HP OpenView Smart Plug-in for Microsoft® Exchange Server

Configuration Guide

Version: B.08.00

Windows® Operating System

February 2004

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- Support program information

contents

1

Introducing the Smart Plug-in for Exchange

This chapter introduces you to some basic Smart Plug-in for Microsoft® Exchange Server (Exchange SPI) concepts and offers an overview of the components that appear in the OpenView for Windows console when Exchange SPI is installed. The chapter includes the following sections:

- What the Exchange SPI does
- How the Exchange SPI works with OpenView Operations for Windows
- Service Discovery, Service Maps and Views
- Policy setup, display and deployment
- Introducing Exchange SPI reports and graphs

What the Exchange SPI does

The Exchange SPI adds Exchange 2003, Exchange 2000 and Exchange 5.5 server-monitoring capabilities to OpenView Operations for Windows. It provides mission critical monitoring and management of the enterprise Exchange environment through predefined yet customizable policies, monitored message delivery times, and predefined service level reporting.

With the Exchange SPI configured and deployed to Exchange server systems you will find that you can increase Exchange availability and performance, lower the support costs associated with the Exchange service, and improve capacity management and planning.

After setup, the Exchange SPI will monitor critical Exchange application/ database resources including:

- Process Monitor (for monitoring the amount of CPU time being used by core Exchange processes)
- Inactive Process Monitor (for monitoring core MS Exchange process for activity and status)
- Exchange Service Monitor (for monitoring Exchange server process for activity levels)
- Message Transfer Agent (MTA) and Simple Mail Transfer Protocol (SMTP) message process data
- MTA Work Queue and SMTP Queues
- IS Public Average Delivery Time
- IS Private Average Delivery Time

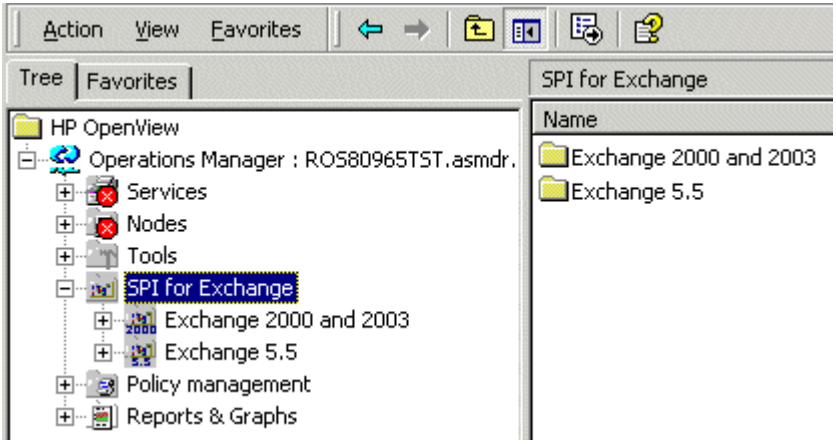
This information comes to you through the OpenView Operations console, in the form of service and organization maps and views, messages, alerts, reports and graphs.

How the Exchange SPI works

Like other Smart Plug-ins, the Exchange SPI collects data that is targeted and gathered according to rules and schedule specifications contained within the Exchange SPI policies.

After selecting nodes to be managed by the Exchange SPI, service discovery policies discover the Exchange environment on those nodes. Through deploying and modifying policies you can monitor your Exchange servers according to your particular needs.

Figure 1 SPI for Exchange folder located in the OVO console



Auto Discovery and the Service Map

The Exchange SPI has an auto discovery function which discovers Exchange topology. The discovery process is done by service discovery Policies, which are automatically deployed when a node becomes an OVO managed node.

For Exchange 5.5, the Service Discovery policy requires the User name and Password of a service account with special Exchange privileges. For more information on this type of account and how to create one, see Chapter 3, Exchange 5.5 user privileges.

The Exchange environment information discovered by the service discovery policies is displayed in Exchange Organization Service maps, and the Exchange Messaging and Organization views.

Dynamic service maps

Service maps are created from the topology discovered on your network by the Exchange service discovery policies. They are dynamic: they reflect the present time status of your Exchange environment.

In the console, display the service map in the details pane by selecting **Services > Applications** and then selecting any level of the Exchange organization. Your Exchange organization and its activity can be looked at either in the console tree or in the Service Map display.

Figure 2 Discovered Exchange servers, in the ASMDR administrative group

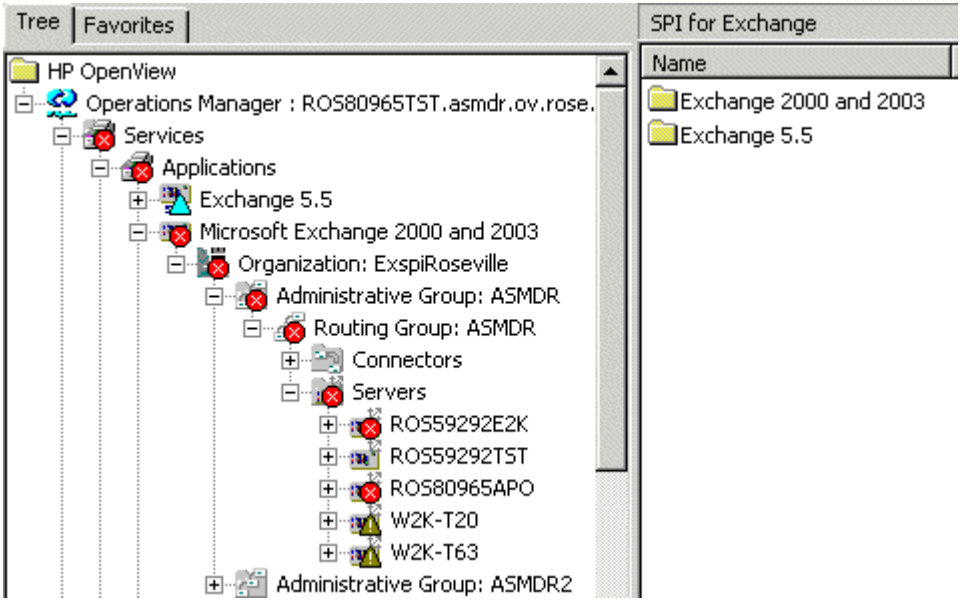
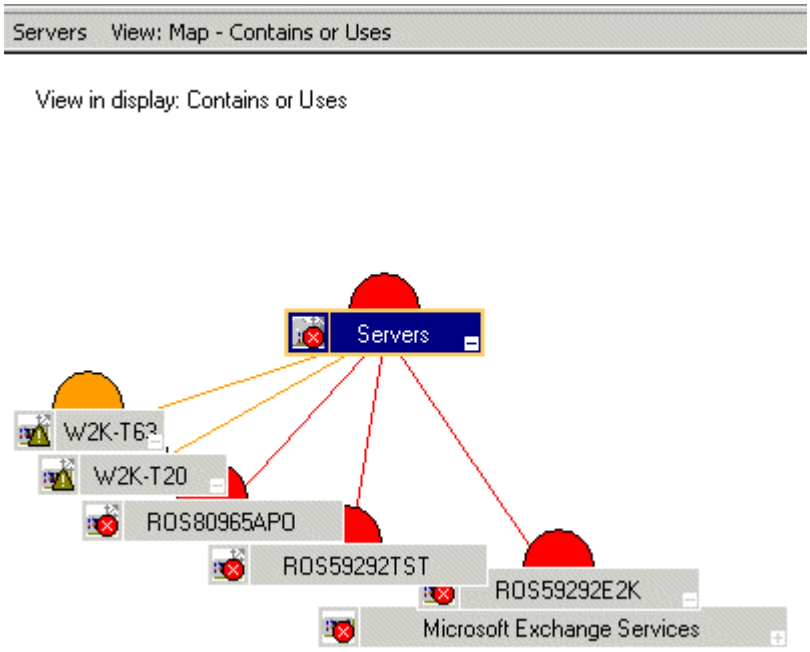


Figure 3 Service Map of ASMDR administrative group servers



Problems in the Exchange Organization are indicated in the Service Map and console tree by colors that illustrate severity level. They are also indicated by critical, major, minor or warning messages displayed in the Message Browser. Hovering the cursor over any entry in the message browser will display descriptive details. Double-click a message to see details.

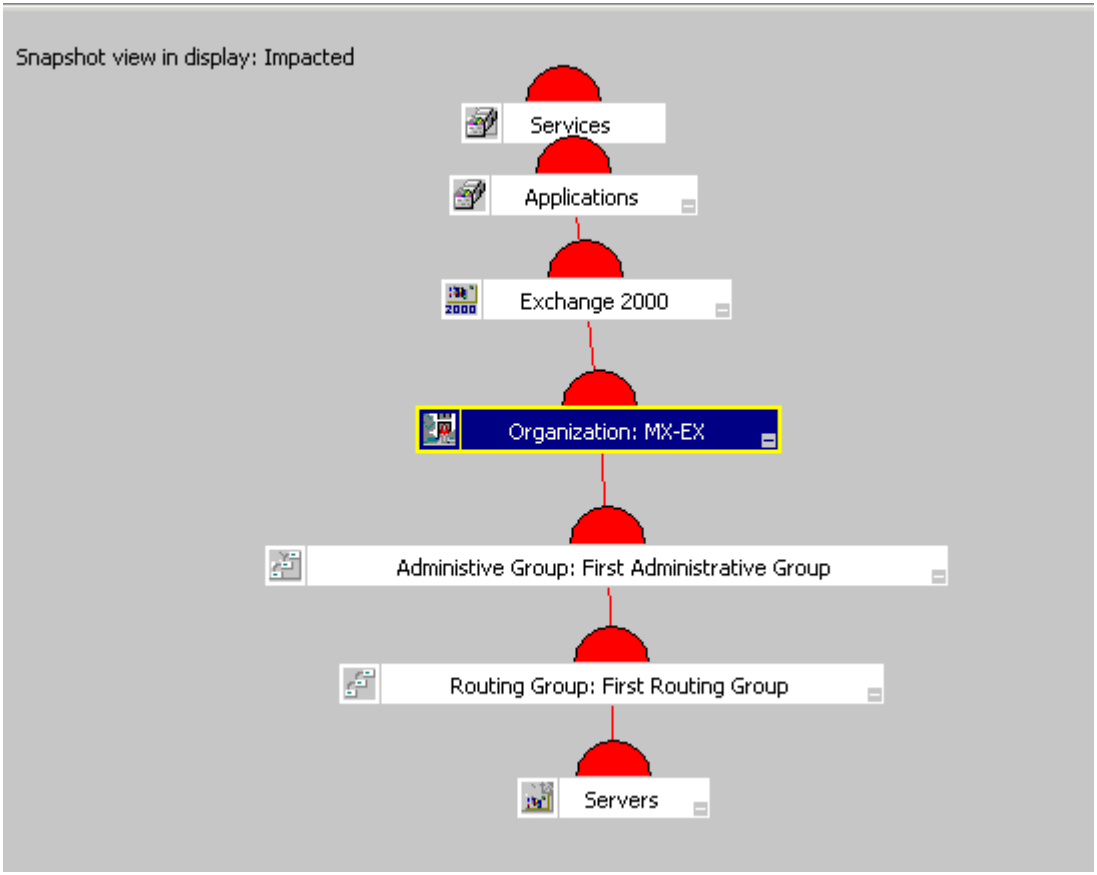
Figure 4 Partial view of Active Message Browser, for the Exchange ASMDR administrative group

Severity	S	U	I	A	O	N	Received	Service	Node	Application
Warning	-	-	X	-	C	-	5/2/2003 4:55:37 PM	Microsoft Exchange I...	RO559292E2K	Exchang...
Warning	-	-	X	-	C	-	5/2/2003 4:56:33 PM	Microsoft Exchange I...	W2K-T20	Exchang...
Warning	-	-	X	-	C	-	5/2/2003 5:19:55 PM	Microsoft Exchange I...	W2K-T63	Exchang...
Warning	-	-	X	-	-	-	5/2/2003 5:21:27 PM	Microsoft Exchange I...	W2K-T20	HP EXSPI
Warning	-	-	X	-	-	-	5/2/2003 5:22:08 PM	Microsoft Exchange I...	W2K-T20	HP EXSPI
Minor	-	-	X	-	-	-	5/2/2003 6:10:12 PM	Microsoft Exchange ...	W2K-T20	EXSPI-Ping
Minor	-	-	X	-	-	-	5/2/2003 6:10:12 PM	Microsoft Exchange ...	W2K-T20	EXSPI-Ping
Minor	-	-	X	-	-	-	5/2/2003 6:10:12 PM	Microsoft Exchange ...	W2K-T20	EXSPI-Ping
Major	-	-	X	-	-	-	5/2/2003 6:10:18 PM	Microsoft Exchange ...	RO559292E2K	EXSPI-Ping
Minor	-	-	X	-	-	-	5/2/2003 6:10:18 PM	Microsoft Exchange ...	RO559292E2K	EXSPI-Ping
Minor	-	-	X	-	-	-	5/2/2003 6:10:21 PM	Microsoft Exchange ...	W2K-T63	EXSPI-Ping
Minor	-	-	X	-	-	-	5/2/2003 6:10:21 PM	Microsoft Exchange ...	W2K-T63	EXSPI-Ping
Minor	-	-	X	-	-	-	5/2/2003 6:40:13 PM	Microsoft Exchange ...	W2K-T20	EXSPI-Ping
Minor	-	-	X	-	-	-	5/2/2003 6:40:14 PM	Microsoft Exchange ...	W2K-T63	EXSPI-Ping
Minor	-	-	X	-	-	-	5/2/2003 6:40:22 PM	Microsoft Exchange ...	RO559292E2K	EXSPI-Ping

The buttons in the OpenView toolbar give you easy access to the various ways of viewing Exchange activity:

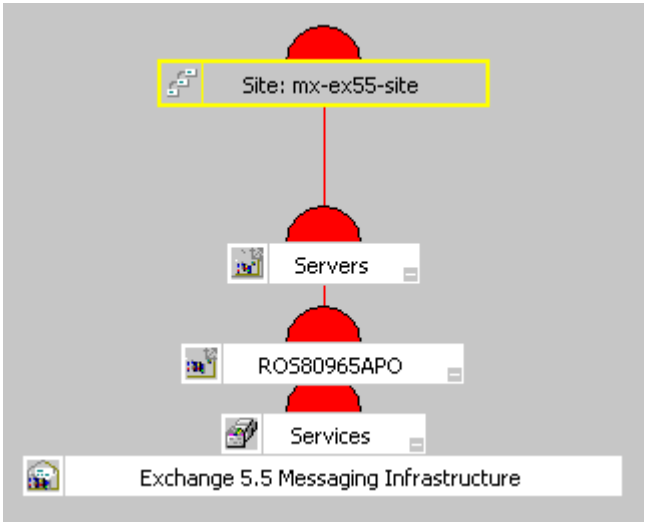
From left to right: Impacted Services, Root Cause, Service Map, Active Message Browser, Acknowledged Message Browser.

Figure 5 Impacted Services from a server problem



The Impacted Services service map view helps you to see at a glance the nodes or services that are affected by any occurrence on a node or service.

Figure 6 Root Cause view of an Exchange 5.5 site problem

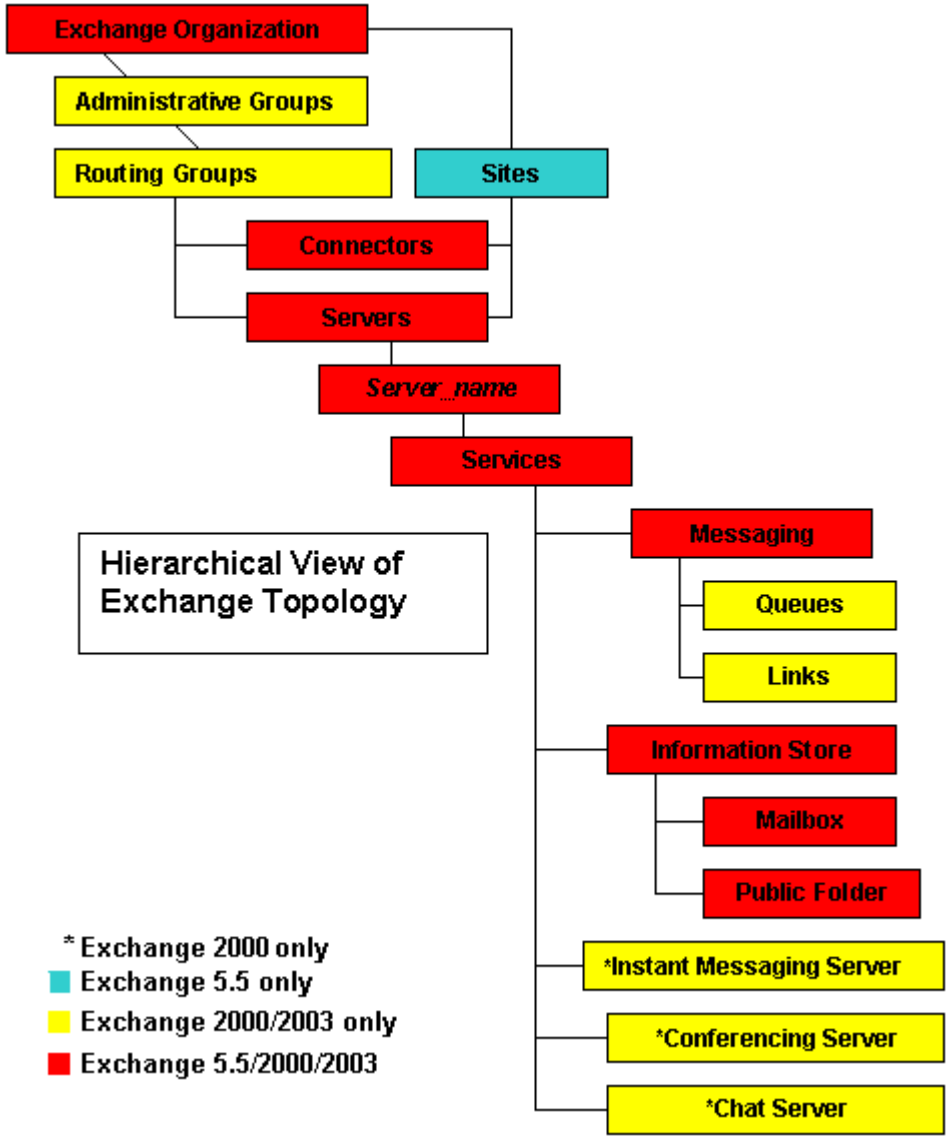


The Root Cause service view helps you to see the source of a problem. Root cause analysis starts at the level of your selected node or service, stops at the level where the cause of the problem lies, and draws a map that shows the source of the problem and the nodes or services affected by it.

Exchange Organization

After Exchange topology is discovered, the organization of your Exchange environment is available for display in the console tree, the dynamic service maps and the snapshot service views. The Exchange organization in an enterprise can be extremely complex, these views help in visualizing the organization from the overview down to the details.

Figure 7 Hierarchical View of Exchange Organization

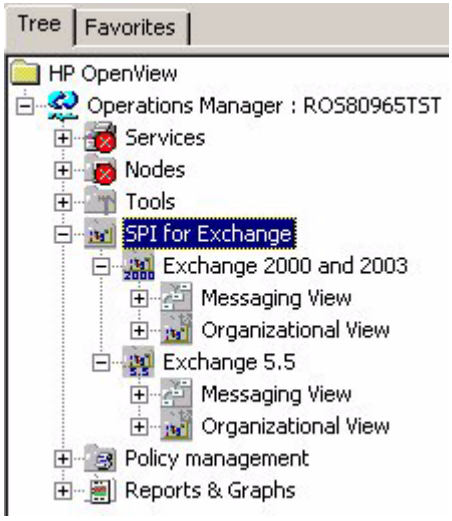


Snapshot views of the Exchange environment

To see the Exchange Messaging View or Organizational View:

1. Open the SPI for Exchange folder on the console tree.
2. Select the Exchange version: Exchange 5.5, or Exchange 2000 and 2003.
3. Select either the **Messaging View** or **Organizational View.**

Figure 8 Location on console tree of Exchange SPI views



These views show information about the Exchange environment collected during the discovery process. They make it easy to see at a glance an overview of the relationship between the different Exchange components in your Exchange organization.

Messaging View

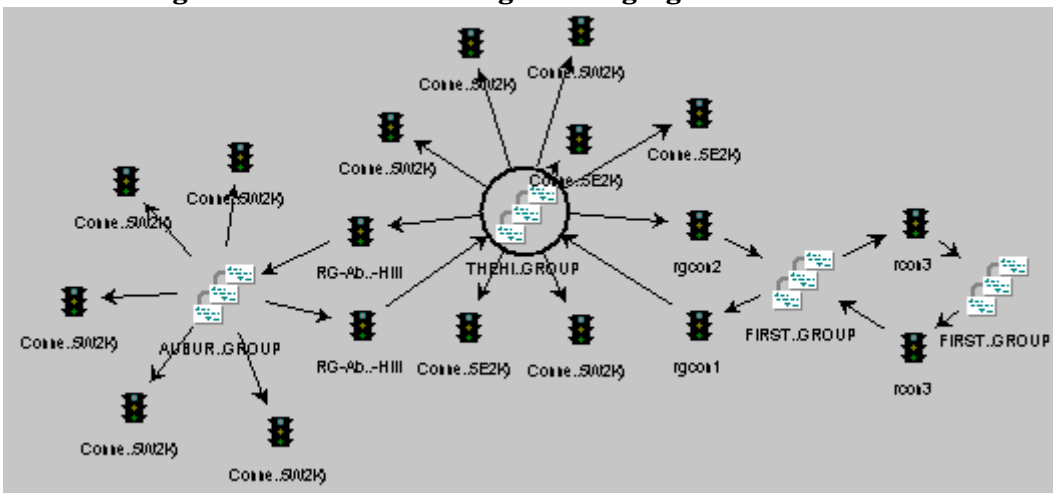
The Messaging View gives a view of the Exchange organization, showing all Exchange routing groups and their associated one-way connectors. Using this view one can quickly see how mail flows through the organization.

This icon represents Exchange connectors in the Exchange organization:

This icon represents Exchange routing groups in the Exchange organization:

The arrows denote the direction of mailflow.

Figure 9 SPI for Exchange Messaging View



Organizational View

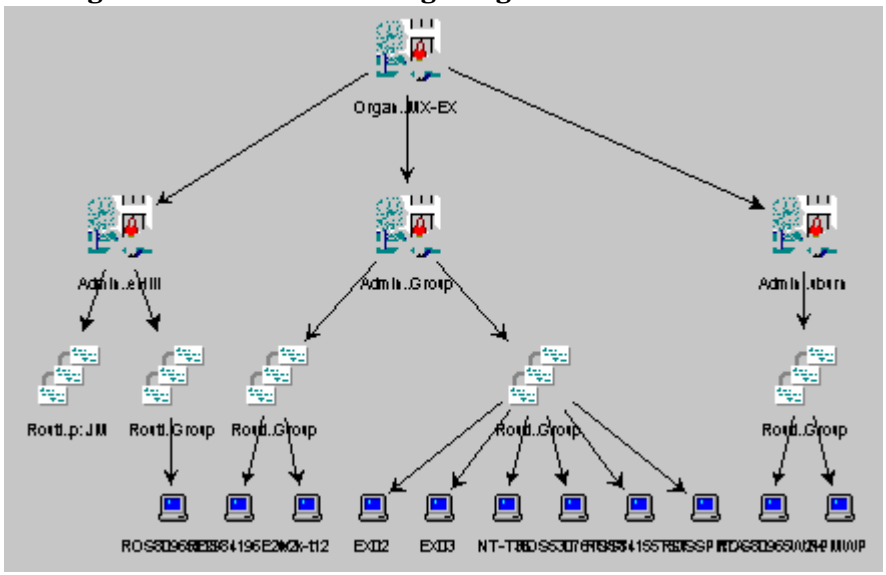
This hierarchical view shows your Exchange Organization sites or administrative/routing groups along with servers.

This icon represents the servers (2000/2003 or 5.5):

This icon represents the Exchange 2000 administrative groups:

This icon represents the Exchange 5.5 routing groups:

Figure 10 SPI for Exchange Organizational View

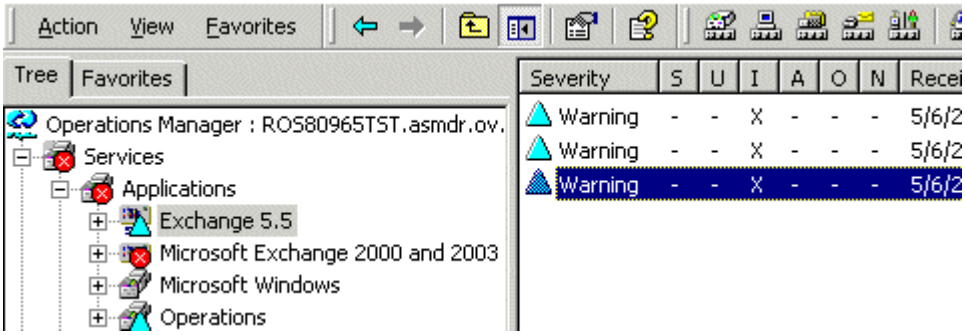


Messages

Policies generate messages and alerts that are displayed in the OpenView message browser. They are also forwarded to the appropriate service category and are displayed in the Service Maps.

Double-click messages in the message browser to view the details of any message:

Figure 11 Selecting a Warning message in the active message browser



Messages include suggestions for corrective actions, and links to appropriate Microsoft information sites.

Figure 12 Message Properties with explanatory text

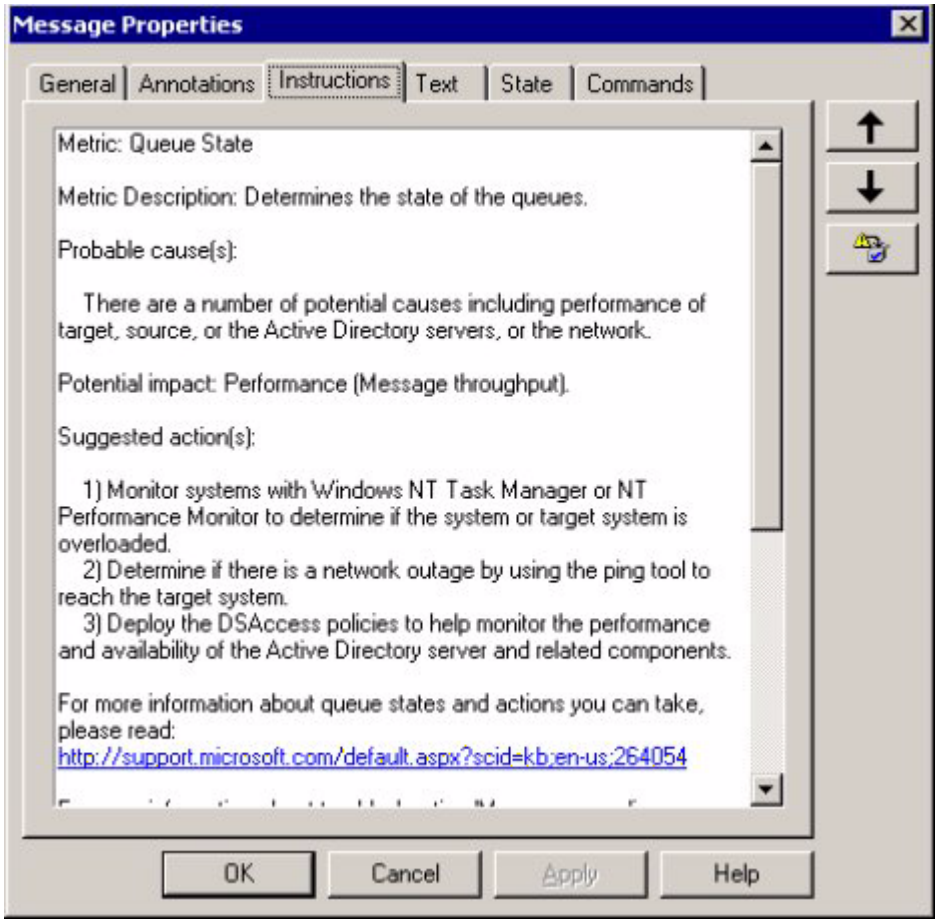
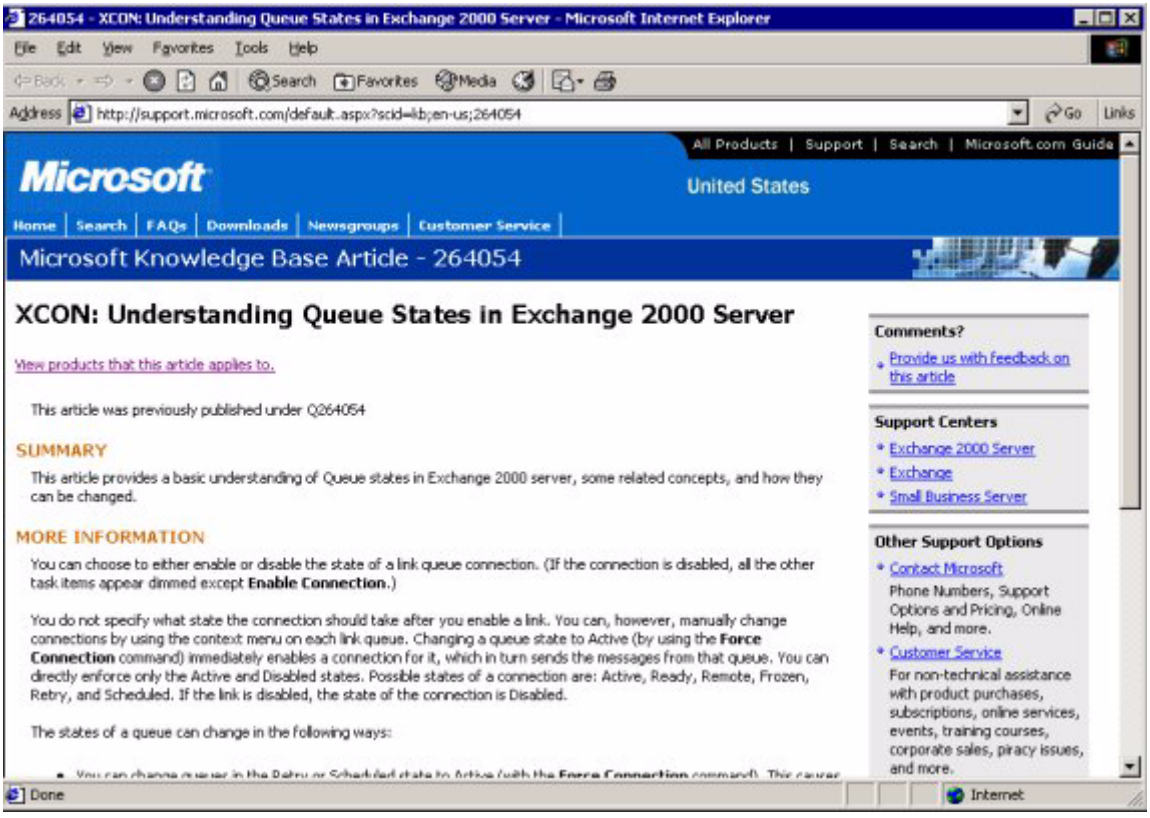


Figure 13 Link takes you to appropriate Microsoft knowledge base



Policy setup and deployment

Exchange SPI policies are organized in the following categories:

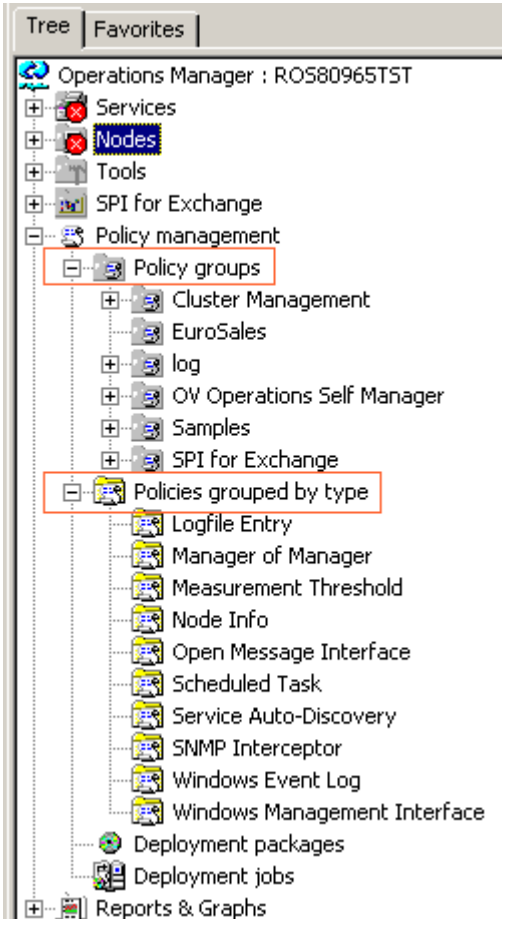
- There is an **EXSPI Discovery** policy group for Exchange 2000 and 2003, and one for Exchange 5.5. These policy groups contain Exchange Service Discovery and Check Discovery policies. These policies perform the Exchange service discovery on all OVO managed Exchange servers, and check for service discovery errors. The service discovery policies for Exchange 2000 and 2003 are deployed automatically to all nodes once they become managed by OVO. For Exchange 5.5, the **EXSPI-5.5 Exchange Service Discovery** policy needs to be edited to include the User name and Password of a service account with special Exchange privileges. For more details on this type of account, see "Service account with special Exchange privileges" on page 47.
- There is an **EXSPI Quick Start** policy group for Exchange 2000 and 2003, and one for Exchange 5.5. These policy groups contain the basic policies for monitoring Exchange servers that most administrators will wish to deploy, for example, policies to monitor key Exchange services, forward application errors and warnings, and monitor messaging queues. These policies need no special customization to run and are deployed automatically to all nodes once they become managed by OVO.
- The **EXSPI Add-Ons** policy group contains policies that monitor applications compatible with, but not a part of Exchange, such as cc:Mail and Chat. They are available to select, modify and deploy as needed.
- The **EXSPI Advanced** policy group contains Reporter policies, Event Log Warnings and Information policies and End-to-End Message Ping policies. Once deployed to the Exchange server nodes, Advanced policies enable the Exchange SPI to target specific data and measure this data against predefined rules, and generate actions, reports and graphs. For Exchange 5.5 most Advanced policies require additional configuration.

EXSPI policies should not be deployed to non-Exchange systems.

Policy display

Exchange SPI policies are displayed in the OVO console in two places: by group under the **Policy groups** folder, and by type under the **Policies grouped by type** folder. These groupings are for your convenience, See the Exchange SPI on-line Help for detailed information on policy groups, policy types, and policy prerequisites.

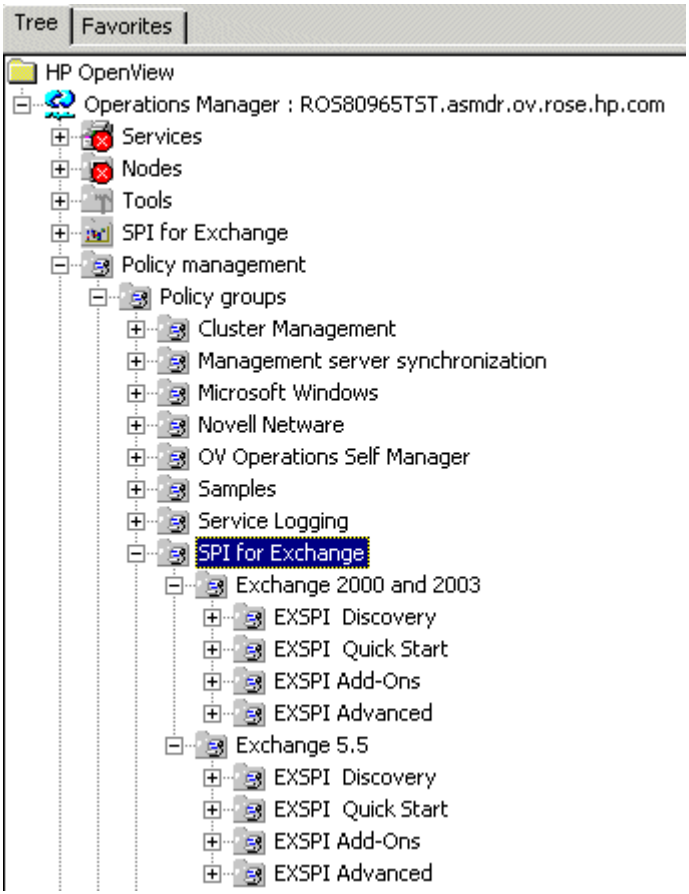
Figure 14 Console tree showing Policy groups and Policies grouped by type



Policy groups

Under Policy Groups policies are organized according to how you might want to deploy them. The EXSPI Discovery and EXSPI Quick Start policy groups contain policies that deploy automatically to nodes as soon as the nodes become managed by OVO, and contain most of the policies you need to get started. The EXSPI Add-Ons policy groups contain policies that monitor applications compatible with but not a part of Exchange, such as cc:Mail and Chat. The EXSPI Advanced policy groups contain policies that require some advanced configuration, including the creation of a mailbox, and in the case of Exchange 5.5, the creation of a service account with special Exchange privileges.

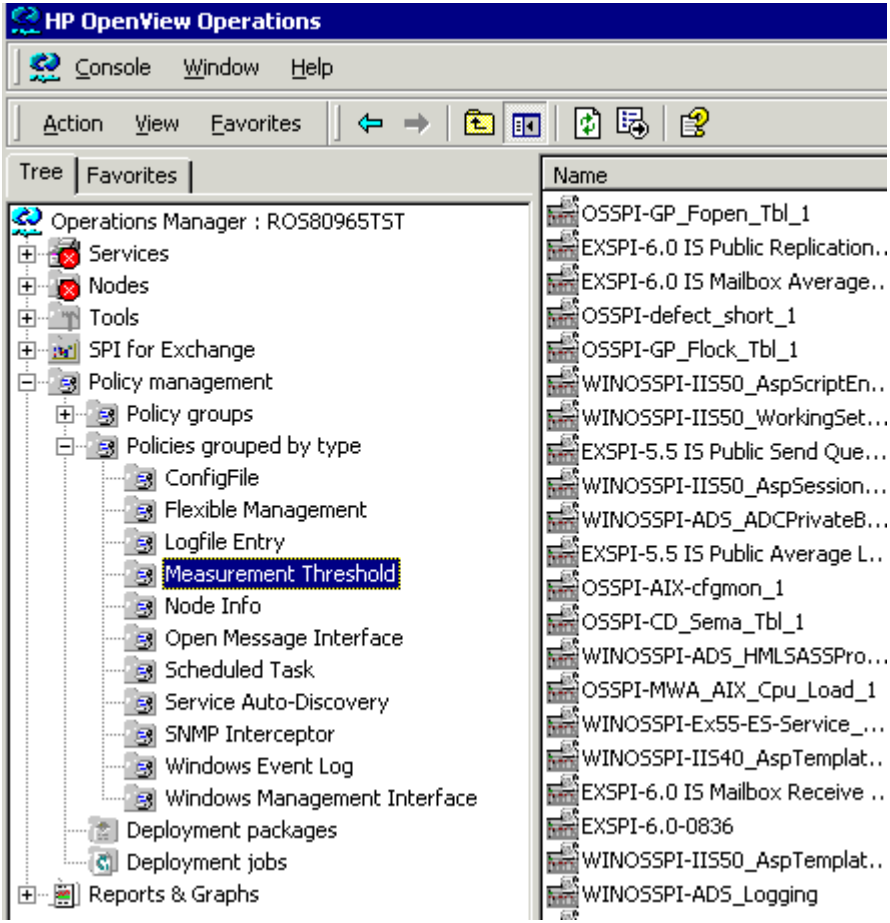
Figure 15 Exchange SPI Policy groups on the console tree



Policies grouped by type

Policies grouped by type displays policies organized according to their function, for example, you can find data collection scheduling in Scheduled Task policies; threshold settings in Measurement Threshold policies, etc. Further information on policy types is available in the OVO on-line Help.

Figure 16 Measurement Threshold policies displayed in the details pane

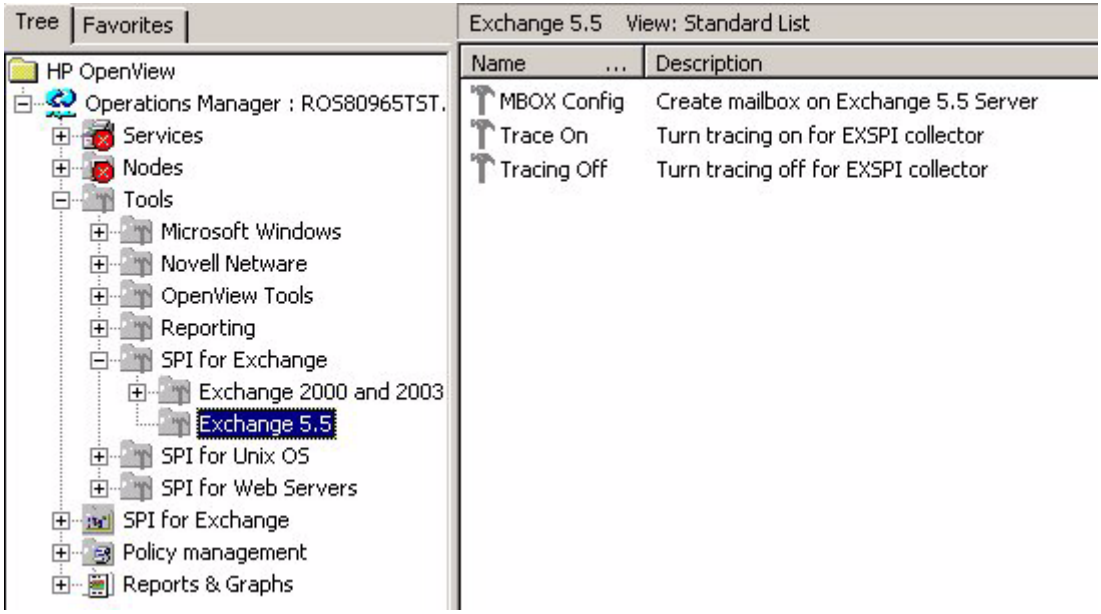


Using Exchange SPI tools

There are two groups of Exchange SPI tools: **Tools > SPI for Exchange > Exchange 5.5**, and **Tools > SPI for Exchange > Exchange 2000 and 2003**.

For Exchange 5.5 the following tools are available:

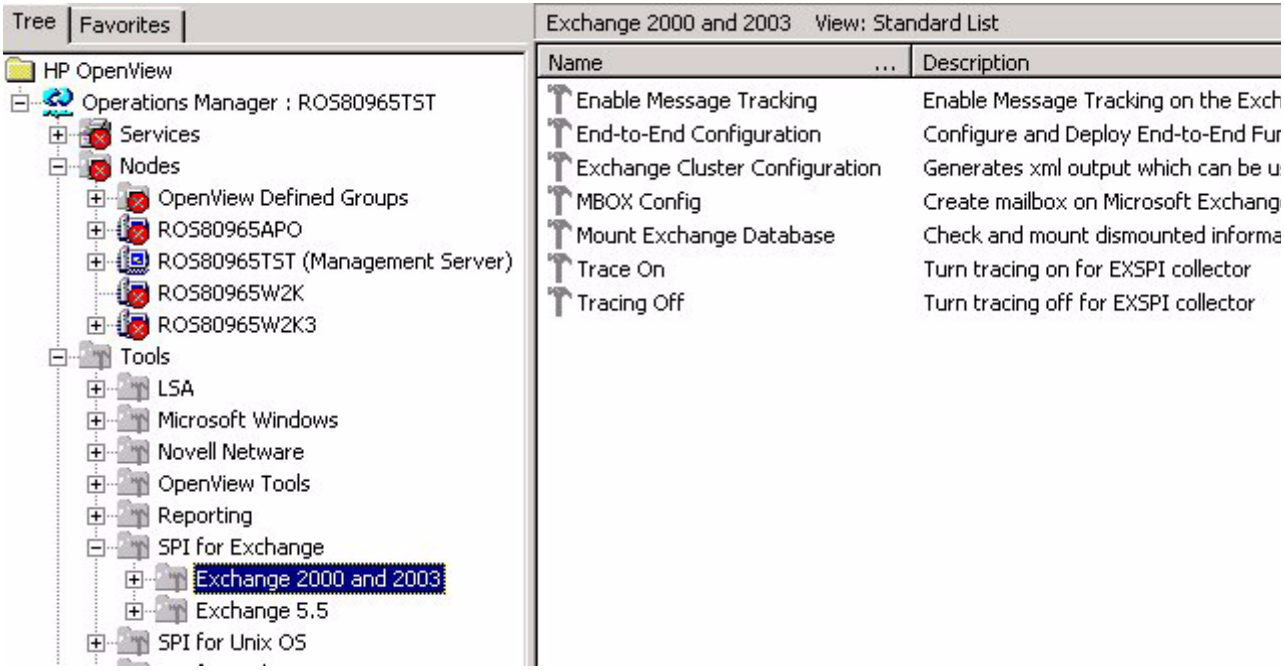
Figure 17 Exchange SPI Tools for Exchange 5.5



- The Exchange SPI **MBOX Config** tool 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.
- **Trace On/ Tracing Off** enables or disables tracing. The default setting is off. Tracing is generally used for troubleshooting purposes.

For Exchange 2000/2003 the following tools are available:

Figure 18 Exchange SPI Tools for Exchange 2000 and 2003



- **Enable Message Tracking** (for Exchange 2000 and 2003 only): Enables message tracking on Exchange 2000 and Exchange 2003 servers.
- **End-to-End Configuration**: This tool is a wizard for configuring the Ping process on Exchange 2000 and 2003 OVO managed servers.
- **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 "Using Exchange SPI in high availability environments" **on page 81**.
- The Exchange SPI **MBOX Config** tool 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.
- **Mount Exchange Database**: This tool can search for and mount dismounted mailboxes or public folder store databases. For more information on this tool, see the Exchange SPI online help.

- **Trace On/Tracing Off** tools enable or disable tracing. The default setting is off. Tracing is generally used 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 HP OpenView Operations for Windows on-line Help.

Exchange SPI reports and graphs

Located in the appropriate Exchange version folder under **SPI for Exchange > Reports and Graphs > SPI for Exchange**, there are a number of preconfigured reports and graphs, displayed by type.

Reports and graphs are enabled by the EXSPI data collection policies. Information is collected nightly and is then available for reports and graphs the following day. Some data collectors run on Saturday/Sunday only and therefore related reports are available only after a weekend has passed.

Please see the Exchange SPI on-line help for detailed information about each report, the policies that need to be deployed for each report, and troubleshooting information.

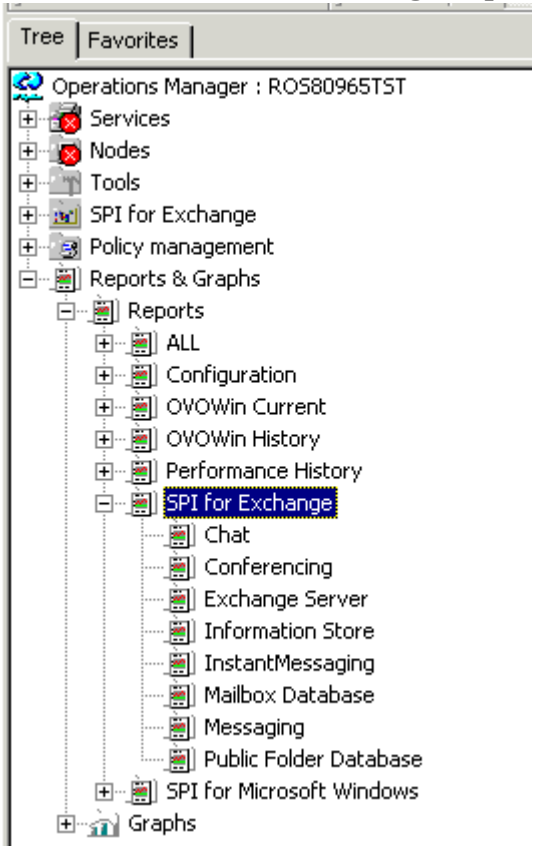
To display a report or graph

When a report/graph group is highlit in the console tree on the left, the list of reports/graphs in that group displays on the right in the details pane. Select a report/graph in the details pane, and double-click to open it.

Exchange SPI reports

There are two types of Exchange SPI reports available: **Summary Reports** which show data for all servers, and **Detail Reports** which provide information server by server.

Figure 19 Location of SPI for Exchange Reports on the console tree

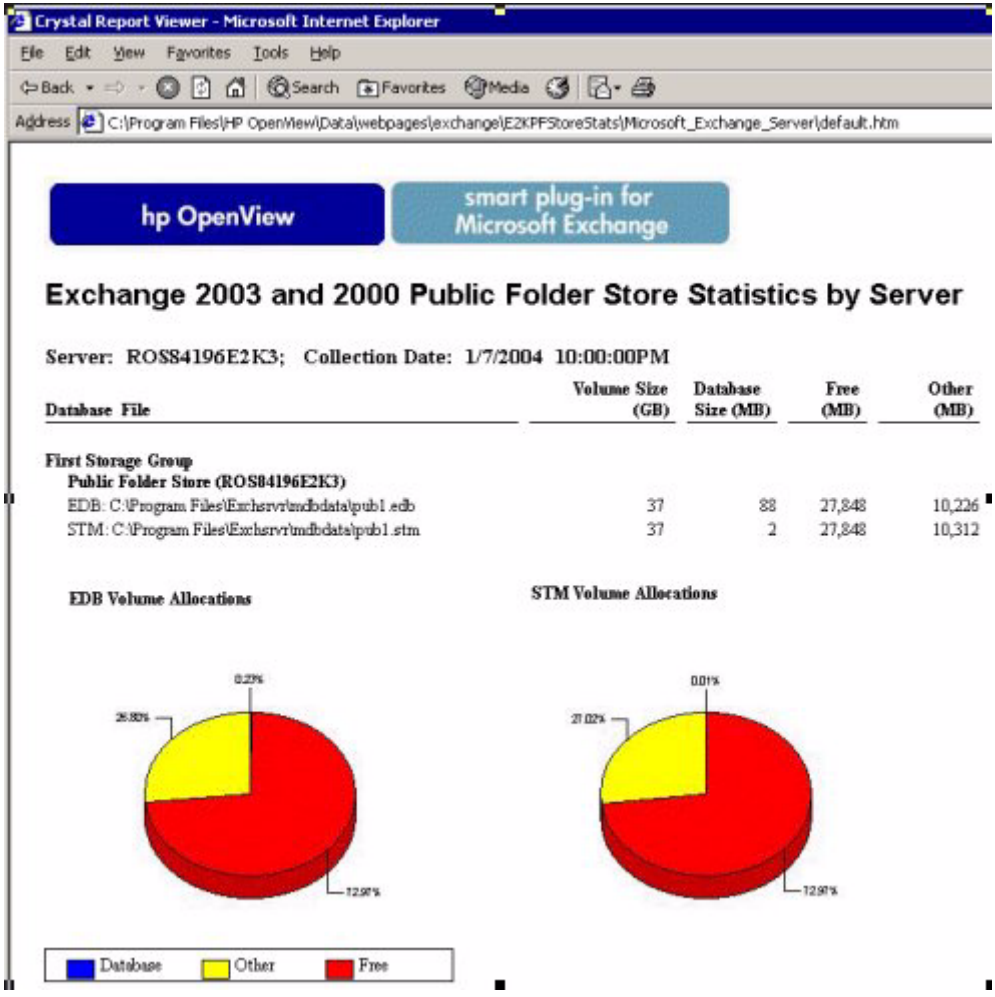


Reports are displayed in the console organized by type. The list of reports available in any category is displayed in the details pane when the category is selected.

Figure 20 SPI for Exchange Conferencing reports

Name	Description
Exchange 2000 Conferencing Server Trends	Exchange 2000 Conferencing Server Trends
Exchange 2000 MCU	Exchange 2000 MCU

Figure 21 SPI for Exchange report example



Exchange SPI graphs

SPI for Exchange Graphs are located in **Reports and Graphs > Graphs > SPI for Exchange 2000/2003, or SPI for Exchange 5.5**.

Figure 22 SPI for Exchange 2000/2003 groups of graphs

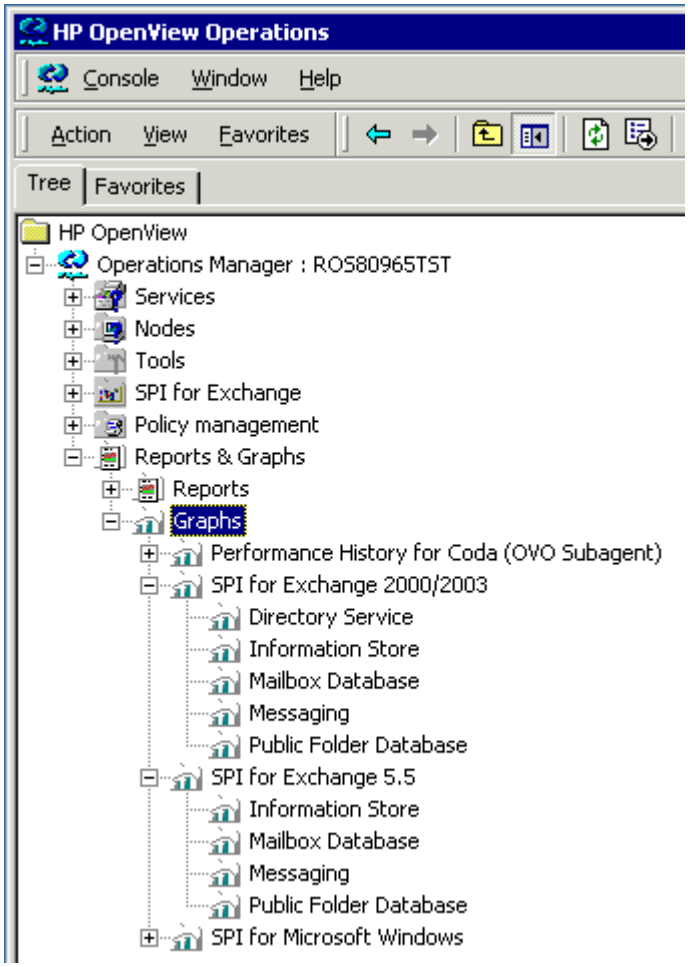
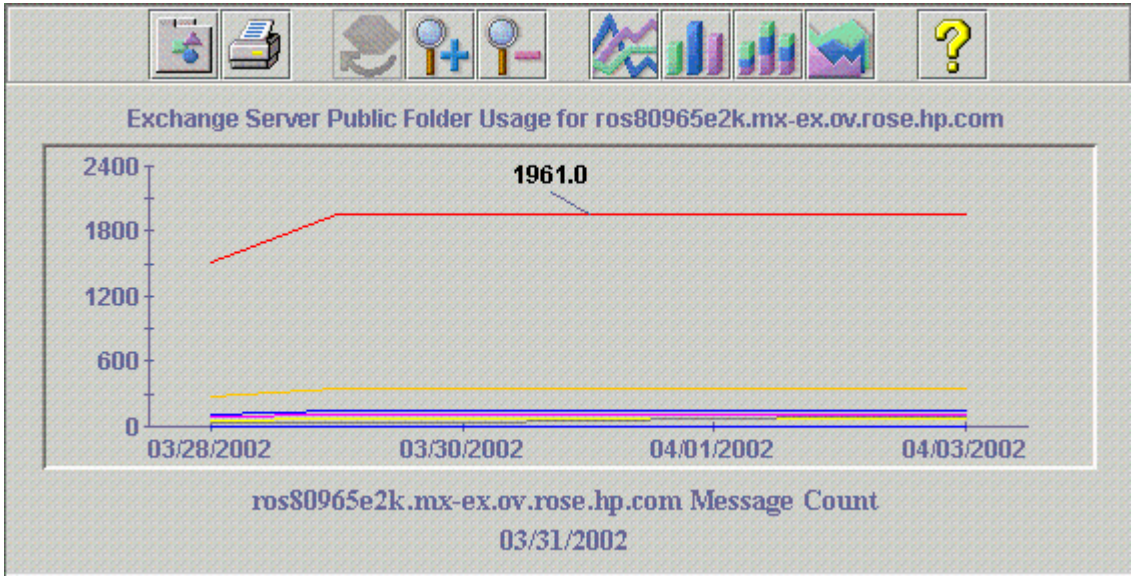


Figure 23 SPI for Exchange Messaging graphs

Messaging

Name	Description
MTA Volume	This graph shows Exchange Server Message Transfer Agent(MTA) volume.
Queues	This graph shows Exchange Server queue lengths.
SMTP Queues	This graph shows SMTP Server queues on the Exchange Server.
SMTP Volume	This graph shows SMTP Volume on the Exchange Server.

Figure 24 Exchange Server Public Folder Usage graph



2

Getting started

Getting started with Exchange 5.5 servers

Task 1: Install the Exchange SPI with OpenView Operations and Performance for Windows

Please see the *HP OpenView Smart Plug-ins, New and Upgraded, for OpenView Operations / Performance for Windows Installation / Upgrade Guide* included with the product. This guide offers a product overview as well as the location of the latest Exchange SPI Release Notes, which you should print and read before getting started.

Task 2: 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 special Exchange privileges. For information on this type of account, and how to create one, see Chapter 3, Exchange 5.5 user privileges.

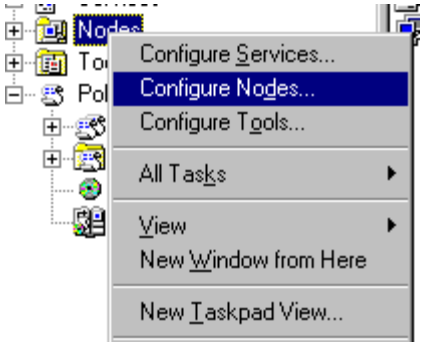
Task 3: Add Exchange servers to the Nodes folder

The servers whose services you want to discover and monitor must be included in the Nodes folder of the OVO management console. Discovered Exchange servers without discovered services are not managed nodes. To monitor servers, add them to the OVO **Nodes** folder now.

To add an Exchange server to the Nodes folder

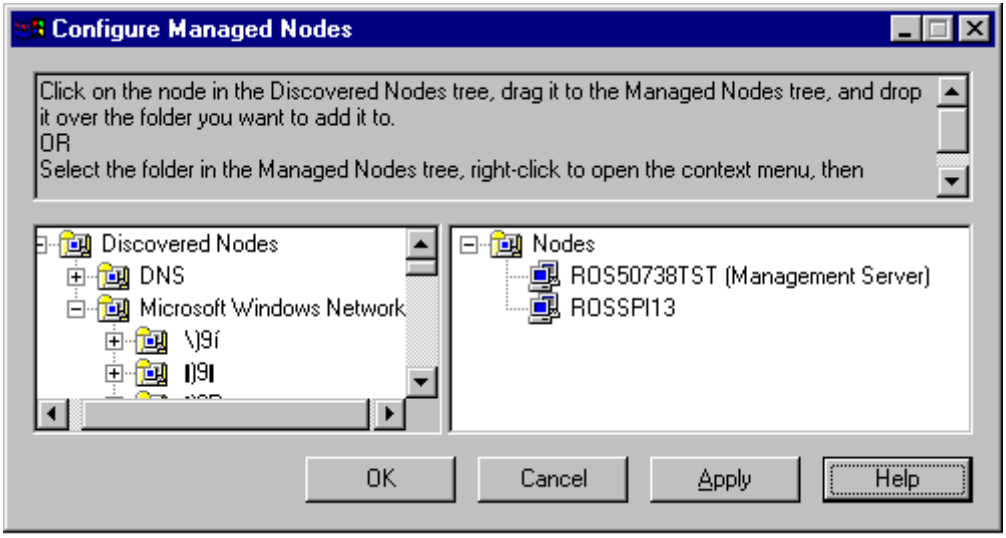
1 In the OVO console, right-click the **Nodes** folder, select **Configure Nodes**

Figure 25 Nodes > Configure Nodes Menu



2 In the Configure Managed Nodes dialog, drag and drop servers listed on the left to the OVO Nodes folder on the right.

Figure 26 Configure Managed Nodes Dialog



Exchange Service Discovery

The Exchange SPI implements an LDAP based Exchange topology discovery. The discovered topology is maintained in the OpenView namespace on the management server or console.

- **How it works**

Exchange 5.5 topology is discovered by the EXSPI-5.5 Exchange Service Discovery policy, which is automatically deployed to all Windows nodes after they are selected to become OVO managed nodes.

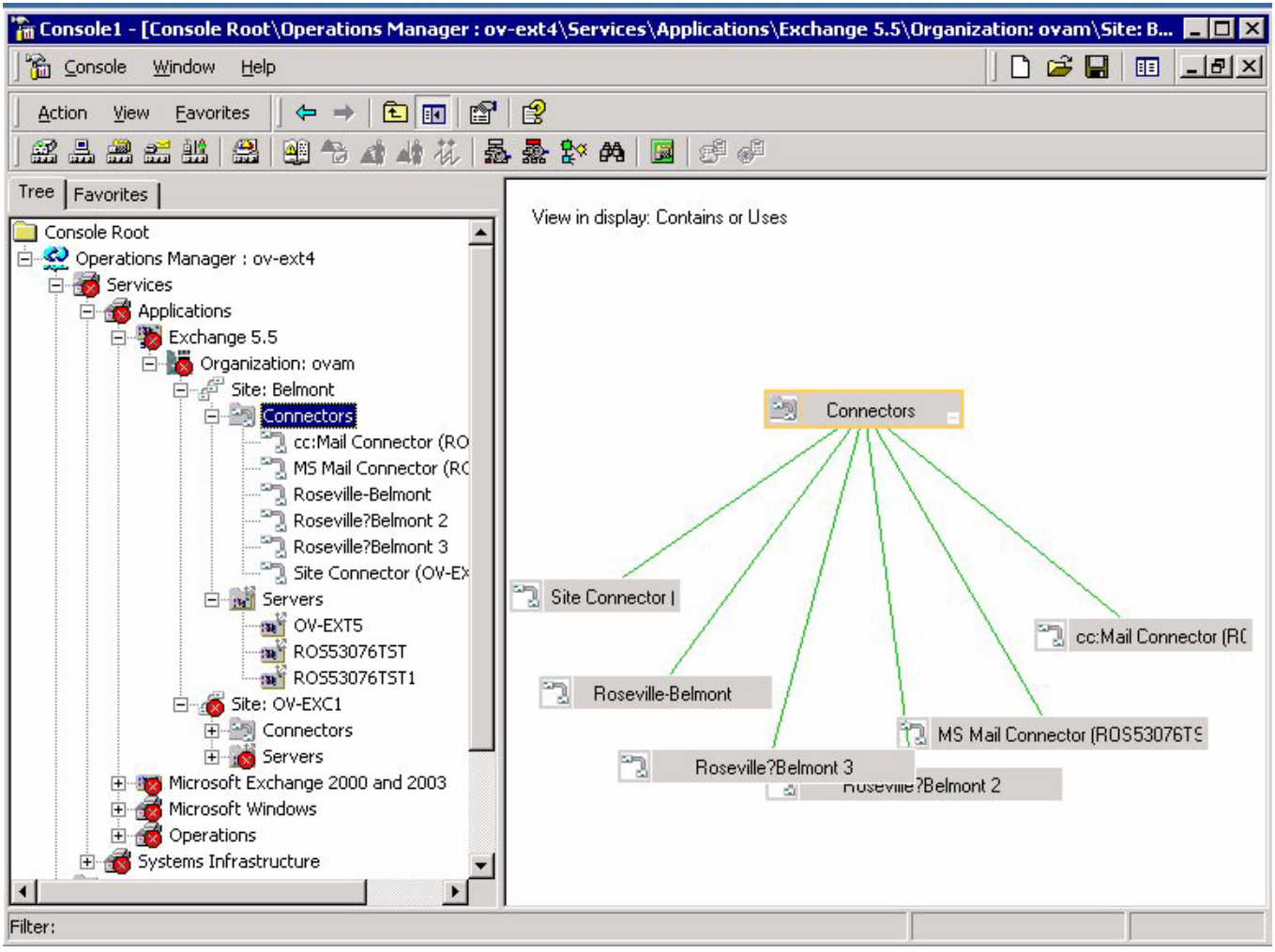
The user ID and password of a service account with special Exchange privileges must be added to the EXSPI-5.5 Exchange Service Discovery policy before deployment. For information on this type of account, and how to create one, see Chapter 3, Exchange 5.5 user privileges.

- **Service Map**

The discovered Exchange organization is displayed in the OVO details pane, in various Service Maps.

The Organization, with the name given by the Exchange administrator, is located beneath the Exchange folder on the OVO console tree. The hierarchical structure below the organization name are folders mirroring your Exchange organizational structure, see the diagram “Hierarchical View of Exchange Organization” on page 17. In the case of OVO managed nodes, all services are listed by product name.

Figure 27 Exchange 5.5 Organization hierarchy, and service map



Identify Exchange servers/services

The Exchange topology is discovered by the Service Discovery policy and the information is visible in the folders labeled **Exchange 5.5 > Services > Applications** on the OVO console tree. By expanding this folder, you see the organization of your Exchange services.

If an Exchange server is listed in the tree with no services listed under it, it is an unmanaged server. If you wish it to be managed by OVO, perform Task 2 "Add Exchange servers to the Nodes folder" on page 35, now.

The **SPI for Exchange** folder below the **Tools** folder on the console tree contains the Messaging and Organizational View folders, see "Snapshot views of the Exchange environment" on page 18.

For Exchange 5.5, the Service Discovery policy requires the User name and Password of a service account with special Exchange privileges. For more information on this type of account and how to create one, see Chapter 3, Exchange 5.5 user privileges.

Task 4: Manual Exchange Service Discovery policy deployment, if required

After adding Exchange servers to the Nodes folder, the EXSPI Exchange Service Discovery policy will automatically deploy.

To perform this step manually

1. In the OVO console tree expand the folders **Policy Management** > **Policy Groups** > **SPI for Exchange** > **Exchange 5.5** > **EXSPI Discovery**.
2. In the details pane select **EXSPI-5.5 Exchange Service Discovery** and right-click.
3. Select **All Tasks**, then **Deploy On**. In the dialog select the nodes you wish the discovery to be deployed on.

After allowing about five minutes, it will be possible to view the structure of Exchange services.

Task 5: Policy deployment, as required

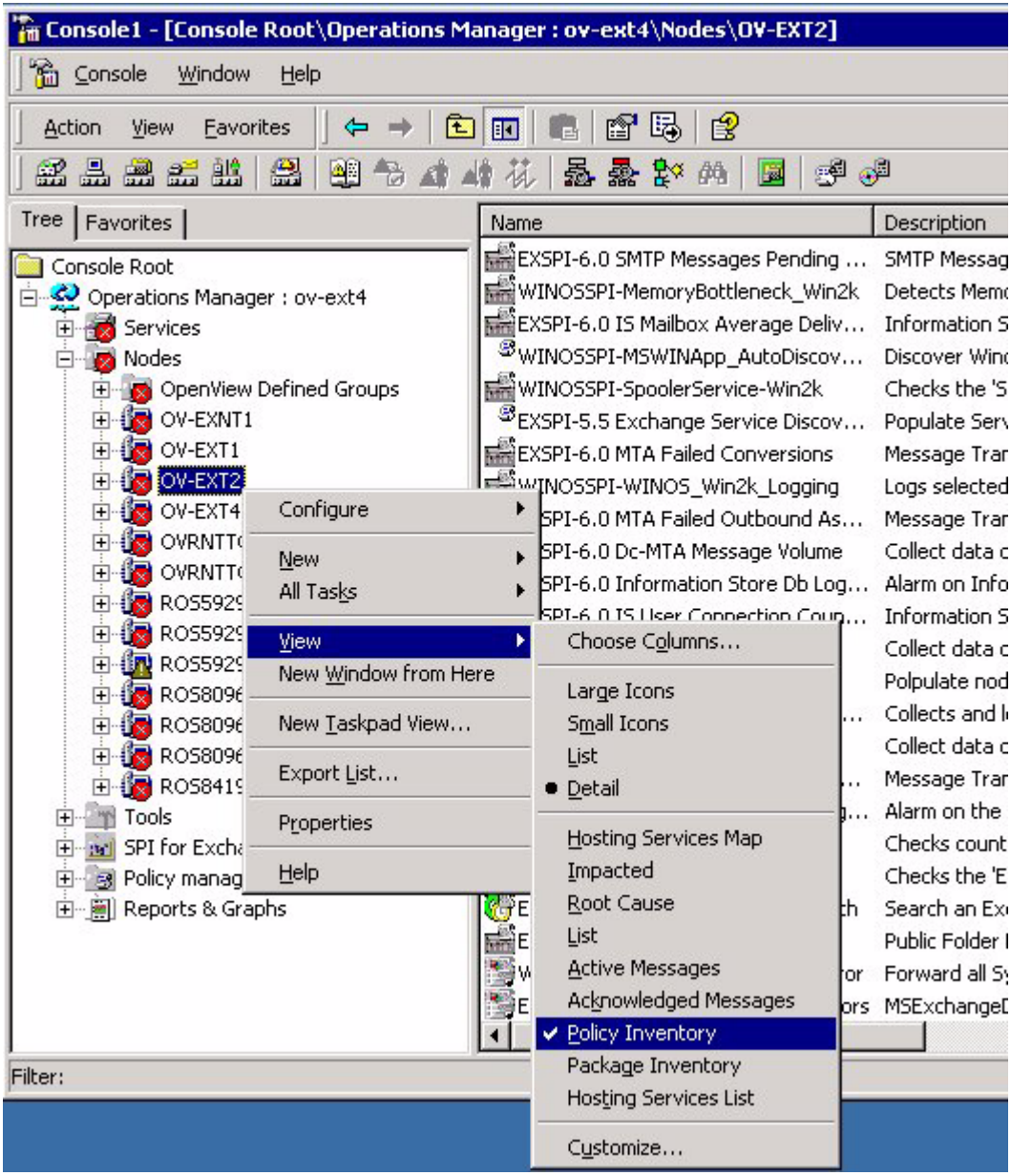
After discovery, the version specific policies in Quick Start are auto deployed.

Select and deploy policies in the Add-Ons and Advanced policy groups, see Chapter 4, Using Exchange SPI policies, reports and graphs for more details.

Task 6: Verify installation results

1. In the OVO Manager console expand the **Nodes** folder.
2. Right-click the node on which to verify deployment and select **View** > **Policy Inventory**.

Figure 28 Policy Inventory for a node



Getting started with Exchange 2000 and 2003 servers

1. Install the HP OpenView Smart Plug-ins CD, and select the SPI for Exchange component.
2. In the OVO console tree select **Nodes**. Right-click, select **Configure Nodes** and check the nodes to manage. Wait about five minutes, as the following occurs on the managed nodes, without user intervention:
   - The **EXSPI-6.0 Exchange Service Discovery** and the **EXSPI Quick Start** policies for 2000 and 2003 servers are auto-deployed to the newly managed nodes. The act of managing the node will cause these policies to be deployed.
   - If Exchange is discovered on the newly managed node the Exchange topology is determined and stored in WMI. This topology is used to populate the Exchange Service Map and SPI for Exchange Views. See the Exchange Service Discovery section below.
   - Any events that require operator action are sent to the active message browser and the corresponding service map nodes.
3. The SPI for Exchange policies are set up out of the box with low thresholds. It is suggested that the operator modify the base line that the SPI for Exchange policies are based on, to make it appropriate for their Exchange base activity. **Note:** Any modification to a threshold on a policy requires that policy is re-deployed.
4. If policies from the **EXSPI Advanced** policy group are desired, deploy the desired policies of this group to the managed node.
5. Configure the End-to-End Message Ping, see “Exchange 2000/2003: configuring and deploying End-to-End Message Ping” on page 118.
6. Deploy the desired **EXSPI Add-ons** policies to the managed node.

Exchange Service Discovery

The Exchange SPI implements an LDAP based Exchange topology discovery. The discovered topology is maintained in the OpenView namespace on the management server or console.

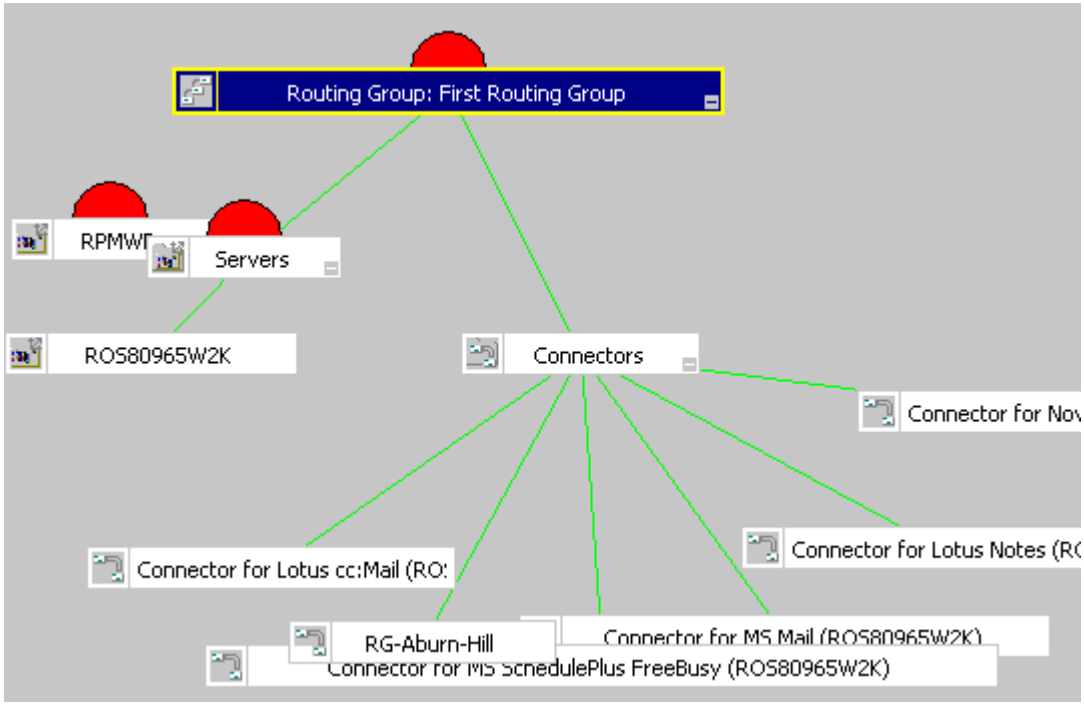
- **How it works**

Exchange 2000 and 2003 topology is discovered by the EXSPI-6.0 Exchange Service Discovery policy, which is automatically deployed to all Windows nodes after they are selected to become OVO managed nodes.

- **Service Map**

The discovered Exchange organization is displayed in the OVO details pane, in various Service Maps.

Figure 29 Service view of one Exchange 2000 routing group

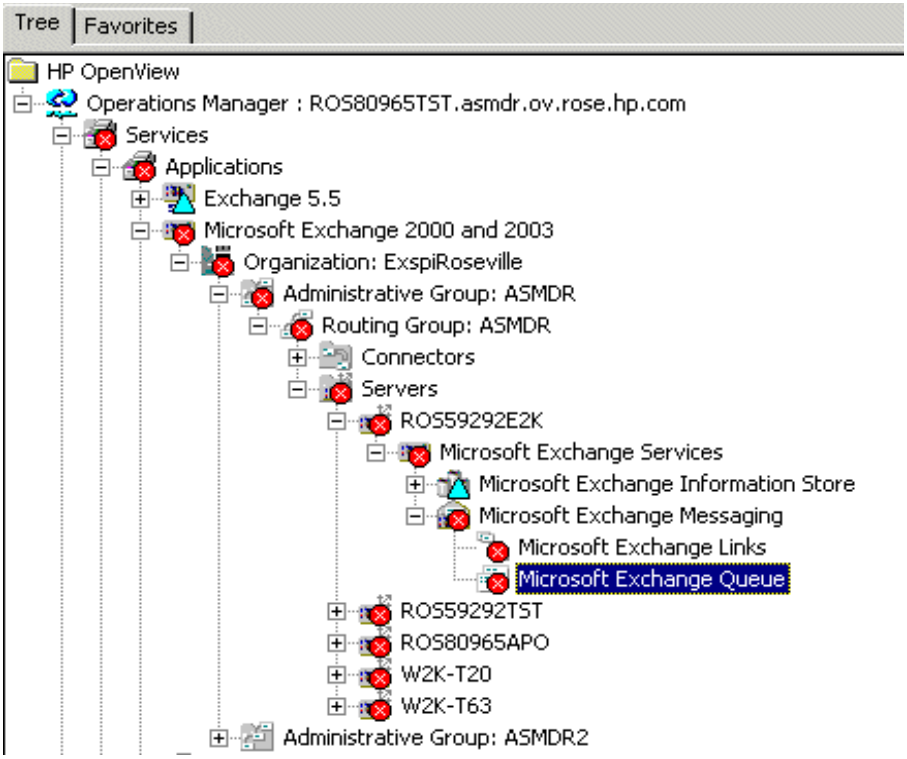


The Organization, with the name given by the Exchange administrator, is located beneath the Exchange folder on the OVO console tree. The hierarchical structure below the organization name are folders mirroring your Exchange organizational structure. In the case of OVO managed nodes, all services are listed by product name.

Identify Exchange servers/services

The Exchange topology is discovered by the Service Discovery policy and the information is visible in the folders labeled **Exchange 6.0 > Services > Applications** on the OVO console tree. By expanding this folder, you see the organization of your Exchange services.

Figure 30 Hierarchy of an Exchange organization



If an Exchange server is listed in the tree with no services listed under it, it is an unmanaged server. If you wish it to be managed by OVO, perform Task 2 “Add Exchange servers to the Nodes folder” on page 35, now.

The **SPI for Exchange** folder below the **Tools** folder on the console tree contains the Messaging and Organizational View folders, see "Snapshot views of the Exchange environment" on page 18.

Suggested daily tasks

Areas to be routinely monitored are:

- The OVO message browser

  Watch for warning and critical messages or multiple alarms. Read the associated instruction text for recommended actions.

  If too many alarms of a particular type are occurring and servers seem to be performing correctly, you likely need to adjust the Exchange SPI measurement threshold policy that is causing the alarm. See the OVO on-line Help for instructions on how to adjust a threshold in a policy.

- The OVO reporting and graphing functionality

  When you become aware of problems with a server, use the OVO reporting function to display additional data, or view historical trends in graphs.

- The Service Map, and Messaging and Organizational Views

  Use the Service Map View to see at a glance the extent of a particular problem indicated by a message, or its root cause, or what Services might be affected and perhaps interrupted. Stay on top of your Exchange Organization by using the Messaging and Organizational views.

Regarding reporting

- The **Quick Start** folders contain schedule policies that perform the data collection/logging work on the managed nodes.
- All SPI for Exchange graphs populate with data that is maintained on the managed node. These graphs are best viewed with 12 to 48 hours of data.
- Most SPI for Exchange reports populate with Service Reporter data after one day. This is due to the fact that the Service Reporter data gathering process needs to run at least once. Trend reports require at least three days of data gathered from the managed nodes. See the Exchange SPI on-line Help to understand which schedule policies are required to populate which reports. Some Advance Reporter Collection policies only run on Saturday/Sunday, so some reports will not have data until after a Saturday/Sunday collection is performed.

3

Exchange 5.5 user privileges

This chapter outlines procedures for creating a service account with special Exchange privileges **for Exchange 5.5** in a Windows NT or Windows 2000 domain.

For Exchange 2000 and 2003, the recommended configuration for the Exchange SPI is:

- running the OVO agent under the user context as Local System.

Should this not be possible in your organization, see Appendix C for details on how to create a privileged service account for Exchange 2000 or 2003 nodes in a Windows 2000 environment.

Service account with special Exchange privileges

This type of account must be set up for the following Exchange 5.5 tools/ policies to deploy successfully:

- MBOX Config tool.
- The Service Discovery policy requires the User name and Password of this service account.
- Many of the policies in the Add-Ons group require the service account user name and password, before they can be deployed.

- Exchange 5.5 > EXSPI Advanced > EXSPI End-to-End Message Ping > EXSPI-5.5 End-to-End Message Ping, schedule policy requires access to the mailboxes created by the tool MBOX Config.
- Exchange 5.5 > EXSPI Advanced > EXSPI Reporter Collection > all policies. These policies use the Mailbox created by the tool MBOX Config, to extract information from the public folder and mailbox tables via MAPI (Messaging Application Programming Interface).

Creating a service account for Exchange 5.5 servers

For Exchange 5.5 servers, before you can deploy the above listed policies and tools, you must create an account for each Windows domain where OVO managed Exchange servers reside. This service account enables the Exchange SPI to access information from the Exchange database.

Because significant configuration details vary according to operating system version, detailed instructions are outlined for the following environments:

- Case 1: For Nodes running Exchange 5.5 in a Windows NT Domain (NT4/Ex5.5)
- Case 2: For Nodes running Exchange 5.5 in a Windows 2000 Domain (W2k/Ex5.5)

Case 1: Exchange 5.5 nodes in a Windows NT Domain (NT4/EX5.5)

Task 1: Create service account (NT4/EX5.5)

1. Log on as Domain Administrator of the domain to which the Exchange server belongs.
2. Select **Start > Programs > Administrative Tools (common) > User Manager for Domain**.
3. Select **User > New User**. In the dialog that appears create a new user as follows:

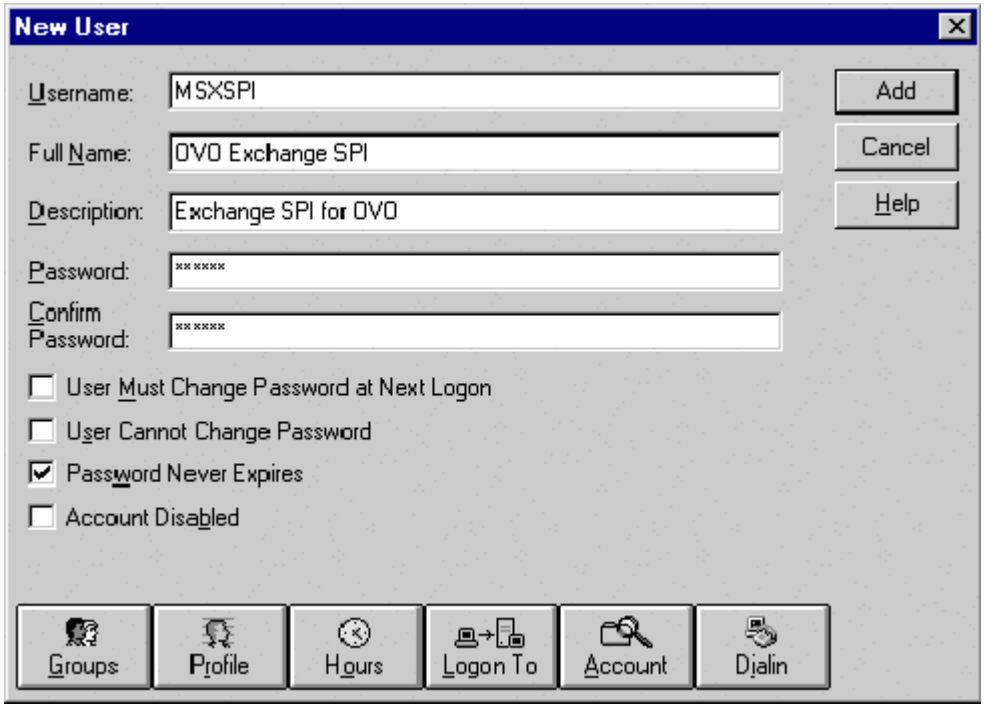
Figure 31 User Manager dialog

Username:	MSXSPI
Full Name:	OVO Exchange SPI
Description:	Exchange SPI for OVO
Password/Confirm Password:	*********

Remember this password; you will need it later to update Tools and Policies.

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

Figure 32 New User dialog

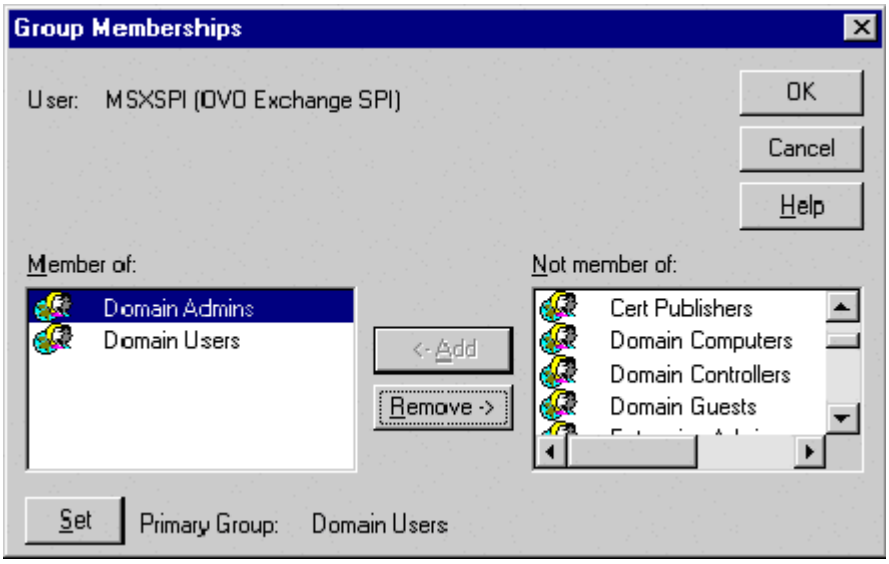


This password must be entered *but will not be authenticated later.*

4 Deselect **User Must Change password at Next Logon** and select **Password Never Expires**.

5 Click the **Groups** button to display the **Group Memberships** window.

Figure 33 Group Memberships window



6 At the right, from the **Not a member of**: box select the **Domain Admins** user, click **Add**, and **OK** to close the **Group Memberships** window.

7 To include necessary information, click buttons in the **New User** window:

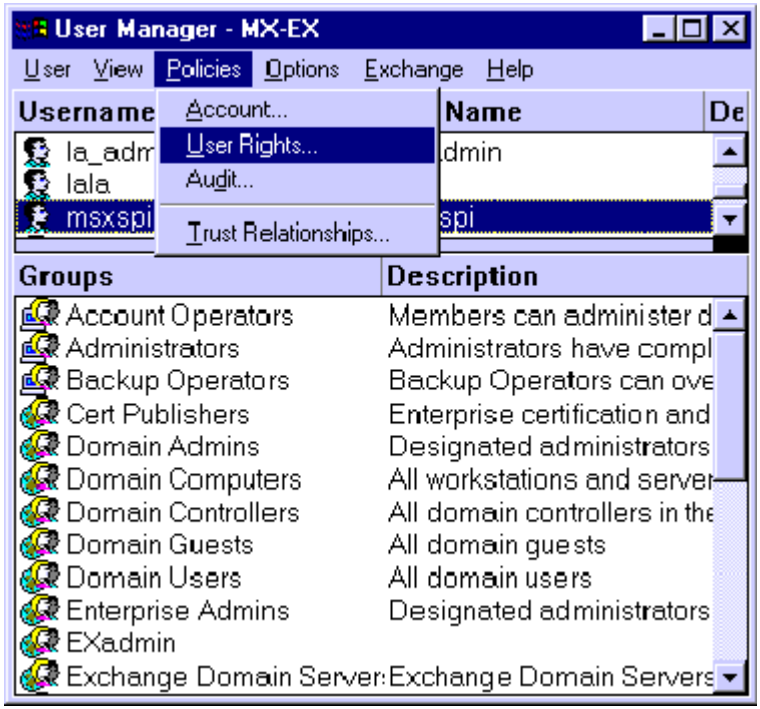
Profile:	No User Profile should be specified.
Hours:	All hours of the day and week should be allowed.
Logon To:	All workstations should be specified.
Account:	Should never expire/should be Global Account.

8 Click **Add** to add this user. (If the **Exchange Add Mailbox** window is displayed, select **Cancel** to close it).

9 Click the **Close** button to close the **New User** window.

10 From the **User Manager** menu bar select **Policies > User Rights....**

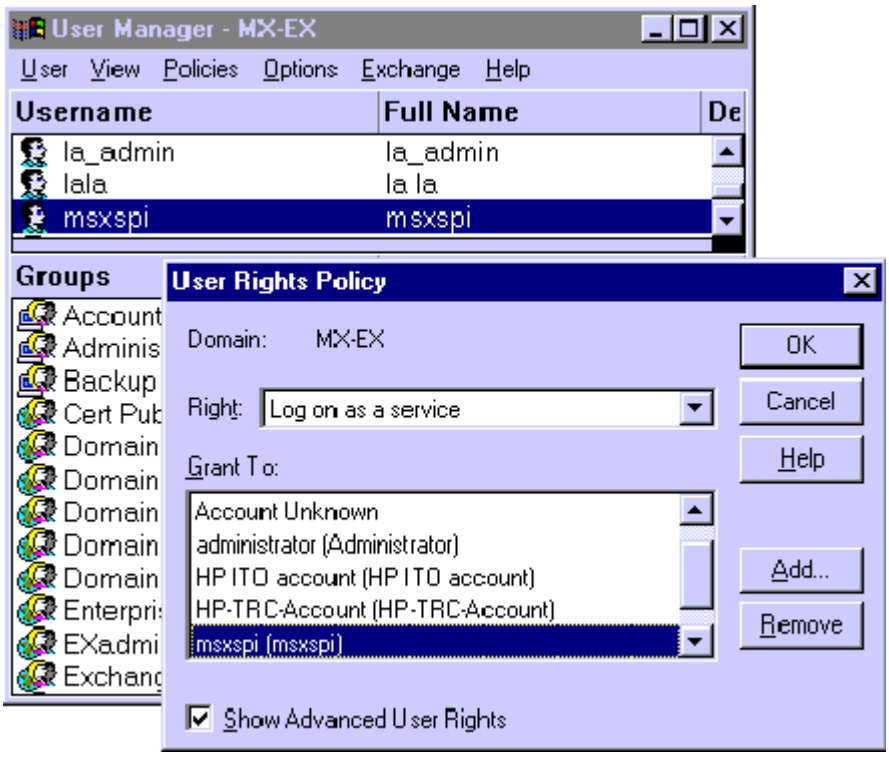
Figure 34 User Manager window



11 Check the **Show Advanced User Rights** checkbox.

12 From the drop-down list select **Log on as a service** in the **Right** field

Figure 35 Selecting Log on as a service for User Rights.

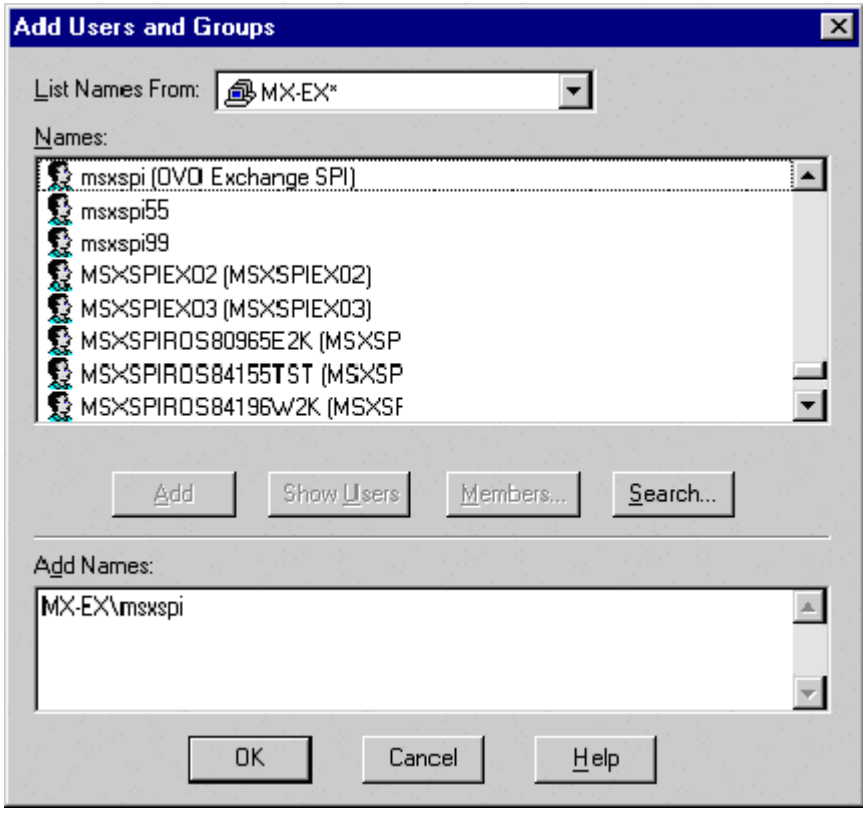


13 Click the **Add** button to open the **Add Users and Groups** window.

14 Click the **Show Users** button.

15 Select the service account just added, click **Add**, then **OK**.

Figure 36 Adding the new service account



16 Repeat steps 12-15 to add the **Profile system performance** right.

Task 2: Grant Exchange access permissions to service account (NT4/EX5.5)

In order for the service account to have access to a mailbox as well as the Exchange IS Public and Private databases, it must have Exchange Admin permissions. Use Exchange Administrator to grant these permissions at the site level.

1 Select **Start > Program > 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**.

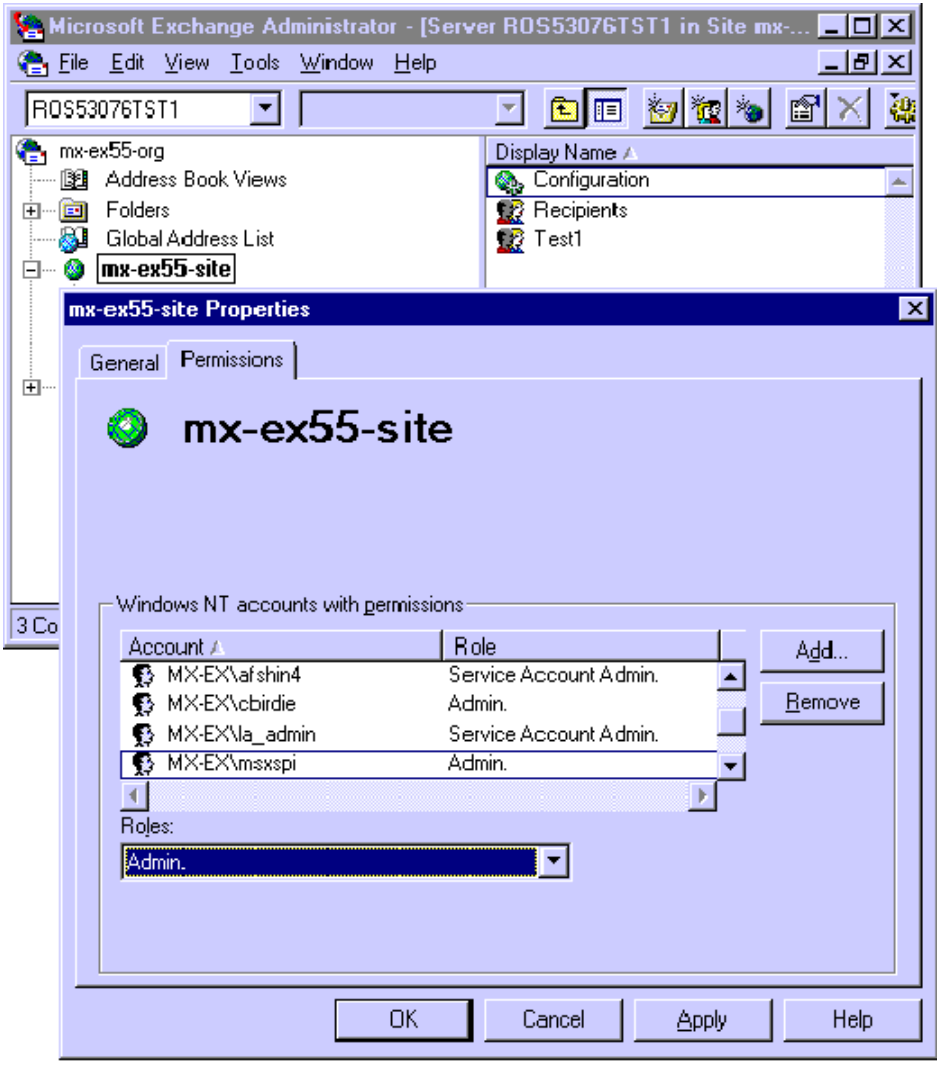
c In the Properties window, select the **Permission** tab and click **Add** to open the **Add Users and Groups** window.

d Select the **MSXSPI** service account previously created, and click **Add**.

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

f Verify the user has the role of **Admin**.

Figure 37 Verifying the User role



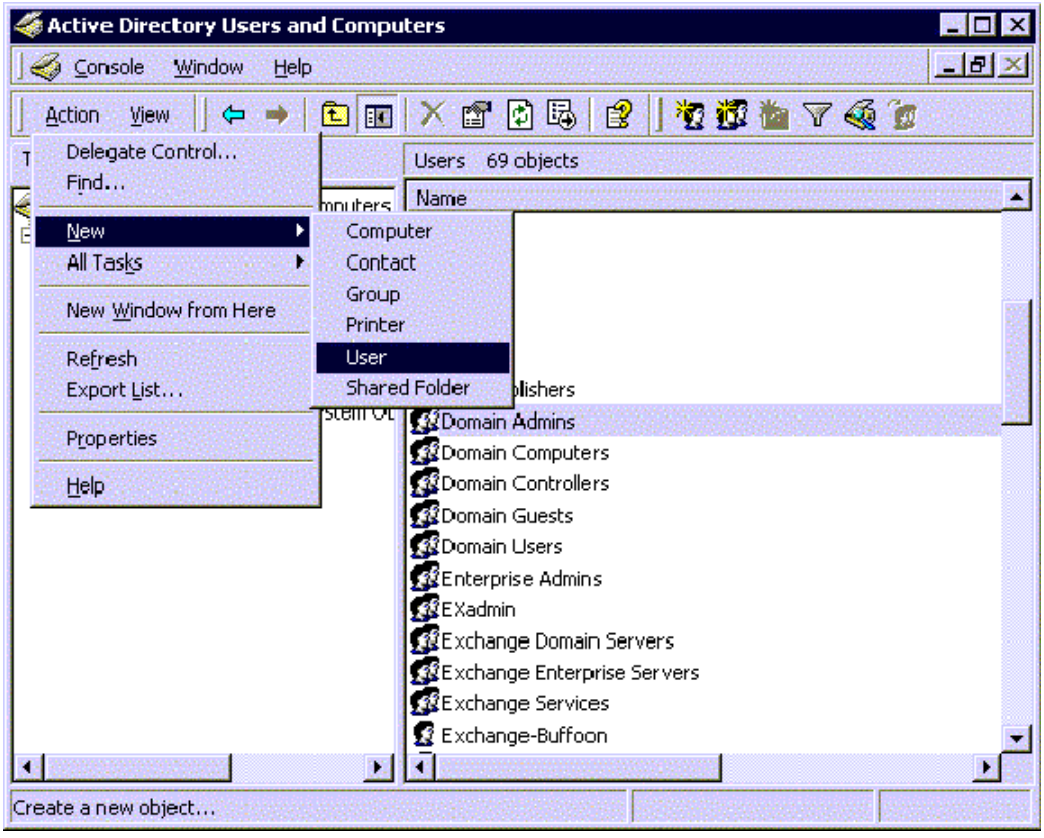
g Click **OK** to save the changes.

Case 2: Exchange 5.5 nodes in a Windows 2000 domain (W2k/EX5.5)

Task 1: Create service account (W2k/EX5.5)

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

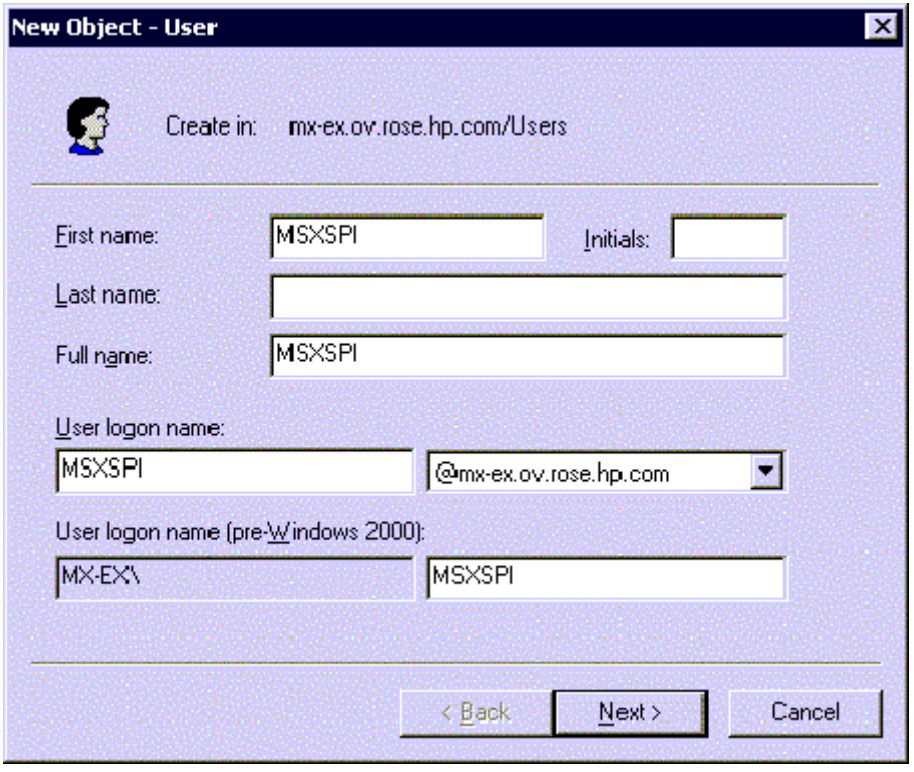
Figure 38 Selecting New User dialog



4 In the dialog box that appears, enter a user name for the service account in the **First Name** and as the **User logon name** fields.

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

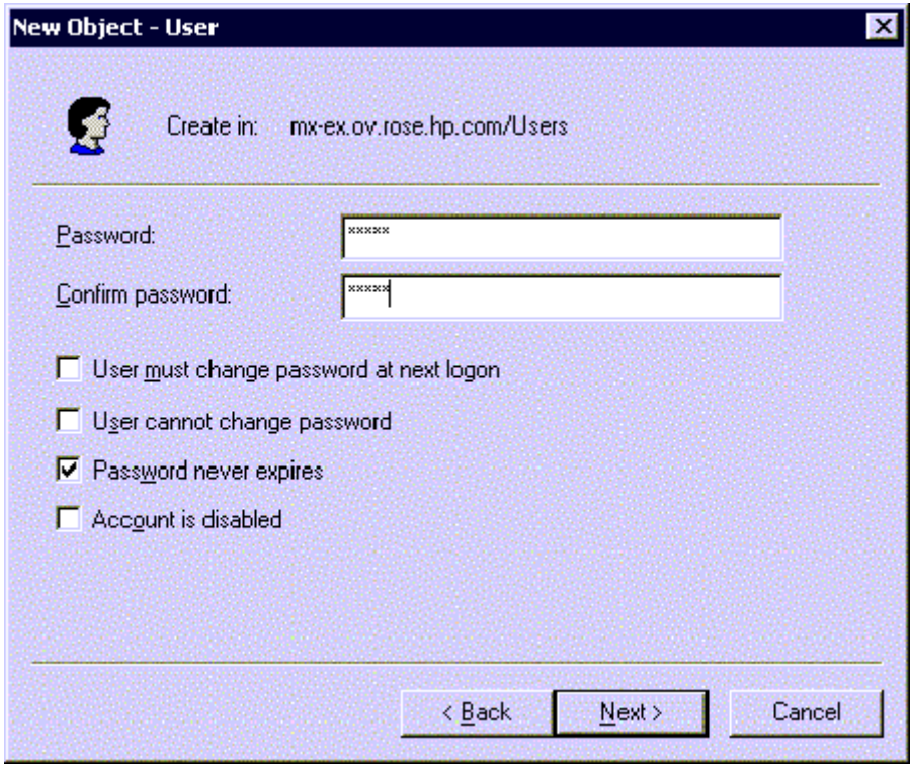
Figure 39 New object dialog



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

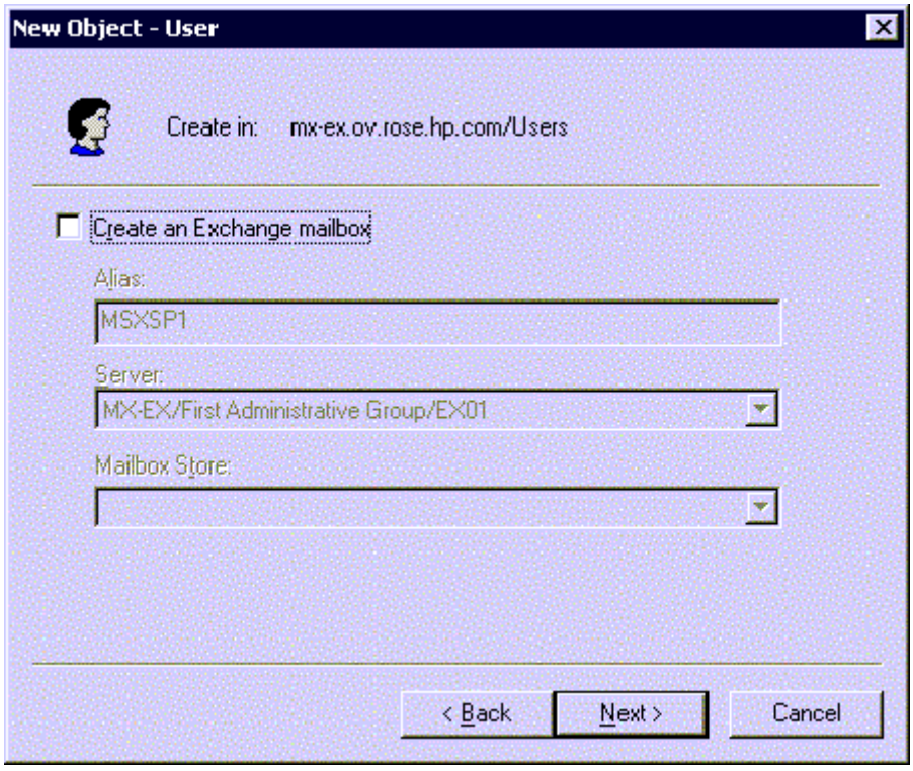
6 Select **Password Never Expires**. Then click **Next**

Figure 40 Setting user privileges.



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

Figure 41 Creating an Exchange Mailbox

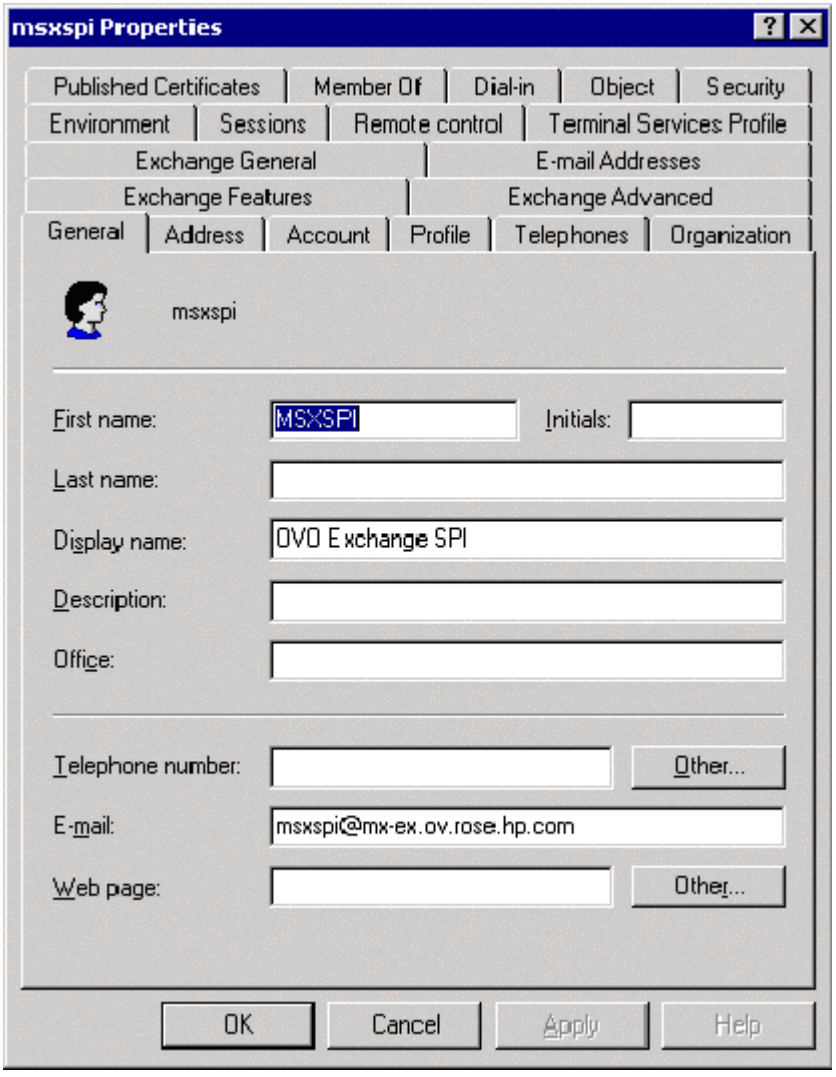


8 In the next dialog, complete creating the user by clicking **Finish**.

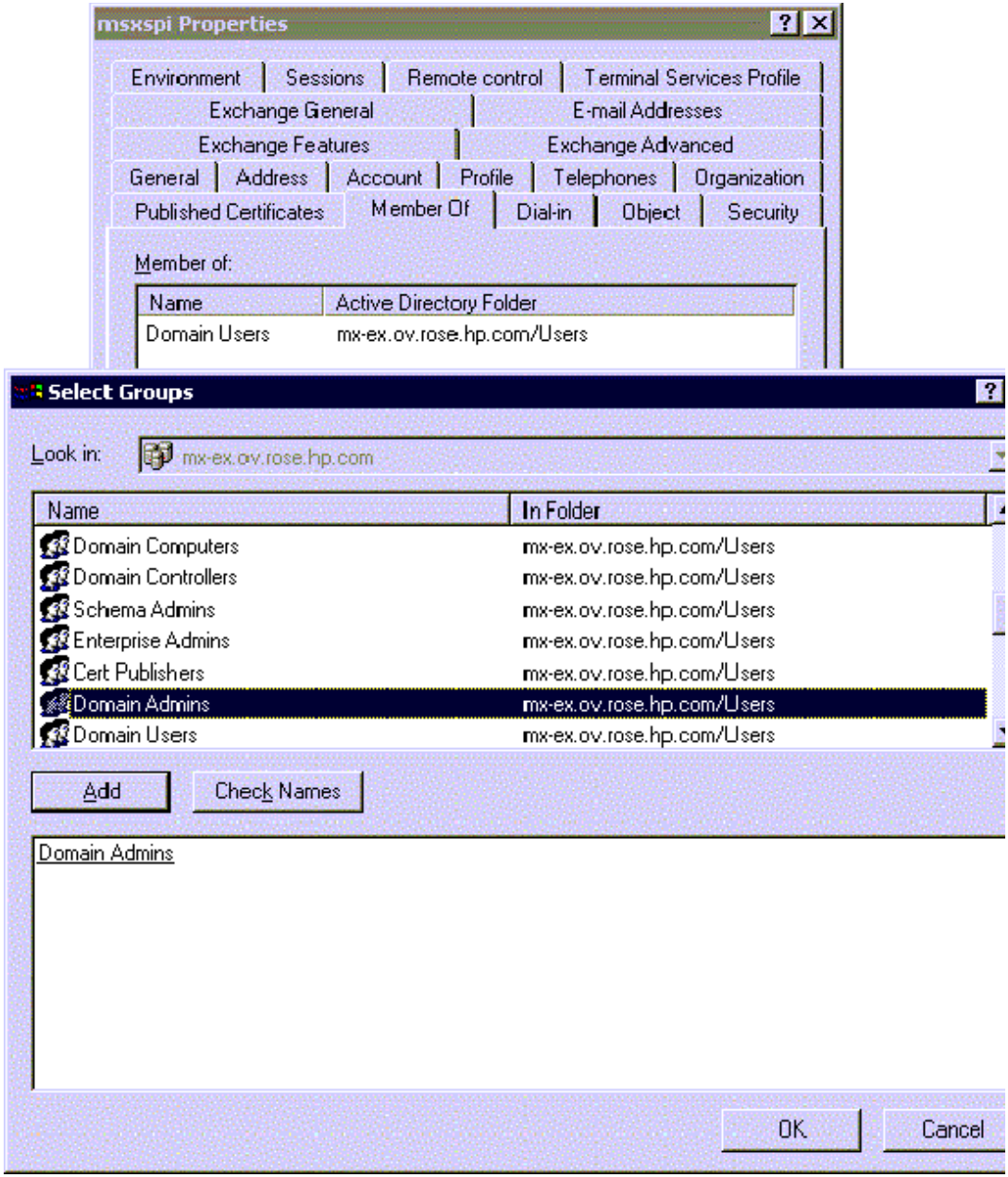
9 You are now back at the **Active Directory Users and Computers** dialog. In the right pane, right-click on the user just created and select **Properties**.

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

Figure 42 Properties dialog



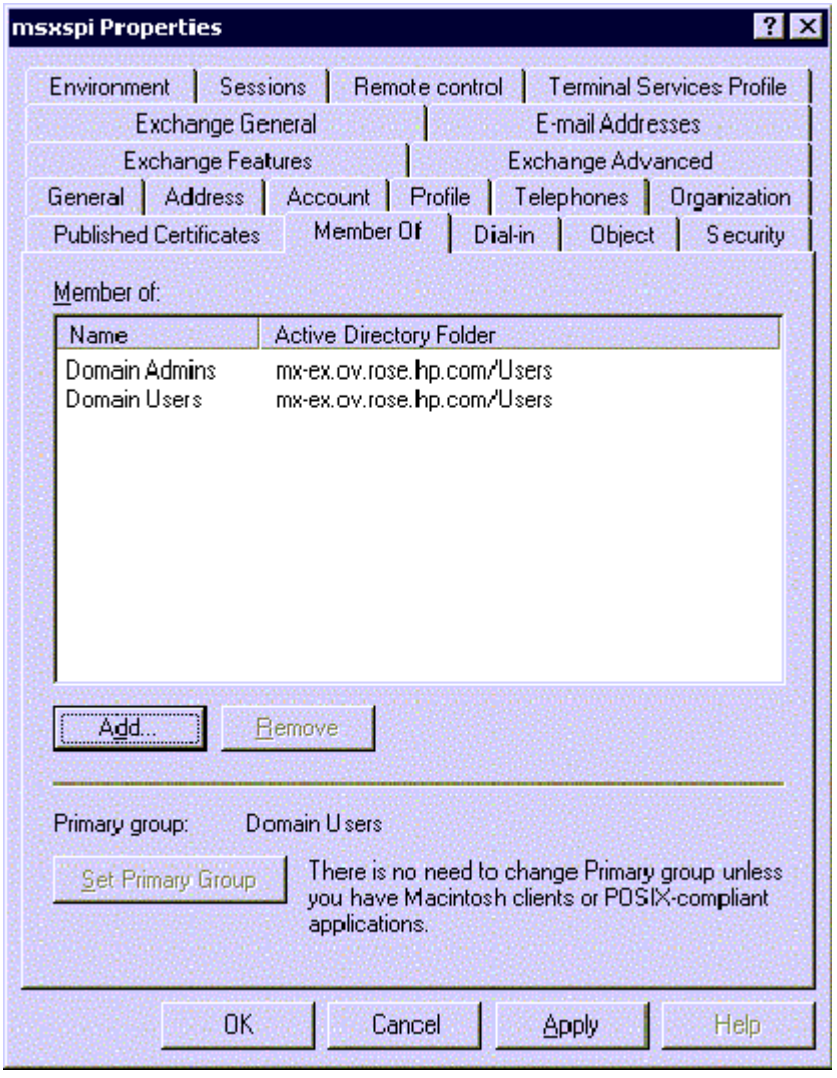
11 Select the **Member Of** tab. Click **Add**.



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

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

Figure 43 New User with new membership status

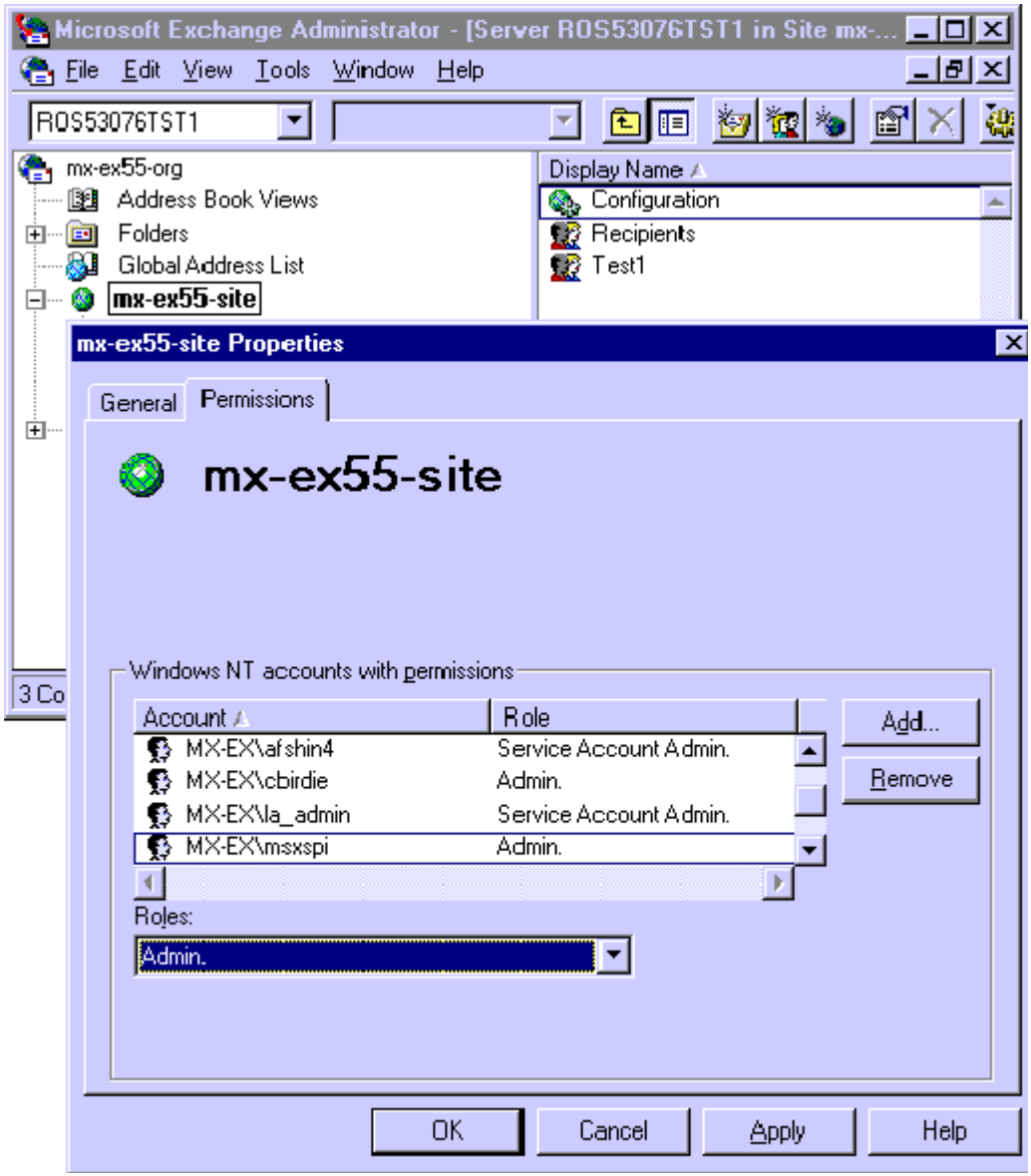


Task 2: Grant Exchange access permissions to service account (W2k/EX5.5)

In order for this service account to have access to a mailbox as well as the Exchange IS Public and Private databases, it must have certain Exchange Admin permissions. Use Exchange Administrator to grant these permissions at the site level.

1. Select **Start > 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 select **Properties**.
   c. In the Properties window, select the **Permission** tab and click **Add** to open the **Add Users and Groups** window.
   d. Select the **MSXSPI** service account just created, and click **Add**.
   e. Click OK to add the user, and close the **Add Users and Groups** window.
   f. Verify the user has the role of **Admin.**

Figure 44 Verifying User roles.



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

4

Using Exchange SPI policies, reports and graphs

This chapter outlines procedures for:

- Deploying the various policy groups
- Using Exchange SPI in high availability environments: clustering support
- Generating Exchange SPI reports and graphs

Using Exchange SPI policies

Important Microsoft Information on the Web: Before you deploy Exchange SPI policies, please refer to the Microsoft article “PRB: Performance Object Is Not Displayed in Performance Monitor” at this URL: http://support.microsoft.com/support/kb/articles/Q248/9/93.ASP.

The article contains information on editing the Windows registry so that performance objects (tracked by Performance Monitor) are always enabled. A disabled performance object could cause an Exchange SPI policy to fail. By following the instructions in the article, you can ensure that policies are able to collect Exchange performance data as expected.

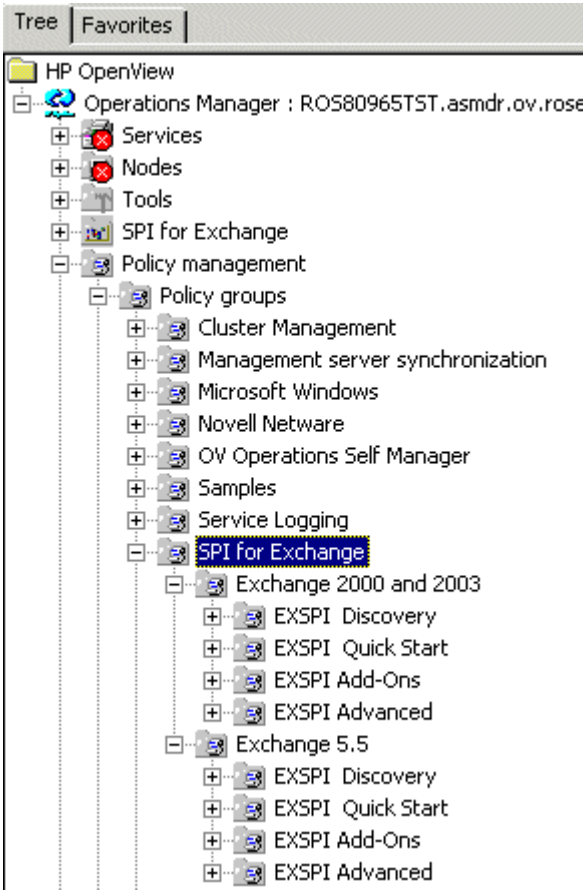
- Some policies in the SPI for Exchange policy groups require that particular software components/services are installed on Exchange server systems before the deployed policies will work.
- For many Exchange 5.5 policies, you must configure a service account with special Exchange privileges, see “Creating a service account for Exchange 5.5 servers” on page 49.
- EXSPI policies should not be deployed to non-Exchange systems.
- Regarding policy names:
  - Policies for Exchange 2003 only, have the prefix EXSPI-6.5
  - Policies for Exchange versions 2000, and 2000 / 2003, have the prefix EXSPI-6.0
  - policies for Exchange version 5.5 only, have the prefix EXSPI-5.5.
- Updating the account information (user name and password) in the policies can be performed using the HP OpenView Operations for Windows tools called **ovpmpwutil**. Detailed procedures for using ovpmpwutil can be found in the Command-line Tools section of HP OpenView Operations for Windows on-line Help.

Use the following tables to decide which policies you want to install. In the Policy Prerequisites table you can see whether or not a policy group/subgroup works with Exchange 5.5 and/or Exchange 2000 and/or Exchange 2003, as well as any required configuration. Policy Group Descriptions show you what type of data/functionality the policy group offers.

Individual policy definitions are documented in the Exchange SPI on-line Help.

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

Figure 45 SPI for Exchange policy location on the console tree



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

Policy Group/ Subgroup	Required Service	Required Manual Configuration
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.

Policy Subgroup	Description
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.

Exchange 2000/2003 policies

Policy group prerequisites for Exchange 2000/2003

Policy Group / Subgroup	Required Service	Required Manual Configuration
EXSPI Discovery	N/A	N/A
EXSPI Quick Start All Policies	N/A	N/A
EXSPI Add-Ons EXSPI cc:Mail Connector	cc:Mail Connector	N/A
EXSPI Chat Service (Exchange 2000 only)	Exchange Chat Service	N/A
EXSPI Conferencing Service (Exchange 2000 only)	Exchange Conferencing Server	N/A
EXSPI Instant Messaging (Exchange 2000 only)	Exchange Instant Messaging Service	N/A
EXSPI Exchange Interprocess Communication	N/A	N/A
EXSPI IS Virus Scan	N/A	N/A
EXSPI Lotus Notes Connector	Lotus Notes Connector	N/A
EXSPI Mailbox	N/A	N/A
EXSPI NNTP	Network News Transfer Protocol	N/A
EXSPI Public Folder	N/A	N/A
EXSPI Site Replication Service	N/A	N/A
EXSPI Transaction Log	N/A	N/A

Policy Group / Subgroup	Required Service	Required Manual Configuration
EXSPI Advanced		
EXSPI Reporter Collection	N/A	N/A
EXSPI Event Log Warnings & Information	N/A	N/A
EXSPI End-to-End Message Ping	N/A	N/A

Policy group descriptions for Exchange 2000/2003

Quick Start policies for Exchange 2000/2003

Policy Subgroup	Description
EXSPI Cluster	Updates the dependencies in the service map, for all nodes which have a dependency on the physical node in the cluster when a failover occurs.
EXSPI Directory Service Access	The policies in this group monitor the activities and cache performance of the MSExchangeDSAccess component, which provides a central communication mechanism between Exchange and the Windows OS Active 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 OpenView 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.

Policy Subgroup	Description
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 SMTP	Executes alarm metrics for problems detected in messages sent to the Simple Mail Transfer Protocol (SMTP) server.

Add-Ons policies for Exchange 2000/2003

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 Lotus Notes Connector	Executes alarms for Lotus Notes Connector metrics. Deploy on all Exchange servers containing the Lotus Notes Connector.
EXSPI Chat Service (for Exchange 2000 only)	Monitors the current client connections to the chat community, showing anonymous connections, authenticated connections, authentication failures, timeouts.
EXSPI Conferencing Service (for Exchange 2000 only)	Monitors current client connections to the server, server load for online data and video conferences, and CPU process time of the T.120 MCU (multipoint control unit) server.
EXSPI Instant Messaging (for Exchange 2000 only)	Monitors current connections using instant messaging service, current subscriptions, and average processor time per instance.
EXSPI Exchange Interprocess Communication	All communication into the Information Store for the POP3, IMAP4, SMTP, HTTP, and NNTP protocols is handled by the Internet Information Service (IIS). IIS receives Internet protocol requests and messages, and passes these requests on to the Information Store. The Exchange Interprocess Communication (EXIPC) layer is the shared memory layer between IIS and the Information Store, often referred to as Epoxy. Exchange SPI policies monitor the performance of the two Epoxy queues: the Client Out Queue Length and the Store Out Queue Length.
EXSPI IS Virus Scan	Exchange SPI monitors the Anti-Virus API performance counters and Windows Event Log informing on the possibility of a virus attack.
EXSPI Mailbox	Monitors mailbox store space usage. Calculates the percentage of space used by the streaming and mailbox databases relative to the total volume of free space. Also checks for dismounted information stores.
EXSPI NNTP	Executes alarm metrics for outbound newsfeed connections that fail.

Policy Subgroup	Description
EXSPI Public Folder	Monitors public folder space usage. Calculates the percentage of space used by the public folder database relative to the total volume of free space. Also checks for dismounted information stores.
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.
EXSPI Site Replication Service	Monitors site replication to verify that synchronization updates are being processed efficiently. Non-zero counters indicate that site replication synchronization is in process. If the values are not decreasing over time a problem may exist with the site replication service or performance of the server. High values are not neccessarily bad, but values not decreasing is cause for concern.

Advanced policies for Exchange 2000/2003

Group: EXSPI Advanced Exchange 2000/2003	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.

Deploying EXSPI Quick Start policies

To receive any information from a managed Exchange server Quick Start policies must be deployed. The Quick Start policy group contains the most basic definitions and rules for scheduling data collecting/graphing, and for generating messages/alerts. This policy group is automatically deployed based on the results of the Exchange Service Discovery, when nodes are selected to be managed by OVO.

For Exchange 5.5 discovery, it is necessary to edit the EXSPI-5.5 Exchange Service Discovery policy to include the user name and password of a service account with special Exchange privileges, see Chapter 3, Exchange 5.5 user privileges for more information.

After Discovery, the version specific policies in the Quick Start group are auto deployed. To deploy this policy group manually:

1. In the left pane of the OVO Manager console expand the **Policy management > Policy groups** folders to view policy groups.
2. Open the **SPI for Exchange** folder and select the correct Exchange version: **Exchange 2000 and 2003,** or **Exchange 5.5**.
3. Open the appropriate Exchange folder, select the **EXSPI Quick Start** policy group, right-click and select **Deploy on....**
4. In the **Deploy policies on...** dialog select all nodes by clicking the check box next to **Nodes**, or select individual nodes by clicking the appropriate checkbox.

Deploying EXSPI Add-Ons policies

EXSPI Add-ons policies monitor Exchange related services, such as Lotus Notes or Internet Mail Services. These policies must be manually deployed. Please see the section "Using Exchange SPI policies" on page 68 for requirements for installing specific policies in the Add-ons group.

To deploy policies in the Add-ons group

1. In the left pane of the OVO Manager console expand the **Policy management > Policy groups** folder to view policy groups.
2. Under **SPI for Exchange** are Exchange 2000 and 2003, and Exchange 5.5 folders. Double click the appropriate Exchange version to view the version specific Exchange SPI policy groups.
3. Double-click **EXSPI Add-ons** and select an add-on policy group, then from the group select individual policies or the entire group. Check policy descriptions in the details pane to verify they are the correct ones (double click to open and see details if necessary), right-click and select **Deploy on....**
4. In the Deploy on... dialog select all nodes by clicking the check box next to **Nodes**, or select individual nodes by clicking each appropriate checkbox.

Deploying EXSPI Advanced policies

Policies in the EXSPI Advanced policy group must be manually deployed. There are three subgroups of policies in the EXSPI Advanced groups:

EXSPI End-to-End Message Ping policy group

These policies enable the Exchange SPI to test network connections between Exchange servers, and collect performance data on message receipt and delivery.

- **For Exchange 5.5:** to configure and deploy the EXSPI-5.5 End-to-End Message Ping see the procedure outlined in "Exchange 5.5: configuring and deploying End-to-End Message Ping" on page 108.

- **For Exchange 2000/2003:** to configure and deploy the EXSPI-6.0 End-to-End Message Ping policies see the procedure outlined in "Exchange 2000/2003: configuring and deploying End-to-End Message Ping" on page 118.

EXSPI Event Log Warnings and Information policy group

- The EXSPI Event Log Warnings and Information policies capture Windows event log text and are generally meant to be deployed for troubleshooting purposes.

EXSPI Reporter Collection policy group

- To deploy EXSPI Reporter Collection policies, please refer to "Using Exchange SPI reports and graphs" on page 92 in this manual, and the SPI for Exchange on-line Help for a listing of all the preconfigured reports offered, with detailed report descriptions, policy prerequisites for deployment, and troubleshooting.

Exchange SPI Clustering support

Using Exchange SPI in high availability environments

The Exchange SPI can be configured to accommodate cluster environments where fail-overs allow uninterrupted Exchange availability.

Synchronized with the cluster environment, Exchange SPI monitoring can be made to switch off for the failed node and switch on for the active node.

For recognizing clustered Exchange instances, Exchange SPI relies on XML configuration files. These files allow the OVO agent to automatically enable instance monitoring on the currently active node after disabling instance monitoring on the inactive node.

The Exchange SPI setup for a cluster environment requires the following steps:

1. Add the nodes to be managed from the OVO Console.
2. Modify, if necessary, the Exchange SPI monitoring configuration file included with the Exchange SPI (`msexchange.apm.xml`).
3. Create the clustered application configuration file (`apminfo.xml`) that associates Exchange SPI-monitored instances (Exchange virtual servers), with their corresponding cluster resource groups.
4. Restart the agent on the managed node.

Task 1: Add the Exchange Cluster nodes to be managed from the OVO Console.

From the **Configure Managed Nodes** dialog box of the OVO Console, add the Exchange cluster nodes to be managed. This brings about the following:

- The Exchange cluster is discovered and the service map is updated with the cluster topology.
- Exchange SPI instrumentation is installed on these nodes.
- Exchange SPI Quick Start policies are deployed to these nodes.

Task 2: Modify the Exchange SPI monitoring configuration file (if necessary)

The Exchange SPI includes a monitoring configuration file, (`msexchange.apm.xml`), which is an XML file that describes the policies that should be cluster-aware.

The (`msexchange.apm.xml` file works in conjunction with the clustered application configuration file (`apminfo.xml`) that you need to create for your Exchange cluster.

The purpose of the Exchange SPI `msexchange.apm.xml` file is to list all the Exchange SPI policies on the managed node, in order that these policies can be disabled/enabled, as appropriate, for inactive/active managed nodes.

The Exchange SPI `msexchange.apm.xml` file is normally ready to use with no configuring. However, if you have renamed any policies, you need to modify the file accordingly. The file is in the **SPI for Exchange** instrumentation directory on the management server. After modifying this file, you need to redeploy the SPI for Exchange instrumentation to the Exchange nodes that are part of the Exchange cluster.

Task 3: Create the clustered application configuration file

`Apminfo.xml` is an XML file that describes the cluster instances (Exchange virtual servers).

`Apminfo.xml`, working in conjunction with the Exchange SPI monitoring configuration file (`msexchange.apm.xml`), allows you to associate Exchange SPI monitored instances (Exchange virtual servers) with their associating cluster resource groups. As a result, when a resource group is moved from one node in a cluster to another node in the same cluster, monitoring stops on the failed node and starts on the new node.

To generate the content of this file:

a. Launch the Exchange SPI Exchange Cluster Configuration tool on an Exchange cluster node, see "Exchange Cluster Configuration tool" on page 84.

b. Use the generated output to construct the `apminfo.xml`.

c Save the completed `apminfo.xml` file on each node in the cluster in this directory:

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

Task 4: Restart the agent on the managed node

After constructing and saving `apminfo.xml`, stop and restart the OVO agent by running the following commands on each node:

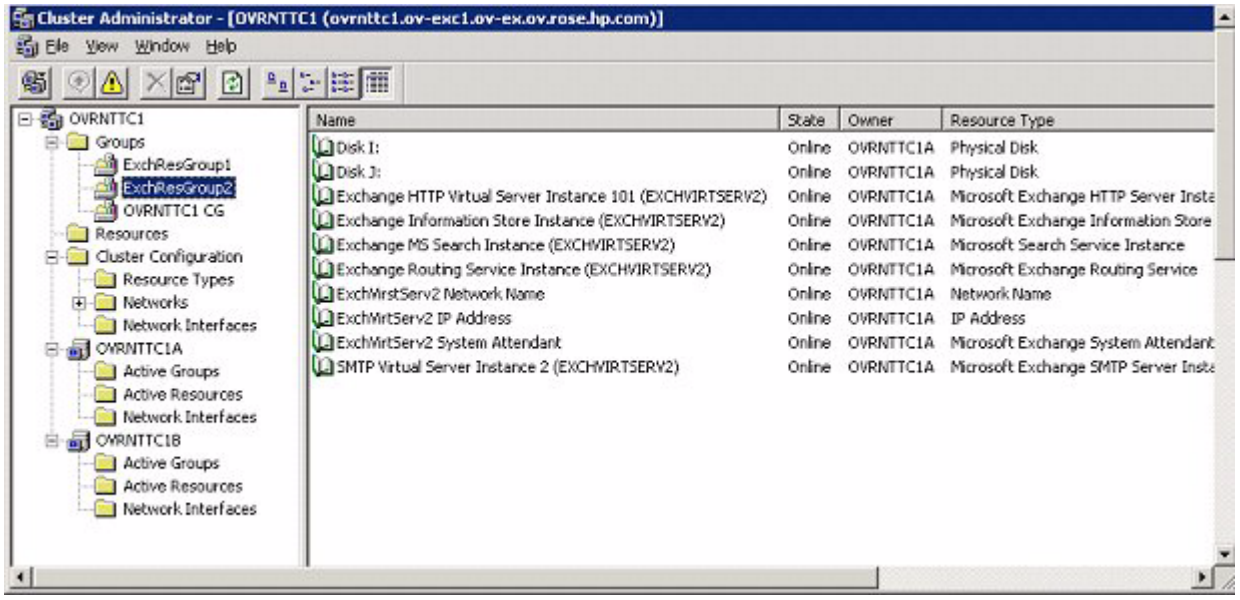
```
opcagt -kill
opcagt -start
```

Example apminfo.xml file

The following is an example apminfo.xml file, where 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 46 Example Exchange resource group



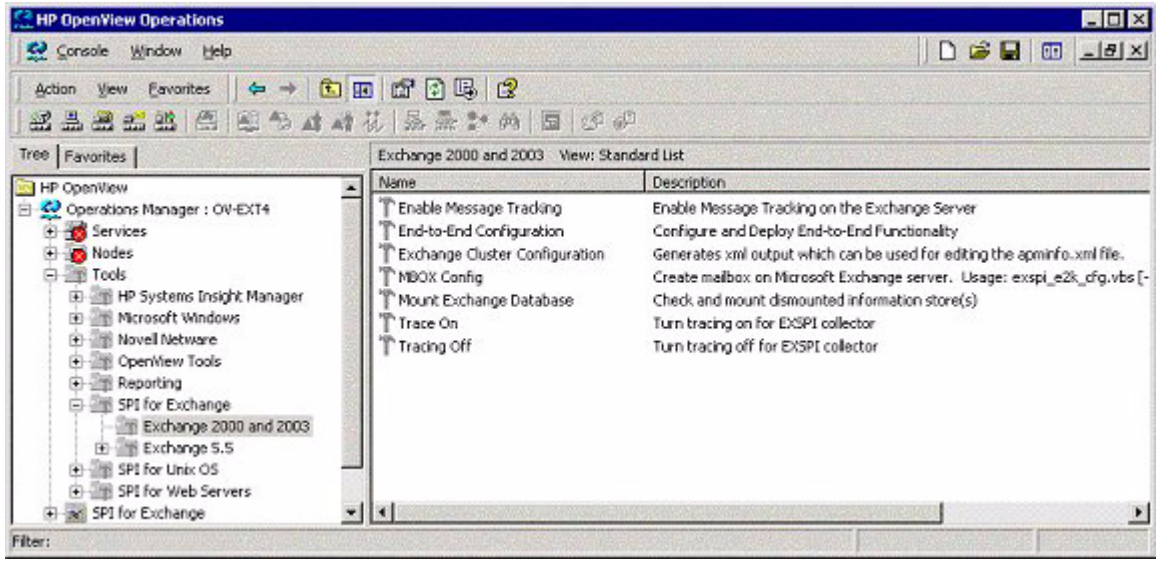
Exchange Cluster Configuration tool

Use the Exchange Cluster Configuration tool to generate the content of the `apminfo.xml` file.

Launch this tool on an Exchange cluster node:

1 In the OVO Manager console expand the Tools > SPI for Exchange > Exchange 2000 and 2003 folder.

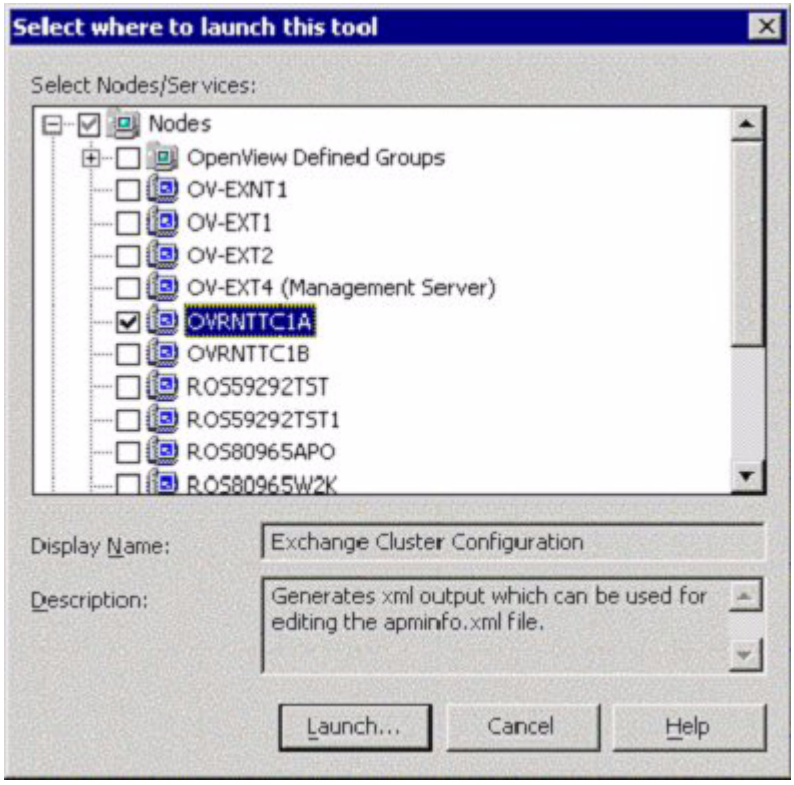
Figure 47 Location of Exchange Cluster Configuration tool



2 In the details pane on the right, double click the Exchange Cluster Configuration tool.

3 Select the Exchange cluster node the tool should launch to.

Figure 48 Select nodes dialog



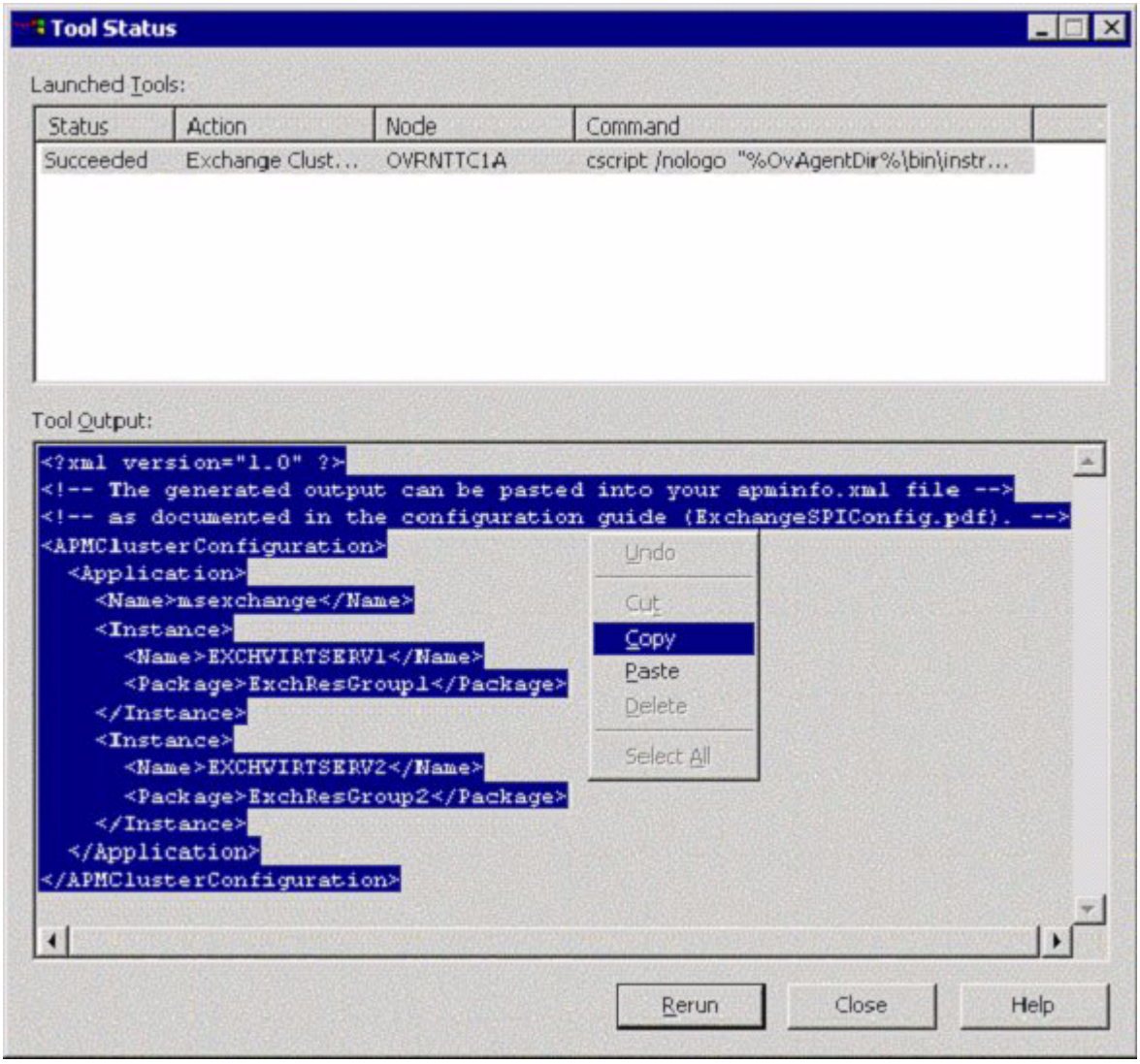
4 Select **Launch** to start the tool running on the selected nodes.

5 Use the generated output to construct the `apminfo.xml`. (Please refer to the section "Create the clustered application configuration file" on page 82).

After constructing and saving `apminfo.xml`, you need to restart the agent on the node, using the following commands:

```
Opcagt -kill
Opcagt -start
```

Figure 49 Example output of Cluster Configuration tool



Data Collection on virtual servers

In order for reports and graphs to show data for any nodes, appropriate data collection policies need to be deployed to those nodes. See the section "Using Exchange SPI reports and graphs" on page 92.

Run the **Enable Message Tracking** tool on all nodes in the cluster before deploying the **EXSPI 6.0 Dc-TrackLog Data** policy, so that the tracking log reports will generate. The tool must run on the physical nodes of a cluster where the Exchange virtual server is running.

Seeing virtual servers in reports and graphs

The Exchange SPI will show Exchange virtual servers in reports and graphs as though they were physical Exchange servers.

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

Using Exchange SPI, End-to-End Message Ping can be configured on Exchange clusters.

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 on. 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. Please see "Configuring Exchange SPI End-to-End Message Ping" on page 107.

Exchange Cluster Service Map

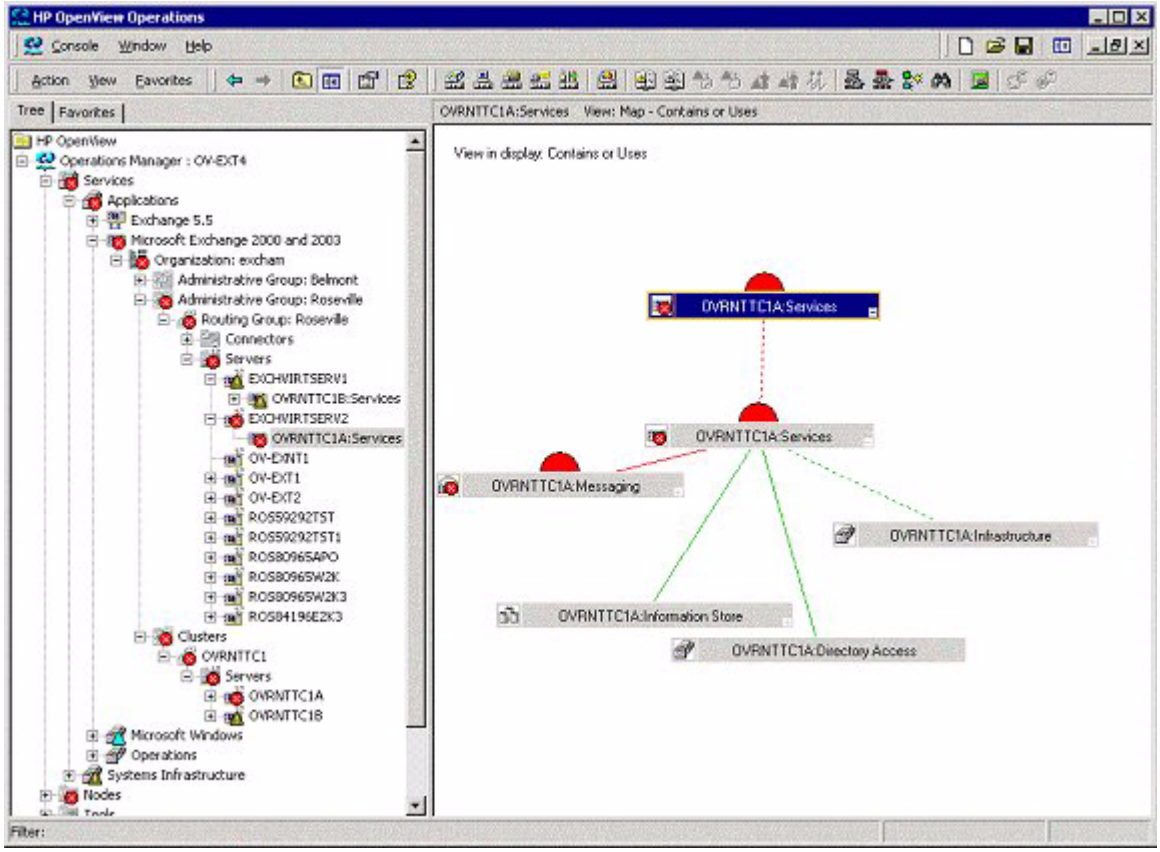
Exchange clusters are represented in the Service Map, and Service map nodes will be created in the service map for each Exchange virtual server in a cluster. Since the cluster is properly modeled in the service map, Exchange SPI instrumentation and Quick Start policies are auto-deployed to all managed 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 up to the correct Virtual Exchange Server virtual node.

Figure 50 Service Map illustrating clustering support



In the example above, there are two Virtual Exchange servers: EXCHVIRTSERV1 and EXCHVIRTSERV2, hosted on physical nodes OVRNTTC1B and OVRNTTC1A. A message is received at hosted-on service OVRNTTCLA:Queue, and via dependencies, status and messages are seen under Virtual server EXCHVIRTSERV2.

What happens during a failover:

When a failover happens, dependencies to the failed node will be removed and replaced with new dependencies to the newly active node. For example, if EXCHVIRTSERV1 moves from OVRNTTC1B to OVRNTTC1A, the dependencies to OVRNTTC1B will automatically be removed and will be replaced with a new set of dependencies to OVRNTTC1A..

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 as part of the Quick Start policy group).

Using Exchange SPI reports and graphs

Data collection for reports and graphs

Exchange SPI reportand graph generation requires that you complete the following:

- Deploy the Quick Start policy group for data collection policies (if not automatically deployed).
- Deploy relevant data collection policies from Add-Ons policy group, for example, deploy EXSPI-6.0 Dc-Instant Messaging if you are interested in gathering data from Instant Messaging services.
- Configure and deploy Exchange SPI Reporter Collection policies in the EXSPI Advanced group (deploy Mailbox policies to Mailbox servers and Public Folder policies to Public Folder servers).

In order to collect data for reports and graphs, the data collection schedule policies for any particular service need to be deployed.

All policies in the Quick Start policy group are deployed automatically after discovery. Data collection policies in the Add-Ons and Advanced policy groups need to be deployed manually.

Location of data collection policies

Quick Start policy group (usually auto-deployed to all managed nodes):

EXSPI General Data Collection

EXSPI Information Store

EXSPI Message Transfer Agent

EXSPI Services and Processes

Add-Ons policy group (only deploy if component is installed):

EXSPI Chat Service (Exchange 2000 only)

EXSPI Conferencing Service (Exchange 2000 only)

EXSPI Instant Messaging (Exchange 2000 only)

EXSPI Site Replication Service

EXSPI Transaction Log

Advanced policy group:

EXSPI End-to-End Message Ping

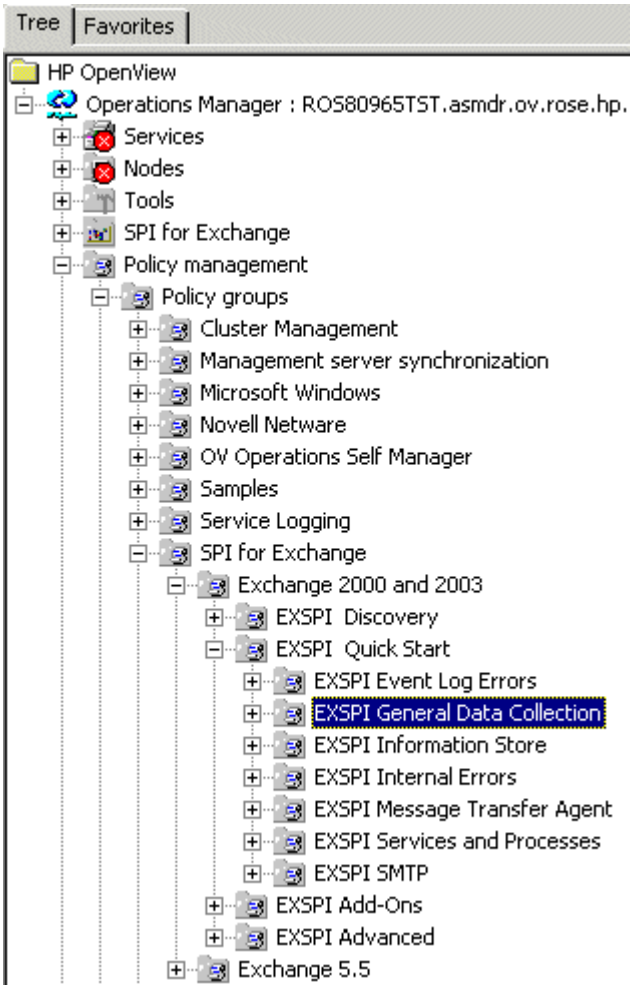
EXSPI Reporter Collection

Deploying policies

To deploy policies manually:

1 Locate the desired policies in the **Exchange 5.5** or **Exchange 2000 and 2003** folder.

Figure 51 Location of Exchange SPI General Data Collection policies for Exchange 2000 and 2003



2 Select in the details pane all the policies to be deployed.

3 Right click, select **All Tasks > Deploy on....**

4 Select the nodes that the policies should be deployed on.

5 Confirm the selection by clicking **OK**.

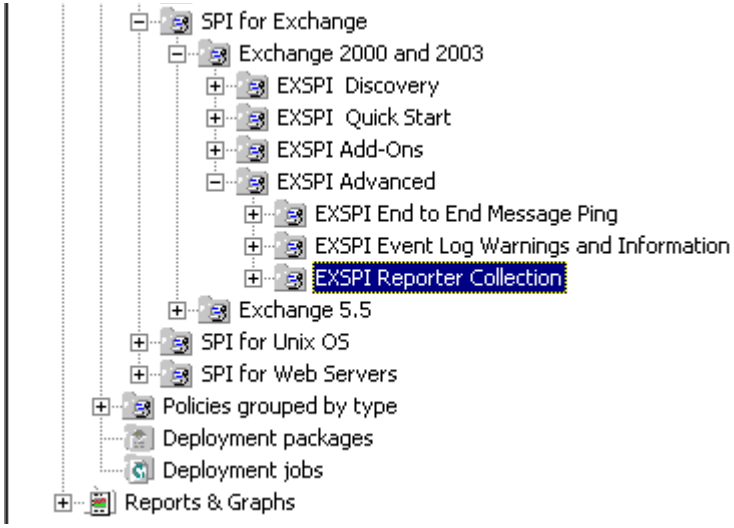
Configuring and deploying Reporter Collection policies

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

The following steps are outlined:

- Create Mailboxes.
- For Exchange 5.5: modify the EXSPI Reporter Collection policies to include service account user name and password.
- Deploy Reporter Collection policies.
- Enable message tracking.

Figure 52 Exchange 2000/2003 Reporter Collection policies location



Task 1: Create mailboxes

See the procedure “Create mailboxes” on page 108.

Task 2: For Exchange 5.5: 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.

To edit Exchange 5.5 Reporter Collection policies:

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. See "Service account with special Exchange privileges" on page 47.
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** or **Exchange 2000 and 2003** > **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**.
5. Other Reporter policies are deployed to servers depending on whether they host mailboxes or public folders. To check this on Exchange 2000 or Exchange 2003, run the Exchange System Manager, root to the Server

level and look in each storage group to determine if there is any mailbox or public store located there. If there are any of either, then the appropriate policies need to be deployed to that server in the following steps.

6 For servers which host mailboxes, select the **Dc-TrackLog Data**, **Dc-Mailbox IS Sum Data** (for Exchange 5.5 **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**.

7 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-6.0/5.5 Dc-TrackLog Data collection policy. This policy must be deployed to all appropriate managed nodes.

Before deploying EXSPI 6.0/5.5 Dc-TrackLog Data collection policy you need to enable message tracking on your Exchange servers.

Enabling message tracking on Exchange 5.5 Servers

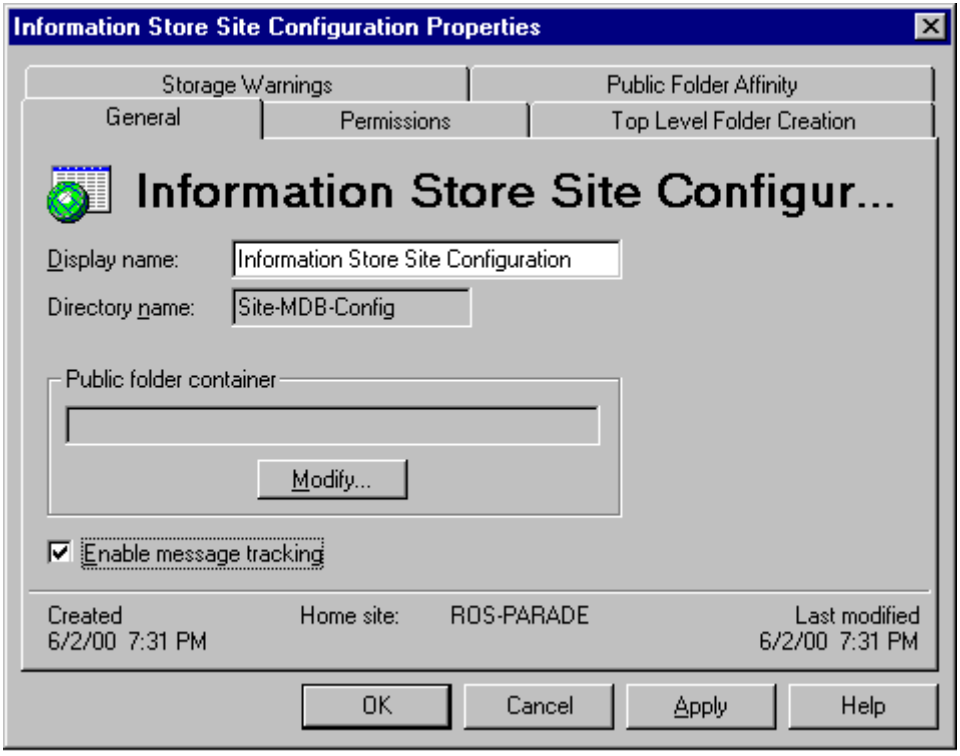
1 Select **Start** > **Programs** > **Microsoft Exchange** > **Microsoft Exchange Administrator**.

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

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

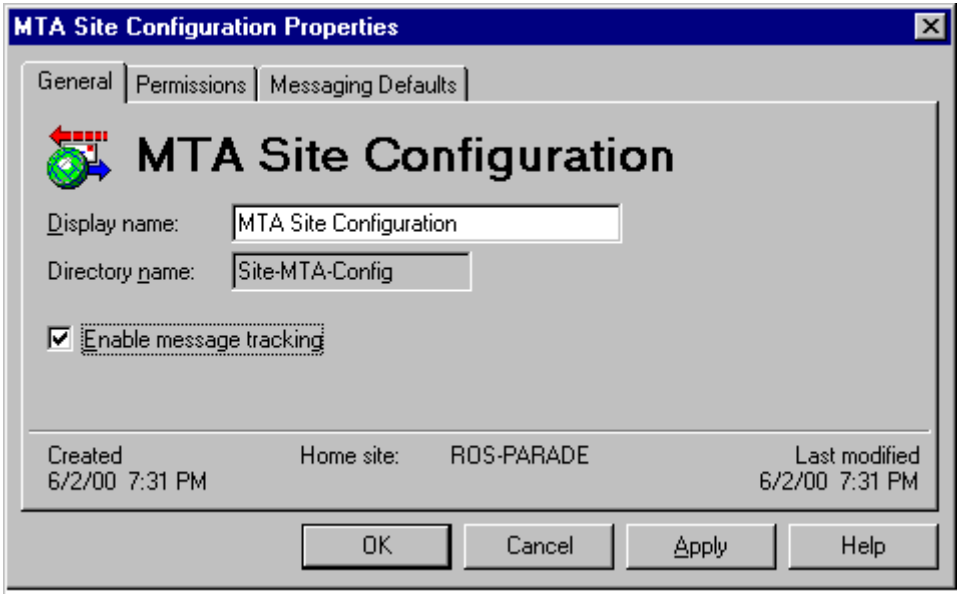
4 In the **Information Store Site Configuration Properties** dialog, check **Enable message tracking**, and select **OK**.

Figure 53 Information Store Site Configuration dialog



5 Repeat steps 3 and 4 for MTA Site Configuration.

Figure 54 MTA Site Configuration dialog



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 press **OK**.

Enabling message tracking on Exchange 2000 or Exchange 2003 servers

1 In the OVO Manager console expand the **Tools** > **SPI for Exchange** > **Exchange 2000 and 2003** folder.

2 In the details pane on the right, double-click the **Enable Message Tracking** tool.

3 Select the servers the tool should launch on.

4 Select **Launch** to start the tool running on the selected nodes.

5 Enter the user name and password of an Exchange administrator.

Time Interval before generation of reports and graphs

Exchange SPI reports and graphs will not be 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/graphs to populate. Where a report/graph type requires data from a Sat/Sun collection, those reports/graphs will require a weekend to pass.

The Transaction Log Statistics report takes 2 days to process.

Exchange SPI graphs

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

Exchange 2000/2003 graphs

The **Exchange 2000/2003** graphs are organized in the following categories:

Directory Service Access

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.

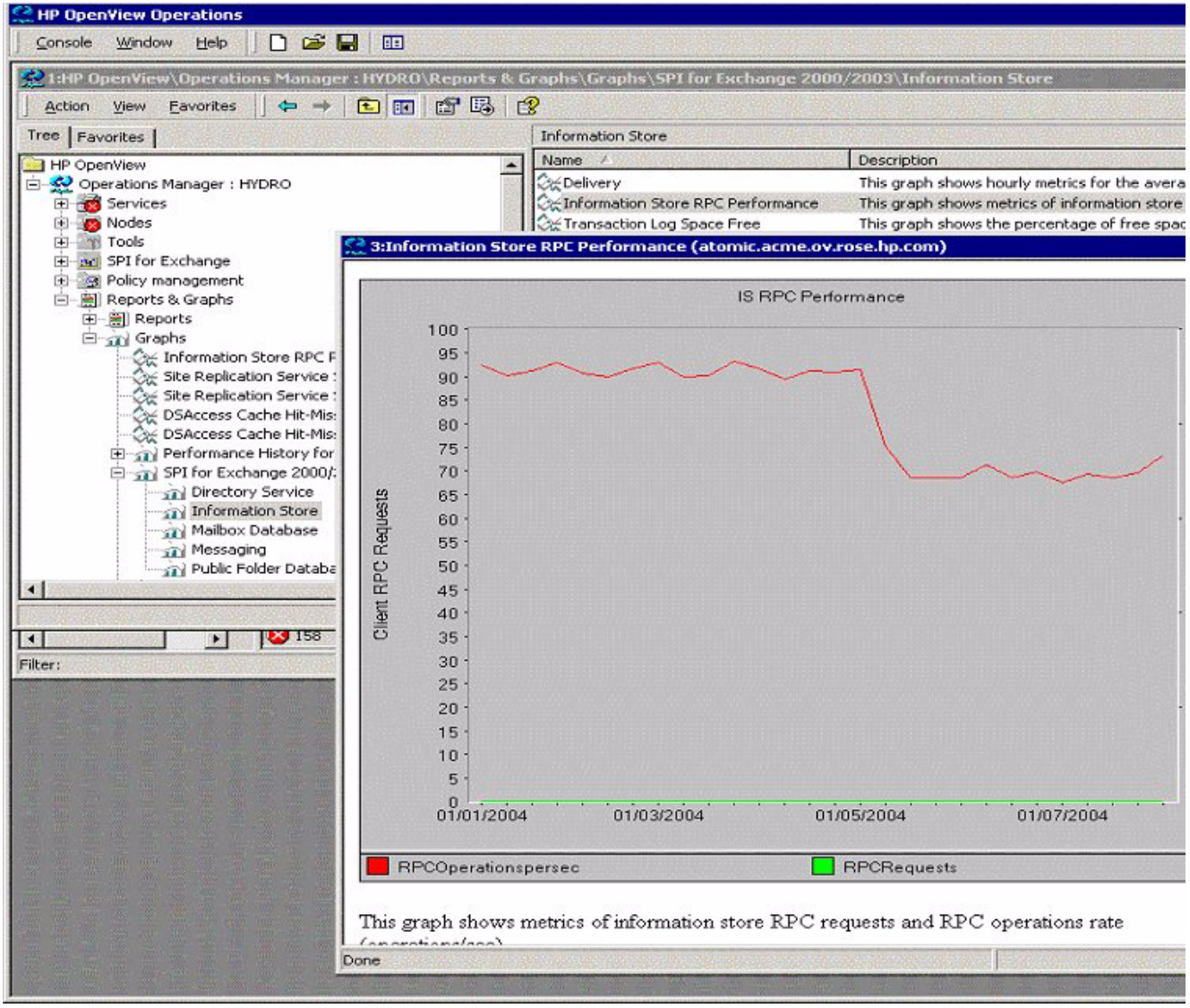
Site Replication Service Space Used: This graph shows Site Replication Service space usage on the Exchange server

Information Store

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

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

Figure 55 Example Information Store RPC Performance graph



Transaction Log Space 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.

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

Messaging

Queues: This graph show Exchange server queue lengths.

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

SMTP Volume: This graph shows SMTP Volume on the Exchange server (for Exchange 2000/2003 only).

SMTP Queues: This graph shows SMTP Server queues on the Exchange server (for Exchange 2000/2003 only).

Mailbox Database

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

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

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

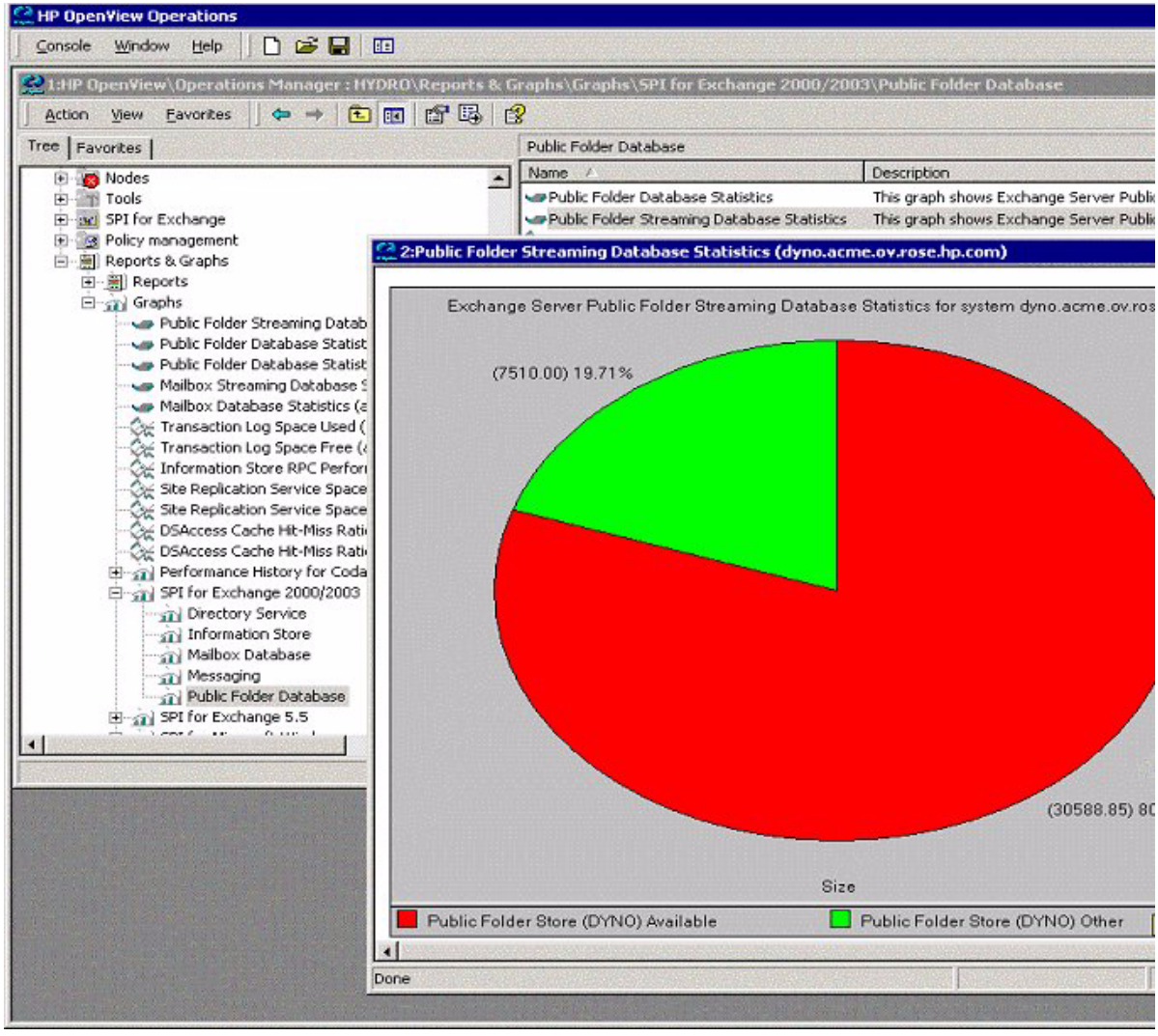
Mailbox Usage: This graph shows Exchange server Mailbox usage.

Public Folder Database

Public Folder Database Statistics: This graph shows Exchange server Public Folder store database statistics.

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

Figure 56 Example Public Folder Streaming Database Stats graph



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

Public Folder Volume: This graph shows Exchange server Public Folder volume.

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.

Displaying a graph

1. In the console tree, open the folder **Reports and Graphs > Graphs > SPI for Exchange 2000/2003** or **SPI for Exchange 5.5.**
2. Select a category of graph on the console tree, then select a graph from the list in the details pane and double click.
3. In the **Display graph** dialog, select desired Exchange servers from the Nodes display, and the date range you wish for the graph. Check the box if you wish the data for the graph to be periodically updated.
4. Click **Finish** and the graph displays.

To enable data collection for these graphs, corresponding data collection policies in the Quick Start, Add-Ons, and Advanced policy groups need to be deployed.

5

Configuring Exchange SPI End-to-End Message Ping

This chapter outlines procedures for:

- Configuring and deploying End-to-End Message Ping to determine SLA performance for Exchange 5.5 servers
- Configuring and deploying End-to-End Message Ping to determine SLA performance for Exchange 2000 and Exchange 2003 servers

Exchange 5.5: configuring and deploying End-to-End Message Ping

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.

The procedure to configure and deploy the EXSPI End-to-End Message Ping involves the following tasks:

1. Create a service account with special admin privileges, see "Creating a service account for Exchange 5.5 servers" on page 49.
2. Create a mailbox for the service account on every targeted Exchange server.
3. Set up the server connections to test message delivery and receipt.
4. Set up the Exchange SPI Message Ping alarms by configuring server pair thresholds.
5. Modify the EXSPI End-to-End Message Ping policy to include the service account user password.
6. Deploy the Configuration file and the EXSPI End-to-End Message Ping policy.

Task 1: Create a service account with special admin privileges

See "Creating a service account for Exchange 5.5 servers" on page 49.

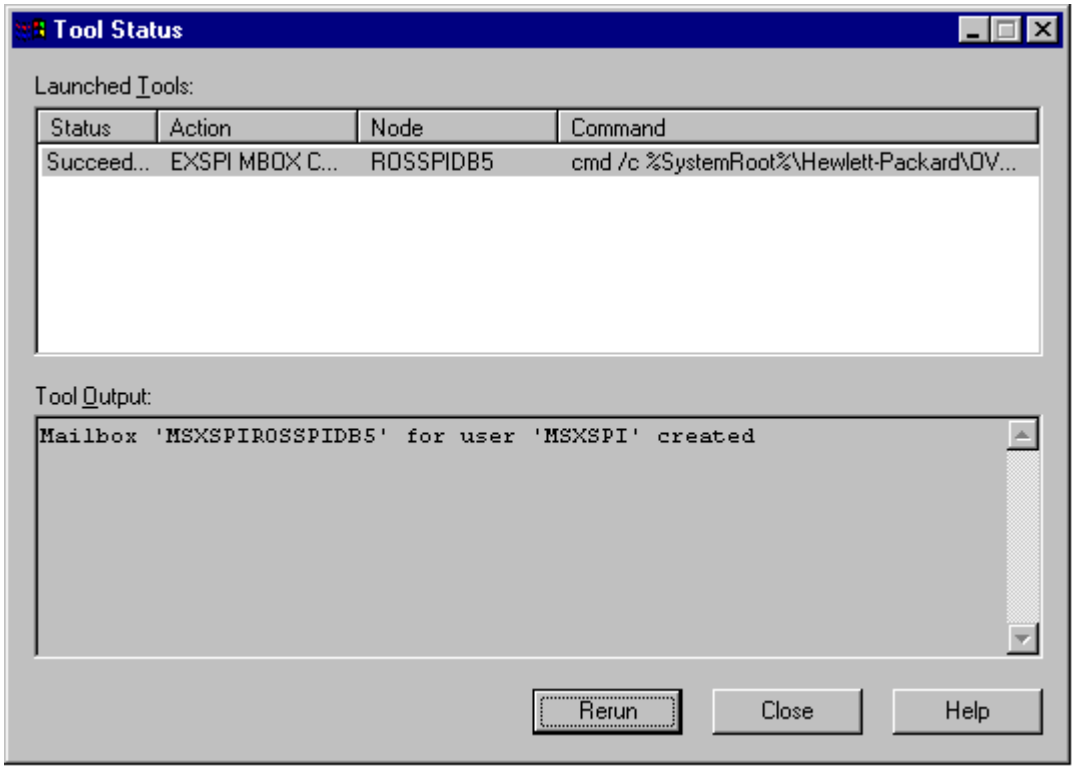
Task 2: Create mailboxes

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

1. In the OVO Manager console expand the **Tools** > **SPI for Exchange** > **Exchange 5.5** folder.
2. In the details pane on the right, double-click the **MBOX Config** tool.
3. Select the servers the tool should launch on.
4. Select **Launch** to start the tool running on the selected nodes.

5 When prompted, enter 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, select **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 # _____#

Definitions of terms:

- **Source Server** (required) — The server that the ping originates from. Each server where Exchange SPI is distributed has the same file, so 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 has not

exceeded the timeout interval. A Failed/Timedout message occurs, therefore, 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 OpenView 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.

To edit the policy:

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 End-to-End Message Ping** group.
3. In the right pane right-click the **EXSPI-5.5-End-to-End Message Ping** policy and select **All Tasks** > **Edit**.

4 In the dialog that appears, confirm or enter the service account user name (MSXSPI), check the **Specify Password** check box, and enter 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 OVO Manager console 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 select **Deploy on....**

4 In the **Deploy policies on...** dialog, 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 Exspi executable to the Metric 1002 for End-to-End Message Ping

The executable **exspi_e55.exe** 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 Service Level Agreements (SLA) for the turnaround-time of a mail time are met. The executable passes a message back to the "Measurement Threshold" Policy to match on 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 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.
- In addition, 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.

Exchange 2000/2003: configuring and deploying End-to-End Message Ping

The EXSPI End-to-End Message Ping procedure requires the following steps:

- Create/specify a mailbox for each source Exchange 2000/2003 server where the policy will be deployed.
- Run the Exchange SPI End-to End Configuration wizard to create Service Level Agreement configurations for all managed Exchange 2000/2003 servers.

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

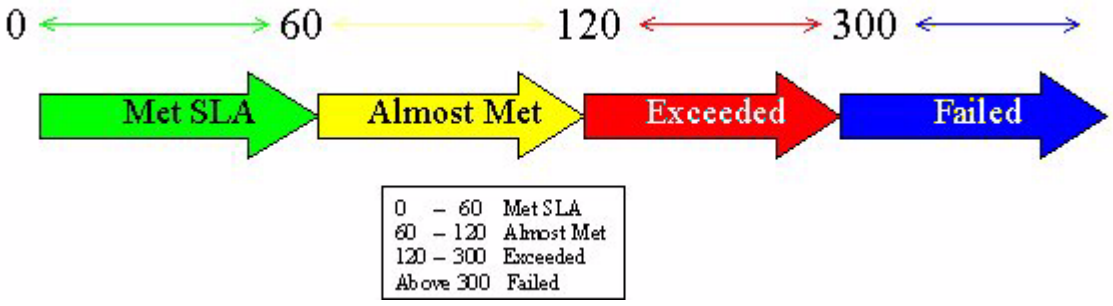
1. In the OVO manager console, expand the **Tools > SPI for Exchange > Exchange 2000 and 2003** folder.
2. In the details pane on the right, double click the **MBOX Config** tool
3. Select the servers the tool should launch on.
4. Launch the MBOX Configuration tool on the managed Exchange server to create a new user and associated mailbox with a prefix ID.
5. 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*>, e.g. **msxspi<server name>**
   c. Select the **Login** tab. Enter the User name and password for a user who has the privilege to create mailboxes in this domain.
   d. Click **Launch**.

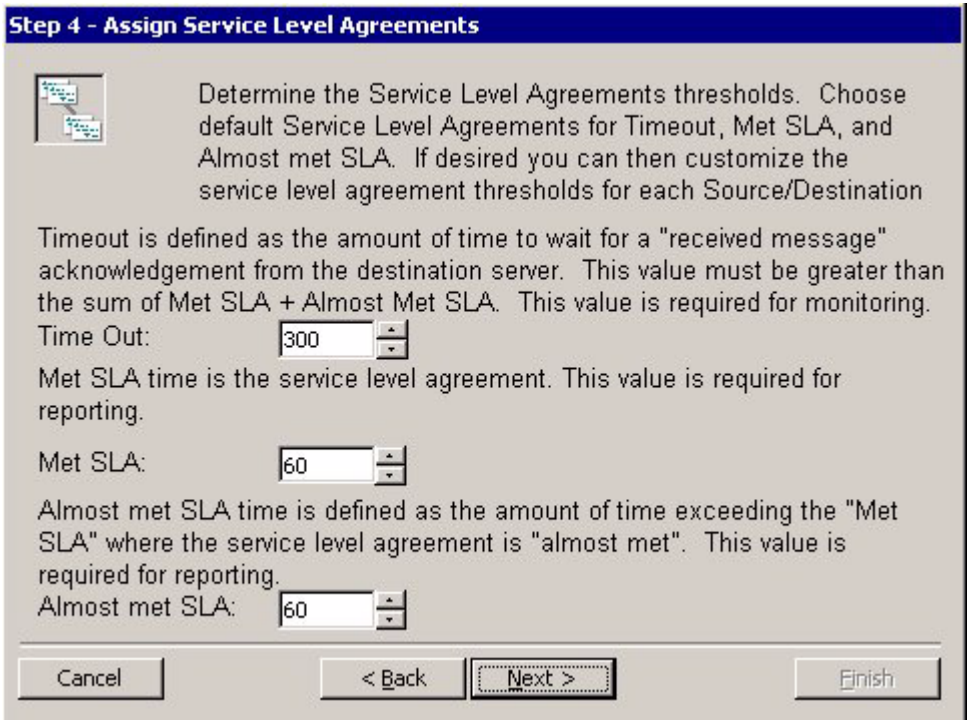
Task 2: Run the End-to-End Configuration wizard to configure SLAs

Before running the End-to-End Configuration wizard, it is necessary to remove any End-to-End Message Ping policies previously deployed to servers.

1. In the OVO Manager console expand the **Tools** > **SPI for Exchange** > **Exchange 2000 and 2003** folder.
2. In the details pane on the right, double-click the **End-to-End Configuration** tool.
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. Click **Next**.
5. Select the Source Servers from the list of OVO managed servers. A source server is a server from which email is sent, which is the server from which the SLA is determined. Click **Next**.
6. Select the Destination Servers from the list. These can be any Exchange servers within your organization, not only OVO managed Exchange servers. Click **Next**.
7. Specify the Service Level Agreement by assigning the thresholds (in seconds) for Timeout, Met SLA and Almost met SLA.

Figure 57 Example SLA thresholds





8 Click **Next**.

9 Confirm or make changes to the SLAs. Click **Next**.

10 Select to deploy all End-to-End Policies to the managed nodes. Only managed nodes configured to determine SLAs will send and receive mail. Note: This step can also be performed manually by deploying SPI for Exchange 2000/2003 instrumentation and the EXSPI End-to-End Message Ping policy group to any desired managed nodes.

11 Click **Next**.

12 Click **Finish**. Then **OK**.

The wizard will have to be run whenever an Exchange server becomes an OVO managed server, if an SLA is required on the newly managed server.

6

Customizing policies and uninstalling the Exchange SPI

This chapter outlines the procedures for:

- Customizing policies and groups of policies
- Uninstalling the Exchange SPI

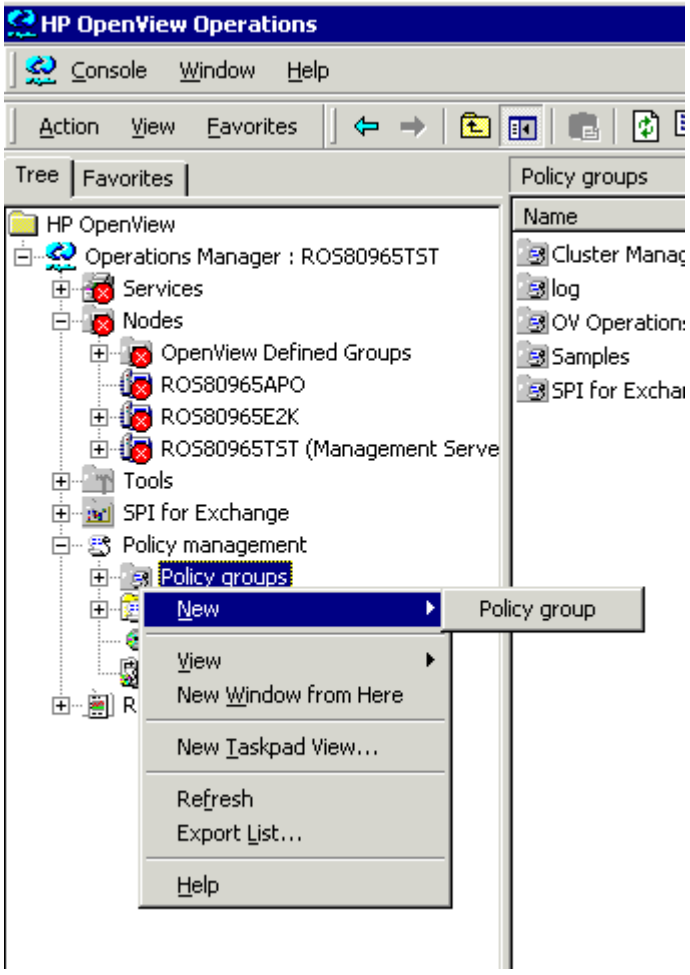
Customizing policies using the tag feature

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. The procedure below gives you an example of how you might do this.

Task 1: Create the new policy group

1. In the OVO console, expand the **Policy management** > **Policy Groups** folders.
2. Right-click the folder in which you want to locate the new group and select **New** > **Policy Group**.

Figure 58 Creating a new policy group



3 Enter the new group name for the folder created and 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 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 new group you just created and click **Paste**.

6 The copied policy will be pasted into the new Policy group.

7 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**.

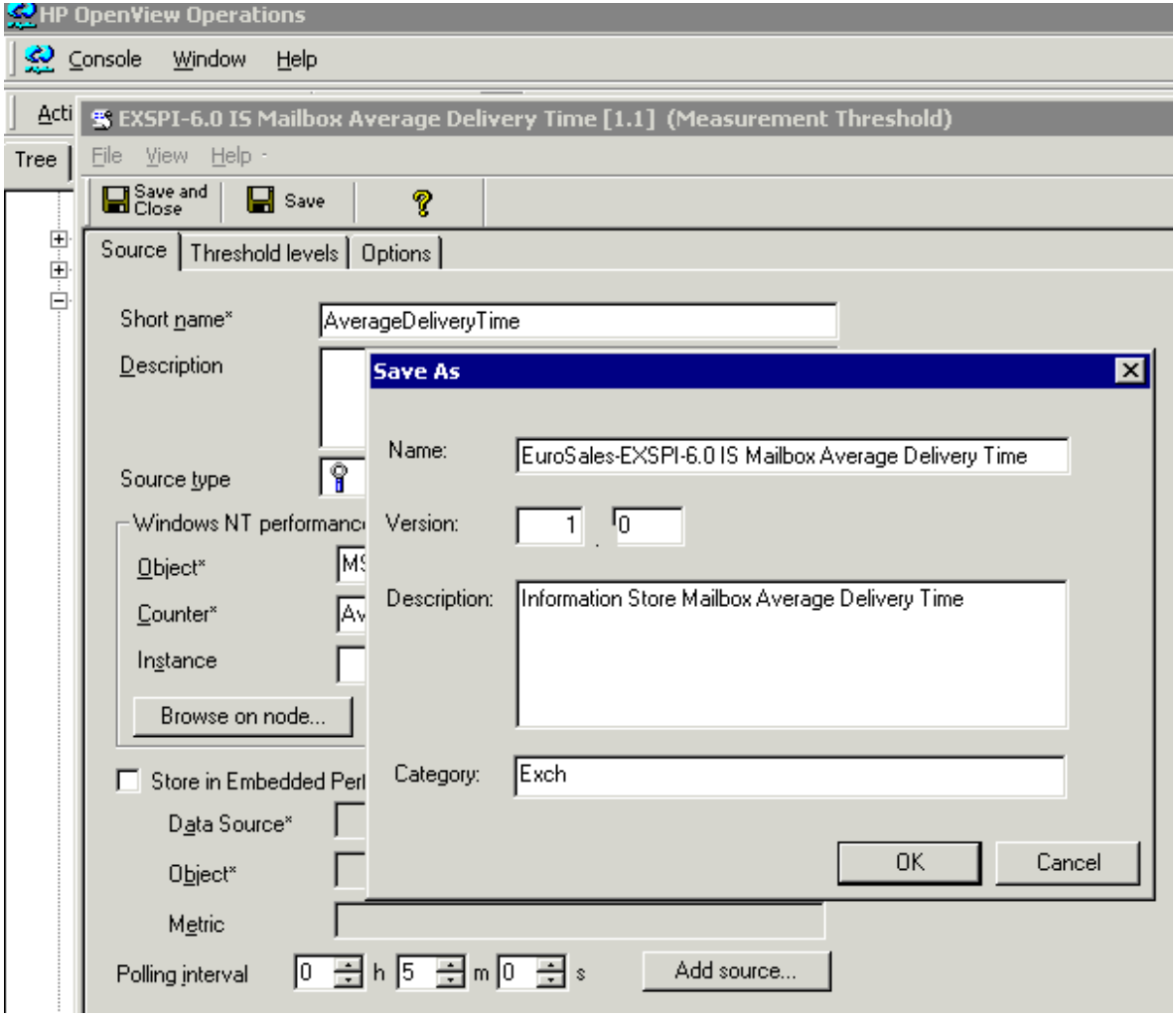
Task 2: Tag the policies

To designate these policies as a specific group, use a special prefix

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 **EuroSales-**EXSPI-6.0 IS Mailbox Average Delivery Time.

Figure 59 Customizing a policy

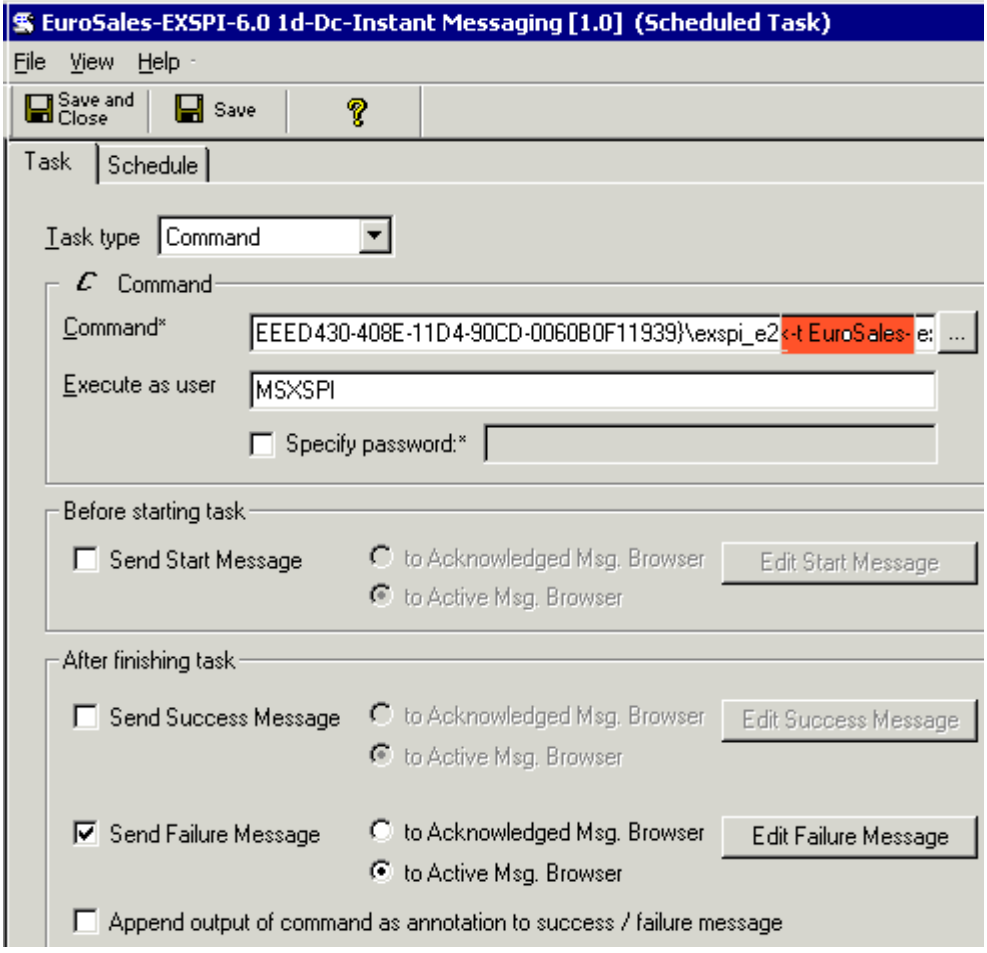


3 After saving any renamed policies, double-click the scheduled task policy that you copied to the new group together with the other policies. (In the example EXSPI-6.0 Id-Dc-Instant Messaging is used.)

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

For example, to ensure data collection for all the policies renamed with the prefix *EuroSales* the Command text box would appear as shown in the figure below:

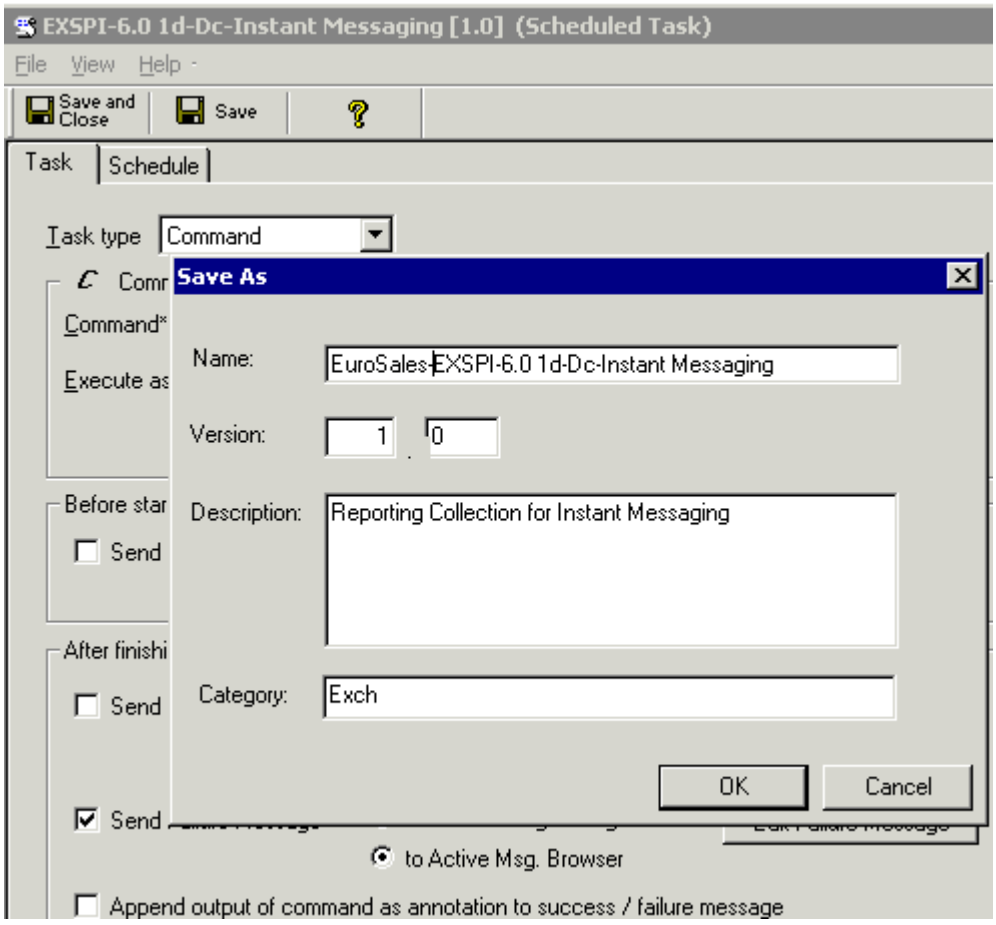
Figure 60 Example of an edited Command



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

Select **File** > **Save As** and rename the EXSPI-6.0 Id-Dc-Instant Messaging scheduled task policy to *EuroSales*-EXSPI-6.0 Id-Dc-Instant Messaging.

Figure 61 Renaming policy



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...**). Please see the online Help for more details.

Uninstalling Exchange SPI

You may wish to remove the Exchange SPI from an OVO managed node, or uninstall the Exchange SPI from both the management server and the managed node/s. In both cases the first step is to remove Exchange SPI policies from managed node/s.

1 Remove Exchange SPI policies from managed node/s

For the more complete uninstall, removing the Exchange SPI from both the management server and the managed node/s, follow these additional steps:

2 Delete Exchange SPI policy groups from management server.

3 Delete Exchange SPI tools from management server.

4 Uninstall Exchange SPI programs from the management server

For any uninstall of Exchange SPI:

Task 1: Remove Exchange SPI policies from all 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 the **SPI for Exchange**, select **All Tasks** > **Uninstall from...**

3 In the “Uninstall Policies on” dialog, select **All Nodes**.

4 Click **OK**.

Note: If there are any customized policies on the node/s, remove them from their location.

Uninstalling Exchange SPI from the management server:

Task 2: Delete Exchange SPI policy groups from the management server

1 On the OVO console tree select and expand the folder **Policy Groups**.

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

Task 3: Delete Exchange SPI tools from the management server

1. On the OVO console tree right-click **Tools** and select **Configure > Tools**.
2. In the **“**Configure Tools” dialog right-click **SPI for Exchange** and select **Delete**.

Task 4: Uninstall Exchange SPI programs from the management server

1. Insert the HP OpenView Operations/Performance for Windows CD (Disk 1) into the CD-ROM drive.
2. Follow instructions as they appear. Start the uninstall procedure by selecting the **Remove products** radio button.
3. In the **Product Selection Uninstall** window select **Microsoft Exchange Server (SPI)** and click **Next**.
4. In the next window, select **Remove**. (You are updated on the progress of the program removal).
5. Click Finish to complete the uninstall.

Exchange SPI Instrumentation Files

EXSPI Exchange Discovery Instrumentation

EXSPI_CreateServices.js	Discovers hosted on Services
msexchange.apm.xml	Cluster support file
OvExchDisc.exe	Discovers virtual Services

Exchange 2000/2003 EXSPI Instrumentation

exspi_e2k.exe	Collector used through schedules
exspidatasource.exe	Creates database schema
EXSPI*.spec	Database schema definitions
ovamd*.dll	Tracking log collector libraries
hpudm.txt	Metric definitions
exspitra.vbs	Turn Tracking on and off
exspi_tracklog.vbs	Turn Tracking log file generation on
exspi_e2k_cfg	Create mailbox.vbs
exspi_dbmount.vbs	Check, or mount, dismounted Information Store
exspi_StartService.vbs	Starts a service

end-to-end.xml	End-to-End Config file
exspi_e2k_clust_config.js	For Cluster Configuration
exspi_RunDiscovery.js	For Exchange SPI Auto Discovery

Exchange 5.5 EXSPI Instrumentation

exspi_e55.exe	Collector used through schedules
exspidatasource.exe	Creates database schema
EXSPI*.spec	Database schema definitions
ovamd*.dll	Tracking log collector libraries
hpudm.txt	Metric definitions
exspitra.vbs	Turn Tracking on and off
exspi_e55_cfg.exe	Create mailbox

B

Policy mappings: metric number to policy name

Metric ID	OVO Windows	OVO UNIX
1	EXSPI-5.5 Process Monitor EXSPI-6.0 Process Monitor	EXSPI-0001, EXSPI-05m-Services and Processes
2	EXSPI-5.5 Inactive Process Monitor EXSPI-6.0 Inactive Process Monitor	EXSPI-0002, EXSPI-10m-Services and Processes
5	EXSPI-5.5-0005, EXSPI-6.0-0005	EXSPI-0005
6	EXSPI-5.5-0006, EXSPI-6.0-0006	EXSPI-0006
10	EXSPI-5.5 MTA Message Delay EXSPI-6.0 MTA Message Delay	EXSPI-0010, EXSPI-05m-MTA
11	EXSPI-5.5 MTA Work Queue Length EXSPI-6.0 MTA Work Queue Length	EXSPI-0011, EXSPI-05m-MTA
12	EXSPI-5.5 MTA Failed Conversions EXSPI-6.0 MTA Failed Conversions	EXSPI-0012, EXSPI-1h-MTA

Metric ID	OVO Windows	OVO UNIX
13	EXSPI-5.5 MTA Connection Message Delay EXSPI-6.0 MTA Connection Message Delay	EXSPI-0013, EXSPI-05m-MTA
14	EXSPI-5.5 MTA Connection Queue Lengths EXSPI-6.0 MTA Connection Queue Lengths	EXSPI-0014, EXSPI-05m-MTA
15	EXSPI-5.5 MTA Failed Outbound Associations EXSPI-6.0 MTA Failed Outbound Associations	EXSPI-0015, EXSPI-1h-MTA
16	EXSPI-5.5 MTA Rejected Inbound Associations EXSPI-6.0 MTA Rejected Inbound Associations	EXSPI-0016, EXSPI-1h-MTA
17	EXSPI-5.5 MTA Rejected Inbound Messages EXSPI-6.0 MTA Rejected Inbound Messages	EXSPI-0017, EXSPI-1h-MTA
30	EXSPI-5.5 IS Public Average Delivery Time EXSPI-6.0 IS Public Average Delivery Time	EXSPI-0030, EXSPI-05m-IS
31	EXSPI-5.5 IS Public Average Local Delivery Time EXSPI-6.0 IS Public Average Local Delivery Time	EXSPI-0031, EXSPI-05m-IS
32	EXSPI-5.5 IS Public Replication Queue Length EXSPI-6.0 IS Public Replication Queue Length	EXSPI-0032, EXSPI-05m-IS
33	EXSPI-5.5 IS Public Receive Queue Length EXSPI-6.0 IS Public Receive Queue Length	EXSPI-0033, EXSPI-05m-IS
34	EXSPI-5.5 IS Public Send Queue Length EXSPI-6.0 IS Public Send Queue Length	EXSPI-0034, EXSPI-05m-IS

Metric ID	OVO Windows	OVO UNIX
40	EXSPI-5.5 IS Private Average Delivery Time EXSPI-6.0 IS Mailbox Average Delivery Time	EXSPI-0040, EXSPI-05m-IS
41	EXSPI-5.5 IS Private Average Local Delivery Time EXSPI-6.0 IS Mailbox Average Local Delivery Time	EXSPI-0041, EXSPI-05m-IS
42	EXSPI-5.5 IS Private Receive Queue Length EXSPI-6.0 IS Mailbox Receive Queue Length	EXSPI-0042, EXSPI-05m-IS
43	EXSPI-5.5 IS Private Send Queue Length EXSPI-6.0 IS Mailbox Send Queue Length	EXSPI-0043, EXSPI-05m-IS
50	EXSPI-6.0 SMTP Categorizer Queue Length	EXSPI-0050, EXSPI-5m-SMTP
51	EXSPI-6.0 SMTP Local Queue Length	EXSPI-0051, EXSPI-5m-SMTP
52	EXSPI-6.0 SMTP Local Retry Queue Length	EXSPI-0052, EXSPI-5m-SMTP
53	EXSPI-6.0 SMTP Messages Pending Routing	EXSPI-0053, EXSPI-5m-SMTP
54	EXSPI-6.0 SMTP Remote Queue Length	EXSPI-0054, EXSPI-5m-SMTP
55	EXSPI-6.0 SMTP Remote Retry Queue Length	EXSPI-0055, EXSPI-5m-SMTP
56	EXSPI-6.0 SMTP NDR Percentage	EXSPI-0056, EXSPI-1h-SMTP
57	EXSPI-6.0 SMTP Outbound Connections Refused	EXSPI-0057, EXSPI-1h-SMTP
58	EXSPI-6.0-0058	EXSPI-0058
60	EXSPI-5.5 IMS Failed Connections	EXSPI-0060, EXSPI-1h-Internet Mail Services

Metric ID	OVO Windows	OVO UNIX
61	EXSPI-5.5 IMS Rejected Connections	EXSPI-0061, EXSPI-1h-Internet Mail Services
62	EXSPI-5.5 IMS MTS-IN Queue Length	EXSPI-0062, EXSPI-5m-Internet Mail Services
63	EXSPI-5.5 IMS MTS-OUT Queue Length	EXSPI-0063, EXSPI-5m-Internet Mail Services
64	EXSPI-5.5 IMS Queued Inbound	EXSPI-0064, EXSPI-5m-Internet Mail Services
65	EXSPI-5.5 IMS Queued Outbound	EXSPI-0065, EXSPI-5m-Internet Mail Services
66	EXSPI-5.5 IMS NDRs Inbound	EXSPI-0066, EXSPI-1h-Internet Mail Services
67	EXSPI-5.5 IMS NDRs Outbound	EXSPI-0067, EXSPI-1h-Internet Mail Services
80	EXSPI-5.5-0080, EXSPI-6.0-0080	EXSPI-0080
81	EXSPI-5.5-0081, EXSPI-6.0-0081	EXSPI-0081
90	EXSPI-5.5-0090, EXSPI-6.0-0090	EXSPI-0090
91	EXSPI-5.5-0091, EXSPI-6.0-0091	EXSPI-0091
92	EXSPI-5.5-0092, EXSPI-6.0-0092	EXSPI-0092
93	EXSPI-5.5-0093, EXSPI-6.0-0093	EXSPI-0093
94	EXSPI-5.5-0094, EXSPI-6.0-0094	EXSPI-0094
95	EXSPI-5.5-0095, EXSPI-6.0-0095	EXSPI-0095
96	EXSPI-5.5-0096, EXSPI-6.0-0096	EXSPI-0096
97	EXSPI-5.5-0097, EXSPI-6.0-0097	EXSPI-0097
100	EXSPI-5.5 IS User Connection Count Low EXSPI-6.0 IS User Connection Count Low	EXSPI-0100, EXSPI-15m-IS

Metric ID	OVO Windows	OVO UNIX
100	EXSPI-5.5 IS User Connection Count Low EXSPI-6.0 IS User Connection Count Low	EXSPI-0100, EXSPI-15m-IS
110	EXSPI-5.5 DS Pending Synchronizations	EXSPI-0110, EXSPI-05m-DS
111	EXSPI-5.5 DS Remaining Updates EXSPI-6.0 SRS Remaining Updates	EXSPI-0111, EXSPI-05m-DS EXSPI-0111, EXSPI-05m-DS
800	EXSPI-6.0-0800	EXSPI-0800
801	EXSPI-6.0-0801	EXSPI-0801
802	EXSPI-6.0-0802	EXSPI-0802
803	EXSPI-6.0-0803	EXSPI-0803
804	EXSPI-6.0-0804	EXSPI-0804
805	EXSPI-6.0-0805	EXSPI-0805
806	EXSPI-6.0-0806	EXSPI-0806
807	EXSPI-6.0-0807	EXSPI-0807
830	EXSPI-6.0-0830	EXSPI-0830
831	EXSPI-6.0-0831	EXSPI-0831
833	EXSPI-6.0-0833	EXSPI-0833
834	EXSPI-6.0-0834	EXSPI-0834
835	EXSPI-6.0-0835	EXSPI-0835
836	EXSPI-6.0-0836	EXSPI-0836
841	EXSPI-6.0-0841	EXSPI-0841
842	EXSPI-6.0-0842	EXSPI-0842
845	EXSPI-6.0-0845	EXSPI-0845
846	EXSPI-6.0-0846	EXSPI-0846

Metric ID	OVO Windows	OVO UNIX
1001	EXSPI-5.5 Exchange Services EXSPI-6.0 Exchange Services	EXSPI-1001, EXSPI-05m-Services and Processes, EXSPI-05m-Map

NOTE:

- OVO Windows policies for Exchange version 5.5 have the prefix EXSPI-5.5.
- OVO Windows policies for Exchange versions 2000 and 2003 have the prefix EXSPI-6.0.

C

Creating service accounts for Exchange 2000 or 2003

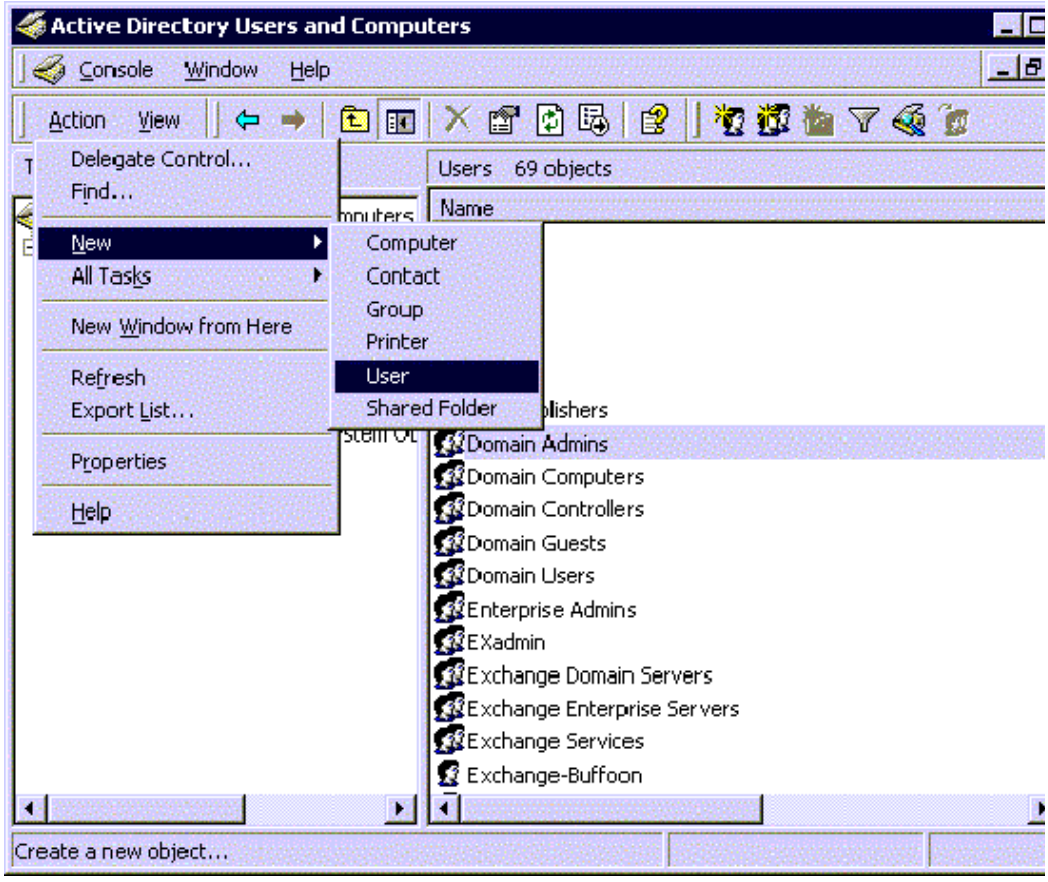
The Exchange SPI collects data from many sources. In order to collect the many types of data, the Exchange SPI requires advanced user credentials. The simplest way to obtain these credentials is to have the OVO management agent run as Local System. If this is not possible in your organization, you'll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

This procedure outlines how to create a service account with advanced user credentials for Exchange 2000 or Exchange 2003 nodes.

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.**

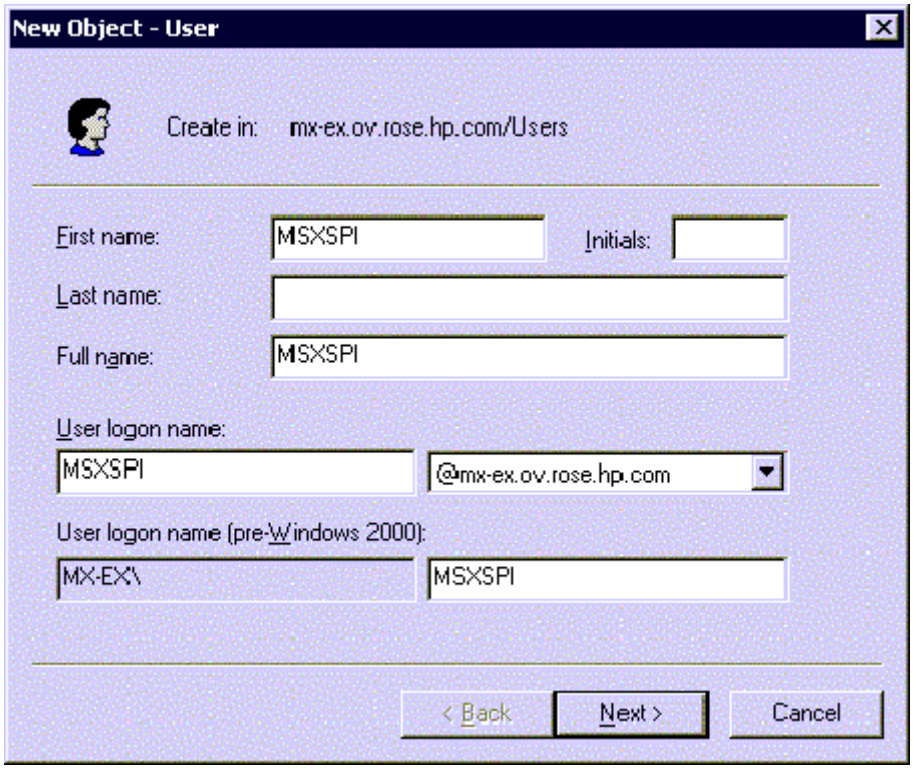
3 Expand the Active Directory Users and Computers and right-click **Users** and select **New > User**,



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. Throughout this document we are using MSXSPI as the user name for the service account.

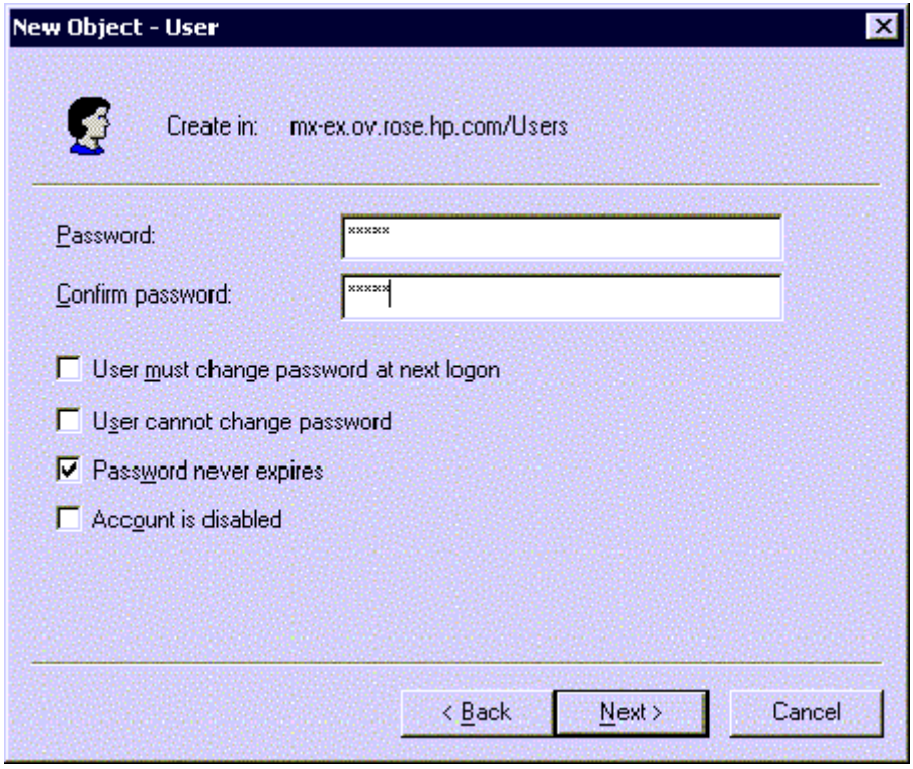
Figure 62 Entering the new service account name



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

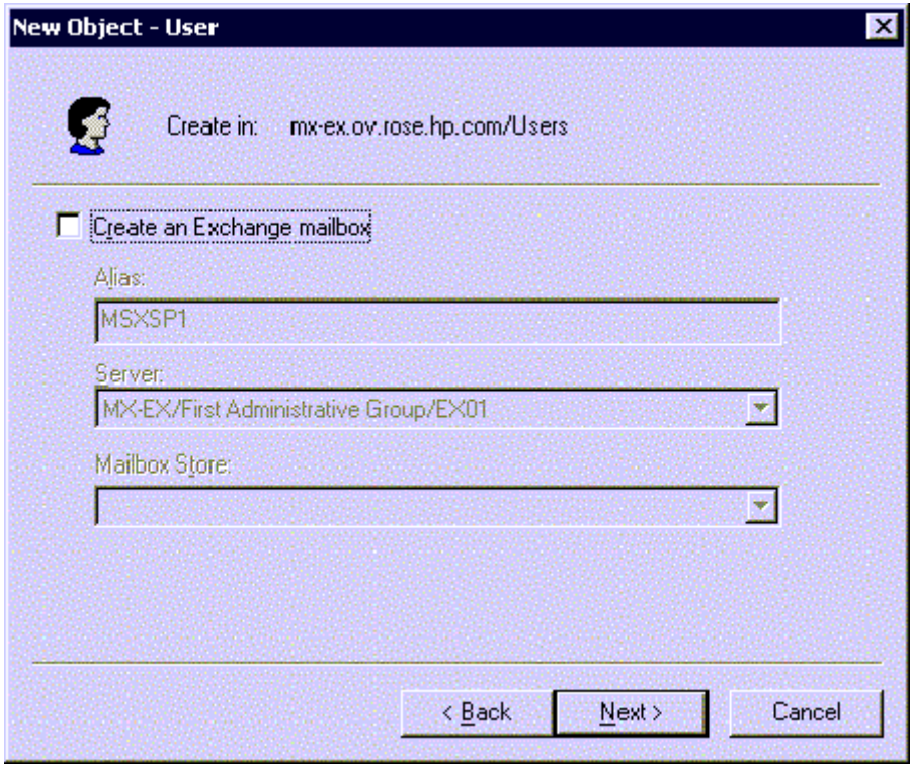
6 Select **Password Never Expires**. Then click **Next**.

Figure 63 Setting password properties



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

Figure 64 Deselecting creating a mailbox

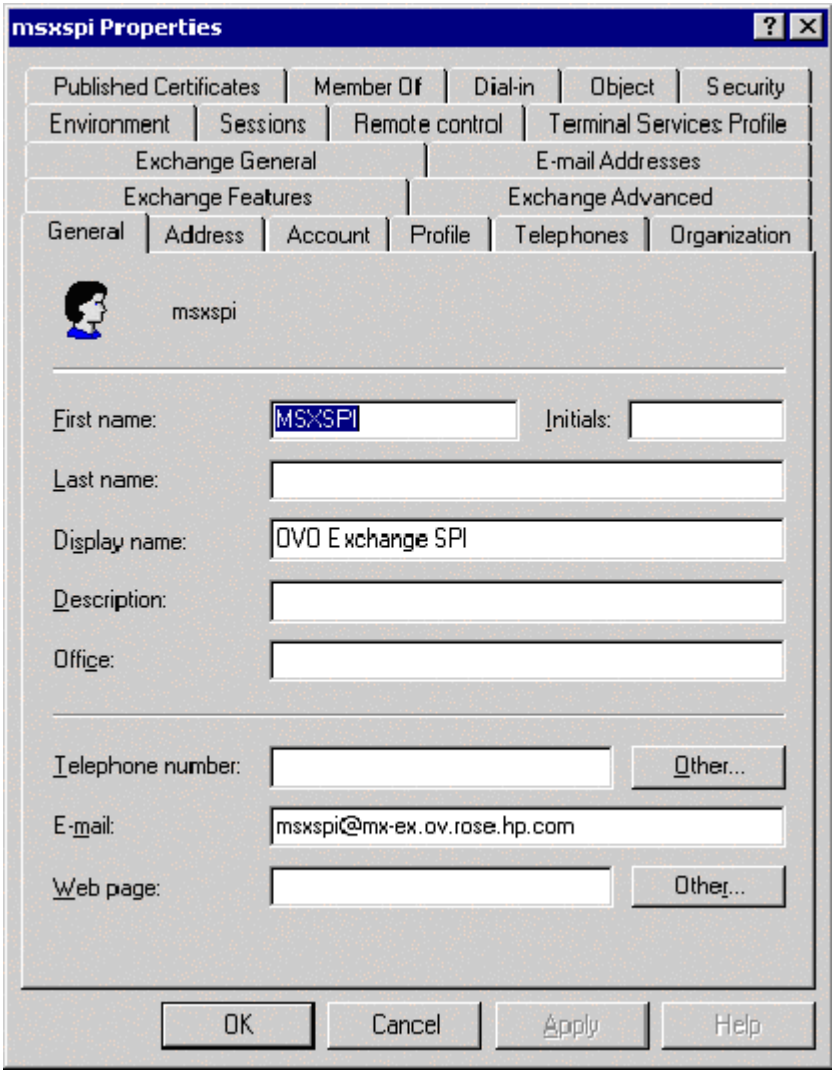


8 In the next dialog, complete creating the user by clicking **Finish**.

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.

Figure 65 Entering names in Properties dialog

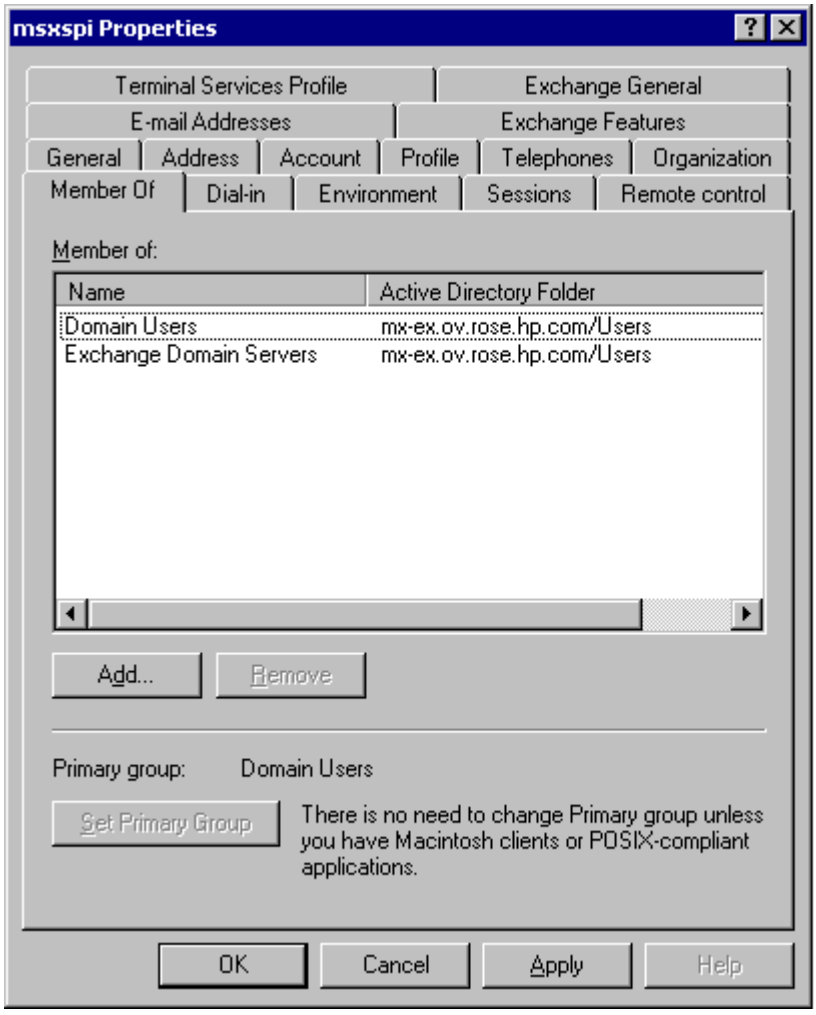


11 Select the **Member Of** tab, and click **Add**.

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.

Figure 66 Confirming membership privileges



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.

D

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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