.

The Register Value Permissions dialog box appears.

- 10 Click **Add**.

The Add Users and Groups dialog box appears.

- 11 Click **Search**.

The Find Account dialog box appears.

- 12 Type in the user name, to whom you want to grant access to the Controller PC, in the **Find User or Group** text box.

13 Click Search.

The search result is displayed in the Search Result list box.

14 Select the user name from the Search Result list box.

15 Click Add.

This adds the selected user name to the Add Names list box in the Add Users and Groups dialog box.

16 Select Allow Access from the Type of Access drop-down list.

17 Click OK.

This saves the user settings and adds its details in the Name list box of the Registry Value Permission dialog box.

18 Click OK.

This closes the Registry Value Permission dialog box and takes you back to the ResourceManager Properties dialog box.

19 Repeat steps 8 to 18 for the Use custom launch permissions and Use custom configuration permissions options.

20 Click Apply.

21 Click OK.

22 Repeat steps 4 to 21 for the *sessionexec* application.

23 Restart the PC.

Installing System Protocol Tester

Once you have prepared the system for installation, you can start installing System Protocol Tester on it. However, if an older version of System Protocol Tester is already installed, then you first need to uninstall it.

To Uninstall System Protocol Tester

- 1 Click **Start > Settings > Control Panel**.

The Control Panel window appears.

- 2 Double-click the **Add/Remove Programs** icon.

The Add/Remove Programs window appears.

- 3 Select **Agilent System Protocol Tester** from the **Current installed programs** list box.

- 4 Click **Change/Remove**.

The Confirm File Deletion dialog box displays.

- 5 Click **Yes**.

This uninstalls the older version of System Protocol Tester.

- 6 Restart the PC.

To Install System Protocol Tester

- 1 Insert the installation CD in the CD drive.

The InstallShield wizard appears.

If the InstallShield wizard does not appear automatically, do the followings:

- a Access the CD drive using Window Explorer.

- b Double-click the `Setup.exe` file.

- 2 The Agilent System Protocol Tester Setup window appears with the welcome screen of the installation wizard.

- 3 Click **Next**.

The Software License Agreement dialog box appears.

- 4 Click **Yes**.

The Choose installation location dialog box appears.

- 5 Specify the location where you want to install System Protocol Tester.

Do the following to specify the desired location to install System Protocol Tester:

- a Click **Browse**. The Choose Folder dialog box appears.
 - b Select the location where you want to install System Protocol Tester.
 - c Click **OK**.
- 6 Click **Next**.

The Select Components screen appears.

- 7 Select the System Protocol Tester components you want to install.
- 8 Click **Next**.

The Setup Type dialog box appears.

- 9 Do one of the followings:
 - a Select the **Client Installation** list item if you want to install only the Client software on your PC.
 - b Select the **Controller PC Installation (includes client)** list item if you want to install both the Controller and Client software on your PC.

- 10 Click **Next**.

The Install extra components dialog box appears.

- 11 Select the extra components, that you want to install with the current System Protocol Tester installation, from the **Components** list box.

- 12 Click **Next**.

The Start copying files dialog box appears.

- 13 Click **Next**.

This installs System Protocol Tester and displays the ReadMe File dialog box.

- 14 Clear the **View Readme.txt** check box if you do not want to view the Readme.txt file.

- 15 Click **Next**.

The Agilent System Test Protocol Setup complete dialog box appears.

- 16 Select **Yes, I want to restart my computer now**.
- 17 Click **Finish**.

Setting Up the DHCP Service

DHCP is a communications protocol that lets network administrators centrally manage and automate the assignment of IP addresses in a computer network. DHCP lets a network administrator supervise and distribute IP addresses from a central point and automatically sends a new IP address when a computer is plugged into a different place in the network.

The DHCP server installed with System Protocol Tester does not use the standard DHCP port. Rather, it uses the following special ports to avoid any interference with the DHCP server running within your corporate LAN:

- **7901:** This port is used to listen to the requests sent from a serial I/O module.
- **7902:** This port is used to listen to the responses/answers sent from the Controller PC.

Setting up the DHCP service for System Protocol Tester requires you to configure the LAN card and configure the DHCP service.

Configuring the LAN card

You need to configure the LAN card on the Controller PC to establish a private LAN connection between the Controller PC and the chassis.

To configure the LAN card

- 1 Click **Start > Settings > Control Panel**.

The Control Panel window appears.

- 2 Double-click the **Network and Dial-up Connections** icon.

The Network and Dial-up Connections window appears.

- 3 Select the icon that represents LAN card for private network.

- 4 Click **File > Properties**.

The Properties dialog box for the selected LAN card appears.

- 5 Click the **General** tab.

6 Select the **Internet Protocol (TCP/IP)** check box in the **Components checked are used by this connection** list box.

7 Click **Properties**.

The Internet Protocol (TCP/IP) dialog box appears.

8 Select **Use the following IP address**.

9 Type in the following information in the **IP address**, **Subnet mask**, and **Default gateway** text boxes.

IP address: 10.0.0.1

Subnet mask: 255.0.0.0

10 Click **OK**.

11 Click **OK**.

Configuring DHCP

To configure DHCP, you need to update the DHCP configuration file (`dhcpd.conf`), restart the DHCP service, and update the DHCP registry file (`dhcpd.reg`) and the system registry.

To update the DHCP configuration file

- 1 Go to the `c:\dhcpdnt` directory.
- 2 Open the `dhcpd.conf` file in a text editor.
- 3 Modify the `subnet`, `netmask`, and `range dynamic-bootp` parameters, as desired.
- 4 Save the `dhcpd.conf` file.
- 5 Close the `dhcpd.conf` file.

To restart the DHCP service

- 1 Click **Start - Settings - Control Panel**.

The Control Panel window appears.

- 2 Double-click the **Administrative Tools** icon.

The Administrative Tools window appears.

- 3 Double-click the **Services** icon.

The Services window appears.

- 4 Select **dhcpdNT** under the **Name** column.

5 Click Action > Restart.

This assigns IP addresses to the serial I/O modules according to the new settings.

To update the DHCP registry file and the system registry

- 1 Go to the `c:\dhcpdnt` directory.
- 2 Open the `dhcpd.reg` file in a text editor.
- 3 Modify the `Interface.0` parameter with the IP address of the LAN card that is connected to serial I/O modules.

The address you specify here should be within the subnet and is used as the DHCP server.

- 4 Save the `dhcpd.reg` file.
- 5 Close the `dhcpd.reg` file.
- 6 Double-click the `dhcpd.reg` file in Windows Explorer.

The Registry Editor dialog box appears asking if you want to update the system registry using the `dhcpd.reg` file.

- 7 Click **Yes**.

The Registry Editor message box displays prompting that the system registry has been successfully updated.

- 8 Click **OK**.

Updating the DHCP configuration file to use MAC addresses

If you do not want to use DHCP, then you can use MAC addresses of the serial I/O modules to assign them their IP addresses. For this, you need to update the DHCP configuration file in order to prepare it for using MAC addresses of the serial I/O modules.

To update the DHCP configuration file for using MAC addresses

- 1 Go to the `c:\dhcpdnt` directory.
- 2 Open the `dhcpd.conf` file in a text editor.

- 3** Comment out the following statements:

```
boot-unknown-clients true;

range dynamic-bootp <range of ip addresses for
modules>;
```

To comment out these statements, insert the # symbol in the beginning.

Commenting these statements disables the automatic configuration of the IP addresses.

- 4** Uncomment the following function for each serial I/O module:

```
#host <hostname for module>{

# hardware ethernet <MAC address of the
module>;

# fixed-address <ip address to be assigned to
this module>;

#}
```

- 5** Replace the *<hostname for module>* parameter with the name of the serial I/O module.
- 6** Replace the *<MAC address of the module>* parameter with the MAC address of the serial I/O module.

You can find the MAC address of the serial I/O module on its label.

- 7** Replace the *<ip address to be assigned to this module>* parameter with the IP address of the serial I/O module.

The IP address of the serial I/O module should be within the defined subnet.

- 8** Save the `dhcpd.conf` file.
- 9** Restart the DHCP service.

For information on restarting the DHCP service, refer to [To restart the DHCP service](#) on page 26.

- 10** Reboot the serial I/O modules.

The new IP addresses are assigned to the serial I/O modules.



4 Testing the Installation

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To Power Down the System 31

Once you have installed the System Protocol Tester platform, the next step is to find out how to power up and power down the system.

In this chapter, you will learn about powering up and powering down the system.



How to Power Up the System

After installing the System Protocol Tester platform, find out if it is starting up fine.

The following procedure tells you about how to power up the system.

To Power Up the System

- 1 Power up the Controller PC.

Powering up the Controller PC starts the AgtResourceManager service. This service keeps track of all the chassis that are connected to the Controller PC.

- 2 Power up the Ethernet switch or hub if you have connected the chassis through an Ethernet switch or hub.
- 3 Power up all the chassis that are connected to the Controller PC.

You can power up the chassis using the power switch, which is at the front of each chassis.

Powering up the chassis also boots the serial I/O modules that are installed in it.

- 4 View the matrix display of the serial I/O modules.

While booting, serial I/O modules display the following sequence:

```
BHW1 - BHW2 - BNET - BIP - BAPP -  
KHW1 - KHW2 - KNET - KIP - KAPP
```

After booting, serial I/O modules display their numbers along with a trail of pixel snake around the border of the display area.

NOTE

If some problem occur while booting, the code shows what stage was reached. A message may also gets scrolled across the display area.

NOTE

To find out more information on System Protocol Tester, access online help. To access online help, click **Start > Programs > Agilent System Protocol Tester > Online Help**.

How to Power Down the System

The following procedure tells you about how to power down the system.

To Power Down the System

- 1 Shut down the Controller PC.
- 2 Switch off the Controller PC.
- 3 Switch off the chassis.

4 Testing the Installation

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