HP OpenView Smart Plug-in for Microsoft® Exchange Server

For HP OpenView Operations for Windows®

Software Version: 11.10

Configuration Guide

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1 Introduction to HP OpenView Smart Plug-ins

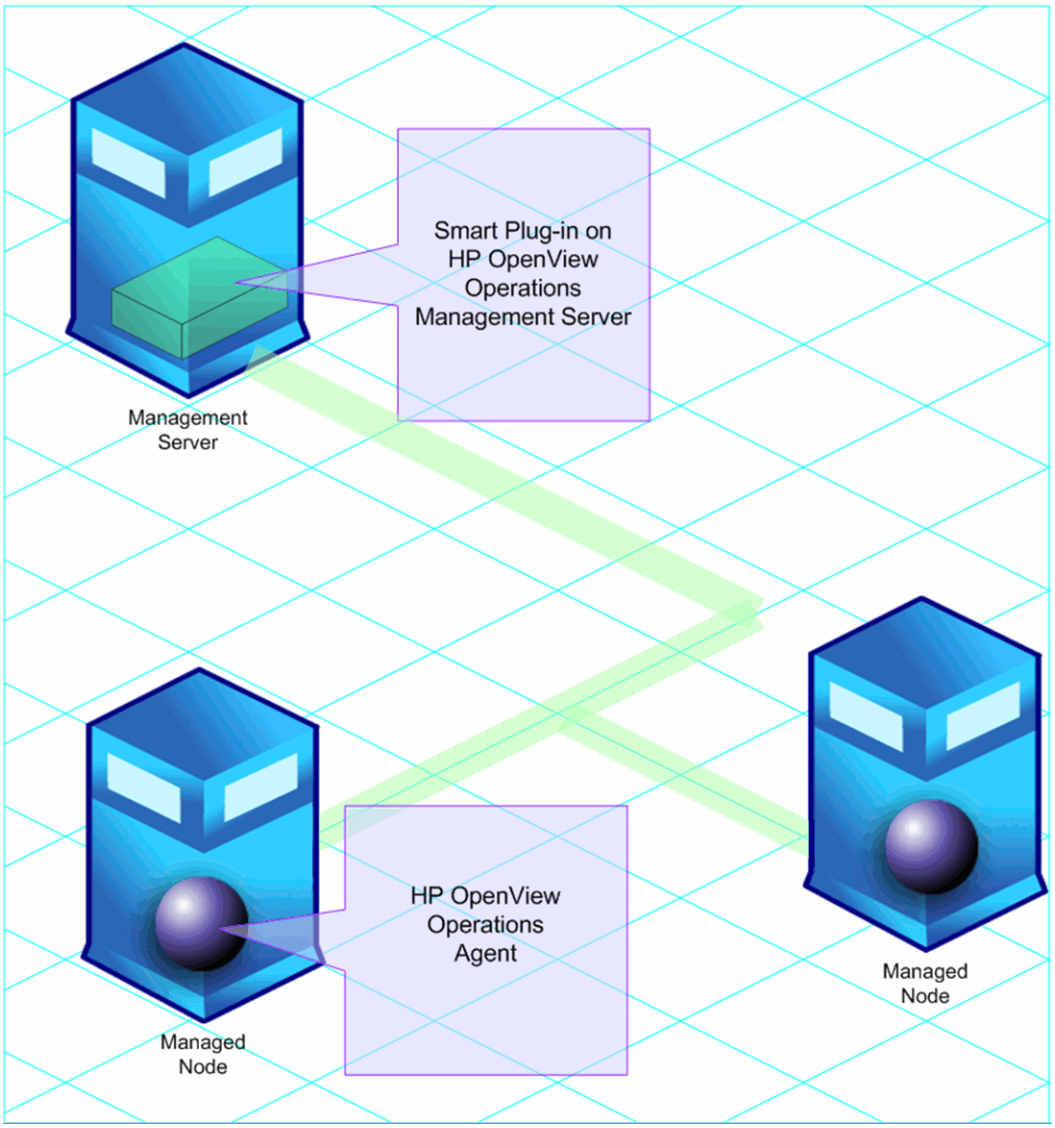
HP OpenView Smart Plug-ins (SPIs) work in conjunction with HP OpenView Operations (OVO) to help you monitor, detect, solve, and prevent problems in your enterprise IT environment. The combination of OVO and SPIs enables you to simplify the following tasks in your IT resource:

- Monitoring availability and health
- Detecting performance lapse
- Detecting, preventing, and solving problems
- Documenting problem solutions
- Generating reports

OVO is a distributed client-server software. The central server, on which OVO is installed, is called the **management server**. OVO monitors systems in the network where your enterprise IT applications and resources are installed. These systems, which are monitored by OVO, are called **managed nodes**. The OVO agent, residing on every managed node, facilitates communication between the management server and the managed node.

A SPI is software that provides management capabilities to OVO specific to a particular enterprise application. You must install a SPI on the management server.

Figure 1 OVO Client-Server Architecture



Smart Plug-in for Microsoft Exchange Server

The Smart Plug-in for Microsoft Exchange Server (the Exchange SPI) enables OVO to monitor Microsoft Exchange Server 2007, 2003, 2000, and 5.5. It enables you to monitor and manage your enterprise Exchange environment through predefined policies, which you can customize. These policies help you monitor server load, server performance, client availability, message delivery times, and service level objectives.

After you set up the Exchange SPI, you can view critical information about your Microsoft Exchange Server through OVO console in the form of:

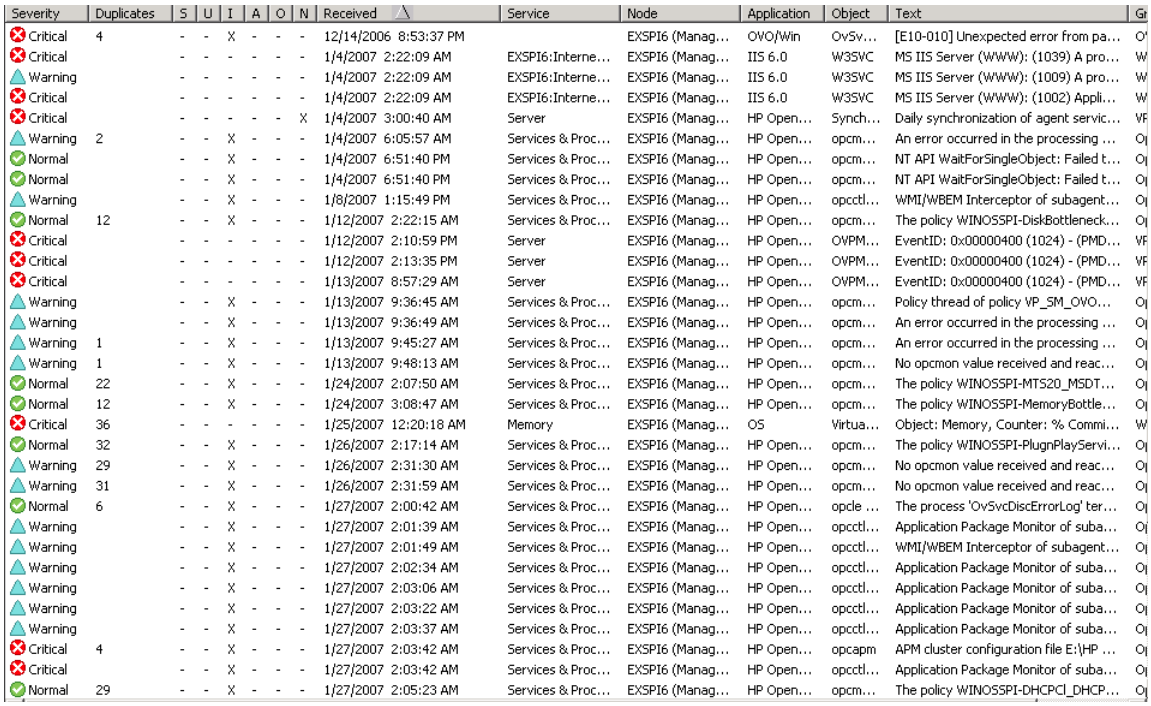
- Message alerts
- Map view
- Reports and graphs

- Topology viewer

Message Alerts

The Exchange SPI monitors events and services on the managed nodes (servers on which the Microsoft Exchange Server is installed and the OVO agent is deployed) and generates messages, which are displayed on the message browser of OVO console.

Figure 2 Message Alerts on OVO Console

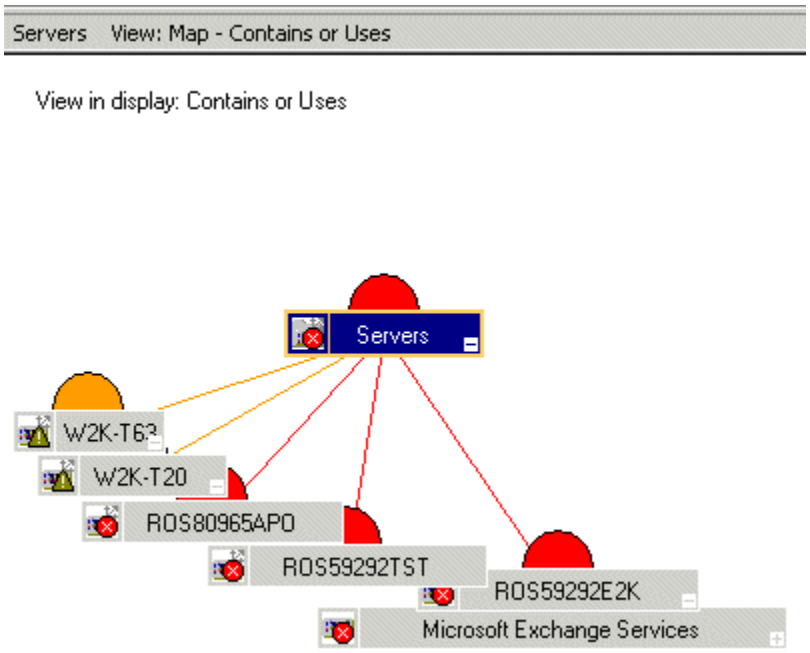


Severity	Duplicates	S	U	I	A	O	N	Received	Service	Node	Application	Object	Text	Gr
Critical	4	-	-	X	-	-	-	12/14/2006 8:53:37 PM		EXSPI6 (Manag...	OVO/Win	OvSv...	[E10-010] Unexpected error from pa...	O'
Critical		-	-	-	-	-	-	1/4/2007 2:22:09 AM	EXSPI6:Interne...	EXSPI6 (Manag...	IIS 6.0	W3SVC	MS IIS Server (WWW): (1039) A pro...	W
Warning		-	-	-	-	-	-	1/4/2007 2:22:09 AM	EXSPI6:Interne...	EXSPI6 (Manag...	IIS 6.0	W3SVC	MS IIS Server (WWW): (1009) A pro...	W
Critical		-	-	-	-	-	-	1/4/2007 2:22:09 AM	EXSPI6:Interne...	EXSPI6 (Manag...	IIS 6.0	W3SVC	MS IIS Server (WWW): (1002) Appli...	W
Critical		-	-	-	-	-	X	1/4/2007 3:00:40 AM	Server	EXSPI6 (Manag...	HP Open...	Synch...	Daily synchronization of agent servic...	VF
Warning	2	-	-	X	-	-	-	1/4/2007 6:05:57 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	An error occurred in the processing ...	Op
Normal		-	-	X	-	-	-	1/4/2007 6:51:40 PM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	NT API WaitForSingleObject: Failed t...	Op
Normal		-	-	X	-	-	-	1/4/2007 6:51:40 PM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	NT API WaitForSingleObject: Failed t...	Op
Warning		-	-	X	-	-	-	1/8/2007 1:15:49 PM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcctl...	WMI/WBEM Interceptor of subagent...	Op
Normal	12	-	-	X	-	-	-	1/12/2007 2:22:15 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	The policy WINOSSPI-DiskBottleneck...	Op
Critical		-	-	-	-	-	-	1/12/2007 2:10:59 PM	Server	EXSPI6 (Manag...	HP Open...	OVPM...	EventID: 0x00000400 (1024) - (PMD...	VF
Critical		-	-	-	-	-	-	1/12/2007 2:13:35 PM	Server	EXSPI6 (Manag...	HP Open...	OVPM...	EventID: 0x00000400 (1024) - (PMD...	VF
Critical		-	-	-	-	-	-	1/13/2007 8:57:29 AM	Server	EXSPI6 (Manag...	HP Open...	OVPM...	EventID: 0x00000400 (1024) - (PMD...	VF
Warning		-	-	X	-	-	-	1/13/2007 9:36:45 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	Policy thread of policy VP_SM_OVO...	Op
Warning		-	-	X	-	-	-	1/13/2007 9:36:49 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	An error occurred in the processing ...	Op
Warning	1	-	-	X	-	-	-	1/13/2007 9:45:27 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	An error occurred in the processing ...	Op
Warning	1	-	-	X	-	-	-	1/13/2007 9:48:13 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	No opcmon value received and reac...	Op
Normal	22	-	-	X	-	-	-	1/24/2007 2:07:50 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	The policy WINOSSPI-MTS20_MSDT...	Op
Normal	12	-	-	X	-	-	-	1/24/2007 3:08:47 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	The policy WINOSSPI-MemoryBottle...	Op
Critical	36	-	-	-	-	-	-	1/25/2007 12:20:18 AM	Memory	EXSPI6 (Manag...	OS	Virtua...	Object: Memory, Counter: % Commi...	W
Normal	32	-	-	X	-	-	-	1/26/2007 2:17:14 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	The policy WINOSSPI-PlugnPlayServi...	Op
Warning	29	-	-	X	-	-	-	1/26/2007 2:31:30 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	No opcmon value received and reac...	Op
Warning	31	-	-	X	-	-	-	1/26/2007 2:31:59 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	No opcmon value received and reac...	Op
Normal	6	-	-	X	-	-	-	1/27/2007 2:00:42 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcle ...	The process 'OvSvcDiscErrorLog' ter...	Op
Warning		-	-	X	-	-	-	1/27/2007 2:01:39 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcctl...	Application Package Monitor of suba...	Op
Warning		-	-	X	-	-	-	1/27/2007 2:01:49 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcctl...	WMI/WBEM Interceptor of subagent...	Op
Warning		-	-	X	-	-	-	1/27/2007 2:02:34 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcctl...	Application Package Monitor of suba...	Op
Warning		-	-	X	-	-	-	1/27/2007 2:03:06 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcctl...	Application Package Monitor of suba...	Op
Warning		-	-	X	-	-	-	1/27/2007 2:03:22 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcctl...	Application Package Monitor of suba...	Op
Warning		-	-	X	-	-	-	1/27/2007 2:03:37 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcctl...	Application Package Monitor of suba...	Op
Critical	4	-	-	X	-	-	-	1/27/2007 2:03:42 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcapm	APM cluster configuration file E:\HP ...	Op
Critical		-	-	X	-	-	-	1/27/2007 2:03:42 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcctl...	Application Package Monitor of suba...	Op
Normal	29	-	-	X	-	-	-	1/27/2007 2:05:23 AM	Services & Proc...	EXSPI6 (Manag...	HP Open...	opcm...	The policy WINOSSPI-DHCPCl_DHCP...	Op

Map View

The map view of OVO presents a graphical and structural view of your Microsoft Exchange Server environment. The Exchange SPI discovers Exchange nodes and Exchange environment services and displays them in the map view. The map view displays the real-time status of your Exchange environment.

Figure 3 Map View on OVO Console



The map view indicates severity levels problems in the Exchange organization with the help of colors (red, yellow, blue, and green).

Reports and Graphs

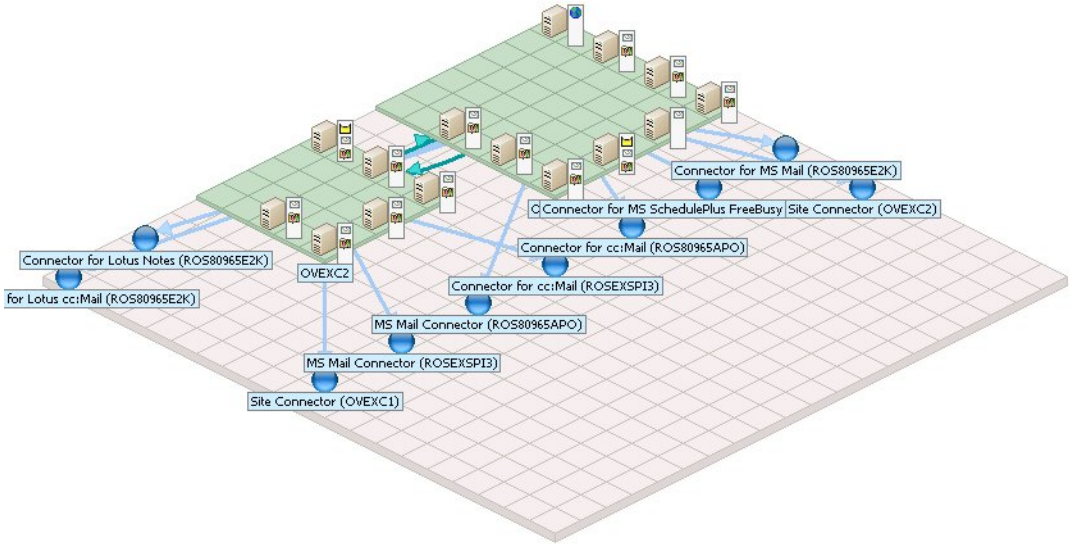
The reporting component, which is installed with HP OpenView Operations, gathers data collected by Exchange SPI data collection policies to generate reports. It captures and formats data collected at nodes and generates web based reports.

The graphing component generates graphs from near real-time data gathered from the managed nodes.

Topology Viewer

The Exchange SPI enables you to view an Exchange organization graphically with the help of three-dimensional maps of routing groups and server connections. From the topology view you can quickly view routing groups, Exchange servers, and the roles they play within your Exchange organization.

Figure 4 Topology Viewer



This release of the Exchange SPI does not provide Topology Viewer tool for Exchange Server 2007.

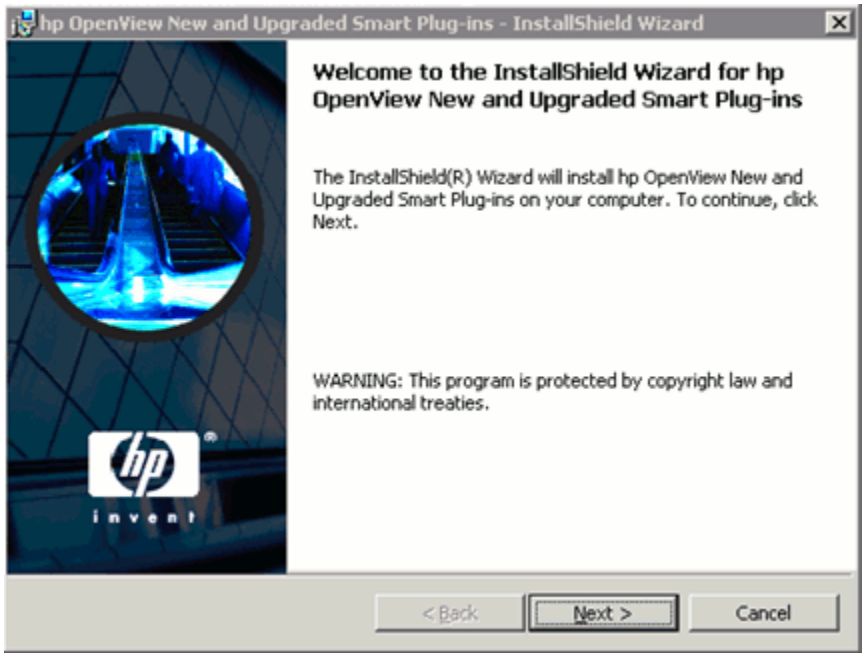
2 Installing the Exchange SPI

The Exchange SPI is packaged with the *Smart Plug-ins, New and Upgraded* CD. You must install the Exchange SPI on the OVO management server. The installation wizard guides you through the entire process of SPI installation.

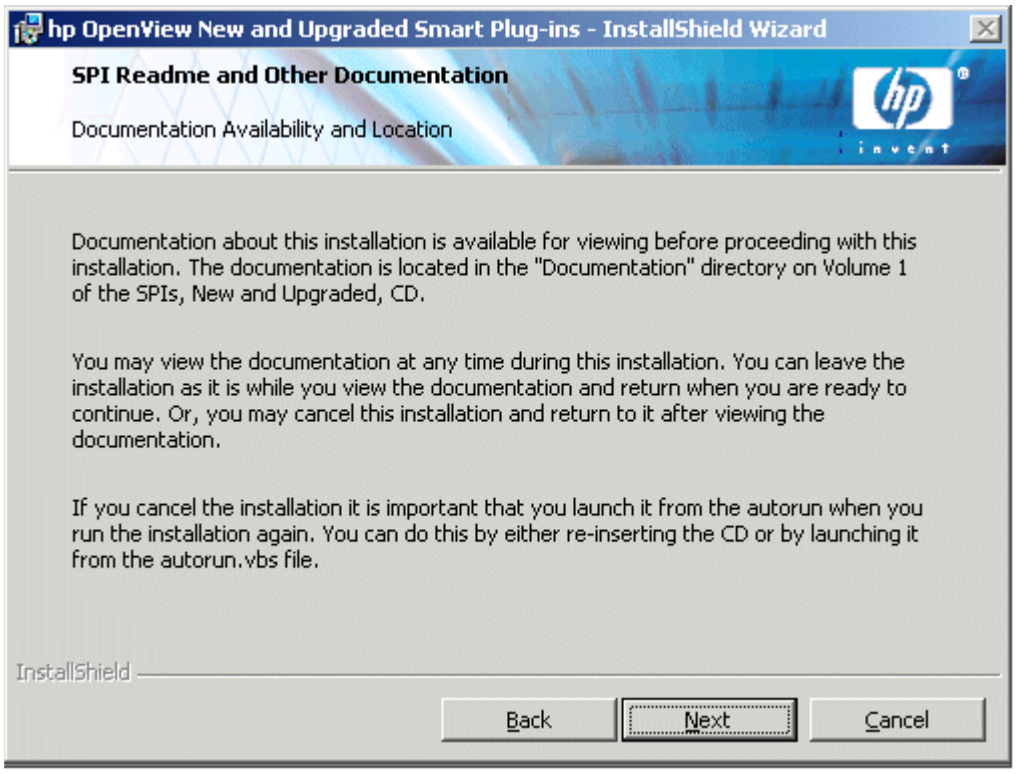
Installation Procedure

To install the Exchange SPI on the management server, follow these steps:

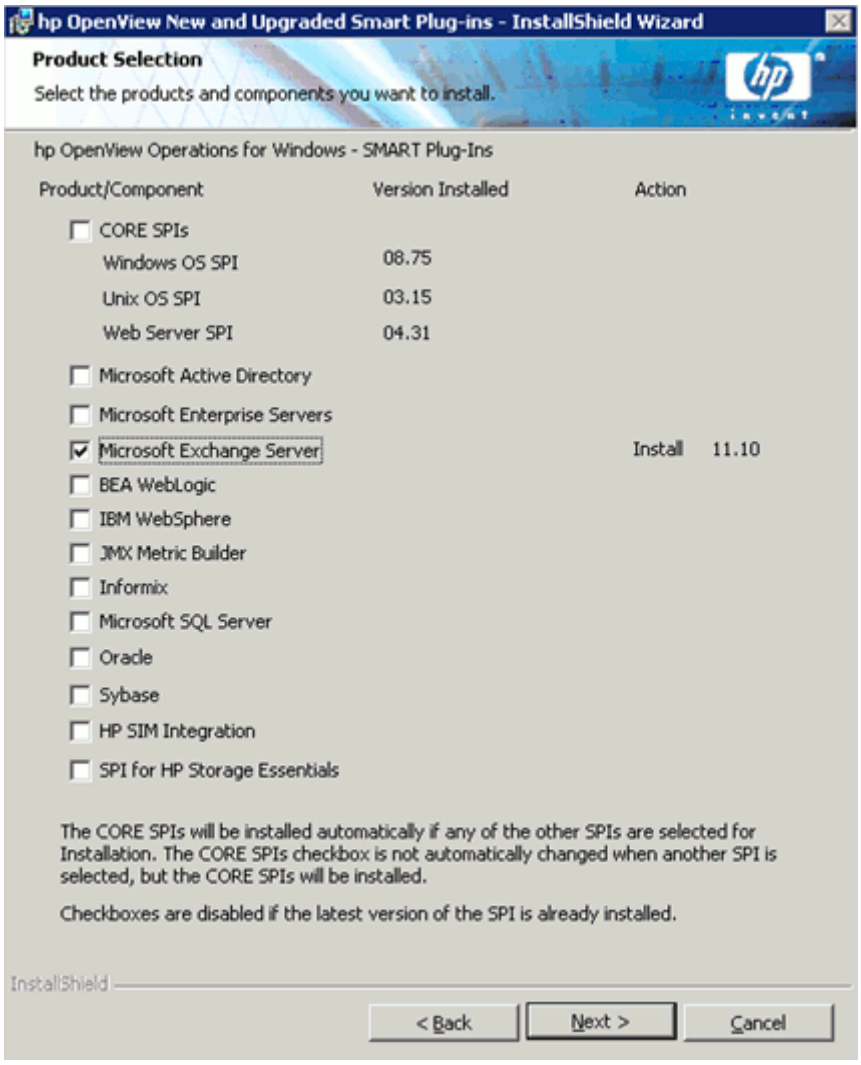
1 Insert the *Smart Plug-ins, New and Upgraded* CD into the CD-ROM drive of the management server. The installation wizard opens.



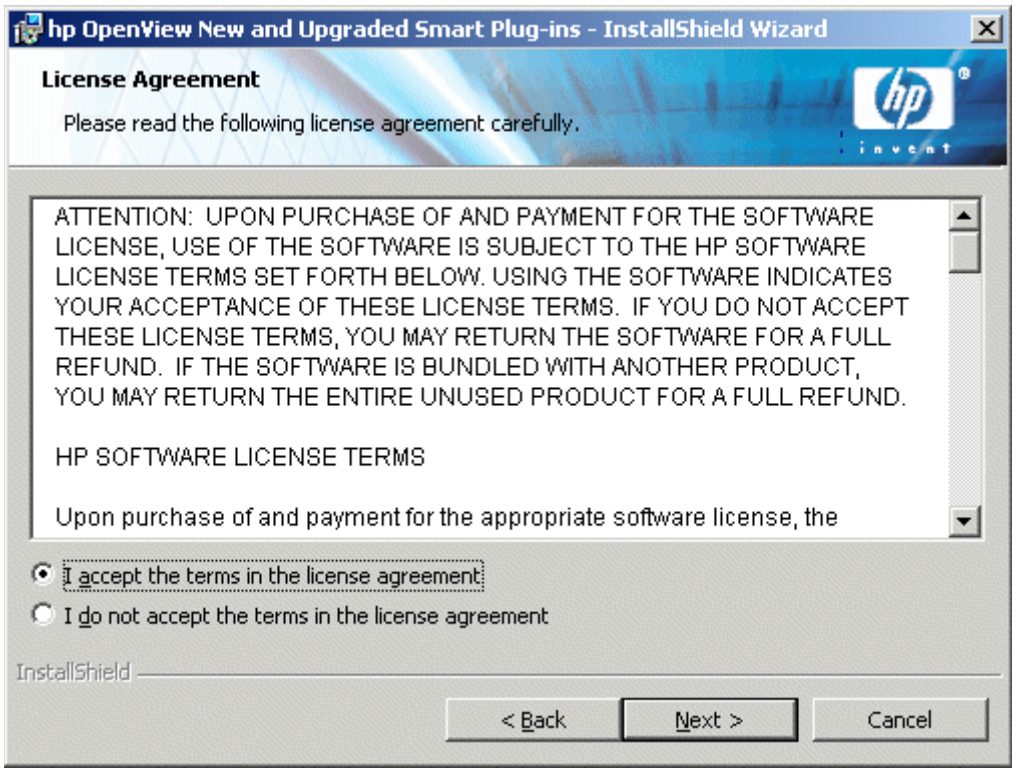
2 Click **Next**. The SPI Readme and Other Documentation screen appears.



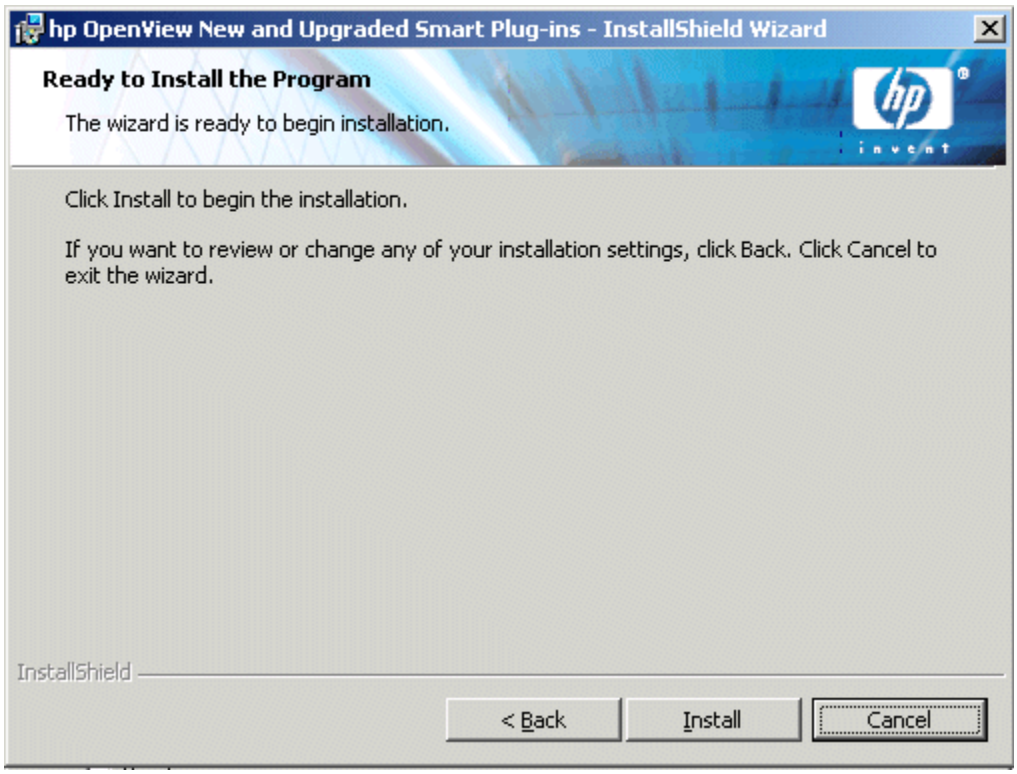
3 Click **Next**. The Product Selection screen appears.



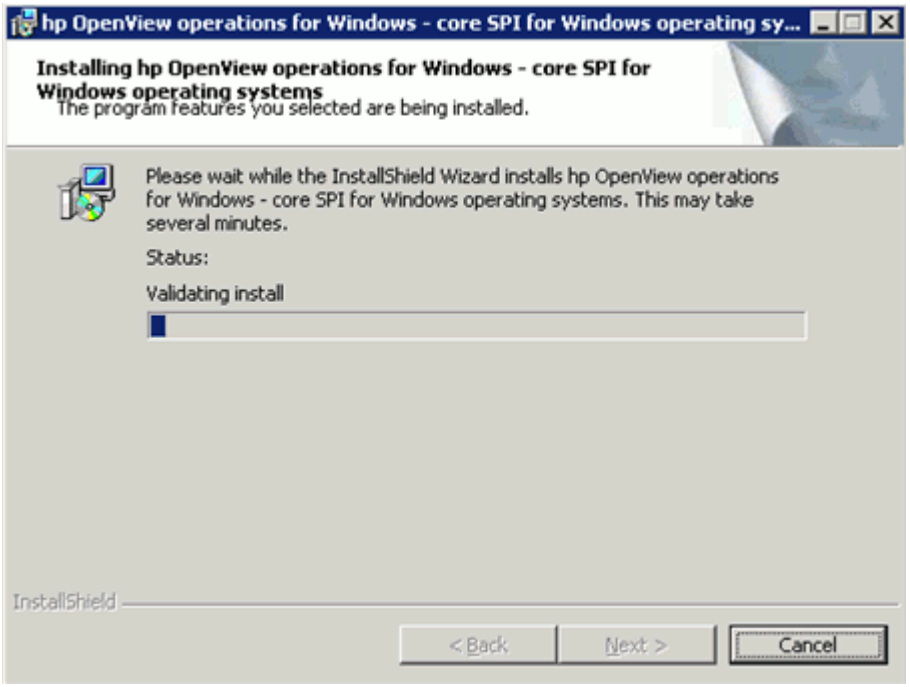
4 Select Microsoft Exchange Server, and then click **Next**. The License Agreement screen appears.



5 Select the I accept the terms...option, and then click **Next**. The Ready to Install the Program screen appears.



6 Click **Install**. The installation begins.



7 The wizard installs the core SPIs, all necessary packages, and the Exchange SPI. After the installation is complete, click **Finish**.

Removing the Exchange SPI

Perform the following tasks to remove the Exchange SPI from the management server and the Exchange SPI policies from the managed nodes:

Task 1: Remove Policies from the Managed Nodes

1 On the OVO console tree, expand the folders **HP OpenView** → **Operations Manager** → **Policy Management** → **Policy groups** → **SPI for Exchange**.

2 Right-click **SPI for Exchange**, and then select **All Tasks** → **Uninstall from...**

3 In the Uninstall Policies on dialog box, select All Nodes.

4 Click **OK**.

➤ Check if there are any customized policies on the nodes and remove those.

Task 2: Delete Exchange SPI Policy Groups from the Management Server

1 In the console tree of the OVO console, select and expand the folder Policy Groups.

2 Right-click **SPI for Exchange**, and then select **Delete**.

Task 3: Delete Exchange SPI Tools from the Management Server

1 In the console tree of the OVO console, right-click **Tools**, and then select **Configure** → **Tools**.

2 In the Configure Tools dialog box, right-click **SPI for Exchange**, and then select **Delete**.

Task 4: Delete Exchange SPI Customized Policies from the Management Server

1. Navigate to Polices grouped by type.
2. For each Policy type group, right-click the group, and then select **Set Filter....**
3. Select the All versions of the policy below option, and then click **OK**.
4. Sort policies by name in the list box. Select all Exchange SPI policies.
5. Right click and select **All tasks** → **Delete from server**.
6. Repeat for all policy groups.

Task 5: Remove the Exchange SPI from the Management Server

1. From the Start menu, click **Settings** → **Control Panel**. The Control Panel window opens.
2. Double-click **Add or Remove Programs**. The Add or Remove Programs window appear.
3. Select hp OpenView New and Upgraded Smart Plug-ins from the list of programs, and then click **Remove**. The uninstallation wizard opens.
4. Click **Next**.
5. Select the Remove products option, and then click **Next**.
6. Click **Finish** when uninstallation is complete.

Installing the Exchange SPI in a Cluster Environment

Before you start installing the Exchange SPI in a cluster environment, make sure that OVO 7.5 is installed on each system of the cluster. To install the Exchange SPI in an OVO cluster, follow these steps:

1. Insert the *Smart Plug-ins, New and Upgraded* CD into the CD-ROM drive of the first node of the OVO cluster. The installation wizard appears.
2. Follow the instructions in the wizard to install the SPI.
3. Repeat step 1 and step 2 on each node of the OVO cluster.

The OVO console does not function properly until you install the SPI on all nodes in the OVO cluster.

Removing the Exchange SPI from a Cluster Environment

To remove the Exchange SPI from a cluster OVO environment, follow these steps:

1. Remove the Exchange SPI policies from the managed nodes (see Task 1 on page 19).
2. Delete the Exchange SPI policy groups from each management server of the cluster (see Task 2 on page 19).
3. Delete the Exchange SPI tools from each management server of the cluster (see Task 3 on page 19).
4. Delete the Exchange SPI customized policies from each management server of the cluster (see Task 4 on page 20).

5 From each management server, remove hp OpenView New and Upgraded Smart Plug-ins from the Add or Remove Programs window, and then select Microsoft Exchange Server in the Product Selection Uninstall screen to remove the Exchange SPI.

   Alternatively, you can insert the *Smart Plug-ins, New and Upgraded* CD into the CD-ROM drive of each management server and remove the Exchange SPI.

Upgrading the Exchange SPI

If you have an older version of the Exchange SPI installed in your environment, you need to perform certain tasks to ensure an effective and optimal upgrade. To upgrade to the latest version of the Exchange SPI, follow these steps:

1 Identify the nodes on which you deployed earlier versions of the Exchange SPI.

2 Right-click one of the identified nodes, and then click **View** → **Policy Inventory**. The details pane displays the list of deployed policies.

3 Select all policies in the details pane, right-click, and then click **All Tasks** → **Disable**.

4 Select all policies in the details pane, right-click, and then click **All Tasks** → **Remove**.

5 Repeat step 2 to step 4 for all nodes on which you deployed earlier versions of Exchange SPI policies.

6 If you customized any of the policies, run the following commands on the management server:

```
ovpmutil cfg pol dnl C:\temp\ConfigDir /a
ovpmutil cfg mdl dnl C:\temp\ConfigDir\model.mof
ovpmutil cfg usr dnl C:\temp\ConfigDir\usroles.xml
```

   OVO saves the existing policy definitions in `C:\temp\ConfigDir\`.

7 Install the SPI from the CD by following the procedure described under Installation Procedure on page 15.

8 If you customized any of the policies, and made a backup of policies (step 6), run the following commands on the management server:

```
ovpmutil cfg pol upl C:\temp\ConfigDir\config.mm
ovpmutil cfg mdl upl C:\temp\ConfigDir\model.mm
ovpmutil cfg usr upl C:\temp\ConfigDir\usroles.mm
```

   OVO retrieves all the policy information that you backed up in step 6.

3 Configuring the Exchange SPI

After you install the Exchange SPI, you must add nodes on which Exchange servers reside to the management console. Also, you must deploy necessary policies and perform certain configuration tasks on the added managed nodes to begin the monitoring operation.

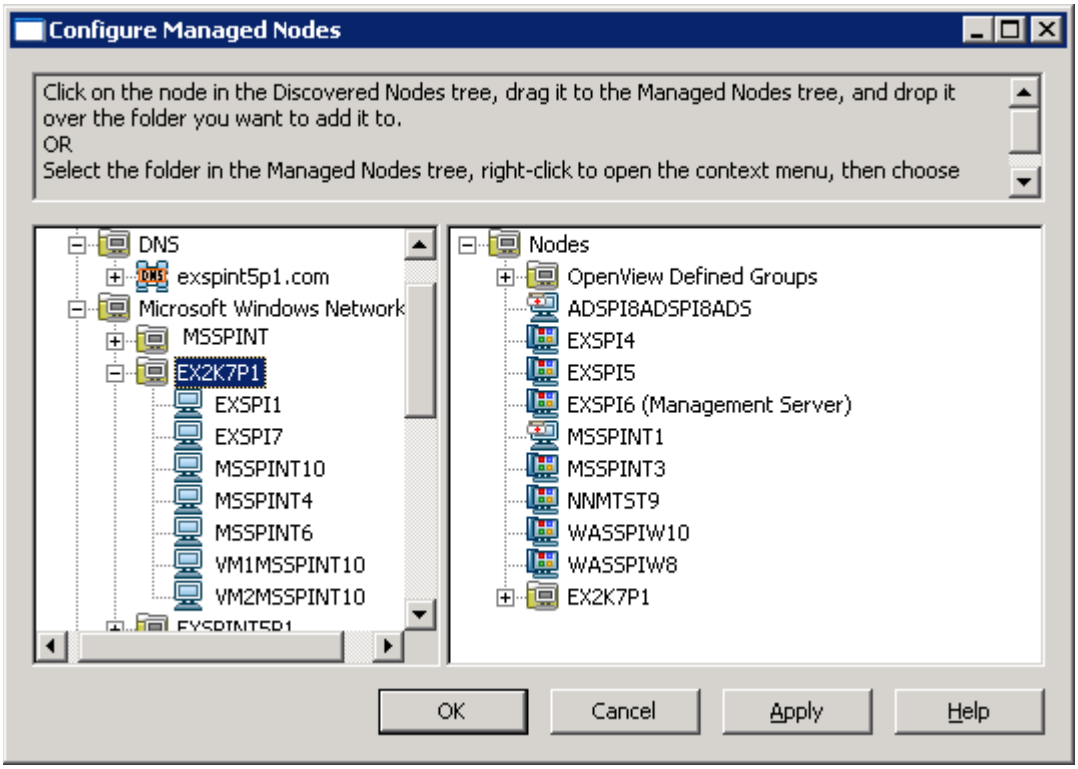
Configuring the Exchange SPI for Microsoft Exchange Server 2007

The Exchange SPI will start monitoring a Microsoft Exchange Server 2007 node after you install the agent and deploy necessary policies on it. When you add a node, agents are automatically installed on the managed nodes.

Add Nodes

To add a new managed node, follow these steps:

1 In the console tree of the OVO console, right-click **Nodes**, and then click **Configure** → **Nodes**. The Configure Managed Nodes window opens.



2 Drag and drop a system from the left frame to the right frame.

3 Click **Apply**.

4 Click **OK**.

After adding nodes, you must run the discovery policy on newly added nodes (See Deploy the Discovery Policy on page 24).

Deploy the Discovery Policy

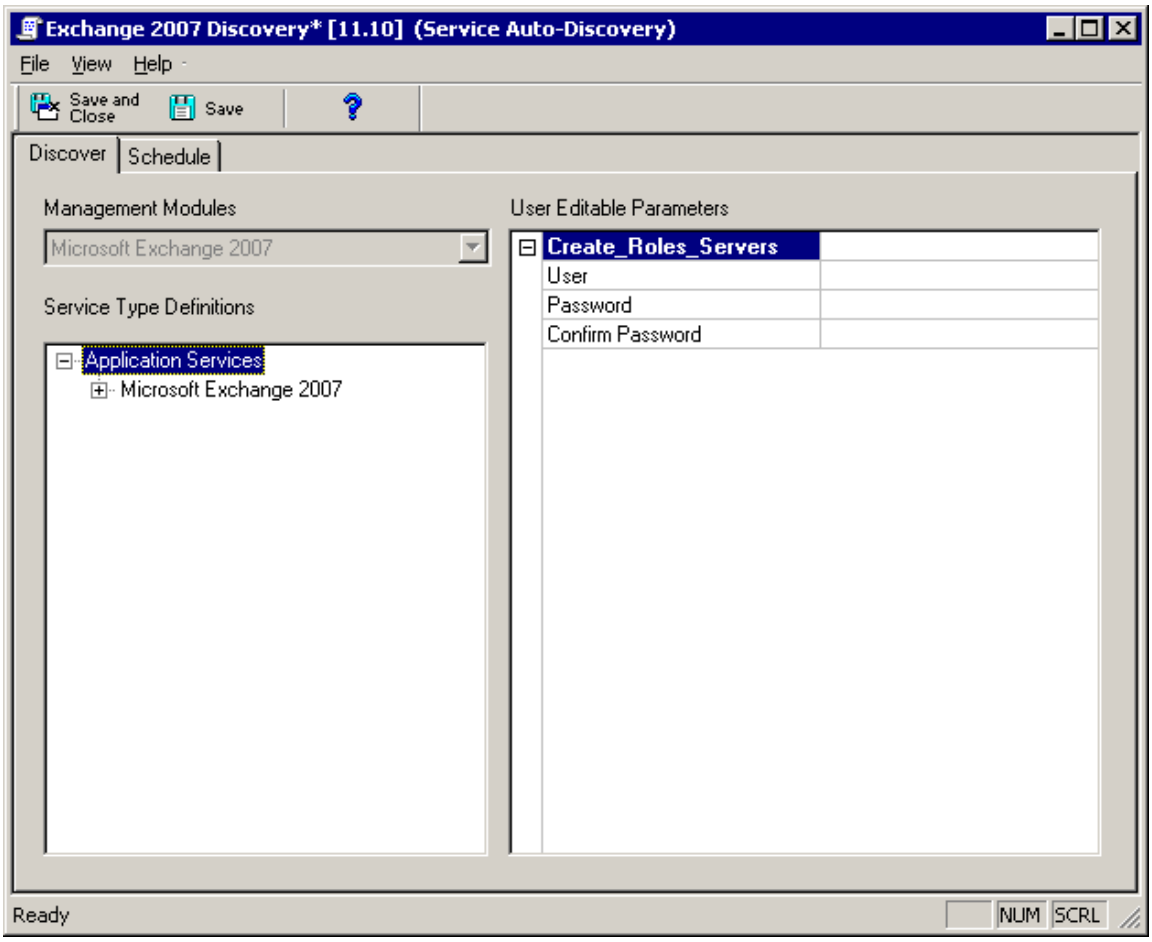
To discover the Exchange environment on the nodes, you must deploy the discovery policies.Before you deploy the policy, you must provide the access credentials of a Microsoft Exchange Server 2007 user with administrative privileges.

Provide User Credentials

If your Exchange organization consists of Exchange clusters, you must provide the Exchange 2007 Discovery policy with the credentials of an administrative user. If you do not use Exchange server clusters, you can skip this procedure and deploy the discovery policy (see Deploy on Nodes on page 25). To provide the credentials of an administrative user to the Exchange 2007 Discovery policy, follow these steps:

1 In the console tree of the OVO console, expand **Policy Management** → **Policy Groups** → **SPI for Exchange** → **Exchange 2007** → **Manual Deploy Groups**, and then double-click **Discovery**.

2 In the details pane, double-click **Exchange 2007 Discovery**. The Exchange 2007 Discovery* [11.10] (Service Auto-Discovery) dialog box opens.



3 In the User Editable Parameters pane, type the following information:

- In the User field, type user name of a user with administrative privilege along with the domain in the following format:

  <Domain>/<User Name>

- In the Password field, type the password of the user.
- Retype the password in the Confirm Password field.

4 Close the Exchange 2007 Discovery* [11.10] (Service Auto-Discovery) dialog box.

Deploy on Nodes

To deploy the Exchange 2007 Discovery policy on managed Exchange nodes, follow these steps:

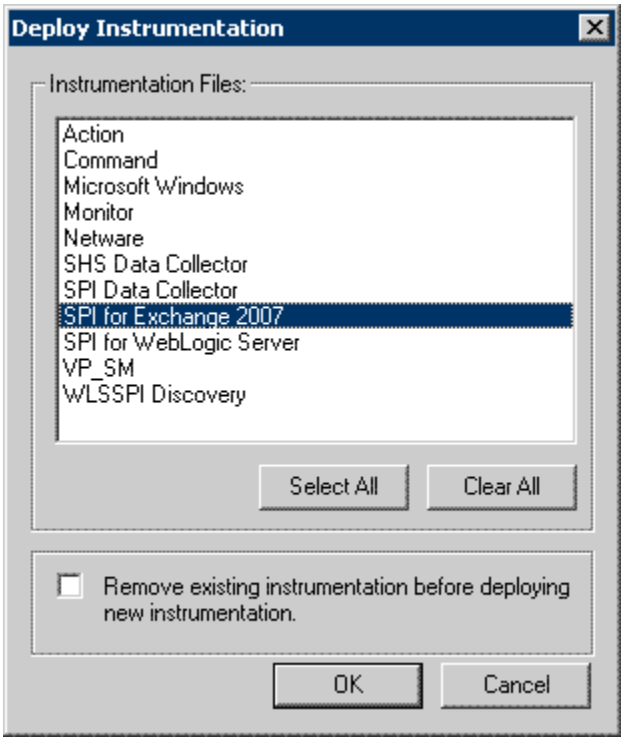
1 In the console tree of the OVO console, expand **Policy Management** → **Policy Groups** → **SPI for Exchange** → **Exchange 2007** → **Manual Deploy Groups**, and then double-click **Discovery**.

2 In the details pane, deploy the Exchange 2007 Discovery policy on the managed Microsoft Exchange Server 2007 nodes.

Deploy Instrumentation

To deploy instrumentation on the newly added nodes, follow these steps:

1. In the console tree of the OVO console, right-click on a node, and then select **All Tasks** → **Deploy Instrumentation**. The Deploy Instrumentation dialog box opens.



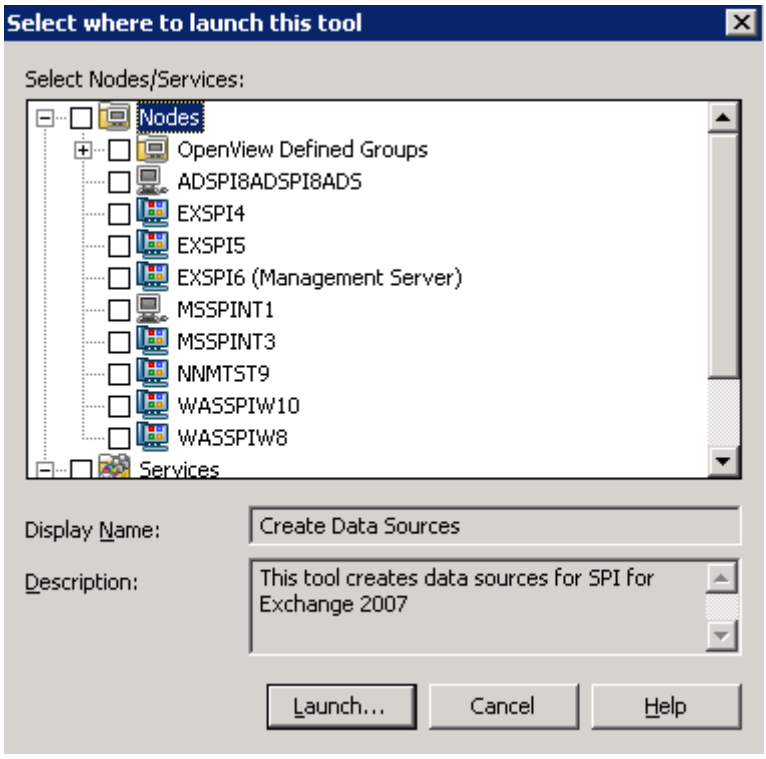
2. Select SPI for Exchange 2007, and then click **OK**.
3. Perform step 1 and step 2 for all added nodes.

Create Databases

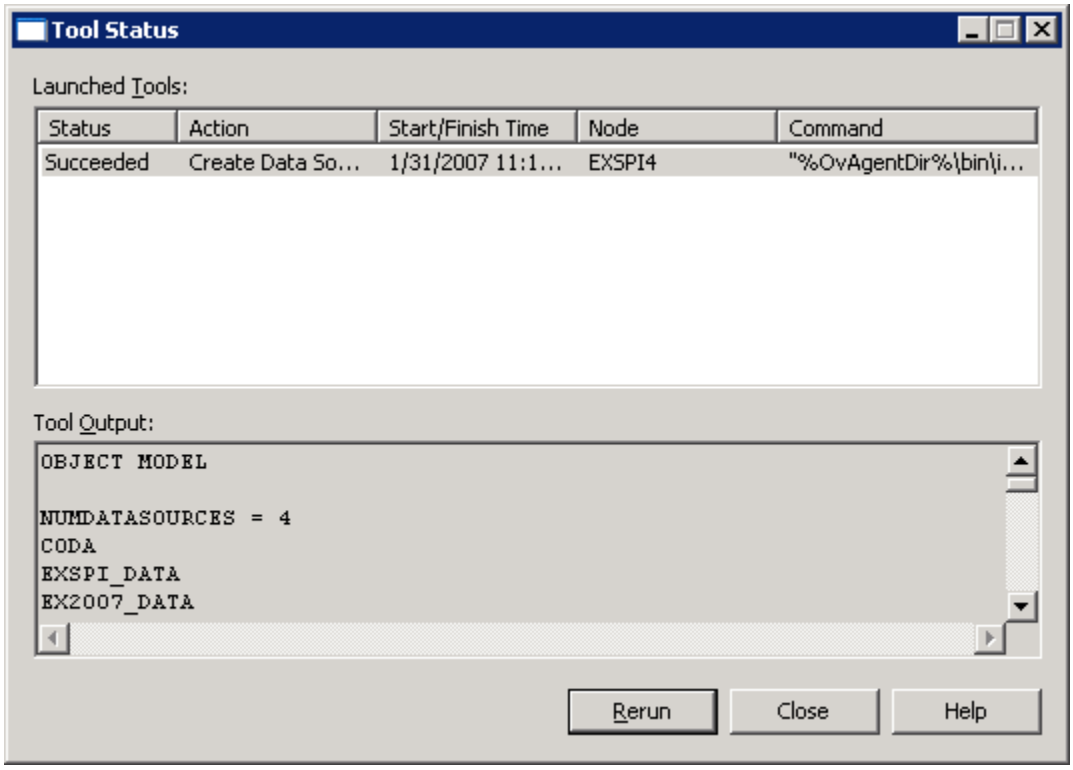
After deploying the discovery policy, you must create databases on a data store. The Create Data Sources tool creates databases on the OVO agent's data store (embedded performance component — also known as CODA). If you do not run this tool and create databases, the agent cannot log messages on the managed node. To run this tool, follow these steps:

1. In the console tree of the OVO console, expand **Tools** → **SPI for Exchange**, and then double-click **Exchange 2007**.

2 In the details pane, double-click **Create Data Sources**. The Select where to launch this tool dialog box opens.



3 Select the nodes on which you want to run the tool, and then click **Launch**. After a few seconds, the Tool Status window opens.

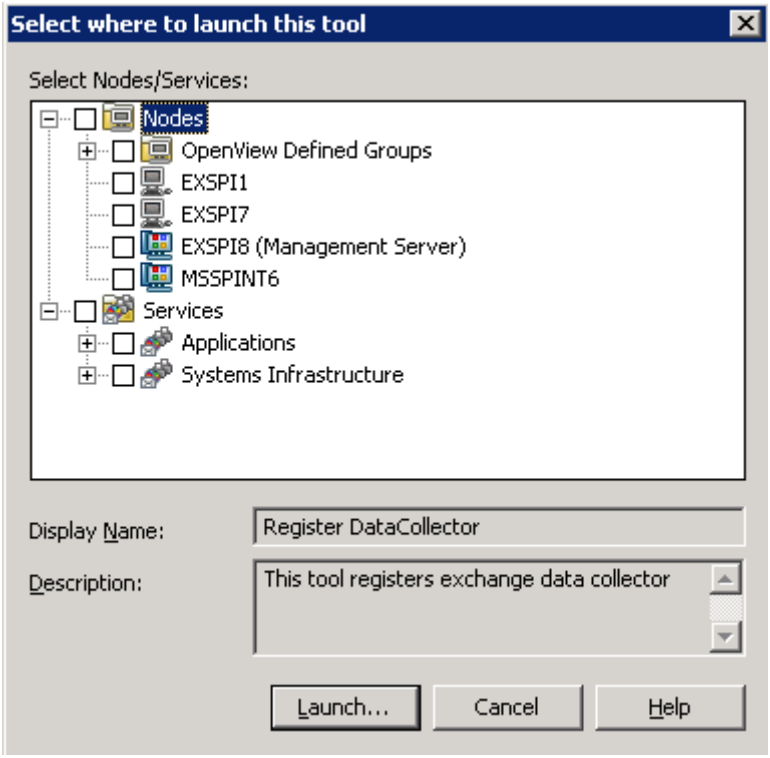


4 Click **Close**.

Run the Register DataCollector Tool

This tool registers COM components on the managed Exchange 2007 nodes. To run the Register DataCollector Tool, follow these steps:

1. In the console tree of the OVO console, expand **Tools** → **SPI for Exchange**, and then double-click **Exchange 2007**.
2. In the details pane, double-click **Register DataCollector**. The Select where to launch this tool dialog box opens.



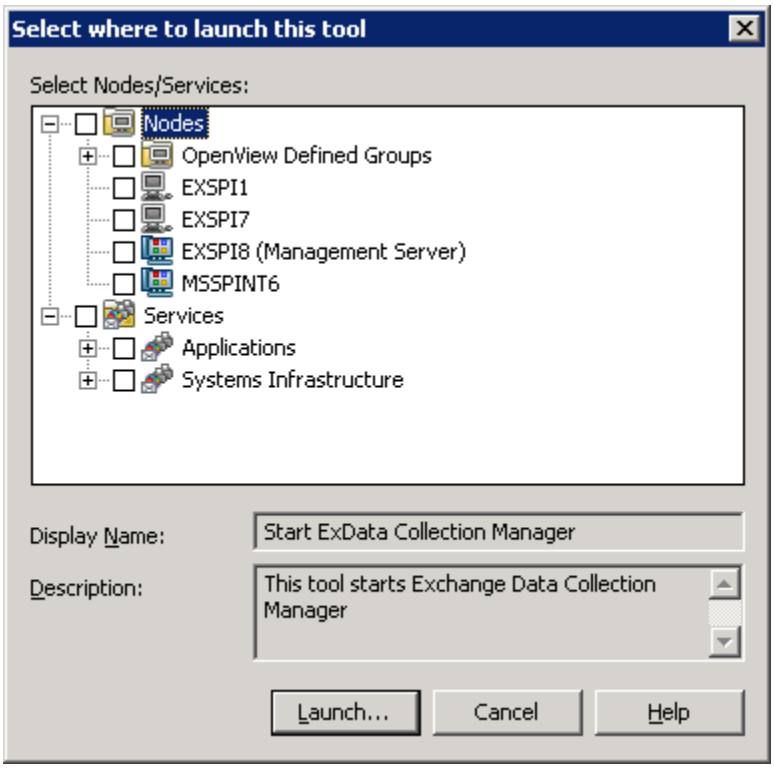
3. Select the nodes, and then click **Launch**. After a few seconds, the Tool Status window opens.
4. Click **Close**.

Run the Start ExData Collection Manager Tool

To facilitate the data collection mechanism on managed nodes, the SPI for Microsoft Exchange Server 2007 uses collection manager, which is a background process that runs on managed Exchange 2007 nodes. Before you start using the SPI, you must run the Start ExData Collection Manager tool on managed Exchange 2007 nodes to enable data collection. To run the Start ExData Collection Manager tool on Exchange 2007 nodes, follow these steps:

1. In the console tree of the OVO console, expand **Tools** → **SPI for Exchange**, and then double-click **Exchange 2007**.

2 In the details pane, double-click **Start ExData Collection Manager**. The Select where to launch this tool dialog box opens.



3 Select the nodes on which you want to run the tool, and then click **Launch**. After a few seconds, the Tool Status window opens.

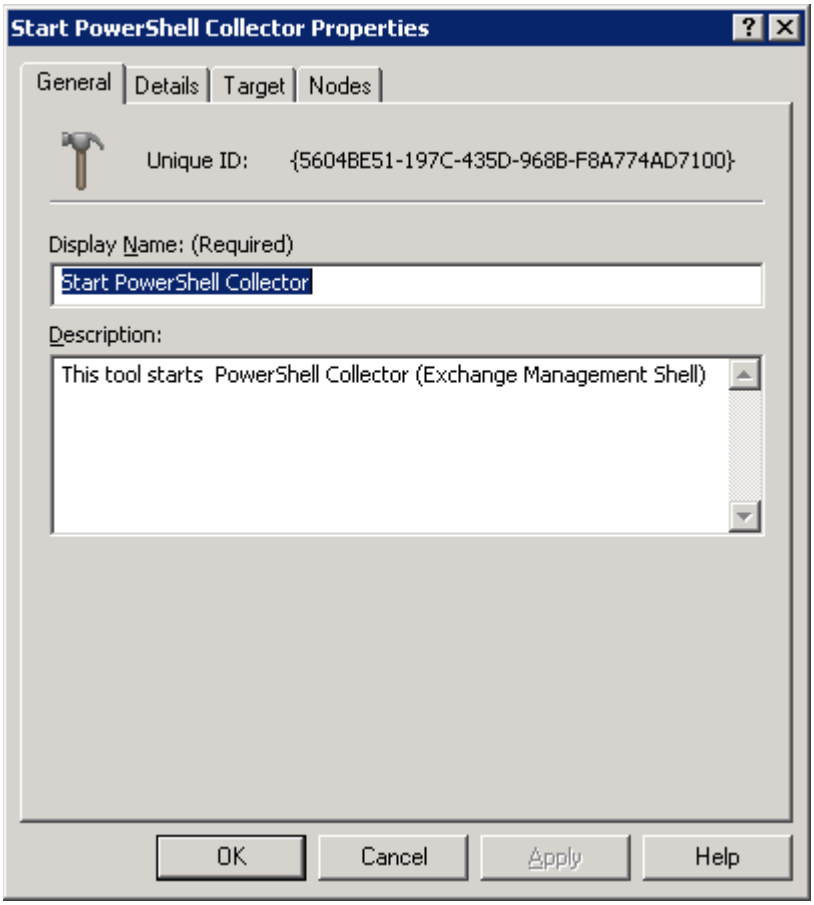
4 Click **Close**.

Run the Start PowerShell Collector Tool

The SPI for Microsoft Exchange Server 2007 uses PowerShell commands to collect metric values. PowerShell collector is a background process, that runs on managed nodes, and works in conjunction with collection manager to facilitate data collection. To run the Start PowerShell Collector tool on Exchange 2007 nodes, follow these steps:

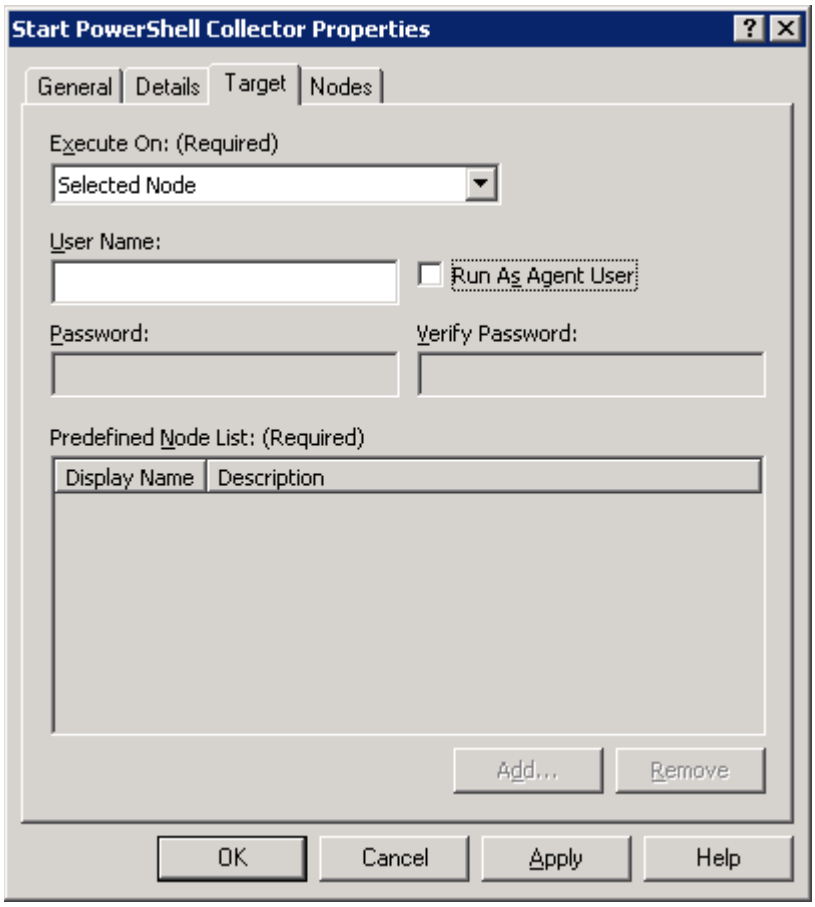
1 In the console tree of the OVO console, expand **Tools** → **SPI for Exchange**, and then double-click **Exchange 2007**.

2 In the details pane, right-click **Start PowerShell Collector**, and then click **Properties**. The Start PowerShell Collector Properties dialog box opens.



3 Go to the Target tab.

4 Clear the Run As Agent User Option.



5 In the User Name text box, type a user name with the Exchange View Only administrative privilege.

6 In the Password and Verify Password text boxes, type the password for the above user.

7 Click **Apply**.

8 Click **OK**.

9 In the details pane, double-click **Start PowerShell Collector**. The Select where to launch this tool dialog box opens.

10 Select the nodes on which you ran the Start Collection Manager tool, and then click **Launch**. After a few seconds, the Tool Status window opens.

11 Click **Close**.

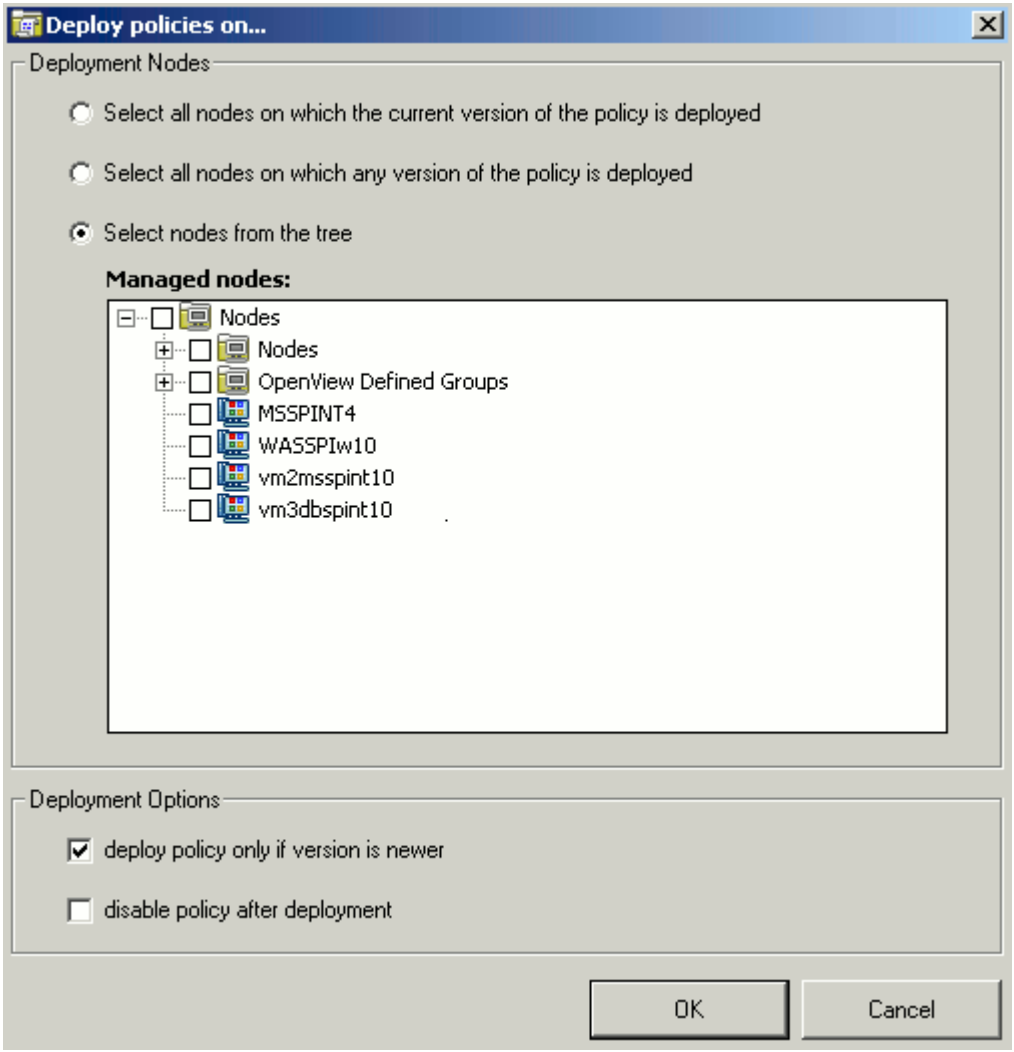
Deploy the Refresh Collection Definition Policy

The PowerShell collection configuration utility enables you to modify the default collection definition by modifying the `SPIMetaData.xml` file. Every time you modify the `SPIMetaData.xml` file, you must deploy the EXSPI-8.X SPIMetaData Versioning policy on

nodes for the modifications to take effect. However, the collection manager process starts following the updated collection mechanism only after you deploy the Refresh Collection Policy. To deploy the Refresh Collection Definition policy, follow these steps:

1 In the console tree of the OVO console, expand **Policy Management** → **Policy groups** → **SPI for Exchange** → **Exchange 2007** → **Manual Deploy Groups**, and then double-click **Collector Definition**.

2 In the details pane, right-click **Refresh Collection Definition**, and then click **All Tasks** → **Deploy on**. The Deploy policies on dialog box opens.



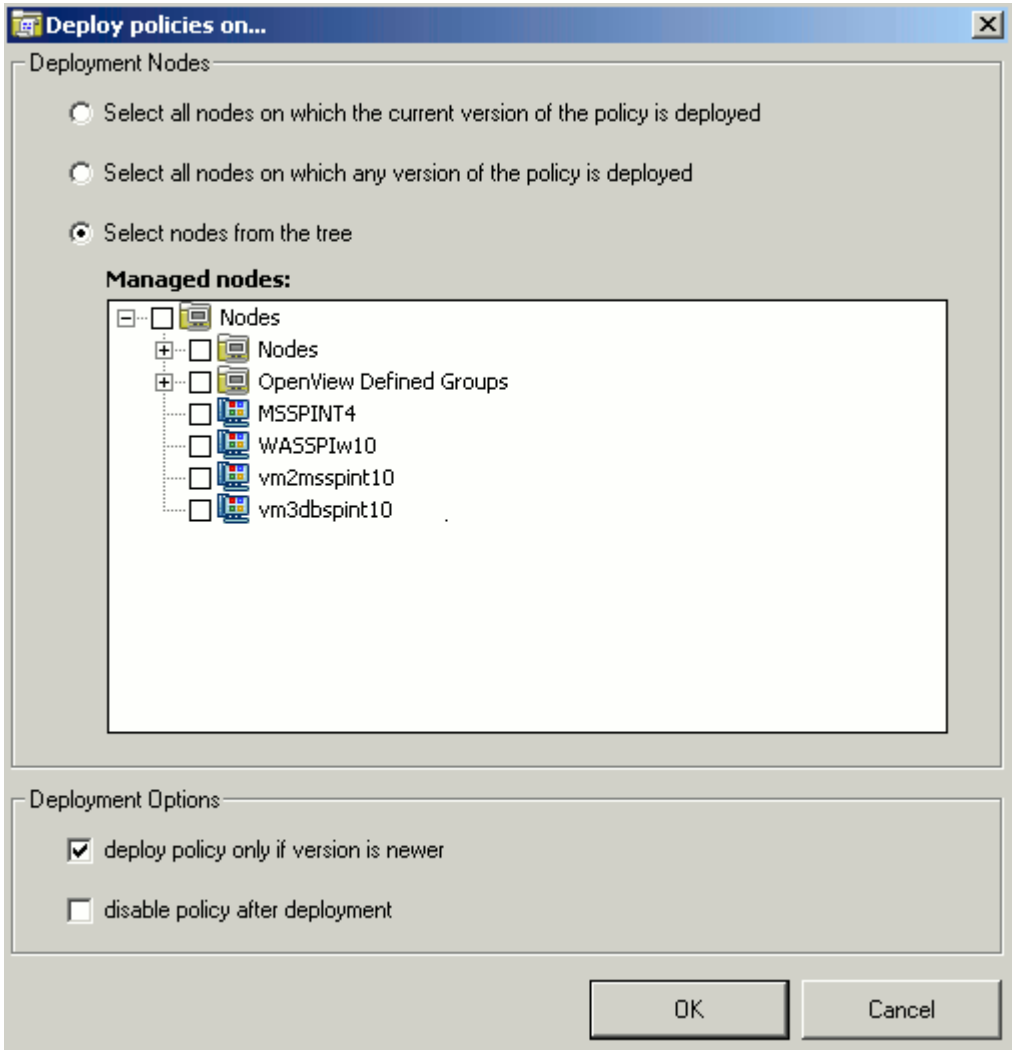
3 Keep all default settings and select nodes from the Managed nodes list.

4 Click **OK**.

Deploy the Check Collector Server Policy

The Check Collector Server policy checks the status of the PowerShell collector process on managed nodes. You must deploy this policy to all added Microsoft Exchange Server 2007 nodes. To deploy the Check Collector Server policy on nodes, follow these steps:

1. In the console tree of the OVO console, expand **Policy Management** → **Policy groups** → **SPI for Exchange** → **Exchange 2007** → **Manual Deploy Groups**, and then double-click **Collector Definition**.
2. In the details pane, right-click **Check Collector Server**, and then click **All Tasks** → **Deploy on**. The Deploy policies on dialog box opens.



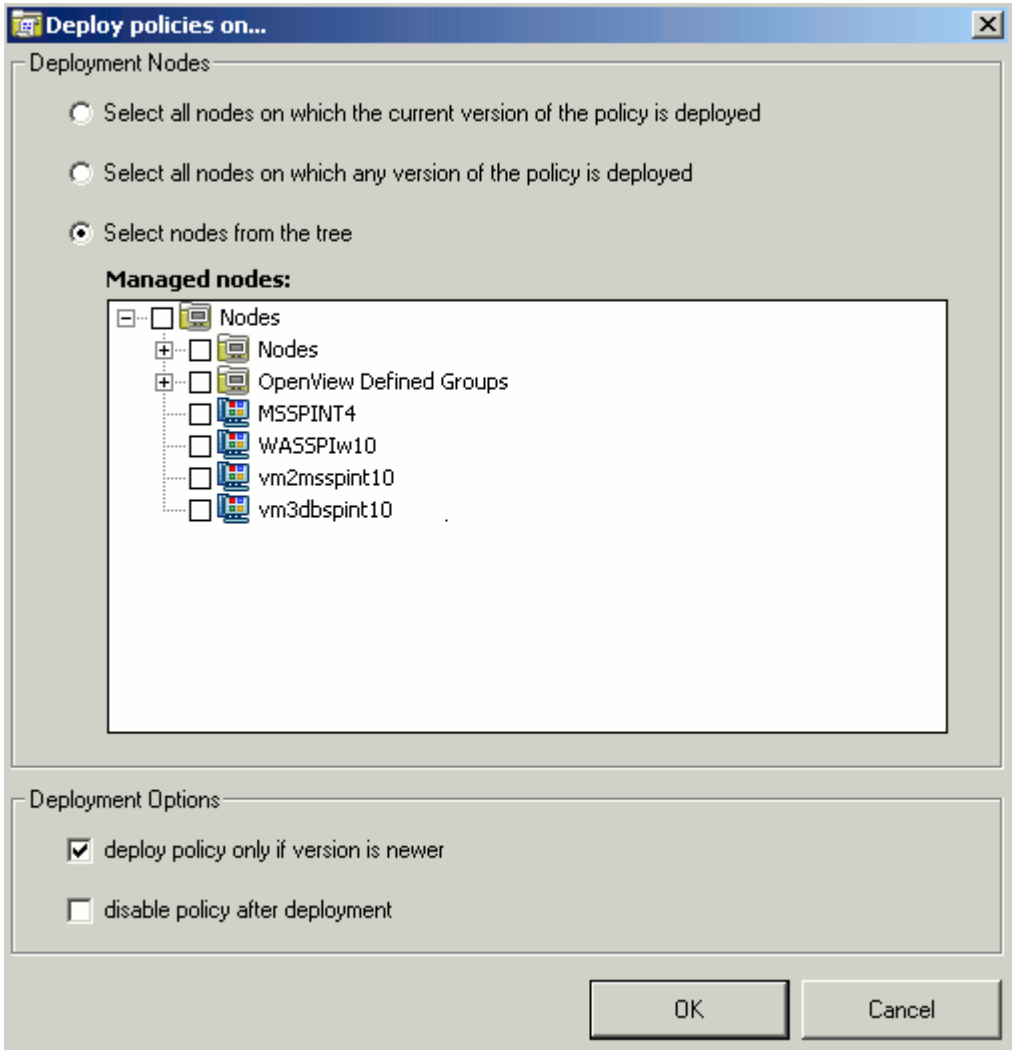
3. Keep all default settings and select nodes from the Managed nodes list.
4. Click **OK**.

Deploy the Check Collection Manager Policy

The Check Collection Manager policy checks the status of the collection manager process on managed nodes. You must deploy this policy to all added Microsoft Exchange Server 2007 nodes. To deploy the Check Collection Manager policy on nodes, follow these steps:

1 the console tree of the OVO console, expand **Policy Management** → **Policy groups** → **SPI for Exchange** → **Exchange 2007** → **Manual Deploy Groups**, and then double-click **Collector Definition**.

2 In the details pane, right-click **Check Collection Manager**, and then click **All Tasks** → **Deploy on**. The Deploy policies on dialog box opens.



3 Keep all default settings and select nodes from the Managed nodes list.

4 Click **OK**.

Configuring the SPI for Microsoft Exchange Server 2003 and 2000

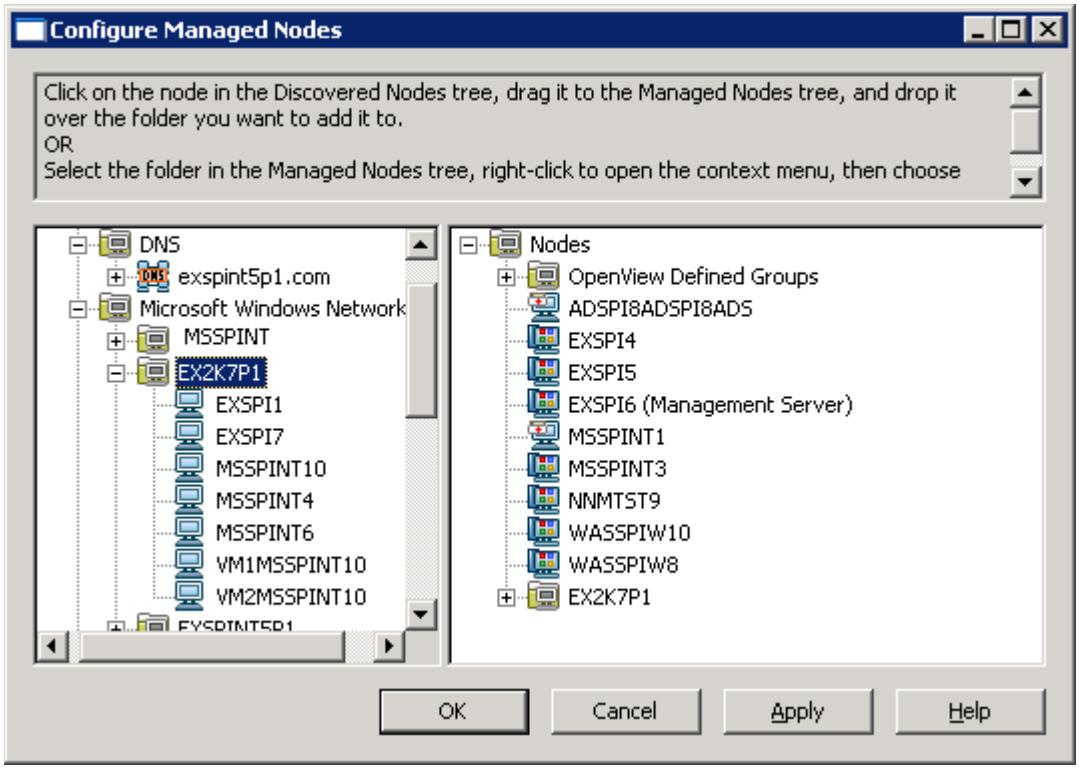
If policy autodeployment is enabled on the management server, add the managed nodes according to the instructions in Add Nodes on page 35, deploy instrumentation on nodes according to the instructions in Deploy Instrumentation on page 36, and then start using the SPI.

If policy autodeployment is disabled on the management server, you must perform the following configuration tasks.

Add Nodes

To add a new managed node, follow these steps:

1 In the console tree of the OVO console, right-click **Nodes**, and then click **Configure** → **Nodes**. The Configure Managed Nodes window opens.



2 Drag and drop a system from the left frame to the right frame.

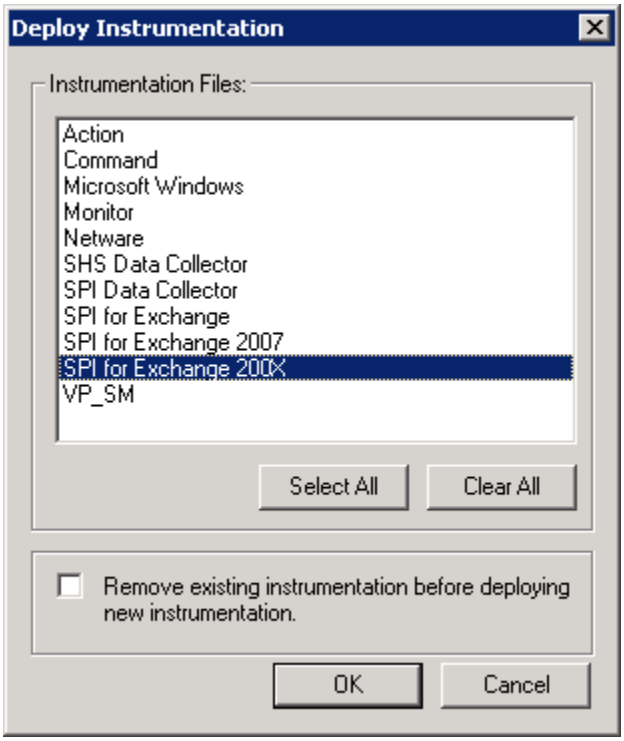
3 Click **Apply**.

4 Click **OK**.

Deploy Instrumentation

To deploy instrumentation on the newly added nodes, follow these steps:

1 In the console tree of the OVO console, right-click on a node, and then select **All Tasks** → **Deploy Instrumentation**. The Deploy Instrumentation dialog box opens:



2 Select SPI for Exchange 200X, and then click **OK**.

3 Perform step 1 and step 2 for all the added nodes.

If the policy autodeployment is enabled, you can start using the SPI.

If the policy autodeployment is disabled, you must run the discovery policy on newly added nodes (see Deploy Discovery Policy on page 36).

Deploy Discovery Policy

For Microsoft Exchange Server 2003 or 2000, you must deploy the Discovery policy under Exchange 2003. To deploy this policy on managed nodes, follow these steps:

1 In the console tree of the OVO console, expand **Policy Management** → **Policy Groups** → **SPI for Exchange** → **Exchange 2003** → **ovo Exchange SPI core** or **Policy Management** → **Policy Groups** → **SPI for Exchange** → **Exchange 2003** → **ovo Exchange SPI core**, and then click **Discovery**.

2 In the right pane, deploy the EXSPI-6.X Exchange Service Discovery policy.

Create Databases

After deploying the discovery policy, you must create databases on a data store. The Data Collection policy can create databases on the OVO agent's data store (embedded performance component — also known as CODA). If you do not deploy this policy and create databases, the agent cannot log messages on the managed node. To create databases in a data store, follow these steps:

1. In the console tree, expand **Policy management** → **Policy groups** → **SPI for Exchange** → **Exchange 2003** → **Auto Deploy Groups** → **ovo Exchange SPI core** or **Policy management** → **Policy groups** → **SPI for Exchange** → **Exchange 2000** → **Auto Deploy Groups** → **ovo Exchange SPI core**, and then click **Data Collection**.
2. In the details pane, deploy the EXSPI-6.X exspi Agent Configuration policy on the nodes of your choice.

Configuring the SPI for Microsoft Exchange Server 5.5

To use certain tools and policies on Exchange 5.5 nodes, you must provide the Exchange SPI with an administrative user credential of Exchange 5.5.

- If policy autodeployment is enabled:
  a. Create Administrative User Credentials on Microsoft Exchange Server 5.5
  b. Add User Name and Password to the EXSPI-5.5 Exchange Service Discovery Policy
  c. Add Nodes
  d. Deploy Instrumentation
- If policy autodeployment is disabled:
  a. Create Administrative User Credentials on Microsoft Exchange Server 5.5
  b. Add User Name and Password to the EXSPI-5.5 Exchange Service Discovery Policy
  c. Add Nodes
  d. Deploy Instrumentation
  e. Run Discovery Policy
  f. Create Databases

Create Administrative User Credentials on Microsoft Exchange Server 5.5

To use the SPI for Exchange 5.5, you must provide user credentials with administrative privileges to the Exchange SPI. You must create an administrative account for each Windows domain where OVO-managed Exchange servers reside.This account enables the Exchange SPI to access information from the Exchange database. To create administrative users for windows domain (for Windows NT Domain or Windows 2000 Domain), follow these steps:

Make sure that the version of Windows NT you are using is supported by OVO for Windows 7.5.

Create Administrative User for Windows NT Domain

Perform the following tasks to create users with administrative rights in Windows NT domain:

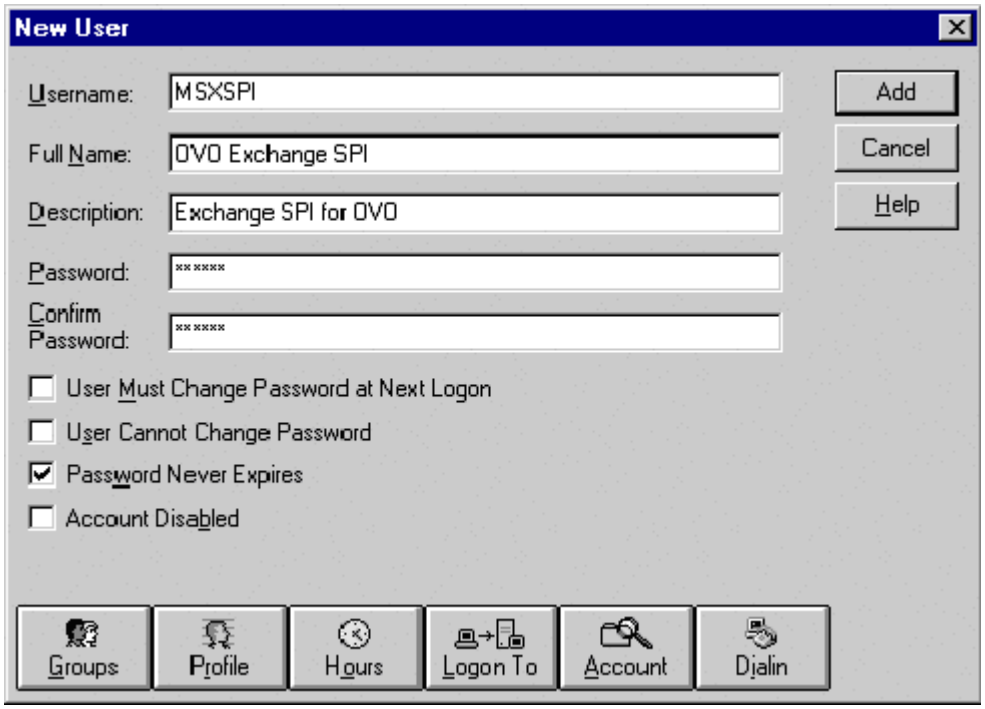
Task 1: Create a Service Account

To create a service account, follow these steps:

1 Log on as Domain Administrator of the domain to which the Exchange server belongs.

2 From the Start menu, select **Programs** → **Administrative Tools (common)** → **User Manager for Domain**. The User Manager window opens.

3 Click **User** → **New User**. The New User dialog box opens.



4 Specify the following details in the New User dialog box:

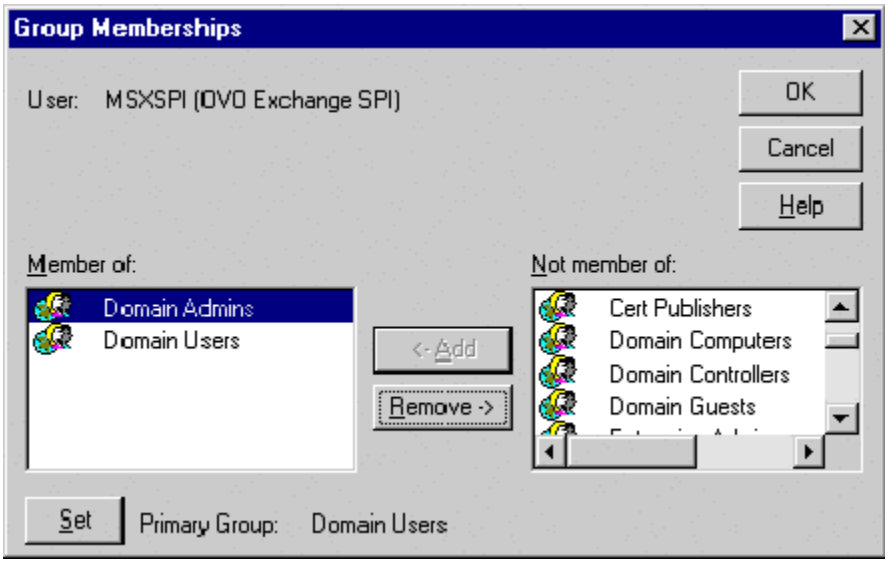
Field	Description
Username	Type a name of the user.
Full Name	Type a descriptive name of the above user.
Description	Type a description of the account.
Password	Type a password.
Confirm Password	Re-type the password entered above.

You must create a service account with these privileges in each Windows domain. Name the account MSXSPI. Throughout this document the account is referred to as MSXSPI, which is the required user name for the service account.

5 Specify the following options in the New User dialog box:

Option	Description
User Must Change Password at Next Logon	Do not select this option.
User Cannot Change Password	Do not select this option.
Password Never Expires	Select this option.
Account Disabled	Do not select this option.

6 Click **Groups**. The Group Memberships dialog box opens.



7 From the Not member of list, click **Domain Admins** users, click **Add**, and then click **OK**.

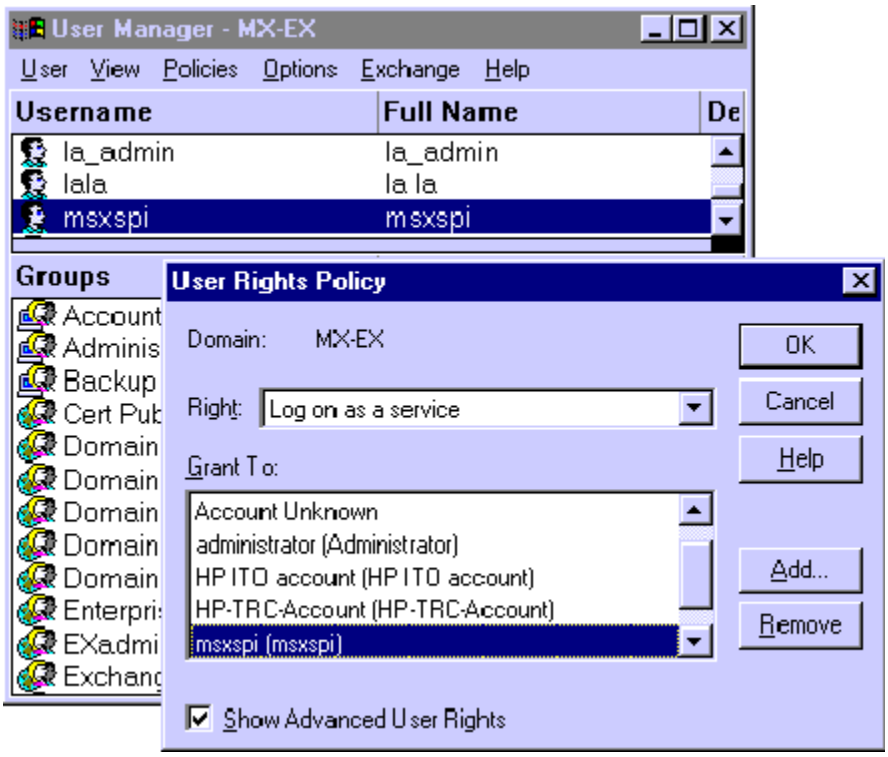
8 In the New User dialog box, click the following buttons to enter necessary information:

Profile	Do not specify any user profile.
Hours	All hours of the day and week should be allowed.
Logon To	Specify all workstations.
Account	Should never expire/should be Global Account.

9 In the New User dialog box, click **Add** (if the Exchange Add Mailbox window opens, click **Cancel**).

10 Click **Close**.

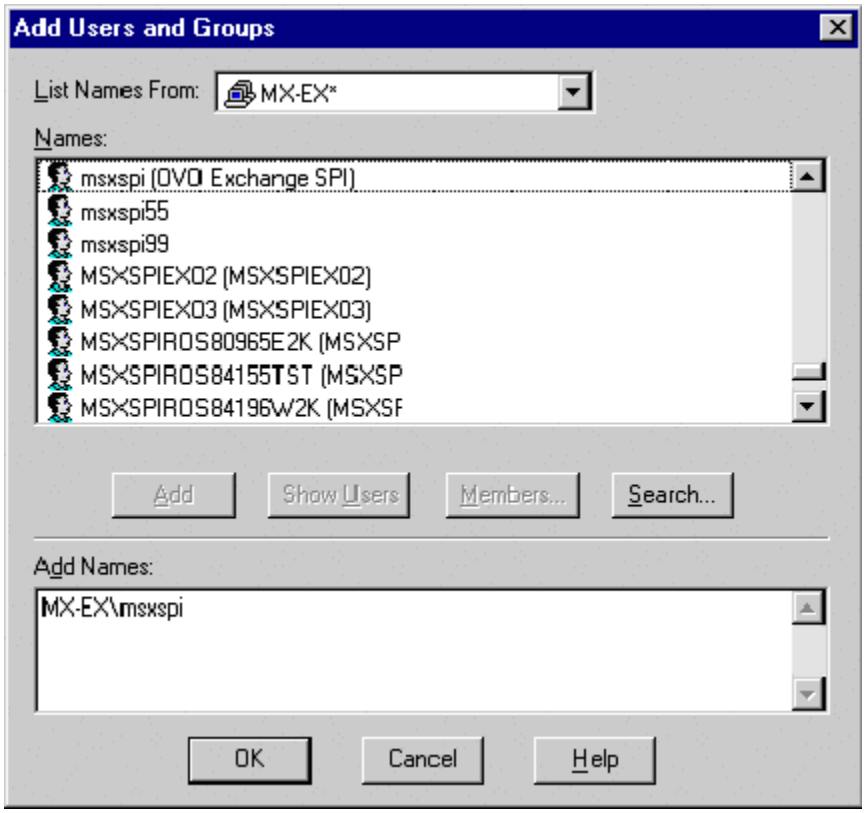
11 In the User Manager window, click **Policies** → **User Rights** from the menu bar. The User Rights Policy dialog box opens.



12 Select the Show Advanced User Rights option.

13 From the right drop-down box, select Log on as a service.

14 Click **Add**. The Add Users and Groups dialog box opens.



15 Click **Show User**.

16 Select the newly added service account (select the name specified in step 4 on page 39), click **Add**, and then click **OK**.

17 Repeat step 13 to step 16 to add the Profile system performance.

Task 2: Grant Exchange Access Permissions to the Service Account

The service account must have Exchange Admin permissions to access a mailbox, Exchange IS Public database, and Exchange IS Private database. To grant Exchange access permission to the service account you created, follow these steps:

1 From the Start menu, select **Programs** → **Microsoft Exchange** → **Microsoft Exchange Administrator**.

2 For each Exchange site where the affected policies are to be deployed:

a In the left pane within the tree, select <*site_name*>.

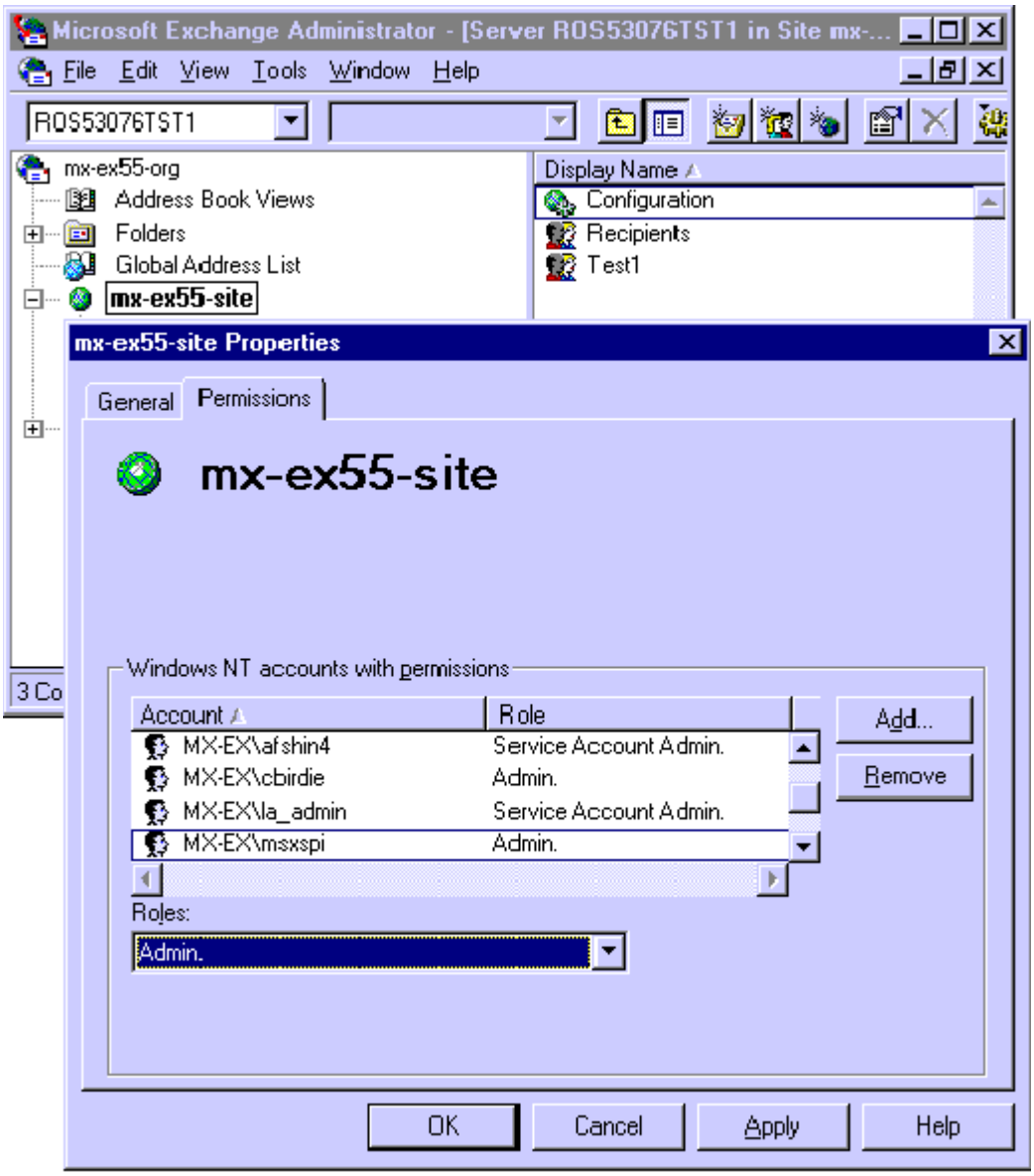
b From the File menu select **Properties**.

c In the Properties window, select the Permission tab, and then click **Add**. The Add Users and Groups window opens.

d Select the newly created service account (select the username specified in step 4 on page 39), and then click **Add**.

e Click **OK** to add the user, and then close the Add Users and Groups window.

f Verify the user has the role of Admin.



3 Click **OK** to save the changes.

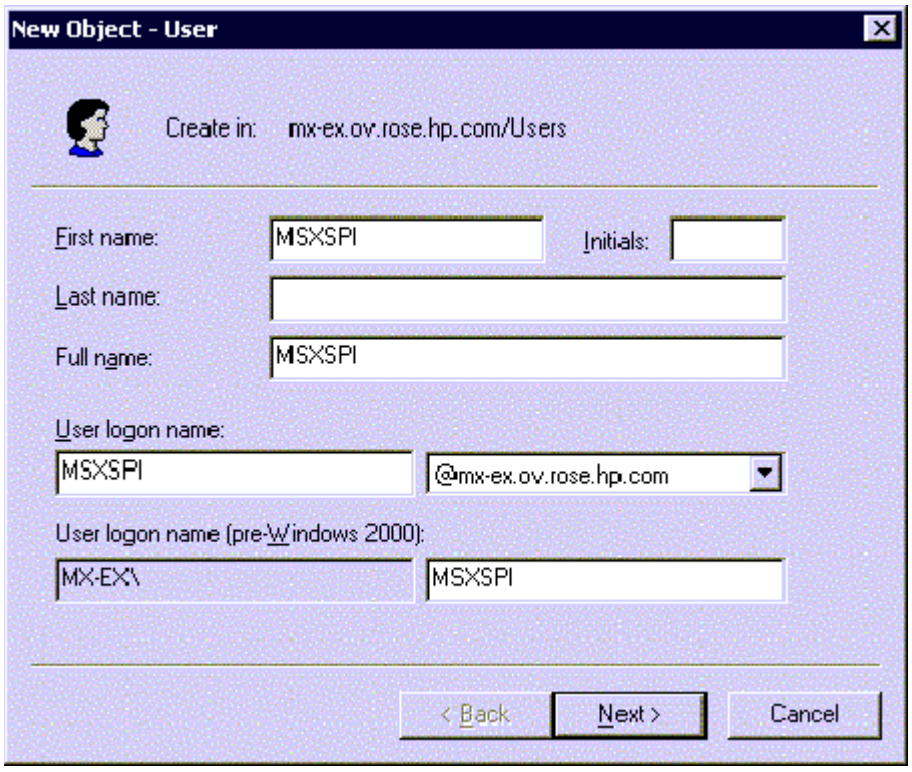
Create Administrative User for Windows 2000 Domain

Task 1: Create a Service Account

1 Log on to the system that hosts the managed node's domain.

2 From the Start menu, select **Programs** → **Administrative Tools** → **Active Directory Users and Computers**.

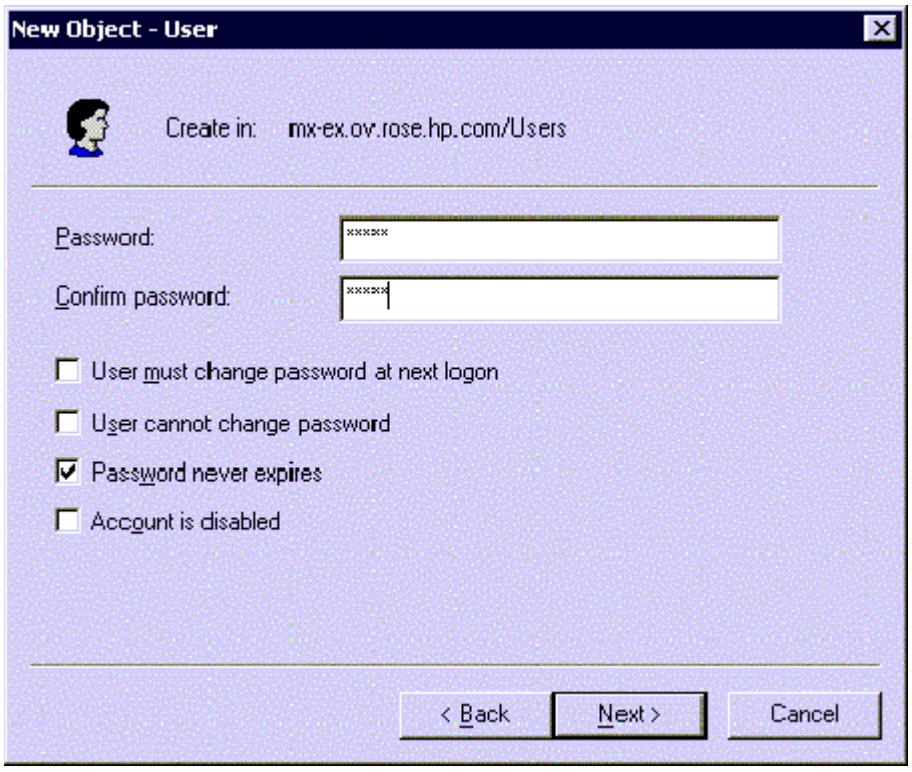
3 From the menu bar, click **Action** → **New** → **User**. The New Object - User dialog box opens.



4 Type a user name for the service account in the First Name and in the User logon name text boxes.

> You must create a service account with these privileges in each Windows domain. Name the account MSXSPI. Throughout this document the account is referred to as MSXSPI, the required user name for the service account.

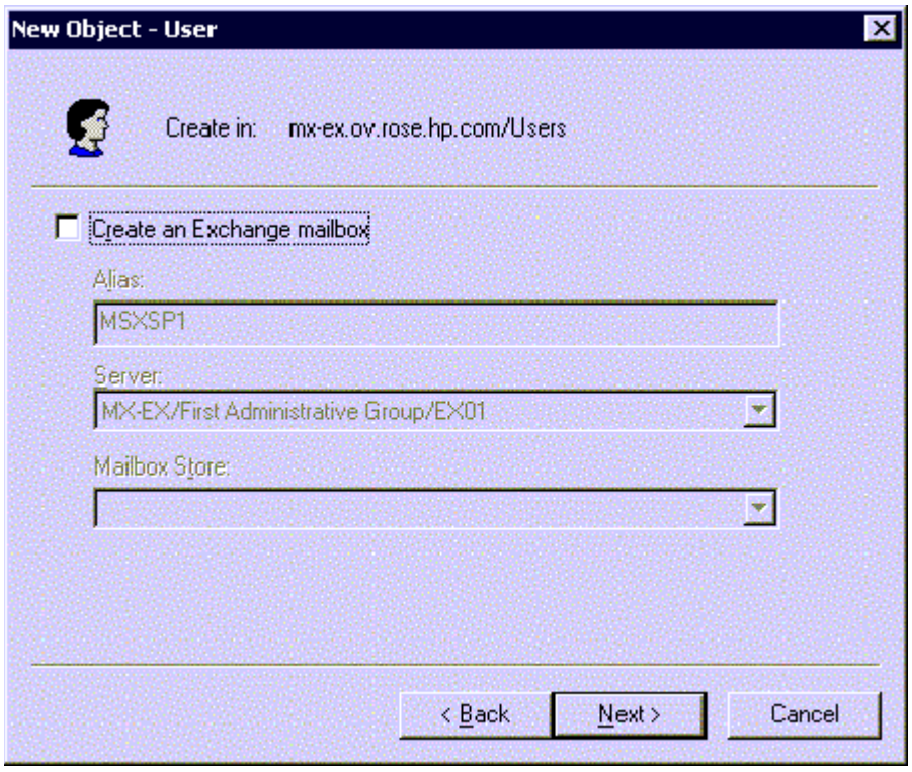
5 Click **Next**.



6 Type Password/Confirm Password for the service account.

7 Select the Password never expires option.

8 Click **Next**.



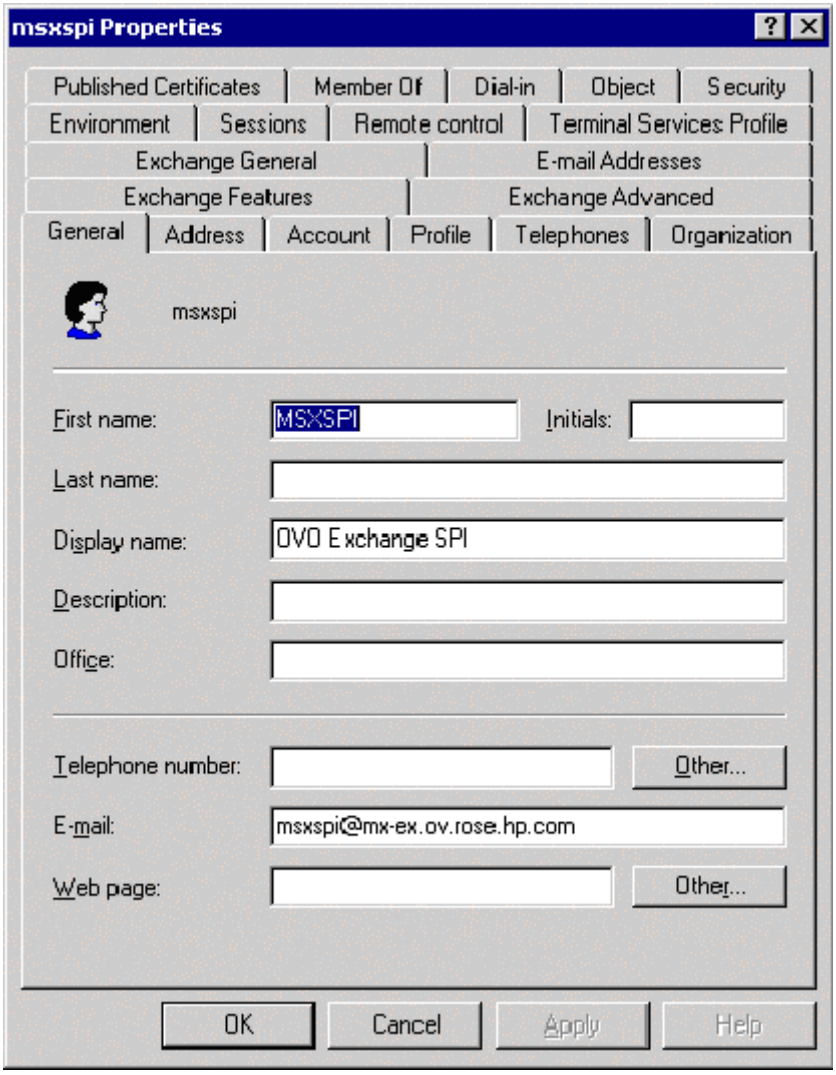
9 Clear the Create an Exchange mailbox option, and then click **Next**.

10 Click **Finish**.

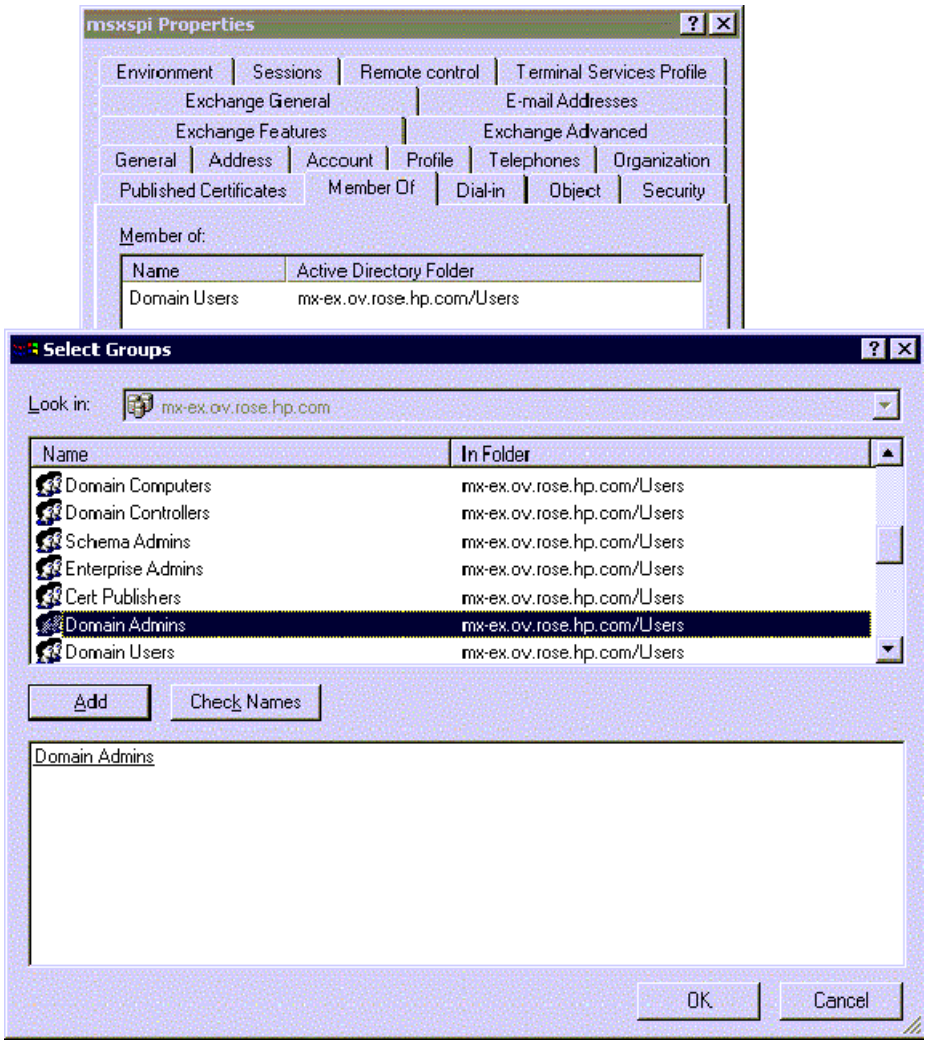
11 In the Active Directory Users and Computer window, double-click **Users** in the right pane.

12 In the right pane, right click the newly created user, and then click **Properties**.The Properties dialog box opens.

13 Select the General tab, and then type OVO Exchange SPI in the Display name and Description text boxes.

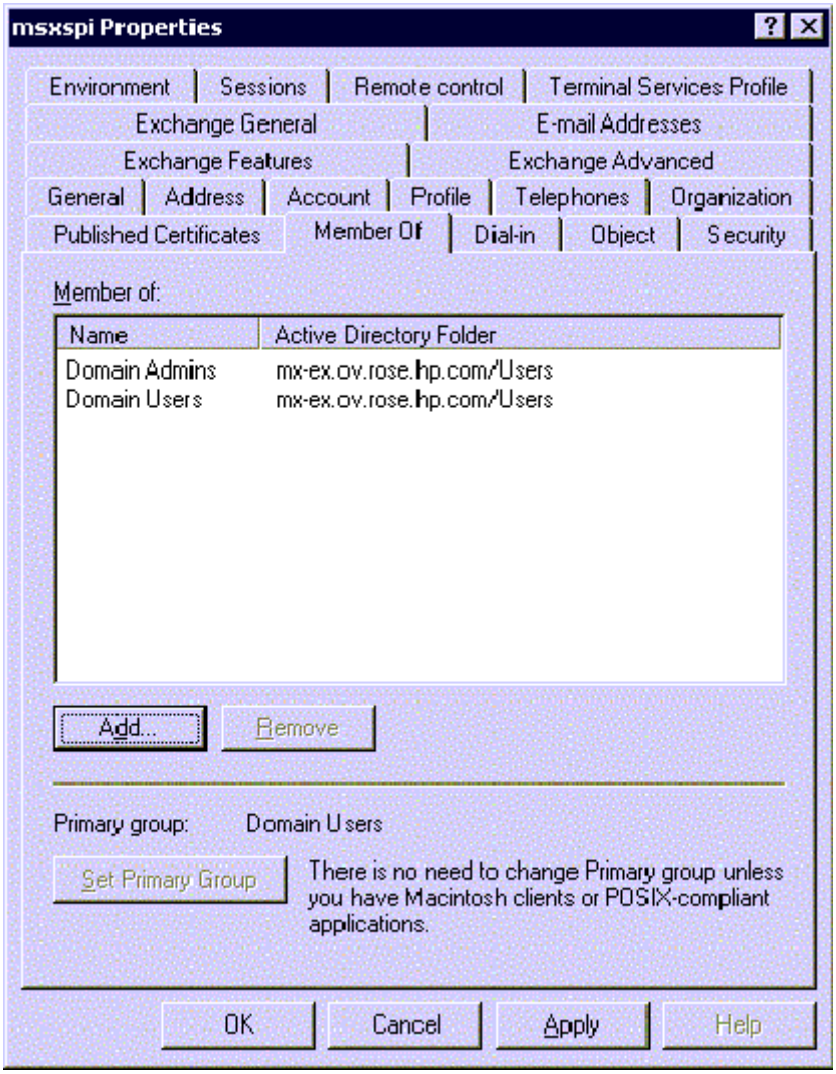


14 Select the Member of tab, and then click **Add**. The Select Groups dialog box opens.



15 Select Domain Admins from the top pane.

16 Click **Add**, and then click **OK**. The new user is now a member of the Domain Admins group.



17 Click **OK**.

Task 2: Grant Exchange Access Permissions to the Service Account

The service account must have Exchange Admin permissions to access a mailbox, Exchange IS Public database, and Exchange IS Private database. To grant Exchange access permission to the service account created above, follow these steps:

1 From the Start menu, select **Program** → **Microsoft Exchange** → **Microsoft Exchange Administrator**.

2 For each Exchange site where affected policies are to be deployed:

a In the left pane within the tree, select **<***site_name***>**.

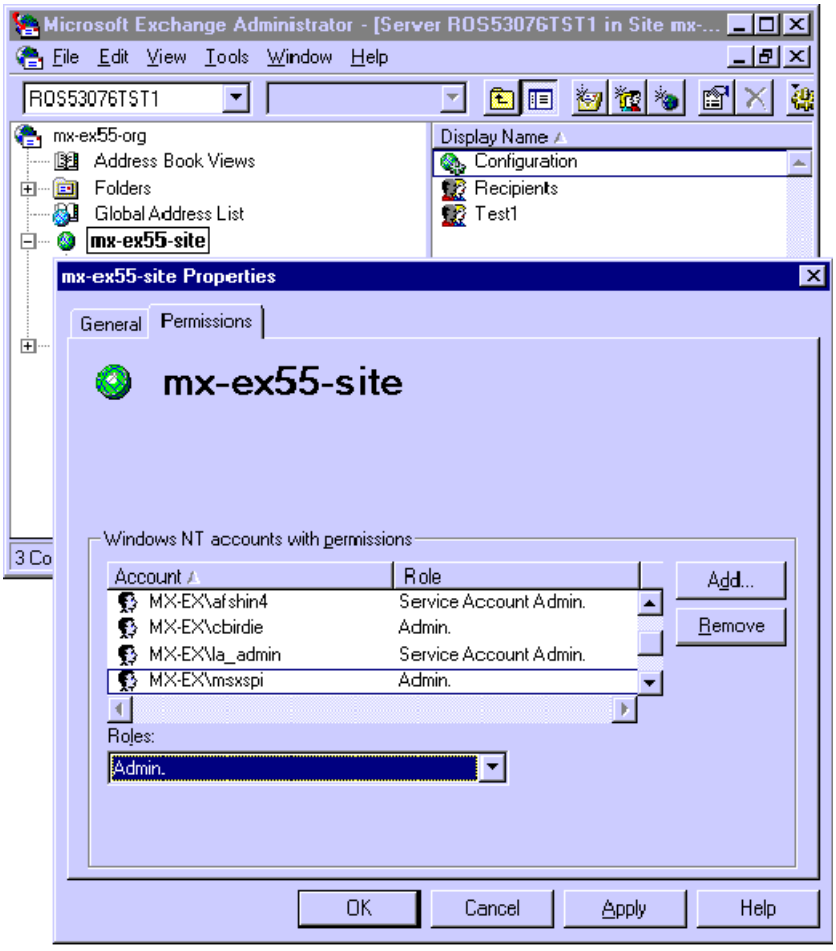
b From the File menu, click **Properties**.

c In the Properties window, select the Permission tab, and then click **Add**. The Add Users and Groups window appears.

d Select the newly created service account (select the username specified in step 4 on page 43), and then click **Add**.

e Click **OK**.

f Verify the user has the role of Admin.



g Click **OK** to save the changes.

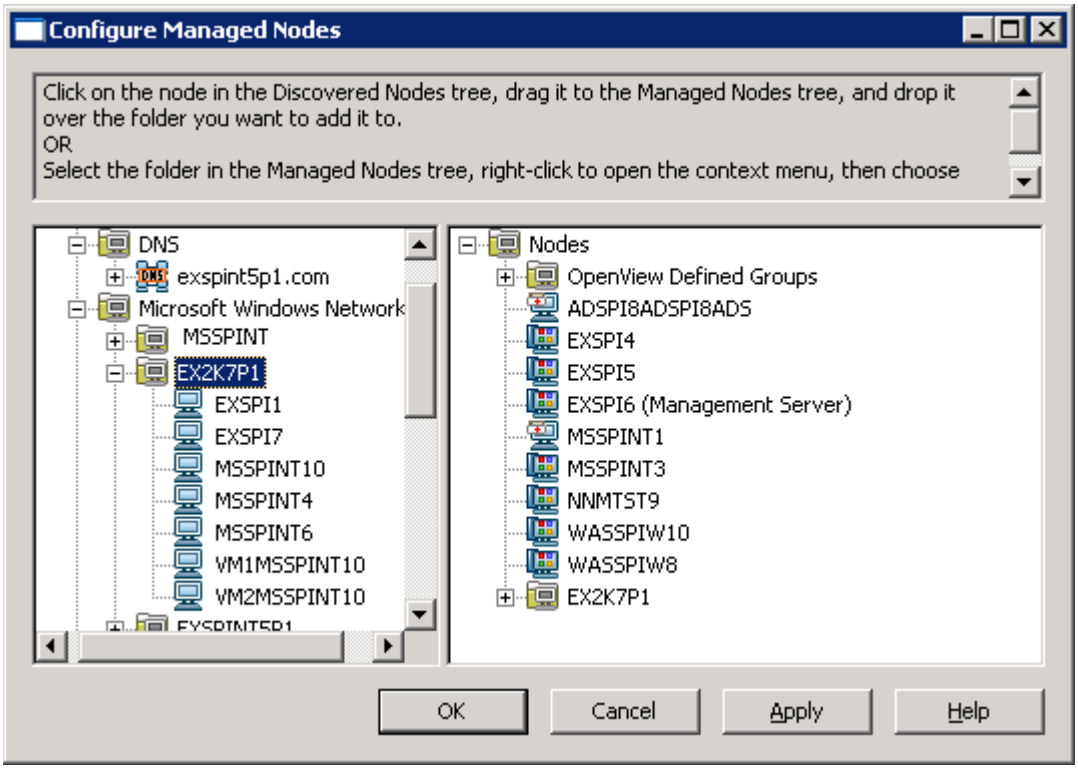
Add User Name and Password to the EXSPI-5.5 Exchange Service Discovery Policy

When the SPI is installed, open the EXSPI-5.5 Exchange Service Discovery policy in the Policy Management → SPI for Exchange → Exchange 5.5 → EXSPI Discovery folder on the OVO console. Add the User name and Password of a service account with administrative Exchange privileges.

Add Nodes

To add a new managed node, follow these steps:

1 In the console tree of the OVO console, right-click **Nodes**, and then click **Configure** → **Nodes**. The Configure Managed Nodes window opens.



2 Drag and drop a system from the left frame to the right frame.

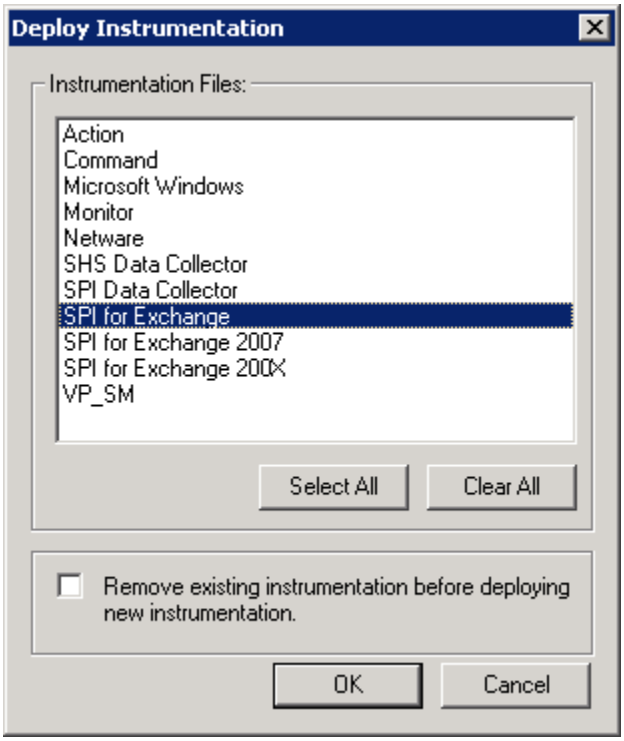
3 Click **Apply**.

4 Click **OK**.

Deploy Instrumentation

To deploy instrumentation on the newly added nodes, follow these steps:

1 In the console tree of the OVO console, right-click on a node, and then select **All Tasks** → **Deploy Instrumentation**. The Deploy Instrumentation dialog box opens.



2 Select SPI for Exchange, and then click **OK**.

3 Perform step 1 and step 2 for all added nodes.

If the policy autodeployment is enabled, you can start using the SPI.

If the policy autodeployment is disabled, you must run the discovery policy on newly added nodes (see Run Discovery Policy on page 51).

Run Discovery Policy

For Microsoft Exchange Server 5.5, you must run the Discovery policy under Exchange 5.5. To run this policy on managed nodes, follow these steps:

1 In the console tree of the OVO console, expand **Policy Management** → **Policy Groups** → **SPI for Exchange** → **Exchange 5.5**, and then double-click **EXSPI Discovery**.

2 In the right pane, deploy the EXSPI-5.5 Exchange Service Discovery policy.

Create Databases

After deploying the discovery policy, you must create databases on a data store. The EXSPI General Data Collection policy can create databases on the OVO agent's data store (embedded performance component — also known as CODA). If you do not deploy this policy and create databases, the agent cannot log messages on the managed node. To create databases in a data store, follow these steps:

1. In the console tree, expand **Policy management** → **Policy groups** → **SPI for Exchange** → **Exchange 5.5** → **EXSPI Quick Start**, and then click **EXSPI General Data Collection**.
2. In the details pane, deploy the EXSPI-5.5 Create Coda Data Sources policy on the nodes of your choice.

4 Configuring Exchange SPI for Message Delivery SLAs

The Exchange SPI enables you to monitor message delivery performance of Exchange Server and compare the performance against Service Level Agreements (SLAs) of your organization. The SPI monitors message delivery and detects SLA violations by using end-to-end message ping.

Exchange 2007: Testing MAPI Connectivity

You can test the message delivery performance of Mailbox servers with the EXSPI-8.X Test Mapi Connectivity policy. You can test the MAPI connectivity latency and error by deploying this policy. The default MAPI connectivity latency is set at 10. If MAPI connectivity latency exceeds this threshold or if any error occurs during this test, the policy sends alert message to the message browser. You can change this MAPI connectivity latency threshold by using the PowerShell collection configuration utility.

To test the MAPI connectivity latency by setting a new threshold, perform these tasks:

Task 1: Change the Threshold Value

1. Go to the PowerShell collection configuration utility.
2. In the left pane, expand **Collection Components** → **OpcMsg**.
3. In the left pane, click **TestMapiLatency**.
4. In the right pane, click **Delete** to delete the existing threshold.
5. Select TestMapiConnectivity from the MetricSetRef drop-down box.
6. Select Latency from the MetricRef drop-down box.
7. Select GreaterThanOrEQ from the Select Arithmetic Operator drop-down box.
8. Set the threshold value in the value to compare box.
9. Click **Add**.
10. Click **Apply Changes**.
11. Click **File** → **Save**.

Task 2: Identify Nodes

1. Identify the nodes on which you want to run the test.
2. In the left pane of the OVO console, expand **Policy management** → **Policy groups** → **SPI for Exchange** → **Exchange 2007** → **Manual Deploy Groups**, and then click **Collector Definition**.
3. In the details pane, right-click **EXSPI-8.X SPIMetaData Versioning**, and then click **All Tasks** → **Update to latest**.
4. Deploy the EXSPI-8.X SPIMetaData Versioning policy on the selected nodes.

Task 3: Deploy the Policy

Deploy the EXSPI-8.X Test Mapi Connectivity policy on the selected nodes to check if the latency is within the threshold value.

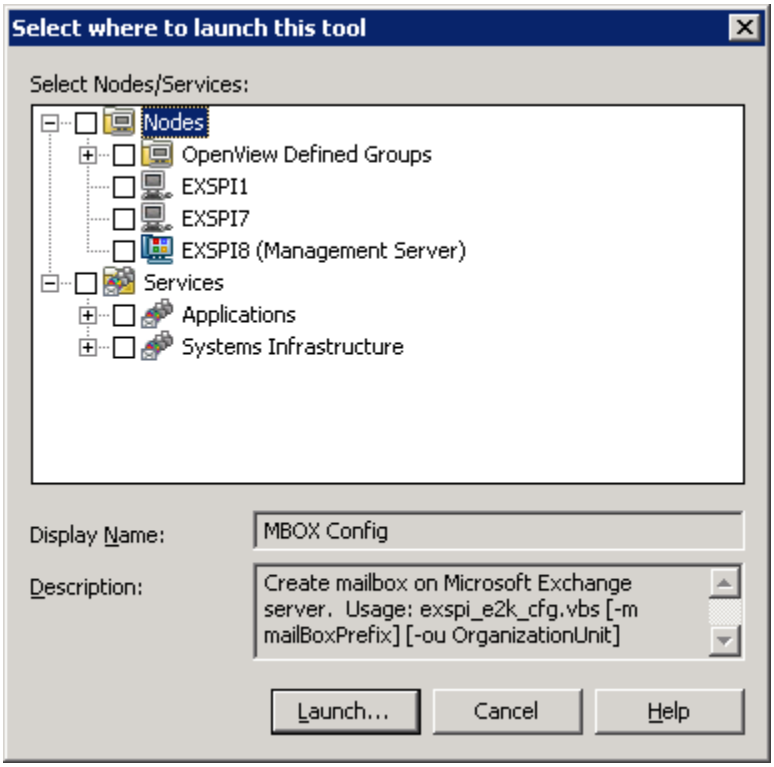
Exchange 2000/2003: Monitoring Message Delivery SLAs

Use the Exchange SPI End-to-End Message Ping to monitor message delivery SLAs. The End-to-End Message Ping procedure requires performing the following tasks in the order given.

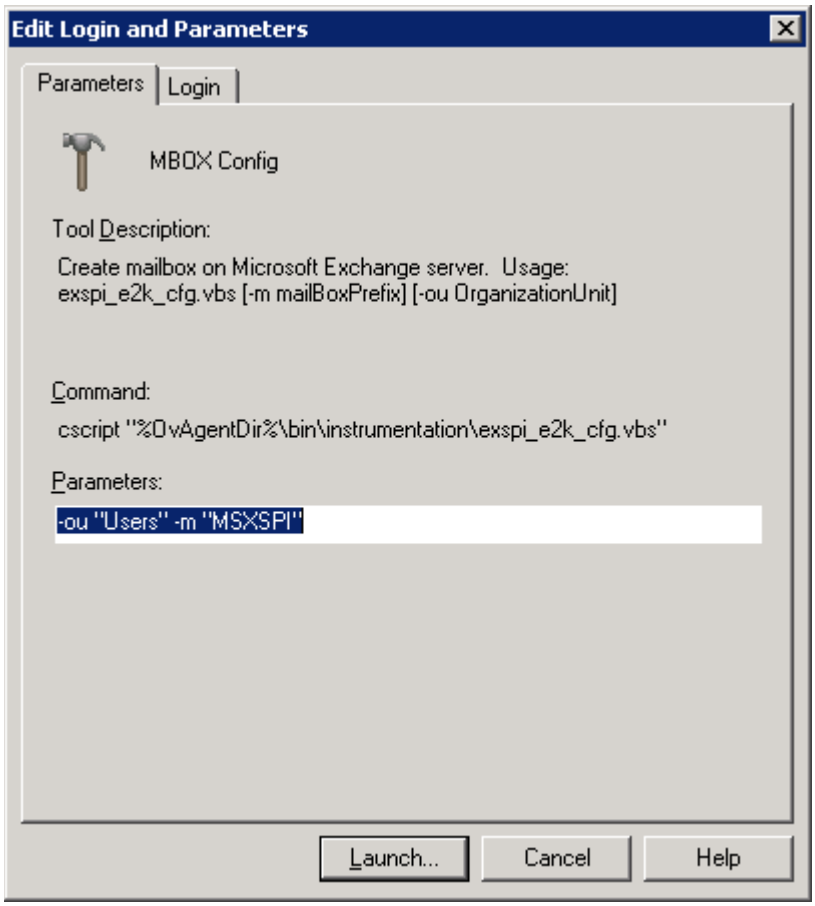
Task 1: Create a New Source Mailbox for Each Source Server

A mailbox needs to be created on each OVO managed Exchange 2000 or Exchange 2003 server from which the Ping messages will be sent out

1. In the OVO manager console, expand the **Tools** → **SPI for Exchange** → **Exchange 2000 and 2003** → **End-to-End SLA Configuration** folder.
2. In the details pane, double-click **MBOX Config**. The Select where to launch this tool dialog box opens.



3 Select the nodes on which you want to launch the tool, and then click **Launch**. The Edit Logins and Parameters dialog box opens.



4 If you want to specify the organizational unit and mailbox prefix:

a Select the Parameters tab. By default, the organizational unit is set to `Users`, and the default mailbox prefix ID is `msxspi`, so the user/mailbox name will be `msxspi`<*server name*>.

b Create the mailbox name with a prefix ID, followed by the Windows hostname, with no spaces: <prefix ID><*server name*>. For example, `msxspi`<*server name*>.

c Select the Login tab. Type the User name and password for a user who has the privilege to create Users with mailboxes in this domain.

d Click **Launch**.

Task 2: Run the End-to-End ConfigurationWizard to configure SLAs

You must set message delivery SLAs of your organization by using the End-to-End Configuration tool.

1 In the console tree, expand the **Tools** → **SPI for Exchange** → **Exchange 2000 and 2003** → **End-to-End SLA Configuration** folder.

2 In the details pane, double-click **End-to-End Configuration**.

3 Confirm the introductory dialog, which gives an example of a typical SLA by clicking **Next**.

4 Select the Exchange SPI configuration setting that best matches your SLA, and then click **Next**.

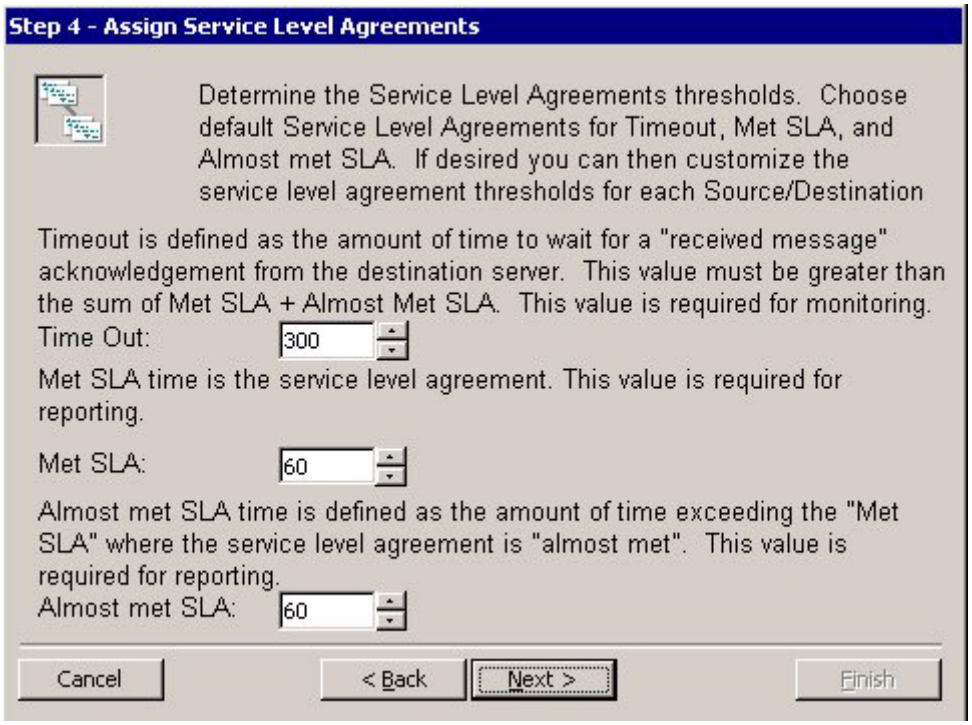
5 Select the Source Servers from the list of OVO managed servers. A source server is a server from which an email is sent.

6 Click **Next**.

7 Select the Destination Servers from the list. These can be any Exchange servers within your organization, not only OVO managed Exchange servers.

8 Click **Next**.

9 Specify the Service Level Agreement by assigning the thresholds (in seconds) for Timeout, Met SLA, and Almost met SLA.



10 Click **Next**.

11 Confirm or make changes to the SLAs, and then click **Next**.

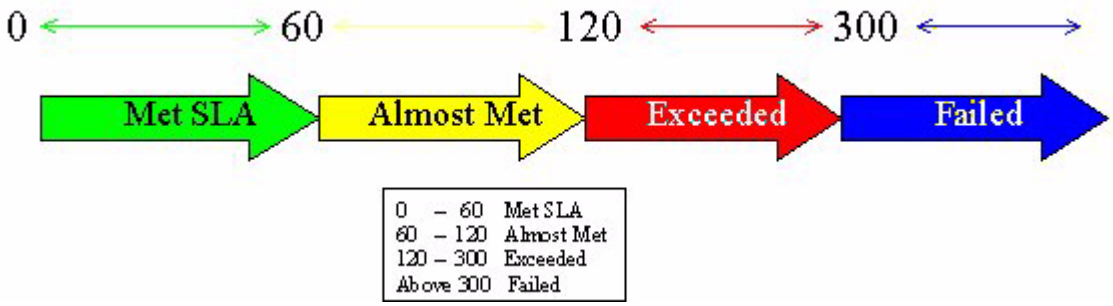
12 Select to deploy all End-to-End Policies to the managed nodes. Only managed nodes configured to determine SLAs will send and receive mail.

> You can also perform this step manually by deploying SPI for Exchange 200X instrumentation and the EXSPI End-to-End Message Ping policy (Manual Deploy Groups → Exchange Server → Message Delivery folder) to any desired managed nodes.

13 Click **Next**.

14 Click **Finish**, and then click **OK**.

Figure 5 Example SLA thresholds, where Met SLA=60, Almost met SLA=60, Time Out=300



You must run the wizard whenever you add a new Exchange server as a managed node, if an SLA is to be monitored on the newly managed server.

Exchange 5.5: monitoring message delivery SLAs

Use the EXSPI-End-to End Message Ping policy in the Exchange 5.5 EXSPI Advanced policy group to determine SLA performance by sending and receiving messages.

To configure and deploy the EXSPI End-to-End Message Ping, perform the following tasks in the order given:

Task 1: Create a Service Account with Special Administrative Privileges

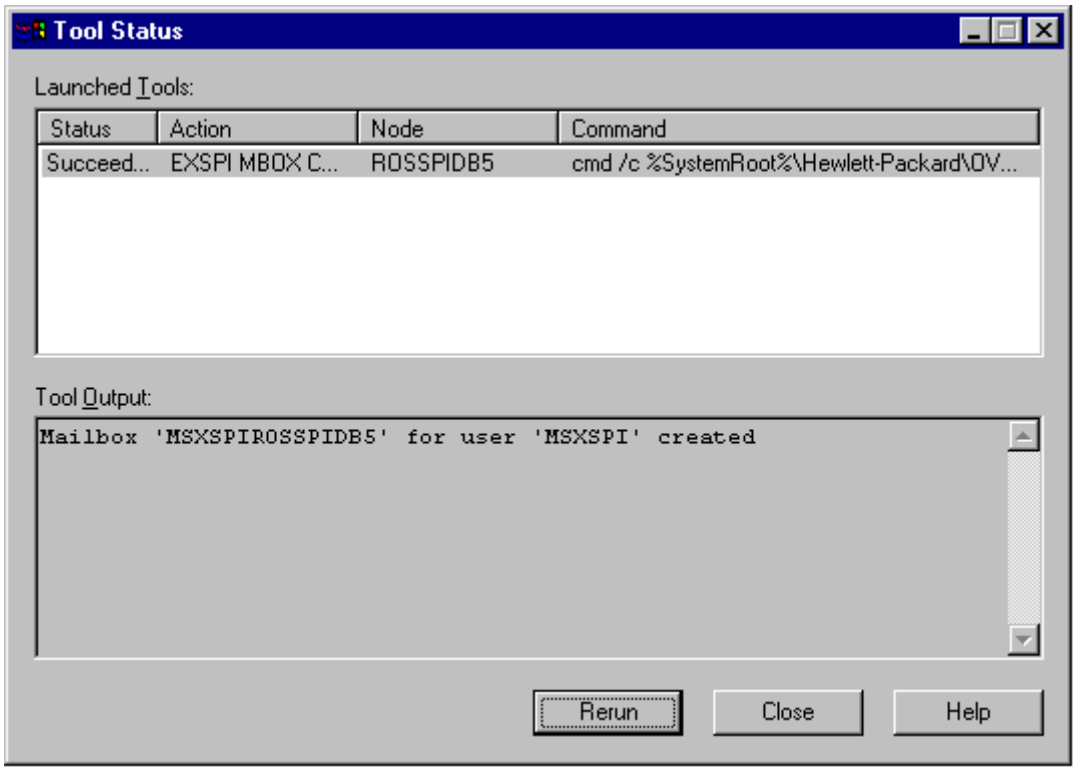
See Create Administrative User Credentials on Microsoft Exchange Server 5.5 on page 37.

Task 2: Create Mailboxes

The service account needs a mailbox on every targeted Exchange server to access Exchange mailbox and folder information.

To create a mailbox for the service account, follow these steps:

1. In the console tree, expand **Tools** → **SPI for Exchange** → **Exchange 5.5** folder.
2. In the details pane, double-click **MBOX Config**.
3. Select the servers the tool should launch on.
4. Click **Launch** to start the tool running on the selected nodes.
5. When prompted, type the service account user name and password.



If you cannot automatically create mailboxes and receive an error, try to manually create a mailbox for each Exchange server with the prefix MSXSPI and NT hostname. For example, the node rosspidb5.rose.hp.com (Internet name) and NT name ROSSPIB5 require a mailbox called MSXSPIROSSPIDB5 with primary NT account MSXSPI.

Task 3: Set up Server Connections to Test Message Delivery/Receipt

The EXSPI-5.5- Ping Config policy in the EXSPI Advanced group tracks the round trip time of a message. Before deploying the policy, the servers you want to monitor must be added to this policy.

1 Open the policy Ping Config.

2 Edit the text in the policy with your Exchange environment information. Only one policy is needed since you are able to designate at this level which server the configuration line is valid for. When finished, click **Save and Close**.

```
# Format of the file:
# Src-Svr:Src-MB:::Dest-MB:Timeout:MetSLA:AlmostMetSLA

# Src-Svr         = Source Server (required)

# Src-MB          = Source Mailbox (optional)
                    Defaults to 'MSXSPI<host_name>'.

# Reserved        = Reserved for future use, leave empty

# Reserved        = Reserved for future use, leave empty

# Dest-MB         = Destination Mailbox (required)

# Timeout         = Timeout (required)
                     (s-seconds, m-minutes, h-hours)

# MetSLA          = Met SLA time (require for reports)
                     (s-seconds, m-minutes, h-hours)

# AlmostMetSLA    = Almost met SLA time (require for reports)
                    (s-seconds, m-minutes, h-hours)
```

Examples:

```
#     EXCH1::::MSXSPIEXCH2:25m:1m:1m
#     EXCH1:MSXSPIEXCH1:::MSXSPIEXCH3:2h:5m:2m
#     EXCH2:MSXSPIEXCH2:::MSXSPIEXCH4:1h:20m:10m
#     EXCH3:MSXSPIEXCH3:::MSXSPIEXCH4:25m:5m:5m
```

Example

Enter server information to replace each entry separated by a colon (:). Each uncommented line represents a Service Level Agreement configuration.

In the following example of Ping Config policy text: ServerA will use Mailbox "MSXSPIServerA" to send a message to mailbox MSXSPIServerB. Server A will ignore the information in the line that starts with ServerC. There should be no white spaces at the beginning of lines. Lines beginning with # are comments and are ignored:

ServerA:MSXSPIServerA:::MSXSPIServerB:2h:5m:2m

ServerC::::MSXSPIServerA:20h:1m:1m

End File # _____#

Definition of Terms

- **Source Server** (required) — The server that the ping originates from. Each server where Exchange SPI is distributed has the same file, so THE Exchange SPI can parse this file and use all lines where the Source Server matches the server where it is run from.
- **Source Mailbox** (optional) — The mailbox to send the mail from. If this is not included, a default account is used "MSXSPI<*host_name*>" where <*host_name*> is replaced with the name of the server.
- **Destination Mailbox** (required) — The mailbox to send the ping to. This field is usually the only required destination entry.
- **Timeout** (required) (s-seconds, m-minutes, h-hours) — If a sent message does not return in the defined timeout interval, EXSPI logs it as a failure and sends a message to the OVO management server. Failed messages are tallied in terms of count and percentage within a report. The timeout value must be larger than the values for MetSLA and AlmostMetSLA so that a returned message can be processed using these values. It may have Exceeded SLA even though it did not exceed the timeout interval. A Failed/Timedout message occurs only when the message does not return before the timeout period is exceeded.

  The minimum timeout value should be set slightly less than the collection interval. For example, if the collection interval for metric 1002 is 30 minutes (the default), the timeout should be set to at least 25 minutes. The logic is that because the next measurement occurs only every 30 minutes, you should allow up to that amount of time for any messages to return before "giving up" and generating a failure. If you keep the timeout value within the collection interval and the reply message does return, it can be processed as Met, Almost Met, or Exceeded as opposed to Failed/Timedout.

- **MetSLA** (required for reports) (s-seconds, m-minutes, h-hours) — If the round trip time is greater than this value, the message is logged as either Almost Met SLA or Exceeded SLA. This value is required if data is being sent to the Measurement Data Collector Agent DSI for reporting (-l option when running exspi.exe). It is optional if only using alarms.
- **AlmostMetSLA** (required for reports) (s-seconds, m-minutes, h-hours) — If the round trip time is greater than the MetSLA value but less than or equal to MetSLA plus AlmostMetSLA, the message is logged as Almost Met SLA. Otherwise, when the round trip time is higher than MetSLA plus AlmostMetSLA, it is logged as Clearly Exceeded SLA. This parameter is required if data is being logged to the data collection Agent DSI (-l option when running exspi.exe), optional if only using alarms.

  Timeout, MetSLA, and AlmostMetSLA values can have optional identifiers that denote the measurement units the value represents; for example, 4m (4 minutes) 30s (30 seconds) or 1h (1 hour). The default unit is seconds; for example, the entry 4 by default is recognized as 4 seconds.

Examples:

EXCH1::::MSXSPIEXCH2:25m:1m:1m
Use the default FROM mailbox of MSXSPIEXCH1. Message must return within 1 minute to meet the SLA, 2 minutes to almost meet the SLA, and at over 25 minutes a failure/timeout is generated.

EXCH1:MAILBOXEXCH1:::MAILOXEXCH3:2h:5m:2m
Message must return within 5 minutes to meet the SLA, 7 minutes to almost meet the SLA, and at over 2 hours a failure/timeout is generated.

EXCH2:MAILBOXEXCH2:::MAILOXEXCH4:1h:20m:10m
Message must return within 20 minutes to meet the SLA, 30 minutes to almost meet the SLA and at over 1 hour a failure/timeout is generated.

Task 4: Set up EXSPI End-to-End Message Ping Alarms—Configure Server Pair Thresholds

Requirement: When you configure server connections, you must start the EXSPI Admin tool EXSPI Ping Config from the OVO management server.

Alarms can be set to occur with metric 1002 (Ping). As you may need to set different thresholds for multiple server pairs, some examples are included here to clarify the procedure. These examples show the syntax to insert in the exspilnk.txt file to set differing thresholds. Metric 1002 sends the “FromMailbox,ToMailbox” in the object pattern fields with the following definitions:

FromMailbox = FromServer:FromMailbox

ToMailbox = :ToMailboxl

Config Entry	Object
EXCH1::::MSXSPIEXCH2:25m:1m:1m	EXCH1:MSXSPIEXCH1,:MSXSPIEXCH2
EXCH1:MAILBOXEXCH1::: MAILOXEXCH3:2h:5m:2m	EXCH1:MAILBOXEXCH1,:MAILOXEXCH3
EXCH2:MAILBOXEXCH2::: MAILOXEXCH4:1h:20m:10m	EXCH2:MAILBOXEXCH2,:MAILOXEXCH4

Condition Name & Type	Condition Object Pattern	Threshold	Explanation
EXSPI-1002.1 +Message on Matched Condition	EXCH1:MSXSPIEXCH1, :MSXSPIEXCH2	120	Threshold condition for ping between System EXCH1 and mailbox MSXSPIEXCH2 on system EXCH2. Object pattern is case sensitive.
EXSPI-1002.2 +Message on Matched Condition	EXCH1:MSXSPIEXCH1, :MSXSPIEXCH3	240	Threshold condition for ping between System EXCH1 and mailbox MSXSPIEXCH3 on system EXCH3. Object pattern is case sensitive.
EXSPI-1002.3 -Suppress Matched Condition	EXCH1:MSXSPIEXCH1, :MSXSPIEXCH2 EXCH1:MSXSPIEXCH1, :MSXSPIEXCH3		If the threshold was not exceeded for these two system pairs, you must suppress the message if either of these system pairs gets past 1002.1 or 1002.2.
EXSPI-1002.4 +Message on Matched Condition		60	A blank object pattern to catch all remaining system pairs.

Task 5: Modify the Policy to Include the Service Account Password

Before deploying the EXSPI End-to-End Message Ping policy, you must edit it to include the service account name and password, so that it has access to data on the Exchange server system.

1. Open the OVO console and expand the Policy Management folder.
2. In the console tree, select Policy groups → SPI for Exchange → Exchange 5.5 → EXSPI Advanced → EXSPI End-to-End Message Ping group.
3. In the details pane, right-click **EXSPI-5.5-End-to-End Message Ping**, and then select **All Tasks → Edit**.
4. In the dialog that appears, confirm or type the service account user name (`MSXSPI`), select the Specify Password option, and type the password you assigned to the service account.
5. Click **Save** and **Close**.

Task 6: Deploy the Configuration File and the Policy

1. In the console tree, expand the folders **Policy management → Policy groups → SPI for Exchange → Exchange 5.5 → EXSPI Advanced**.
2. In the EXSPI Advanced folder, double-click the Advanced policy sub-group you want to deploy.
3. In the details pane where all the policies and/or configuration files are now listed, select the policies and/or configuration file needed, right-click, and then select **Deploy on...**.
4. In the Deploy policies on... dialog box, select all nodes by clicking the check box next to Nodes, or select individual nodes by clicking the adjacent checkbox.

Format of Objects Passed from the Exchange SPI Executable to the Metric 1002 for End-to-End Message Ping

The `exspi_e55.exe` executable is used to pass objects to the monitoring Measurement Threshold Policy EXSPI-5.5-1002. This monitor evaluates the End-to-End Message Ping and is used to check if the SLAs for the turnaround-time of a mail time are met. The executable passes a message back to the Measurement Threshold Policy to match the Object name in the following format:

A:B:C:D:E:F

The format has the following meaning:

- A is one of the strings: ["SLAViolation" | "SLAWarning" | "Timeout" | "Undeliverable"].
- B is Source node.
- C is Source Mailbox.
- D is Destination Node.
- E is Destination Mailbox.
- F is one of the following, depending on A: [SLA Threshold | Warning Threshold | Timeout Threshold].

According to this format, the default policy has four rules that match on the Object A. According to the value of A, a message is created and sent to the OVO Message Browser.

Comparison: End-to-End Message Ping for Exchange 5.5 v. Exchange 2000/2003

- The Exchange SPI End-to-End Message Ping for Exchange 2000 and Exchange 2003 servers sends the ping message to the System Assistant account of a destination Exchange 2000/2003 server. Therefore, there is no need to configure a receiving mailbox.
- The ping messages received by the System Assistant will be automatically deleted by the Exchange 2000/2003 server and do not need to be manually deleted from the receiving mailbox by the Exchange SPI user.

5 Exchange SPI Clustering Support

You can use Microsoft Exchange Server 2007 and 2003/2000 in a cluster environment where the fail-over capability of Exchange Servers ensures uninterrupted Exchange availability. In the event of a cluster node failure, the Exchange SPI automatically switches monitoring activity from the failed node to the active node.

Configuring Exchange SPI for a Cluster Environment

The Exchange SPI recognizes Exchange instances in an Exchange cluster by using XML configuration files (`apminfo.xml` and `msexchange.apm.xml`). In the event of failure, these XML files enable the OVO agent to automatically perform the following functions:

- Disable instance monitoring on the inactive node
- Enable instance monitoring on the currently active node

To configure the Exchange SPI for a cluster environment, perform the following tasks in the order given.

Task 1: Add the Exchange Cluster Nodes to OVO Console

Identify the cluster nodes of your Exchange environment, and then add those nodes to OVO console.

If policy autodeployment is disabled, you must launch the necessary policies on newly added cluster nodes.

The discovery policy discovers the Exchange cluster and updates the map with cluster topology.

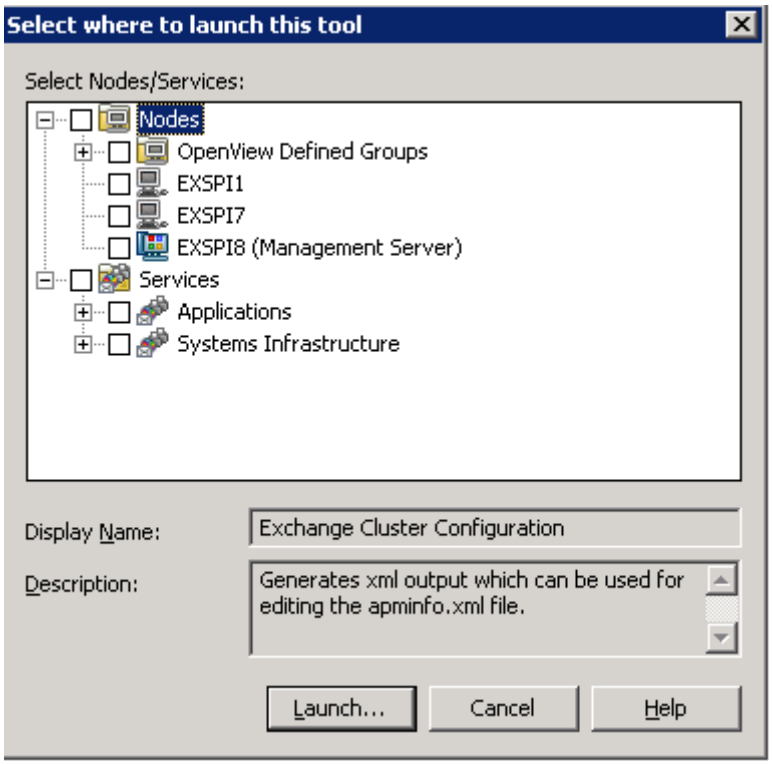
Task 2: Generate Cluster Application Configuration File

You must generate the `apminfo.xml` file to describe the cluster instances (Exchange virtual servers).

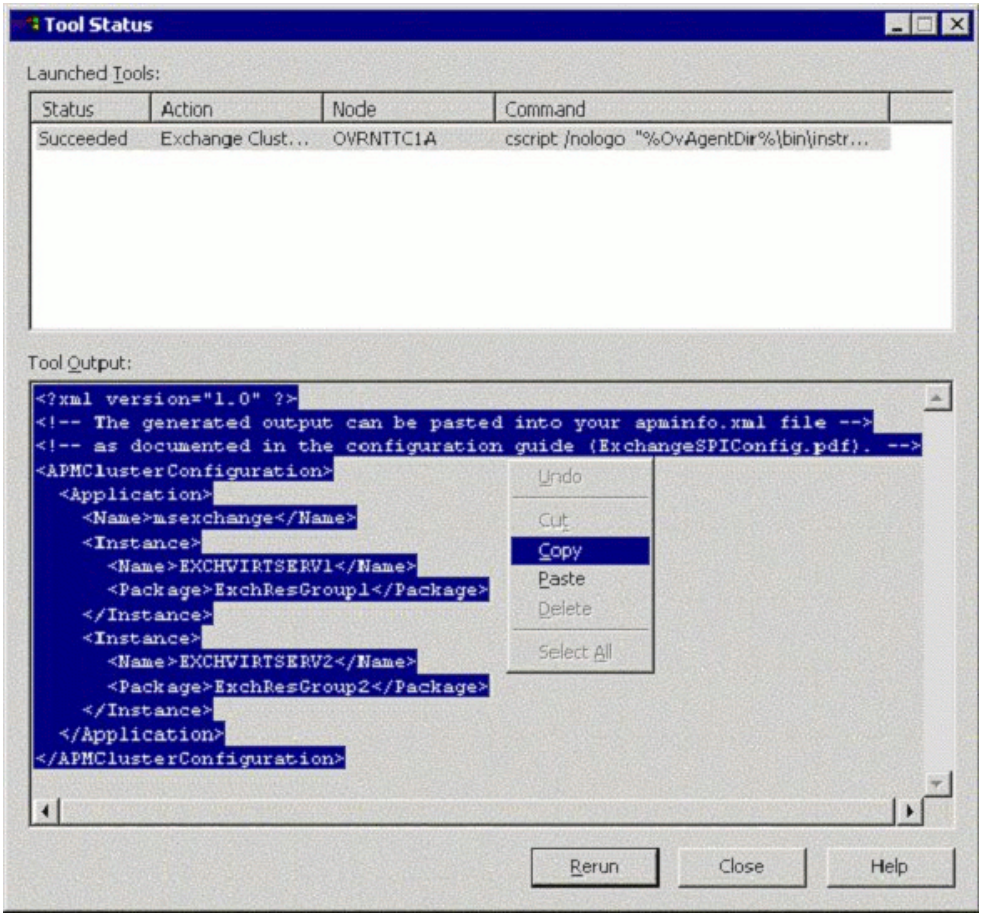
1. Launch the Exchange Cluster Configuration tool on the cluster nodes.
2. For Exchange 2003 and 2000, in the console tree, expand **Tools** → **SPI for Exchange** → **Exchange 2000 and 2003** → **ovo Utilities folder**.

   For Exchange 2007, in the console tree, expand **Tools** → **SPI for Exchange** → **Exchange 2007**.

3 In the details pane, double-click **Exchange Cluster Configuration**. The Select where to launch this tool dialog box opens.



4 Click **Launch**. The Tool Status window appears and displays the output under the Tool Output section.



5 Select the text content under the Tool Output section, and then copy it to a text editor.

6 Save the text as `apminfo.xml` in the following locations on cluster nodes:

<installation_directory>`/Installed Packages/{790C06B4-844E-11D2-972B-080009EF8C2A}/conf/OpC/`

7 Stop and start the agents on the nodes by using the following commands:

```
opcagt -stop
opcagt -start
```

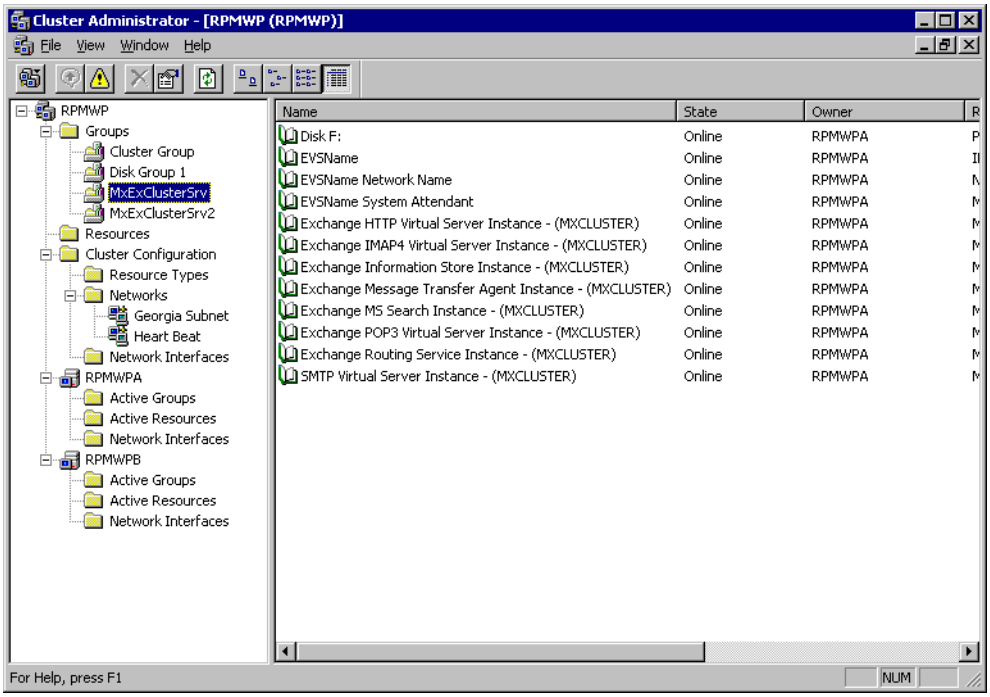
Example apminfo.xml File

In the following example, `ExchResGroup1` and `ExchResGroup2` are the names of the Exchange resource groups corresponding to `EXCHVIRTSERV1` and `EXCHVIRTSERV2` instances (virtual servers):

```
<?xml version="1.0" ?>
<APMClusterConfiguration>
  <Application>
    <Name>msexchange</Name>
      <Instance>
```

```
            <Name>EXCHVIRTSERV1</Name>
            <Package>ExchResGroup1</Package>
          </Instance>
    <Instance>
    <Name>EXCHVIRTSERV2</Name>
            <Package>ExchResGroup2</Package>
          </Instance>
      </Application>
    </APMClusterConfiguration>
```

Figure 6 Example of Exchange Resource Group



Additional Configuration for Policy Name Change

The Exchange SPI disables all policies from a cluster node if the node fails, and then enables all policies on the active cluster node. While switching its operation from disabled node to active node, the Exchange SPI retrieves policy information from the `msexchange.apm.xml` file. If you change any policy name (or add a new policy) and deploy the changed policy on a managed cluster node, you must reflect the change in the `msexchange.apm.xml` file as well. To update the `msexchange.apm.xml` file with changed policy information, follow these steps:

1. Open the `msexchange.apm.xml` file from the following location by using a text editor:

   <*agent_dir*>`/bin/installation/`

   where <*agent_dir*> is the agent's installation directory on the node.

2. Edit the changed policy names in this file. Add new policy names (within `Template` markup), if required.

3. Restart the agent.

4. Redeploy Exchange SPI instrumentation on the node.

Data Collection on Virtual Servers

The Exchange SPI shows Exchange virtual servers in reports and graphs as though they were physical Exchange servers.You must deploy appropriate policies to a managed node to successfully show correct data for the node in reports and graphs. Follow the guidelines given below for deploying data collection policies on cluster nodes of Microsoft Exchange Server 2003/2000.

Microsoft Exchange Server 2003/2000

Run the Enable Message Tracking tool on all nodes in the cluster before deploying the EXSPI 6.X Dc-TrackLog Data policy, so that the policy can generate tracking log reports. The tool must run on the physical nodes of a cluster where the Exchange virtual server is running.

Setting up End-to-End Message Ping on an Exchange Cluster

To configure End-to-End Message Ping in an Exchange 2003/2000 clusters, follow these steps:

1. Run the MBox Config tool on all nodes in the cluster. The tool must run on the physical nodes of a cluster where the Exchange virtual server is running. This is a necessary step for configuring and deploying End-to-End Message Ping.
2. Run the End-to-End Configuration (wizard) tool to add the Exchange virtual server to the end-to-end configuration. Exchange virtual server names will appear in the Source Server and Destination Server fields. See Configuring Exchange SPI for Message Delivery SLAs on page 53.

Map View for Exchange Cluster Services

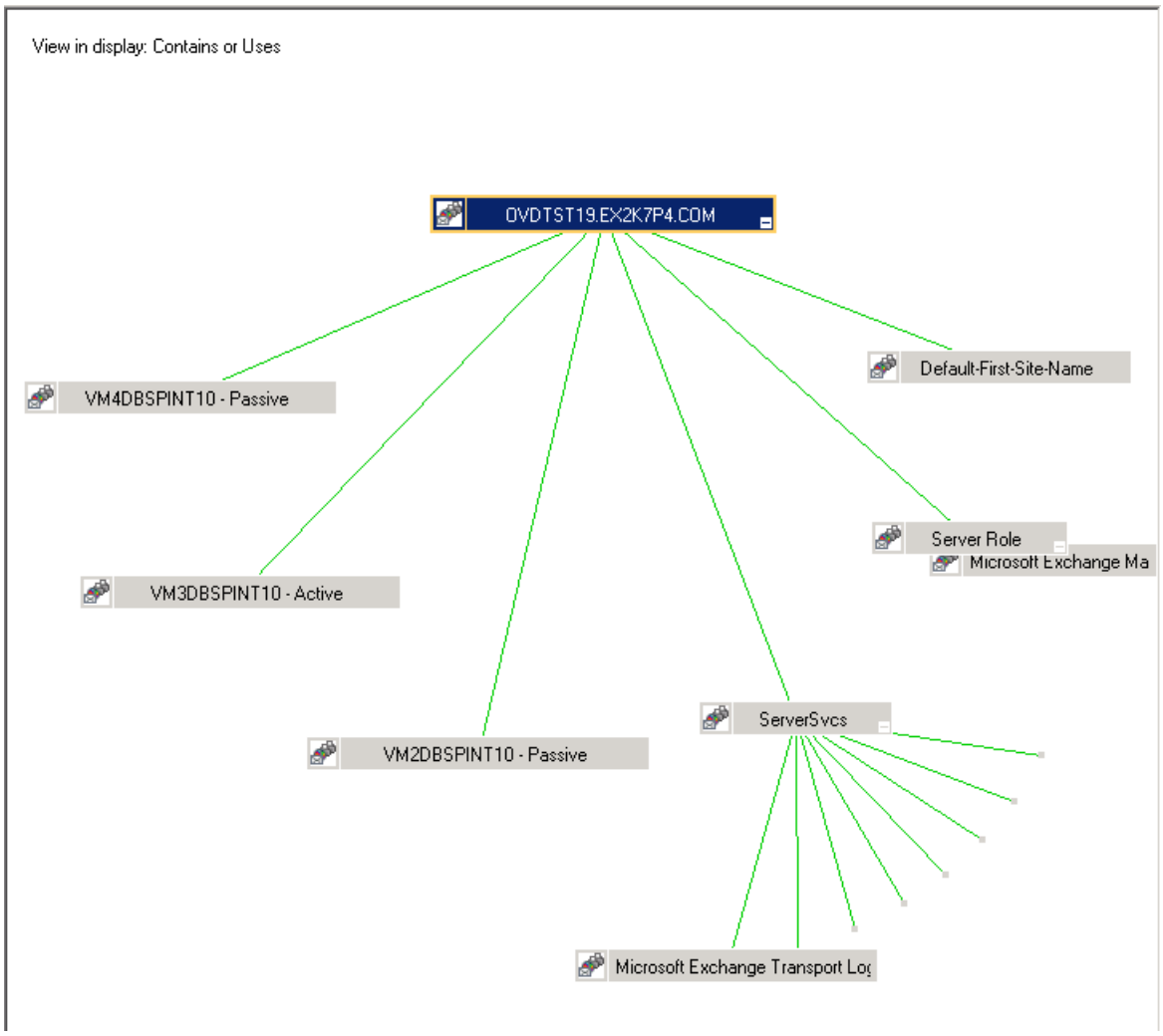
The Exchange SPI represents Exchange clusters in the map view. Map view creates one node for each virtual server in the cluster. Because the cluster is properly modeled in the service map, Exchange SPI instrumentation and Quick Start policies are auto-deployed to all managed Exchange cluster nodes.

Messages for the Exchange virtual server show up under the Exchange virtual server name in the maps.

For the Exchange Virtual server an EXSPI service discovery hosted-on hierarchy is created within a Clusters container. This allows messages to be sent to the hosted-on hierarchy.

This same hierarchy is also created as virtual nodes under the Exchange Virtual Server. A dependency is created from each Virtual Exchange Server virtual node to its corresponding Cluster hosted-on node. Messages and status will then propagate to the correct Virtual Exchange Server virtual node.

Figure 7 Service Map Illustrating Clustering Support



When a fail-over happens, dependencies to the failed node will be removed and replaced with new dependencies to the newly active node..

When a failover happens, messages that occurred before the failover will not be propagated to the virtual node

For this mechanism to work EXSPI-6.0 Exchange Cluster Discovery Event Log policy must be deployed (normally auto-deployed) for Exchange 2000 nodes.

6 Additional Configuration for Microsoft Exchange Server 2007

The Exchange SPI enables you to customize the monitoring activity on Microsoft Exchange Server 2007 nodes. By default, the collectors on Microsoft Exchange Server 2007 nodes follow a pre-defined data collection mechanism. The SPI enables you to customize this definition to create new mechanisms to collect and store metric data.

Data Collection Mechanism on Microsoft Exchange Server 2007

The default data collection mechanism on Microsoft Exchange Server 2007 is described in an XML file (`spimetadata.xml`). When you add a node for the first time, the default `spimetadata.xml` file is placed on the node. The collectors start collecting metric data according to this XML file. The Exchange SPI provides you with a utility (**PowerShell collection configuration utility**) to modify the default mechanism of data collection on Microsoft Exchange Server 2007 nodes. PowerShell collection configuration utility enables you to modify the `spimetadata.xml` file through its graphic user interface.

On a managed node, collectors collect metric data. If logging information is available, collectors log the collected data to a data store. Every collector follows a pre-defined mechanism to collect and log data, which is retrieved from the `spimetadata.xml` file.

Collection is an element in the `spimetadata.xml` file that describes the complete data collection mechanism of a particular collector. Collection configuration consists of the following components or building blocks:

- **MetricSet** — A metric is a measurement that defines a specific operational or performance characteristic of a system or an application. A MetricSet is a group of related metrics.
- **OpCMsg** — An OpCMsg is an element of a collection that generates an alert message when a metric value does not match a preset value or range of values.
- **OpCMon** — An OpCMon is an element of a collection that sends the collected metric data to a measurement threshold policy. The measurement threshold policy checks the data against some upper or lower threshold defined within the policy and sends alarm to the message browser.
- **DataStore** — A DataStore defines the way in which the collected data can be stored in the data store.

Collection Configurations

A collection configuration describes the complete workflow of a collector and defines the mechanism of metric data collection. It also defines how to store metric data. Every collection is associated with a scheduled task policy. When you invoke a scheduled task policy on a managed node, a collector retrieves the following information from a collection:

- The metric value to be collected

- The mechanism to send the collected data to analyzer for data analysis
- The mechanism to receive the analyzed data
- The mechanism to send the analyzed data to a DataStore (if required)

PowerShell Collection Configuration Utility

The Exchange SPI provides you with a utility (**PowerShell collection configuration utility**) to modify the default mechanism of data collection on Microsoft Exchange Server 2007 nodes. PowerShell collection configuration utility enables you to modify the `spimetadata.xml` file through its graphic user interface. You can change existing collection definitions, or create new collection definition to monitor additional metric data. It enables you to perform the following tasks:

- View existing collection configurations
- Modify existing collection configurations
- Add a new MetricSet
- Add an OpcMsg
- Add an OpcMon
- Add a DataStore
- Add a new collection configuration

Refer to the *Smart Plug-in for Microsoft Exchange Server Online Help* for information on PowerShell collection configuration utility.

Adding or Modifying a Collection Configuration

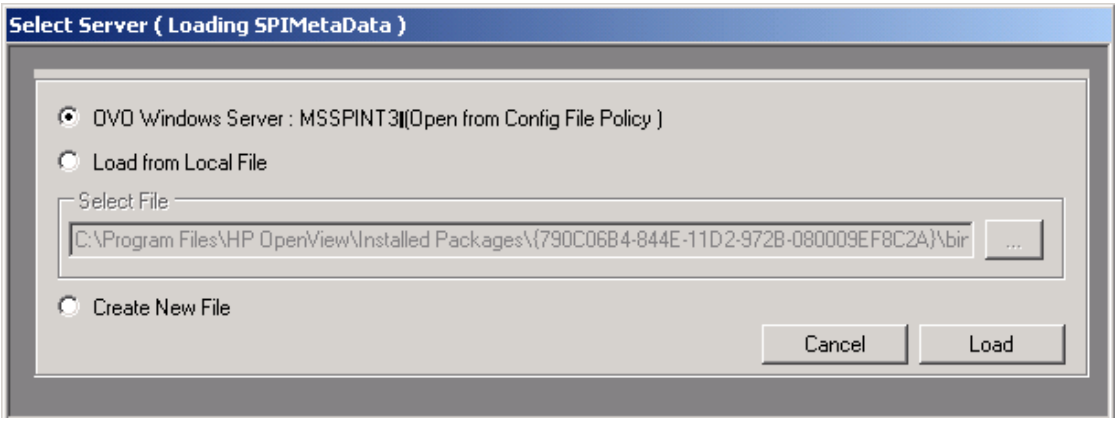
To customize metric data collection mechanism on Microsoft Exchange Server 2007 nodes, you can modify an existing collection configuration present in the `spimetadata.xml` file, or you can add a new collection configuration. Using PowerShell collection configuration utility, you can customize the configuration, and save the change in the `spimetadata.xml` file. After making the change, you must place this updated `spimetadata.xml` file on managed nodes by deploying the SPIMetaData Versioning policy the nodes.

Task 1: Run the PowerShell Collection Configuration Utility Tool

The PowerShell Collection Configuration Utility tool launches the PowerShell collection configuration utility interface. To run it, follow these steps:

1 In the console tree, expand **Tools** → **SPI for Exchange**, and then click **Exchange 2007**.

2 In the details pane, double-click **PowerShell Collection Configuration Utility**. The Select Server dialog box opens.



3 Select the OVO Windows Server option, and then click **Load**. The PowerShell collection configuration utility window opens.

Task 2: Add or Modify Elements of a Collection Configuration

You can modify the following components (building blocks) of a collection configuration or create new ones.

- MetricSet — Every default MetricSet corresponds to an Exchange PowerShell command (cmdlet). You can add additional MetricSets to the set of existing MetricSets and map those to available Exchange cmdlets. You can also add an available metric to a MetricSet.
- DataStore — You can modify the metric data logging mechanism by modifying an existing DataStore. PowerShell collection configuration utility enables you to add new definitions of logging metric data by creating a new DataStore.
- OpCMsg and OpCMon — OpCMsgs and OpCMons describe the mechanism to trigger an error message when a metric value does not match with a preset value. Use PowerShell collection configuration utility to modify OpCMsgs/OpCMons if you want to:
  - Change default error messages
  - Change preset value
  - Change severity level of OpCMsgs/OpCMons

Refer to the *Smart Plug-in for Microsoft Exchange Server Online Help* for detailed information on adding or modifying these components.

Task 3: Deploy the EXSPI-8.X SPIMetaData Versioning Policy on Nodes

After you make modifications in collection definitions, which are recorded in the `spimetadata.xml` file, you must deploy the file on the nodes of your interest. To achieve this, deploy the EXSPI-8.X SPIMetaData Versioning policy on the managed nodes on which you want to implement the modified data collection mechanism.

While modifying default collection configurations or adding new collection configurations, if you change existing DataStores or add new DataStores, you must launch the Create Data Sources tool on the nodes on which you want the change to take effect. Launch the Create Data Source tool before you deploy the EXSPI-8.X SPIMetaData Versioning policy.

To deploy the EXSPI-8.X SPIMetaData Versioning policy on managed nodes, follow these steps:

1. In the console tree, expand **Policy groups** → **SPI for Exchange** → **Exchange 2007** → **Manual Deploy Groups**, and then click **Collector Definition**.
2. In the details pane, right-click **EXSPI-8.X SPIMetaData Versioning**, and then click **All Tasks** → **Update to latest**.
3. In the details pane, right-click **EXSPI-8.X SPIMetaData Versioning**, and then click **All Tasks** → **Deploy on**. The Deploy policies on dialog box opens.
4. Select the nodes on which you want to deploy the policy from the tree, and then click **OK**.

After you deploy the EXSPI-8.X SPIMetaData Versioning policy, the updated `spimetadata.xml` file is placed on the selected nodes. The Refresh Collector Definition policy updates the collection manager process with the modified collection mechanism described in the newly deployed `spimetadata.xml` file.

The Refresh Collector Definition periodically runs on the node with an interval of 30 minutes. The new collection mechanism is not synchronized to the collection manager until the Refresh Collector Definition runs on the node. If you want the changes to take effect immediately after you deploy the SPIMetaData Versioning policy, launch the following tools in the given sequence on the nodes after deploying the SPIMetaData Versioning policy:

1. Stop ExData Collection Manager
2. Stop PowerShell Collector
3. Start PowerShell Collector
4. Start ExData Collection Manager

Using Additional Cmdlets

You can create customized cmdlets and use those cmdlets to monitor metric data on a managed node. You can create customized cmdlets to return additional metrics, and configure the SPI to monitor these additional metrics. Perform the following tasks to achieve this:

Task 1: Identify the Microsoft Exchange Server 2007 Node

Identify the Microsoft Exchange Server 2007 node on which you want to add customized cmdlets to observe additional metric data.

Task 2: Create Cmdlets

Create customized cmdlets on the identified nodes.

Task 3: Install Snap-ins

Install customized snap-ins for the newly created cmdlets on the nodes on which you have created new cmdlets.

Task 4: Update the Exspi-exshell.psc1 File

To update the `Exspi-exshell.psc1` file with the new snap-in information, follow these steps:

1. Open the `Exspi-exshell.psc1` file by using a text editor from the location <*Agent_Dir*>`/bin/instrumentation`, where <*Agent_Dir*> is the install directory of agent on the node.
2. Add the following within the `PSSnapin` tag:

   `<PSSnapIn Name="`*new_snap-in_name*`" />`
   where *new_snap-in_name* is the name of newly added snap-in.
3. Save the file.

Task 5: Create New Collection Definitions for New Cmdlets

Use policy composer and create new collections with newly added cmdlets.

Task 6: Deploy the EXSPI-8.X SPIMetaData Versioning Policy on Nodes

Deploy the EXSPI-8.X SPIMetaData Versioning policy on the nodes on which you have created new cmdlets.

7 Using Exchange SPI Policies, Reports, and Graphs

Exchange SPI policies enable you to simplify monitoring the performance and health of Microsoft Exchange Server. A policy contains a rule or a set of rules that automate the monitoring operation. The data collection mechanism of collectors on the managed nodes is governed by these policies. Policies can trigger alert signals in case of threshold violation. The SPI also enables you to generate reports and graphs to analyze metric data.

This chapter contains tables of Exchange SPI policies, reports and graphs, and outlines procedures for:

- Deploying the various policy groups
- Generating Exchange SPI reports and graphs.

Using Exchange SPI Policies

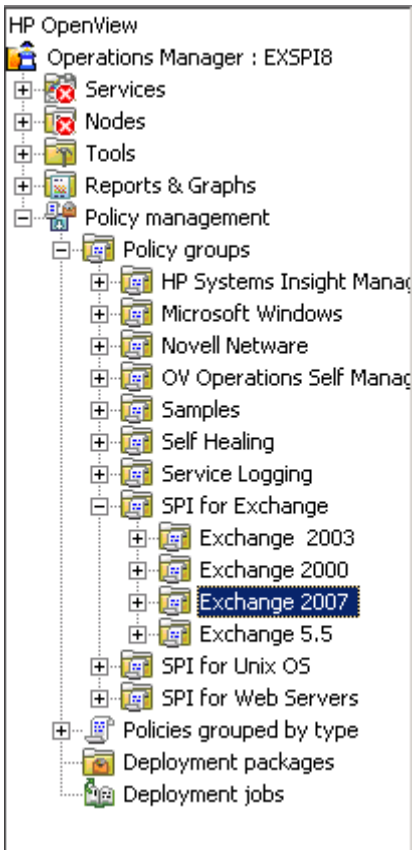
Exchange SPI policies are classified in four broad groups — Exchange 5.5, Exchange 2000, Exchange 2003, and Exchange 2007. Each group contains policies specific to a particular Microsoft Exchange Server version. Refer to the general information on Exchange SPI policies listed below:

- Some policies in the SPI for Exchange policy groups require that particular software components or services be installed on Exchange server systems before the deployed policies will work.
- Do not deploy Exchange SPI policies on a non-Exchange systems.
- Regarding policy names:
  - Policies for only Microsoft Exchange Server 2007 are prefixed with EXSPI-8.X
  - Policies for only Microsoft Exchange Server 2003 are prefixed with EXSPI-6.5
  - Policies for only Microsoft Exchange Server 2000 are prefixed with EXSPI-6.0
  - Policies for Microsoft Exchange Server version 2000 and 2003 are prefixed with EXSPI-6.X
  - Policies for Microsoft Exchange Server version 5.5 are prefixed with EXSPI-5.5
- You can use the `ovpmwutil` tool to update account information (user name and password) in multiple policies. Refer to the *Server Command Line Utilities* section in the *HP OpenView Operations for Windows Online Help*.

Individual policy definitions are documented in the Exchange SPI online Help.

Policy Groups are located in the console tree under **Policy Management** → **Policy Groups** → **SPI for Exchange** and then the Exchange version.

Figure 8 SPI for Exchange policy location on the console tree



Exchange 2007 Policies

The SPI for Microsoft Exchange Server 2007 does not provide any auto deploy policies. You must manually deploy the available policies depending on your requirement.

Exchange 2007 Manual Deploy Groups	Policies
Availability	• EXSPI-8.X Exchange 2007 Application Errors • EXSPI-8.X Exchange 2007 Application Warnings • EXSPI-8.X Exchange 2007 Application Info
Client Access Server	• **Availability** — EXSPI-8.X Monitor Client Access Server Services • **IMAP4** — EXSPI-8.X Monitor Check IMAP4 Max Connection — EXSPI-8.X Dc-IMAP4 Performance — EXSPI-8.X IMAP4 Failed Connection Rate — EXSPI-8.X Monitor Check IMAP4 Max Connections from Single IP — EXSPI-8.X IMAP4 Connections — EXSPI-8.X Get IMAP4 Settings — EXSPI-8.X Monitor Check IMAP4 Max Connections per User — EXSPI-8.X IMAP4 Rejected Connection Rate • **Outlook Anywhere** — EXSPI-8.X Check Outlook Anywhere Enabled — EXSPI-8.X Check Outlook Anywhere Not Enabled • **POP3** — EXSPI-8.X POP3 Failed Connection Rate — EXSPI-8.X POP3 Connections — EXSPI-8.X POP3 Rejected Connection Rate — EXSPI-8.X Get POP3 Settings — EXSPI-8.X Dc-POP3 Performance — EXSPI-8.X Monitor Check POP3 Max Connections from Single IP — EXSPI-8.X Monitor Check POP3 Max Connection — EXSPI-8.X Monitor Check Pop3 Max Connections per User
Collector Definition	• EXSPI-8.X SPIMetaData Versioning • Check Collector Server • Check Collection Manager • Refresh Collection Definition
Discovery	Exchange 2007 Discovery

Exchange 2007 Manual Deploy Groups	Policies
Edge Server	• EXSPI-8.X Edge Get Queue Data • EXSPI-8.X Edge Check Tracking Log Settings • EXSPI-8.X Edge Get Configuration of the Transport Agent • **Availability** — EXSPI-8.X Monitor Edge Server Services • **SMTP** — EXSPI-8.X Edge Dc-SMTP Performance for Inbound Connections — EXSPI-8.X Edge Dc-SMTP Performance for Outbound Connections
ExBPA Integration	• EXSPI-8.X Forward ExBPA Event Log Errors • EXSPI-8.X ExBPA Integration
Hub Transport Server	• EXSPI-8.X Get Queue Data • EXSPI-8.X Check Tracking Log Settings • EXSPI-8.X Get Configuration of the Transport Agent • **Availability** — EXSPI-8.X Monitor Hub Transport Server Services • **SMTP** — EXSPI-8.X Edge Dc-SMTP Performance for Inbound Connections — EXSPI-8.X Edge Dc-SMTP Performance for Outbound Connections

Exchange 2007 Manual Deploy Groups	Policies
Mailbox Server	• **Availability** — EXSPI-8.X Monitor Mailbox Server Services • **High Availability** — **Replication Monitoring** – EXSPI-8.X ReplicationCopyQueueLength – EXSPI-8.X Replication Warnings in Application Event Log – EXSPI-8.X Replication Errors in Application Event Log – EXSPI-8.X Dc Replication Summary – EXSPI-8.X ReplicationReplayQueueLength – EXSPI-8.X Check Replication Service • **Mailbox** — EXSPI-8.X MailBoxItemCount — EXSPI-8.X IS Mailbox Average Delivery Time — EXSPI-8.X IS Mailbox Receive Queue Length — EXSPI-8.X Dc-IS Mailbox Performance — EXSPI-8.X Check Circular Logging Enabled — EXSPI-8.X Get Mailbox Details — EXSPI-8.X Check If Circular Logging Disabled • **MAPI** — EXSPI-8.X Information Store RPC Operations — EXSPI-8.X Test Mapi Connectivity — EXSPI-8.X Information Store RPC Averaged Latency — EXSPI-8.X Information Store RPC Requests • **Outlook Performance** — EXSPI-8.X Dc-Outlook Client — EXSPI-8.X Outlook Client RPC Failure Rate — EXSPI-8.X Outlook Client Latency • **Performance** — EXSPI-8.X Information Store Heap Memory Errors — EXSPI-8.X Information Store VM Large Block Bytes — EXSPI-8.X Information Store Db Log Record Stalls per sec — EXSPI-8.X Information Store Performance — EXSPI-8.X Information Store Additional Heaps — EXSPI-8.X Information Store User Count — EXSPI-8.X Information Store Db Cache Size — EXSPI-8.X Information Store Db Log Threads Waiting — EXSPI-8.X Information Store Memory Errors — EXSPI-8.X Information Store VM Largest Block

Exchange 2007 Manual Deploy Groups	Policies
Mailbox Server (Cont.)	— EXSPI-8.X Information Store VM 16MB Blocks — EXSPI-8.X Information Store Db Log Writes per sec • **Public Folder** — EXSPI-8.X PublicFolderItemCount — EXSPI-8.X Public Replication Queue Length — EXSPI-8.X Get Public Folder Details — EXSPI-8.X IS Public Average Delivery Time — EXSPI-8.X IS Public Receive Queue Length — EXSPI-8.X Dc-IS Public Folder Performance
Unified Messaging Server	— EXSPI-8.X GetUM IPGateway Details — EXSPI-8.X Get UMHuntGroup Details — EXSPI-8.X Get UMMailbox Pin Details — EXSPI-8.X Get UMMailbox Policy Details — EXSPI-8.X Get UMServer Details — EXSPI-8.X Get Unified Messaging Mailbox Details • **Availability** — EXSPI-8.X Monitor Unified Messaging Server Services

Exchange 2003 policies

Exchange 2003 Auto Deploy policies

Exchange 2003 Auto Deploy Groups	Policies
Availability	EXSPI-6.X Queue State EXSPI-6.X Connector State EXSPI-6.X Exchange System Errors EXSPI-6.X Link State EXSPI-6.X Exchange Services EXSPI-6.X Process Monitor EXSPI-6.X Exchange Application Errors EXSPI-6.X Inactive Process Monitor

Exchange 2003 Auto Deploy Groups	Policies
Client Accessibility	**ActiveSync** EXSPI-6.5 ActiveSync AD Requests EXSPI-6.5 ActiveSync Mailbox Connection Requests EXSPI-6.5 ActiveSync Mailbox pending requests EXSPI-6.5 ActiveSync Users EXSPI-6.5 Dc-ActiveSync EXSPI-6.5 Dc-ActiveSyncNotify **OMA** EXSPI-6.5 OMA Response time EXSPI-6.5 Dc-OMA EXSPI-6.5 OMA Application Event Errors **IMAP4** EXSPI-6.X IMAP4 Failed Connection Rate EXSPI-6.X IMAP4 Rejected Connection Rate EXSPI-6.X IMAP4 Connections EXSPI-6.X Dc-IMAP4 Performance EXSPI-6.X IMAP4 Port Response **MAPI** EXSPI-6.X Information Store RPC Requests EXSPI-6.X Information Store RPC Operations EXSPI-6.X Information Store RPC Averaged Latency **Outlook 2003** EXSPI-6.5 Dc-Outlook Client EXSPI-6.5 Outlook Client Latency EXSPI-6.5 Outlook Client RPC Failure Rate
Client Accessibility (cont)	**OWA** **Front End:** EXSPI-6.X OWA Current Connections EXSPI-6.X Dc-OWA Front End EXSPI-6.X HTTP Port Response **Back End:** EXSPI-6.X Dc-OWA Back End **POP3** EXSPI-6.X POP3 Failed Connection Rate EXSPI-6.X POP3 Rejected Connection Rate EXSPI-6.X POP3 Connections EXSPI-6.X Dc-POP3 Performance EXSPI-6.X POP3 Port Response
Cluster	EXSPI-6.X Exchange Cluster Discovery SysLog EXSPI-6.X Cluster Connection Limits

Exchange 2003 Auto Deploy Groups	Policies
Directory	EXSPI-6.X DSAccess Cache Hit-Miss Ratio EXSPI-6.X Dc-DSAccess Performance EXSPI-6.X DSAccess Application Errors
Information Store	**Epoxy** EXSPI-6.5 Epoxy Store Out Queue Length EXSPI-6.5 Epoxy Client Out Queue Length **Full Text Index** EXSPI-6.X Dc-Full Text Index EXSPI-6.X-0074 **Mailbox** EXSPI-6.X IS Mailbox Average Delivery Time EXSPI-6.X IS Mailbox Receive Queue Length EXSPI-6.X IS Mailbox Send Queue Length EXSPI-6.X Database Mounted Search EXSPI-6.X 1h-Mailbox Space Usage EXSPI-6.X Dc-Mailbox IS Sum. Data EXSPI-6.X Dc-Mailbox Data EXSPI-6.X Dc-IS Mailbox Performance EXSPI-6.X Database Mounted Check EXSPI-6.X-0070 **Performance** EXSPI-6.X Information Store Db Cache Size EXSPI-6.X Information Store Db Log Threads Waiting EXSPI-6.X Information Store Db Log Record Stalls per sec EXSPI-6.X Information Store Db Log Writes per sec EXSPI-6.X Dc-Information Store Performance EXSPI-6.X Information Store User Count EXSPI-6.X Information Store VM Largest Block EXSPI-6.X Information Store VM 16MB Blocks EXSPI-6.X Information Store VM Large Block Bytes EXSPI-6.X Check Memory Configuration EXSPI-6.5 Information Store Additional Heaps EXSPI-6.5 Information Store Memory Errors EXSPI-6.5 Information Store Heap Memory Errors

Exchange 2003 Auto Deploy Groups	Policies
Information Store (cont)	**Public Folder** EXSPI-6.X IS Public Replication Queue Length EXSPI-6.X 1h-Public Folder Space Usage EXSPI-6.X Dc-IS Public Folder Performance EXSPI-6.X Database Mounted Search EXSPI-6.X Database Mounted Check EXSPI-6.X Dc-Public Folder Data EXSPI-6.X IS Public Receive Queue Length EXSPI-6.X Dc-Public IS Sum. Data EXSPI-6.X IS Public Send Queue Length EXSPI-6.X IS Public Average Delivery Time EXSPI-6.X-0072 **Transaction Log** EXSPI-6.X-0004 EXSPI-6.X-0008 EXSPI-6.X Transaction Log BackUp Check EXSPI-6.X Transaction Log Space Usage **Virus Scan** EXSPI-6.X Virus Scan Messages Quarantined per Sec EXSPI-6.X Virus Scan Files Cleaned per Sec EXSPI-6.X Virus Scan Queue Length EXSPI-6.X Virus Scan Files Quarantined per sec EXSPI-6.X Virus Scan Messages Cleaned per Sec

Exchange 2003 Auto Deploy Groups	Policies
Messaging	**cc:Mail Connector** EXSPI-6.X 1h-ccMail Connector EXSPI-6.X-0091 EXSPI-6.X 5m-ccMail Connector EXSPI-6.X-0093 EXSPI-6.X-0092 EXSPI-6.X-0090 **Lotus Notes Connector** EXSPI-6.X Lotus Notes Process Monitor EXSPI-6.X-0094 EXSPI-6.X 1h-Lotus Notes Connector EXSPI-6.X-0095 EXSPI-6.X-0096 EXSPI-6.X-0096 EXSPI-6.X 5m-Lotus Notes Connector **MTA** EXSPI-6.X MTA Work Queue Length EXSPI-6.X Dc-MTA Performance EXSPI-6.X MTA Rejected Inbound Messages EXSPI-6.X MTA Connection Queue Lengths EXSPI-6.X MTA Failed Outbound Associations EXSPI-6.X MTA Failed Conversions EXSPI-6.X MTA Message Delay EXSPI-6.X MTA Connection Message Delay EXSPI-6.X MTA Rejected Inbound Associations EXSPI-6.X Dc-X.400 Service MTA Queue EXSPI-6.X-0075 **NNTP** EXSPI-6.X 1h-NNTP EXSPI-6.X-0058

Exchange 2003 Auto Deploy Groups	Policies
Messaging (cont)	**SMTP** EXSPI-6.X SMTP Messages Pending Routing EXSPI-6.X SMTP Categorizer Queue Length EXSPI-6.X SMTP Local Queue Length EXSPI-6.X SMTP Local Retry Queue Length EXSPI-6.X Dc-SMTP Server Performance EXSPI-6.X Dc-SMTP Queues EXSPI-6.X SMTP NDR Percentage EXSPI-6.X SMTP Outbound Connections Refused EXSPI-6.X SMTP Remote Queue Length EXSPI-6.X SMTP Remote Retry Queue Length EXSPI-6.X Dc-SMTP Virtual Server Storage EXSPI-6.X-0082 EXSPI-6.X-0083 EXSPI-6.X-0084 EXSPI-6.X-0085 EXSPI-6.X-0086 EXSPI-6.X-0087 EXSPI-6.X SMTP Port Response **Tracking Log** EXSPI-6.X Dc-TrackLog Data EXSPI-6.X Dc-TrackLog SLA Delivery EXSPI-6.X Dc-Message Tracking Log Space Usage EXSPI-6.X-0076
ovo Exchange SPI core	**Data Collection** EXSPI-6.X exspi Agent Configuration EXSPI-6.X Messages **Exchange Discovery** EXSPI-6.X Check Discovery EXSPI-6.X Exchange Service Discovery EXSPI-6.X Exchange Cluster Discovery SysLog

Exchange 2003 Manual Deploy policies

Exchange 2003 Manual Deploy Groups	Policies
Site Replication Service	EXSPI-6.X SRS Process Monitor EXSPI-6.X SRS Service EXSPI-6.X-0112 EXSPI-6.X SRS Pending Synchronizations EXSPI-6.X SRS Data Space Usage EXSPI-6.X SRS Remaining Updates EXSPI-6.X-0113
Active Directory Connector Server	EXSPI-6.X ADC Process Monitor EXSPI-6.X ADC Service EXSPI-6.X ADC Import Failure Rate EXSPI-6.X ADC Operation Failure Rate
Exchange Server	**Availability** EXSPI-6.X Server State EXSPI-6.X Exchange Application Information EXSPI-6.X Exchange System Information EXSPI-6.X Exchange Application Warnings EXSPI-6.X Exchange System Warnings **Transaction Log** EXSPI-6.X-0005 EXSPI-6.X-0006 EXSPI-6.X Transaction Log Storage Use **Message Delivery** EXSPI-6.X End to End Message Ping **Client Accessibility** EXSPI-6.X Client Message Read EXSPI-6.X Client MAPI Logon EXSPI-6.X Client Message Send

Exchange 2000 Policies

Exchange 2000 Auto Deploy Policies

Exchange 2000 Auto Deploy Groups	Policies
Availability	EXSPI-6.X Queue State EXSPI-6.X Connector State EXSPI-6.X Exchange System Errors EXSPI-6.X Link State EXSPI-6.X Exchange Services EXSPI-6.X Process Monitor EXSPI-6.X Exchange Application Errors EXSPI-6.X Inactive Process Monitor
Client Accessibility	**IMAP4** EXSPI-6.X IMAP4 Failed Connection Rate EXSPI-6.X IMAP4 Rejected Connection Rate EXSPI-6.X IMAP4 Connections EXSPI-6.X Dc-IMAP4 Performance EXSPI-6.X IMAP4 Port Response **MAPI** EXSPI-6.X Information Store RPC Requests EXSPI-6.X Information Store RPC Operations EXSPI-6.X Information Store RPC Averaged Latency **OWA** **Front End:** EXSPI-6.X OWA Current Connections EXSPI-6.X Dc-OWA Front End EXSPI-6.X HTTP Port Response **Back End:** EXSPI-6.X Dc-OWA Back End **POP3** EXSPI-6.X POP3 Failed Connection Rate EXSPI-6.X POP3 Rejected Connection Rate EXSPI-6.X POP3 Connections EXSPI-6.X Dc-POP3 Performance EXSPI-6.X POP3 Port Response
Cluster	EXSPI-6.X Exchange Cluster Discovery SysLog EXSPI-6.0 Exchange Cluster Discovery AppLog EXSPI-6.X Cluster Connection Limits

Exchange 2000 Auto Deploy Groups	Policies
Directory	EXSPI-6.X DSAccess Cache Hit-Miss Ratio EXSPI-6.X Dc-DSAccess Performance EXSPI-6.X DSAccess Application Errors
Information Store	**Epoxy** EXSPI-6.0 Epoxy Store Out Queue Length EXSPI-6.0 Epoxy Client Out Queue Length **Full Text Index** EXSPI-6.X Dc-Full Text Index EXSPI-6.X-0074 **Mailbox** EXSPI-6.X IS Mailbox Average Delivery Time EXSPI-6.X IS Mailbox Receive Queue Length EXSPI-6.X IS Mailbox Send Queue Length EXSPI-6.X Database Mounted Search EXSPI-6.X 1h-Mailbox Space Usage EXSPI-6.X Dc-Mailbox IS Sum. Data EXSPI-6.X Dc-Mailbox Data EXSPI-6.X Dc-IS Mailbox Performance EXSPI-6.0 IS Mailbox Average Local Delivery Time EXSPI-6.X Database Mounted Check EXSPI-6.X-0070 **Performance** EXSPI-6.X Information Store Db Cache Size EXSPI-6.X Information Store Db Log Threads Waiting EXSPI-6.X Information Store Db Log Record Stalls per sec EXSPI-6.X Information Store Db Log Writes per sec EXSPI-6.X Dc-Information Store Performance EXSPI-6.X Information Store User Count EXSPI-6.X Information Store VM Largest Block EXSPI-6.X Information Store VM 16MB Blocks EXSPI-6.X Information Store VM Large Block Bytes EXSPI-6.X Check Memory Configuration

Exchange 2000 Auto Deploy Groups	Policies
Information Store (cont)	**Public Folder** EXSPI-6.X IS Public Replication Queue Length EXSPI-6.X 1h-Public Folder Space Usage EXSPI-6.0 IS Public Average Local Delivery Time EXSPI-6.X Database Mounted Search EXSPI-6.X Database Mounted Check EXSPI-6.X Dc-Public Folder Data EXSPI-6.X IS Public Receive Queue Length EXSPI-6.X Dc-Public IS Sum. Data EXSPI-6.X Dc-IS Public Folder Performance EXSPI-6.X IS Public Send Queue Length EXSPI-6.X IS Public Average Delivery Time EXSPI-6.X-0072 **Transaction Log** EXSPI-6.X-0004 EXSPI-6.X-0008 EXSPI-6.X Transaction Log BackUp Check EXSPI-6.X Transaction Log Space Usage **Virus Scan** EXSPI-6.X Virus Scan Messages Quarantined per Sec EXSPI-6.X Virus Scan Files Cleaned per Sec EXSPI-6.X Virus Scan Queue Length EXSPI-6.X Virus Scan Files Quarantined per sec EXSPI-6.X Virus Scan Messages Cleaned per Sec

Exchange 2000 Auto Deploy Groups	Policies
Messaging	**cc:Mail Connector** EXSPI-6.X 1h-ccMail Connector EXSPI-6.X-0091 EXSPI-6.X 5m-ccMail Connector EXSPI-6.X-0093 EXSPI-6.X-0092 EXSPI-6.X-0090 **Lotus Notes Connector** EXSPI-6.X Lotus Notes Process Monitor EXSPI-6.X-0094 EXSPI-6.X 1h-Lotus Notes Connector EXSPI-6.X-0095 EXSPI-6.X-0096 EXSPI-6.X-0097 EXSPI-6.X 5m-Lotus Notes Connector **MTA** EXSPI-6.X MTA Work Queue Length EXSPI-6.X Dc-MTA Performance EXSPI-6.X MTA Rejected Inbound Messages EXSPI-6.X MTA Connection Queue Lengths EXSPI-6.X MTA Failed Outbound Associations EXSPI-6.X MTA Failed Conversions EXSPI-6.X MTA Message Delay EXSPI-6.X MTA Connection Message Delay EXSPI-6.X MTA Rejected Inbound Associations EXSPI-6.X Dc-X.400 Service MTA Queue EXSPI-6.X-0075 **NNTP** EXSPI-6.X 1h-NNTP EXSPI-6.X-0058

Exchange 2000 Auto Deploy Groups	Policies
Messaging (cont)	**SMTP** EXSPI-6.X SMTP Messages Pending Routing EXSPI-6.X SMTP Categorizer Queue Length EXSPI-6.X SMTP Local Queue Length EXSPI-6.X SMTP Local Retry Queue Length EXSPI-6.X Dc-SMTP Server Performance EXSPI-6.X Dc-SMTP Queues EXSPI-6.X SMTP NDR Percentage EXSPI-6.X SMTP Outbound Connections Refused EXSPI-6.X SMTP Remote Queue Length EXSPI-6.X SMTP Remote Retry Queue Length EXSPI-6.X Dc-SMTP Virtual Server Storage EXSPI-6.X-0082 EXSPI-6.X-0083 EXSPI-6.X-0084 EXSPI-6.X-0085 EXSPI-6.X-0086 EXSPI-6.X-0087 EXSPI-6.X SMTP Port Response **Tracking Log** EXSPI-6.X Dc-TrackLog Data EXSPI-6.X Dc-TrackLog SLA Delivery EXSPI-6.X Dc-Message Tracking Log Space Usage EXSPI-6.X-0076

Exchange 2000 Auto Deploy Groups	Policies
Optional Exchange Server Roles	**EXSPI Chat Service** EXSPI-6.0-0836 EXSPI-6.0-0835 EXSPI-6.0 15m-Chat EXSPI-6.0-0834 EXSPI-6.0-0833 EXSPI-6.0-0831 EXSPI-6.0-0830 EXSPI-6.0 Dc-Chat Service Clients and Channels **EXSPI Conferencing Service** **EXSPI Conference Server** EXSPI-6.0-0801 EXSPI-6.0 10m-Conf EXSPI-6.0 Dc-ConfTrends EXSPI-6.0-0800 EXSPI-6.0-0802 **EXSPI Conferencing Bridge** EXSPI-6.0-0805 EXSPI-6.0 10m-ConfBridge EXSPI-6.0-0807 EXSPI-6.0-0806 **EXSPI MCU Server** EXSPI-6.0-0803 EXSPI-6.0 10m-MCU EXSPI-6.0 Dc-MCU EXSPI-6.0-0804 **EXSPI Instant Messaging** EXSPI-6.0-0842 EXSPI-6.0-0846 EXSPI-6.0-0845 EXSPI-6.0 Dc-Instant Messaging Enabled Users EXSPI-6.0-0841
ovo Exchange SPI core	**Data Collection** EXSPI-6.X exspi Agent Configuration EXSPI-6.X Messages **Exchange Discovery** EXSPI-6.X Check Discovery EXSPI-6.X Exchange Service Discovery EXSPI-6.X Exchange Cluster Discovery SysLog

Exchange 2000 Manual Deploy policies

Exchange 2000 Manual Deploy Groups	Policies
Site Replication Service	EXSPI-6.X SRS Process Monitor EXSPI-6.X SRS Service EXSPI-6.X-0112 EXSPI-6.X SRS Pending Synchronizations EXSPI-6.X SRS Data Space Usage EXSPI-6.X SRS Remaining Updates EXSPI-6.X-0113
Active Directory Connector Server	EXSPI-6.X ADC Process Monitor EXSPI-6.X ADC Service EXSPI-6.X ADC Import Failure Rate EXSPI-6.X ADC Operation Failure Rate
Exchange Server	**Availability** EXSPI-6.X Server State EXSPI-6.X Exchange Application Information EXSPI-6.X Exchange System Information EXSPI-6.X Exchange Application Warnings EXSPI-6.X Exchange System Warnings **Transaction Log** EXSPI-6.X-0005 EXSPI-6.X-0006 EXSPI-6.X Transaction Log Storage Use **Message Delivery** EXSPI-6.X End to End Message Ping **Client Accessibility** EXSPI-6.X Client Message Read EXSPI-6.X Client MAPI Logon EXSPI-6.X Client Message Send

Manual Deployment of Exchange 2000 and 2003 Policies

By default, groups of Exchange SPI policies deploy automatically when relevant applications or services are discovered on managed nodes. The setting to automatically deploy policies when services are discovered can be turned off, and each group of policies can be deployed manually.

If manual deployment of policies is desired, use the Recommended Policy deployment tables in the Exchange SPI online help to determine which policy groups should be deployed to manage an Exchange server.

Perform the following steps to deploy policies manually:

1. Select the desired policies.
2. Right-click, and then click **All Tasks** → **Deploy on.....**
3. Select the nodes on which to deploy the policies.
4. Click **Launch...**

Manual Deploy Policy Groups

There is also a Manual Deploy folder containing policies, located under Policy Management Policy Groups SPI for Exchange, and the relevant Exchange version. These folders contain policies requiring additional configuration or special circumstances for deployment.

Exchange 5.5 Policies

Policy Group Prerequisites for Exchange 5.5

Policy Group/ Subgroup	Required Service	Required Manual Configuration
EXSPI Discovery	N/A	• Create MSXSPI service account with correct permissions • Modify the policy to include service account and password.
EXSPI Quick Start	N/A	N/A
EXSPI Add-Ons EXSPI cc:Mail Connector	cc:Mail Connector	N/A
EXSPI Internet Mail Services	Internet Mail Service (IMS)	N/A
EXSPI Lotus Notes Connector	Lotus Notes Connector	N/A
EXSPI News Service	N/A	N/A
EXSPI Advanced EXSPI End-to-End Message Ping	N/A	• Create MSXSPI service account with correct permissions • Create mailbox using MBOX Config tool (needs service account name and password) • Configure EXSPI End-to-End Message Ping policy to set up server pairs • Modify the policy to include user name and password
EXSPI Event Log Warnings & Information	N/A	N/A
EXSPI Reporter Collection	N/A	• Create MSXSPI service account and password • Modify policies to include user name and password

Policy Group Descriptions for Exchange 5.5

Quick Start Policies for Exchange 5.5

Policy Subgroup	Description
EXSPI Directory Service	Executes alarm metrics for problems detected in the Microsoft Exchange Directory service.
EXSPI Event Log Errors	Monitors all errors (type = Error) in the Windows System Log.
EXSPI General Data Collection	Contains all standard data collection policies used to feed data into the data collector. The collected data can be graphed or used to generate reports.
EXSPI Information Store	Executes alarm metrics for problems detected in the Exchange Information Store service.
EXSPI Internal Errors	Open Message Interface policy for trapping EXSPI errors.
EXSPI Message Transfer Agent	Executes alarm metrics for problems detected in the Microsoft MTA service.
EXSPI Services and Processes	Monitors the availability of key Exchange services and processes.
EXSPI Transaction Log	Monitors the size in MB of the Exchange transaction logfiles as well as the disk space used by the files. When size increases or available disk space decreases to specific defined values, messages with warnings appear in the message browser.

Add-Ons Policies for Exchange 5.5

Policy Subgroup	Description
EXSPI cc:Mail Connector	Executes alarm according to cc:Mail Connector metrics. Deploy on all Exchange servers containing the cc:Mail Connector.
EXSPI Internet Mail Services	Executes alarm metrics for the problems detected in Exchange Internet Mail service. Deploy on all Exchange servers containing IMS.
EXSPI Lotus Notes Connector	Executes alarms for Lotus Notes Connector metrics. Deploy on all Exchange servers containing the Lotus Notes Connector.
EXSPI News Service	Executes alarm metrics for problems detected in the Exchange News service. Deploy on all Exchange 5.5 servers containing the Exchange News service.

Advanced Policies for Exchange 5.5

Policy Subgroup	Description
EXSPI End-to-End Message Ping	Alarms on AND collects data for the End-to-End Message Ping policy
EXSPI Event Log Warnings/Information	Monitors all warnings and information messages in the Windows System Log. Is not typically deployed.
EXSPI Reporter Collection	Feeds data into the OpenView data collector for use by OpenView reporter.

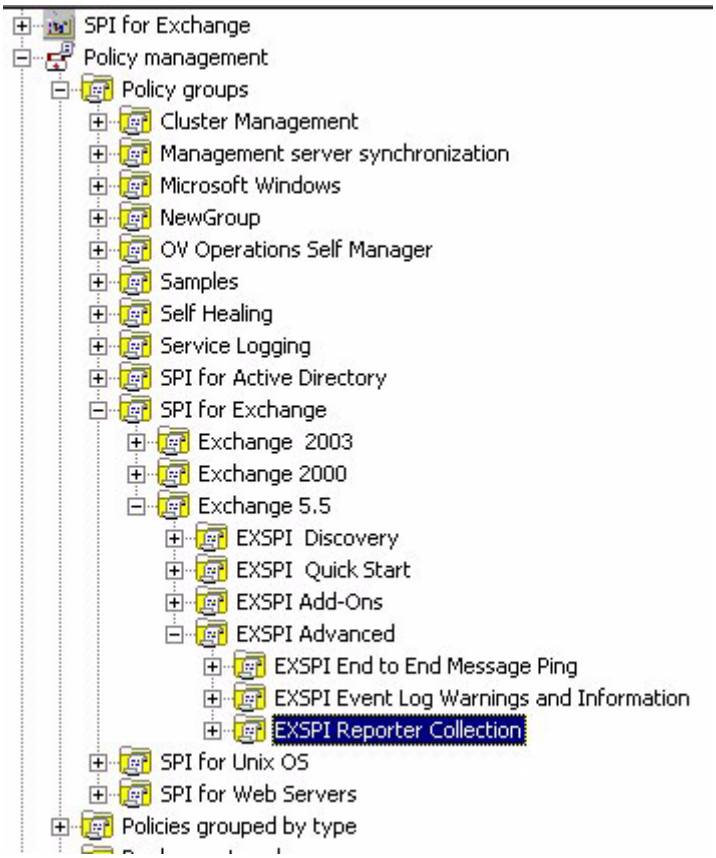
Using Exchange 5.5 Reports and Graphs

Data Collection for Reports and Graphs

To collect data for Exchange 5.5 reports and graphs, the data collection schedule policies for any particular service need to be deployed.

Configuring and Deploying Reporter Collection Policies

The Exchange SPI Reporter Collection policies need to be deployed to any Exchange server for which you wish reports.



Task 1: Create Mailboxes

See the procedure Create Mailboxes on page 58.

Task 2: Modify the EXSPI Reporter Collection Policies to Include the Service Account User Name and Password

For Exchange 5.5 servers you need to edit each of the EXSPI Reporter Collection policies in the EXSPI Advanced policy group by adding the service account user name and password, so that Exchange server system data is accessible. The EXSPI General Data Collector policies in the EXSPI Quick Start policy group do not need modification.

1 Open the OVO console and expand the **Policy Management** folder.

2 In the left pane select **Policy groups** → **SPI for Exchange** → **Exchange 5.5** →**EXSPI Advanced** → **EXSPI Reporter Collection** policy group.

3 In the right pane right-click a Reporter Collection policy and select **All Tasks** > **Edit**.

4 In the dialog that appears, check the **As User** radio button, enter the name of the service account, check **Specify Password** and enter the service account password.

5 Click **Save** and **Close**.

6 Repeat these steps for each Reporter Collection policy in the group.

Task 3: Deploy Reporter Collection Policies

1 In the OVO Manager console expand the **Policy management** → **Policy groups** folders to view policy groups.

2 Open **SPI for Exchange** → **Exchange 5.5** → **EXSPI Advanced** to view the policy groups in the EXSPI Advanced folder.

3 In the EXSPI Advanced folder double-click the **Reporter Collection** policy sub-group and see the individual policies in the details pane.

4 Select the Dc-Exchange Info policy, right-click and select **All Tasks** → **Deploy on**, check all the nodes and click **OK**.

Other Reporter policies are deployed to servers depending on whether they host mailboxes or public folders.

5 For servers which host mailboxes, select the Dc-TrackLog Data, Dc-Private IS Sum Data, and Dc-Mailbox Data policies in the details pane, right-click and select **All Tasks** → **Deploy on**, then select all the servers which host mailboxes and click **OK**.

6 For servers which host public folders, select the Dc-Public Folder Data and Dc-Public IS Sum Data policies in the details pane, right-click and select **All Tasks** → **Deploy on**, then select all the servers which host public folders and click **OK**.

Task 4: Enabling Message Tracking

Exchange provides a message-tracking facility that stores processed message information in a log file. This information, which includes sender address, recipient addresses, and message size, is collected by the EXSPI-5.5 Dc-TrackLog Data collection policy. This policy must be deployed to all appropriate managed nodes.

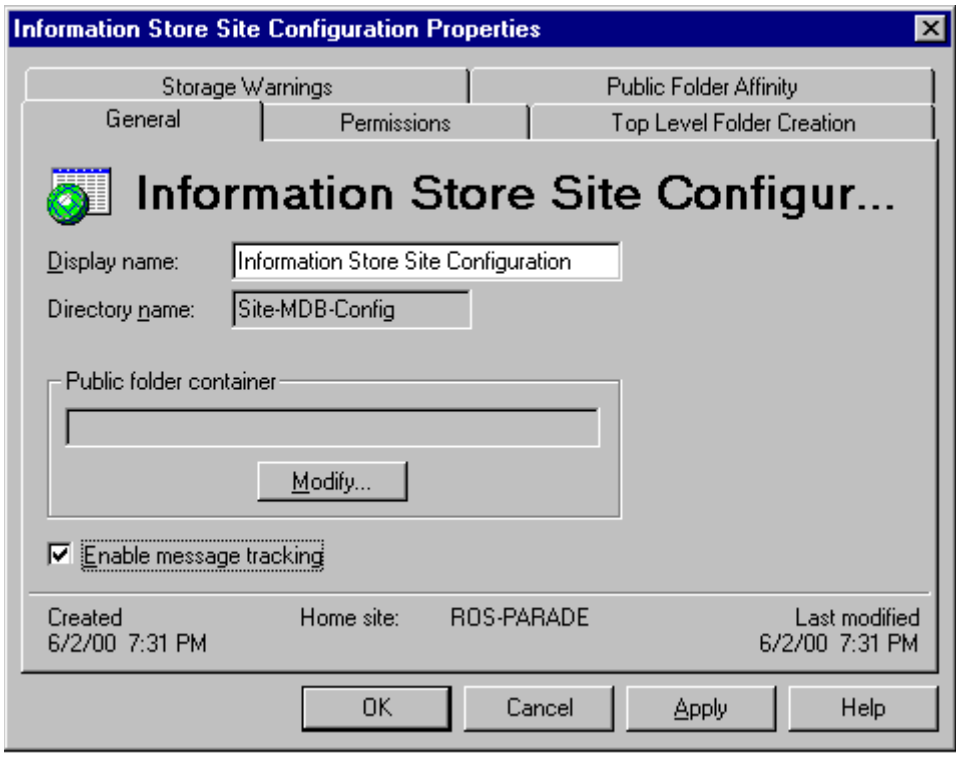
Before deploying EXSPI 5.5 Dc-TrackLog Data collection policy you need to enable message tracking on your Exchange servers.

1 Select **Start** → **Programs** → **Microsoft Exchange** → **Microsoft Exchange Administrator.**

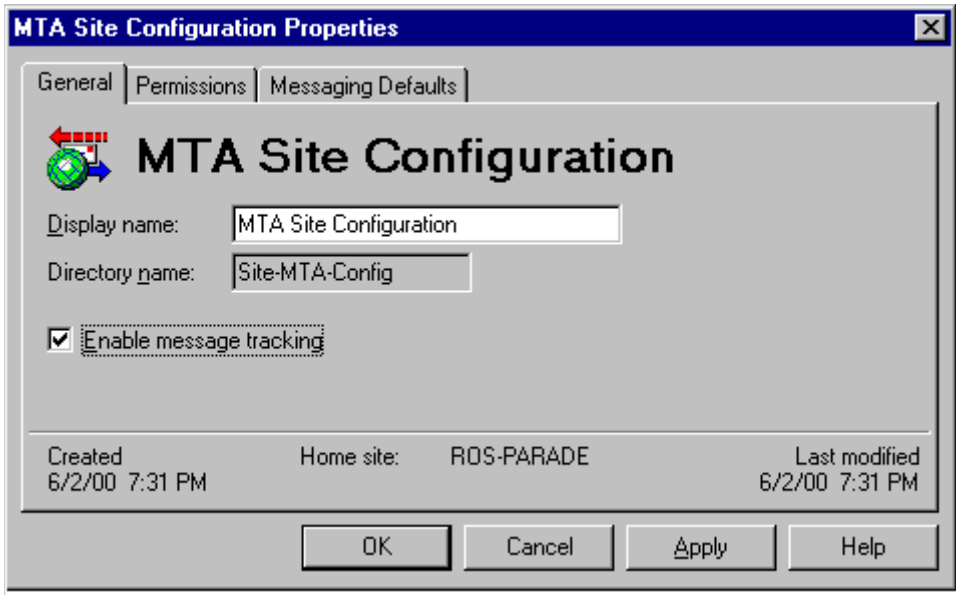
2 Expand the site level and Configuration to view selections beneath it.

3 In the details pane, double-click **Information Store Site Configuration**.

4 In the Information Store Site Configuration Properties dialog, check **Enable message tracking**, and then select **OK**.



5 Repeat steps 3 and 4 for MTA Site Configuration.



If the Internet Mail Service connector does not exist, skip the following steps.

6 In the left pane, select **Connections**.

7 In the right pane, select **Internet Mail Service**, check the **Enable message tracking** checkbox, and then click **OK**.

Time Interval before Generation of Reports

Exchange SPI reports are not available until data has been gathered to the management server from the managed nodes. This occurs each night, so at least one day of activity is needed for the reports to populate. Where a report type requires data from a Sat/Sun collection, those reports require a weekend prior to generation.

The SPI for Exchange Reports folder is not be created until data is collected on nodes and the Service Reporter consolidation process has run, which is usually 24 hours after a node becomes managed.

To display a report, select the desired report, right click, and then select Show report.

The SPI for Exchange Reports and Graphs folder is not created until data is collected on nodes and the Service Reporter consolidation process has run. Out of the box, the Reporter Data consolidation process (`gathercoda.exe`) is scheduled to run each day shortly after midnight.

Exchange SPI Reports

Reports enable you to analyze the data collected by the SPI. You can use HP OpenView Reporter in conjunction with OVO to generate reports. After the OVO agent collects metric data from the managed nodes, HP OpenView Reporter can create web-based reports for the collected data.

Exchange 2007 Reports

To view reports for Microsoft Exchange Server 2007, expand **Reports and Graphs** → **Reports** → **SPI for Exchange 2007** in the console tree.

The SPI for Microsoft Exchange Server provides the following reports:

- Exchange 2007 Mailbox Details by Server — This report contains information about mailboxes on the Mailbox Server. This report displays information sorted by disk space usage and grouped by storage group and database.
- Exchange 2007 Top 100 Mailboxes — This report lists the top 100 mailboxes by disk space usage across all Exchange 2007 Mailbox Servers.
- Exchange 2007 Server Inactive Mailboxes by Server — This report lists the mailboxes that were not used to send mails in 20, 40 and 60 or more days and the number of days for which the mailboxes were not used.
- Exchange 2007 Mailbox Store Message Trends by Server — This report contains summary and detailed trend graphs showing Mailbox Store message volumes.
- Exchange 2007 Public Folder Messaging Trends by Server — This report contains summary and detail trend graphs showing Public Folder Store message volumes.

- Exchange 2007 Users and Connections by Server — This report provides a graph of the average number of users and connections counts for hours of the day over a given time period.
- Exchange 2007 POP3 Connections by Server — This report provides a graph of the average POP3 connection counts for hours of the day over a given time period.
- Exchange 2007 IMAP4 Connections by Server — This report provides a graph of the average IMAP4 connection counts for hours of the day for a given time period.
- Exchange 2007 SMTP Receive Messaging Trends by Server — This report provides a graphs showing the volume of simple mail transport protocol (SMTP) messages received by the receive connectors on transport servers.
- Exchange 2007 SMTP Send Messaging Trends by Server — This report contains trend graphs showing the volume of simple mail transport protocol (SMTP) messages sent by the send connectors on transport servers.

Exchange 2003 Reports

Exchange SPI reports for Exchange 2003 are located on the OVO console under **Reports and Graphs → Reports → SPI for Exchange 2000**, in the following groups:

Client Access

Exchange 2003 ActiveSync Usage

Exchange 2003 ActiveSync Notifications

Exchange 2003 and 2000 IMAP4 Connections

Exchange 2003 and 2000 MAPI Logon SLA

Exchange 2003 and 2000 Message Read SLA

Exchange 2003 and 2000 Message Send SLA

Exchange 2003 and 2000 OWA Authentications

Exchange 2003 and 2000 OWA Connections

Exchange 2003 and 2000 OWA Usage

Exchange 2003 OMA Sync Usage

Exchange 2003 and 2000 POP3 Connections

Exchange 2003 and 2000 Messaging Ports

Exchange Server

Exchange 2000 and 2003 System Information Summary

Information Store

Exchange 2003 and 2000 Full Text Indexing Stats

Exchange 2003 and 2000 IS Users and Connections

Exchange 2003 and 2000 Transaction Log Stats

Mailbox Store

Exchange 2003 and 2000 Inactive Mailboxes

Exchange 2003 and 2000 Mailbox Details

Exchange 2003 and 2000 Mailbox Store Stats

Exchange 2003 and 2000 Mailbox Summary

Exchange 2003 and 2000 Mailbox Store Msg Trends

Exchange 2003 and 2000 Mailbox Usage Trends

Exchange 2003 and 2000 Top 100 Mailboxes

Messaging

Exchange 2003 and 2000 All Local Msg Delivery SLA

Exchange 2003 and 2000 MTA Msg Trends

Exchange 2003 and 2000 MTA Queue Data Stats

Exchange 2003 and 2000 SMTP Connections

Exchange 2003 and 2000 SMTP Msg Trends

Exchange 2003 and 2000 SMTP Virtual Server Stats

Exchange 2003 and 2000 Message Tracking Stats

Exchange 2003, 2000, and 5.5 Top Destinations

Exchange 2003, 2000, and 5.5 Top Recipients

Exchange 2003, 2000, and 5.5 Top Senders

Exchange 2003, 2000, and 5.5 Top Sources

Exchange 2003, 2000, and 5.5 Message Delivery SLA

Public Folder Store

Exchange 2003 and 2000 Folder Summary

Exchange 2003 and 2000 Folder Usage Trends

Exchange 2003 and 2000 Inactive Folders

Exchange 2003 and 2000 Public Folder Store Stats

Exchange 2003 and 2000 Public Folder Store Msg Tnd

Exchange 2000 and 2003 Top 100 Public Folders

Exchange 2000 reports

Exchange SPI reports for Exchange 2000 are located on the OVO console under **Reports and Graphs → Reports → SPI for Exchange 2000**, in the following groups:

Chat

Exchange 2000 Chat Trends

Client Access

Exchange 2003 and 2000 IMAP4 Connections

Exchange 2003 and 2000 MAPI Logon SLA

Exchange 2003 and 2000 MAPI Send SLA

Exchange 2003 and 2000 Message Read SLA

Exchange 2003 and 2000 OWA Authentications

Exchange 2003 and 2000 OWA Connections

Exchange 2003 and 2000 OWA Usage

Exchange 2003 and 2000 POP3 Connections

Exchange 2003 and 2000 Messaging Ports

Conferencing

Exchange 2000 Conferencing Server Trends

Exchange 2000 MCU Trends

Exchange Server

Exchange 2003 and 2000 System Information Summary

Information Store

Exchange 2003 and 2000 IS Users and Connections

Exchange 2003 and 2000 Full Text Indexing Stats

Exchange 2003 and 2000 Transaction Log Stats

Instant Messaging

Exchange 2000 Instant Messaging Availability Trends

Exchange 2000 Instant Messaging Users Growth

Mailbox Store

Exchange 2003 and 2000 Inactive Mailboxes

Exchange 2003 and 2000 Mailbox Details

Exchange 2003 and 2000 Mailbox Store Stats

Exchange 2003 and 2000 Mailbox Summary

Exchange 2003 and 2000 Mailbox Store Msg Trends

Exchange 2003 and 2000 Mailbox Usage Trends

Exchange 2000/2003 Top 100 Mailboxes

Messaging

Exchange 2003 and 2000 All Local Msg Delivery SLA

Exchange 2003 and 2000 MTA Msg Trends

Exchange 2003 and 2000 MTA Queue Data Stats

Exchange 2003 and 2000 SMTP Msg Trends

Exchange 2003 and 2000 SMTP Connections

Exchange 2003 and 2000 Message Tracking Stats

Exchange 2003, 2000, and 5.5 Top Destinations

Exchange 2003, 2000, and 5.5 Top Recipients

Exchange 2003, 2000, and 5.5 Top Senders

Exchange 2003, 2000, and 5.5 Top Sources

Exchange 2003, 2000, and 5.5 Message Delivery SLA

Exchange 2003 and 2000 SMTP Virtual Server Stats

Public Folder Store

Exchange 2003 and 2000 Folder Summary

Exchange 2003 and 2000 Folder Usage Trends

Exchange 2003 and 2000 Inactive Folders

Exchange 2003 and 2000 Public Folder Store Stats

Exchange 2003 and 2000 Public Folder Store Msg Tnd

Exchange 2000/2003 Top 100 Public Folders

Exchange 5.5 reports

Exchange Server

Exchange 5.5 System Information Summary

Information Store

Exchange 5.5 User Connections

Mailbox Database

Exchange 5.5 Mailbox Details

Exchange 5.5 Mailbox Summary

Exchange 5.5 Mailbox Usage Trends

Exchange 5.5 Top 100 Mailboxes

Messaging

Exchange 5.5 IMS Messaging Trends

Exchange 5.5 Messaging Trends

Exchange 5.5 Message Delivery SLA

Exchange 2003, 2000 and 5.5 Top Destinations

Exchange 2003, 2000 and 5.5 Top Recipients

Exchange 2003, 2000 and 5.5 Top Senders

Exchange 2003, 2000 and 5.5 Top Sources

Public Folder Database

Exchange 5.5 Folder Summary

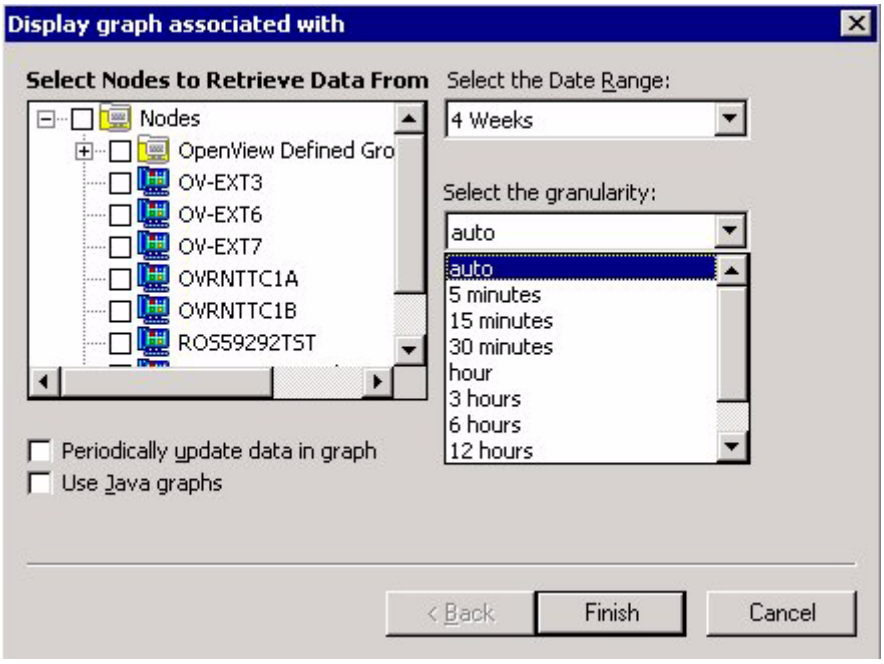
Exchange 5.5 Folder Usage Trends

Exchange 5.5 Top 100 Public Folders

Exchange SPI Graphs

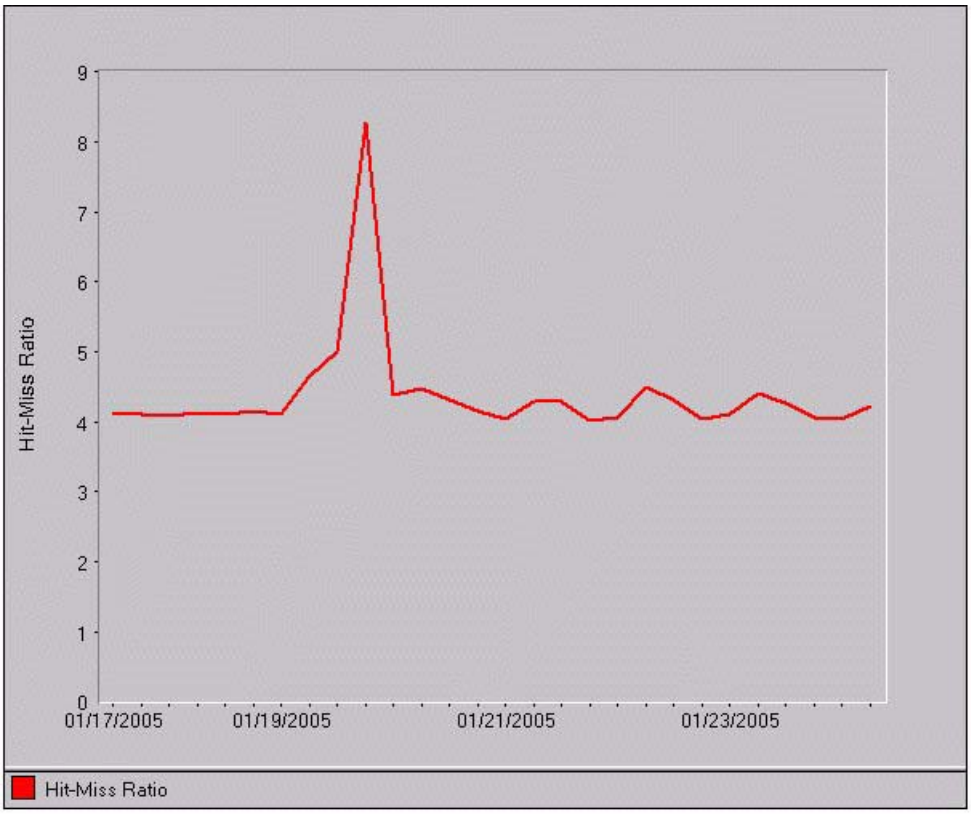
Exchange SPI comes with a set of pre-configured graphs. They are located on the OVO console tree in the **Operations Manager** → **Reports and Graphs** → **Graphs** folders.

To display a graph, double-click the desired graph. The Display graph associated with dialog box opens:



Select the nodes to retrieve data from, the date range, and the level of granularity. Check to periodically update the data in the graph, or to use Java graphs.

Figure 9 Example DSAccess Hit-Miss Ratio Graph



This graph shows Exchange Directory Access cache hit and miss ratio.

Hit-Miss Ratio is the ratio of perfmon counters MSExchangeDSAccess Cache hits/sec and misses/sec.

☐ Automatically Refresh Refresh Graph Now

Exchange 2007 Graphs

Exchange SPI provides pre-configured graphs for Microsoft Exchange Server 2007. To view these graphs, expand **Reports and Graphs** → **Graphs** → **SPI for Exchange 2007** in the console tree.

Client Access

Outlook Client Failures: This graph shows the percentage of RPCs failed in different categories.

IMAP4 Connections: This graph shows the IMAP4 connection activity.

MAPI RPC Performance: This graph shows metrics of information store RPC requests and RPC operations rate (operations/sec).

MAPI RPC Latency Levels: This graph shows the number of successful RPCs with different Outlook client latency levels.

POP3 Connections: This graph shows the POP3 connection activity.

POP3 Performance: This graph shows POP3 messages delivered to mailboxes.

Outlook Client RPC Performance: This graph shows the Outlook Client RPC Performance.

Information Store

Information Store Users and Connections: This graph shows user and connection count metrics for the current day.

Virtual Memory 16MB Free Block Trend: This graph shows information store virtual memory 16MB free block use trends.

Virtual Memory Large Free Block Megabytes Usage: This graph shows information store virtual memory large free block megabytes usage.

Virtual Memory Largest Block Size: This graph shows the change of the information store virtual memory largest block size.

Mailbox Store

Mailbox Store Delivery Time: This graph shows hourly metrics for the average delivery times of messages to Exchange server private and public mailboxes.

Mailbox Store Message Volume: This graph shows Exchange server private mailbox volume.

Mailbox Store Queues: This graph shows Exchange server mailbox store queue lengths.

Public Folder Store

Public Folder Store Delivery Time: This graph shows hourly metrics for the average delivery times of local messages to Exchange servers.

Public Folder Store Message Volume: This graph shows Exchange server public folder volume.

Public Folder Store Queues: This graph shows Exchange server public folder store queue lengths.

Exchange 2003 Graphs

Exchange SPI comes with an array of pre-configured graphs. In the console tree, open **Reports and Graphs → Graphs → SPI for Exchange 2003**. Graphs are located in the following folders:

Client Access

ActiveSync Performance: This graph shows the ActiveSync Microsoft Exchange active directory, connection, and pending requests.

ActiveSync Users: This graph shows the current users of Microsoft Exchange ActiveSync.

IMAP4 Connections: This graph shows the IMAP4 connection activity.

IMAP4 Performance: This graph shows the IMAP4 transaction activity.

MAPI RPC Latency levels: This graph shows the number of successful RPCs with Outlook client latency levels.

MAPI RPC Performance: This graph shows metrics of information store RPC requests and RPC operations rate (operations/sec).

Number of Successful RPCs with Different Latency Levels: This graph shows the number of successful RPCs with different Outlook client latency levels.

Outlook Client RPC Performance: This graph shows the Outlook Client RPC Performance.

OWA Connections: This graph shows the OWA connection activity.

OMA Response Time: This graph shows the MSExchangeOMA last response time in seconds.

POP3 Connections: This graph shows the POP3 connection activity.

POP3 Performance: This graph shows POP3 messages delivered to mailboxes.

Directory Service

DSAccess Cache Hit-Miss Ratio: This graph shows MSExchangeDSAccess cache hit and miss ratio for Exchange 2000 and 2003 servers.

Site Replication Service Space Free: This graph shows the percentage of free space on the Site Replication Service volume.

Site Replication Service Space Used: This graph shows Site Replication Service space usage on the Exchange server.

Information Store

Full-Text Indexing Space Usage: This graph shows disk space usage for full-text indexing of Microsoft Exchange information stores.

Information Store Users and Connections: This graph shows user and connection count metrics, for the current day.

Virtual Memory 16MB Free Block Trend: This graph shows information store virtual memory 16MB free block use trends.

Virtual Memory Large Free Block Megabytes Usage: This graph shows information store virtual memory large free block megabytes usage.

Virtual Memory Largest Block Size: This graph shows the change of the information store virtual memory largest block size.

Transaction Log Percentage Free: This graph shows the percentage of free space on the transaction log volumes.

Transaction Log Space Used: This graph shows Exchange server transaction log space usage on the Exchange server.

Mailbox Store

Mailbox Store Delivery Time: This graph shows hourly metrics for the average delivery times of messages to Exchange server private and public mailboxes.

Mailbox Store EDB Database Statistics: This graph shows Exchange server private mailbox store database statistics.

Mailbox Store Streaming Database Statistics: This graph shows Exchange mailbox store streaming database statistics.

Mailbox Store Storage Usage: This graph shows mailbox store storage usage.

Mailbox Store Message Volume: This graph shows Exchange server private mailbox volume.

Mailbox Store Queues: This graph shows Exchange server mailbox store queue lengths.

Messaging

MTA Message Volume: This graph shows Exchange server Message Transfer Agent volume.

MTA Queues: This graph shows Exchange server queue lengths.

SMTP Connections: This graph shows SMTP virtual server connections on the Exchange server.

SMTP Queues: This graph shows SMTP server queues on the Exchange server

SMTP Message Volume: This graph shows SMTP volume on the Exchange server.

SMTP Queue, Badmail, and Pickup Counts: This graph shows SMTP badmail, pickup and queue item counts for each SMTP virtual server.

SMTP Queue, Badmail, and Pickup Size: This graph shows SMTP badmail, pickup and queue sizes for each SMTP virtual server.

X400 MTA Queue Space Usage: This graph shows disk space usage for X400 service MTA queue.

Public Folder Store

Public Folder Store Delivery Time: This graph shows hourly metrics for the average delivery times of local messages to Exchange servers.

Public Folder Store EDB Database Statistics: This graph shows Exchange server public folder store (edb) database statistics.

Public Folder Store Message Volume: This graph shows Exchange server public folder volume.

Public Folder Store Streaming Database Statistics: This graph shows Exchange Public Folder store streaming database statistics.

Public Folder Store Storage Usage: This graph shows Exchange server public folder usage.

Public Folder Store Queues: This graph shows Exchange server public folder store queue lengths.

Exchange 2000 Graphs

Exchange 2000 graphs are arranged in the following service groups:

Client Access

IMAP4 Connections: This graph shows the IMAP4 connection activity.

IMAP4 Performance: This graph shows the IMAP4 transaction activity.

MAPI RPC Performance: This graph shows metrics of information store RPC requests and RPC operations rate (operations/sec).

OWA Connections: This graph shows the OWA connection activity.

POP3 Connections: This graph shows the POP3 connection activity.

POP3 Performance: This graph shows POP3 messages delivered to mailboxes.

Directory Service

DSAccess Cache Hit-Miss Ratio: This graph shows MSExchangeDSAccess cache hit and miss ratio for Exchange 2000 and 2003 servers.

Site Replication Service Space Free: This graph shows the percentage of free space on the Site Replication Service volume.

Site Replication Service Space Used: This graph shows Site Replication Service space usage on the Exchange server.

Information Store

Full-Text Indexing Space Usage: This graph shows disk space usage for full-text indexing of Microsoft Exchange information stores.

Information Store Users and Connections: This graph shows user and connection count metrics, for the current day.

Transaction Log Percentage Free: This graph shows the percentage of free space on the transaction log volumes.

Transaction Log Space Used: This graph shows Exchange server transaction log space usage on the Exchange server.

Virtual Memory 16MB Free Block Trend: This graph shows information store virtual memory 16MB free block use trends.

Virtual Memory Large Free Block Megabytes Usage: This graph shows information store virtual memory large free block megabytes usage.

Virtual Memory Largest Block Size: This graph shows the change of the information store virtual memory largest block size.

Mailbox Store

Mailbox Store Delivery Time: This graph shows hourly metrics for the average delivery times of messages to Exchange server private and public mailboxes.

Mailbox Store EDB Database Statistics: This graph shows Exchange server private mailbox store database statistics.

Mailbox Store Message Volume: This graph shows Exchange server private mailbox volume.

Mailbox Store Streaming Database Statistics: This graph shows Exchange mailbox store streaming database statistics.

Mailbox Store Storage Usage: This graph shows mailbox store storage usage.

Mailbox Store Queues: This graph shows Exchange server mailbox store queue lengths.

Messaging

MTA Message Volume: This graph shows Exchange server Message Transfer Agent volume.

MTA Queues: This graph shows Exchange server queue lengths.

SMTP Connections: This graph shows SMTP virtual server connections on the Exchange server.

SMTP Message Volume: This graph shows SMTP volume on the Exchange server.

SMTP Queues: This graph shows SMTP server queues on the Exchange server

SMTP Queue, Badmail, and Pickup Counts: This graph shows SMTP badmail, pickup and queue item counts for each SMTP virtual server.

SMTP Queue, Badmail, and Pickup Size: This graph shows SMTP badmail, pickup and queue sizes for each SMTP virtual server.

X400 MTA Queue Space Usage: This graph shows disk space usage for X400 service MTA queue.

Public Folder Store

Public Folder Store Delivery Time: This graph shows hourly metrics for the average delivery times of local messages to Exchange servers.

Public Folder Store EDB Database Statistics: This graph shows Exchange server public folder store (edb) database statistics.

Public Folder Store Message Volume: This graph shows Exchange server public folder volume.

Public Folder Store Streaming Database Statistics: This graph shows Exchange Public Folder store streaming database statistics.

Public Folder Store Storage Usage: This graph shows Exchange server public folder usage.

Public Folder Store Queues: This graph shows Exchange server public folder store queue lengths.

Exchange 5.5 Graphs

The **Exchange 5.5** graphs are organized in the following categories:

Information Store

Delivery: This graph shows hourly metrics for the average delivery times of messages to Exchange server private and public mailboxes.

Users: This graph shows information store user count metrics, for the current day.

Mailbox Database

Mailbox Usage: This graph shows Exchange server mailbox usage.

Private Mailbox Volume: This graph shows Exchange server private mailbox volume.

Messaging

Internet Mail Queue: This graph shows the Exchange server Internet Mail Service queue count.

Internet Mail Volume: This graph shows Exchange server Internet Mail Connector volume.

MTA Volume: This graph shows Exchange server Message Transfer Agent volume.

Newsfeed Volume: This graph shows Exchange server newsfeed volume.

Queues: This graph shows Exchange server queue lengths.

Public Folder Database

Public Folder Usage: This graph shows Exchange server public folder usage.

Public Folder Database: This graph shows Exchange server public folder volume.

8 Exchange SPI Tools

Tools enable you to perform tasks to facilitate Microsoft Exchange Server monitoring. With the help of tools, you can perform certain configuration tasks on managed nodes to start monitoring Microsoft Exchange Server.

Exchange SPI Tools for Microsoft Exchange Server 2007

The following tools are available:

- **Create Data Sources** — When you run this tool on a Microsoft Exchange Server 2007 node, it creates databases on the OVO agent's data store, which can be used by collectors to log metric data. The tool creates databases in the embedded performance component (CODA) of the agent.
- **Register DataCollectors** — This tool registers COM components on the node required by the collectors.
- **Start ExData Collection Manager** — This tool starts the collection manager process on the managed node. Collection manager is a background process, which runs on a managed node. Collection manager creates objects necessary to analyze and publish the data collected by individual collectors.
- **Start PowerShell Collector** — This tool starts another background process — PowerShell collector — on the managed node.
- **Stop PowerShell Collector** — Run this tool to stop the PowerShell collector process on a managed Microsoft Exchange Server 2007 node.
- **Stop ExData Collection Manager** — Run this tool to stop the collection manager process on a managed Microsoft Exchange Server 2007 node.
- **PowerShell Collection Configuration Utility** — This tool launches PowerShell collection configuration utility. PowerShell collection configuration utility enables you to create and modify **collection** definitions. A collection is a description that specifies the mechanism to collect, analyze, and store metric data for Microsoft Exchange Server 2007. With the help of the graphic user interface, you can create new collection definitions, or modify existing definitions.
- **Exchange Cluster Configuration** — This tool helps you create the apminfo.xml file to enable monitoring of Microsoft Exchange Server 2007 cluster nodes.
- **Exchange SPI Trace** — This tool sets the trace levels on managed nodes. Launch this tool if you need to collect troubleshooting information from nodes.
- **Self-Healing Info** — The Self-Healing Info tool gathers system information, and configuration, log, and trace Exchange SPI files, for assisting to troubleshoot problems. Gathered information and files are placed in a pre-defined output directory. The data collector gathers real-time data, which reduces the probability of troubleshooting with stale data.

- **Self-Healing Verification** — Launch this tool to detect any version mismatch between the Exchange SPI and the instrumentation files. If the tool detects any mismatch, it displays error message in the tool status window.

Exchange SPI Tools for Microsoft Exchange Server 2000 and 2003

The following groups of tools are available:

Client SLA Configurations

This tool group contains the following tools for MAPI-based client probes:

- **Configure Client MAPI Logon**
- **Configure Client Message Read**
- **Configure Client Message Send**
- **MBOX creation for MAPI client based policies**

These tools, used together with associated policies, generate and collect Service Level Objective data on various basic client tasks such as logon, sending, and reading E-mail messages. See the online Help for more information and procedures.

End-to-End SLA Configuration

- **MBOX Config**: starts the mailbox configuration program that automatically configures a mailbox. The user name and password of a service account with Exchange administrative privileges needs to be given for the tool to execute.
- **End-to-End Configuration**: This tool is a wizard for configuring the Message Delivery (Ping) Service Level Objective process on Exchange 2000 and 2003 OVO managed servers.

See Configuring Exchange SPI for Message Delivery SLAs on page 53 for more information.

Exchange Server Utilities

- **Enable Message Tracking**: Enables message tracking on Exchange 2000 and Exchange 2003 servers.
- **Mount Exchange Information Store**: This tool can search for and mount dismounted information or public folder stores. For more information on this tool, see the Exchange SPI online help.

EXSPI Support

- **Trace On/Tracing Off**: This tool enables and disables tracing. The default setting is off. Tracing is generally used by customer support for troubleshooting purposes.
- **Self Healing Info:** This tool gathers system information, and configuration, log, and trace Exchange SPI files to help troubleshoot problems. See the online help for more information.

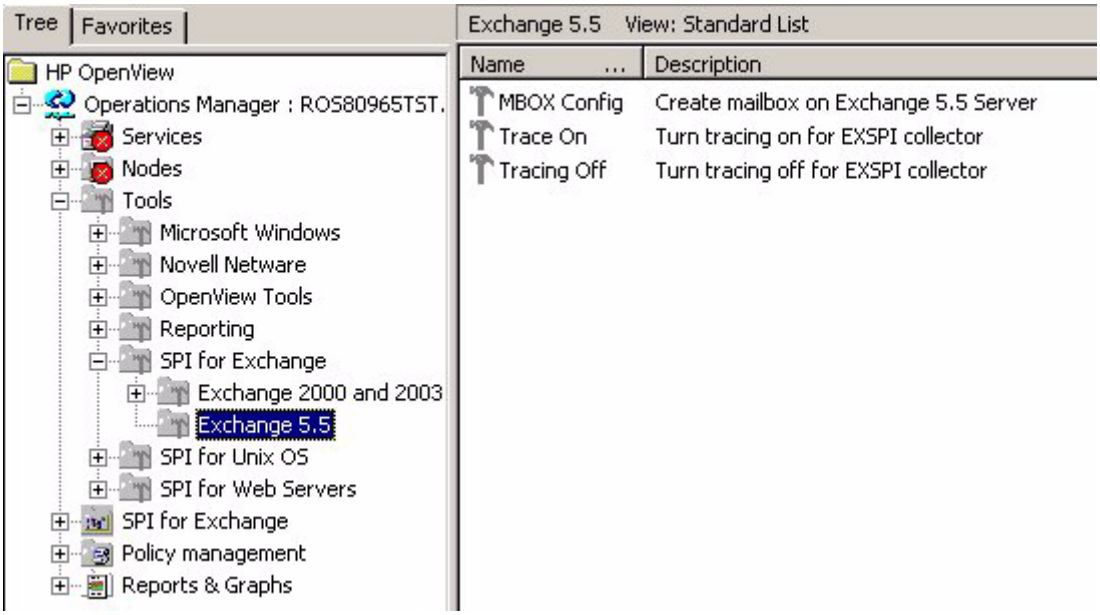
Exchange Topology

- **OV Topology Viewer:** This tool provides for the visualization of Microsoft Exchange and directory servers, with a 3-dimensional perspective. See OV Topology Viewer **on page 125** for more details.

- **Exchange Cluster Configuration:** This tool prints apminfo data, which can be used to create the apminfo.xml file used by the Exchange SPI to recognize clustered instances. For further information about Exchange SPI monitoring clusters, see Exchange SPI Clustering Support on page 67.
- **Embedded Performance Component Configuration**: This tool creates the EXSPI_DATA datasource, classes and metrics. It performs the same functions as the Auto Deploy policy **EXSPI-6.X exspi Agent Configuration** in the **ovo Exchange SPI core > Data Collection** group. The tool lists all current datasources prior to creation of the EXSPI_DATA datasource. To verify successful creation, wait a few minutes after initial execution, and execute the tool again. See Embedded Performance Component (EPC) Schema on page 161 for a complete listing of the EPC schema.

Exchange SPI Tools for Microsoft Exchange Server 5.5

For Exchange 5.5, the following tools are available:



- The Exchange SPI **MBOX Config** tool starts the mailbox configuration program that automatically creates and configures a mailbox. The user name and password of a service account with Exchange User and mailbox creation administrative privileges, needs to be given for the tool to execute.
- The **Trace On/ Tracing Off** tool enables or disables tracing. The default setting is off. Tracing is generally used by customer support for troubleshooting purposes.

OVO Foundation Tools

Some Exchange 5.5 Advanced policies require a Domain Admin account. To help manage those accounts, a tool called **ovpmpwutil** has been added to the OVO foundation tools. This tool is not SPI specific. Documentation for ovpmpwutil can be found in the Command-line Tools section of the HP OpenView Operations for Windows online help.

OV Topology Viewer

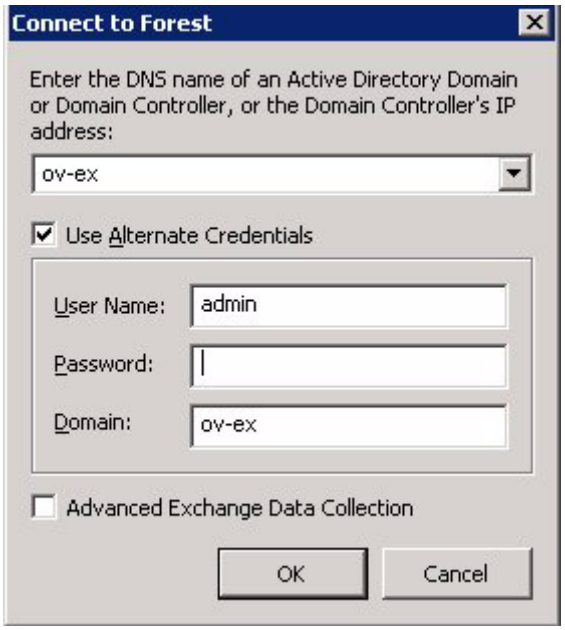
This release of the Exchange SPI does not provide Topology Viewer tool for Exchange Server 2007.

The OV Topology Viewer lets you visualize your Microsoft Exchange Server 2000 and 2003 environment from a three-dimensional perspective. The viewer is a tool located in the OVO console under **Tools** > **SPI for Exchange > Exchange 2000 and 2003 > Exchange Topology**. Using this tool you can quickly visualize routing groups, Exchange servers and the roles they play within your Exchange organization, by selecting the **Exchange Topology** folder on the console tree.

If you also have the OpenView Active Directory SPI installed, the OV Topology Viewer opens with two folders: Exchange Topology and Site Topology. The Site Topology view displays Active Directory and Exchange server information. For more details on the Site Topology view see the Active Directory SPI online help and Configuration Guide.

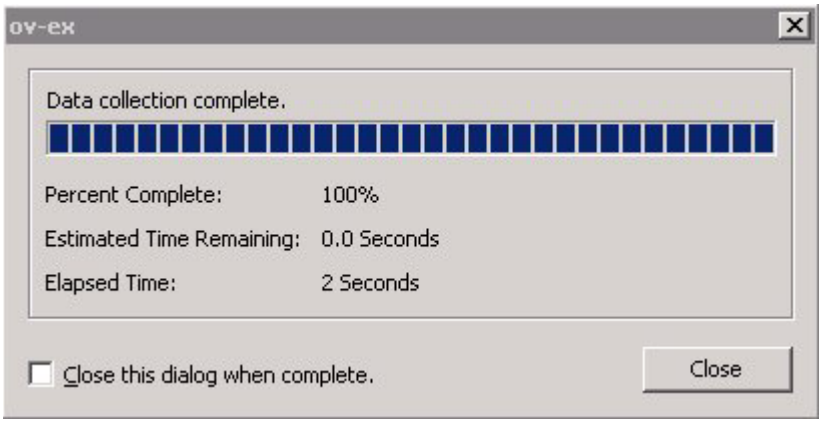
To open the Exchange Topology viewer:

1. Select **Tools** > **SPI for Exchange > Exchange 2000 and 2003 > Exchange Topology**.
2. Double-click **OV Topology Viewer**.
3. The OV Topology Viewer opens. In the left pane, right click **Forests**, and select **Add Forest...**.



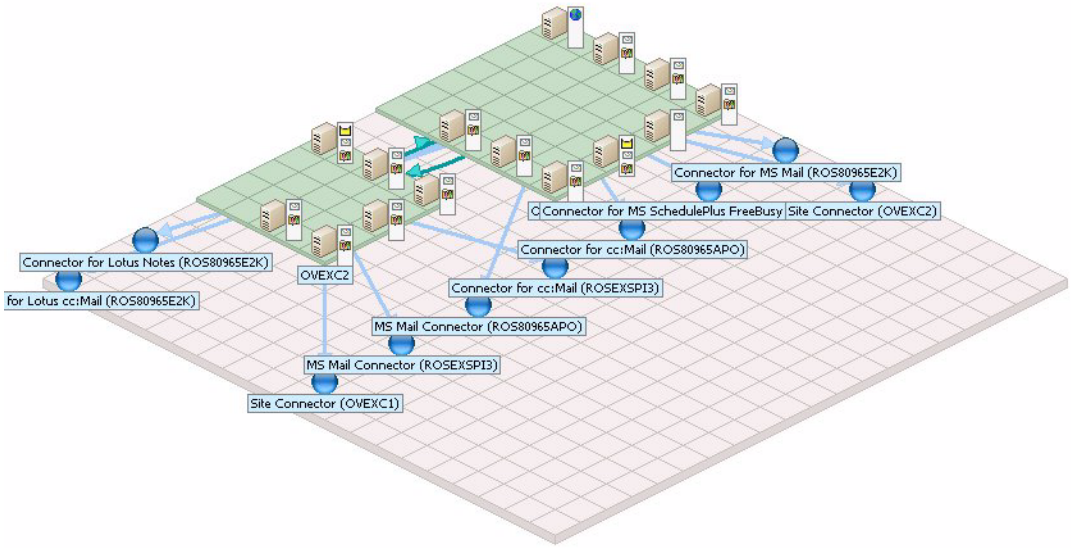
4 Identify the Domain Controller or Active Directory Domain which will be interrogated for Exchange data. Before selecting the Advanced Exchange Data Collection checkbox, see Advanced Exchange Data Collection on page 128. Enter the requested information. Click **OK**.

You are informed when the data collection is complete.

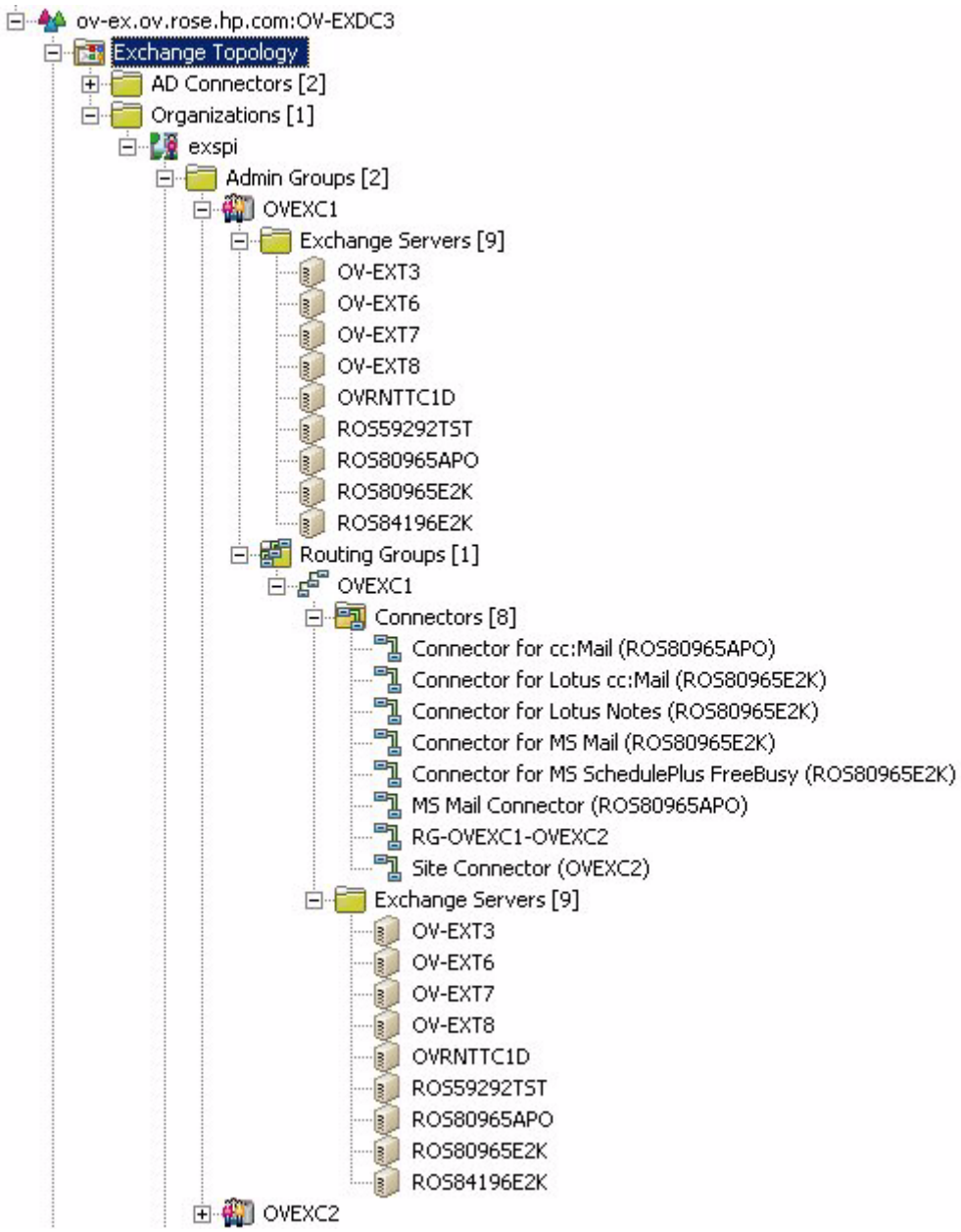


5 Click **Close**, or check the **Close the dialog when complete** box if you prefer that this dialog close automatically in the future.

6 Select **Exchange Topology** in the left pane. An untitled view of your Exchange Topology is displayed in the right pane. Save this view for future use.



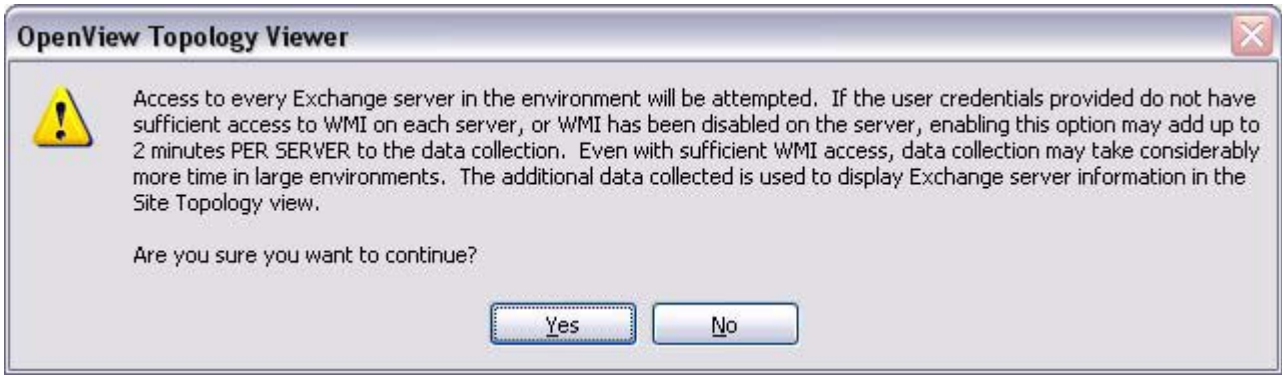
7 Expand the folders to see your Exchange Organization hierarchy.



Advanced Exchange Data Collection

Whether or not the OV Topology Viewer can collect particular Exchange data will depend on the specific permissions assigned to components of your Exchange organization, see How can I tell if I have WMI access to an Exchange Server? on page 134.

On the **Connect to Forest...** screen, if the option **Advanced Data Collection** is checked you will see the following warning:



As the warning indicates, the retrieval of this information from a large Exchange Organization can take a number of hours. In addition, if it is not successful due to these permission limitations, you will not be notified, but must check the error log files for connection difficulties to determine if your privileges were sufficient. See Required WMI Security Access Permissions on page 135 for details of required WMI permissions and error log file locations.

If you select not to initially collect this data from your entire Exchange organization, OV-TV will try to retrieve this same data when the **Properties** dialog of individual servers is opened. If the permissions allow, the query will retrieve data and populate the **Dependent DC** tab on the server Properties dialog. If Advanced Exchange Data Collection is selected initially, this tab on the Properties dialog of any servers (where the permissions permit) will be populated.

Site Topology Viewer

If you have an Active Directory SPI license, there will be a Site Topology folder on the console tree, beneath the Exchange Topology folder.

The Site Topology view shows both Active Directory (AD) and Exchange servers on the same map, when:

- both SPIs are installed
- the correct permissions were set to allow the collection of Exchange data
- Advanced Exchange Data Collection has been performed with the initial data collection (through checking the check box).

The advanced Exchange data collection gathers information about where in the Active Directory sites the Exchange servers live, and the dependent domain controllers. This Exchange information will be present in the Site Topology map, which opens in the details pane when you select this folder on the console tree. For more information on the Site Topology view, see the Active Directory SPI online Help and Configuration Guide.

Getting Started with the Exchange Topology Viewer

When the OV Topology Viewer opens, on the left are folders containing routing groups and servers. On the right is a graphical representation that places the routing groups and server links within a context. While the tree view on the left displays the hierarchy of the Exchange organization, the right pane shows the non-hierarchical relationships among its components.

Accessing functions: The OV Topology Viewer's features can be accessed through its *menu commands*, its *toolbar buttons*, or by *context menus* within areas on either side of the window pane. For complete menu and toolbar descriptions, refer to the SPI for Exchange online help.

Manipulating the Exchange Topology View

You may find when you view the Exchange Topology map that servers do not appear within the viewable area. You may also want to resize the viewable area. These and other changes are possible as follows:

Table 1 Modifying the OV Topology Viewer

Tree/map modification	How to do it
To move servers to different locations within their routing groups.	Drag and drop the server to the desired tile within its routing group.
To increase/decrease size of row/columns in the map's grid.	Right-click the unused space on or off the map and select **View Properties,** and the **General** tab.
To find a server in the tree.	On the map, right-click a server and select **Find Server in Tree.** (Label appears highlighted)
To find a server in the map.	In the tree, right-click on the server and select **Find Server on Map**. (Label appears bold, with larger text)
Move a routing group to a different area of the grid	**Method #1:** 1. Pressing the left mouse button, click the routing group and start to drag and drop to the desired area. 2. Drag to edge of view to auto scroll the view. **Method #2** 1. Pressing the left mouse button, select the routing group and start to drag and drop to the desired area. 2. Still holding the left mouse button down, use the arrow keys to change the view of the map.

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Table 2 Keyboard Functionality

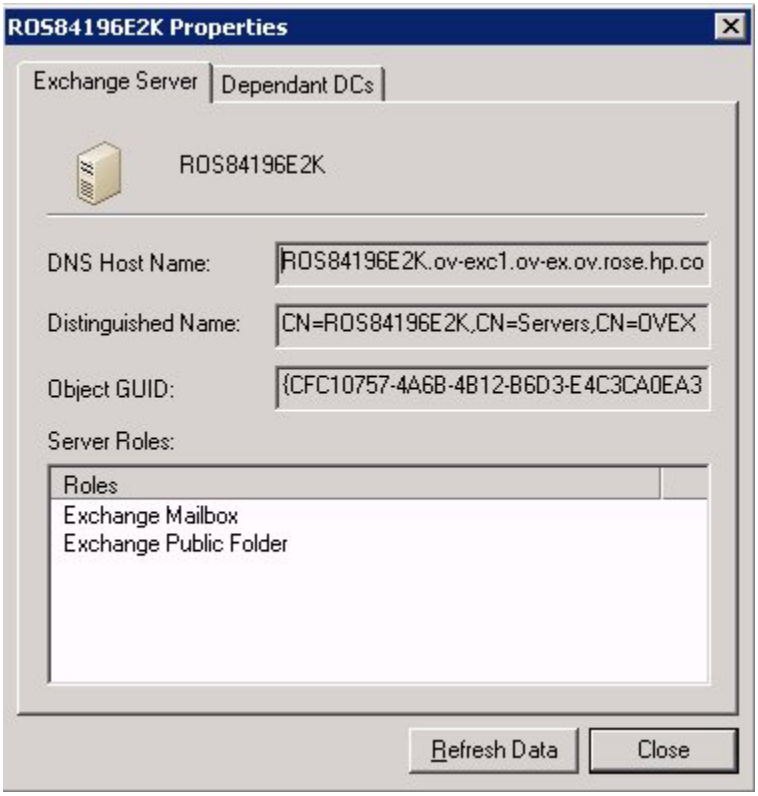
Keystroke	Map function
← left arrow	Scrolls the map view to the left approximately one tile width.
→ right arrow	Scrolls the map view to the right approximately one tile width.
Home	Scrolls the map view to the left extent. (Vertical position remains the same).
End	Scrolls the map view to the right extent. (Vertical position remains the same).

Accessing Server and Map Properties

After successfully connecting to a forest, the tree is populated and a topological map is displayed.

By right-clicking any discovered Exchange server in either the tree or the map and selecting **Properties**, you can view the following Exchange server information:

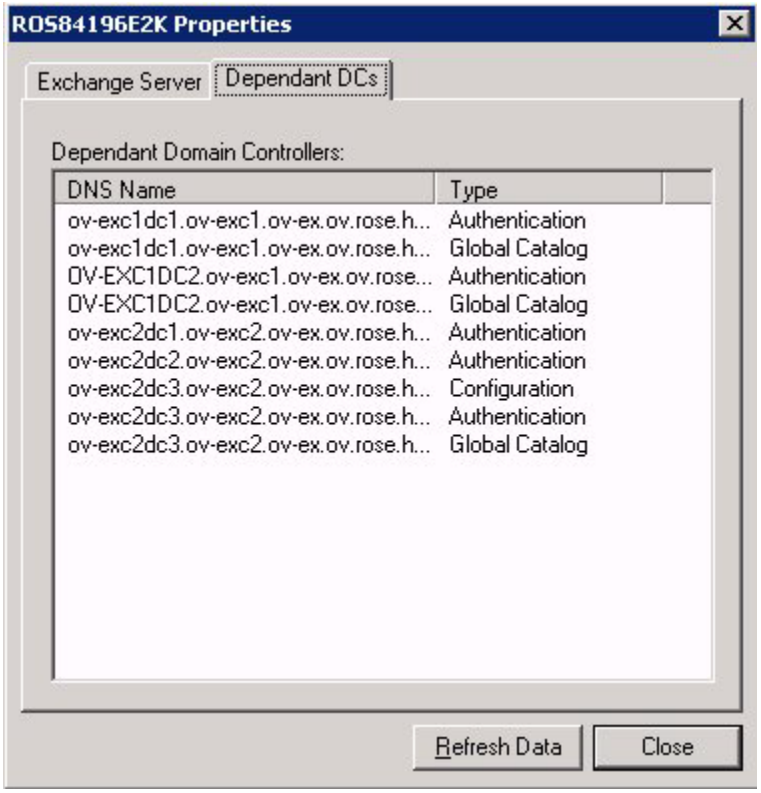
Server Properties



The information displayed in the server Properties dialog (DNS Host Name, Distinguished Name, Object GUID, Server Roles and Dependent Domain Controllers), will be derived from the initial Active Directory query (see Advanced Exchange Data Collection on page 128). If little or no information is displayed, it is probably a result of the required WMI permissions not being granted, see Required WMI Security Access Permissions on page 135.

The server properties information is cached, click **Refresh Data** if you want the data to be updated.

The Dependant DC Tab



The Dependant domain controllers are listed with their DNS Name, and their Type. If the Advanced Exchange Data Collection option was checked initially, this data has already been collected and will display. If the option was not checked initially, selecting to view the Server Properties activates the collection of this data and it will display in the dialog if the appropriate security authorizations are set.

Type: Any of the three types of roles the domain controller can have: Authentication, Global Catalog or Configuration.

Map Properties

By right-clicking on an unused area of the grid or space off the grid, you can open the Exchange Messaging View menu, with the following options:

— **Navigator:** Allows you to view and navigate the entire grid, giving you an overview of what you are seeing. The blue rectangle represents the area visible in the main view.

— **Clear Find:** If an object on the map is in focus as a result of the right-click menu option **Find in View**, this will be enabled, and you can select to clear the find.

— **View Properties:** Many variables of the map view can be modified, for example colors of routing groups and lines, as well as line widths and styles.

For more information about the OV Topology Viewer, see the Exchange SPI online Help.

If you have the **Active Directory SPI** installed and wish to view Active Directory detail using the Site Topology View, see the Active Directory SPI online Help.

FAQs

Can I print the map image?

No. But you can export the map, save it as .png or as a bitmap file, then open it in a graphics program to print the file.

How can I tell if I have WMI access to an Exchange Server?

1 Look in the <`OVTV install directory>\release\logs\AD_OvADExCollectorErrorLog.txt` log file.

2 Look for a warning such as:

```
03/01/05 11:44:53 WARNING: Exception thrown, HR#80070005, Access is denied.
WMI connection failed to server 'myExchangeServer01.americas.mycorp.net'.
FileName: .\OvWmiQuery.cpp Line#128
```

Or

```
02/24/05 17:36:24 WARNING: Exception thrown, HR#80041008,  WMI connection
failed to server 'myExchangeServer01.americas.mycorp.net'. FileName:
.\OvWmiQuery.cpp Line#126
```

What log files does OVTV generate?

When you launch OV-TV, it generates `OVTV_ConsoleErrorLog.txt` and `OVTV_OvADExCollectorErrorLog`.txt

files located at:

```
OVTV install directory>\release\logs\
```

If you shut down OV-TV, or simply cancel out, or stop then reconnect to a forest, the previously created `OVTV_ConsoleErrorLog.txtlog` file is rolled over into `OVTV_ConsoleErrorLog.old.txt` and the previously created `OVTV_OvADExCollectorErrorLog.txt` is rolled into `OVTV_OvAdExCollectorErrorLog.old`.txt.

Note that the `OVTV_OvADExCollectorErrorLog.txt` is created only if you receive a warning. If no warning occurs, then no files are created.

Required WMI Security Access Permissions

The following permissions are required for the OV Topology Viewer to collect advanced Exchange data:

- To get Exchange server site membership data, the OV-TV user must have READ and REMOTE access to the WMI namespace **root\default**.
- To get Exchange server DC dependency data, the OV-TV user must have READ and REMOTE access to the WMI namespace **root\MicrosoftExchangeV2**.
- And to get the DNS servers of a DC, the OV-TV user must have READ and REMOTE access to the WMI namespace **root\CMIv2**.

A Exchange SPI Instrumentation Files

EXSPI Exchange Discovery Instrumentation

EXSPI_CreateServices.js	Discovers hosted on Services
msexchange.apm.xml	Cluster support file, identifies policies to enable/disable
OvExchDisc.exe	Discovers virtual Services
exspi_RunDiscovery.js	Resource group identification for rediscovery after a cluster failover

Exchange 2007 EXSPI Instrumentation

HP.OV.SPI.Composer.exe	Files required by the PowerShell Collection Configuration Utility.
HP.OV.SPI.CollectionFlowPane.dll	
CmdLetCommands.xml	
Interop.OVPMADLib.dll	
HP.OV.SPI.ExDataCollector.dll	Used by the Exchange data collector.
SNCOLLECTORKEY.SNK	
SYSTEM.MANAGEMENT.AUTOMATION.DLL	
HP.OV.SPI.ExCollectorServer.exe	Used by the ExCollector server.
HP.OV.SPI.ExDataCollector.dll	
SYSTEM.MANAGEMENT.AUTOMATION.DLL	
Analyzer.dll	Used by the analyzer.
AnalyzerInfo.xml	
HP.OV.SPI.CollectionManager.exe	Used by the Collection Manager service.
SPIMetaData.xml	
HP.OV.SPI.ExScheduler.exe	Used by the scheduler.
PSCollector.dll	Used by the PowerShell Collector service.
HP.OV.SPI.ExDataCollector.tlb	
CollectorInfo.xml	
PSPublisher.dll	Used by the data store mechanism.
PublisherInfo.xml	

xerces-c_2_7d.dll	Miscellaneous files.
HP.OV.SPI.Terminator.exe	
Register.bat	
ex2007_*.spec	Database schema definitions.

Exchange 200X EXSPI Instrumentation

exspi_e2k.exe	Collector used through schedules
exspidatasource.exe	Creates database schema
EXSPI*.spec	Database schema definitions
ovam*.dll	Tracking log collection library
hpudm.txt	Metric definitions
exspitra.vbs	Turn Exchange SPI data collection tracing on and off
exspi_tracklog.vbs	Turn Exchange tracking log file generation on
exspi_e2k_cfg	Create mailbox
exspi_dbmount.vbs	Checks mount/dismount Information Store
exspi_StartService.vbs	Starts a service
end-to-end.xml	End-to-End Config file. This file exists after the execution of End-to-End Config tool
exspi_e2k_clust_config.js	For Cluster Configuration
spi_msexch*.* shs*.*	Self healing Service support files
exspi_ports.exe	Determines if SMTP, HTTP, POP3, and IMAP4 ports are responding
exspi_checkMemCfg.wsf exspi_checkMemoryConfig.vbs exspi_cMemoryConfig.vbs	Check memory settings for Exchange Mailbox and public Folder Servers
exspi_e2k_tlog.js exspi_e2k_tlog.vbs exspi_e2k_tlog.wsf exspi_e2k_tlog_lib.vbs	Used for gathering tracking log data. (Average delivery time for email sent on current server).
exspi_cml_cfg.wsf exspi_cmr_cfg.wsf exspi_cms_cfg.wsf	Tools for creating Mapi client SLA values.
exspi_agent.vbs exspi_core.vbs	Shared scripts with agent functions
exspi_e2k_client_lib.vbs	Shared script for Client response time scripts

exspi_e2k_cmr.vbs exspi_e2k_cmr.wsf	Mapi Client Message Read response time scripts
exspi_e2k_send.vbs exspi_e2k_send.wsf	Mapi Client Message Send response time scripts
exspi_e2k_logon.vbs exspi_e2k_logon.wsf	Mapi Client Message Logon response time scripts

Exchange 5.5 EXSPI Instrumentation

exspi_e55.exe	Collector used through schedules
exspidatasource.exe	Creates EPC database schema
EXSPI*.spec	Database schema definitions
ovam*.dll	Tracking log collector libraries
hpudm.txt	Metric definitions
exspitra.vbs	Turn Exchange SPI data collection tracing on and off
exspi_e55_cfg.exe	Create mailbox
spi_msexch*.* shs*.*	Self healing Service support files

B Customizing Policies

A policy is a rule or set of rules that helps you automate network and service administration. The Exchange SPI provides you a range of policies to simplify your Exchange Server monitoring tasks. You can customize existing policies from the OVO console.

Customize Policies Using the Tag Feature

If you have servers dedicated to specific sites or business units, you may find it effective for those servers to have uniquely named Exchange SPI policies. In such cases, copy default policies into new groups, affix prefixes to the original names, and include them in the schedule policy that collects data during that measurement interval.

Task 1: Create a new Policy Group

1. In the console tree, expand the **Policy management** → **Policy Groups** folders.
2. Right-click the folder in which you want to locate the new group, and then select **New** → **Policy Group**.
3. Type the new group name for the folder created, and then click **Enter**.
4. In the console, use Shift+click or Ctrl+click to select the default policies to be in the group, right-click, and then select **Copy**.

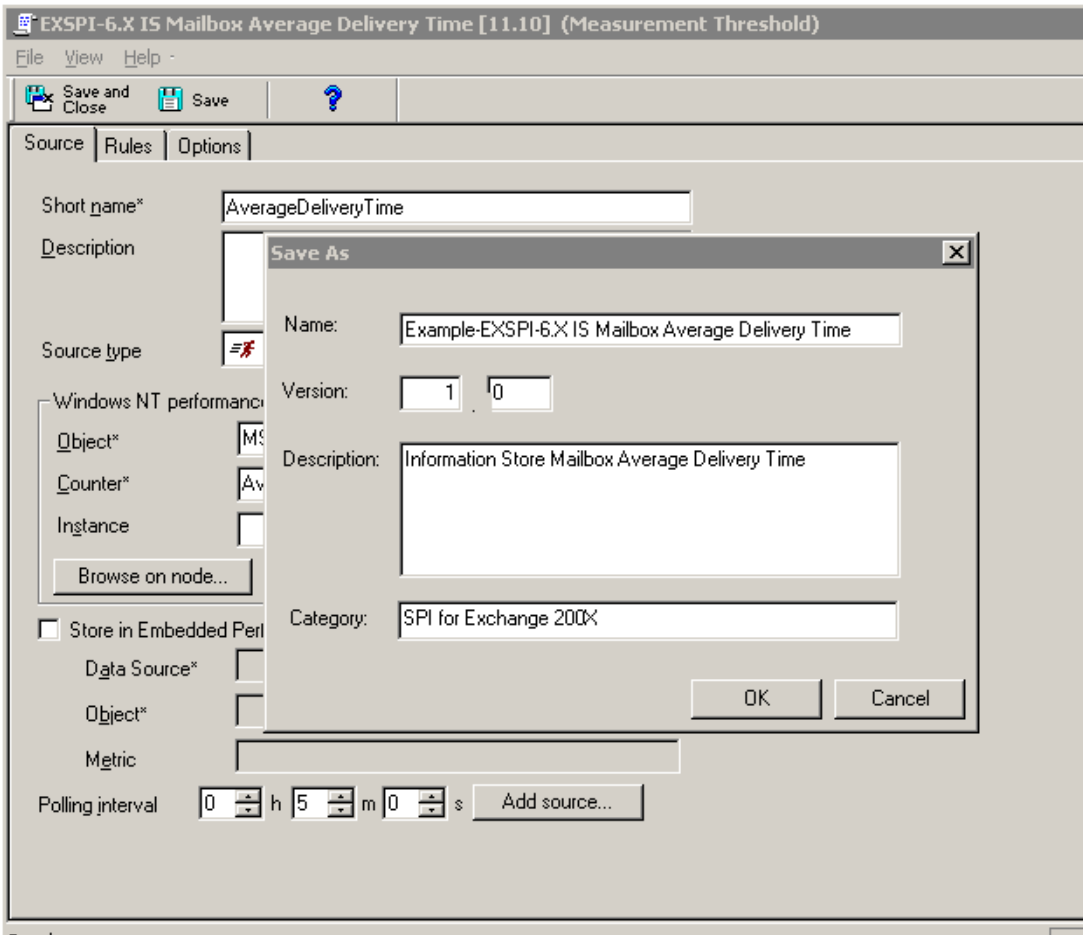
   Remember to always copy scheduled task policies from the default policy group containing the measurement threshold policy you are copying to the new policy group. The scheduled task policy is necessary for any data collection to occur.

5. Right-click the newly created group and click **Paste**. The copied policy will be pasted into the new Policy group.
6. If you copied an entire group of default policies into the new group, you can eliminate those you do not need by right-clicking them and selecting **Delete**.

Task 2: Tag the Policies

1. Double-click each policy and make any changes to the policy desired.

2 Select **File** → **Save As**. In the dialog that appears enter the special prefix followed by a hyphen in front of the default policy name; for example **`Example-`**EXSPI-6.X IS Mailbox Average Delivery Time.



3 After saving any renamed policies, double-click the scheduled task policy that you copied to the new group together with the other policies. (In the example, EXSPI-6.X Id-Dc-Instant Messaging is used.)

4 In the **Command*** text box at the end of the text, insert the tag (-t) parameter and the *<prefix>-*

5 When finished, rename the scheduled task policy to include the group prefix, in this way:

Select **File** → **Save As** and rename the EXSPI-6.X Id-Dc-Instant Messaging scheduled task policy to *Example*-EXSPI-6.X Id-Dc-Instant Messaging.

The prefix attached to the beginning of each policy in the new group makes the policies easy to find in the Policies grouped by type folder in the console. Also, creating a new group for the new policies gives you an efficient means to deploy them (right-click the group and select **All Tasks** → **Deploy on...**). See the Online Help for more details.

C Service Reporter Schema

In all EXSPI Reporter database tables, the first five columns have to be ID, SYSTEMNAME, DATETIME, GMT, SHIFTNAME, and in that order. No EXSPI data can be gathered if the first five column names or their order are different from this.

EXSPI_PFSUMMARY
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INTERVAL_KEY
SERVER_NAME
ADMINGROUP
STORAGEGROUP_NAME
DATABASE_NAME
EDBPATH
STMPATH
EDBSIZE
STMSIZE
EDBFREE
STMFREE
EDBTOTAL
STMTOTAL
PFLOGICALSIZE
FOLDER_MSGCNT
FOLDER_COUNT

EXSPI_PFPERF
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INSTANCE_NAME
SERVER_NAME
PFDELIVERYTIME
PFDELIVER
PFSENT
PFSUBMITTED
PFRECIPIENT
PFACTIVELOGON
PFLOGON
PFLOGONPEAK
PFSIRATIO
PFRECOVERITEMS
PFRECOVERSIZE
PFREPRCVD
PFREPSENT
PFREPQ

EXSPI_MBDETAIL
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INTERVAL_KEY
SERVER_NAME
STORAGEGROUP_NAME
DATABASE_NAME
MAILBOX_NAME
MAILBOX_SIZE
MAILBOX_QUOTA
MAILBOX_MSGCNT
MAILBOX_LASTACCESS

EXSPI_MBSUMMARY
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INTERVAL_KEY
SERVER_NAME
ADMINGROUP
STORAGEGROUP_NAME
DATABASE_NAME
EDBPATH
STMPATH
EDBSIZE
STMSIZE
EDBFREE
STMFREE
EDBTOTAL
STMTOTAL
MBLOGICALSIZE
MAILBOX_USRCNT
MAILBOX_MSGCNT

EXSPI_MBPERF
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INSTANCEL_NAME
SERVER_NAME
MBDELIVERYTIME
MBLOCALDELIVER
MBDELIVER
MBSENT
MBSUBMITTED
MBRECIPIENT
MBACTIVELOGON
MBLOGON
MBLOGONPEAK
MBSIRATIO
MBRECOVERITEMS
MBRECOVERSIZE
MBSIRATIO

EXSPI_TRANSLOG
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INTERVAL_KEY
SERVER_NAME
STORAGEGROUP_NAME
TRANSLOGFILEPATH
TRANSLOGFILESIZE
TRANSLOGFILEFREE
TRANSLOGFILETOTAL

EXSPI_OMA
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
OMASENT
OMAIGNORE
OMADISCARD
OMARESPONSE

EXSPI_ASYNC
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
EXSPI_ASYNC
ASYNCSENDMAIL
ASYNCCMDS
ASYNCCLIENTITEMS
ASYNCSERVERITEMS
ASYNCAD
ASYNCCONNECT
ASYNCPENDING
ASYNCUSERS

EXSPI_ASNOTIFY
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
ASNTOTAL
ASNSENT
ASNIGNORE
ASNDISCARD
ASNEXPIRED
ASNBIFURCATED

EXSPI_SMTPPERF
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
SMTPMSGSENT
SMTPMSGRECEIVE
SMTPBYTESENT
SMTPBYTERECEIVE
SMTPMSGBYTESENT

SMTPMSGBYTERECEIVE
SMTPINBOUNDCON
SMTPOUTBOUNDCON

SMTPOUTBOUNDCONREF

EXSPI_IMAP4PERF
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
IMAP4CON
IMAP4FAILEDCON
IMAP4REJECTEDCON

EXSPI_ISPERF
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
ISUSERCNT
ISACTIVEUSERCNT
ISANONUSERCNT
ISACTIVEANONUSERCNT
ISCONNECTCNT
ISACTIVECONNECTCNT

EXSPI_MTAPERF
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
MTAMSGIN
MTAMSGOUT
MTARCPIN
MTARCPOUT
MTABYTESIN
MTABYTESOUT

EXSPI_PORTS
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SERVER_NAME
PORT_NAME
PORT_NUMBER
SERVICE_PROVIDER
SENT_BYTE
RECV_BYTE
RESP_TIME
CONGFIG_TIMEOUT

EXSPI_MTADATA
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SERVER_NAME
INSTANCE_NAME
MTADATABASEPATH
MTADATABASESIZE
MTADATABASEFREE
MTADATABASETOTAL
MTADATABASEFP

EXSPI_SMTPDATA
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SERVER_NAME
INSTANCE_NAME
SMTPBADMAILDIR
SMTPBADMAILSIZE
SMTPBADMAILCNT
SMTPBADMAILFREE
SMTPBADMAILTOTAL
SMTPBADMAILFP
SMTPPICKUPDIR
SMTPPICKUPSIZE
SMTPPICKUPCNT
SMTPPICKUPFREE
SMTPPICKUPTOTAL
SMTPPICKUPFP
SMTPQUEUEDIR
SMTPQUEUESIZE
SMTPQUEUECNT
SMTPQUEUEFREE
SMTPQUEUETOTAL
SMTPQUEUEFP

EXSPI_MTLDATA
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SERVER_NAME
MTLPATH
MTLSIZE
MTLCNT
MTLFREE
MTLTOTAL
MTLFP

EXSPI_OWAFE
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INSTANCE_NAME
OWACONNECTIONS
OWAMAXCONNECTIONS

EXSPI_OWABE
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INSTANCE_NAME
SERVER_NAME
OWAMSGSSENT
OWAMSGSOPEN
OWAAUTHS
OWAAUTHSCACHE
OWARECENTAUTHS

EXSPI_FTIDATA
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SERVER_NAME
INSTANCE_NAME
FTILOCATION
FTISIZE
FTIFREE
FTITOTAL
FTIFP

EXSPI_SINGLE
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
IMC_IN_MSGS_TOT
IMC_OUT_MSGS_TOT
IMC_TOT_IN_KB
IMC_TOT_IN_RCPIPNTS
IMC_TOT_MSGS_QUEUED
IMC_TOT_OUT_KB
IMC_TOT_OUT_RCPIPNTS
IS_ACTIVE_USER_CNT
IS_NEWS_MSGS_RECV
IS_NEWS_MSGS_SENT
IS_NEWS_NNTP_POSTED
IS_NEWS_NNTP_READ
IS_PRIV_AVG_DEL_TIME
IS_PRIV_AVG_LOC_DEL
IS_PRIV_RECV_QUEUE
IS_PRIV_SEND_QUEUE
IS_PUB_AVG_DEL_TIME
IS_PUB_AVG_LOC_DEL
IS_PUB_RECV_QUEUE
IS_PUB_SEND_QUEUE

EXSPI_SINGLE
IS_USER_CNT
VERSION
RESERVE1
RESERVE2
MTA_IN_BYTES_TOT
MTA_IN_MSGS_TOTAL
MTA_OUT_BYTES_TOT
MTA_OUT_MSGS_TOTAL
MTA_Q_LEN
MTA_TOT_RCPIPNTS_IN
MTA_TOT_RCPIPNTS_OUT
PRIV_FREE_MB
PRIV_IS_INST_RATIO
PRIV_IS_LOC_DELIV
PRIV_IS_LOG_DB_SIZE
PRIV_IS_MSG_RCPT_DLV
PRIV_IS_MSGS_DELIV
PRIV_IS_MSGS_SENT
PRIV_IS_MSGS_SUB
PRIV_IS_TOTAL_MBOXES
PRIV_IS_TOTAL_MSGS
PUB_FREE_MB
PUB_IS_INST_RATIO
PUB_IS_LOG_DB_SIZE
PUB_IS_MSG_RCPT_DLV
PUB_IS_MSGS_DELIV
PUB_IS_MSGS_SENT
PUB_IS_MSGS_SUB
PUB_IS_TOTAL_FOLDERS
PUB_IS_TOTAL_MSGS

EXSPI_MULTI
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INSTANCE
INTERVAL_KEY
METRIC_ID
VALUE
VALUE_ID
SERVER_NAME

EXSPI_M0660
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
COUNTER_0660
INSTANCE_0660
NUM_BYTES_0660
NUM_MSGS_0660
SERVER_NAME

EXSPI_0661
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
COUNTER_0661
INSTANCE_0661
NUM_BYTES_0661
NUM_MSGS_0661
SERVER_NAME

EXSPI_0662
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
DEST_TYPE_0662
INSTANCE_0662
NUM_BYTES_0662
NUM_MSGS_0662
SERVER_NAME

EXSPI_0663
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SRC_TYPE_0663
INSTANCE_0663
NUM_BYTES_0663
NUM_MSGS_0663
SERVER_NAME

EXSPI_M1002
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
FROMSYSTEM
INSTANCEVAL
MEASUREDTIME
MSE_DEST_SITE
MSE_ORIG_SITE
PINGTIMESTAMP
SLA
SLAAPPROACH
TIMEOUT
TOSYSTEM

EXSPI_CMR
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SERVER_NAME
STORAGEGROUP_NAME
DATABASE_NAME
INSTANCEVAL
READSIZE
SLA
SLAAPPROACH
TIMEOUT
MEASUREDTIME
RUNTIME
INTERVAL_KEY

EXSPI_CML
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SERVER_NAME

STORAGEGROUP_NAME
DATABASE_NAME
INSTANCEVAL
LOGONSIZE
SLA
SLAAPPROACH
TIMEOUT
MEASUREDTIME
RUNTIME
INTERVAL_KEY

EXSPI_CMS
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SERVER_NAME

STORAGEGROUP_NAME
DATABASE_NAME
INSTANCEVAL
SENDSIZE
SLA
SLAAPPROACH
TIMEOUT
MEASUREDTIME
RUNTIME
INTERVAL_KEY

EXSPI_POP3PERF
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
POP3CON
POP3FAILEDCON
POP3REJECTEDCON

EXSPI_DELIV
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INSTANCE_KEY
SERVER_NAME
DELIVSTATUS
SLATIME
SLAPERCENT
DELIVTOTAL
PERCENTMET
TOTALMISSEDSLA
AVERAGEDELIV
ORIGSVR
INTERVAL_KEY

EXSPI_PFDETAIL
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SERVER_NAME
STORAGEGROUP_NAME
DATABASE_NAME
FOLDER_NAME
FOLDER_LASTACCESS
FOLDER_SIZE
FOLDER_MSGCNT

Service Reporter Schema for Exchange 2007

EX2007_MBDETAIL
MB_IDENTITY
MB_NAME
MB_SVRNAME
MB_SGNAME
MB_DBNAME
MB_SIZE
MB_MSGCOUNT
MB_DISCONNECT

EX2007_MBDETAIL
MB_DELCOUNT
MB_DELSIZE
MB_STGLIMIT

EX2007_MBPERF
INSTANCE_NAME
SERVER_NAME
MBDELIVERYTIME
MBLOCALDELIVER
MBDELIVER
MBSENT
MBSUBMITTED
MBRECIPIENT
MBACTIVELOGON
MBLOGON
MBLOGONPEAK
MBSIRATIO
MBRECOVERITEMS
MBRECOVERSIZE

EX2007_PFPERF
INSTANCE_NAME
SERVER_NAME
PFDELIVERYTIME
PFDELIVER
PFSENT

EX2007_PFPERF
PFSUBMITTED
PFRECIPIENT
PFACTIVELOGON
PFLOGON
PFLOGONPEAK
PFSIRATIO
PFRECOVERITEMS
PFRECOVERSIZE
PFREPRCVD
PFREPSENT
PFREPQ

EX2007_IMAP4PERF
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
IMAP4CON
IMAP4FAILEDCON
IMAP4REJECTEDCON

EX2007_POP3PERF
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME

EX2007_POP3PERF
POP3CON
POP3FAILEDCON
POP3REJECTEDCON

EX2007_ISPERF
ISUSERCNT
ISACTIVEUSERCNT
ISANONUSERCNT
ISACTIVEANONUSERCNT
ISCONNECTCNT
ISACTIVECONNECTCNT

EX2007_SMTPSEND
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
SMTPMSGSENT
SMTPMSGRECEIVE
SMTPBYTESENT
SMTPBYTERECEIVE
SMTPMSGBYTESENT
SMTPMSGBYTERECEIVE
SMTPINBOUNDCON
SMTPOUTBOUNDCON
SMTPOUTBOUNDCONREF

EX2007_SMTPRECV
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
SMTPMSGSENT
SMTPMSGRECEIVE
SMTPBYTESENT
SMTPBYTERECEIVE
SMTPMSGBYTESENT
SMTPMSGBYTERECEIVE
SMTPINBOUNDCON
SMTPOUTBOUNDCON
SMTPOUTBOUNDCONREF

D Embedded Performance Component (EPC) Schema

EXSPI_ASNOTIFY
ASNTOTAL
ASNSENT
ASNIGNORE
ASNDISCARD
ASNEXPIRED
ASNBIFURCATED

EXSPI_ASYNC
ASYNCUSERS
ASYNCSENDMAIL
ASYNCCMDS
ASYNCCLIENTITEMS
ASYNCSERVERITEMS
ASYNCAD
ASYNCCONNECT
ASYNCPENDING

EXSPI_CML
INSTANCE_KEY
SERVER_NAME
STORAGEGROUP_NAME
DATABASE_NAME
INSTANCEVAL
LOGONSIZE
SLA
SLAAPPROACH
TIMEOUT
MEASUREDTIME
RUNTIME
INTERVAL_KEY

EXSPI_CMR
INSTANCE_KEY
SERVER_NAME
STORAGEGROUP_NAME
DATABASE_NAME
INSTANCEVAL
READSIZE
SLA
SLAAPPROACH
TIMEOUT
MEASUREDTIME
RUNTIME
INTERVAL_KEY

EXSPI_CMS
INSTANCE_KEY
SERVER_NAME
STORAGEGROUP_NAME
DATABASE_NAME
INSTANCEVAL
SENDSIZE
SLA
SLAAPPROACH
TIMEOUT
MEASUREDTIME
RUNTIME
INTERVAL_KEY

EXSPI_DELIV
INSTANCE_KEY
SERVER_NAME
STATUS
SLATIME
SLAPERCENT
DELIVTOTAL
PERCENTMET
TOTALMISSEDSLA
AVERAGEDELIV
ORIGINATING_SERVER
INTERVAL_KEY

EXSPI_DSACCESS
CACHEMISSESPERSEC
CACHEHITSPERSEC

EXSPI_FTIDATA
SERVER_NAME
INSTANCE_NAME
FTILOCATION
FTISIZ
FTIFREE
FTITOTAL
FTIFP

EXSPI_IMAP4
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
IMAP4CON
IMAP4FAILEDCON
IMAP4REJECTEDCON
IMAP4UID

EXSPI_ISCLIENT
ISCLATENCY10
ISCLATENCY5
ISCLATENCY2
ISCRPCATTEMPT
ISCRPCSUCCEED
ISCRPCFAIL
ISCRPCFUNAV
ISCRPCFBUSY
ISCRPCFCANCEL
ISCRPCFCALLFAIL
ISCRPCFACCESSDENY
ISCRPCFOTHER

EXSPI_ISPERF
RPCREQUESTS
RPCOPERATIONSPERSEC
ISVMLARGESTBLOCK
ISVMLARGEFREEBB
ISVM16MBFREE
ISUSERCNT
ISCONNECTCNT
ISANONUSERCNT
ISACTIVEUSERCNT
ISACTIVECONNECTCNT
ISACTIVEANONUSERCNT

EXSPI_M0660
INSTANCE_KEY
SERVER_NAME
INSTANCE_0660
NUM_BYTES_0660
NUM_MSGS_0660
COUNTER_0660

EXSPI_M0661
INSTANCE_KEY
SERVER_NAME
INSTANCE_0661
NUM_BYTES_0661
NUM_MSGS_0661
COUNTER_0661

EXSPI_M0662
INSTANCE_KEY
SERVER_NAME
INSTANCE_0662
NUM_BYTES_0662
NUM_MSGS_0662
DEST_TYPE_0662
COUNTER_0662

EXSPI_M0663
INSTANCE_KEY
SERVER_NAME
INSTANCE_0663
NUM_BYTES_0663
NUM_MSGS_0663
SRC_TYPE_0663
COUNTER_0663

EXSPI_M1002
INSTANCE_KEY
INTERVAL_KEY
SERVER_NAME
MSE_ORIG_SITE
MSE_DEST_SITE
PINGTIMESTAMP
FROMSYSTEM
TOSYSTEM
INSTANCEVAL
SLA
SLAAPPROACH
TIMEOUT
MEASUREDTIME

EXSPI_MBDETAIL
INSTANCE_KEY
INTERVAL_KEY
MAILBOX_NAME
SERVER_NAME
STORAGEGROUP_NAME
DATABASE_NAME
MAILBOX_SIZE
MAILBOX_QUOTA
MAILBOX_MSGCNT
MAILBOX_LASTACCESS

EXSPI_MBPERF
INSTANCE_NAME
SERVER_NAME
MBSENDQ
MBRECEIVEQ
MBDELIVERYTIME
MBLOCALDELIVER
MBDELIVER
MBSENT
MBSUBMITTED
MBRECIPIENT
MBACTIVELOGON
MBLOGON
MBLOGONPEAK
MBSIRATIO
MBRECOVERITEMS
MBRECOVERSIZE

EXSPI_MBSUMMARY
INSTANCE_KEY
STORAGEGROUP_NAME
DATABASE_NAME
SERVER_NAME
ADMINGROUP
EDBPATH
STMPATH
EDBSIZE
STMSIZE
EDBFREE
STMFREE
EDBTOTAL
STMTOTAL
MBLOGICALSIZE
MAILBOX_USRCNT
MAILBOX_MSGCNT
INTERVAL_KEY

EXSPI_MTADATA
SERVER_NAME
INSTANCE_NAME
MTADATABASEPATH
MTADATABASESIZE
MTADATABASEFREE
MTADATABASETOTAL
MTADATABASEFP

EXSPI_MTAPERF
MTAWORKQ
MTAMSGIN
MTAMSGOUT
MTARCPIN
MTARCPOUT
MTABYTESIN
MTABYTESOUT

EXSPI_MTLDATA
SERVER_NAME
MTLPATH
MTLSIZE
MTLCNT
MTLFREE
MTLTOTAL
MTLFP

EXSPI_MULTI
INSTANCE_KEY
SERVER_NAME
METRIC_ID
VALUE_ID
INSTANCE
VALUE
INTERVAL_KEY

EXSPI_OMA
OMASENT
OMAIGNORE
OMADISCARD
OMARESPONSE

EXSPI_OWABE
INSTANCE_NAME
SERVER_NAME
OWAMSGSSENT
OWAMSGSOPEN
OWAAUTHS
OWAAUTHSCACHE
OWARECENTAUTHS

EXSPI_OWAFE
INSTANCE_NAME
OWACONNECTIONS
OWAMAXCONNECTIONS

EXSPI_PFDETAIL
INSTANCE_KEY
INTERVAL_KEY
FOLDER_NAME
SERVER_NAME
STORAGEGROUP_NAME
DATABASE_NAME
FOLDER_SIZE
FOLDER_MSGCNT
FOLDER_LASTACCESS

EXSPI_PFPERF
INSTANCE_NAME
SERVER_NAME
PFSENDQ
PFRECEIVEQ
PFDELIVERYTIME
PFDELIVER
PFSENT
PFSUBMITTED
PFRECIPIENT
PFACTIVELOGON
PFLOGON
PFLOGONPEAK
PFSIRATIO
PFRECOVERITEMS
PFRECOVERSIZE
PFREPRCVD
PFREPSENT
PFREPQ

EXSPI_PFSUMMARY
INSTANCE_KEY
STORAGEGROUP_NAME
DATABASE_NAME
SERVER_NAME
ADMINGROUP
EDBPATH
STMPATH
EDBSIZE
STMSIZE
EDBFREE
STMFREE
EDBTOTAL
STMTOTAL
PFLOGICALSIZE
FOLDER_COUNT
FOLDER_MSGCNT
INTERVAL_KEY

EXSPI_POP3
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
POP3CONN
POP3FAILEDCON
POP3REJECTEDCON
POP3DELE
POP3RETR

EXSPI_PORTS
SERVER_NAME
PORT_NAME
PORT_NUMBER
SERVICE_PROVIDER
SENT_BYTE
RECV_BYTE
RESP_TIME
CONFIG_TIMEOUT

EXSPI_SINGLE
Version
Reserve 1
Reserve 2
IS Active User Count
IS User Count
MTA Inbound Msgs Tot
MTA Outb. Msgs Tot
MTA Tot. Recip. Inb.
MTA Tot. Recip. Outb
MTA Inb. Bytes Total
MTA Out. Bytes Total
Priv.IS Local Deliv.

EXSPI_SINGLE
Priv.IS Msgs Deliv.
Priv.IS Msgs Sent
Priv.IS Msgs Submit.
Priv.IS Recip. Deli.
Pub.IS Msgs Deliv.
Pub.IS Msgs Sent
Pub.IS Msgs Submit.
(cont.)
Pub.IS Recip. Deliv.
Newsfeed Msgs Sent
Newsfeed Msgs Receiv
NNTP Messages Read
NNTP Messages Posted
MTA Queue length
Priv.IS Send Queue
Priv.IS Recei. Queue
Pub.IS Send Queue
Pub.IS Recei. Queue
Priv.IS Avg Local
Priv.IS Avg Delivery
Pub.IS Avg Local
Pub.IS Avg Delivery
IMC In Msgs Total
IMC Out Msgs Total
IMC Total In (KB)
IMC Total Out (KB)
IMC Tot. In Recip.
IMC Tot. Out Recip.
IMC Tot. Msgs Queued
Priv.IS DB Size (MB)
Priv. IS Tot. MBoxes
Priv. IS Tot. Mesgs
Priv. IS Log.DB Size
Priv. IS Inst. Ratio
Pub. IS DB Size (MB)
Pub. IS Tot. Folders
Pub. IS Tot. Mesgs
Pub. IS Log. DB Size
Pub. IS Inst. Ratio
SERVER_NAME

EXSPI_SMTPDATA
SERVER_NAME
INSTANCE_NAME
SMTPBADMAILDIR
SMTPBADMAILSIZE
SMTPBADMAILCNT
SMTPBADMAILFREE
SMTPBADMAILTOTAL
SMTPBADMAILFP
SMTPPICKUPDIR
SMTPPICKUPSIZE
SMTPPICKUPCNT
SMTPPICKUPFREE
SMTPPICKUPTOTAL
SMTPPICKUPFP
SMTPQUEUEDIR
SMTPQUEUESIZE
SMTPQUEUECNT
SMTPQUEUEFREE
SMTPQUEUETOTAL
SMTPQUEUEFP

EXSPI_SMTPPERF
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
SMTPMSGSENT
SMTPMSGRECEIVE
SMTPBYTESENT
SMTPBYTERECEIVE
SMTPMSGBYTESENT
SMTPMSGBYTERECEIVE
SMTPINBOUNDCON
SMTPOUTBOUNDCON
SMTPOUTBOUNDCONREF

EXSPI_SMTPQ
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
REMOTERETRYQ
REMOTEQ
LOCALRETRYQ
LOCALQ
PENDINGROUTINGQ
CATEGORIZERQ

EXSPI_SRS
SRSDIRPATH
SERVER_NAME
SSRSDIRSIZE
SRSDIRFREE
SRSDIRTOTAL
SRSDIRPF
INTERVAL_KEY

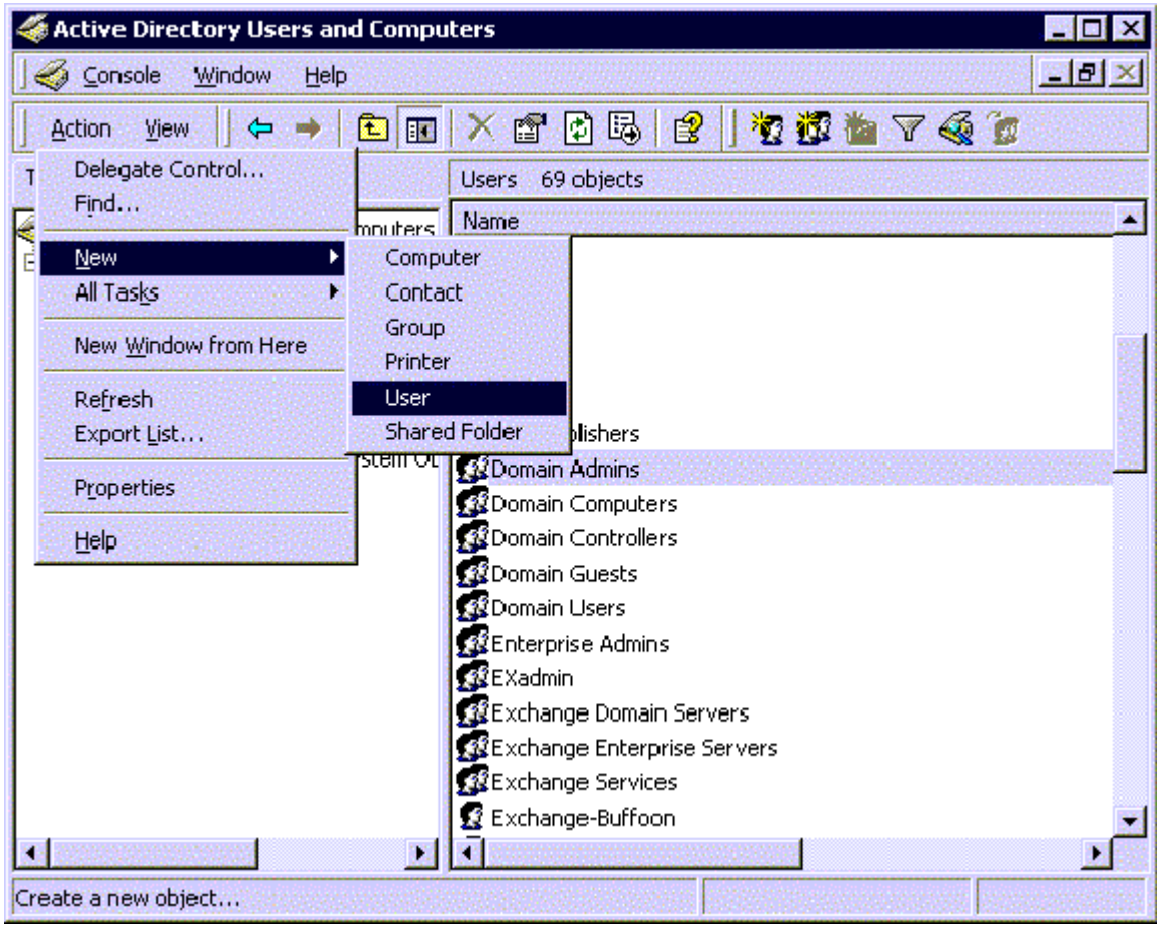
EXSPI_TRANSLOG
STORAGEGROUP_NAME
SERVER_NAME
TRANSLOGFILEPATH
TRANSLOGFILESIZE
TRANSLOGFILEFREE
TRANSLOGFILETOTAL
TRANSLOGFILEFP
INTERVAL_KEY

E Creating Service Accounts for Exchange 2000 or 2003

The Exchange SPI collects data from many sources. To collect the many types of data, the Exchange SPI requires advanced user credentials. The simplest way to obtain these credentials is to have the OVO management agent run as Local System. If this is not possible in your organization, you must create a special service account with the necessary privileges.

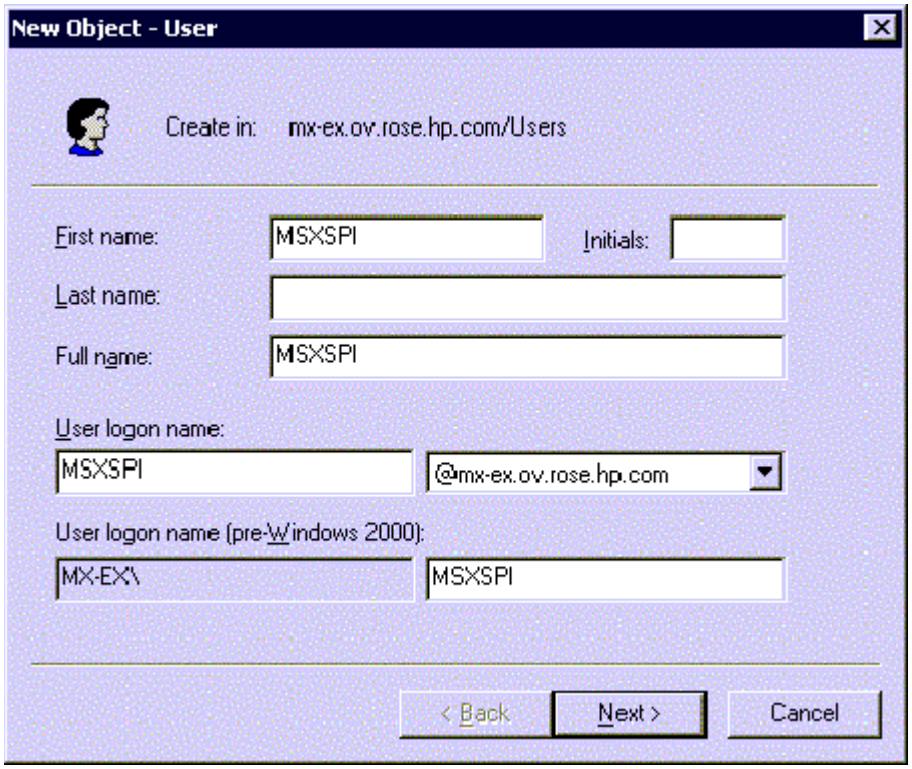
Task 1: Create service account

1. Log on to the system that hosts the managed node's domain.
2. Select **Start > Settings > Control Panel > Administrative Tools > Active Directory Users and Computers.**
3. Expand the Active Directory Users and Computers and right-click **Users** and select **New > User**,



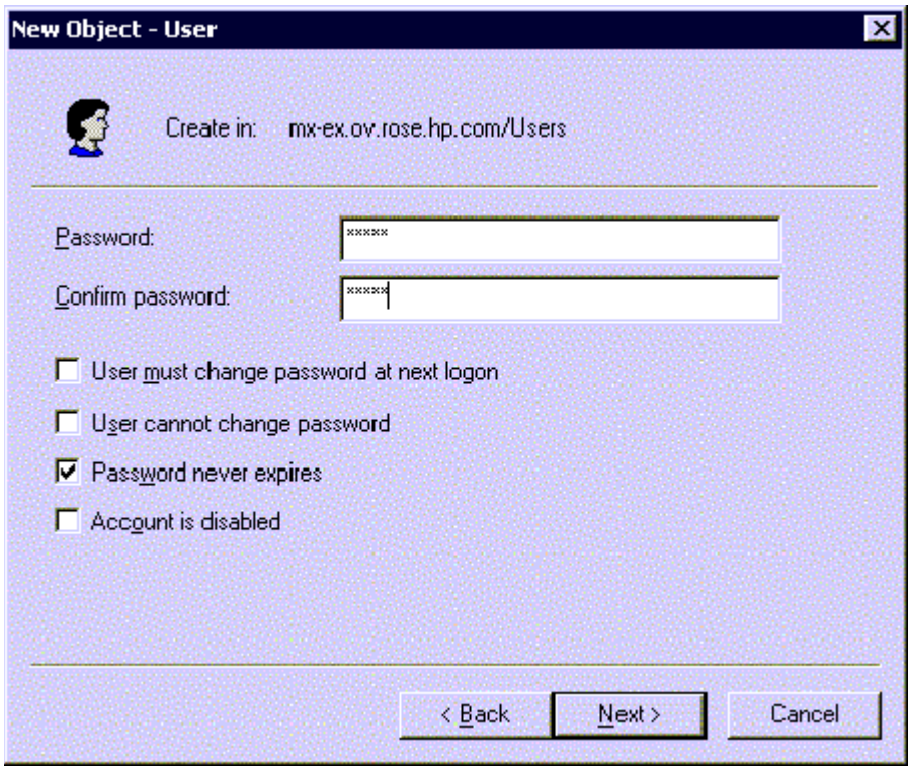
4 In the **New Object - User** dialog, enter a user name for the new service account into the **First Name** and the **User logon name** fields.

You must create a service account with these privileges in each Windows domain. You may use any user name you wish. This example uses MSXSPI as the user name for the service account.

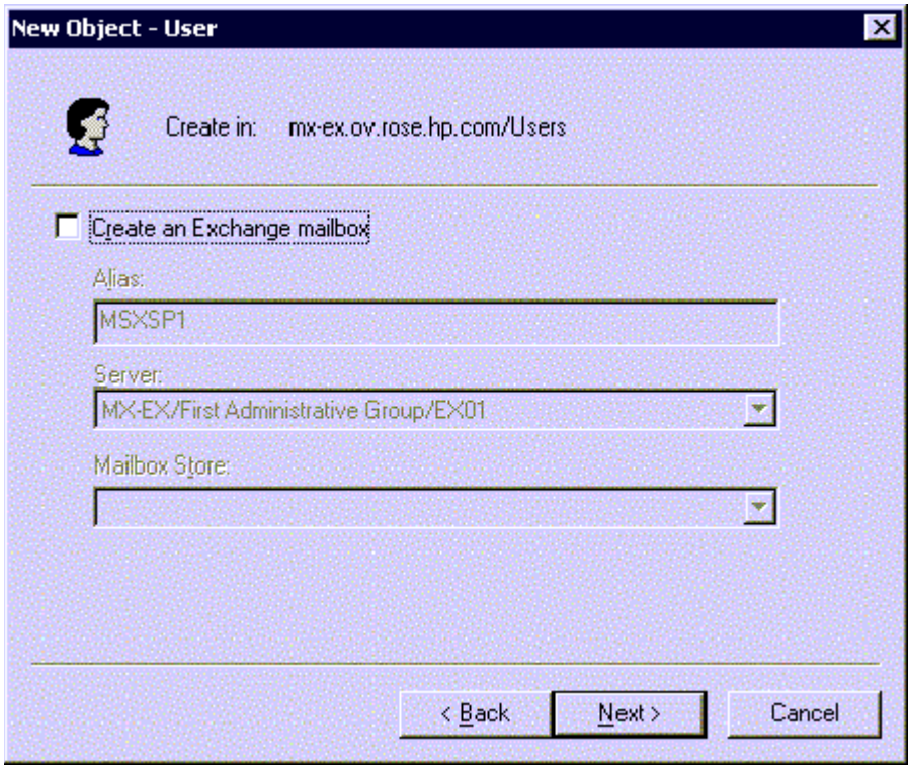


5 In the next window, enter **Password/Confirm Password** for the service account.

6 Select **Password Never Expires**. Then click **Next**.



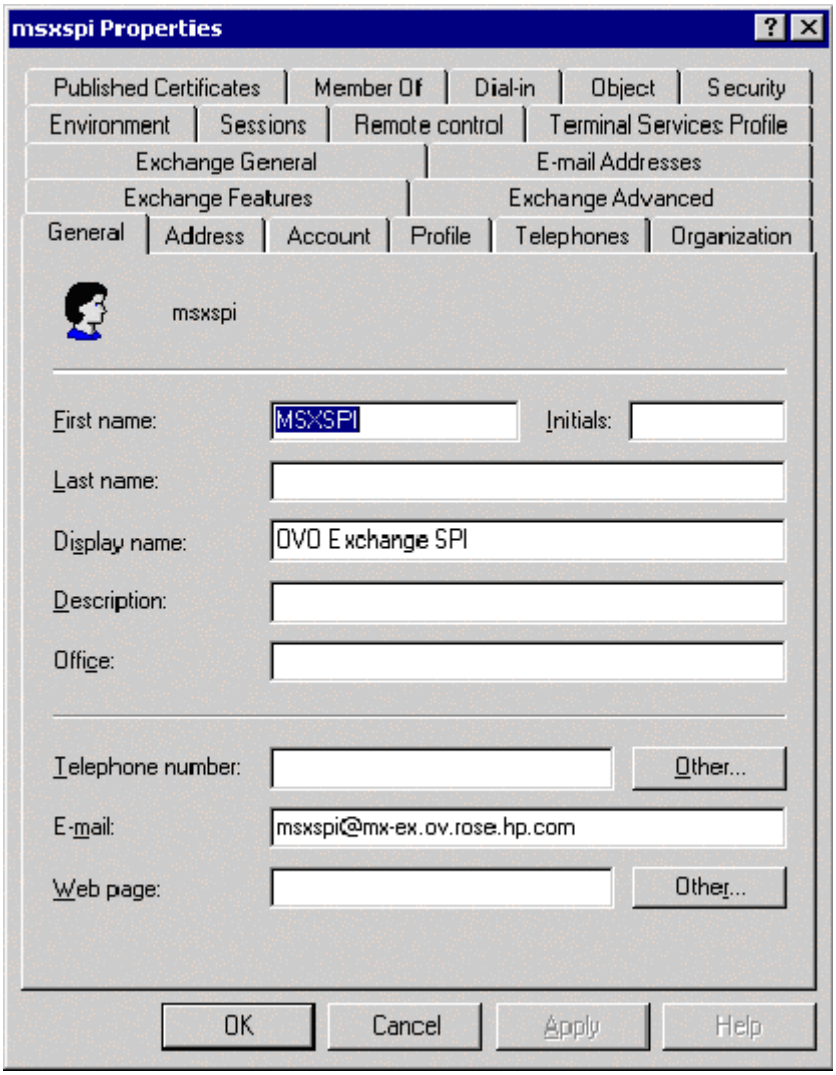
7 In the **New Object** dialog, deselect **Create an Exchange mailbox**, and click **Next**



8 In the next dialog, complete creating the user by clicking **Finish**.

9 You are now back at the **Active Directory Users and Computers** dialog. In the right pane, right-click on the service account user just created and select **Properties**.

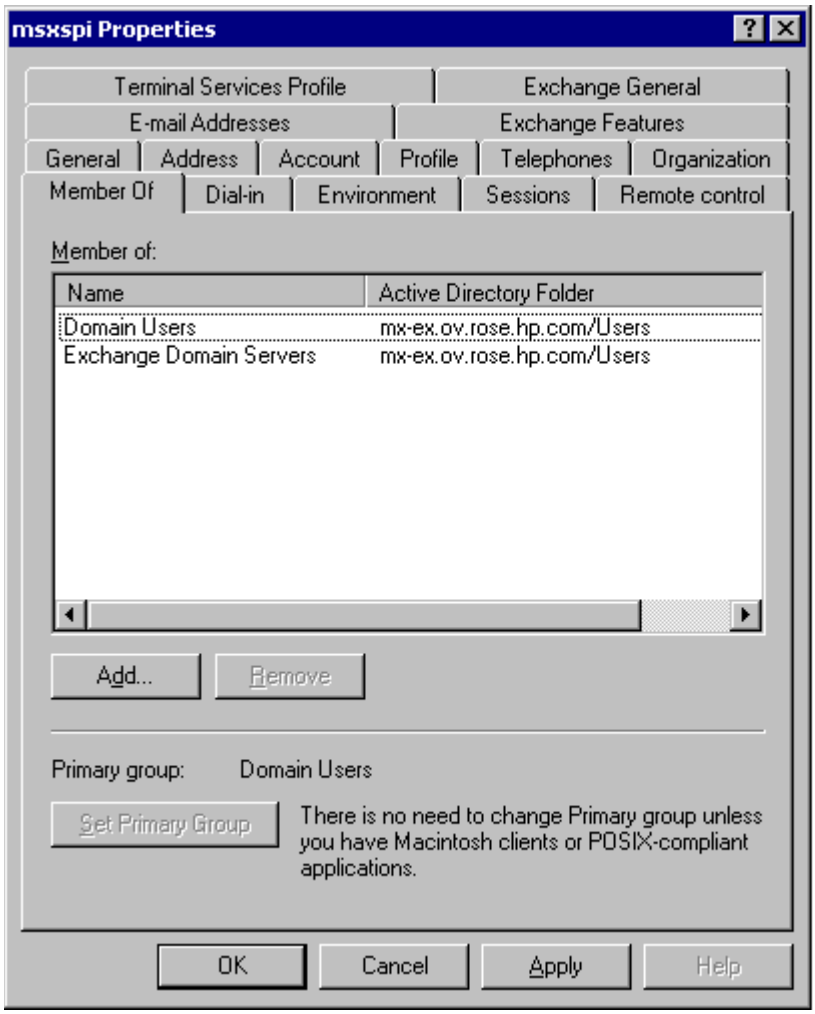
10 In the service account **Properties** page, select the **General** tab. Enter *OVO Exchange SPI* in the **Display name** and **Description** fields.



11 Select the **Member Of** tab, and click **Add**.

12 In the **Select Group** dialog select **Exchange Domain Servers** from the top pane. Click **Add**, then **OK**.

13 The new user is now a member of Domain Admins group. Click **OK** and exit the **Active Directory Users and Computer** dialog.



Task 2: Add service account user to Local Administrators group

1. On each targeted Exchange 2000/2003 server, select **Start > Settings > Control Panel.**
2. Double click **Administrative Tools**. Double click **Computer Management**, then open the **Local Users and Groups** folder. Select and open the **Groups** folder, then double click **Administrators**.
3. In the **Administrators Properties** dialog, click the **Add** button. Select the correct Domain from the **Look in** drop down list. Select the new service account user from the list, and click **Add.**
4. Update the discovery policy EXSPI-6.0 Exchange Service Discovery, to include this new user.
5. This procedure needs to be carried out for each targeted Exchange 2000/2003 server.

It can sometimes take a few hours for new group membership and rights to be applied to a service account.

F Exchange Cluster Terminology

Cluster

A cluster is a group of independent computers, called nodes, that present themselves to a network as a highly available single system.

Node

A system that is a member of a cluster, and has a working installation of the Cluster Service.

Resources

Resources are physical or logical entities, such as applications, or services, under the control of the Cluster Service.

Cluster Resource Group

A Cluster resource group is a set of resources that are grouped together to be managed as a single unit for configuration and recovery purposes. Each resource in a resource group may be dependent on other resources within that group.

A resource group is the unit of failover in a cluster.

Failover

Failover is the process of moving a resource group from one node to another in the case of a failure. A failover can occur automatically, in the case of a problem, or manually, initiated by an administrator.

Failback

Is the process of returning a resource group to the node on which it was running before a failover happened.

Active/passive

A cluster is in Active/Passive mode when one node is active while another is passive/idle. Only when the active node fails or is taken offline, will the passive node becomes active.

Active/active

Each node is assigned some of the workload and process requests from clients. When one node fails or is taken offline, control of its resources are passed to the other node.

Virtual Server

A virtual server is a resource group and contains:

- A Network Name resource
- An IP Address resource
- The resources to be accessed by the clients of the virtual server.

A virtual server acts as a standalone system. Clients on the network interact with the virtual server just as if it were a physical server.

Exchange Server Cluster

To create an Exchange Server cluster, services provided by the Windows Cluster service are needed. Microsoft Exchange Server installs custom files and resources when installing the cluster-aware version of Exchange. This cluster-aware version of Exchange is installed when Exchange Server Setup is run on a node of a Windows Server cluster.

Exchange Virtual Server (EVS)

If Exchange is installed in a Windows Cluster; the EVS is the network name of a cluster resource group which contains:

- A Network Name resource
- An IP Address resource
- A Disk Resource on a common storage subsystem.

Additional resources represent the various components of Exchange:

  - System Attendant
  - Information Store
  - Routing
  - Message Tracking Agent
  - MSSearch
  - Protocol
  - SMTP
  - HTTP
  - POP3
  - IMAP

The EVS runs as a unit on one node in the cluster at any given time. It may also be limited to a subset of the total nodes in the cluster.

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