

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 SIM 5.x in a Microsoft Cluster Server configuration. Using Microsoft Windows 2000 Advanced Server / 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

HP SIM 5.x offers the ability to run in a Microsoft Windows 2000 Advanced Server / 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.

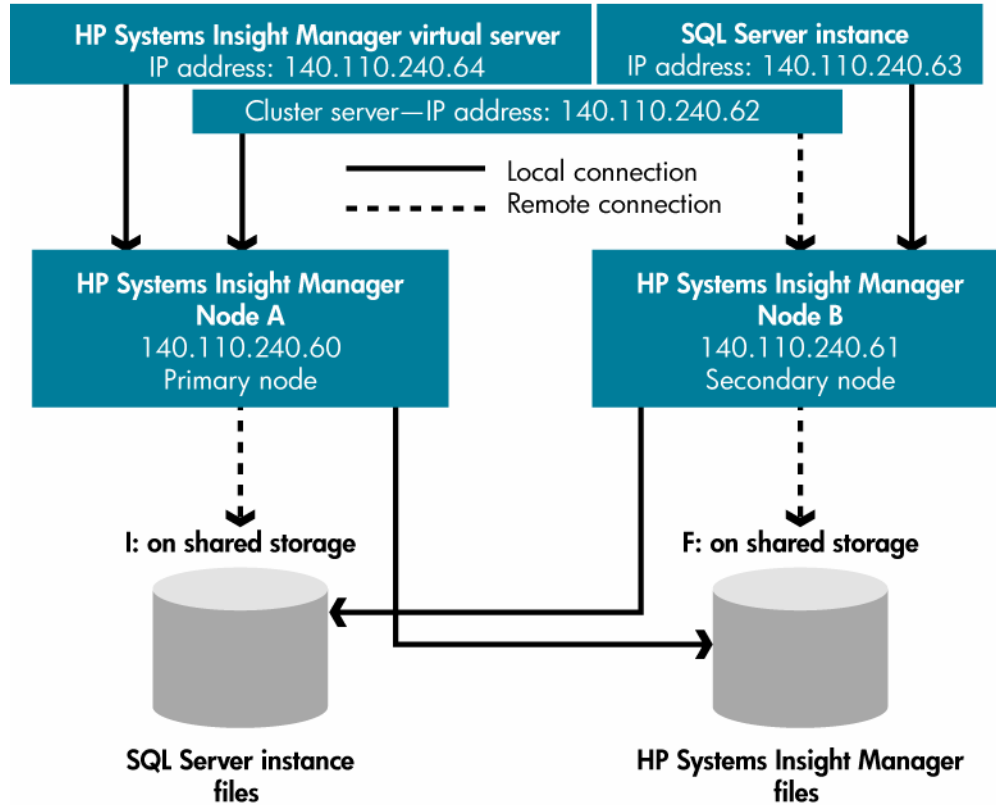
Additionally, by distributing the load for Microsoft SQL Server 2000 and HP SIM 5.x on separate systems, you can take advantage of maximum efficiency.

This white paper describes the steps to install a highly available clustered version of HP SIM 5.x on a ProLiant cluster running Windows 2000 Advanced Server / 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 wish 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 [“Installing the Microsoft SQL Server 2000 Enterprise Edition,”](#) 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 [“Installing HP SIM 5.x on the cluster”](#) for steps to install HP SIM 5.x and the process to make it highly available.

If HP Systems Insight Manger 4.2 SP2 is running in your cluster, go to [“Upgrading HP SIM 4.2 SP2 Cluster to HP SIM 5.x Cluster”](#) for steps to upgrade the HP SIM 4.2 SP2 to HP SIM 5.x in a cluster.

System infrastructure

Figure 1 details how to configure a cluster for enhanced performance once all components are installed. With this configuration, you can distribute the load by designating 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 purpose of the secondary system is to run 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, this drive is I:.
- The other shared disk contains the HP SIM 5.x program files. For the examples 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 Internet Explorer.
- Suggested action: All SNMP devices that report their 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 Microsoft Windows 2000 and Windows 2003 services
- Advanced TCP/IP and DNS network concepts

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

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

Hardware and software requirements

This document 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 SIM 5.x program files
 - At least one free shared disk for Microsoft SQL Server 2000
 - Microsoft Windows 2000 Advanced Server with Service Pack 4 / 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 (version 7.1 or later) and related ProLiant Support Packs

Setting up the Failover environment

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

Installing the Simple Network Management Protocol

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. Based on the operating system installed, insert the **Windows 2000 Advanced Server CD / 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.

IMPORTANT: If you install SNMP service 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 agent 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 Installation and Configuration Guides that ships 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.

To activate the HP Cluster MIB Agents on each system:

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. Under the **Inactive Agents:** list box on the right side, double-click **Clustering Information** to add it to the **Active Agents** list box on the left side.
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 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 2000 Enterprise Edition installed, you can create the HP SIM 5.x database and attach it to the existing server.

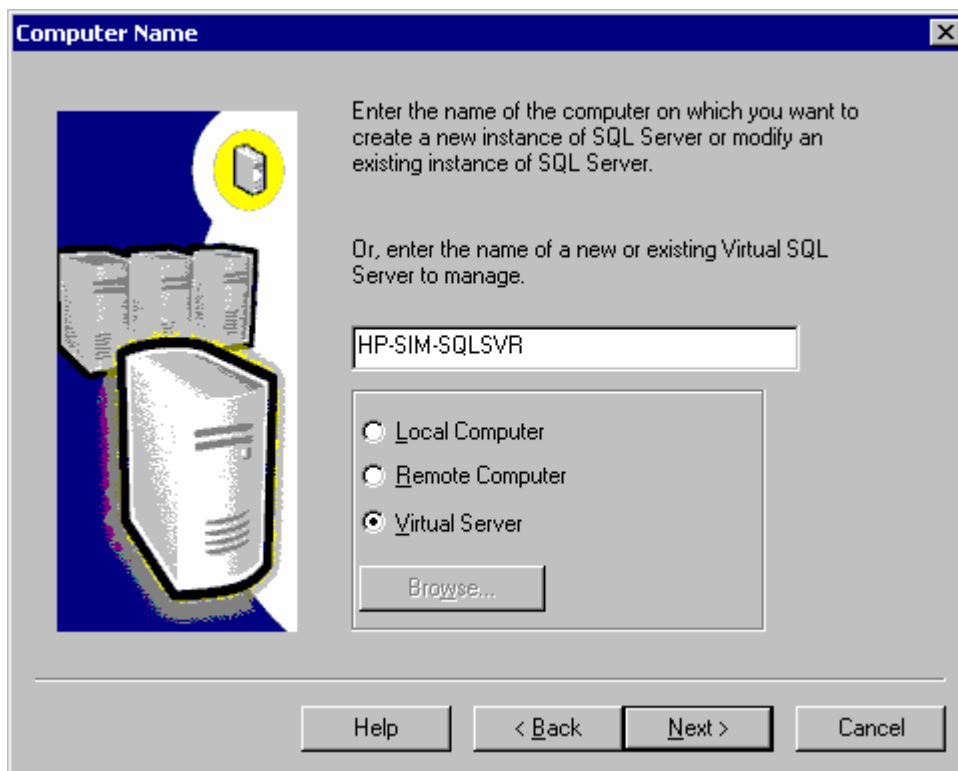
Note: This section of the white paper assumes that you already have a working two-system cluster with at least two free logical drives: one for the Microsoft SQL Server 2000 data files and another for the HP SIM 5.x program files.

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 administrator rights.
2. From the **Run** menu on any system in the cluster, enter **comclust** and press the **Enter** key. Wait for the command to complete. Then run **comclust** on the remaining system in the cluster. This executable sets up the 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 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 drive letter of your CD-ROM drive.)
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.

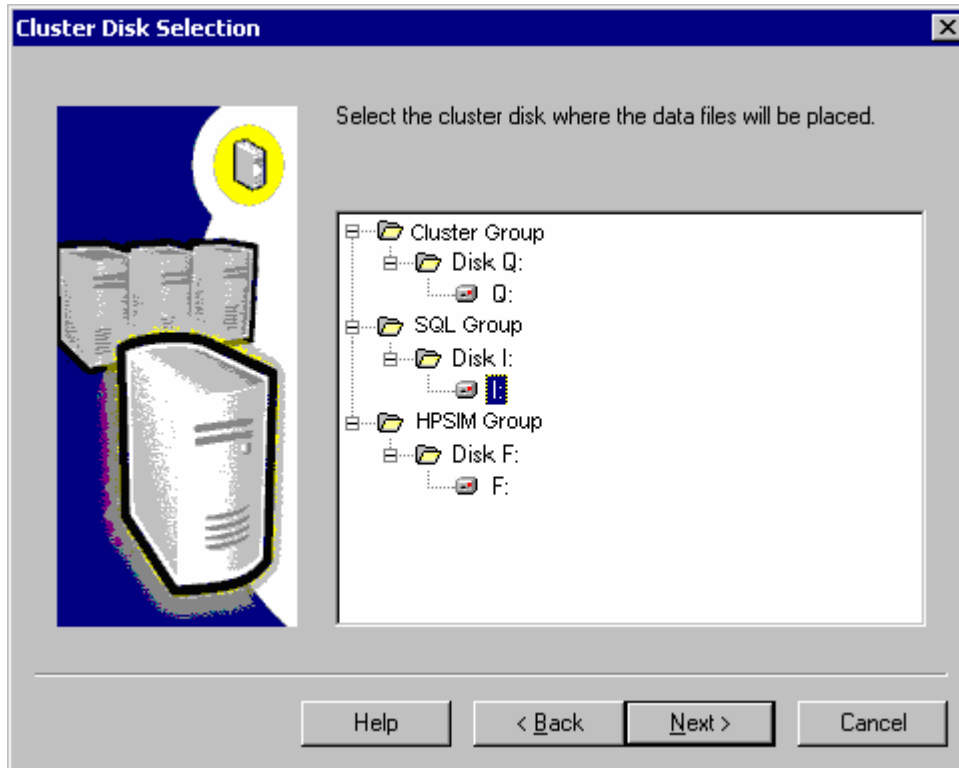
8. Enter the name of your new virtual server. For this example, we have used the name HP-SIM-SQLSVR, as shown in Figure 2.
9. Click **Next**.

Figure 2. The Computer Name window



10. Enter user information for your company. 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 the IP Address 140.110.240.63.
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 as shown in Figure 3.
16. Click **Next**. The **Cluster Management** window appears

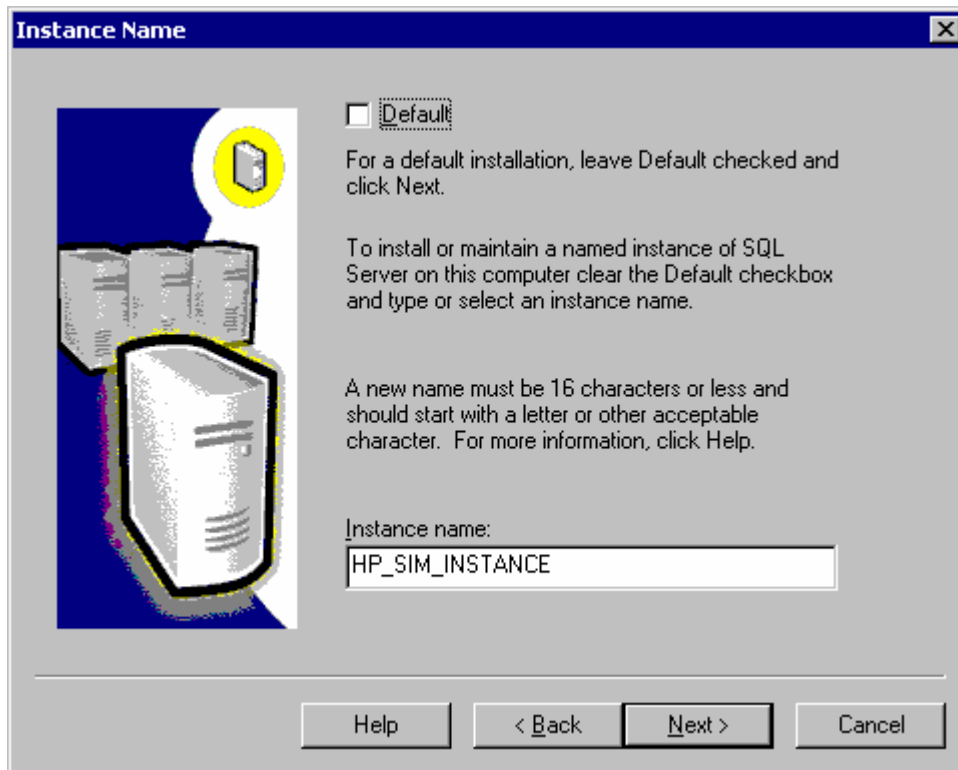
Figure 3. The Cluster Disk Selection window



IMPORTANT: 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 books online. When you use a small cluster, the quorum disk 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 purposes.

17. Be sure that the two systems of your cluster are displayed in the **Configured Systems** window.
18. Click **Next**. The **Remote 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 a Microsoft SQL Server 2000 virtual server called *HP_SIM_INSTANCE*. Clients connect to the server through the name *HP-SIM-SQLSVR\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 previously 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, as well as 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 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 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 SIM 5.x, but please 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 service should be running. To be sure that you meet these requirements, refer to the *HP Systems Insight Manager Installation and Configuration Guides* located 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 id that you used to install the Microsoft SQL Server 2000 Enterprise Edition instance.
2. Download the latest version of System Management Homepage (SMH) software from <http://h18023.www1.hp.com/support/files/server/us/>, from the link specified select the appropriate server and operating system and download the executable for SMH.
Note: SMH supports clustering from the version SMH 2.1.4 onwards.
3. Start the installation of SMH 2.1.4 by executing the downloaded setup file For example: cp00XXXX.exe, here 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**.
 - iii. **User Access** page appears. Select appropriate options and click **Next**.
 - iv. The **Trust mode** page appears. Select a trust mode and click **Next**.
 - v. The **IP Binding** page appears. Configure IP bindings if required and click **Next**.
 - vi. The **IP Restricted logins** page appears. Configure IP Restricted logins if required and click **Next**.
 - vii. Click **Next** on the **Summary** window and the installation begins.
 - viii. Click **Finish** to complete the installation of System Management Home Page.
4. Edit the smhpd.xml from the following path c:\hp\hpsmh\conf and add a tag, <monitor-ip-changes>1</monitor-ip-changes>, below <localaccess-type>Anonymous< /localaccess-type> and save the file.
5. Restart SMH service from service console under Administrative tools.

6. Insert the **HP Management CD** into the CD-ROM drive. The CD has 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 accept the license agreement for the HP Management CD.
7. Click the **Products** tab.
8. Click the **HP SIM 5.x-Windows Install** link. The **HP Systems Insight Manager Set up** window appears.
9. Click **Install**. The **Welcome to the HP Systems Insight Manager Installer** window appears.
10. Click **Install**. The **Select Installation Type** window appears.
11. Click **Custom**. The **Custom Install—Software Selection** window appears.

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

12. Click **Next**. The **Custom Install—Summary** window appears.
13. 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** dialog 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. For the example discussed in this paper we have chosen 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**. **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 for HP Systems Insight Manager Setup Wizard** window appears.

- vi. Click **Finish** to close the **Setup—OpenSSH Services for HP Systems Insight Manager** wizard dialog window.
- b. A new **Welcome to the Pegasus WMI Mapper V2.1 Setup Wizard** dialog 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 v2.1** screen.

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 v2.1 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** dialog window appears.

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

- i. Click **Next**. The **JVM Extraction** window appears.
- ii. The **Service Account Credentials** 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 in to the system.
- iii. Click **Next**. The **Database Configuration** 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 in to the system.
 4. Enter the name of the Microsoft SQL Server 2000 Enterprise Edition instance that you created. Refer [Installing a Clustered Instance of the Microsoft SQL Server 2000 Enterprise Edition](#). For this paper, HP-SIM-SQLSVR\HP-SIM-INSTANCE is discussed.

Note: If the credentials specified cannot be validated, a message appears stating this. 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 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.

- iv. Click **Next**. The **Select Destination Directory** window appears.
- v. Specify the desired directory to be in the desired shared disk. For example, we are using *F:\HPSIM* in this paper.
- vi. Click **Next**. The **Select Start Menu Folder** window appears.
- vii. 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.
- viii. Click **Next**. The **Ready to Install** window appears.
- ix. 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** dialog appears. At the end, the **Completing the HP Systems Insight Manager Setup Wizard** screen appears.

- x. Click **Finish** to close the **Setup HP Systems Insight Manager** wizard dialog window.
- d. A message box displays, which gives a warning message “**As part of the PMP installation HPSIM service must be stopped and restarted**”, Click **OK** to continue. A new **Welcome to the HP Performance Management Pack Setup Wizard** dialog window appears.
- i. Click **Next**. The **Database configuration** screen appears.
 1. The **Username** field displays the user name that is logged in.
 2. Enter in the correct password in the **Password** field.

3. The **Domain** field is already filled in with the user domain that you logged in with. The Data base server name field also displays the database name you had entered during the HP SIM installation.
 4. The Database server field is already filled in with the name of the Microsoft SQL Server 2000 Enterprise Edition instance that you created. Refer to [Installing a Clustered Instance of the Microsoft SQL Server 2000 Enterprise Edition](#). We use HP-SIM-SQLSVR\HP-SIM-INSTANCE in the examples discussed in this paper.
- ii. Click **Next** to proceed to **Installing** screen.

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

Note: After the copy process is complete, if your system does not have 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** to continue.

Note: A progress bar indicating **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 done, **Completing the HP Performance Management Pack setup Wizard** dialog box appears.
 - iii. Click **Finish** to exit the setup.
- e. A new **HP Package Setup: Version Control Repository Manager** dialog window appears.

Note: If the Version Control Repository Manager is already installed on your system, this dialog 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** screen. 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** dialog box.
 - iii. Click **Browse**. The **Browse for Folder** dialog box 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** dialog box and return to the **Repository Directory** dialog box.

Note: Click **Perform an initial repository population**, if you have ProLiant Support Packs available. Alternatively, the repository can be populated at later point of time 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 directly from HP website.
 - viii. Click **Finish**. The **HP ProLiant Setup: Version Control Repository Manager** dialog box appears.
 - ix. Click **Close**.
 - f. A message box appears which gives a warning message *As part of the VMM installation, HPSIM must be stopped and restarted*. Click **OK** to continue.
 - i. The **Welcome to the HP Virtual Machine Management Pack Setup Wizard** appears. Click **Next** to continue.
 - ii. The **Database configuration** page appears. Enter the password and click **Next** to continue.

- iii. **HP Virtual Machine Management Pack** is installed at this time. **Completing the HP Virtual Machine Management pack setup wizard** page appears after the installation. Click **Finish** to complete the installation.
 - h. A message box appears which gives a warning message *As part of the SMP installation, HPSIM Service must be stopped and restarted.* Click **OK** to continue.
 - i. **Welcome to the HP Server Migration Pack Setup Wizard** appears. Click **Next** to continue.
 - ii. **HP Server Migration Pack** is installed at this time. **Completing the HP Server Migration Pack setup wizard** page appears after the installation. Click **Finish** to complete the installation.
 - i. **HP Systems Insight Manager Installation Information** window appears. Click **OK**.
14. Click **Finished** from the **Custom Install—Status** window on the **HP Systems Insight Manager Installer** window to close the dialog box.
15. Click **Finish** in the **Pre-installation/Installation/Post-Installation** window.
16. The message **Please reboot your system to complete your HP Systems Insight Manager installation** appears.
17. Click **OK**.
18. Shutdown the system.

Installing HP SIM 5.x on the secondary system

To have a clustered installation of HP SIM, the second system in the cluster must complete the installation process as well, 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.

IMPORTANT: Be sure that the secondary system owns all of the clustered disks.

VERY 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 same-shared disk as in the primary system installation.

1. At your secondary system, repeat steps 1-13 in [Installing HP SIM 5.x on the primary system](#) with respect to the secondary system.
2. Open `~\HP Systems Insight manager\config\database.props` file and note down the database name specified against the keyword `hp.Database.databaseName`.
3. Shutdown the Secondary system.

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

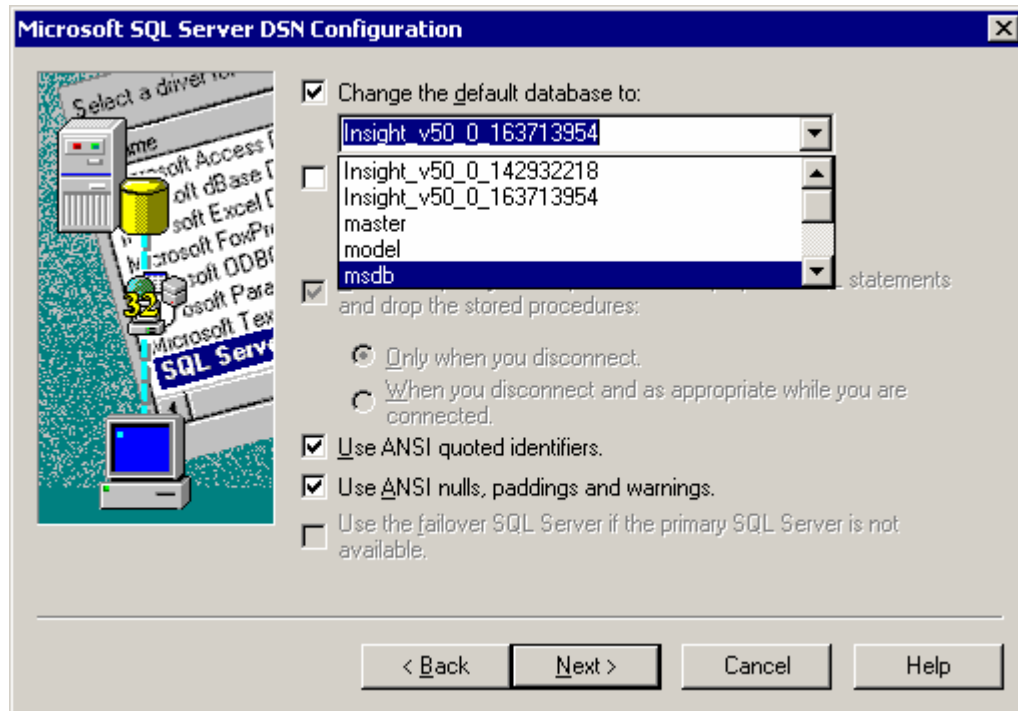
- a. Bring up primary system.
- b. Click **Control Panel**→**Administrative Tools**->**Data Sources (ODBC)**.
- c. Select **System DSN**.
- d. Select **Insight_v50_0** and click **Configure**.
- e. Update the **Database Description** referring to the database name created on Secondary system

Note: Use the database name noted in step 2 of [Installing HP SIM 5.x on the Secondary system](#).

- f. Click **Next**. The **authentication mode selection** window appears.
- g. Click **Next**. The database selection window appears. (As shown in Figure 5.)
- h. Select the database, which is created by the secondary system. Use the database name indicated in [Installing HP SIM 5.x on the Secondary system](#).)

- i. Click **Next**.
- j. Click **Finish** to complete the configuration. A summary window appears.
- k. Click **OK**. The **ODBC Data Source Administrator** window appears.
- l. Click **OK** to close **ODBC Data Source Administrator** window.

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



4. Go to [Adding the HP SIM 5.x cluster resources](#).

Upgrading HP SIM 4.2 SP2 Cluster to HP SIM 5.x Cluster

Note: This section assumes that HP SIM 4.2 SP2 is running in the failover mode in a two system Microsoft Windows 2000 advanced server / Microsoft Windows 2003 Enterprise Server cluster environment, and these servers meet the pre-requisites detailed in the [Hardware and Software Requirements](#). For more details, please refer *HP Systems Insight Manager Installation and Configuration Guides* and *HP Systems Insight Manager Release Notes* located on the HP Management CD.

Upgrading 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 id that you used to install the Microsoft SQL Server 2000 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 primary system owns all cluster resources.
5. Take a copy of the existing HP SIM 4.2, HP PMP, HP VMM, and HP SMP folder from the shared disk on which HPSIM and PMP are installed.
6. Start the HPSIM4.2, PMP, VMM and VCRM services manually.
7. Upgrading SMH. Refer to [Installing HP SIM 5.x on the primary system](#); execute Step 2 to Step 5.

8. Insert the **HP Management CD** into the CD-ROM drive. The CD has 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 to accept the license agreement for the HP Management CD.
 9. Click on the **Products** tab.
 10. Click the **HP SIM 5.x-Windows Install** link. The **HP Systems Insight Manager Set up** window appears.
 11. Click **Install**. The **Welcome to the HP Systems Insight Manager Installer** window appears.
 12. Click **Install**. The **Select Installation Type** window appears.
 13. Click **Custom**. The **Custom Install—Software Selection** window appears.
- Note:** The **Custom Install** option allows you to specify installing on the desired shared disks. For example, F: and I: in the examples discussed in this paper.
14. Click **Next**. The **Custom Install—Summary** window appears.
 15. Click **Install**. The installation of HP SIM 5.x and its dependent services is initiated.

- a. A new **Welcome to the Pegasus WMI Mapper V2.1 Setup Wizard** dialog 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** screen.

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** dialog window appears.

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

- i. Click **Next**. The **JVM Extraction** window appears.
- ii. The **Service Account Credentials** 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 that you have logged in with.
- iii. Click **Next**. The **Database Configuration** window appears.
 5. The **Username** field displays the user name that is logged in.
 6. Enter the password in the **Password** field.
 7. The **Domain** field displays the user domain that you have logged in with.
 8. The Database server field is already filled in with the name of the Microsoft SQL Server 2000 Enterprise Edition instance that you created. Refer to [Installing a Clustered Instance of the Microsoft SQL Server 2000](#)

[Enterprise Edition](#). For example, HP-SIM-SQLSVR\HP-SIM-INSTANCE is used in this paper.

Note: If the credentials specified cannot be validated, a message appears stating this. 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 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.

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, which might take a few minutes.

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

vi. Click **Finish** to close the **Setup HP Systems Insight Manager** wizard dialog window.

c. PMP Uninstall window appears.

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

A message box displays, which gives a warning message **As part of the PMP installation HPSIM service must be stopped and restarted**, Click **OK** to continue. A new **Welcome to the HP Performance Management Pack Setup Wizard** dialog window appears.

iv. Click **Next** to proceed to **Database configuration** screen.

1. The **Username** field displays the user name that is logged in.
2. Enter in 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 also displays the database name used during the HP SIM installation.
4. The Database server field is already populated with the name of the Microsoft SQL Server 2000 Enterprise Edition instance that you created. Refer "[Installing a Clustered Instance of the Microsoft SQL Server 2000 Enterprise Edition](#)" (HP-SIM-SQLSVR\HP-SIM-INSTANCE in the examples discussed in this paper).

ii. Click **Next** to continue. The **Installing** window appears.

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

Note: After the copy process is complete, if your system does not have 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** to continue.

Note: A progress bar indicating **Creating PMP database** appears. A folder *Performance Management Pack* is created in the same location where HP SIM and PMP are installed. For example, *F:\Performance Management Pack* in this white paper. The **Completing the HP Performance Management Pack setup Wizard** dialog box appears. Click **Finish** to exit the setup.

- d. A new **HP Package Setup: Version Control Repository Manager** dialog window appears.
 - Note:** If the latest Version Control Repository Manager is already installed on your system, this dialog window does not appear.
 - x. 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 on to step 14f.
 - xi. Click **Install** to proceed to the **Repository Directory** screen. The Repository Directory is already selected with the VCRM installed directory with HPSIM4.2. For example, in this case it is *F:\VCRM*.
 - xii. Click **Next**. The **Automatic Update** window appears.
 - xiii. If required, make the appropriate selections for automatic download of the latest support packs directly from HP Website.
 - xiv. Click **Finish**. The **HP ProLiant Setup: Version Control Repository Manager** dialog window appears.
 - xv. Click **Close**.
- e. A warning message appears indicating *As part of the VMM installation, HPSIM Service must be stopped and restarted*. Click **OK** to continue.
 - i. Another message appears indicating **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.
 - iii. A message box appears asking **Are you sure you want to remove HP Server Migration Pack and all of its component**. Click **Yes** to continue.
 - iv. The **HP Server Migration Pack Uninstall** window appears.
 - Note:** A progress bar appears indicating HPSMP is being uninstalled, which might take a few minutes.
 - v. A message box appears indicating **HP Server Migration Pack was successfully removed from your computer**. Click **OK**.
 - vi. The **Welcome to the HP Virtual Machine Management Pack Setup Wizard** appears. Click **Next** to continue.
 - vii. The **Database configuration** page appears. Enter the password and click **Next** to continue.
 - viii. The **HP Virtual Machine Management Pack** is installed at this time. The **Completing the HP Virtual Machine Management pack setup wizard** page appears after the installation. Click **Finish** to complete the installation.
- f. A message box appears indicating *As part of the SMP installation, HPSIM Service must be stopped and restarted*. Click **OK** to continue.
 - iv. The **Welcome to the HP Server Migration Pack Setup Wizard** appears. Click **Next** to continue.
 - v. The **HP Server Migration Pack** 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.
- g. The **HP Systems Insight Manager Installation Information** window appears. Click **OK** to close the window.

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

17. Click **Finish**. A message appears indicating *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 userid that you used to install the Microsoft SQL Server 2000 Enterprise Edition instance.

20. Select **Start→Run**.
21. Enter **Regedit** and click **OK**. The **Registry Editor** page appears.
22. Expand **HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard** open **Export Registry file** from Registry menu.
23. Enter a file name and click **Save**. Save the file in shared disk. For example, save it in **F:\ Hewlett**. This saves the HPSIM and VCRM registries.
24. Expand **HKEY_LOCAL_MACHINE\SOFTWARE\HP** open **Export Registry file** from the **Registry** menu.
25. Enter a file name and click **Save**. Save the file in shared disk. For example, save it in **F:\ HP**. This saves the PMP, VMM and SMP registries.
26. Shutdown the primary system.

Upgrading Secondary System

1. Power the Secondary system on, log in to Windows as a user with administrator rights.

Note: Be sure to log in with the same userid that you used to install the Microsoft SQL Server 2000 Enterprise Edition instance.
2. Be sure that secondary system owns all the cluster resources.
3. Select **Start→Run**.
4. Enter **Regedit** and click **OK**. The **Registry Editor** page appears.
5. Expand and select **HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard**
6. Open **Import Registry file** from the **Registry** menu.
7. Enter the path to the file, such as **F:\Hewlett** that is saved on the shared disk from primary system, and click **Open**. A message appears indicating that the registry file has been imported successfully.
8. Expand and select **HKEY_LOCAL_MACHINE\SOFTWARE\HP**.
9. Enter the path to the file, such as **F:\HP**, which is saved on the shared disk from the primary system, and click **Open**. A message appears indicating that the registry file has been imported successfully.
10. For the PMP Service to work on the secondary system, you must manually change the executable path of PMP Services in Registry.
11. Expand and select **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\HP Performance Management Pack** and select **ImagePath**
12. Right click **ImagePath** and select **Modify**.
13. Modify the value data: **F:\Performance Management Pack 3\pmp.exe** to **F:\Performance Management Pack 4\pmp.exe**.
14. Expand and select **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\HP PMP Tools** and select **ImagePath**
15. Right click **ImagePath** and select **Modify**.
16. Modify the value data: **F:\Performance Management Pack 3\PMP Tools\pmptools.exe** to **F:\Performance Management Pack 4\PMP Tools\pmptools.exe**.
17. Shutdown the secondary system.
18. Power the Primary system on, log in to Windows as a user with administrator rights.

Note: Be sure to log in with the same userid that you used to install the Microsoft SQL Server 2000 Enterprise Edition instance.
19. Be sure that primary system owns all the cluster resources.
20. Power the Secondary system on, log in to Microsoft Windows as a user with administrator rights.

Note: Be sure to log in with the same userid that you used to install the Microsoft SQL Server 2000 Enterprise Edition instance.
21. Go to [Adding the HP SIM 5.x cluster resources](#)

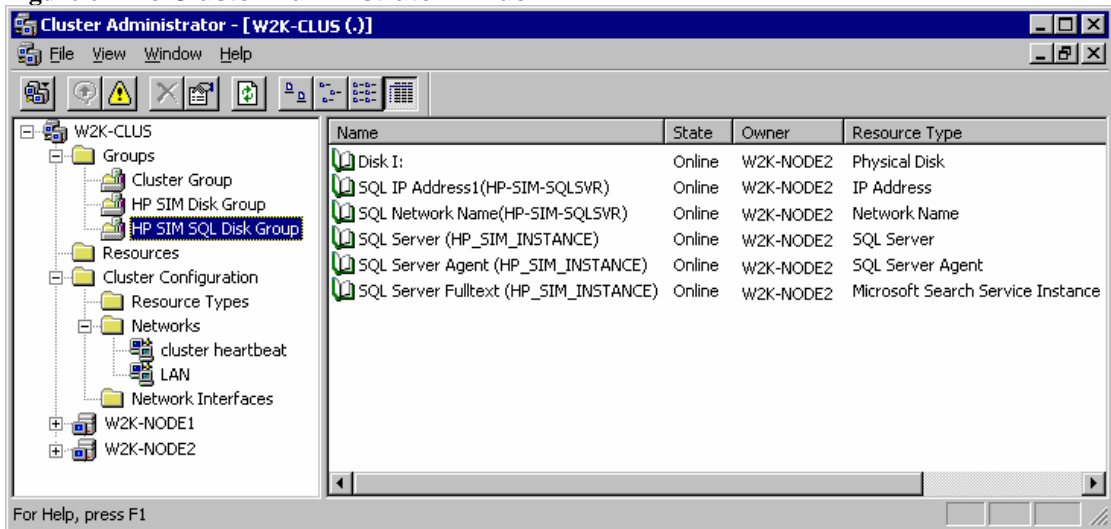
Adding the HP SIM 5.x cluster resources

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. Power the primary system on, and log in to windows as administrator.
2. Power the secondary system on.
3. Open the **Cluster administrator** tool from the primary system and confirm that the primary system owns all the cluster resources.
4. In 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 HPSIM 4.2 to HPSIM 5.0, 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 one. 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 one. In the examples discussed in this paper, it is called **HP SIM Disk Group**.

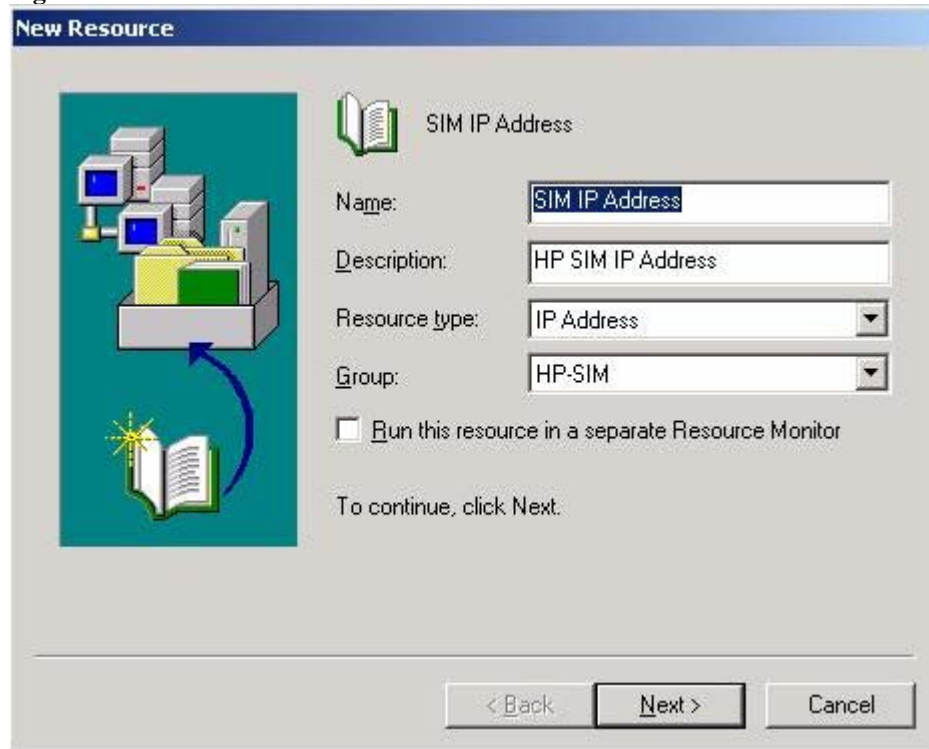
Note: It is not necessary to the functionality of HP SIM to change the names of these disk groups. If you used a pre-existing installation of Microsoft SQL Server 2000, the disk group containing these program files would be likely to already have an appropriate name.

Creating the HP SIM 5.x IP address resource

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

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. 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 resource, 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 white 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**.

Creating the HP SIM 5.x network name 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. The **New Resource** window appears.
3. In the **Name** field, enter **HP SIM Svr** and select **Network Name** 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 displays. Give the resource a network name (for this white paper *W2K-CLUS-HPSIM*). 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. 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 **HP SIM Service** and select **Generic Service** from the **Resource type** dropdown menu.
3. Click **Next**. The **Possible Owners** window appears.
4. Be sure that the two systems in your cluster are listed in the **Possible Owners** pane.
5. Click **Next**. The **Dependencies** window appears. Select HPSIM 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 the HP SIM 5.0 as shown in Figure 8. Parameters are not required.
8. Click **Next**. The **Registry Replication** window appears.
9. Click **Finish**. A **Resource Creation Confirmation** window appears.
10. Click **OK**.

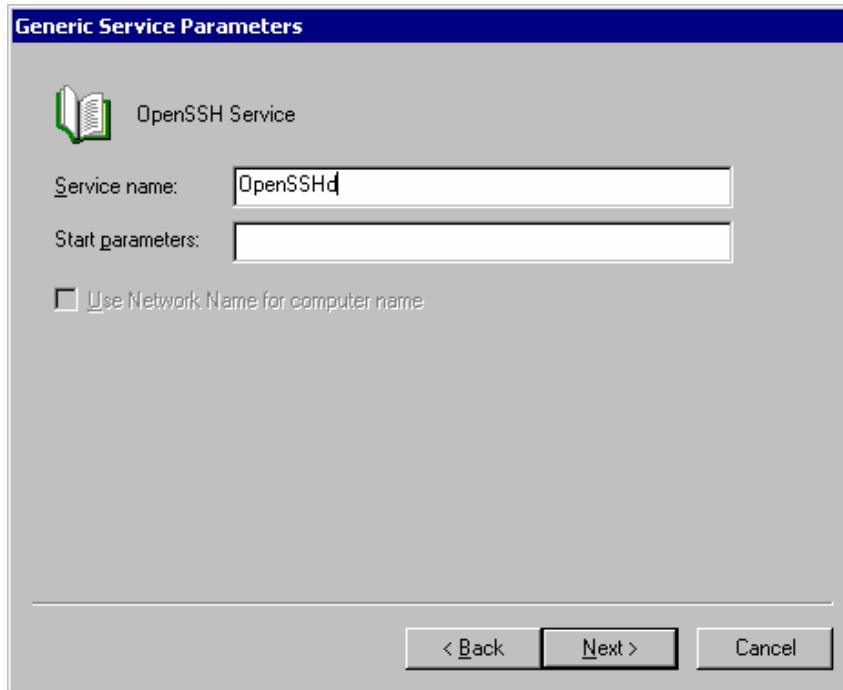
Figure 8. Creating the HP SIM 5.x service



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. 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 **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 the 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**.

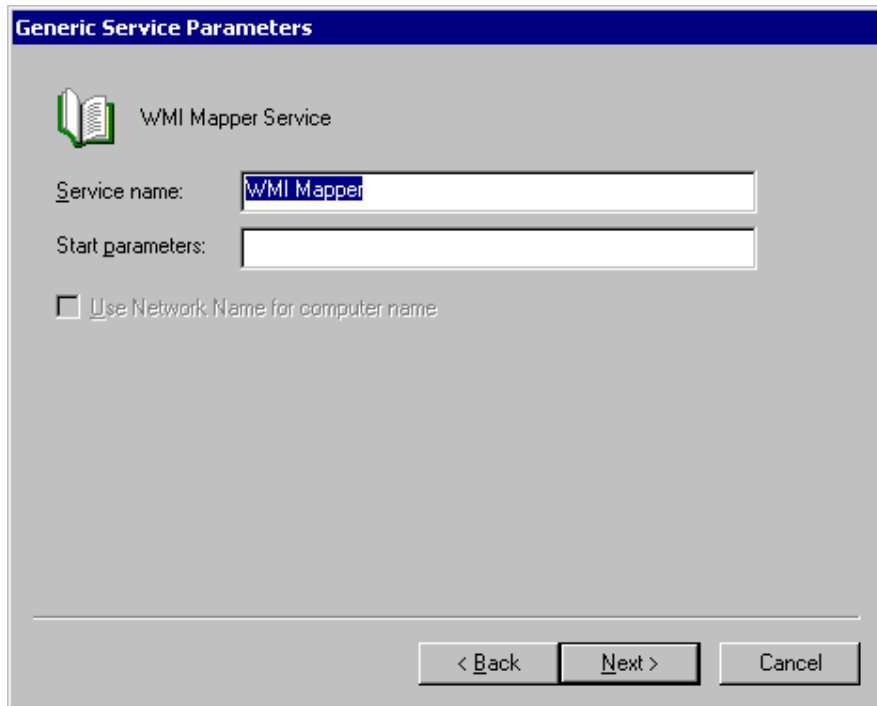
Figure 9. Creating the OpenSSH Service



Creating the Pegasus WMI Mapper generic service resource

1. In the **Cluster Administrator** window, select the *HP SIM Disk Group* from the left pane. 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 **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 for this service. 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**. A **Resource Creation Confirmation** window appears.
9. Click **OK**.

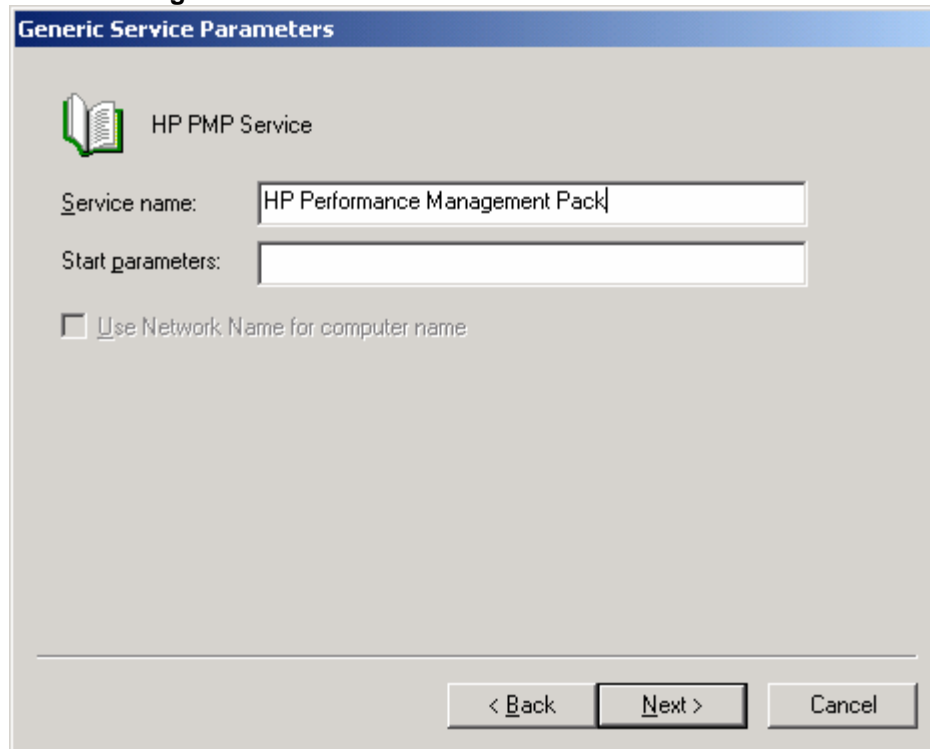
Figure 10. Creating the WMI Mapper Service



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

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 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 **HPSIM 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 11. Parameters are not required.
8. Click **Next**. The **Registry Replication** window appears.

Figure 11. Creating PMP service



9. Click **Add** and add the registry key. A **Resource Creation Confirmation** window appears.

Note: ProLiant Performance Analyzer requires the specification of two registry keys in order to properly operate in a cluster. Add **SOFTWARE\HP\ProLiant Essentials\Licensing\4** and **SOFTWARE\HP\Performance Management Pack\4.0**

Figure 12. Adding Registry Key.

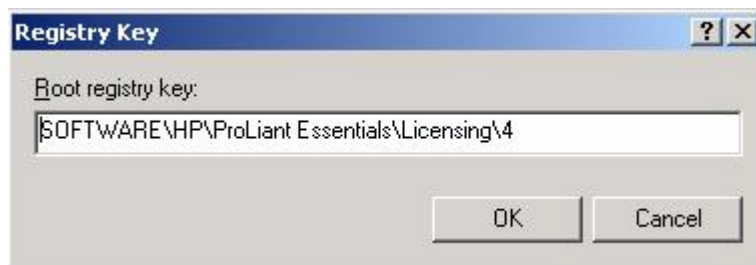
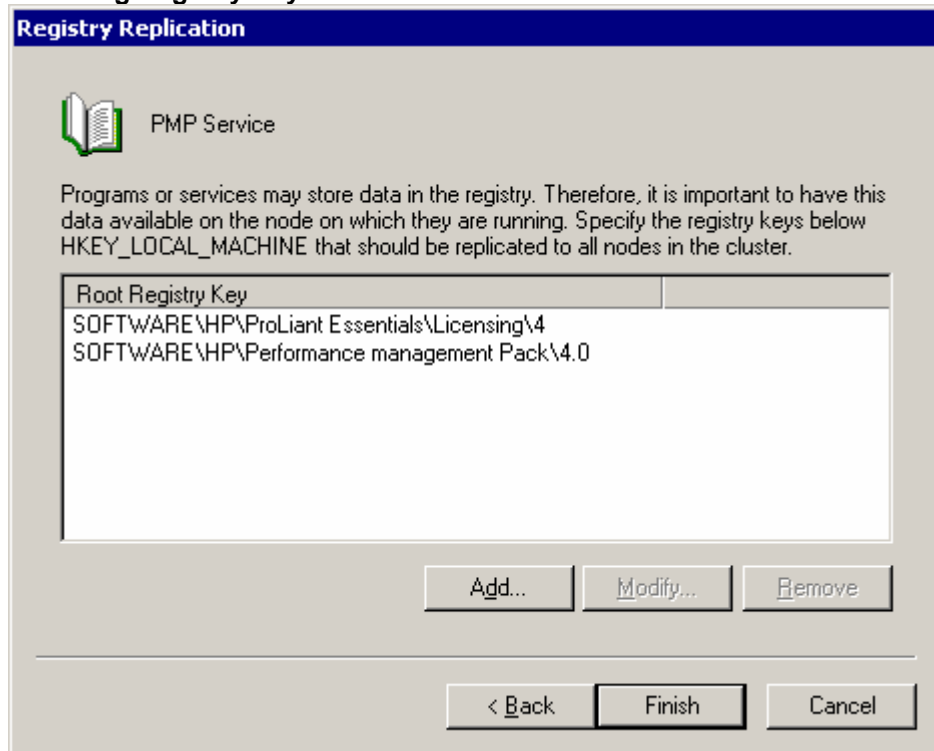


Figure 13. Adding Registry Key.



10. Click **OK**.

Creating the PMP tools 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. 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 Figure 14. Parameters are not required.
9. Click **Next**. The **Registry Replication** window appears.
10. Click **Finish**. A **Resource Creation Confirmation** appears.
11. Click **OK**.

Figure 14. Creating HP PMP Tool service.

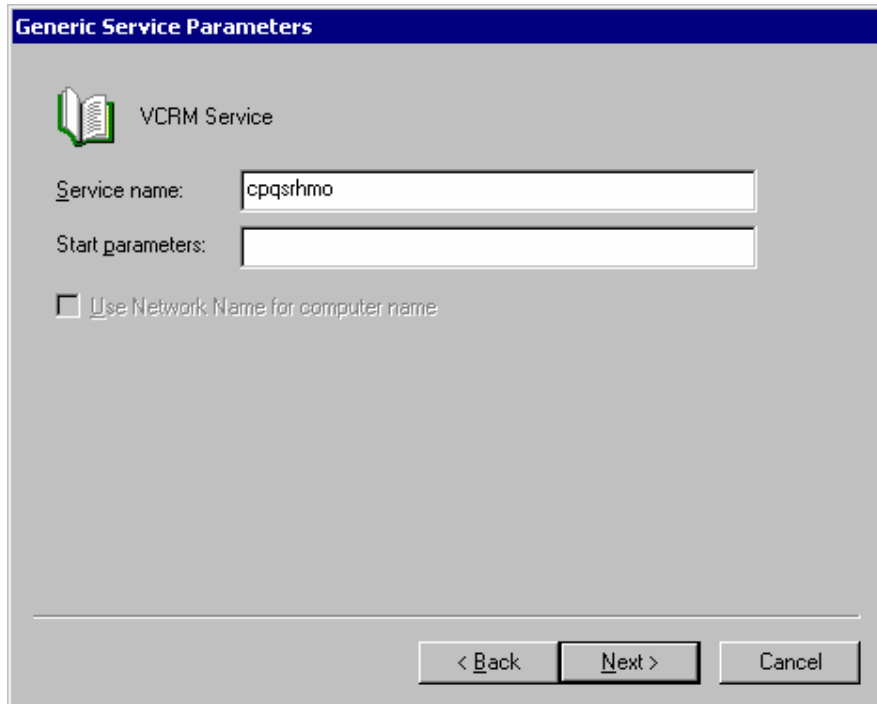
The screenshot shows a dialog box titled "Generic Service Parameters" with a blue header bar. Below the title bar, there is a green book icon and the text "PMP Tools". The dialog contains three input fields: "Service name:" with the text "HP PMP Tools" entered, "Start parameters:" which is empty, and a checkbox labeled "Use Network Name for computer name" which is unchecked. At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel".

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

You must create the VCRM generic service resource, if you had opted to install the VCRM in step 8f 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 a dependency. For this paper, we have selected Disk F as dependencies.
7. Click **Next**. The **Generic Service Parameters** window appears.
8. In the **Service Name** field enter **cpqsrhmo** which is the service name for the VCRM as shown in Figure 15. Parameters are not required.
9. Click **Next**. The **Registry Replication** window appears.
10. Click **Finish**. A **Resource Creation Confirmation** window appears.
11. Click **OK**.

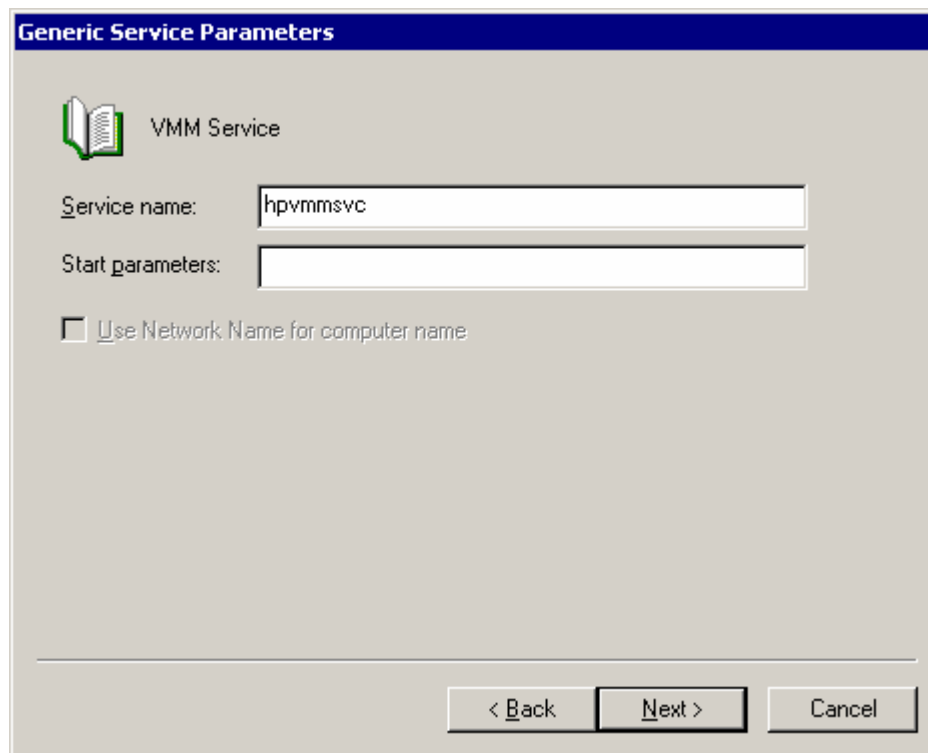
Figure 15. Creating the VCRM Service



Creating the Virtual Machine Management Pack 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 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 **hypmmsvc** which is the service name for the VMM as shown in Figure 16. Parameters are not required.
9. Click **Next**. The **Registry Replication** window appears.
10. Click **Finish**. A **Resource Creation Confirmation** window appears.
11. Click **OK**.

Figure 16. Creating the VMM Service




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 *hpymmweb* is the service name for the VMM web as shown in Figure 17. Parameters are not required.
9. Click **Next**. The **Registry Replication** window appears.
10. Click **Finish**. A **Resource Creation Confirmation** window appears.
11. Click **OK**.

Figure 17. Creating the VMM Service

Generic Service Parameters

 VMM Web Service

Service name:

Start parameters:

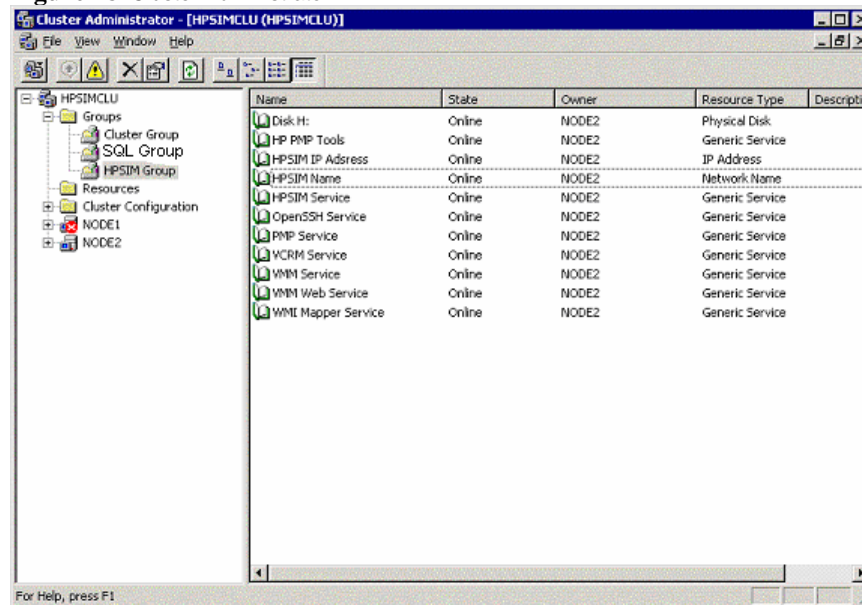
Use Network Name for computer name

< Back Next > Cancel

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 18. 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 fail over 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 User Guide*.

Note: The Systems Insight Manager 5.0 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.

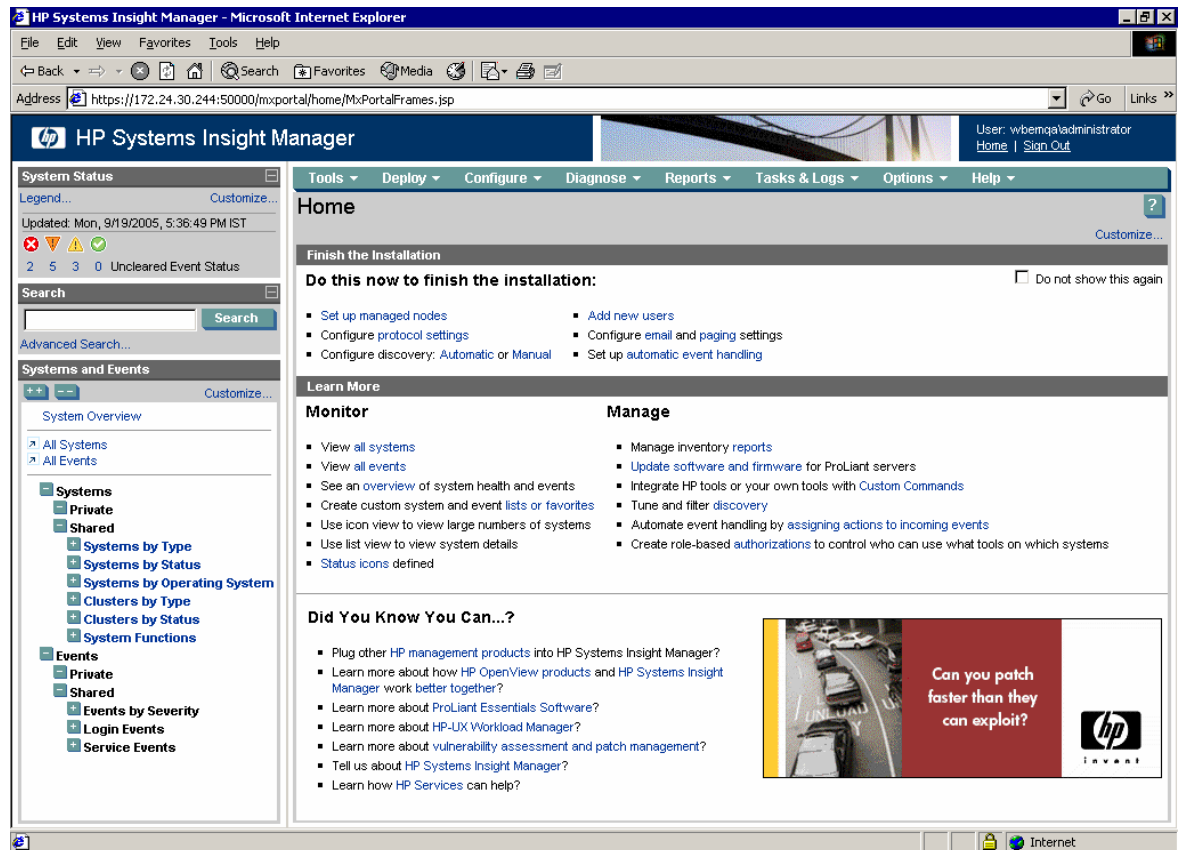
5. A security alert displays. Click **OK**. The **Login** window appears.

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 19.

Figure 19. 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 section [Validating the Installation](#) 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

- **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.msp>

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>

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