

Deploying HP SIM 5.x on MSCS clusters



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Abstract

This white paper is intended to assist IT professionals in installing HP Systems Insight Manager (HP SIM) 5.x in a Microsoft Cluster Server configuration. Microsoft Windows 2003 Enterprise Server with HP SIM 5.x can be a simple way of obtaining redundancy and failover capability from this powerful management software.

Introduction

Note: This paper mentions Microsoft SQL Server 2000 Enterprise Edition throughout the text. However, HP SIM supports both Microsoft SQL Server 2000 Enterprise Edition and Microsoft SQL Server 2005 Enterprise Edition and includes steps for installing both.

HP SIM 5.x offers the ability to run in a Microsoft Windows 2003 Enterprise Server clustered environment, using Microsoft SQL Server 2000 Enterprise Edition on an HP ProLiant cluster. By installing HP SIM 5.x as a clustered application, this versatile and simple management product can also be highly available.

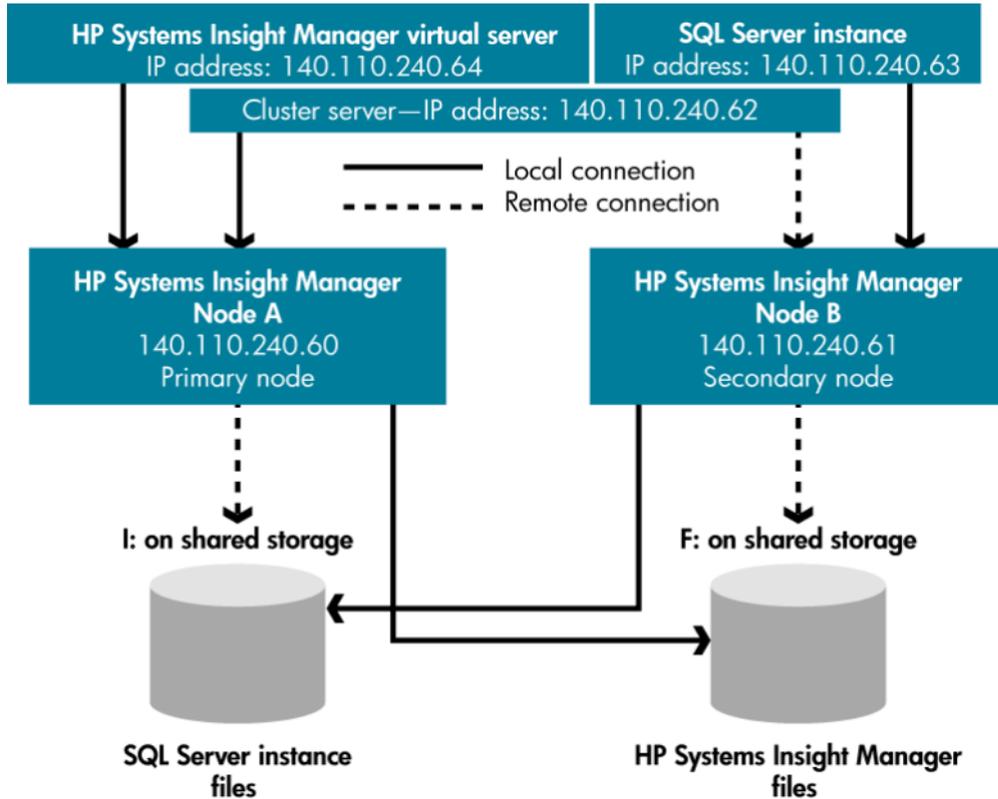
Additionally, by distributing the load for Microsoft SQL Server 2000 and HP SIM 5.x on separate systems, you can take advantage of maximum efficiency.

This white paper describes the steps to install a highly available clustered version of HP SIM 5.x on a ProLiant cluster running Microsoft Windows 2003 Enterprise Server.

The HP SIM 5.x database, the repository for all management information used by HP SIM 5.x, resides on a Microsoft SQL Server 2000 virtual server, which is also clustered.

- The relationship between the Microsoft SQL Server 2000 Enterprise Edition instances and HP SIM 5.x is shown in Figure 1.
- HP SIM 5.x connects to the database using the network name of the Microsoft SQL Server 2000 instance that owns the HP SIM 5.x database.
- A named instance of Microsoft SQL Server 2000 has a virtual server within the cluster, with a network name and an IP address for which clients connect.
- HP SIM 5.x has its own network name and IP address. Clients who want to browse to the HP SIM 5.x service can do so by using the unique name or IP address for HP SIM 5.x in the cluster.

Figure 1: The relationship between HP SIM 5.x, SQL Server 2000, and the cluster disks



Getting started

If you are installing HP SIM 5.x into an environment without a Microsoft SQL Server 2000 Enterprise Edition instance already installed, go to for steps to install a clustered named instance of Microsoft SQL Server 2000 Enterprise Edition. This named instance can host the HP SIM 5.x databases and any other production databases you might require in your environment.

If an instance of Microsoft SQL Server 2000 Enterprise Edition already exists in your cluster, you can go to for steps to install HP SIM 5.x and the process to make it highly available.

If HP SIM 4.x SP2 is running in your cluster, go to for steps to upgrade the HP SIM 4.2 SP2 to HP SIM 5.x in a cluster.

If HP Systems Insight Manager 5.0 is running in your cluster, go to [Upgrading HP SIM 5.0 to HP SIM 5.2 in a cluster environment](#) for steps to upgrade the HP SIM 5.0 to HP SIM 5.2 in a cluster.

If HP Systems Insight Manager 5.1 is running in your cluster, go to [Upgrading HP SIM 5.1 to HP SIM 5.2 in a cluster environment](#) for steps to upgrade the HP SIM 5.1 to HP SIM 5.2 in a cluster.

System infrastructure

Figure 1 details how to configure a cluster for enhanced performance after all components are installed. With this configuration, you can distribute the load by designing each virtual group to work on a separate system.

The primary system is for running the Microsoft SQL Server 2000 Enterprise Edition processor and handling remote Microsoft SQL Server commands.

The secondary system is for running the HP SIM 5.x service and all the component services it requires.

Storage configuration

Figure 1 displays the relationship between Microsoft SQL Server 2000 Enterprise Edition instances and HP SIM 5.x. At least two logical drives must be available in the shared storage if your infrastructure does not have Microsoft SQL Server installed to which you can attach the HP SIM 5.x database.

- The first shared disk contains the Microsoft SQL Server 2000 Enterprise Edition data files. For the examples discussed in this paper, the drive is I:.
- The other shared disk contains the HP SIM 5.x program files. For the example discussed in this paper, this drive is F:.

Note:

If you already practice separating your transaction log from your data files, you can enhance performance by specifying that the HP SIM 5.x transaction log be installed to a separate disk.

IP addresses

Microsoft Cluster Services (MSCS) requires that all virtual servers in a cluster have a unique static IP address. For the configuration described in this paper, five unique IP addresses are required.

1. HP SIM 5.x virtual server IP address and name.
 - Function: To act as the virtual server IP address and name for HP SIM 5.x event reception. You specify this name and address to connect to HP SIM 5.x through Microsoft Internet Explorer.
 - Suggested action: All SNMP systems that report events to HP SIM 5.x should use this IP address and name for the location of the Event Consolidator, the SNMP trap destination. For the examples discussed in this paper, the IP address is 140.110.240.64.
2. MSCS cluster IP address/name
 - Function: To act as the virtual server IP address and name for the MSCS software.
 - Suggested action: MSCS management tools would use this address to get status and reconfigure the MSCS software. For the examples discussed in this paper, the IP address is 140.110.240.62.
3. Microsoft SQL Server 2000 virtual server IP address and name
 - Function: To act as the virtual server IP address and name for the Microsoft SQL Server 2000 Enterprise Edition database software. This software is used to extract, manipulate, or back up the HP SIM 5.x database.
 - Suggested action: The HP SIM 5.x ODBC data source uses this as the location where the HP SIM 5.x DSN points. In the examples discussed in this paper, the IP address is 140.110.240.63.
4. MSCS primary system IP address and name
 - Function: To serve as the TCP/IP address and name of the specific Microsoft Windows server host.

- Suggested action: Any software that references system-specific functions uses this address to connect to this system. In the examples discussed in this paper, the IP address is 140.110.240.60.

5. MSCS secondary system IP address and name

- Function: To serve as the TCP/IP address and name of the specific Microsoft Windows server host.
- Suggested action: Any software that references system-specific functions uses this address to connect to this system. For the examples shown in this paper, the IP address is 140.110.240.61.

Target audience

It is assumed that readers of this document have an excellent understanding of the following concepts and services:

- Basic clustering concepts
- Basic Windows 2003 services
- Advanced TCP/IP and Domain Name System (DNS) network concepts

In addition, readers must be familiar with installing and administering these products:

- Microsoft Windows 2003 Enterprise Server and MSCS
- Microsoft SQL Server 2000 Enterprise Edition, particularly named instances

Hardware and software requirements

This paper discusses configuring and administering a cluster using the following products:

- A two-system HP ProLiant cluster with each system satisfying all the hardware requirements for HP SIM 5.x

Note: For best results, each system should meet the recommended memory and processor speed requirements.

- One free shared disk for the HP SIMO 5.x program files
- At least one free shared disk for Microsoft SQL Server 2000
- Microsoft Windows 2003 Enterprise Server with Service Pack 1
- Microsoft Cluster Services
- Microsoft Internet Explorer 6.0 with Service Pack 1 or later
- Simple Network Management Protocol (SNMP)
- Microsoft SQL Server 2000 Enterprise Edition with Service Pack 4
- HP SIM 5.x
- HP Management CD 7.1 or later and related ProLiant Support Packs

Setting up the failover environment

Note: This section of the paper assumes that you log into each of your cluster systems with the same administrator credentials that you are using to access all of the HP SIM 5.x and Microsoft SQL Server 2000/2005 components that are being set up.

Installing SNMP

SNMP is a prerequisite for the HP SIM 5.x installation. The following section details how to install SNMP to the cluster systems intended to host HP SIM 5.x.

1. Insert the **Microsoft Windows 2003 Enterprise Server CD** into the CD-ROM drive of the target server.
2. Select **Start>Settings>Control Panel**.
3. Click **Add/Remove Programs**.
4. Click **Add/Remove Windows Components**.
5. Select **Management and Monitoring Tools** in the **Windows Component Wizard** window.
6. Click **Details**. Then select **Simple Network Management Protocol** if it is not selected by default.
7. Click **OK**. The **Windows Component Wizard** window appears.
8. Click **Next**. Wait for the file copying to complete.
9. Click **Finish**.
10. Remove the CD.

Note: If you install SNMP after installing a Microsoft Windows operating system service pack, you must reinstall that service pack.

Note: Upgrading the HP Management Agents or adding new hardware does not change the existing agent configuration. You must manually enable any new hardware-related or cluster-related agents to activate it.

Activating the HP cluster MIB agents

The HP Cluster MIB Agents provide information about your cluster through SNMP. It is a prerequisite for the HP SIM 5.x that these MIB agents be installed on your cluster to discover and identify itself as a cluster, as well as recognizing its systems as such. If your cluster was setup following the *HP Systems Insight Manager 5.x Installation and Configuration* guides that ship with the cluster itself, the HP Management Agents and all the MIBs (including the HP Cluster MIB Agents) should already be installed on each system.

Activating the HP cluster MIB agents

1. Select **Start>Settings>Control Panel**.
2. Double-click **HP Management Agents**. The **HP Management Agents for Servers** window appears.
3. Be sure the **Services** tab page window appears.
4. Double-click **Clustering Information** from the **Inactive Agents** list box to add it to the **Active Agents** list box.

Note: You might need to scroll down to the bottom of the **Active Agents** list box to ensure and verify that **Clustering Information** has been added to the list.

5. Click **OK** to apply the update.
6. Click **Yes** to restart the management agents.

Installing the Microsoft SQL Server 2000/2005 Enterprise Edition

The Microsoft SQL Server 2000 Enterprise Edition is required for the installation of HP SIM 5.x to be highly available. If you already have an instance of Microsoft SQL Server Enterprise Edition installed, you can create the HP SIM 5.x database and attach it to the existing server.

Note: This section assumes that you already have a working two-system cluster with at least two free logical drives, one for the Microsoft SQL Server 2000/2005 data files and another for the HP SIM 5.x program files.

Installing a clustered instance of the Microsoft SQL Server 2000 Enterprise Edition

1. On the primary system, log into Microsoft Windows as a domain user with administrative rights.
2. From the **Run** menu on any system in the cluster, enter **comclust** and press **Enter**. Wait for the command to complete, and then run **comclust** on the remaining systems in the cluster. This executable sets up the Microsoft Distributed Transaction Coordinator (MSDTC), a component for use in the cluster.
3. Insert the **Microsoft SQL Server 2000 Enterprise Edition CD** into the server that currently owns all the shared disks in the cluster.

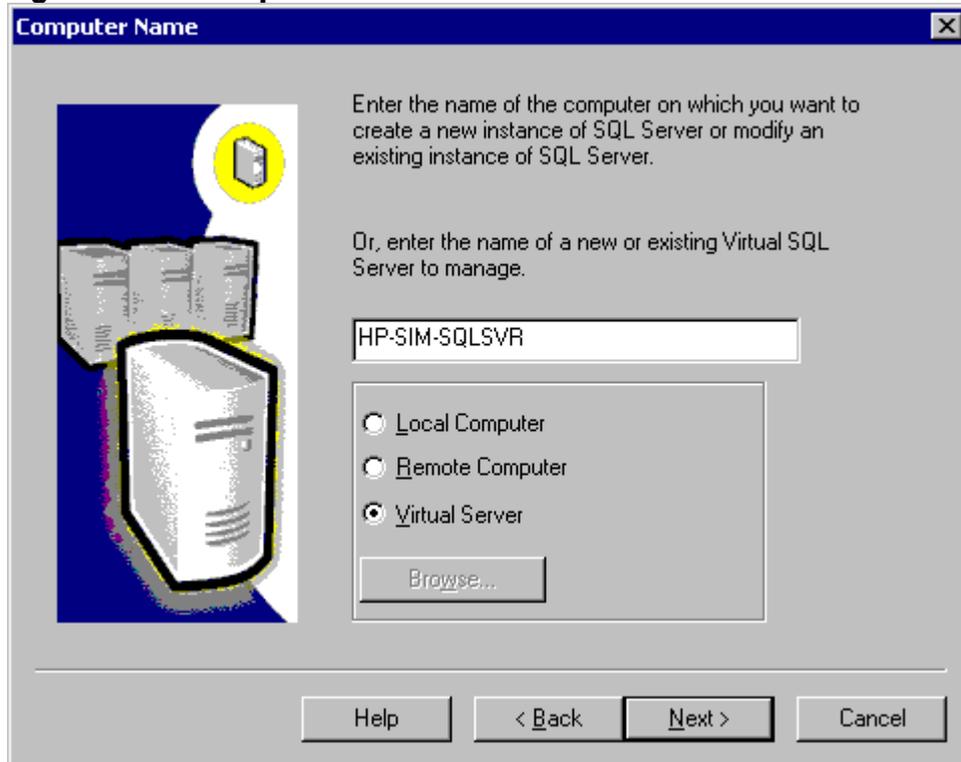
Note: This server is referred to as the primary system for the remainder of this section.

4. At the **Run** menu, enter `D:\english\ent\autorun.exe` (where D: is the driver letter of your CD-ROM).

Note: You can skip this step if the AutoRun feature is enabled on your primary system.

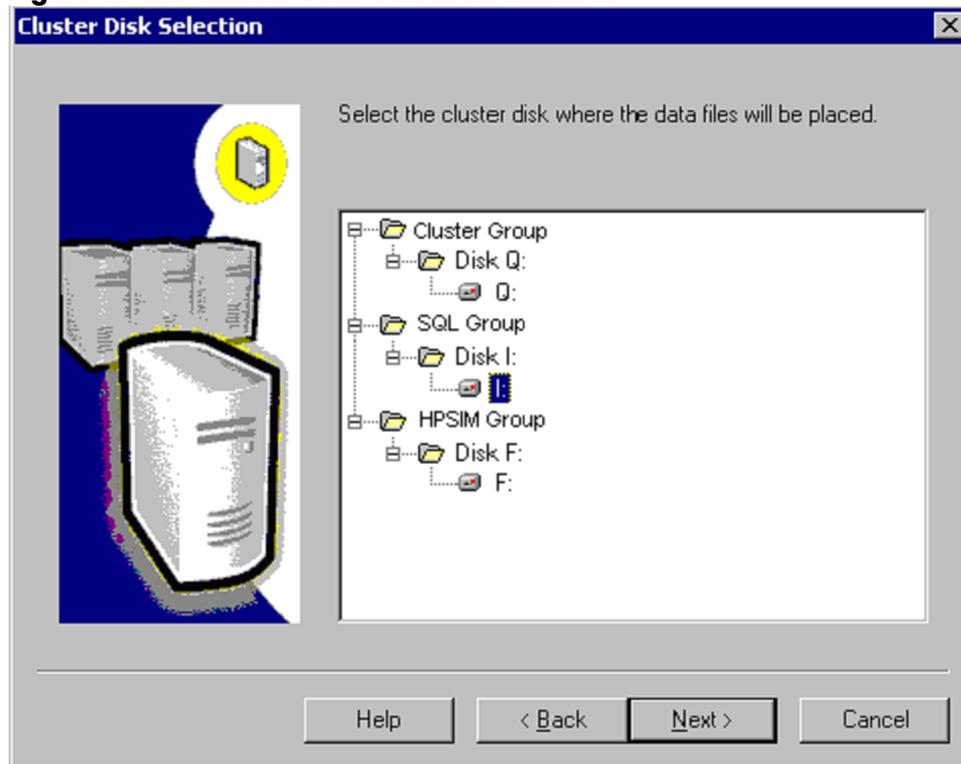
5. Select **SQL Server 2000 Components**.
6. Select **Install Database Server**. The **Welcome** window appears.
7. Click **Next**. The **Computer Name** window appears.
8. Enter the name of your new virtual server. (HP-SIM-SQLSVR is used in this example)
9. Click **Next**.

Figure 2: The Computer Name window



10. Enter user information for your company and click **Next**.
11. Review the license agreement. You must accept the license agreement before you can install Microsoft SQL Server 2000 Enterprise Edition.
12. Click **Yes** to accept the license agreement. The **Failover Clustering** window appears.
13. Enter an IP address for your new virtual server. This address must be unique. Be sure that the **public** network is selected in the **Network To Use** field.
14. Click **Next**. For this example, we are using 140.110.240.63 for the IP address in this example.
15. In the **Cluster Disk Selection** window, select the cluster disk where the Microsoft SQL Server 2000 program files is to be saved, by selecting the disk drive letter.
16. Click **Next**. The **Cluster Management** window appears.

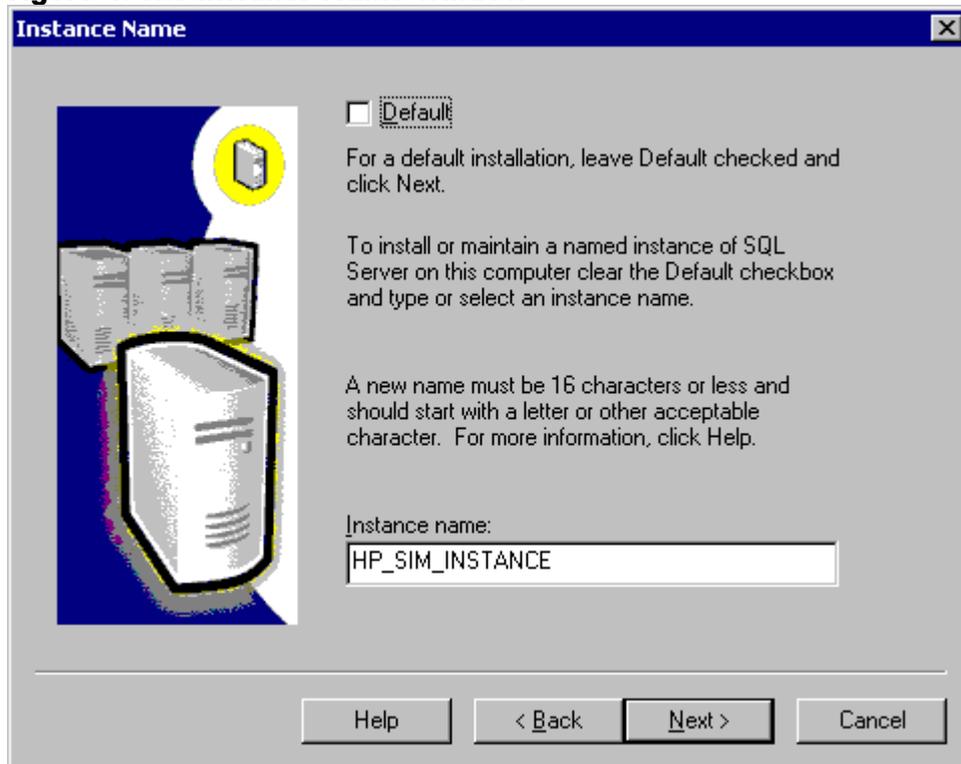
Figure 3: The Cluster Disk Selection window



Note: Do not use the cluster quorum disk, the disk containing your cluster's quorum files (in Figure 3 the quorum disk is Disk Q: in the cluster group, the first group in the list) because the quorum disk must be treated as a special resource. A warning message appears if you select the quorum disk. For more information, see the Quorum Disk Selection Warning topic in the SQL Server 2000 online books (<http://www.microsoft.com/sql/prodinfo/previousversions/books.msp> to download). When you use a small cluster, the quorum might be the only choice available. Use the quorum disk only for testing purposes or to explore failover clustering. Never use the quorum group for production purpose.

17. Be sure that the two systems or your cluster are displayed in the **Configured Systems** window.
18. Click **Next**. The **Remove Information** window appears.
19. Enter the **Username**, **Password**, and **Domain** for a user account with access to all cluster resources.
20. Click **Next**. The **Instance Name** window appears.
21. Name this instance. By default, **Default** is selected and clients connect to the server by the server name. You must deselect **Default** and enter a name in the **Instance name** field, as shown in Figure 4. Click **Next**.

Figure 4: The Instance Name window



Note: For this example, we have installed a named instance of Microsoft SQL Server 2000 virtual server called HP_SIM_INSTANCE. Clients connect to the server through the name HP-SIM-SQLSVR\HP_SIM_INSTANCE.

22. Select **Typical installation** at the **Setup Type** window. Be sure that the drive letter of the destination folder for your data files matches the drive you chose in step 14.
23. Click **Next**. The **Services Accounts** window appears. Enter the same domain account information you entered in step 1 to ensure connectivity.
24. Click **Next**. The **Authentication Mode** window appears.
25. Select **Mixed mode** for the **Authentication mode** and enter the password for the sa account. This enables the sa account and Microsoft Windows authenticated users access to the clustered virtual SQL server.
26. Click **Next**. The **Start Copying Files** window appears.
27. Click **Next**. The **Choose Licensing Mode** window appears. Choose your licensing mode and enter the number of licenses you have.
28. Click **Continue**. A message appears indicating **Setup is performing required operations on Cluster Systems. This may take a few minutes**. Following the licensing portion of setup, the installation performs required actions on the cluster systems. This process takes approximately 30 minutes. The **Setup Complete** window appears.
29. Click **Finish**. Reboot of your servers is not necessary. If required be sure to follow any reboot instructions at the end of the installation.
30. You must verify the installation of the Microsoft SQL Server 2000 Enterprise Edition resources using Cluster Administrator. Do so by opening Cluster Administrator from the **Start>Programs>Administrative Tools>Cluster Administrator** menu. You should see the

following resources in the disk group containing your Microsoft SQL Server 2000 disk: *Microsoft SQL IP Address*, *Microsoft SQL Network Name*, *Microsoft SQL Server*, *Microsoft SQL Server Agent*, *Microsoft SQL Server Full Text*. Be sure that the new Microsoft SQL Server virtual server is running by connecting to it through the Microsoft SQL Server Enterprise Manager.

Note: HP SIM 5.x requires a minimum of Service Pack 3 or later for SQL Server 2000. Update your SQL Server 2000 installation with Service Pack 3 or later before installing HP SIM 5.x. Be sure to follow any reboot instructions at the end of the service pack installation.

Installing a clustered instance of the Microsoft SQL Server 2005 Enterprise Edition

1. Insert the **Microsoft SQL 2005 Extended Edition CD** into your CD-ROM drive.

This paper assumes that the **SQL Server 2005 Installation** setup window opens automatically.

2. Click **Install**. The installation begins. The user license agreement appears.
3. Accept the license agreement and then click **Next**.
4. After the configuration check is complete on all systems, a summary appears. You should review any warning or error messages and correct any issues until there are no messages in the Summary window.
5. Click **Next**. The **Microsoft SQL server installation** window appears.
6. Click **Next**.
7. Enter registration information and enter a valid product ID.
8. Select components to install in the **Components to install** window. Available components include Database services, Create SQL server Failover Cluster, Workstation components, books Online, and development tools.
9. Click **Advanced** to ensure that **Management Tools** is selected.

Note: The **Management Tools** option is not installed by default and must be selected.

10. Select **Management Tools** from client tools in the **Feature selection** window.
11. Click **Next**. The **Instance name** window appears.
12. Select **Name Instance** and enter one instance name.

Note: Common instance name is required to install HP SIM and fail over for HP SIM.

13. Click **Next**.
14. Enter the **Virtual Server name** (SQL-SRV).
15. Click **Next**. The **Virtual Server Configuration** window appears.
16. Enter the **Virtual Server IP** address.

Note: If the system you are installing on is a two node MSCS box with a private and public network, you must select public when assigning a new public IP address to the SQL 2005 Virtual Server IP address. This can be selected in the **Network to use** field on the **Virtual Server Configuration** window.

17. Click **Next** after you have entered the **Client Access Point (CAP)** information. The **Cluster Group Selection** window appears.
18. Select the **Resource container** that was configured in the failover Cluster Management plug-in. If there is more than one storage system is located in the group, select the correct system from the drop-down list in the **Cluster Group Configuration** window.
19. Click **Next**. The **Cluster Node Configuration** window appears.

By default the installation program assumes that all nodes are part of the cluster. In this example, we have two nodes that must have SQL Server 2005 installed and participate as part of the SQL clustered instance.

Note: Be sure that in the selected nodes section, the second node of the cluster and in required node with localhost (current system) is displayed.

20. Click **Next**. The **In Service account** window appears.
21. Enter the user name and password for an account with permission to run the service. For example, the domain administrator account.
Note: Do not select the **Customize for each service account information** checkbox.
22. Enter the group names to run different services in the **Domain Groups for Clustered Services** window.
Note: You must complete the remaining steps to enter the group names for services. Follow the steps and create one group in the domain and use the same group for all the services.
23. Under the **Administrators** group, create one group named `sqlacct`s in the domain.
24. Enter the group `sqlacct`s name for all the services.
25. Click **Next**. The **Authentication mode** page appears.
26. Select **Windows authentication** mode.
27. Click **Next**. The **Collation settings** window appears.
28. By default **Dictionary order, case-sensitive, for use with 1252 Character set** is selected. If not, be sure to select the options.
29. Click **Next** in the **Error and send Report Settings** window. The **Ready to Install** window appears.
30. Verify that all selected components are displayed and then click **Install**. The **Set Progress** window appears where you can monitor the installation progress of each component on any of the nodes in the cluster by selecting the node from the dropdown list. After setup is complete, all of the components should have a green check beside them and show a status of **Set Up Finished**. If a reboot is required, it will be noted on the screen. If a reboot is required, reboot the nodes one by one.

Installing HP SIM 5.x on the cluster

After completing the installation of a Microsoft SQL Server 2000 Enterprise Edition instance or verification of the availability of an existing Microsoft SQL Server 2000 instance, you are ready to proceed with the installation of HP SIM 5.x. If you already have a Microsoft SQL Server 2000 instance, which you would like to use to host the HP SIM 5.x database (for HP SIM 5.x), follow the instructions below for installing HP SIMN 5.x, but note the additional comments throughout this section that relate to your particular setup.

IMPORTANT: Before you begin, be sure you have all system and pre-installation requirements fulfilled. In addition, the Microsoft SQL Server 2000 service should be running. To be sure that you meet these requirements, see the *HP Systems Insight Manager Installation and Configuration* guides on the HP Management CD.

1. Ensure that both systems are up and running cluster services before installation. Also, be sure that the SQL server instance, to which you are installing the HP SIM 5.x database, is running.
2. Ensure that the cluster system that is to be installed with HP SIM 5.x owns the clustered disks.

3. Read the *HP Systems Insight Manager Installation and Configuration* guides to be sure that you have the right prerequisites for installation.
4. Read the *HP Systems Insight Manager Release Notes*.

Installing HP SIM 5.x on the primary system

1. On the primary system, log into Microsoft Windows as a user with administrator rights.

Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000/2005 Enterprise Edition instance.

2. Download the latest version of System Management Homepage (SMH) from <http://h18023.www1.hp.com/support/files/servers/us/>. From the link specified select the appropriate sever and operating system and download the executable for SMH.

Note: SMH 2.1.4 and later support clustering.

3. Start the installation of SMH by executing the downloaded setup file. For example, `cp00XXXX.exe`, where XXXX represents the number.

- a. **Welcome to the Setup Wizard for the System Management Homepage 2.1.4** appears.

- i. Click **Next**. The **Operating System Groups** page appears.
- ii. Create the appropriate groups and click **Next**. The **User Access** page appears.
- iii. Select the appropriate options and click **Next**. The **Trust mode** page appears.
- iv. Select a trust mode and click **Next**. The **IP Binding** page appears.
- v. Configure the IP bindings if required.
- vi. Click **Next**. The **IP Restricted logins** page appears.
- vii. Configure the IP restricted logins if required.
- viii. Click **Next**. The **Summary** page appears.
- ix. Click **Next**. The SMH installation begins.
- x. Click **Finish** to complete the installation of SMH.

4. Edit the `smhpd.xml` file located in `c:\hp\hpsmh\conf` and add the following tag after the `<localaccess-type>Anonymous</localaccesstype>` tag:

```
<monitor-ip-changes>1</monitor-ip-changes>
```

5. Save the `smhpd.xml` file.
6. Restart the SMH service from the service console under Administrative tools.
7. Insert the **HP Management CD** into the CD-ROM drive. The CD includes an AutoRun feature that displays the **ProLiant Essentials Foundation Pack-management CD** window. If AutoRun is disabled on the primary system, go to `D:\autorun.exe`. If this is the first time you are installing from this version of the management CD, you must accept the license agreement for the CD.
8. Select **Products**.
9. Click the **HP SIM 5.x- Windows Install** link. The **HP Systems Insight Manager Set up** window appears.
10. Click **Install**. The **Welcome to the HP Systems Insight Manager Installer** window appears.
11. After completing the system inspection, the **Database Configuration** window appears.

- a. The **Username** field displays the user name that is logged in.
- b. Enter the password in the **Password** field.
- c. The **Domain** field displays the user domain used to log into the system.
- d. Enter the name of the Microsoft SQL Server 2000 Enterprise Edition instance that you created. See **Error! Reference source not found.** For this paper, HP-SIM-SQLSVR\HP_SIM_INSTANCE is used.

Note: If the credentials specified cannot be validated, a message appears, stating You are not able to continue with the installation until the account information is validated.

Note: Be sure to close any application, such as Microsoft SQL Server Enterprise Edition Manager that connects to the Microsoft SQL Server 2000 Enterprise Edition instance being referenced here (HP-SIM-SQLSVR\HP_SIM_INSTANCE in this paper). Otherwise, this step might hang.

12. In the **Select Installation Type window**, select **Custom**, and then click **Next**.

13. Click **Custom**. The **Custom Install-Software Selection** window appears.

Note: The **Custom Install** option enables you to specify installing on the desired shared disks (F: and I: in this paper).

14. Click **Next**. The **Service Account Credentials** window appears.

- a. The **Username** field displays the user name that is logged in.
- b. Enter the password in the **Password** field.
- c. The **Domain** field displays the user domain used to log into the system.

15. Click **Next**. The **Custom Install-Summary** window appears.

16. Click **Install**. The installation of HP SIM 5.x and its dependent services is initiated.

- a. A new **Welcome to the OpenSSH Services for HP Systems Insight Manager Setup Wizard** window appears.

Note: Read the welcome message, which reminds you to close other applications.

- i. Click **Next**. The **Select Destination Location** window appears.
- ii. Specify the desired directory to be on the local drive of the current system. In this paper, the default C:\Program Files\OpenSSH.
- iii. Click **Next**. The **OpenSSH Service Log on as User** window appears.
 1. The **Username** field displays the user name that is logged in.
 2. Enter the password in the **Password** field.
 3. The **Domain** field displays the user domain used to log into the system.
- iv. Click **Next**. The **Ready to Install** window appears.
- v. Click **Install**. The **Installing** window appears.

Note: A progress bar indicating files are being copied appears during the installation of this service. At the end, the **Completing the OpenSSH Services Manager Setup Wizard** window appears.

- vi. Click **Finish** to close the **Setup – OpenSSH Services for HP Systems Insight Manager** wizard window.
- b. A new **Welcome to the Pegasus WMI Mapper V2.4 Setup Wizard** window appears.

- i. Click **Next**. The **End-User License Agreement** window appears.
- ii. Select **I accept the terms in the License Agreement**.
- iii. Click **Next**. The **Choose Setup Type** window appears.
- iv. Select **Typical**. The **Ready to Install** window appears.
- v. Click **Install** to continue to the **Installing Pegasus WMI Mapper v2.4** window.

Note: A progress bar indicating files are being copied appears during the installation of this service. WMI Mapper is installed in `c:\Program Files\The Open Group\WMI Mapper`. At the end the **Completing the Pegasus WMI Mapper v2.4 Setup Wizard** window appears.

- vi. Click **Finish** to exit the WMI Mapper setup wizard.
- c. A new **Welcome to the HP Systems Insight Manager Setup Wizard** window appears.
- i. Click **Next**. The **Select Destination Directory** window appears.
 - ii. Specify the desired directory to be in the desired shared disk. For example, we are using `F:\HPSIM` in this paper.
 - iii. Click **Next**. The **Select Start Menu Folder** window appears.
 - iv. Specify the desired **Start Menu Folder** name or stay with the default setting. For example, we are using HP Systems Insight Manager in this paper.
 - v. Click **Next**. The **Ready to Install** window appears.
 - vi. Click **Install**. The **Installing** window appears.

Note: A progress bar indicating files are being copied appears during the installation, which might take a few minutes.

Note: It might take a few more minutes with the **Initializing HP Systems Insight Manager** window appears. At the end, the **Completing the HP Systems Insight Manager Setup Wizard** window appears.

- vii. Click **Finish** to close the **Setup HP Systems Insight Manager** wizard window.
- d. A new **Remote Support Pack Installation** window appears
- i. Click **Next** to proceed with the default path (`c:\Program Files\hp`) on the **Please specify where you would like the Remote Support Pack component to be installed** page.
 - ii. Click **Yes** in the **Confirmation installation directory** window.

- e. A new **HP Package Setup: Version Control Repository Manager** window appears.

Note: If the Version Control Repository Manager is already installed on your system, this window is not displayed.

Note: If you do not want to install the Version Control Repository Manager, click **Close** to skip this component. You can move on to step 13f.

- i. Click **Install** to proceed to the **Repository Directory** window. From a separate Windows Explorer window, create the desired directory in the desired shared drive that is part of your cluster. For this paper, we are using `F:\VCRM`.
- ii. Return to the **Repository Directory** window.

- iii. Click **Browse**. The **Browse for Folder** window appears.
- iv. Select the previously created directory in the desired shared drive that is part of your cluster. For this paper, we are using F:\VCRM.
- v. Click **OK**. To close the **Browse for Folder** window and return to the **Repository Directory** window.

Note: Click **Perform an initial repository population**, if you have ProLiant Support Packs available. Alternatively, the repository can be populated later by copying the files to the repository directory.

- vi. Click **Next**. The **Automatic Update** window appears.
- vii. Make the appropriate selections for automatic download of latest support packs directory from the HP website.
- viii. Click **Finish**. The **HP ProLiant Setup: Version Control Repository Manager** window appears.
- ix. Click **Close**.

Note: HP Performance Management Pack (PMP) is not bundled with HP SIM 5.2. If installing manually, complete the following steps.

- f. From the Management CD, select the **Product** tab, and then click **HP Performance Management Pack Install** link.

A warning message appears, stating **As part of the PMP installation, HP SIM service must be stopped and restarted**. Click **OK** to continue. A new **Welcome to the HP Performance Management Pack Setup Wizard** window appears.

- i. Click **Next**. The **Database configuration** window appears.
 1. The **Username** field displays the user name that is logged in.
 2. Enter the correct password in the **Password** field.
 3. The **Domain** field is already filled with the user domain that you logged in with. The **Database server name** field displays the database name you entered during the HP SIM installation.
 4. The **Database server** field is filled in with the name of the Microsoft SQL Server 2000 Enterprise Edition instance that you created. See **Error! Reference source not found.** This paper uses HP-SIM-SQLSVR\HP_SIM_INSTANCE.
- ii. Click **Next** to proceed to the **Installing** screen.

Note: You must use valid credentials; otherwise, a message appears indicating the credentials cannot be valid. The installation cannot continue until the account information is validated.

Note: After the copy process is complete, if your system does not have the Web-based agents installed, the **Web-based Management Setup Wizard** appears. You must enter a non-blank password and a confirmation password. This password becomes the administrator account password for all Web-based agents installed on your system. Click **Next**.

Note: A progress bar indication **Creating PMP database** appears. A folder Performance Management Pack is created in the same location where you have installed HP SIM (F:\Performance Management Pack in this paper) and PMP is installed. When this is complete, the **Completing**

the HP Performance Management Pack setup Wizard window appears.

- iii. Click **Finish** to exit the setup.

Note: HP Virtual Machine Management Pack is not bundled with HP SIM 5.2. If installing manually, complete the following steps.

- g. From the Management CD, select the **Product** tab, and then click **HP Virtual Machine Management Pack Install**.
- h. The **Welcome to the HP Virtual Machine Management Pack Setup Wizard** appears. Click **Next** to continue. The **Available Components** page appears with **Virtual Machine Management Pack 3.1** selected and in a disabled state.
 - i. Click **Next** to continue. The **Service Account credentials** page appears.
 - ii. Enter the user name, password, and define the VMM port. The default is 40420.
 - iii. Click **Next. HP Virtual Machine Management Pack** is installed.
 - iv. After the VMM installation is complete, the **Completing the HP Virtual Machine Management Pack setup wizard** page appears. Click **Finish** to complete the installation.

Note: The Server Migration Pack (SMP) and VMM were previously installed as Virtualization Management software. The SMP name has changed to HP Server Migration Pack – Universal Edition Application.

- i. From the Management CD click **Product** tab and click **HP Server Migration Pack Install**.

A warning message appears, stating As part of the SMP installation, the HP SIM service must be stopped and restarted. Click **OK** to continue.

- i. The **Welcome to the HP Server Migration Pack Setup Wizard** window appears. Click **Next** to continue.
- ii. SMP is installed at this time. The **Completing the HP Server Migration Pack setup wizard** page appears after the installation. Click **Finish** to complete the installation.
- iii. The **HP Systems Insight Manager Installation Information** window appears. Click **OK**.

17. Click **Next** from the **Custom Install – Status** window on the **HP Systems Insight Manager Installer** window to close the window.

18. Click **REGISTER LATER** from the **Registration** window.

19. Select **Yes, reboot system now** in the **Installation complete** window, and then click **Finish**.

20. Click **OK**.

21. Shutdown the system.

Installing HP SIM 5.x on the secondary system

To have a clustered installation of HP SIM, the secondary system in the cluster must complete the installation process, with a few differences in the procedure to account for the existing program files on the cluster disk.

IMPORTANT: Be sure to specify the same user credentials and path information that you used on the primary system. Be sure that the secondary system owns all of the clustered disks.

IMPORTANT: Rename the existing HP SIM 5.x folder and all its installed components folders (such as PMP, VCRM, VMM, and SMP) from the shared disk. For this paper, we are using F:\HPSIM, F:\Performance Management Pack\, F:\Virtual Machine Management, F:\Server Migration Pack, and F:\VCRM) before you continue. Be sure to specify the same locations and same folder name on the shared disk as in the primary system installation.

1. At your secondary system, repeat steps 1-20 in the Installing HP SIM 5.x on the primary system section.
2. Open ~\HP Systems Insight Manager\config\databaseprops file and note the database name specified against the keyword **hp.Database.databaseName**.
3. Shutdown the secondary system.

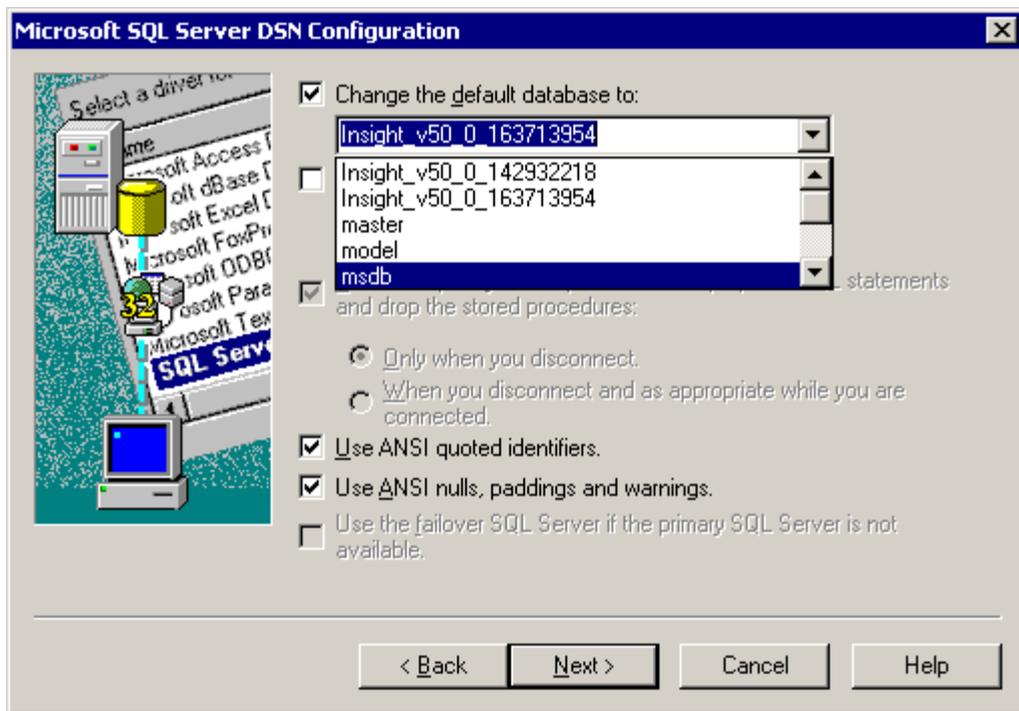
Adjusting the HP SIM 5.x data source name on the primary system

1. Start the primary system.
2. Click **Control Panel>Administrative Tools>Data Sources (ODBC)**.
3. Select **System DSN**.
4. Select **Insight_v50_0** and click **Configure**.
5. Update the **Database Description** field, referring to the database name created on the secondary system.

Note: Use the database name noted in step 2 of the Installing HP SIM 5.x on the secondary system section.

6. Click **Next**. The **Authentication mode selection** window appears.
7. Click **Next**. The **Microsoft SQL Server DSN Configuration** window appears (Figure 5).
8. Select the database, which is created by the secondary system. Use the database name indicated in the Installing HP SIM 5.x on the secondary system section.
9. Click **Next**.
10. Click **Finish** to complete the configuration. A **Summary** window appears.
11. Click **OK**. The **ODBC Data Source Administrator** window appears.
12. Click **OK** to close the **ODBC Data Source Administrator** window appears.

Figure 5: Adjusting the HP SIM 5.x data source name on the primary system



13. Go to the Adding the HP SIM 5.x cluster resources section.

Upgrading HP SIM 4.2 SP2 to HP SIM 5.2 in a cluster environment

This section assumes that HP SIM 4.2 SP2 is running in the failover mode in a two system Microsoft Windows 2003 Enterprise Server cluster environment, and these servers meet the pre-requisites detailed in the Hardware and Software Requirements section. For more details, see *HP Systems Insight Manager 5.2 Installation and Configuration* guides and the *HP Systems Insight Manager 5.2 Release Notes* located on the HP Management CD.

Upgrading the primary system

1. On the primary system, log into Microsoft Windows as a user with administrative rights.

Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000/2005 Enterprise Edition instance.
2. Open the **Cluster Administrator** tool, bring the resources created under hpsim disk group offline (HP SIM IP Address, HP SIM Svr, HP SIM Service, OpenSSH, WMI Mapper Service, PMP Service, PMP Tools, VCRM Service, VMM Service, VMM Web Service), and then delete all the cluster resources.
3. Shutdown the secondary system.
4. Be sure that the primary system owns all cluster resources.
5. Take a copy of the existing HP SIM 4.2, HP PMP, HP VMM, and HP SMP folders from the shared disk on which HP SIM and PMP are installed.
6. Start the HP SIM 4.2, PMP, VMM, and VCRM services manually.
7. Upgrade SMH. See Installing HP SIM 5.x on the primary system and execute step 2 – 5.
8. Insert the **HP Management CD** into the CD-ROM drive. The CD includes an AutoRun feature that displays the **ProLiant Essentials Foundation Pack-management CD** window. If AutoRun is not enabled on the primary system, go to D:\autorun.exe. If this is the first time

you are installing from this version of the HP Management CD, you must first accept the license agreement for the HP Management CD.

9. Select the **Products** tab.
10. Click the **HP SIM 5.x-Windows Install** link. The **HP Systems Insight Manager Setup** window appears.
11. After completing the system inspection, the **Database Configuration** window appears with only the **Use SQL** option selected.
 - a. The **Username** field displays the user name that is logged in.
 - b. Enter the password in the **Password** field.
 - c. The **Domain** field displays the user domain used to log into the system
 - d. Enter the name of the Microsoft SQL Server 2000 Enterprise Edition instance that you created. See *Installing a clustered instance of the Microsoft SQL Server 2000 Enterprise Edition*. For this paper, HP-SIM-SQLSVR\HP_SIM_INSTANCE is used.

Note: If the credentials specified cannot be validated, a message appears stating the credentials are invalid. You cannot continue with the installation until the account information is validated.

Note: Be sure to close any running applications, such as Microsoft SQL Server Enterprise Manager, that connect to the Microsoft SQL Server 2000 Enterprise Edition instance being referenced (HP-SIM-SQLSVR\HP_SIM_INSTANCE in this paper). Otherwise, this step might hang.

12. Select **Custom** and click **Next** in the **Select Installation Type** window.
13. Click **Custom**. The **Custom Install – Software Selection** window appears.

Note: The **Custom Install** option enables you to specify installing on the desired shared disks (F: and I: in this paper).

14. Click **Next**. The **Service Account Credentials** window appears.
 - a. The **Username** field displays the user name that is logged in.
 - b. Enter the password in the **Password** field.
 - c. The **Domain** field displays the user domain used to log into the system.
15. Click **Next**. The **Custom Install – Summary** window appears.

Note: The **Incompatible HP SIM Plug-in Version Detected** window appears. PMP and VMM are not bundled with HP SIM 5.2. This window displays the version of the plug-in that must be manually updated.

16. Click **Install**. The installation of HP SIM 5.x and its dependent services are initiated.
 - a. A new **Welcome to the Pegasus WMI Mapper V2.1 Setup Wizard** window appears.
 - i. Click **Next**. The **End-User License Agreement** window appears.
 - ii. Select **I accept the terms in the License Agreement**.
 - iii. Click **Next**. The **Choose Setup Type** window appears.
 - iv. Select **Typical**. The **Ready to Install** window appears.
 - v. Click **Install** to proceed to the **Installing Pegasus WMI Mapper v2.0 window**.

Note: A progress bar indicating files are being copied appears during the installation of this service. WMI Mapper is installed on C:\Program

Files\The Open Group\WMI Mapper. At the end, the **Completing the Pegasus WMI Mapper v2.0 Setup Wizard** window appears.

- vi. Click **Finish** to exit the WMI Mapper setup wizard.
- b. A new **Welcome to the HP Systems Insight Manager Setup Wizard** window appears.
 - i. Click **Next**. The **Select Destination Directory** window appears.
 - ii. Specify the desired directory to be in the desired shared disk. For example, we are using F:\HPSIM in this paper.
 - iii. Click **Next**. The **Select Start Menu Folder** window appears.
 - iv. Specify the desired folder name or accept the default setting. For example, this paper uses HP Systems Insight Manager.
 - v. Click **Next**. The **Ready to Install** window appears.
 - vi. Click **Install**. The **Installing** window appears.

Note: A progress bar indicating files are being copied appears during the installation, which might take a few minutes.

Note: It might take a few more minutes when the **Initializing HP Systems Insight Manager** window appears. After initialization is complete, the **Completing the HP Insight Manager Setup Wizard** window appears.

- vii. Click **Finish** to close the **Setup HP Systems Insight Manager Wizard** window.
- c. A new **Remote Support Pack Installation** window appears.
 - i. Click **Next** to proceed with default path c:\Program Files\hp located in the **Please specify where you would like the Remote Support Pack component installed** window.
 - ii. Click **Yes** in the **Confirmation installation directory** windows.
- d. A new **HP Package Setup: Version Control Repository Manager** window appears.

Notes: If the latest Version Repository Manager is already installed on your system, this window does not appear.

- i. Click **Install** to continue.

Note: If you do not want to install the Version Control Repository Manager, click **Close** to skip this component. You can move to step 16e.

- ii. Click **Install** to proceed to the **Repository Directory** window. The Repository Directory is already selected with the VCRM installed directory with HPSIM4.2. For example, in this case it is F:\VCRM.
- iii. Click **Next**. The **Automatic Update** window appears.
- iv. If required, make the appropriate selections for automatic download of the latest support packs directly from the HP website.
- v. Click **Finish**. The **HP ProLiant Setup: Version Control Repository Manager** window appears.
- vi. Click **Close**.

Note: Upgrading PMP is not supported from PMP 3.0 to 4.7. You must uninstall the older version and then start the installation of PMP 4.7.

Note: Upgrading VMM is not supported from VMM 1.1 to 3.1. You must uninstall the older version and then install VMM 3.1.

- e. From the Management CD, select **Products** and then click **HP Virtual Machine Management Pack Install**.
 - i. The **Welcome to the HP Virtual Machine Management Pack Setup Wizard** appears. Click **Next**. The **Available Components** page appears with **Virtual Machine Management Pack 3.1** selected and in a disabled state.
 - ii. Click **Next**. The **Service Account credentials** page appears.
 - iii. Enter the user name, password, and define the VMM port. The default port is 40420.
 - iv. Click **Next**. **HP Virtual Machine Management Pack** is installed.
 - v. After the VMM installation is complete, the **Completing the HP Virtual Machine Management Pack setup wizard** page appears. Click **Finish** to complete the installation.

Note: SMP and VMM were previously installed as Virtualization Management software. The SMP name has changed to HP Server Migration Pack – Universal Edition Application.

- f. From the Management CD select **Product** and then click **HP Server Migration Pack Install**.

A warning message appears, stating As part of the SMP installation, the HP SIM service must be stopped and restarted. Click **OK** to continue.

- i. The **Welcome to the HP Server Migration Pack Setup Wizard** window appears. Click **Next**.
- ii. SMP is installed at this time. The **Completing the HP Server Migration Pack setup wizard** page appears after the installation.
- iii. Click **Finish** to complete the installation. The **Pre-installation/Installation/Post-installation** window appears.

17. Click **Finish**. A message appears, stating Please reboot your system to complete your HP Systems Insight Manager installation.

18. Click **OK**.

19. Reboot the primary system. Log in to Windows as a user with administrator rights.

Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000 Enterprise Edition.

20. Select **Start>Run**.

21. Enter **Regedit** and then click **OK**. The **Registry Editor** window appears.

22. Expand **HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard** and then open **Export Registry file** from the **Registry** menu.

23. Enter a file name and then click **Save**. Save the file to a shared disk. For example, in F:\Hewlett. This saves the HP SIM and VCRM registries.

24. Expand **HKEY_LOCAL_MACHINE\SOFTWARE\HP** and then open **Export Registry file** from the **Registry** menu.

25. Enter a file name and then click **Save**. Save the file to a shared disk. For example, in F:\HP. This saves the PMP, VMM, and SMP registries.

26. Shut down the primary system.

Upgrading the secondary system

1. Start the secondary system and log in to Windows as a user with administrator rights.

Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000/2005 Enterprise Edition instance.

2. Be sure that the secondary system owns all the cluster resources.

3. Select **Start>Run**.

4. Enter **Regedit** and then click **OK**. The **Registry Editor** page appears.

5. Expand and select **HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard**, and then select **Import Registry file** from the **Registry** menu.

6. Enter the path to the file, such as `F:\Hewlett` that is saved on the shared disk from the primary system, and then click **Open**. A message appears indicating that the registry file has been imported successfully.

7. Expand and select **HKEY_LOCAL_MACHINE\SOFTWARE\HP**.

8. Enter the path to the file, such as `F:\HP`, which is saved on the shared disk from the primary system, and then click **Open**. A message appears indicating that the registry file has been imported successfully.

9. Shut down the secondary system.

10. Start the primary system and log in to Windows as a user with administrator rights.

Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000 Enterprise Edition instance.

11. Be sure that the primary system owns all the cluster resources.

12. Start the secondary system and log in to Windows as a user with administrator rights.

Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000 Enterprise Edition instance.

13. Go to Adding the HP SIM 5.x cluster resources.

Upgrading HP SIM 5.0 to HP SIM 5.2 in a cluster environment

This section assumes that HP SIM 5.0 is running in the failover mode in a two system Microsoft Windows 2003 Enterprise Server cluster environment, and these servers meet the pre-requisites detailed in the Hardware and Software Requirements section. For more details, see *HP Systems Insight Manager 5.2 Installation and Configuration* guides and the *HP Systems Insight Manager 5.2 Release Notes* located on the HP Management CD.

Upgrading the primary system

1. On the primary system, log into Windows as a user with administrator rights.

Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000/2005 Enterprise Edition instance.

2. Open the **Cluster Administrator** tool, bring the resources created under hpsim disk group offline (HP SIM IP Address, HP SIM Svr, HP SIM Service, OpenSSH, WMI Mapper Service, PMP

Service, PMP Tools, VCRM Service, VMM Service, VMM Web Service) and then delete all the mentioned cluster resources.

3. Shutdown the secondary system.
4. Be sure that the primary system owns all cluster resources.
5. Take a copy of the existing HP SIM 5.0, HP PMP, HP VMM, and HP SMP folders from the shared disk on which HP SIM and PMP are installed.
6. Start the HP SIM 5.0, PMP, VMM, and VCRM services manually.
7. Upgrade SMH. See Installing HP SIM 5.x on the primary system and run step 2-5.
8. Insert the **HP Management CD** into the CD-ROM drive. The CD includes an AutoRun feature that displays the **ProLiant Essentials Foundation Pack-management CD** window. If AutoRun is not enabled on the primary system, go to D:\autorun.exe. If this is the first time you are installing from this version of the HP Management CD, you must first accept the license agreement for the HP Management CD.
9. Select the **Products** tab.
10. Click **HP SIM 5.x Windows Install**. The **HP Systems Insight Manager Setup** window appears.
11. After completing the system inspection, the **Database Configuration** window appears with only the **Use SQL** option selected.

- a. The **Username** field displays the user name that is logged in.
- b. Enter the password in the **Password** field.
- c. The **Domain** field displays the user domain used to log into the system.
- d. Enter the name of the Microsoft SQL Server 2000 Enterprise Edition instance that you created. See Installing a clustered instance of the Microsoft SQL Server 2000 Enterprise Edition. For this paper, HP-SIM-SQLSVR\HP_SIM_INSTANCE is used.

Note: You must use valid credentials; otherwise, a message appears indicating the credentials cannot be valid. The installation cannot continue until the account information is validated.

Note: Be sure to close any running applications, such as Microsoft SQL Server Enterprise Manager, that connect to the Microsoft SQL Server 2000 Enterprise Edition instance being referenced (HP-SIM-SQLSVR\HP_SIM_INSTANCE in this paper). Otherwise, this step might hang.

12. Select **Custom** and then click **Next** in the **Select Installation Type** window.
13. Click **Custom**. The **Custom Install – Software Selection** window appears.

Note: The **Custom Install** option enables you to specify installing on the desired shared disks (F: and I: in this paper).

14. Click **Next**. The **Service Account Credentials** window appears.
 - a. The **Username** field displays the user name that is logged in.
 - b. Enter the password in the **Password** field.
 - c. The **Domain** field displays the user domain used to log into the system.
15. Click **Next**. The **Custom Install – Summary** window appears.

Note: The **Incompatible HP SIM Plug-in Version Detected** window appears. PMP and VMM are not bundled with HP SIM 5.2. This window displays the version of the plug-in that must be manually updated.

16. Click **Install**. The installation of HP SIM 5.x and its dependent services are initiated.

- a. A new **Welcome to the Pegasus WMI Mapper V2.1 Setup Wizard** window appears.
 - i. Click **Next**. The **End-User License Agreement** window appears.
 - ii. Select **I accept the terms in the License Agreement**.
 - iii. Click **Next**. The **Choose Setup Type** window appears.
 - iv. Select **Typical**. The **Ready to Install** window appears.
 - v. Click **Install** to proceed to the **Installing Pegasus WMI Mapper v2.0 window**.

Note: A progress bar indicating files are being copied appears during the installation of this service. WMI Mapper is installed on C:\Program Files\The Open Group\WMI Mapper. At the end, the **Completing the Pegasus WMI Mapper v2.0 Setup Wizard** window appears.
 - vi. Click **Finish** to exit the WMI Mapper setup wizard.
- b. A new **Welcome to the HP Systems Insight Manager Setup Wizard** window appears.
 - i. Click **Next**. The **Select Destination Directory** window appears.
 - ii. Specify the desired directory to be in the desired shared disk. For example, we are using F:\HPSIM in this paper.
 - iii. Click **Next**. The **Select Start Menu Folder** window appears.
 - iv. Specify the desired folder name or accept the default setting. For example, this paper uses HP Systems Insight Manager.
 - v. Click **Next**. The **Ready to Install** window appears.
 - vi. Click **Install**. The **Installing** window appears.

Note: A progress bar indicating files are being copied appears during the installation, which might take a few minutes.

Note: It might take a few more minutes when the **Initializing HP Systems Insight Manager** window appears. After initialization is complete, the **Completing the HP Insight Manager Setup Wizard** window appears.
 - vii. Click **Finish** to close the **Setup HP Systems Insight Manager Wizard** window.
- c. A new **Remote Support Pack Installation** window appears.
 - i. Click **Next** to proceed with default path c:\Program Files\hp located in the **Please specify where you would like the Remote Support Pack component installed** window.
 - ii. Click **Yes** in the **Confirmation installation directory** windows.
- d. A new **HP Package Setup: Version Control Repository Manager** window appears.

Notes: If the latest Version Repository Manager is already installed on your system, this window does not appear.

 - i. Click **Install**.

Note: If you do not want to install the Version Control Repository Manager, click **Close** to skip this component. You can move to step 16e.

- ii. Click **Install**. The **Repository Directory** window appears. The Repository Directory is already selected with the VCRM installed directory with HPSIM4.2. For example, in this case it is F:\VCRM.
- iii. Click **Next**. The **Automatic Update** window appears.
- iv. If required, make the appropriate selections for automatic download of the latest support packs directly from the HP website.
- v. Click **Finish**. The **HP ProLiant Setup: Version Control Repository Manager** window appears.
- vi. Click **Close**.

Note: Upgrading PMP is not supported from PMP 3.0 to 4.7. You must uninstall the older version and then start the installation of PMP 4.7.

Note: Upgrading VMM is not supported from VMM 1.1 to 3.1. You must uninstall the older version and then install VMM 3.1.

- e. From the Management CD, select **Products** and then click **HP Virtual Management Pack Install**. A warning message appears, stating as part of the VMM installation, the HP SIM service must be stopped and restarted. Click **OK**.
 - i. A warning message appears, stating An older version of HP Virtual Machine Management Pack is installed. Click **OK** to uninstall the older version.
 - ii. The **HP Virtual Machine Management Pack Uninstall** window appears. A message appears asking if you are sure you want to remove SMP and all of its components. Click **Yes**.
 - iii. The **HP Server Migration Pack Uninstall** window appears.

Note: A progress bar appears indicating SMP is being uninstalled. The uninstall might take a few minutes.
 - iv. A message appears, stating that SMP was successfully removed. Click **OK**.
 - v. The **Welcome to the HP Virtual Machine Management Pack Setup Wizard** appears. Click **Next**.
 - vi. The **Database configuration** window appears. Enter the password and then click **Next**.
 - vii. VMM is installed at this time. The **Completing the HP Virtual Machine Management Pack setup wizard** window appears after the installation. Click **Finish** to complete the installation.
- f. From the Management CD select the **Product** tab and click **HP Server Migration Pack Install**.

A warning message appears, stating as part of the SMP installation, the HP SIM service must be stopped and restarted. Click **OK** to continue.

 - i. The **Welcome to the HP Server Migration Pack Setup Wizard** window appears. Click **Next** to continue.
 - ii. SMP is installed at this time. The **Completing the HP Server Migration Pack setup wizard** page appears after the installation.
 - iii. Click **Finish** to complete the installation.
- g. The **HP Systems Insight Manager Installation Information** window appears. Click **OK** to close the window.

17. Click **Finished**. The Pre-installation/Installation/Post-installation window appears.

18. Click **Finish**. A message appears, stating Please reboot your system to complete your HP Systems Insight Manager installation.
19. Click **OK**.
20. Reboot the primary system. Log in to Windows as a user with administrator rights.
Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000/2005 Enterprise Edition.
21. Select **Start>Run**.
22. Enter **Regedit** and then click **OK**. The **Registry Editor** window appears.
23. Expand **HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard** and then open **Export Registry file** from the **Registry** menu.
24. Enter a file name and then click **Save**. Save the file to a shared disk. For example, in `F:\Hewlett`. This saves the HP SIM and VCRM registries.
25. Expand **HKEY_LOCAL_MACHINE\SOFTWARE\HP** and then open **Export Registry file** from the **Registry** menu.
26. Enter a file name and then click **Save**. Save the file to a shared disk. For example, in `F:\HP`. This saves the PMP, VMM, and SMP registries.
27. Shut down the primary system.

Upgrading the secondary system

1. Start the secondary system and log in to Windows as a user with administrator rights.
Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000/2005 Enterprise Edition instance.
2. Be sure that the secondary system owns all the cluster resources.
3. Select **Start>Run**.
4. Enter **Regedit** and then click **OK**. The **Registry Editor** page appears.
5. Expand and select **HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard**, and then open **Import Registry file** from the **Registry** menu.
6. Enter the path to the file, such as `F:\Hewlett` that is saved on the shared disk from the primary system, and then click **Open**. A message appears indicating that the registry file has been imported successfully.
7. Expand and select **HKEY_LOCAL_MACHINE\SOFTWARE\HP**
8. Enter the path to the file, such as `F:\HP`, which is saved on the shared disk from the primary system, and then click **Open**. A message appears indicating that the registry file has been imported successfully.
9. Shut down the secondary system.
10. Start the primary system and log in to Windows as a user with administrator rights.
Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000/2005 Enterprise Edition instance.
11. Be sure that the primary system owns all the cluster resources.
12. Start the secondary system and log in to Windows as a user with administrator rights.
Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000/2005 Enterprise Edition instance.
13. Go to Adding the HP SIM 5.x cluster resources.

Upgrading HP SIM 5.1 to HP SIM 5.2 in a cluster environment

This section assumes that HP SIM 5.1 is running in the failover mode in a two system Microsoft Windows 2003 Enterprise Server cluster environment, and these servers meet the pre-requisites detailed in the Hardware and Software Requirements section. For more details, see *HP Systems Insight Manager 5.2 Installation and Configuration* guides and the *HP Systems Insight Manager 5.2 Release Notes* located on the HP Management CD.

Upgrading the primary system

1. On the primary system, log into Windows as a user with administrator rights.
Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000/2005 Enterprise Edition instance.
2. Open the **Cluster Administrator** tool, bring the resources created under hpsim disk group offline (HP SIM IP Address, HP SIM Svr, HP SIM Service, OpenSSH, WMI Mapper Service, PMP Service, PMP Tools, VCRM Service, VMM Service, VMM Web Service) and then delete all the mentioned cluster resources.
3. Shutdown the secondary system.
4. Be sure that the primary system owns all cluster resources.
5. Take a copy of the existing HP SIM 5.0, HP PMP, HP VMM, and HP SMP folders from the shared disk on which HP SIM and PMP are installed.
6. Start the HP SIM 5.1, PMP, VMM, and VCRM services manually.
7. Upgrade SMH. See Installing HP SIM 5.x on the primary system and run step 2-5.
8. Insert the **HP Management CD** into the CD-ROM drive. The CD includes an AutoRun feature that displays the **ProLiant Essentials Foundation Pack-management CD** window. If AutoRun is not enabled on the primary system, go to `D:\autorun.exe`. If this is the first time you are installing from this version of the HP Management CD, you must first accept the license agreement for the HP Management CD.
9. Select the **Products** tab.
10. Click **HP SIM 5.x Windows Install**. The **HP Systems Insight Manager Setup** window appears.
11. After completing the system inspection, the **Database Configuration** window appears with only the **Use SQL** option selected.
 - a. The **Username** field displays the user name that is logged in.
 - b. Enter the password in the **Password** field.
 - c. The **Domain** field displays the user domain used to log into the system.
 - d. Enter the name of the Microsoft SQL Server 2000 Enterprise Edition instance that you created. See Installing a clustered instance of the Microsoft SQL Server 2000 Enterprise Edition. For this paper, `HP-SIM-SQLSVR\HP_SIM_INSTANCE` is used.

Note: You must use valid credentials; otherwise, a message appears indicating the credentials cannot be valid. The installation cannot continue until the account information is validated.

Note: Be sure to close any running applications, such as Microsoft SQL Server Enterprise Manager, that connect to the Microsoft SQL Server 2000 Enterprise

Edition instance being referenced (HP-SIM-SQLSVR\HP_SIM_INSTANCE in this paper). Otherwise, this step might hang.

12. Select **Custom** and then click **Next** in the **Select Installation Type** window.

13. Click **Custom**. The **Custom Install – Software Selection** window appears.

Note: The **Custom Install** option enables you to specify installing on the desired shared disks (F: and I: in this paper).

14. Click **Next**. The **Service Account Credentials** window appears.

- a. The **Username** field displays the user name that is logged in.
- b. Enter the password in the **Password** field.
- c. The **Domain** field displays the user domain used to log into the system.

15. Click **Next**. The **Custom Install – Summary** window appears.

Note: The **Incompatible HP SIM Plug-in Version Detected** window appears. PMP and VMM are not bundled with HP SIM 5.2. This window displays the version of the plug-in that must be manually updated.

16. Click **Install**. The installation of HP SIM 5.2 and its dependent services are initiated.

- a. A new **Welcome to the Pegasus WMI Mapper V2.1 Setup Wizard** window appears.
 - i. Click **Next**. The **End-User License Agreement** window appears.
 - ii. Select **I accept the terms in the License Agreement**.
 - iii. Select **Typical**. The **Ready to Install** window appears.
 - iv. Click **Next**. The **Choose Setup Type** window appears.
 - v. Click **Install** to proceed to the **Installing Pegasus WMI Mapper v2.0 window**.

Note: A progress bar indicating files are being copied appears during the installation of this service. WMI Mapper is installed on C:\Program Files\The Open Group\WMI Mapper. At the end, the **Completing the Pegasus WMI Mapper v2.0 Setup Wizard** window appears.

- vi. Click **Finish** to exit the WMI Mapper setup wizard.
- b. A new **Welcome to the HP Systems Insight Manager Setup Wizard** window appears.
 - i. Click **Next**. The **Select Destination Directory** window appears.
 - ii. Specify the desired directory to be in the desired shared disk. For example, F:\HPSIM in this paper.
 - iii. Click **Next**. The **Select Start Menu Folder** window appears.
 - iv. Specify the desired folder name or accept the default setting. For example, HP Systems Insight Manager in this paper.
 - v. Click **Next**. The **Ready to Install** window appears.
 - vi. Click **Install**. The **Installing** window appears.

Note: A progress bar indicating files are being copied appears during the installation, which might take a few minutes.

Note: It might take a few more minutes when the **Initializing HP Systems Insight Manager** window appears. After initialization is

complete, the **Completing the HP Insight Manager Setup Wizard** window appears.

- vii. Click **Finish** to close the **Setup HP Systems Insight Manager Wizard** window.
- c. A new **Remote Support Pack Installation** window appears.
 - i. Click **Next** to proceed with default path `c:\Program Files\hp` located in the **Please specify where you would like the Remote Support Pack component installed** window.
 - ii. Click **Yes** in the **Confirmation installation directory** windows.
- d. A new **HP Package Setup: Version Control Repository Manager** window appears.

Notes: If the latest Version Repository Manager is already installed on your system, this window does not appear.

- i. Click **Install** to continue.

Note: If you do not want to install the Version Control Repository Manager, click **Close** to skip this component. You can move to step 16e.

- ii. Click **Install** to proceed to the **Repository Directory** window. The Repository Directory is already selected with the VCRM installed directory with HPSIM4.2. For example, in this case it is `F:\VCRM`.
- iii. Click **Next**. The **Automatic Update** window appears.
- iv. If required, make the appropriate selections for automatic download of the latest support packs directly from the HP website.
- v. Click **Finish**. The **HP ProLiant Setup: Version Control Repository Manager** window appears.
- vi. Click **Close**.

Note: Upgrading PMP is not supported from PMP 3.0 to 4.7. You must uninstall the older version and then start the installation of PMP 4.7.

Note: Upgrading VMM is not supported from VMM 1.1 to 3.1. You must uninstall the older version and then install VMM 3.1.

- e. From the Management CD, select **Products** and then click **HP Performance Management Pack Install**. A message appears stating that as part of the PMP installation, the HP SIM service must be stopped and restarted. Click **OK**. A new **Welcome to the HP Performance Management Pack Setup Wizard** window appears.

- i. The PMP uninstall window appears.

Note: A progress bar indicating uninstallation of PMP appears. The uninstall might take a few minutes.

- ii. Click **Next**. The **Database configuration** window appears.
 1. The **Username** field displays the user name that is logged in.
 2. Enter the correct password in the **Password** field.
 3. The **Domain** field is already populated with the user domain used to log in. The **Database server name** field displays the database name used during the HP SIM installation.
 4. The **Database server** field is populated with the name of the Microsoft SQL Server 2000 Enterprise Edition instance that you

created. See Installing a clustered instance of the Microsoft SQL Server 2000 Enterprise Edition. (HP-SIM-SQLSVR\HP_SIM_INSTANCE in this paper.)

- iii. Click **Next**. The **Installing** window appears.

Note: You must use valid credentials; otherwise, a message appears indicating the credentials cannot be valid. The installation cannot continue until the account information is validated.

Note: After the copy process is complete, if your system does not have the Web-based agents installed, the **Web-based Management Setup Wizard** appears. You must enter a non-blank password and a confirmation password. This password becomes the administrator account password for all Web-based agents installed on your system. Click **Next**.

Note: A progress bar indication **Creating PMP database** appears. A folder Performance Management Pack is created in the same location where you have installed HP SIM (F:\Performance Management Pack in this paper) and PMP is installed. When this is complete, the **Completing the HP Performance Management Pack setup Wizard** window appears.

- iv. Click **Finish** to exit the setup.

Note: HP Virtual Machine Management Pack is not bundled with HP SIM 5.2. If installing manually, complete the following steps.

- f. From the Management CD, select the **Product** tab, and then click **HP Virtual Machine Management Pack Install**.

Note: A warning message appears stating that as part of the VMM installation, the HP SIM service must be stopped and restarted. Click **OK**.

Another warning message appears stating that an older version of VMM is installed. Click **OK** to uninstall the older version.

- i. The **HP Virtual Machine Management Pack Uninstall** window appears.

A message appears asking if you are sure you want to remove HP SMP and all of its components. Click **Yes**.

- ii. The **HP Server Migration Pack Uninstall** window appears.

Note: A progress bar appears indicating that HP SMP is being uninstalled. This might take a few minutes.

- iii. A message appears stating that HP SMP was removed successfully. Click **OK**.
- iv. The **Welcome to the HP Virtual Machine Management Pack Setup Wizard** window appears. Click **Next**.
- v. The **Database configuration** window appears. Enter the password and then click **Next**.
- vi. VMM is installed at this time. The **Completing the HP Virtual Machine Management Pack setup wizard** window appears. Click **Finish** to complete the installation.

- g. From the Management CD, select the **Products** tab and then click **HP Server Migration Pack Install**. A message appears stating that as part of the SMP installation, the HP SIM service must be stopped and restarted. Click **OK**.
 - i. The **Welcome to the HP Server Migration Pack Setup Wizard** window appears. Click **Next**.
 - ii. The **HP Server Migration Pack Setup Wizard** window appears. Click **Finish** to complete the installation.
17. The **HP Systems Insight Manager Installation Information** window appears. Click **OK**.
18. Click **Finished**. A message appears stating you must reboot your system to complete the HP SIN installation. Click **OK**.
19. Reboot the primary system. Log into Windows as a user with administrator rights.

Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000 Enterprise Edition instance.
20. Select **Start>Run**.
21. Enter **Regedit** and then click **OK**. The **Registry Editor** window appears.
22. Expand and select **HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard**, and then open **Export Registry file** from the **Registry** menu.
23. Enter a file name and click **Save**. Save the file on a shared disk. For example, save in `F:\Hewlett`. This saves the HP SIM and VCRM registries.
24. Expand **HKEY_LOCAL_MACHINE\SOFTWARE\HP** and select **Export Registry file** from the **Registry** menu.
25. Enter a file name and click **Save**. Save the file on a shared disk. For example, save in `F:\HP`. This saves the PMP, VMM, and SMP registries.
26. Shutdown the primary system.

Upgrading the secondary system

1. Start the secondary system and log in to Windows as a user with administrator rights.

Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000/2005 Enterprise Edition instance.
2. Be sure that the secondary system owns all the cluster resources.
3. Select **Start>Run**.
4. Enter **Regedit** and then click **OK**. The **Registry Editor** page appears.
5. Expand and select **HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard**, and then open **Import Registry file** from the **Registry** menu.
6. Enter the path to the file, such as `F:\Hewlett` that is saved on the shared disk from the primary system, and then click **Open**. A message appears indicating that the registry file has been imported successfully.
7. Expand and select **HKEY_LOCAL_MACHINE\SOFTWARE\HP**
8. Enter the path to the file, such as `F:\HP`, which is saved on the shared disk from the primary system, and then click **Open**. A message appears indicating that the registry file has been imported successfully.
9. Shut down the secondary system.
10. Start the primary system and log in to Windows as a user with administrator rights.

Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000/2005 Enterprise Edition instance.

11. Be sure that the primary system owns all the cluster resources.
12. Start the secondary system and log in to Windows as a user with administrator rights.

Note: Be sure to log in with the same user name that you used to install the Microsoft SQL Server 2000/2005 Enterprise Edition instance.

13. Go to Adding the HP SIM 5.x cluster resources.

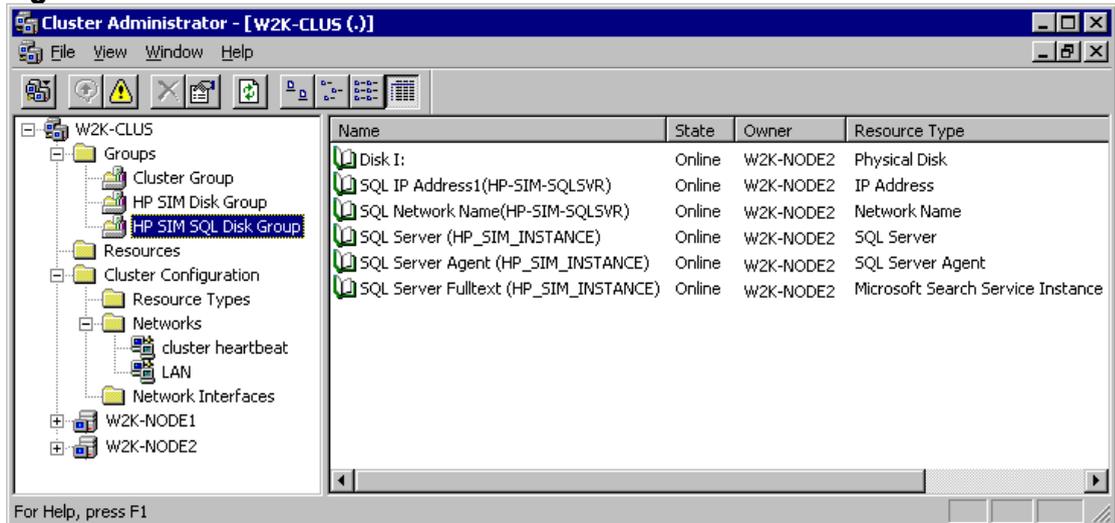
Adding the HP SIM 5.x cluster resources

To complete the installation of HP SIM 5.x to the cluster, several cluster resources must be created using Cluster Administrator.

Naming the HP SIM 5.x and SQL Server disk groups

1. Start the primary system and log in to Windows as a user with administrator rights.
2. Start the secondary system.
3. Open the **Cluster Administrator** window, a minimum of three disk groups are displayed including the **Cluster Group** and the two groups that contain your HP SIM 5.x program files and the Microsoft SQL Server program files.

Figure 6: The Cluster Administrator window



Note: If it is an upgrade from HP SIM 4.2 to HP SIM 5.2, an upgrade from HP SIM 5.0 to 5.2, or upgrade from 5.1 to 5.52, disregard the following two steps and go to Creating the HP SIM 5.x IP address resource.

- a. Rename the group containing your Microsoft SQL Server 2000 instance program files to an appropriate name. In the examples discussed in this paper, it is called HP SIM SQL Disk Group.
- b. Rename the group containing your HP SIM 5.x program files to an appropriate name. In the examples discussed in this paper, it is called HP SIM Disk Group.

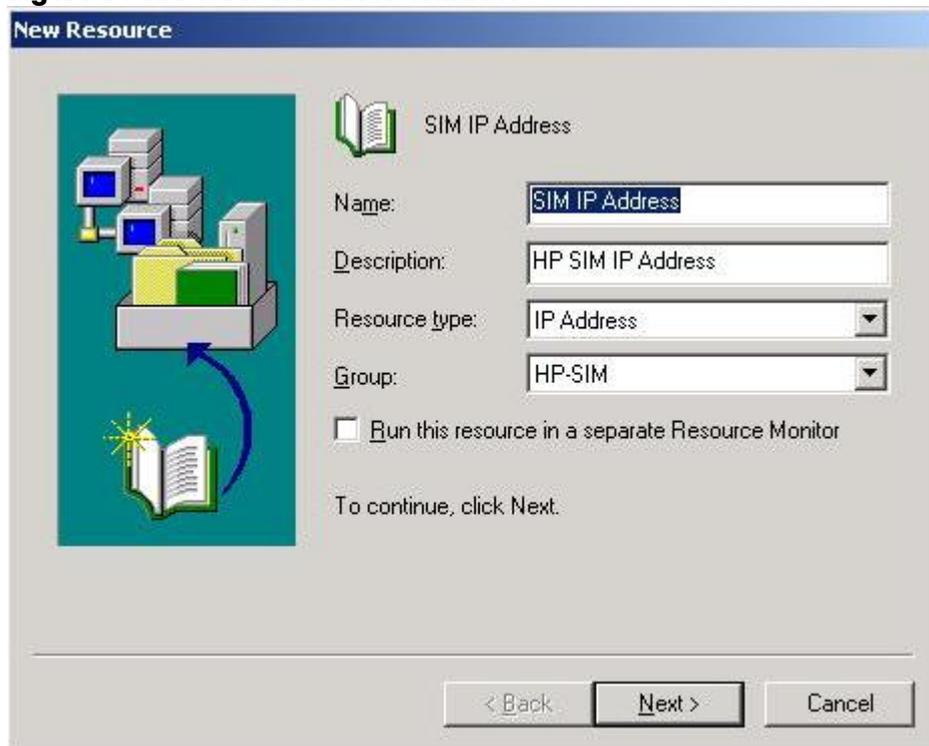
Note: It is not necessary to the functionality of HP SIM to change the names of these disk groups. If you used a pre-existing installation of Microsoft SQL Server 2000, the disk group containing these program files should already have an appropriate name.

Creating the HP SIM 5.x IP address resource

Note: The disk group containing the HP SIM 5.x program files can be used for other programs, but for the purpose of this paper, HP SIM 5.x is the only application installed to the disk.

1. In the **Cluster Administrator** window, select **HP SIM Disk Group** from the left pane. Click anywhere in the right pane and select **New>Resource** from the dropdown menu.
2. The **New Resource** window appears.
3. In the **Name** field, enter **HP SIM IP Address**, and select **IP Address** from the **Resource type** dropdown menu, as shown in Figure 7.
4. Click **Next**.

Figure 7: The New Resource window



5. The **Possible Owners** window appears. Be sure that the two systems in your cluster are listed in the **Possible Owners** pane.
6. Click **Next**. The **Dependencies** window appears.
7. Specify the other resources in this disk group that a new resource depends on. An IP address in cluster services is not required to establish any dependencies.
8. Click **Next**. The **TCP/IP Address Parameters** window appears.

Note: Dependencies are resources that must be brought online by the cluster service first. Since the IP address resource you are creating here does not depend on any other resources, you are not required to specify any dependencies. When creating the resource for the HP SIM 5.x network name, this IP address resource is specified as a dependency.

9. Enter the unique IP address to use for connecting to the HP SIM 5.x service. This is the IP address (for this paper, 140.110.240.64) that the network name resource associates with, and clients can

use it to connect to the service, regardless of which server system the group is owned by. Select public network and enable NetBIOS settings if it is not enabled by default.

10. Click **Finish**. A **Resource Creation Confirmation** window appears.
11. Click **OK**.

Upgrading the HP SIM 5.x network name resource

1. In the **Cluster Administrator** window, select the **HP SIM Disk Group** from the left pane. Click anywhere in the right pane and select **New>Resource** from the dropdown menu.
2. The **New Resource** window appears.
3. In the **Name** field, enter **HP SIM IP Address**, and select **IP Address** from the **Resource type** dropdown menu.
4. Click **Next**. The **Possible Owners** window appears.
5. Be sure the two systems in your cluster are listed in the **Possible Owners** pane.
6. Click **Next**. The **Dependencies** window appears.
7. Select **HP SIM IP Address** as a dependency for this new resource.
8. Click **Add** to add this resource to the dependencies list.
9. Click **Next**. The **Network Name Parameters** window appears. Give the resource network name (W2K-CLUS-HPSIM in this paper). Clients access the HP SIM 5.x service by this name. This name is not required to be NetBIOS compliant.
10. Click **Finish**. The **Resource Creation Confirmation** window appears.

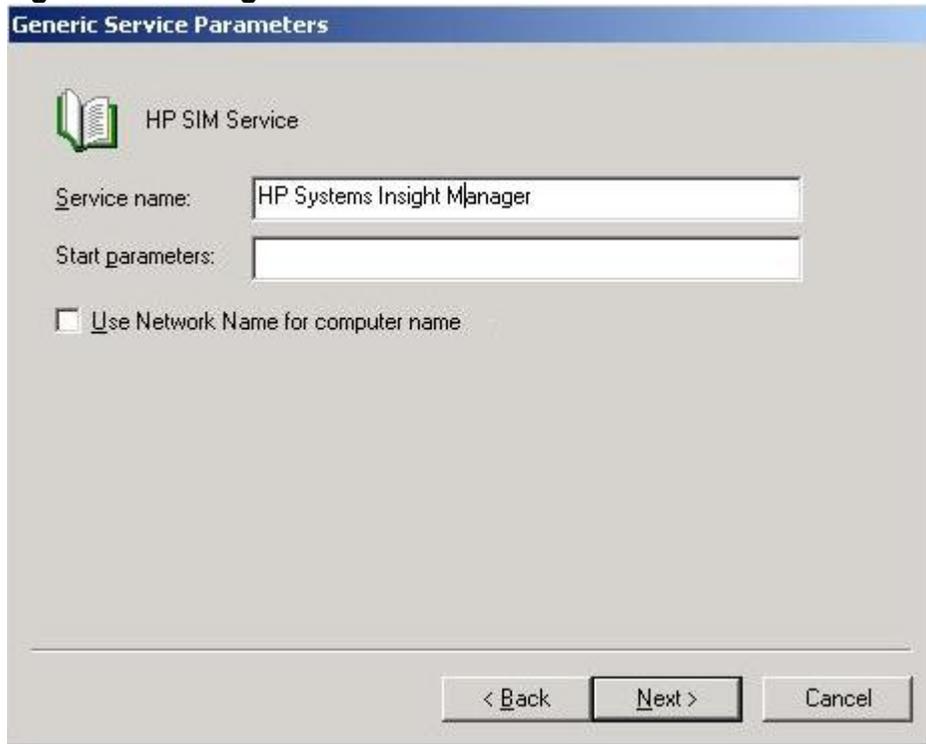
IMPORTANT: Do not use the underscore character (_) in the network name; some client Internet browsers might not be able to handle this character correctly when passing SSL session information.

11. Click **OK**.

Creating the HP SIM 5.x generic service resource

1. In the **Cluster Administrator** window, select the **HP SIM Disk Group** from the left pane. Click anywhere in the right pane and select **New>Resource** from the dropdown menu.
2. In the **Name** field, enter **HP SIM Service**, and select **Generic Service** from the **Resource type** dropdown menu.
3. Click **Next**. The **Possible Owners** window appears.
4. Be sure the two systems in your cluster are listed in the **Possible Owners** pane.
5. Click **Next**. The **Dependencies** window appears. Select HP SIM shared disk as dependencies. For example, in this white paper Disk F has been selected as dependencies.
6. Click **Next**. The **Generic Service Parameters** window appears.
7. In the **Service Name** field, enter **HP Systems Insight Manager** which is the service name for HP SIM 5.x as shown in Figure 8. Parameters are not required.
8. Click **Next**. The **Registry Replication** window appears.
9. Click **Finish**. The **Resource Creation Confirmation** window appears.
10. Click **OK**.

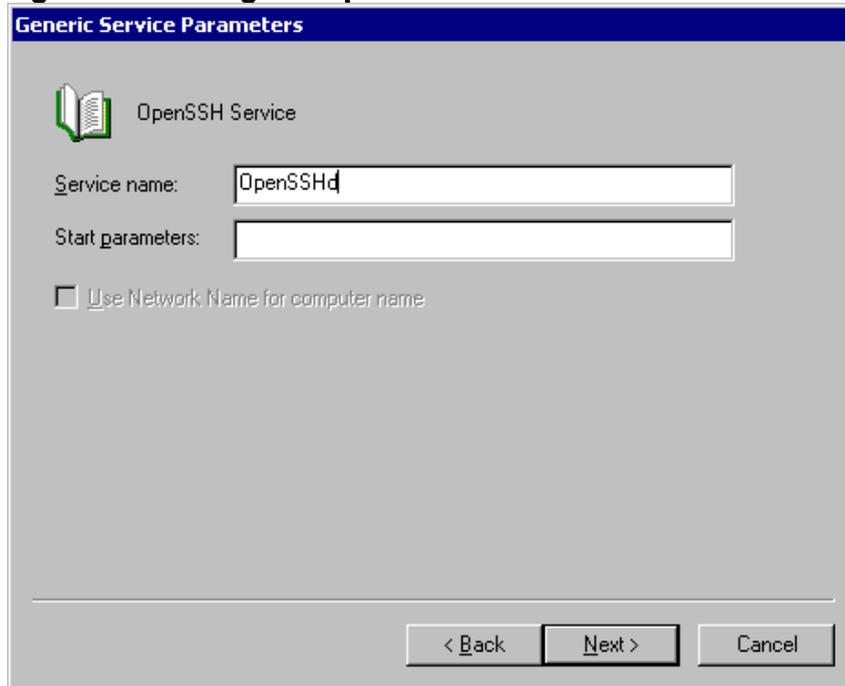
Figure 8: Creating the HP SIM 5.x service



Creating the OpenSSH Services for HP SIM 5.x generic service resource

1. In the **Cluster Administrator** window, select the **HP SIM Disk Group** from the left pane. Click anywhere in the right pane and select **New>Resource** from the dropdown menu.
2. In the **Name** field, enter **OpenSSH Service** and select **Generic Service** from the **Resource type** dropdown menu.
3. Click **Next**. The **Possible Owners** window appears. Be sure that both systems in your cluster are selected.
4. Click **Next**. The **Dependencies** window appears.
5. Do not set any dependencies. Click **Next**. The **Generic Service Parameters** window appears.
6. In the **Service name** field, enter **OpenSSHd** which is the service name for OpenSSH, as shown in Figure 9. Parameters are not required.
7. Click **Next**. The **Registry Replication** window appears.
8. Click **Finish**. The **Resource Creation Confirmation** window appears.
9. Click **OK**.

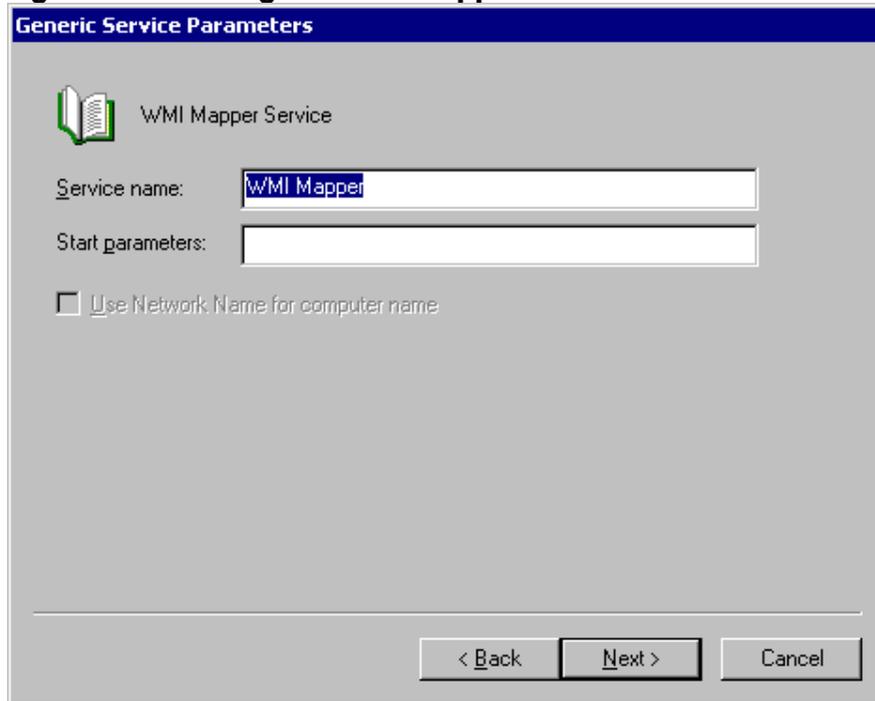
Figure 9: Creating the OpenSSH Service



Creating the Pegasus WMI Mapper generic service resource

1. In the **Cluster Administrator** window, select the **HP SIM Disk Group** from the left pane. Click anywhere in the right pane and select **New>Resource** from the dropdown menu.
2. In the **Name** field, enter **WMI Mapper Service**, and select **Generic Service** from the **Resource type** dropdown menu.
3. Click **Next**. The **Possible Owners** window appears. Be sure that both systems in your cluster are selected.
4. Click **Next**. The **Dependencies** window appears.
5. Do not set any dependencies. Click **Next**. The **Generic Service Parameters** window appears.
6. In the **Service name** field, enter **WMI Mapper** which is the service name for Pegasus WMI Mapper, as shown in Figure 10. Parameters are not required.
7. Click **Next**. The **Registry Replication** window appears.
8. Click **Finish**. The **Resource Creation Confirmation** window appears.
9. Click **OK**.

Figure 10: Creating the WMI Mapper Service



Creating the PMP services for HP SIM 5.x generic service resource

Note: This section is applicable only if PMP has been installed manually.

1. In the **Cluster Administrator** window, select the **HP SIM Disk Group** from the left pane. Click anywhere in the right pane and select **New>Resource** from the dropdown menu.
2. In the **Name** field, enter **PMP Service**, and select **Generic Service** from the **Resource type** dropdown menu.
3. Click **Next**. The **Possible Owners** window appears. Be sure that both systems in your cluster are selected.
4. Click **Next**. The **Dependencies** window appears.
5. Set the **HP SIM Service** as dependency.
6. Click **Next**. The **Generic Service Parameters** window appears.
7. In the **Service name** field, enter **HP Performance Management Pack** which is the service name for PMP, as shown in Figure 9. Parameters are not required.
8. Click **Next**. The **Registry Replication** window appears.

9. Click **Add** and add the registry key. The **Resource Creation Confirmation** window appears.
Note: ProLiant Performance Analyzer requires the specification of two registry keys to properly operate in a cluster. Add **SOFTWARE\HP\ProLiant Essentials\Licensing\4** and **SOFTWARE\HP\Performance Management Pack\4.0**.
10. Click **OK**.

Creating the PMP tools services for HP SIM 5.x generic service resources

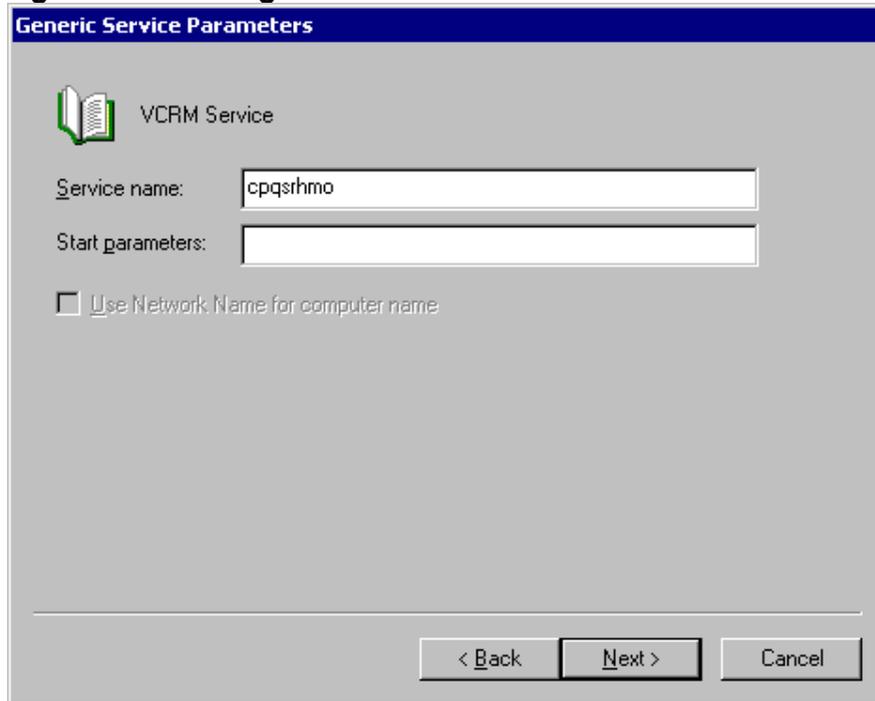
1. In the **Cluster Administrator** window, select the **HP SIM Disk Group** from the left pane. In the right pane, right-click anywhere and select **New** → **Resource** from the dropdown menu.
2. From the **New Resource** window, in the **Name** field, enter **PMP Tools** and select **Generic Service** from the **Resource type** dropdown menu.
3. Click **Next**. The **Possible Owners** window appears.
4. Be sure that both systems in your cluster are selected.
5. Click **Next**. The **Dependencies** window appears.
6. Set the **PMP Services** as dependency.
7. Click **Next**. The **Generic Service Parameters** window appears.
8. In the **Service name** field enter **HP PMP Tools** which is the service name for PMP Tool as shown in **Error! Reference source not found.**. Parameters are not required.
9. Click **Next**. The **Registry Replication** window appears.
10. Click **Finish**. A **Resource Creation Confirmation** appears.
11. Click **OK**.

Creating the Version Control Repository Manager (VCRM) 5.0 generic service resource

You must create the VCRM generic service resource, if you had opted to install the VCRM in step 8 in the Installing HP SIM 5.x on the primary system section.

1. In the **Cluster Administrator** window, select the **HP SIM Disk Group** from the left pane. In the right pane, right-click anywhere and select **New** → **Resource** from the dropdown menu.
2. From the **New Resource** window, in the **Name** field, enter **VCRM Service** and select **Generic Service** from the **Resource type** dropdown menu.
3. Click **Next**. The **Possible Owners** window appears.
4. Be sure that both systems in your cluster are selected.
5. Click **Next**. The **Dependencies** window appears.
6. Set the **HPSIM shared disk** as dependency. For this paper, Disk F: is used.
7. Click **Next**. The **Generic Service Parameters** window appears.
8. In the **Service name** field enter **cpqsrhmo** which is the service name for VCRM as shown in Figure 11. Parameters are not required.
9. Click **Next**. The **Registry Replication** window appears.
10. Click **Finish**. A **Resource Creation Confirmation** appears.
11. Click **OK**.

Figure 11: Creating the VCRM service



Creating the Virtual Machine Management Pack generic service resource

Note: This section is applicable only if VMM has been installed manually.

1. In the **Cluster Administrator** window, select the **HP SIM Disk Group** from the left pane. In the right pane, right-click anywhere and select **New>Resource** from the dropdown menu.
2. From the **New Resource** window, in the **Name** field, enter **VMM Service** and select **Generic Service** from the **Resource type** dropdown menu.
3. Click **Next**. The **Possible Owners** window appears.
4. Be sure that both systems in your cluster are selected.
5. Click **Next**. The **Dependencies** window appears.
6. Set the **HPSIM Service** as a dependency.
7. Click **Next**. The **Generic Service Parameters** window appears.
8. In the **Service** name field enter `hpvmmsvc` which is the service name for the VMM as shown in **Error! Reference source not found.** Parameters are not required.
9. Click **Next**. The **Registry Replication** window appears.
10. Click **Finish**. A **Resource Creation Confirmation** window appears.
11. Click **OK**.

Creating the Virtual Machine Management Webservice generic service resource

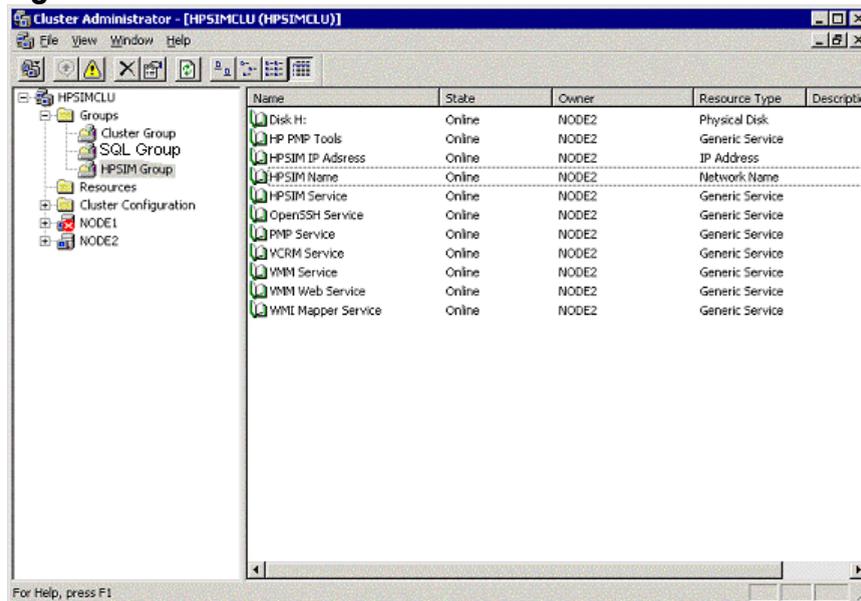
1. In the **Cluster Administrator** window, select the **HP SIM Disk Group** from the left pane. In the right pane, right-click anywhere and select **New>Resource** from the dropdown menu.

2. From the **New Resource** window, in the Name field, enter **VMM Web Service** and select **Generic Service** from the **Resource type** dropdown menu.
3. Click **Next**. The **Possible Owners** window appears.
4. Be sure that both systems in your cluster are selected.
5. Click **Next**. The **Dependencies** window appears.
6. Set the **HPSIM Service** as a dependency.
7. Click **Next**. The **Generic Service Parameters** window appears.
8. In the **Service** name field enter `hpvmmweb` is the service name for the VMM web as shown in **Error! Reference source not found.**. Parameters are not required.
9. Click **Next**. The **Registry Replication** window appears.
10. Click **Finish**. A **Resource Creation Confirmation** window appears.
11. Click **OK**.

Bringing the virtual group containing the HP SIM 5.x resources online

In the Cluster Administrator window, right-click on the HP SIM Disk Group in the left pane and select **Bring Online** from the dropdown menu. If configured properly, all resources should come online.

Figure 12: Cluster Administrator



The installation of HP SIM 5.x is now complete. The following section discusses how to validate your installation of HP SIM 5.x.

Validating the installation

To be sure that the HP SIM 5.x service can be moved between both systems, perform the following steps from either one of the cluster systems:

1. Open the **Cluster Administrator** and connect to the cluster.
2. In the **Cluster Administrator** window, on the left pane, right-click on the disk group containing the HP SIM 5.x program files. For example, HP SIM Disk Group is used in this paper. Select **Move Group**. Be sure that the group fails-over to the other system and that all of the HP SIM 5.x resources come online.
3. After the failover occurs on the second system restart the System Management Homepage service manually on the second system.
4. After waiting a few minutes to ensure that the HP SIM 5.x service has restarted, go to the HP SIM 5.x service through a Web browser using the network name you specified when creating the HP SIM 5.x network name resource (W2K-CLUS-HPSIM in this paper). The URL <http://W2K-CLUS-HPSIM:280> specifies the virtual network name and the port of the HP SIM 5.x

Note: You must always specify the port 280 in the URL of your Web browser to connect to the HP SIM 5.x service. To learn more about connecting to HP SIM 5.x, refer to the *HP Systems Insight Manager Technical Reference Guide*.

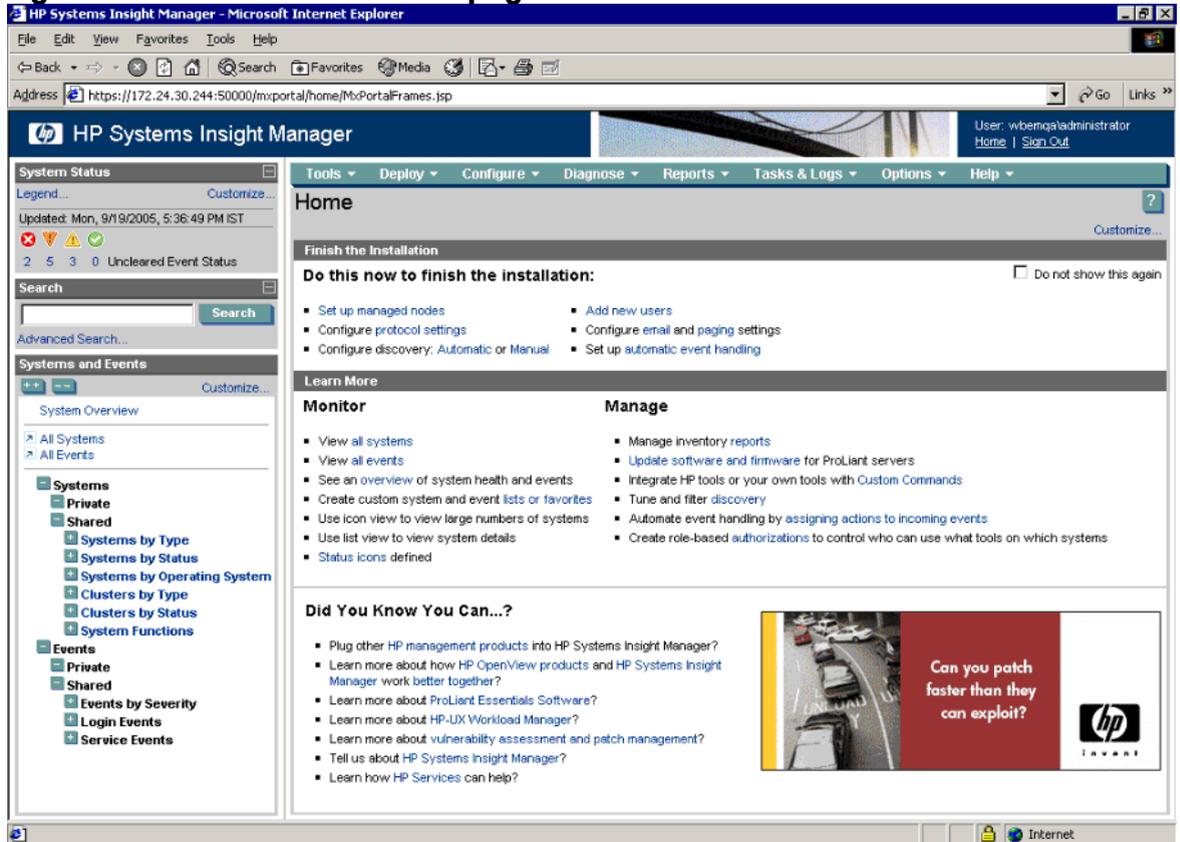
Note: The HP SIM 5.x icon on the Windows desktop of each system was created by the installation of HP SIM 5.x as a handy shortcut for a regular standalone server only. This icon is no longer applicable at this point because the HP SIM 5.x is clustered. The icon should be deleted from the desktop of each system to avoid future confusion.

5. A security alert displays. Click **OK**. The Login window appears.
6. Be sure to log in with the appropriate username, password, and domain for your cluster.

IMPORTANT: Clustering allows any system in the cluster to own the virtual group containing the HP SIM 5.x resources. With the creation of a virtual network name and IP address specific to the HP SIM 5.x service, clients can connect to the service without knowing which system currently owns the virtual group. When browsing to the virtual name for HP SIM 5.x rather than the name of the server that owns the virtual group, a security certificate for HP SIM 5.x is sent to your browser. If your browser is configured to warn about invalid site certificates, a security alert displays when connecting to the HP SIM 5.x virtual server (which was created earlier in this paper). This alert indicates that the name you have connected to does not match the name on the certificate. This is because the name on the certificate is the name of the secondary system and not that of the virtual server. To learn more about the browser security alert, refer to the *HP Systems Insight Manager User Guide* located on the HP Management CD (version 7.1 or greater).

7. After you have successfully logged in, the HP SIM 5.x home page appears as shown in Figure 13.

Figure 13: The HP SIM 5.x home page



Note: Navigate to **Options** → **Discovery**. Select **System Automatic Discovery** task and click **Edit**. The **Edit Discovery** page appears. Take a look at the **Ping inclusion ranges** list box (on the left side of the right frame, near the bottom of the screen). Note that HP SIM 5.x automatically generates a range for each of the IP addresses the current system has. Because one of these ranges is based on the cluster heartbeat IP address (generally of the form 10.0.0.1), that range would not be of any use, and you should remove it from the list in order to prevent future confusion. Be sure to click **OK**.

IMPORTANT: Navigate to the **Options** → **Protocol Settings** → **WMI Mapper Proxy**. Check the **Host** list and ensure that the cluster virtual name is used instead of any of the system names (delete the system name, if it is used, and add the cluster virtual name).

8. Return to the Cluster Administrator.
9. Repeat steps 2 through 6 in the Validating the installation using using the other system.

Note: These steps are to ensure HPSIM is working after failover.

10. You should be able to use the active system name to establish a command-line session to the cluster HP Systems Insight Manager service from a client system that has an **OpenSSH** client installed, using SSH.

Note: The only exception is when the disk group containing the HP SIM program files (HP SIM Disk Group in this paper) has failed-over to the other system. In this case, a failing message indicating **WARNING: REMOTE HOST IDENTIFICATION HAS CHANGED** appears. When that happens, simply use the name of the other system instead.

Troubleshooting

Note: This section is applicable only if PMP has been installed manually.

- **Problem:** Error during MSA tool execution.
- **Solution:** Execution of MSA tools might fail due to SSH key mismatch. For proper execution of MSA tools, perform the following:
 1. Make the primary system active and execute `mxagentconfig` to push the ssh key to primary system itself.
AND
 2. Make secondary system active and execute `mxagentconfig` to push the ssh key to secondary system itself.
- **Problem:** Unable to Single Sign-On to client.
- **Solution:** Client should have the certificate/Name of both cluster systems in it.
 1. If the **Trust mode** is **Trust By Certificate** on the client, open the Web agent certificate, `cert.pem` file, from both the systems and import them into client Web agent.
 2. If the **Trust mode** is **Trust By Name** on the client, include both the system names in trusted server name list.
- **Problem:** Unable to get the second system certificate when browsing to SMH
- **Solution:** Import the second system certificate on to the first system.

For more information

Refer to the following for more information regarding the topics referenced in this paper.

Microsoft cluster services

Clustering basics

www.microsoft.com/windows2000/technologies/clustering/default.asp

Steps to setting up a Microsoft cluster

www.microsoft.com/windows2000/techinfo/planning/server/clustersteps.asp

HP ProLiant clusters

<http://h18000.www1.hp.com/solutions/enterprise/highavailability/microsoft/index.html>

Microsoft SQL Server 2000 Enterprise Edition

System requirements

www.microsoft.com/sql/evaluation/sysreqs/2000/default.asp

White papers on SQL Server 2000

<http://www.microsoft.com/resources/documentation/sql/2000/all/reskit/en-us/default.mspx>

HP SIM 5.x

Overview and features

<http://h18013.www1.hp.com/products/servers/management/hpsim/index.html>

HP Systems Insight Manager quick specs

<http://h18013.www1.hp.com/products/servers/management/hpsim/quickspecs.html>