HP OpenView Smart Plug-in for Microsoft® Exchange Server

Configuration Guide

Version: B.09.00

Windows® Operating System

April 2005

Legal Notices

Warranty

Hewlett-Packard makes no warranty of any kind with regard to this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be held liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance, or use of this material.

A copy of the specific warranty terms applicable to your Hewlett-Packard product can be obtained from your local Sales and Service Office.

Restricted Rights Legend

Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause in DFARS 252.227-7013.

Hewlett-Packard Company
United States of America

Rights for non-DOD U.S. Government Departments and Agencies are as set forth in FAR 52.227-19(c)(1,2).

Copyright Notices

Trademark Notices

Microsoft®, Exchange Server®, and Windows® are U.S. registered trademarks of Microsoft Corporation.

Pentium® is a U.S. registered trademark of Intel Corporation.

Crystal Reports® is registered trademark of Seagate Software.

Sun Solaris® is registered trademark of Sun Microsystems.

All other product names are the property of their respective trademark or service mark holders and are hereby acknowledged.

Support

Please visit the HP OpenView website at:

http://openview.hp.com/

There you will find contact information and details about the products, services, and support that HP OpenView offers.

You can go directly to the HP OpenView Software Support Online website at:

http://support.openview.hp.com/

The Software Support Online site includes:

- Downloadable documentation
- Troubleshooting information
- Patches and updates
- Problem reporting
- Training information
- 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 the Exchange Topology viewer
- Exchange SPI tools
- Policy setup, display and deployment
- Introducing Exchange SPI reports and graphs
- Where to find Exchange SPI documentation.

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 offering monitored server load and performance, client availability, message delivery times, and service level objectives.

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, giving you information through the OpenView Operations console in the form of service maps, topology views, message alerts, reports and graphs.

How the Exchange SPI works

When the Exchange SPI is installed on a management server, and nodes running Microsoft Exchange server are added to the OVO Nodes folder, Exchange SPI service discovery policies will discover the Exchange environment on those nodes, and deploy automatically relevant groups of Exchange SPI policies. The policies trigger actions, or messages/alerts being sent to the OVO message browser, or they collect data that is used to populate Exchange SPI reports and graphs.

Auto Discovery and the Service Map

The Exchange SPI uses the OVO discovery service components to discover your Exchange topology and services. The discovery process is performed 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 7, Exchange 5.5 user privileges.

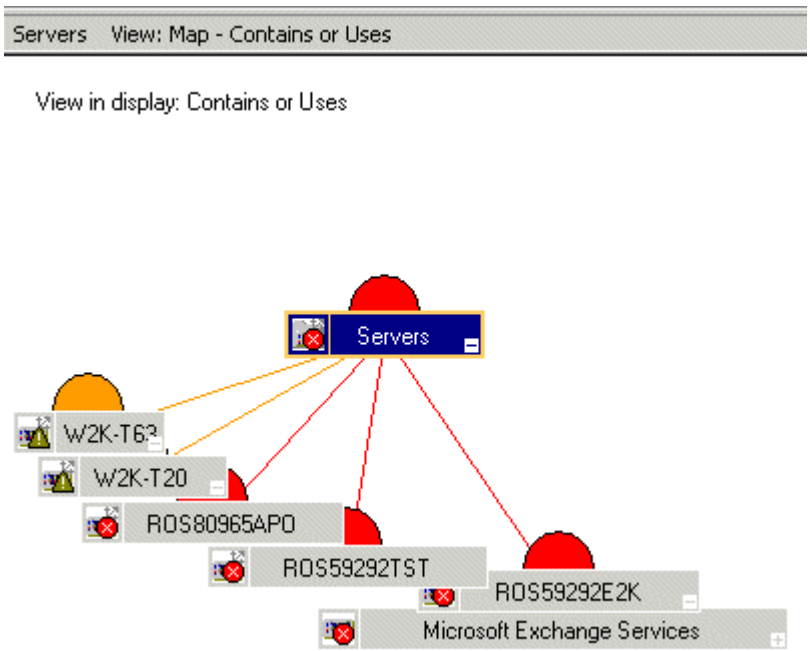
The Exchange environment services discovered by the service discovery policies are displayed in the Exchange organization service map.

Dynamic service maps

Service maps are created from the topology discovered in your network by the Exchange service discovery policies. They are dynamic, reflecting 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 1 Service Map of administrative group servers



Problems in the Exchange organization are indicated in the Service maps by colors showing severity level (red, orange, yellow, blue). 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.

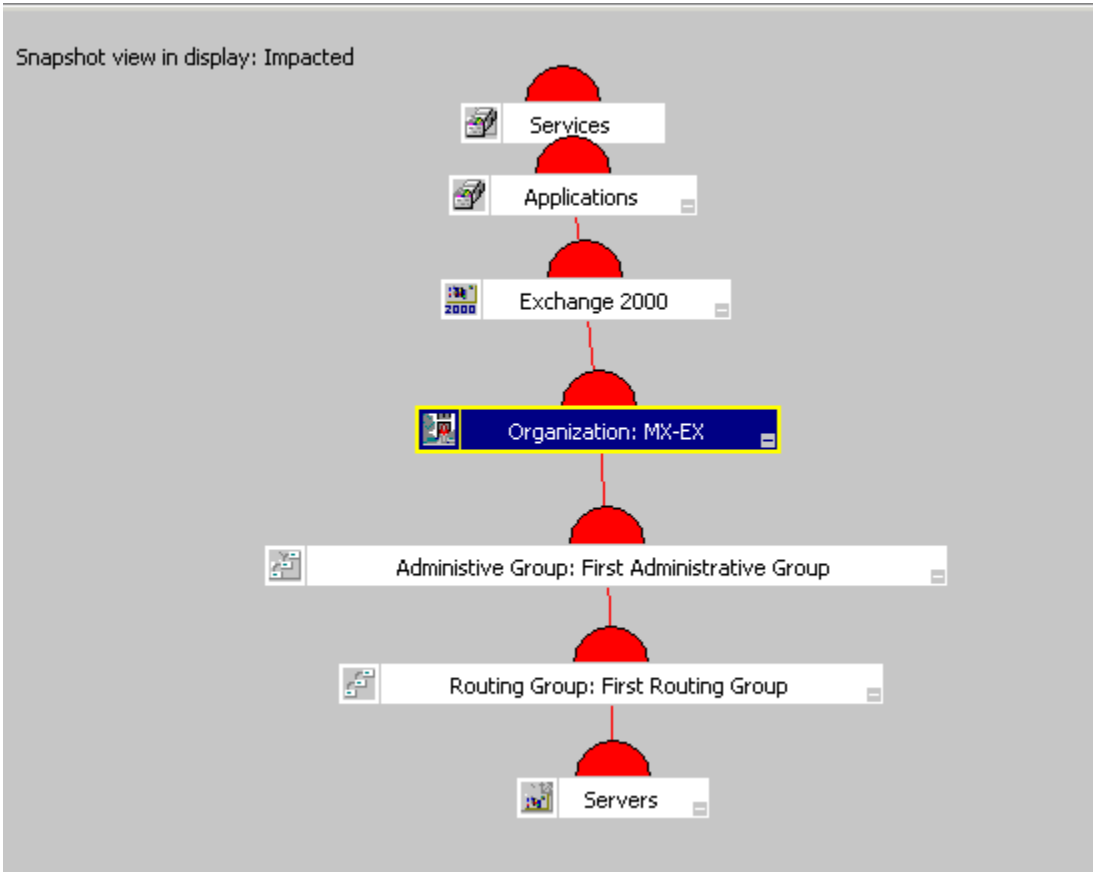
Figure 2 Partial view of Active Message Browser, for an Exchange administrative group

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:

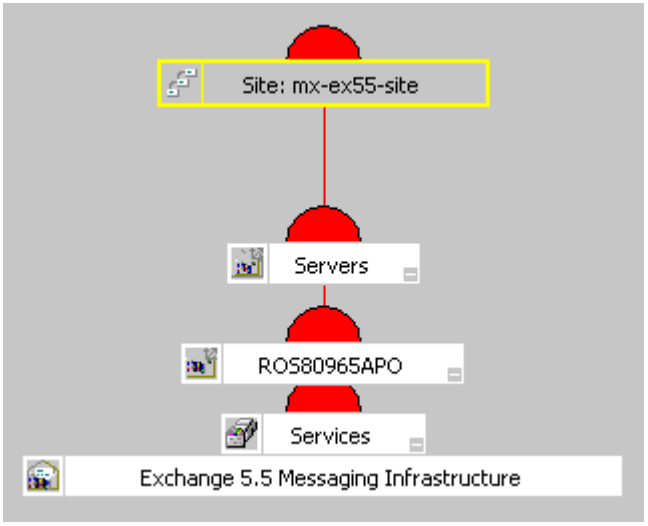
From left to right: Impacted Services, Root Cause, Service Map, Active Message Browser, Acknowledged Message Browser.

Figure 3 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 4 Root Cause view of an Exchange 5.5 site problem

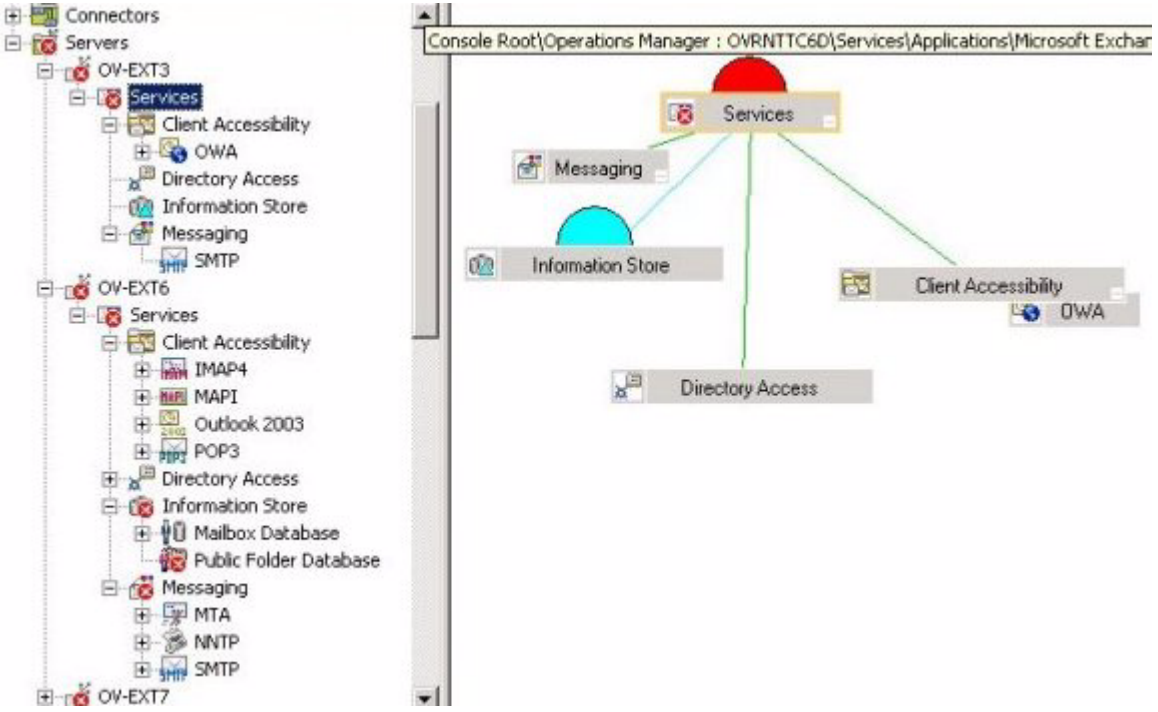


The Root Cause service view helps you to see the source of a problem. Root cause analysis starts at the level of your selected node or service, stops at the level where the cause of the problem lies, and draws a map that shows the source of the problem and the nodes or services affected by it.

Exchange Organization

After Exchange topology is discovered, the organization of your Exchange environment displays in the console tree under **Services**, in the various Service maps. The Exchange organization in an enterprise can be extremely complex, these views help in visualizing the organization from the overview down to the detail level.

Figure 5 Example Service map



OV Topology Viewer

The OV Topology Viewer provides for an easy visualization of your Microsoft Exchange environment from a 3-dimensional perspective. The viewer is a tool located in the OVO console under **Tools** > **SPI for Exchange > Exchange 2000 and 2003 > Exchange Topology**. Using this tool you are able to quickly visualize routing groups, Exchange servers and the roles they play within your Exchange organization, by selecting the **Exchange Topology** folder on the console tree.

This documentation is written from the Exchange perspective, focusing on the Exchange Topology view within the OV Topology Viewer, which collects and displays Exchange organization data. If you also have the OpenView Active Directory SPI installed, the OV Topology Viewer will open with with two folders: Exchange Topology and Site Topology. The Site Topology view displays Active Directory and Exchange server information. For more details on the Site Topology view see the Active Directory SPI online Help and Configuration Guide.

To open the Exchange Topology viewer:

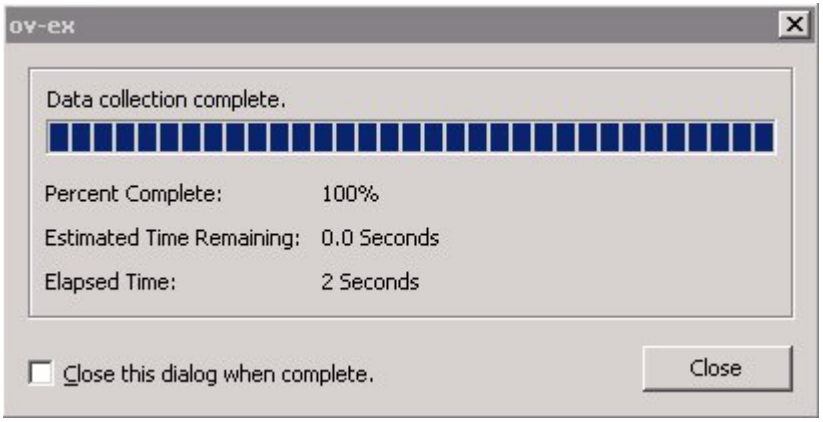
1. Select **Tools** > **SPI for Exchange > Exchange 2000 and 2003 > Exchange Topology**.
2. Double-click **OV Topology Viewer**.
3. The OV Topology Viewer opens. In the left pane, right click **Forests**, and select **Add Forest...**.

Figure 6 OV-TV: Connect to Forest

4 Identify the Domain Controller or Active Directory Domain which will be interrogated for Exchange data. Before selecting the Advanced Exchange Data Collection checkbox, see "Concerning Advanced Exchange Data Collection" on page 20. Enter the requested information. Click **OK**.

5 You are informed when the data collection is complete.

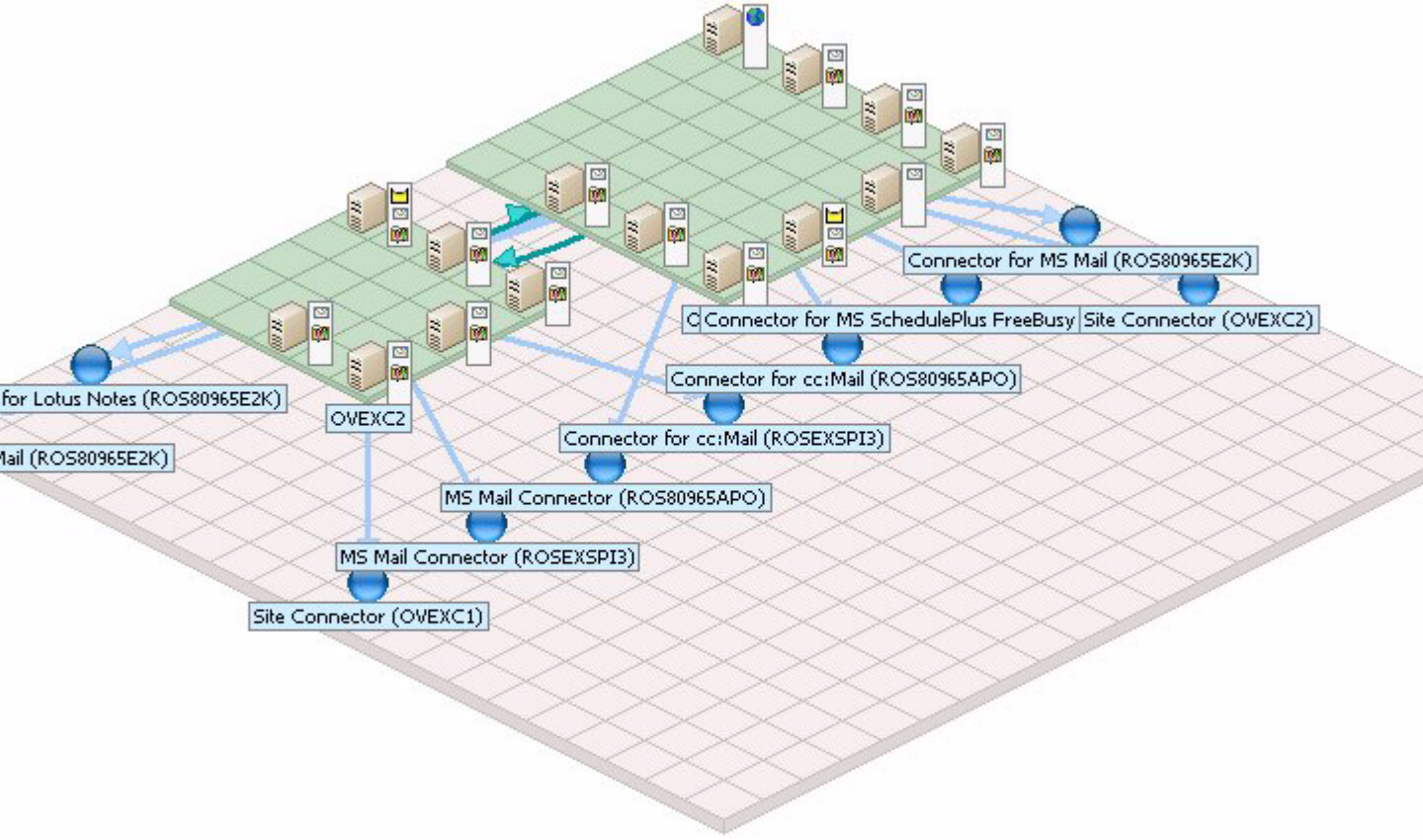
Figure 7 OV-TV data collection complete



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

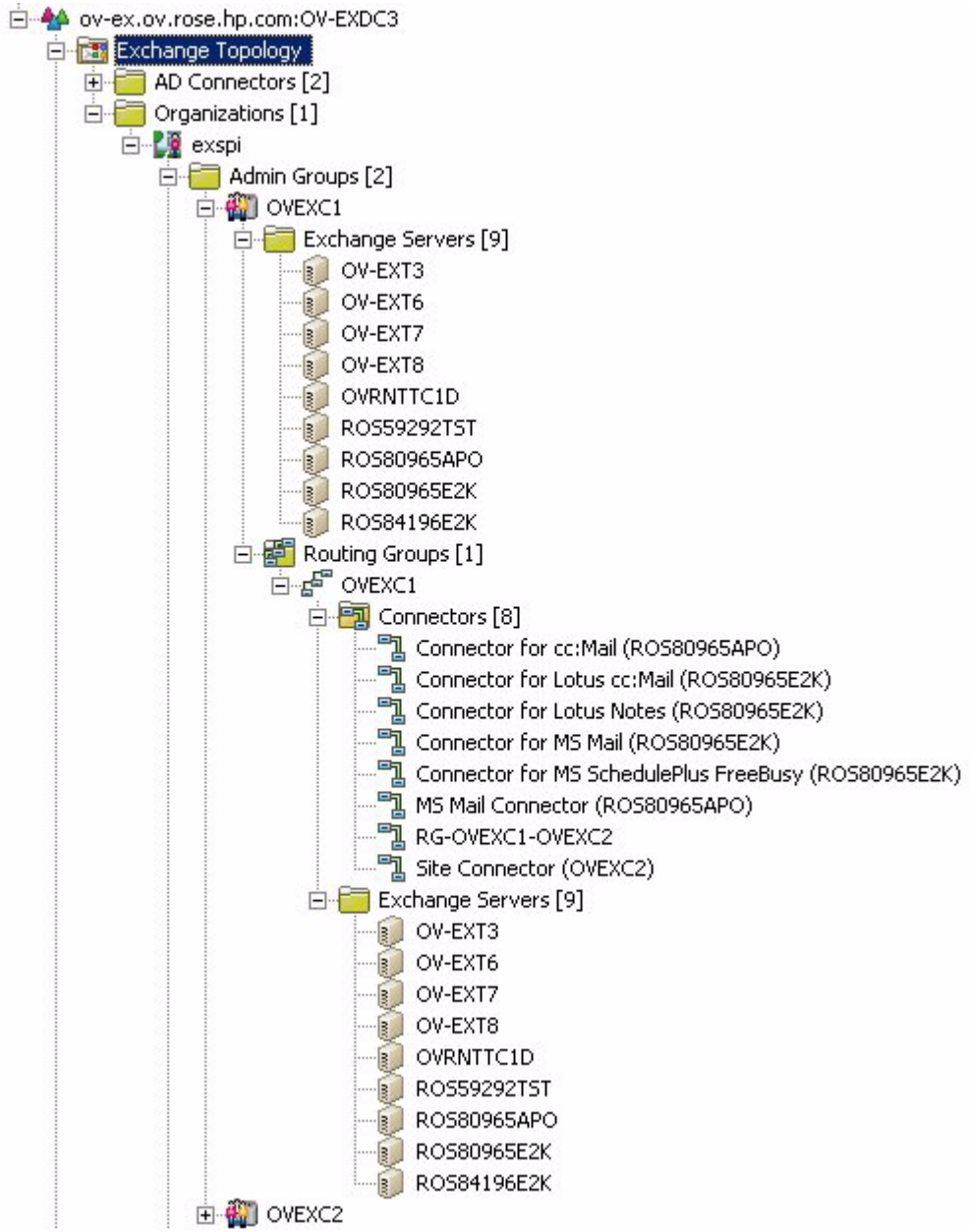
7 Select **Exchange Topology** in the left pane. An untitled view of your Exchange Topology is displayed in the right pane. Save this view for future use.

Figure 8 OV-TV:



8 Expand the folders to see your Exchange Organization hierarchy.

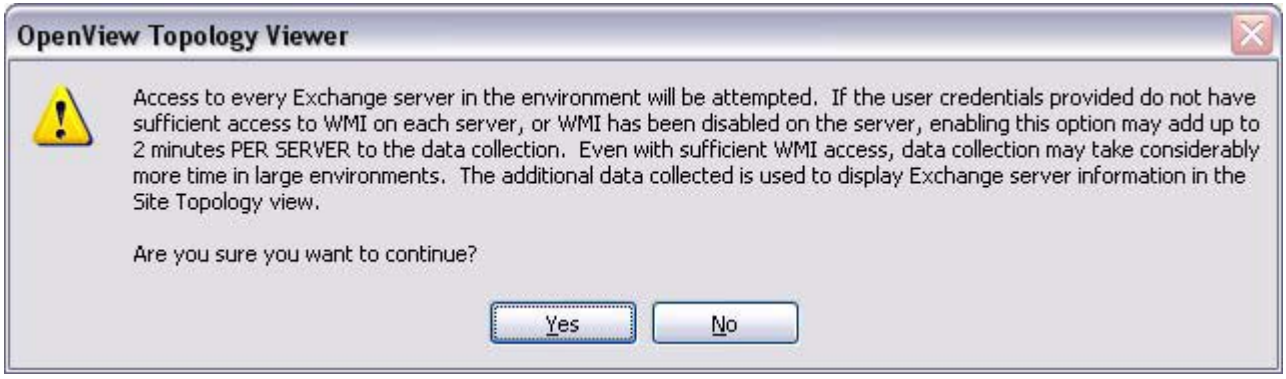
Figure 9 Example Exchange Topology console view



Concerning Advanced Exchange Data Collection

Whether or not the OV Topology Viewer can collect particular Exchange data will depend on the specific permissions assigned to components of your Exchange organization, see "How can I tell if I have WMI access to an Exchange Server?" on page 26.

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



As the warning indicates, the retrieval of this information from a large Exchange Organization can take a number of hours. In addition, if it is not successful due to these permission limitations, you will not be notified, but must check the error log files for connection difficulties to determine if your privileges were sufficient. See "Required WMI Security Access permissions" on page 27 for details of required WMI permissions and error log file locations.

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

Site Topology viewer

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

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

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

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

Getting Started with the Exchange Topology viewer

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

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

Manipulating the Exchange Topology view

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

Table 1 Modifying the OV Topology Viewer

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

Using the keyboard to move around the map.

Table 2 Keyboard Functionality

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

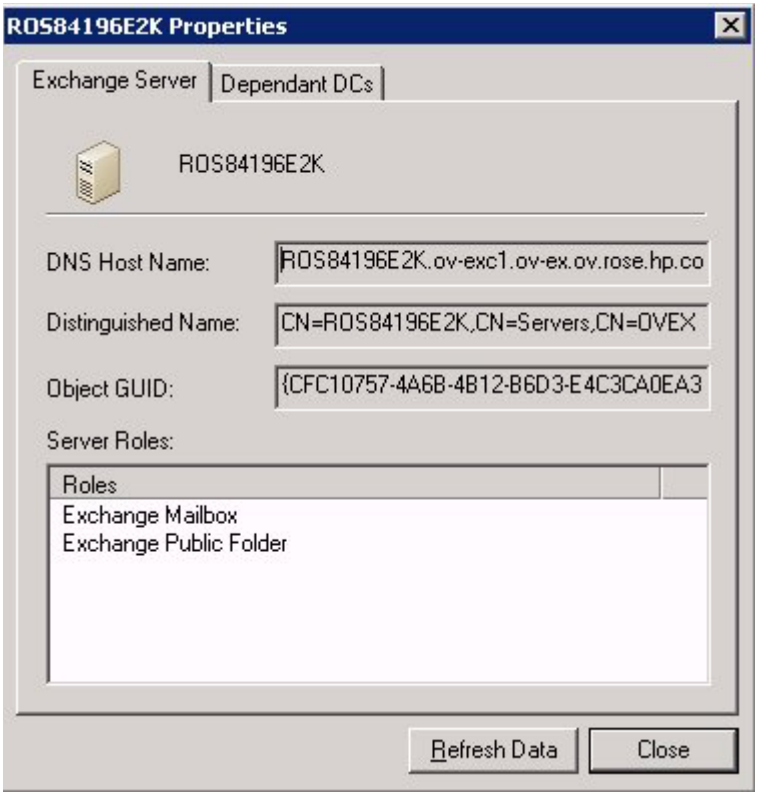
Accessing Server and Map Properties

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

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

Server Properties

Figure 10 OV-TV server Properties

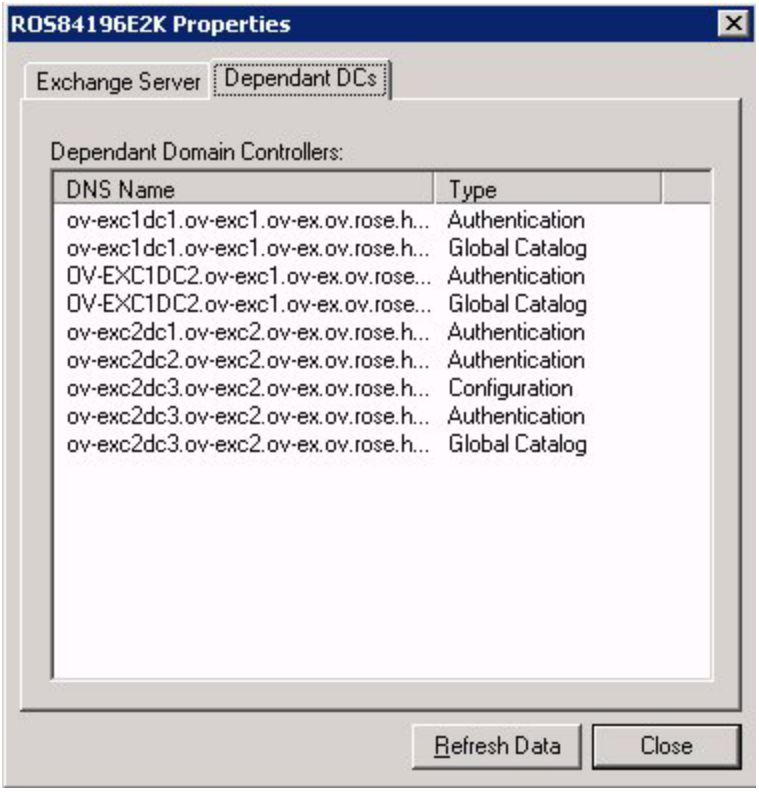


The information displayed in the server Properties dialog (DNS Host Name, Distinguished Name, Object GUID, Server Roles and Dependent Domain Controllers), will be derived from the initial Active Directory query (see “Concerning Advanced Exchange Data Collection” on page 20). If little or no information is displayed, it is probably a result of the required WMI permissions not being granted, see “Required WMI Security Access permissions” on page 27.

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

The Dependant DC tab

Figure 11 Example Dependant DCs



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

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

Map Properties

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

- **Navigator:** allows you to view and navigate the entire grid, giving you an overview of what you are seeing. The blue rectangle represents the area visible in the main view.
- **Clear Find:** If an object on the map is in focus as a result of the right-click menu option **Find in View**, this will be enabled, and you can select to clear the find.
- **View Properties:** Many variables of the map view can be modified, for example colors of routing groups and lines, as well as line widths and styles.

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

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

FAQs

Can I print the map image?

No. But you can export the map, save it as .png or as a bitmap, then open it in MS Paint to print the file or other graphics programs such as Adobe PaintShop or Photoshop. You can also view and print it in the MS Office Picture Manager.

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

1. Look in the `<OVTV install directory>\release\logs\AD_OvADExCollectorErrorLog.txt` log file.
2. Look for a warning such as:

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

Or

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

What log files does OVTV generate?

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

files located at:

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

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

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

Required WMI Security Access permissions

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

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

Exchange SPI 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.

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

Figure 12 Message Properties with explanatory text

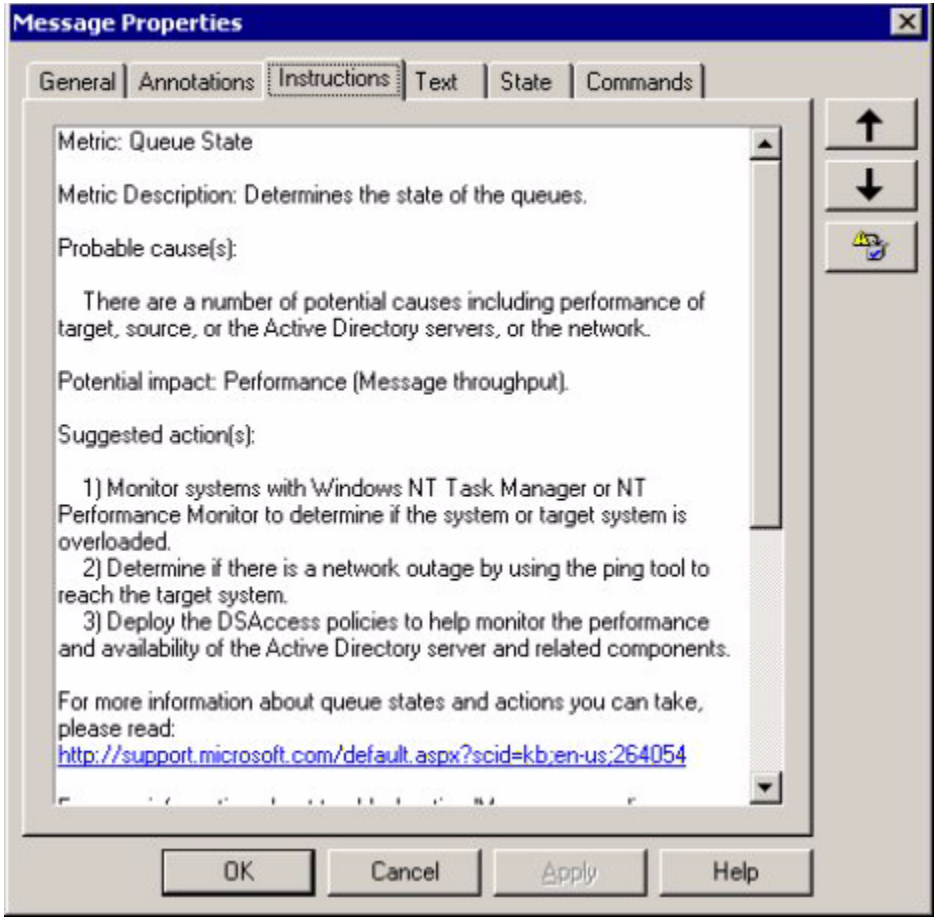


Figure 13 Link takes you to relevant Microsoft knowledge base

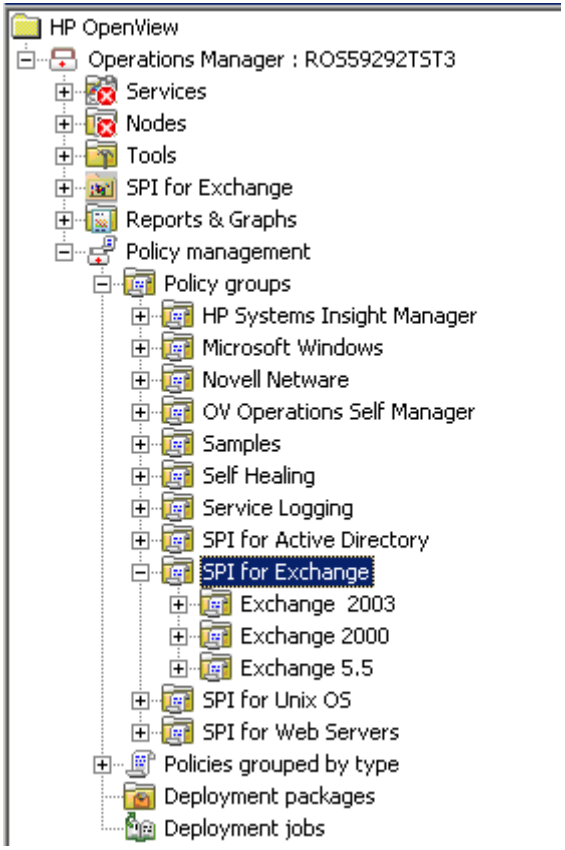
Policy setup and deployment

EXSPI policies must be deployed according to Microsoft Exchange S0erver version (eg. Exchange 2000 policies to nodes running Microsoft Exchange Server 2000). In addition, do not deploy EXSPI policies to non-Exchange systems.

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. The groupings under **Policy groups** are organized by Exchange components and services. These folder groups are used by the Auto Deploy functionality of OVO. See the Exchange SPI online Help for detailed information on policy groups, policy types, and policy prerequisites.

Policy groups

Figure 14 Exchange SPI Policy groups on the console tree

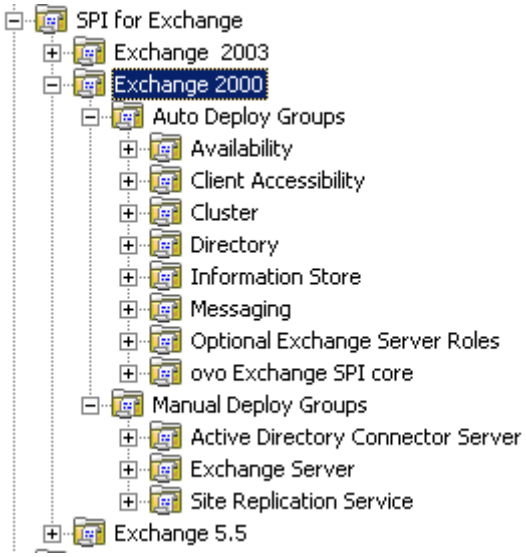


Exchange 2000 and Exchange 2003 policy groups

Policies for Exchange 2000 and 2003 are in version specific folders, organized in **Auto Deploy** and **Manual Deploy** groups. By default, Auto Deploy Groups of Exchange SPI policies are set to deploy automatically when relevant applications or services are discovered on OVO managed nodes. Manual Deploy Groups contain policies requiring configuration or special circumstances for deployment.

Exchange 2000 policies are grouped in Auto and Manual deploy groups in the following way:

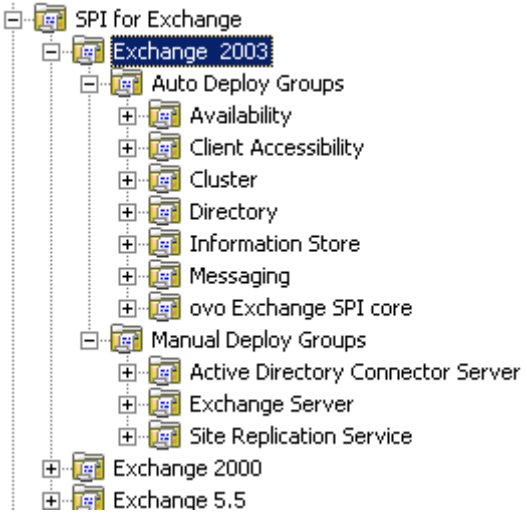
Figure 15 Exchange 2000 policy groups



For a complete listing of individual policies, see "Exchange 2000 policies" on page 77, individual policy descriptions are in the Exchange SPI online Help,

Exchange 2003 policies are grouped in Auto and Manual deploy groups in the following way:

Figure 16 Exchange 2003 policy groups



For a complete listing of individual policies, see “Exchange 2003 policies” on page 68, individual policy descriptions are in the Exchange SPI online Help.

Exchange 5.5 policy groups

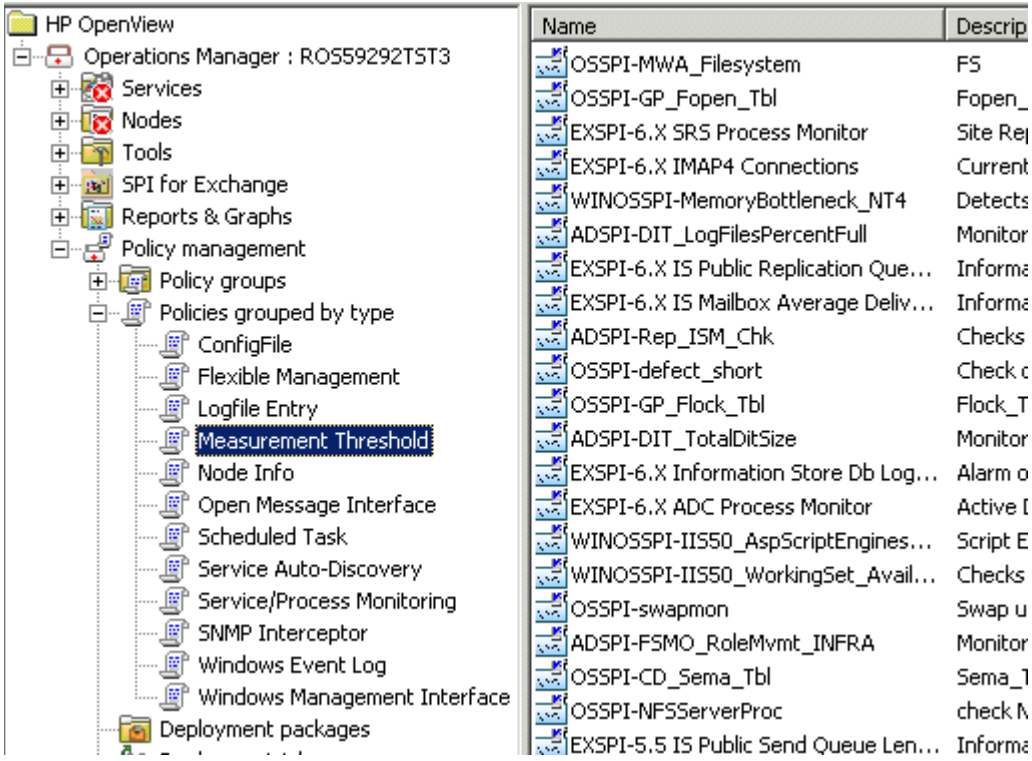
Policies are organized according to how you might want to deploy them. The EXSPI Discovery and EXSPI Quick Start policy groups contain policies that deploy automatically to nodes as soon as the nodes become managed by OVO, and contain most of the policies you need to get started. The EXSPI Add-Ons policy groups contain policies that monitor applications compatible with but not a part of Exchange, such as cc:Mail. The EXSPI Advanced policy groups contain policies that require some advanced configuration, including the creation of a mailbox, and a service account with special Exchange privileges. For a listing of individual policies see “Exchange 2003 policies” on page 68.

- The **EXSPI Discovery** policy group contains Exchange Service Discovery and Check Discovery policies. These policies perform the Exchange service discovery on all OVO managed Exchange 5.5 servers, and check for service discovery errors. Before deployment, 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 135.
- The **EXSPI Quick Start** policy group contains the basic policies for monitoring Exchange servers, for example, policies to monitor key Exchange services, forward application errors and warnings, and monitor messaging queues. These policies need no special customization and are deployed automatically to all nodes once they become managed by OVO.
- The **EXSPI Add-Ons** policy group contains policies to monitor applications compatible with, but not a part of Exchange, such as cc:Mail and Chat Service. 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. Most Advanced policies require additional configuration.

Policies grouped by type

Policies grouped by type displays policies organized according to function, for example, you 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 online Help.

Figure 17 Measurement Threshold policies displayed in the details pane

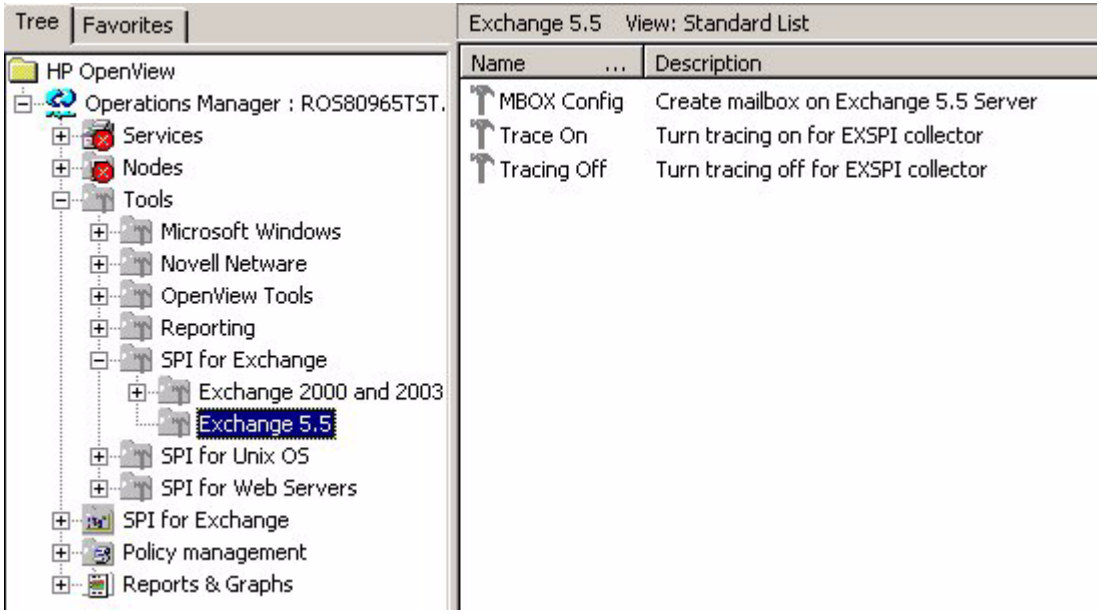


Using Exchange SPI tools

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:

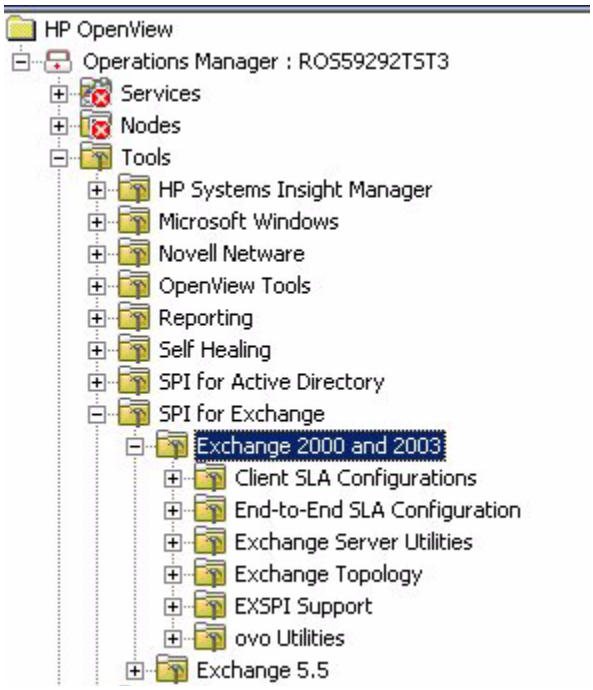
Figure 18 Exchange SPI Tools for Exchange 5.5



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

For Exchange 2000/2003 the following groups of tools are available

Figure 19 Exchange SPI Tool groups for Exchange 2000 and 2003:



Client SLA Configurations

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

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

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

End-to-End SLA Configuration

This tool group contains the following tools:

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

See "Configuring Exchange SPI for Message Delivery SLAs" on page 111 for more information.

Exchange Server Utilities

This tool group contains the following tools:

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

EXSPI Support

This tool group contains the following tools:

- **Trace On/Tracing Off** tools enable or disable tracing. The default setting is off. Tracing is generally used by customer support for troubleshooting purposes.
- **Self Healing Info:** this tool gathers system information, and configuration, log, and trace Exchange SPI files, for assisting customer support in troubleshooting problems. See the online Help for more information.

Exchange Topology

- **OV Topology Viewer:** This tool provides for the visualization of Microsoft Exchange and directory servers, with a 3-dimensional perspective. See "OV Topology Viewer" **on page 16** for more details.

ovo Utilities

This tool group contains the following tools:

- **Exchange Cluster Configuration:** This tool prints apminfo data, which can be used to create the apminfo.xml file used by the Exchange SPI to recognize clustered instances. For further information about Exchange SPI monitoring clusters, see "Exchange SPI Clustering support" on page 125.
- **Embedded Performance Component Configuration**: This tool creates the EXSPI_DATA datasource, classes and metrics. It performs the same functions as the Auto Deploy policy **EXSPI-6.X exspi Agent Configuration** in the **ovo Exchange SPI core > Data Collection** group. The tool will list all current datasources prior to creation of the EXSPI_DATA datasource. To verify successful creation, wait a few minutes after initial execution, and execute the tool again. See "Embedded Performance Component (EPC) schema" on page 185 for a complete listing of the EPC schema.

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 online Help.

Exchange SPI reports and graphs

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

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

Reports and graphs are populated with data collected by the EXSPI data collection policies. Data is consolidated nightly and used to generate 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.

Graphs are near real-time, populated with data contained in the Exchange SPI Embedded Performance Component (EPC).

See the Exchange SPI online Help for detailed information about each report, the policies that need to be deployed for each report, and troubleshooting tips.

To display a report or graph

When a report/graph group is highlighted 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. A dialog asks you to select the nodes from which to take data, and the date range and level of granularity desired. Click Finish, and the report or graph will display.

Exchange SPI reports

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

For a complete listing of Exchange SPI reports, see "Exchange SPI reports" on page 96. For details about each report, including troubleshooting tips, see the Exchange SPI online Help.

Figure 20 SPI for Exchange 2003 Client Access reports

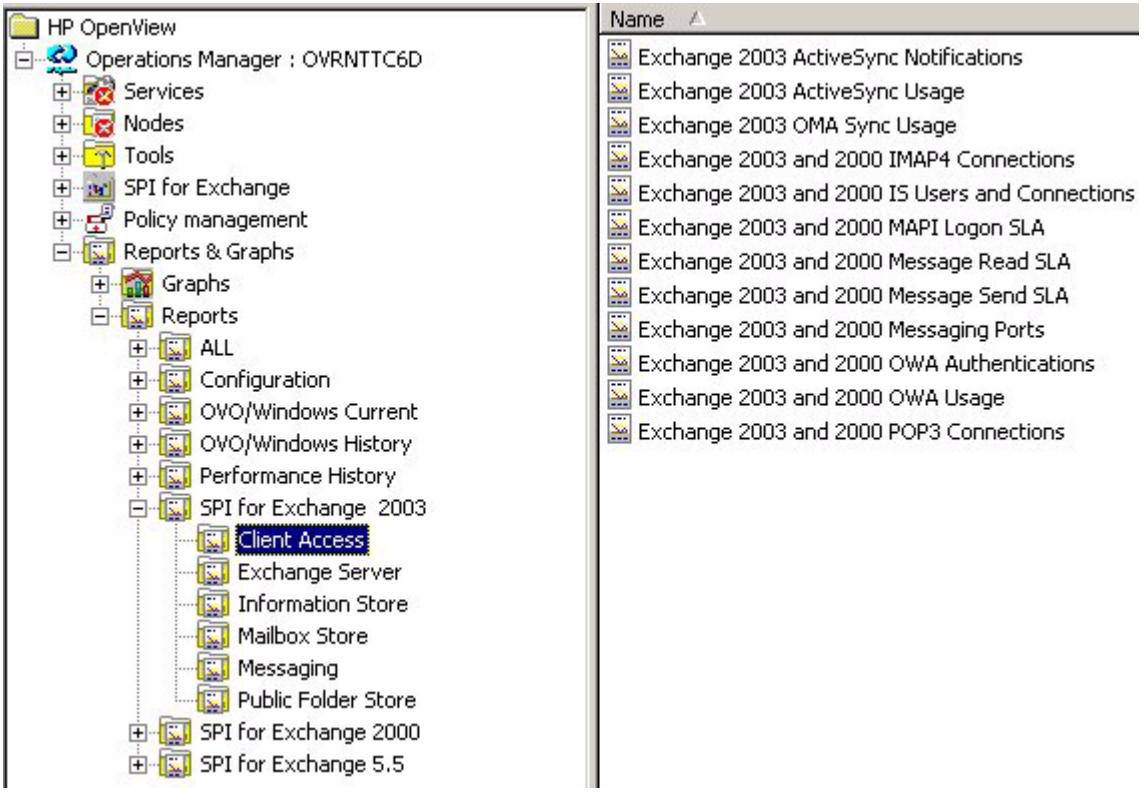
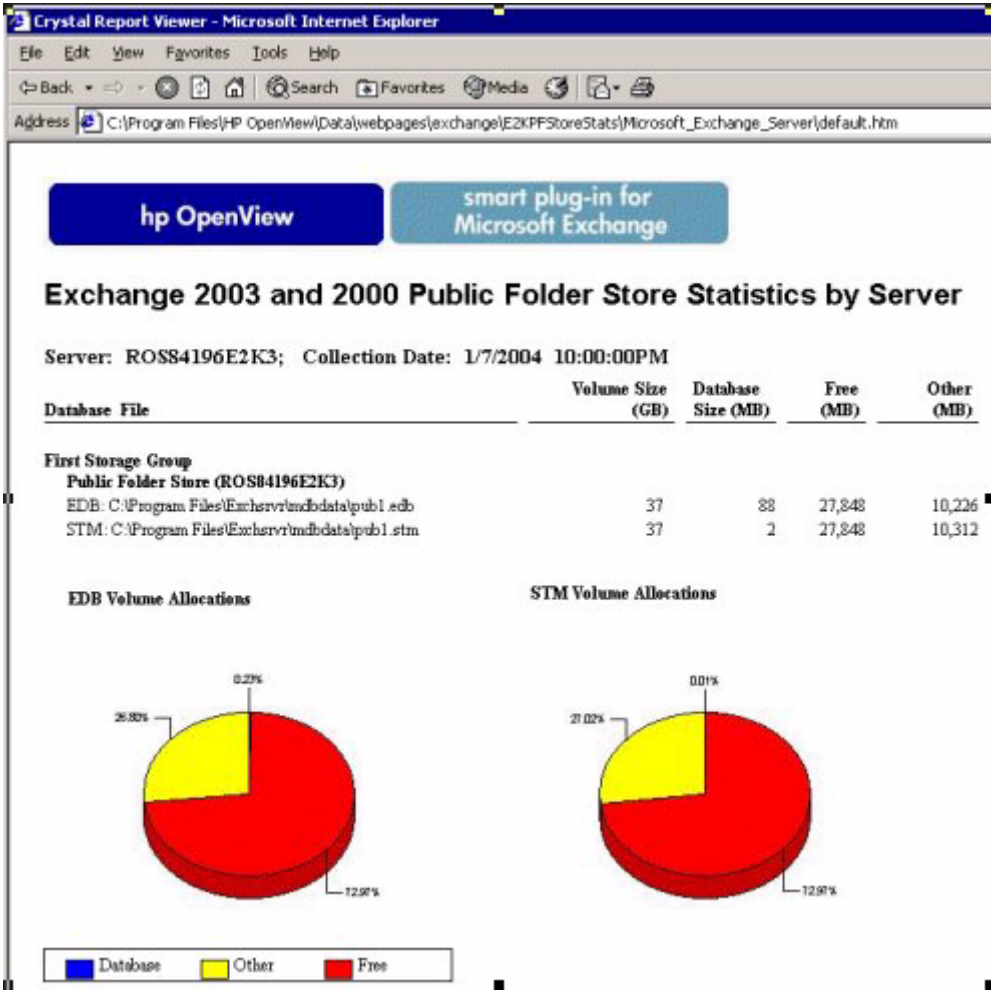


Figure 21 SPI for Exchange report example

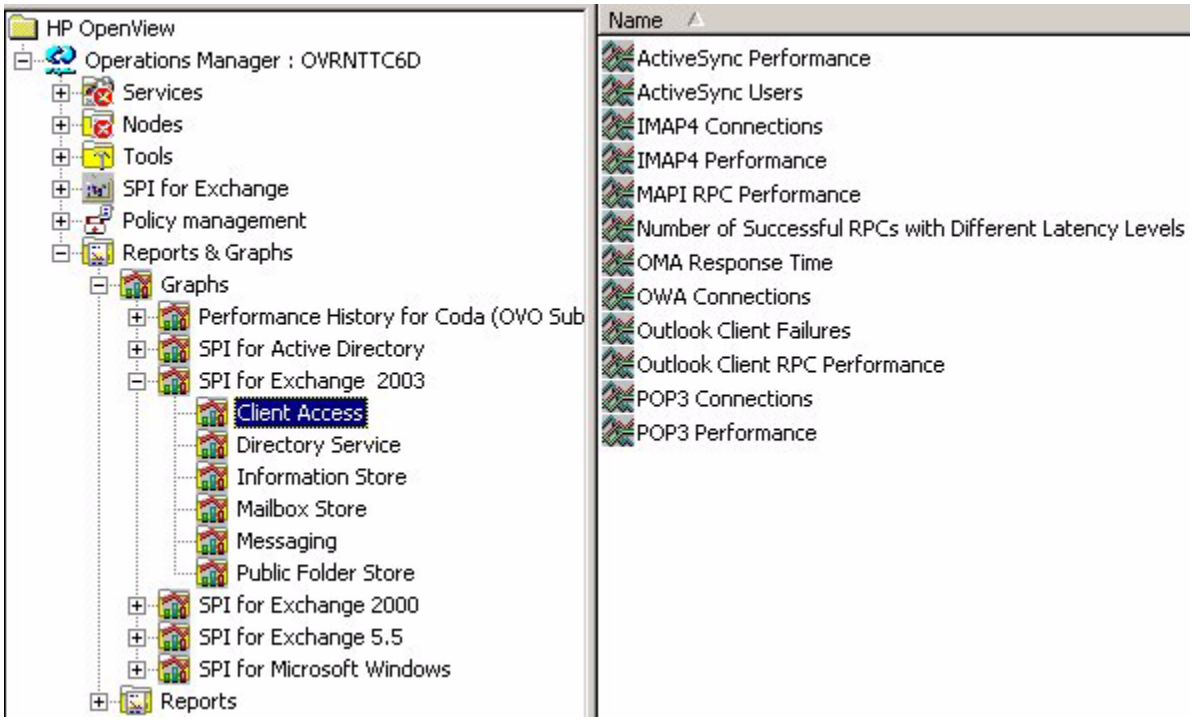


Exchange SPI graphs

Graphs are displayed in the console organized by service. The list of graphs available in any service category is displayed in the details pane when the service category is selected.

SPI for Exchange Graphs are located in **Reports and Graphs > Graphs > SPI for Exchange** *(version #)*. For a complete listing of Exchange SPI graphs, see "Exchange SPI graphs" on page 102.

Figure 22 SPI for Exchange 2003 Client Access graphs



Where to find Exchange SPI documentation

2

Version Details and Upgrading

This chapter covers upgrading information, and policy and tool changes from the last Exchange SPI version to this one.

Policy changes in this version

Threshold changes in policies

In response to customer feedback, the default out-of-the-box threshold values and scheduled times within all Exchange 2000 and 2003 policies have been enhanced. Please check the properties of individual policies.

Obsolete policies

- EXSPI-6.0 Dc-IS Msg Delivery Time
- EXSPI-6.0 Dc-IS Public Msg Vol
- EXSPI-6.0 Dc-IS Private Msg Vol
- EXSPI-6.0 Dc-MTA & IS Queue Lengths
- EXSPI-6.0 Dc-Exchange Info
- EXSPI-6.0 Dc-MTA Message Volume
- EXSPI-6.0 Create Coda Data Sources

- EXSPI-6.0 Dc-User Connections
- EXSPI-6.0 Dc-SMTP Message Volume
- EXSPI-6.0 Measurement Data Collector

New policies

ActiveSync:

- EXSPI-6.5 ActiveSync AD requests
- EXSPI-6.5 ActiveSync Mailbox Connection requests
- EXSPI-6.5 ActiveSync Mailbox pending requests
- EXSPI-6.5 ActiveSync Users
- EXSPI-6.5 DC ActiveSync
- EXSPI-6.5 DC ActiveSyncNotify

OMA (Outlook Mobile Access):

- EXSPI-6.5 OMA Response time
- EXSPI-6.5 OMA Application Event Errors
- EXSPI-6.5 DC OMA

MAPI (Messaging Application Programming/Protocol Interface):

- EXSPI-6.X Information Store RPC Averaged Latency

Outlook 2003

- EXSPI-6.5 Outlook Client Latency
- EXSPI-6.5 Outlook Client RPC Failure Rate
- EXSPI-6.5 DC Outlook Client

OWA (Outlook Web Access)

- EXSPI-6.X OWA Current Connections
- EXSPI-6.X Dc- OWA Back End
- EXSPI-6.X Dc-OWA Front End

- EXSPI-6.X HTTP Port Response

IMAP4 (Internet Message Access Protocol, version 4)

- EXSPI-6.X IMAP4 Failed Connection Rate
- EXSPI-6.X IMAP4 Rejected Connection Rate
- EXSPI-6.X IMAP4 Connections
- EXSPI-6.X IMAP4 Port Response
- EXSPI-6.X-Dc IMAP4 Performance

POP3 (Post Office Protocol version 3):

- EXSPI-6.X POP3 Failed Connections Rate
- EXSPI-6.X POP3 Rejected Connections Rate
- EXSPI-6.X POP3 Connections
- EXSPI-6.X POP3 Port Response
- EXSPI-6.X-Dc POP3 Connections

Clusters:

- EXSPI-6.X Cluster Connection Limits

Full Text Index:

- EXSPI-6.X 0074
- EXSPI-6.X DC Full Text Index

Mailbox:

- EXSPI-6.X Dc-IS Mailbox Performance

IS (Information Store) Performance:

- EXSPI-6.X Information Store User Count
- EXSPI-6.X Information Store Db Cache Size
- EXSPI-6.X Information Store VM Largest Block
- EXSPI-6.X Information Store VM 16MB Blocks

- EXSPI-6.X Information Store VM Large Block Bytes
- EXSPI-6.5 Information Store Additional Heaps
- EXSPI-6.5 Information Store Memory Errors
- EXSPI-6.5 Information Store Heap Memory Errors
- EXSPI-6.X Dc-Information Store Performance
- EXSPI-6.5 Check Memory Configuration

Public Folder:

- EXSPI-6.X Dc-IS Public Folder Performance

Transaction log:

- EXSPI-6.X Transaction Log BackUp Check
- EXSPI-6.X-0008

SMTP:

- EXSPI-6.X SMTP Port Response
- EXSPI-6.X Dc-SMTP Server Performance
- EXSPI-6.X DC SMTP Virtual Server Storage
- EXSPI-6.X-0082
- EXSPI-6.X-0083
- EXSPI-6.X-0084
- EXSPI-6.X-0085
- EXSPI-6.X-0086
- EXSPI-6.X-0087

Tracking Log:

- EXSPI-6.X Dc-TrackLog SLA Delivery
- EXSPI-6.X Dc-Message Tracking Log Space Usage
- EXSPI-6.X-0076

MTA (Message Transfer Agent):

- EXSPI-6.X DC X.400 Service MTA Queue
- EXSPI-6.X Dc-MTA Performance
- EXSPI-6.X-0075

Lotus Notes:

- EXSPI-6.0 Lotus Notes Process Monitor

SRS (Site Replication Service):

- EXSPI-6.X SRS Process Monitor
- EXSPI-6.X SRS Service

Active Directory Connector Server:

- EXSPI-6.X ADC Service
- EXSPI-6.X ADC Operation Failure Rate
- EXSPI-6.X ADC Import Failure Rate
- EXSPI-6.X ADC Process Monitor

Client Accessibility:

- EXSPI-6.X Client Message Read
- EXSPI-6.X Client MAPI Logon
- EXSPI-6.X Client Message Send

ovo Exchange SPI core/ Data Collection:

- EXSPI-6.X exspi Agent Configuration

Re-organization of policies, reports and graphs

Policies, reports and graphs are in folders according to Exchange version.

For Exchange 2003 and 2000

- The policy groupings Quick Start, Add-Ons and Advanced are obsolete.

- Policies are grouped in Auto Deploy Groups and Manual Deploy Groups. All Auto Deploy policies are automatically deployed to managed nodes. Manual Deploy policies require some manual configuration, or special circumstances, before deployment.
- Policies in Manual Deploy and Auto Deploy groups are grouped based on a service-centric view of Exchange. See Chapter 4, Using Exchange SPI policies, reports and graphs for more details.

Renaming of policies in this version

- All policies for both Exchange 2000 and 2003 versions, now have the prefix **6.*X***
- All policies for the Exchange 2000 version only, now have the prefix **6.0**.
- All policies for the Exchange 2003 version only, now have the prefix **6.5**.

Upgrading Exchange SPI from B.08.00

IT IS IMPORTANT TO FOLLOW THE UPGRADE INSTRUCTIONS. FAILURE TO DO SO MAY RESULT IN UNPREDICTABLE OVO MANAGEMENT SERVER, OVO CONSOLE, AND OVO MANAGED NODE STATE, OR LOSS OF HISTORICAL EXCHANGE SPI DATA.

For Side by Side migration procedure to upgrade to OVO 7.5 cluster, see the HP OpenView Operations for Windows, Upgrade Guide, Software Version 7.50.

The procedure for upgrade from Exchange SPI version B.08.00 to B.09.00 is accomplished with the following tasks:

1. Upgrade the OVO management server from OVO for Windows 7.21 to OVO for Windows 7.5, see the HP OpenView Operations for Windows, Upgrade Guide, Software Version 7.50, for procedures.
2. Remove the SPI of Exchange **Tools** group.
3. Install Exchange SPI Version B.09.00 from the Application SPI CD.
4. After the install completes note that the policy group **SPI for Exchange** is renamed to **SPI for Exchange Version 8.**
5. Determine which of your SPI for Exchange Version 8 policies contain customizations that are desired in the new version of the product and manually merge them. Examples of customizations to carry forward into the new product include thresholds and schedules.
6. If managing Exchange 5.5 servers:
   a. Copy the configuration contents of the EXSPI 5.5 Ping Config to the new version (9) of this policy.
   b. Update all policies that contain user account information such as Advanced Data Collectors and the Service Discovery policy
7. Un-deploy all old Exchange SPI policies from all managed nodes.
8. For **Auto-Deployment of polices** you must remove the existing portion of the Service map associated with the managed Exchange node, by using Configure Services to delete the Server from the Exchange Service map. **NOTE:** For **manual deployment of polices** ignore this step.

9 Upgrade the Agent on the nodes by deploying the Openview Operations Agent – located in the **Packages** folder of the OVO console.

10 Deploy Discovery:

a **For Exchange 2000 and 2003**: Deploy the Exchange Discovery policy group for the appropriate version. For example, to all Exchange 2003 servers deploy the SPI for Exchange > Exchange 2003 > Auto Deploy Groups > ovo Exchange SPI core > Exchange Discovery policy group. This action will discover the node's Exchange Services and deploy the corresponding policy groups and instrumentation.

b **For Exchange 5.5**: Deploy the EXSPI Discovery policy group.

3

Getting started

Getting started managing Exchange 2000 and 2003 servers

1. Install the HP OpenView Smart Plug-ins CD

Install the SPI CD, and select the SPI for Exchange component.

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.

2. Select nodes to manage

- 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:
  - — As the Exchange server role is discovered, relevant policies for Exchange 2000 and 2003 servers in the **Auto Deploy Groups** are auto-deployed to the newly managed nodes.

— 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 OVO Exchange Service Map.

— Any events that require operator action are sent to the active message browser and the corresponding service map nodes.

3. Modify policy threshold values, as desired

The SPI for Exchange policy thresholds are set up based on customer feedback, Microsoft best practices, and consultant recomendations.The operator may modify the factory set thresholds as appropriate for their Exchange activity.

Some of the Measurement Threshold polices contain embedded script. To change threshold values for these types of polices open the script and change the following parameters:

Const THRESHOLD = 10	This is the threshold used for the rule alarm.
Const CONSECUTIVE = 3	How many consecutive times that metric value exceeds the threshold before sending an alarm.
Const CONSECUTIVEMAX = 6	When the metric exceeds the threshold but is improving then CONSECUTIVE MAX intervals are allowed before an alarm is sent.
Const THRESHOLDCHANGEMAGNITUDE =0	The threshold will be ignored, instead the metric value is allowed to deviate from the observed value by the MAGNITUDE CHANGE from interval to interval.

NOTE: Any modification to a threshold on a policy requires that policy to be re-deployed.

4. Configure the End-to-End Message Ping

See “Exchange 2000/2003: monitoring message delivery SLAs” on page 112 for details.

5. Configure the MAPI Service Level Objective policies

See the Exchange SPI online Help for procedures.

6. Deploy Manual Deploy Groups policies, as desired

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.

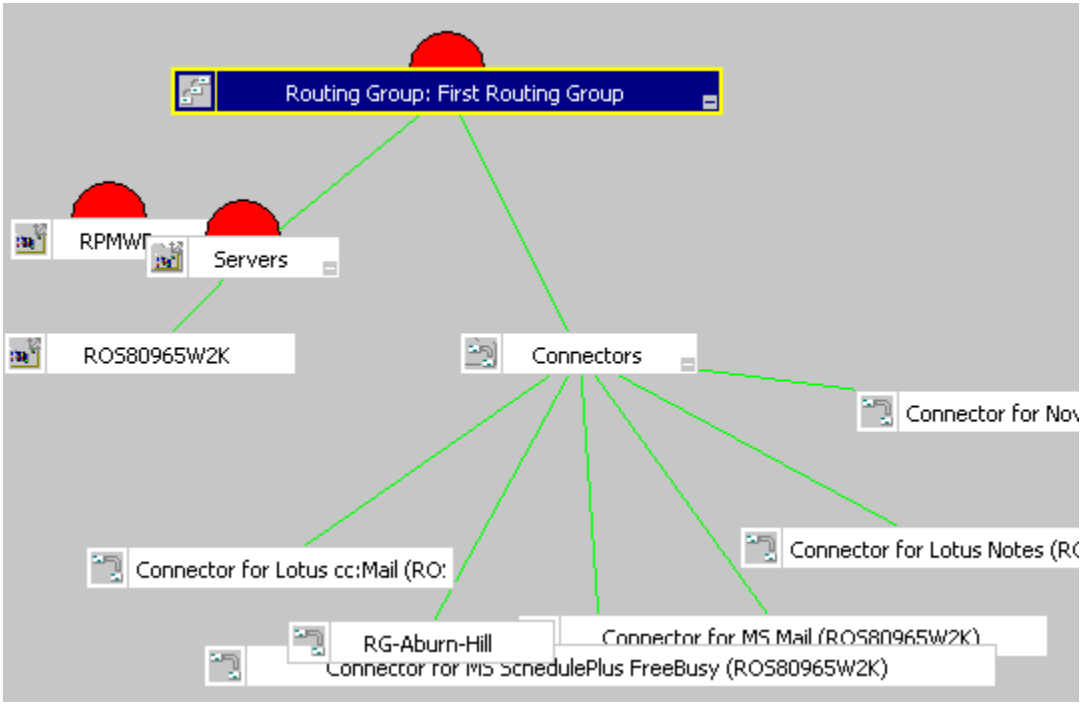
- **How it works**

Exchange 2000 and 2003 topology is discovered by the EXSPI-6.X 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 1 Service view of one Exchange 2000 routing group

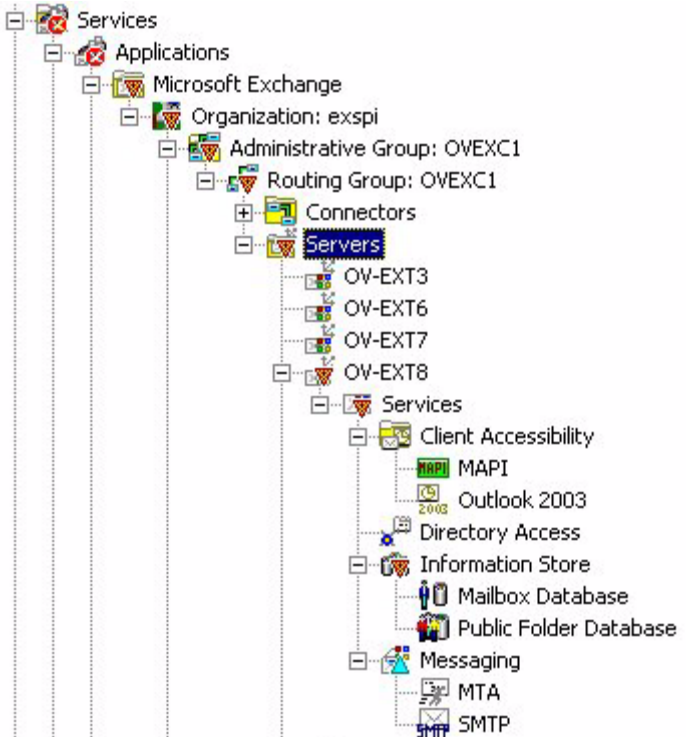


The Organization, with the name given by the Exchange administrator, is located beneath the Exchange folder on the OVO console tree. The hierarchical structure below the organization name are folders mirroring your Exchange organizational structure. In the case of OVO managed nodes, all services are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

Identify Exchange servers/services

The Exchange topology is discovered by the Service Discovery policies and the information is visible in the Organizations under **Services > Applications > Microsoft Exchange** on the OVO console tree.

Figure 2 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 "3. Add Exchange 5.5 servers to the Nodes folder" on page 57, now.

Getting started managing Exchange 5.5 servers

1. Install the HP OpenView Smart Plug-ins CD

Install the SPI CD, and select the SPI for Exchange component.

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.

2. Add User name and Password to EXSPI-5.5 Exchange Service Discovery

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 7, Exchange 5.5 user privileges.

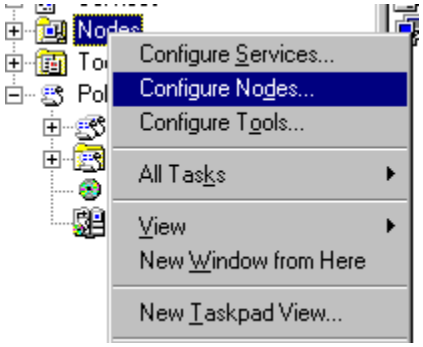
3. Add Exchange 5.5 servers to the Nodes folder

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 3 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.

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.

5. Policy deployment, as desired

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.

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**.

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.

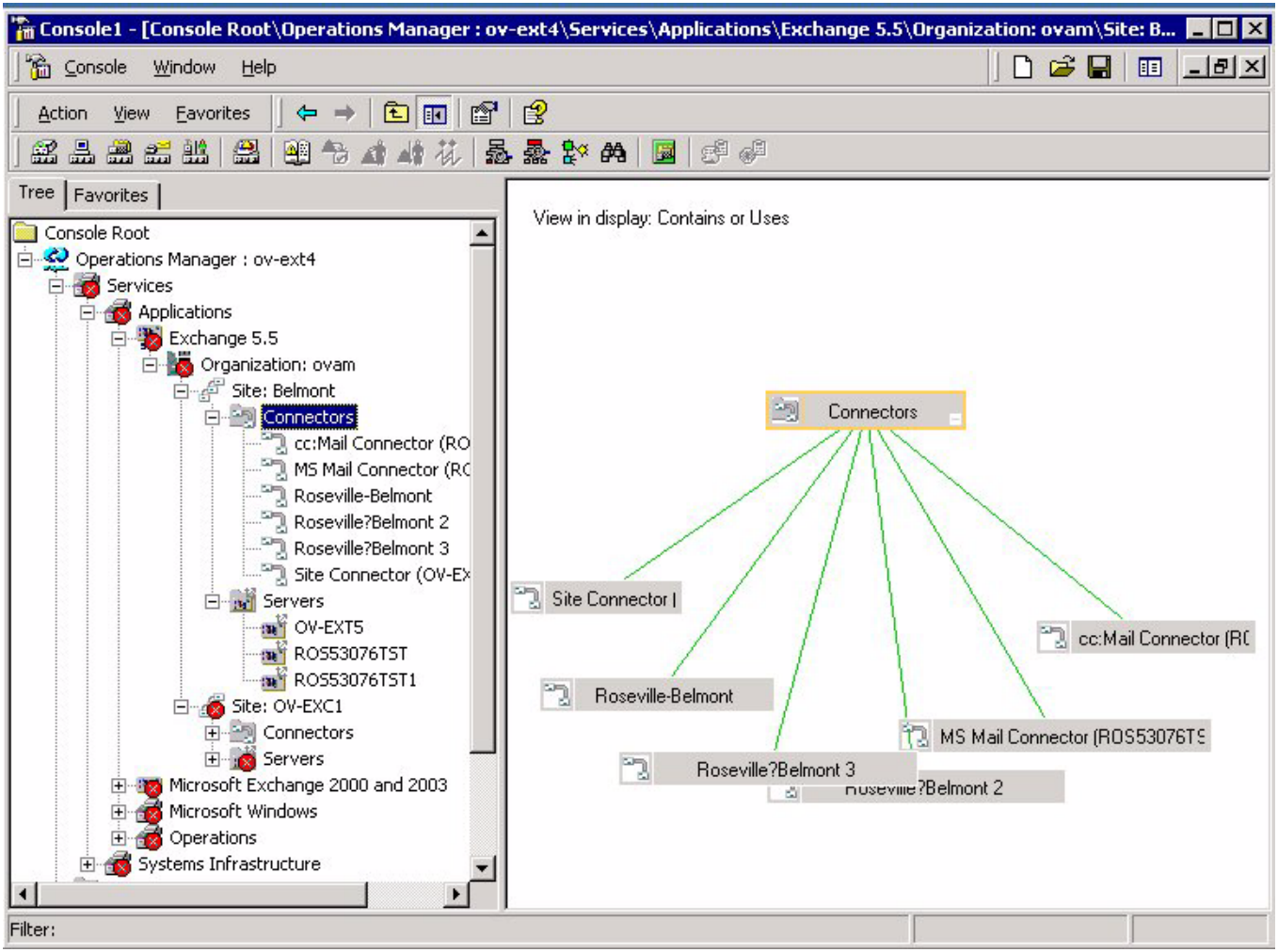
The user ID and password of a service account with special Active Directory privileges must be added to the EXSPI-5.5 Exchange Service Discovery policy before deployment. For information on this type of account, and how to create one, see Chapter 7, Exchange 5.5 user privileges.

- **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. In the case of OVO managed nodes, all services are listed by product name.

Figure 4 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 “3. Add Exchange 5.5 servers to the Nodes folder” on page 57, now.

For Exchange 5.5, the Service Discovery policy requires the User name and Password of a service account with special Active Directory and Exchange privileges. For more information on this type of account and how to create one, see Chapter 7, Exchange 5.5 user privileges.

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 policy threshold that is causing the alarm. See the OVO online Help for instructions on how to adjust a threshold in a policy.

- The Exchange SPI reports and graphs

  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

  Use the Service Map View to see which services are impacted by any message alarm.

- The OpenView Topology Viewer

  Monitor changes to your Exchange Organization by using the OV Topology Viewer. See “OV Topology Viewer” on page 16 for more details.

Regarding reporting

- For Exchange 2000 and 2003, the **Auto Deploy** folders contain basic schedule policies that perform the data collection/logging work on the managed nodes. For Exchange 5.5, these policies are in the Advanced policy group and need to be manually deployed, see “5. Policy deployment, as desired” on page 58.
- 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. Some data collection policies only run on Saturday/Sunday, so some reports will not have data until after a Saturday/Sunday collection is performed. See the Exchange SPI online Help for a mapping of data collection policies to reports.
- The SPI for Exchange **Reports** folder will not be created until data is collected on nodes and the Service Reporter consolidation process has run. Out of the box the Reporter Data consolidation process (`codaGather.exe`) is scheduled to run each day shortly after midnight.
- For full functionality of Exchange SPI reports, the full version of Reporter, or Reporter-lite, must be installed on the same management server as OpenView Operations for Windows. Both versions of Reporter are supported within the Exchange SPI reporting package.

4

Using Exchange SPI policies, reports and graphs

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

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

Using Exchange SPI policies

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.

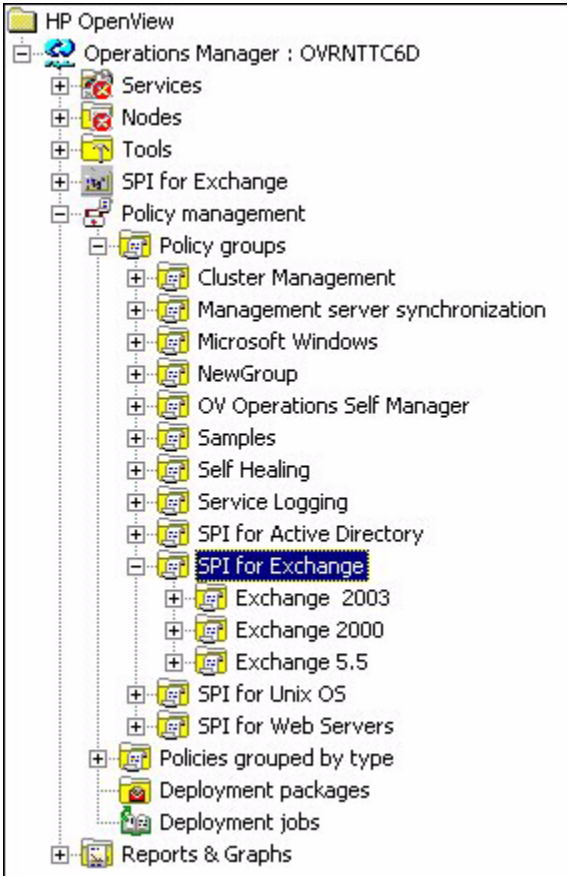
- Some policies in the SPI for Exchange policy groups require that particular software components/services are installed on Exchange server systems before the deployed policies will work.
- For many Exchange 5.5 data collection policies, you must configure a service account with special Exchange privileges, see “Creating a service account for Exchange 5.5 servers” on page 137.
- 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 2000 only, have the prefix EXSPI-6.0
  - policies for Exchange version 2000 and 2003, have the prefix EXSPI-6.X
  - policies for Exchange version 5.5 only, have the prefix EXSPI-5.5.
- Updating the account information (user name and password) in many policies at once on the management server can be performed using the HP OpenView Operations for Windows tool called **ovpmpwutil**. Detailed procedures for using ovpmpwutil can be found in the Command-line Tools section of HP OpenView Operations for Windows online Help.

Use the following tables to decide which policies you want to install. Policy Group Descriptions show you what type of data/functionality the policy group offers.

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

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

Figure 5 SPI for Exchange policy location on the console tree



Exchange 2003 policies

Exchange 2003 Auto Deploy policies

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

Exchange 2003 Auto Deploy Groups	Policies
Client Accessibility	**ActiveSync** EXSPI-6.5 ActiveSync AD Requests EXSPI-6.5 ActiveSync Mailbox Connection Requests EXSPI-6.5 ActiveSync Mailbox pending requests EXSPI-6.5 ActiveSync Users EXSPI-6.5 Dc-ActiveSync EXSPI-6.5 Dc-ActiveSyncNotify **OMA** EXSPI-6.5 OMA Response time EXSPI-6.5 Dc-OMA EXSPI-6.5 OMA Application Event Errors **IMAP4** EXSPI-6.X IMAP4 Failed Connection Rate EXSPI-6.X IMAP4 Rejected Connection Rate EXSPI-6.X IMAP4 Connections EXSPI-6.X Dc-IMAP4 Performance EXSPI-6.X IMAP4 Port Response **MAPI** EXSPI-6.X Information Store RPC Requests EXSPI-6.X Information Store RPC Operations EXSPI-6.X Information Store RPC Averaged Latency **Outlook 2003** EXSPI-6.5 Dc-Outlook Client EXSPI-6.5 Outlook Client Latency EXSPI-6.5 Outlook Client RPC Failure Rate

Exchange 2003 Auto Deploy Groups	Policies
Client Accessibility (cont)	**OWA** **Front End:** EXSPI-6.X OWA Current Connections EXSPI-6.X Dc-OWA Front End EXSPI-6.X HTTP Port Response **Back End:** EXSPI-6.X Dc-OWA Back End **POP3** EXSPI-6.X POP3 Failed Connection Rate EXSPI-6.X POP3 Rejected Connection Rate EXSPI-6.X POP3 Connections EXSPI-6.X Dc-POP3 Performance EXSPI-6.X POP3 Port Response
Cluster	EXSPI-6.X Exchange Cluster Discovery SysLog EXSPI-6.X Cluster Connection Limits
Directory	EXSPI-6.X DSAccess Cache Hit-Miss Ratio EXSPI-6.X Dc-DSAccess Performance EXSPI-6.X DSAccess Application Errors

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

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

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

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

Exchange 2003 Auto Deploy Groups	Policies
ovo Exchange SPI core	**Data Collection** EXSPI-6.X exspi Agent Configuration EXSPI-6.X Messages **Exchange Discovery** EXSPI-6.X Check Discovery EXSPI-6.X Exchange Service Discovery EXSPI-6.X Exchange Cluster Discovery SysLog

Exchange 2003 Manual Deploy policies

Exchange 2003 Manual Deploy Groups	Policies
Site Replication Service	EXSPI-6.X SRS Process Monitor EXSPI-6.X SRS Service EXSPI-6.X-0112 EXSPI-6.X SRS Pending Synchronizations EXSPI-6.X SRS Data Space Usage EXSPI-6.X SRS Remaining Updates EXSPI-6.X-0113
Active Directory Connector Server	EXSPI-6.X ADC Process Monitor EXSPI-6.X ADC Service EXSPI-6.X ADC Import Failure Rate EXSPI-6.X ADC Operation Failure Rate

Exchange 2003 Manual Deploy Groups	Policies
Exchange Server	**Availability** EXSPI-6.X Server State EXSPI-6.X Exchange Application Information EXSPI-6.X Exchange System Information EXSPI-6.X Exchange Application Warnings EXSPI-6.X Exchange System Warnings **Transaction Log** EXSPI-6.X-0005 EXSPI-6.X-0006 EXSPI-6.X Transaction Log Storage Use **Message Delivery** EXSPI-6.X End to End Message Ping **Client Accessibility** EXSPI-6.X Client Message Read EXSPI-6.X Client MAPI Logon EXSPI-6.X Client Message Send

Exchange 2000 policies

Exchange 2000 Auto Deploy policies

Exchange 2000 Auto Deploy Groups	Policies
Availability	EXSPI-6.X Queue State EXSPI-6.X Connector State EXSPI-6.X Exchange System Errors EXSPI-6.X Link State EXSPI-6.X Exchange Services EXSPI-6.X Process Monitor EXSPI-6.X Exchange Application Errors EXSPI-6.X Inactive Process Monitor

Exchange 2000 Auto Deploy Groups	Policies
Client Accessibility	**IMAP4** EXSPI-6.X IMAP4 Failed Connection Rate EXSPI-6.X IMAP4 Rejected Connection Rate EXSPI-6.X IMAP4 Connections EXSPI-6.X Dc-IMAP4 Performance EXSPI-6.X IMAP4 Port Response **MAPI** EXSPI-6.X Information Store RPC Requests EXSPI-6.X Information Store RPC Operations EXSPI-6.X Information Store RPC Averaged Latency **OWA** **Front End:** EXSPI-6.X OWA Current Connections EXSPI-6.X Dc-OWA Front End EXSPI-6.X HTTP Port Response **Back End:** EXSPI-6.X Dc-OWA Back End **POP3** EXSPI-6.X POP3 Failed Connection Rate EXSPI-6.X POP3 Rejected Connection Rate EXSPI-6.X POP3 Connections EXSPI-6.X Dc-POP3 Performance EXSPI-6.X POP3 Port Response
Cluster	EXSPI-6.X Exchange Cluster Discovery SysLog EXSPI-6.0 Exchange Cluster Discovery AppLog EXSPI-6.X Cluster Connection Limits
Directory	EXSPI-6.X DSAccess Cache Hit-Miss Ratio EXSPI-6.X Dc-DSAccess Performance EXSPI-6.X DSAccess Application Errors

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

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

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

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

Exchange 2000 Auto Deploy Groups	Policies
Optional Exchange Server Roles	**EXSPI Chat Service** EXSPI-6.0-0836 EXSPI-6.0-0835 EXSPI-6.0 15m-Chat EXSPI-6.0-0834 EXSPI-6.0-0833 EXSPI-6.0-0831 EXSPI-6.0-0830 EXSPI-6.0 Dc-Chat Service Clients and Channels **EXSPI Conferencing Service** **EXSPI Conference Server** EXSPI-6.0-0801 EXSPI-6.0 10m-Conf EXSPI-6.0 Dc-ConfTrends EXSPI-6.0-0800 EXSPI-6.0-0802 **EXSPI Conferencing Bridge** EXSPI-6.0-0805 EXSPI-6.0 10m-ConfBridge EXSPI-6.0-0807 EXSPI-6.0-0806 **EXSPI MCU Server** EXSPI-6.0-0803 EXSPI-6.0 10m-MCU EXSPI-6.0 Dc-MCU EXSPI-6.0-0804 **EXSPI Instant Messaging** EXSPI-6.0-0842 EXSPI-6.0-0846 EXSPI-6.0-0845 EXSPI-6.0 Dc-Instant Messaging Enabled Users EXSPI-6.0-0841

Exchange 2000 Auto Deploy Groups	Policies
ovo Exchange SPI core	**Data Collection** EXSPI-6.X exspi Agent Configuration EXSPI-6.X Messages **Exchange Discovery** EXSPI-6.X Check Discovery EXSPI-6.X Exchange Service Discovery EXSPI-6.X Exchange Cluster Discovery SysLog

Exchange 2000 Manual Deploy policies

Exchange 2000 Manual Deploy Groups	Policies
Site Replication Service	EXSPI-6.X SRS Process Monitor EXSPI-6.X SRS Service EXSPI-6.X-0112 EXSPI-6.X SRS Pending Synchronizations EXSPI-6.X SRS Data Space Usage EXSPI-6.X SRS Remaining Updates EXSPI-6.X-0113
Active Directory Connector Server	EXSPI-6.X ADC Process Monitor EXSPI-6.X ADC Service EXSPI-6.X ADC Import Failure Rate EXSPI-6.X ADC Operation Failure Rate

Exchange 2000 Manual Deploy Groups	Policies
Exchange Server	**Availability** EXSPI-6.X Server State EXSPI-6.X Exchange Application Information EXSPI-6.X Exchange System Information EXSPI-6.X Exchange Application Warnings EXSPI-6.X Exchange System Warnings **Transaction Log** EXSPI-6.X-0005 EXSPI-6.X-0006 EXSPI-6.X Transaction Log Storage Use **Message Delivery** EXSPI-6.X End to End Message Ping **Client Accessibility** EXSPI-6.X Client Message Read EXSPI-6.X Client MAPI Logon EXSPI-6.X Client Message Send

Manual deployment of Exchange 2000 and 2003 policies

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

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

To deploy policies manually:

1. Select the desired policies.
2. Right click and select **All Tasks > Deploy on.....**
3. Select the nodes on which to deploy the policies.
4. Select **Launch....**

Manual Deploy policy groups

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

Exchange 5.5 policies

Policy group prerequisites for Exchange 5.5

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

Policy Group/ Subgroup	Required Service	Required Manual Configuration
EXSPI Reporter Collection	N/A	• Create MSXSPI service account and password • Modify policies to include user name and password

Policy group descriptions for Exchange 5.5

Quick Start policies for Exchange 5.5

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

Add-Ons policies for Exchange 5.5

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

Advanced policies for Exchange 5.5

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

Using Exchange 5.5 reports and graphs

Data collection for reports and graphs

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

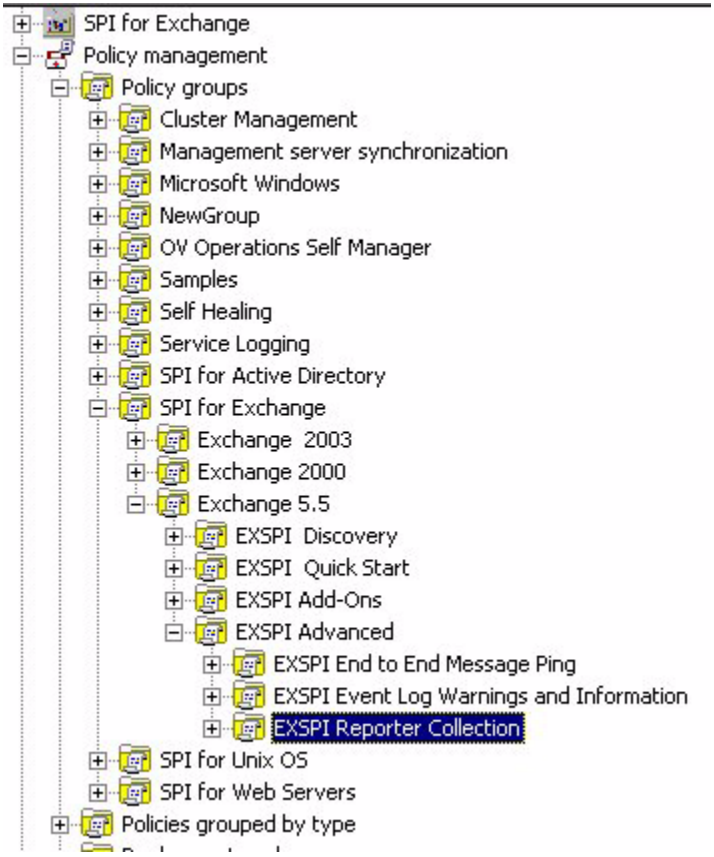
Configuring and deploying Reporter Collection policies

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

The following steps are outlined:

- Create Mailboxes.
- Modify the EXSPI Reporter Collection policies to include service account user name and password.
- Deploy Reporter Collection policies.
- Enable message tracking.

Figure 6 Exchange 5.5 Reporter Collection policies location



Task 1: Create mailboxes

See the procedure "Create mailboxes" on page 115.

Task 2: Modify the EXSPI Reporter Collection Policies to include the service account user name and password

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

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 135.
5. Click **Save** and **Close**.
6. Repeat these steps for each Reporter Collection policy in the group.

Task 3: Deploy Reporter Collection policies

1. In the OVO Manager console expand the **Policy management** > **Policy groups** folders to view policy groups.
2. Open **SPI for Exchange** > **Exchange 5.5** > **EXSPI Advanced** to view the policy groups in the EXSPI Advanced folder.
3. In the **EXSPI Advanced** folder double-click the **Reporter Collection** policy sub-group and see the individual policies in the details pane.
4. Select the **Dc-Exchange Info** policy, right-click and select **All Tasks** > **Deploy on**, check all the nodes and click **OK**.
5. Other Reporter policies are deployed to servers depending on whether they host mailboxes or public folders.
6. For servers which host mailboxes, select the **Dc-TrackLog Data**, **Dc-Private IS Sum Data** and **Dc-Mailbox Data** policies in the details pane, right-click and select **All Tasks > Deploy on**, then select all the servers which host mailboxes and click **OK**.
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

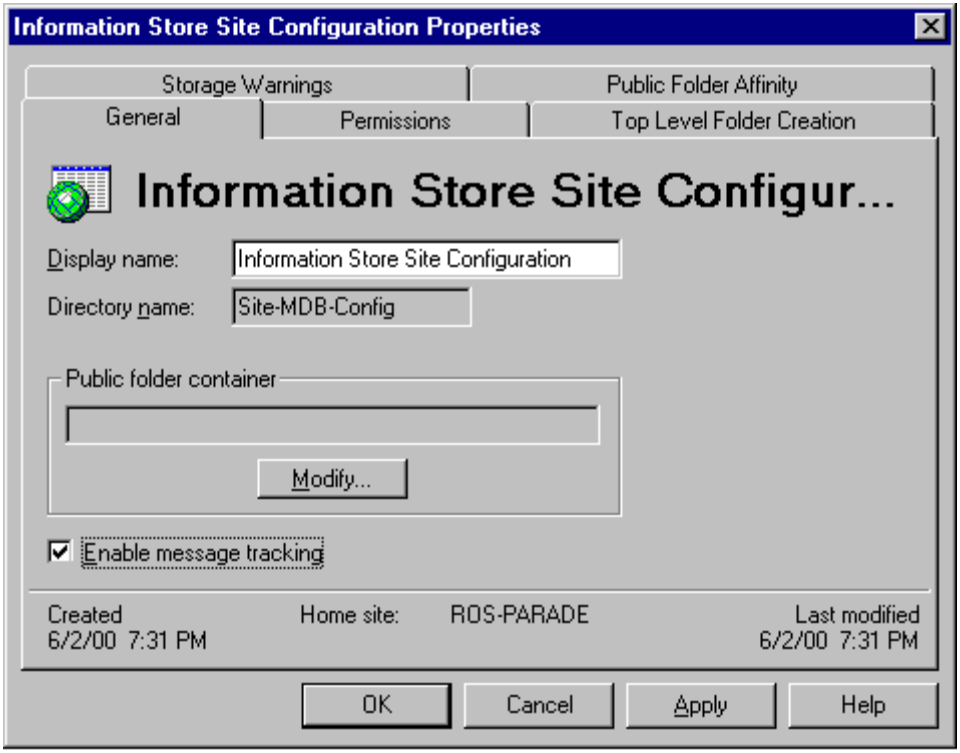
Exchange provides a message-tracking facility that stores processed message information in a log file. This information, which includes sender address, recipient addresses, and message size, is collected by the EXSPI-5.5 Dc-TrackLog Data collection policy. This policy must be deployed to all appropriate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

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

Enabling message tracking on Exchange 5.5 Servers

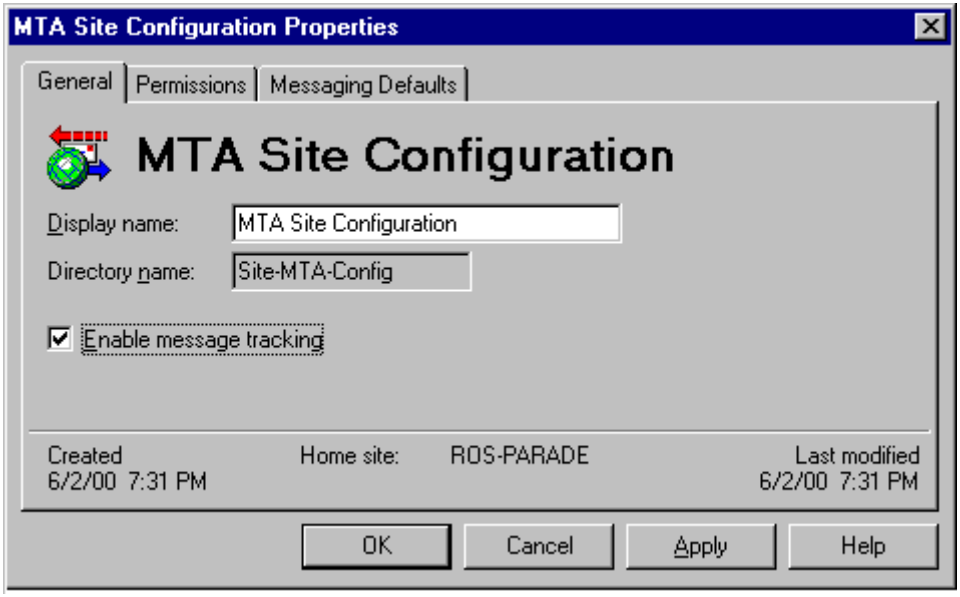
1. Select **Start** > **Programs** > **Microsoft Exchange** > **Microsoft Exchange Administrator**.
2. Expand the site level and **Configuration** to view selections beneath it.
3. In the details pane double-click **Information Store Site Configuration**.
4. In the **Information Store Site Configuration Properties** dialog, check **Enable message tracking**, and select **OK**.

Figure 7 Information Store Site Configuration dialog



5. Repeat steps 3 and 4 for MTA Site Configuration.

Figure 8 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**.

Time interval before generation of reports

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

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

To display a report:

Select the desired report, right click.and select **Show report**.

Exchange SPI reports

Exchange 2003 reports

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

Client Access

Exchange 2003 ActiveSync Usage

Exchange 2003 ActiveSync Notifications

Exchange 2003 and 2000 IMAP4 Connections

Exchange 2003 and 2000 MAPI Logon SLA

Exchange 2003 and 2000 Message Read SLA

Exchange 2003 and 2000 Message Send SLA

Exchange 2003 and 2000 OWA Authentications

Exchange 2003 and 2000 OWA Connections

Exchange 2003 and 2000 OWA Usage

Exchange 2003 OMA Sync Usage

Exchange 2003 and 2000 POP3 Connections

Exchange 2003 and 2000 Messaging Ports

Exchange Server

Exchange 2000 and 2003 System Information Summary

Information Store

Exchange 2003 and 2000 Full Text Indexing Stats

Exchange 2003 and 2000 IS Users and Connections

Exchange 2003 and 2000 Transaction Log Stats

Mailbox Store

Exchange 2003 and 2000 Inactive Mailboxes

Exchange 2003 and 2000 Mailbox Details

Exchange 2003 and 2000 Mailbox Store Stats

Exchange 2003 and 2000 Mailbox Summary

Exchange 2003 and 2000 Mailbox Store Msg Trends

Exchange 2003 and 2000 Mailbox Usage Trends

Exchange 2003 and 2000 Top 100 Mailboxes

Messaging

Exchange 2003 and 2000 All Local Msg Delivery SLA

Exchange 2003 and 2000 MTA Msg Trends

Exchange 2003 and 2000 MTA Queue Data Stats

Exchange 2003 and 2000 SMTP Connections

Exchange 2003 and 2000 SMTP Msg Trends

Exchange 2003 and 2000 SMTP Virtual Server Stats

Exchange 2003 and 2000 Message Tracking Stats

Exchange 2003, 2000, and 5.5 Top Destinations

Exchange 2003, 2000, and 5.5 Top Recipients

Exchange 2003, 2000, and 5.5 Top Senders

Exchange 2003, 2000, and 5.5 Top Sources

Exchange 2003, 2000, and 5.5 Message Delivery SLA

Public Folder Store

Exchange 2003 and 2000 Folder Summary

Exchange 2003 and 2000 Folder Usage Trends

Exchange 2003 and 2000 Inactive Folders

Exchange 2003 and 2000 Public Folder Store Stats

Exchange 2003 and 2000 Public Folder Store Msg Tnd

Exchange 2000 and 2003 Top 100 Public Folders

Exchange 2000 reports

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

Chat

Exchange 2000 Chat Trends

Client Access

Exchange 2003 and 2000 IMAP4 Connections

Exchange 2003 and 2000 MAPI Logon SLA

Exchange 2003 and 2000 MAPI Send SLA

Exchange 2003 and 2000 Message Read SLA

Exchange 2003 and 2000 OWA Authentications

Exchange 2003 and 2000 OWA Connections

Exchange 2003 and 2000 OWA Usage

Exchange 2003 and 2000 POP3 Connections

Exchange 2003 and 2000 Messaging Ports

Conferencing

Exchange 2000 Conferencing Server Trends

Exchange 2000 MCU Trends

Exchange Server

Exchange 2003 and 2000 System Information Summary

Information Store

Exchange 2003 and 2000 IS Users and Connections

Exchange 2003 and 2000 Full Text Indexing Stats

Exchange 2003 and 2000 Transaction Log Stats

Instant Messaging

Exchange 2000 Instant Messaging Availability Trends

Exchange 2000 Instant Messaging Users Growth

Mailbox Store

Exchange 2003 and 2000 Inactive Mailboxes

Exchange 2003 and 2000 Mailbox Details

Exchange 2003 and 2000 Mailbox Store Stats

Exchange 2003 and 2000 Mailbox Summary

Exchange 2003 and 2000 Mailbox Store Msg Trends

Exchange 2003 and 2000 Mailbox Usage Trends

Exchange 2000/2003 Top 100 Mailboxes

Messaging

Exchange 2003 and 2000 All Local Msg Delivery SLA

Exchange 2003 and 2000 MTA Msg Trends

Exchange 2003 and 2000 MTA Queue Data Stats

Exchange 2003 and 2000 SMTP Msg Trends

Exchange 2003 and 2000 SMTP Connections

Exchange 2003 and 2000 Message Tracking Stats

Exchange 2003, 2000, and 5.5 Top Destinations

Exchange 2003, 2000, and 5.5 Top Recipients

Exchange 2003, 2000, and 5.5 Top Senders

Exchange 2003, 2000, and 5.5 Top Sources

Exchange 2003, 2000, and 5.5 Message Delivery SLA

Exchange 2003 and 2000 SMTP Virtual Server Stats

Public Folder Store

Exchange 2003 and 2000 Folder Summary

Exchange 2003 and 2000 Folder Usage Trends

Exchange 2003 and 2000 Inactive Folders

Exchange 2003 and 2000 Public Folder Store Stats

Exchange 2003 and 2000 Public Folder Store Msg Tnd

Exchange 2000/2003 Top 100 Public Folders

Exchange 5.5 reports

Exchange Server

Exchange 5.5 System Information Summary

Information Store

Exchange 5.5 User Connections

Mailbox Database

Exchange 5.5 Mailbox Details

Exchange 5.5 Mailbox Summary

Exchange 5.5 Mailbox Usage Trends

Exchange 5.5 Top 100 Mailboxes

Messaging

Exchange 5.5 IMS Messaging Trends

Exchange 5.5 Messaging Trends

Exchange 5.5 Message Delivery SLA

Exchange 2003, 2000 and 5.5 Top Destinations

Exchange 2003, 2000 and 5.5 Top Recipients

Exchange 2003, 2000 and 5.5 Top Senders

Exchange 2003, 2000 and 5.5 Top Sources

Public Folder Database

Exchange 5.5 Folder Summary

Exchange 5.5 Folder Usage Trends

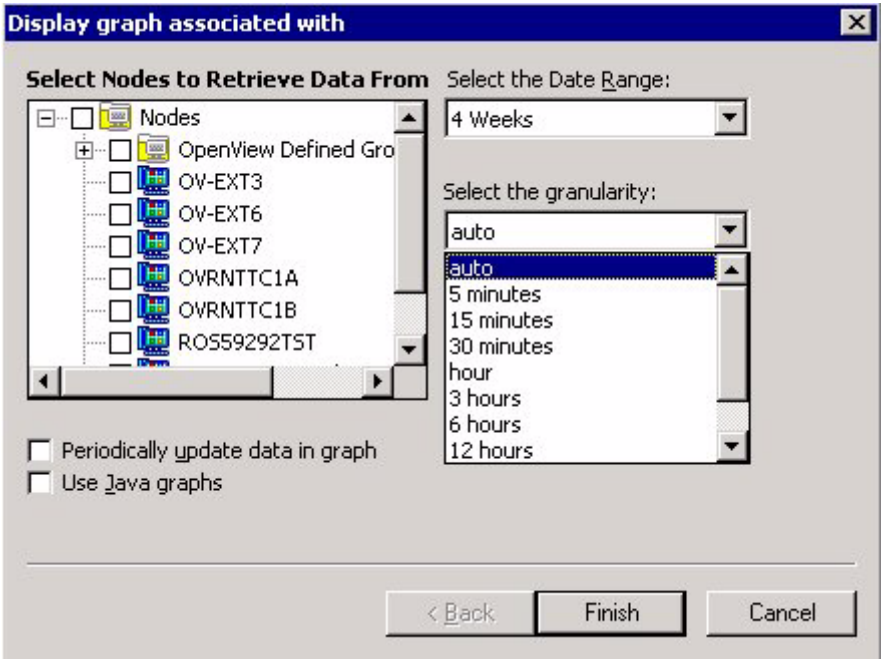
Exchange 5.5 Top 100 Public Folders

Exchange SPI graphs

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

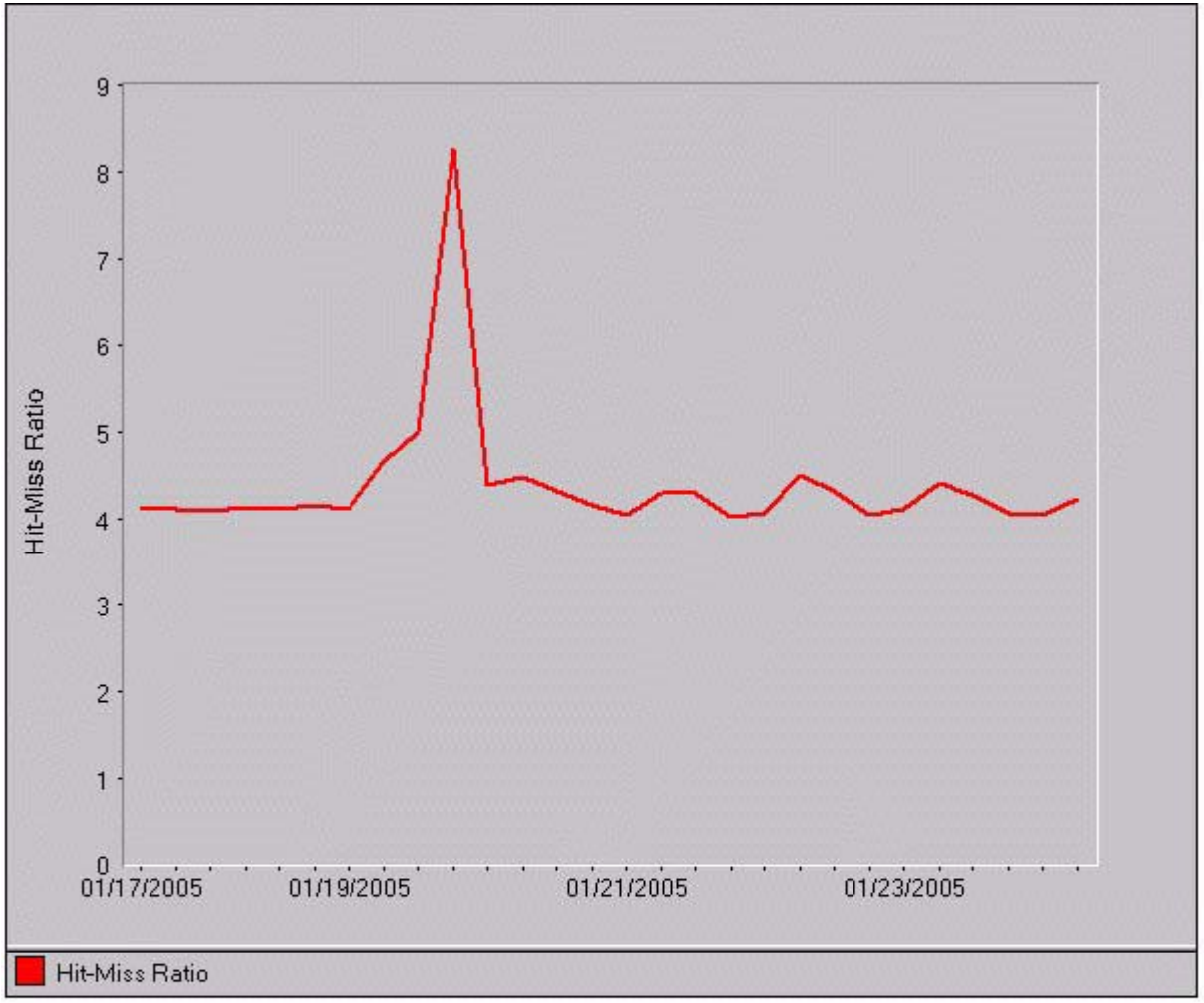
To display a graph:

Double click the desired graph and the **Display graph associated with** dialog opens:



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

Figure 9 Example DSAccess Hit-Miss Ratio graph



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

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

☐ Automatically Refresh Refresh Graph Now

Exchange 2003 graphs

Exchange SPI comes with an array of preconfigured graphs. In the console tree, open Reports and Graphs > Graphs > SPI for Exchange 2003. Graphs are located in the following folders:

- Client Access
- Directory Service
- Information Store
- Mailbox Store
- Messaging
- Public Folder Store

Client Access

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

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

IMAP4 Connections: This graph shows the IMAP4 connection activity.

IMAP4 Performance: This graph shows the IMAP4 transaction activity.

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

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

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

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

OWA Connections: This graph shows the OWA connection activity.

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

POP3 Connections: This graph shows the POP3 connection activity.

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

Directory Service

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

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

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

Information Store

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

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

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

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

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

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

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

Mailbox Store

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

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

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

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

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

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

Messaging

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

MTA Queues: This graph shows Exchange server queue lengths.

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

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

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

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

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

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

Public Folder Store

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

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

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

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

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

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

Exchange 2000 graphs

Exchange 2000 graphs are arranged in the following service groups:

- Client Access
- Directory Service
- Information Store
- Mailbox Store
- Messaging
- Public Folder Store

Client Access

IMAP4 Connections: This graph shows the IMAP4 connection activity.

IMAP4 Performance: This graph shows the IMAP4 transaction activity.

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

OWA Connections: This graph shows the OWA connection activity.

POP3 Connections: This graph shows the POP3 connection activity.

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

Directory Service

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

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

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

Information Store

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

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

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

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

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

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

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

Mailbox Store

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

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

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

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

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

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

Messaging

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

MTA Queues: This graph shows Exchange server queue lengths.

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

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

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

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

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

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

Public Folder Store

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

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

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

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

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

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

Exchange 5.5 graphs

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

Information Store

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

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

Mailbox Database

Mailbox Usage: This graph shows Exchange server mailbox usage.

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

Messaging

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

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

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

Newsfeed Volume: This graph shows Exchange server newsfeed volume.

Queues: This graph shows Exchange server queue lengths.

Public Folder Database

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

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

5

Configuring Exchange SPI for Message Delivery SLAs

This chapter outlines procedures for:

- Configuring and deploying End-to-End Message Ping to determine Service Level Agreement/Objective (SLA) performance for Exchange 2000 and Exchange 2003 servers.
- Configuring and deploying End-to-End Message Ping to determine Service Level Agreement/Objective (SLA) performance for Exchange 5.5 servers

Exchange 2000/2003: monitoring message delivery SLAs

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

- 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 or 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 > End-to-End SLA Configuration** 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 the default 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 Users with mailboxes in this domain.
   d. Click **Launch**.

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

1. In the OVO Manager console expand the **Tools** > **SPI for Exchange** > **Exchange 2000 and 2003 > End-to-End SLA Configuration** folder.

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

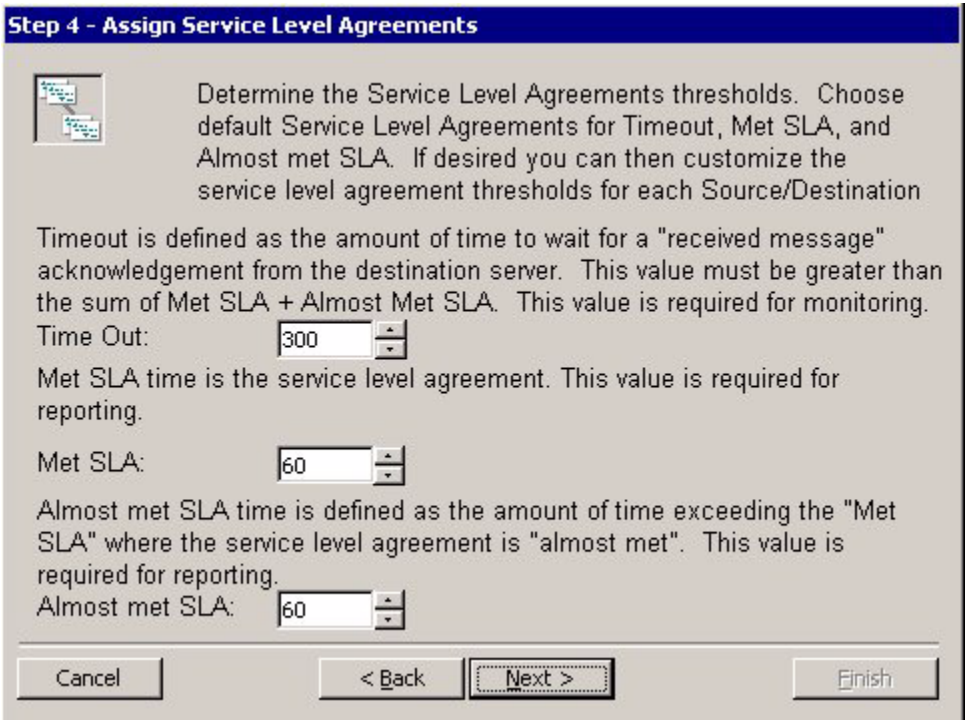
3 Confirm the introductory dialog, which gives an example of a typical SLA, by clicking **Next**.

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.



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 200X instrumentation and the EXSPI End-to-End Message Ping policy (**Manual Deploy Groups > Exchange Server > Message Delivery** folder) to any desired managed nodes.

11 Click **Next**.

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

Figure 10 Example SLA thresholds, where Met SLA=60, Almost met SLA=60, Time Out=300

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

Exchange 5.5: monitoring message delivery SLAs

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

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 137.
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 137.

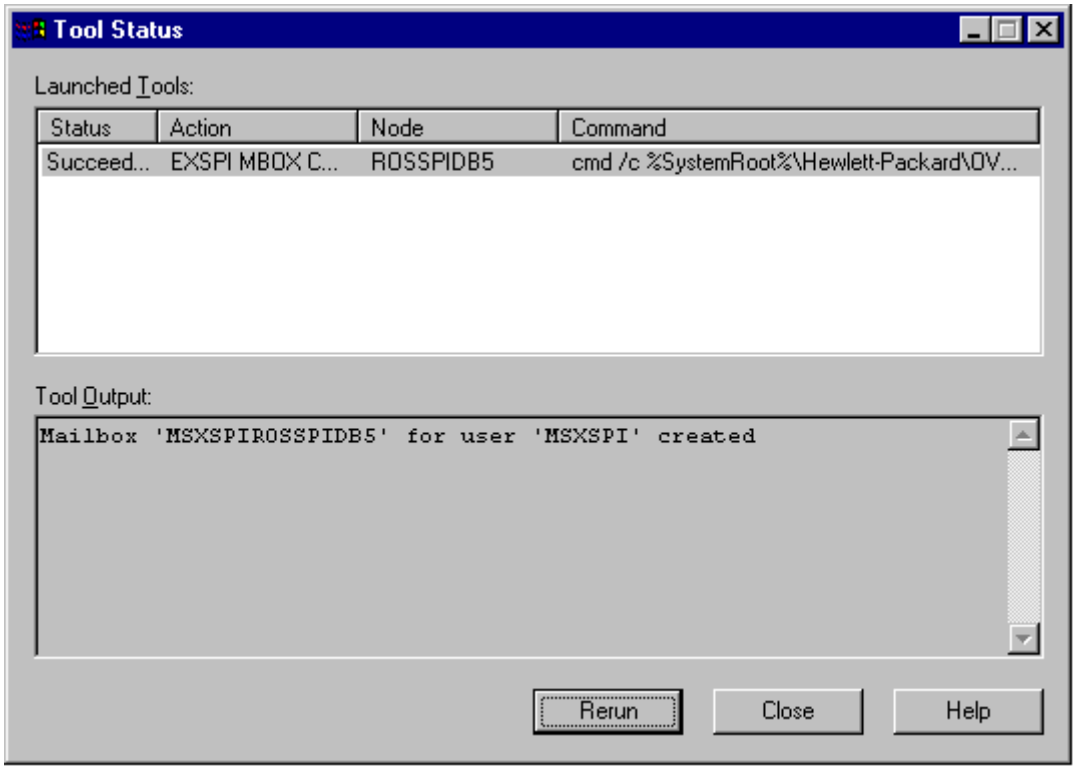
Task 2: Create mailboxes

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 servers sends the ping message to the System Assistant account of a destination Exchange 2000/2003 server. Therefore, there is no need to configure a receiving mailbox.
- 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.

6

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.

— Auto Deploy Groups 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 128.

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:

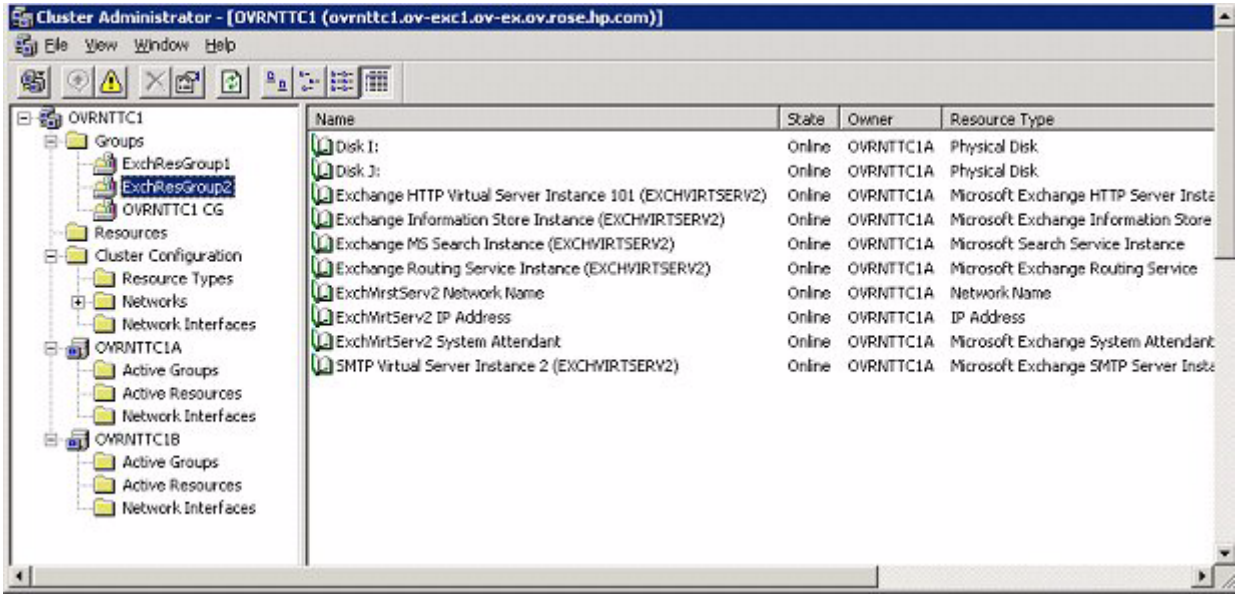
```
opcagt -kill
opcagt -start
```

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 11 Example Exchange resource group



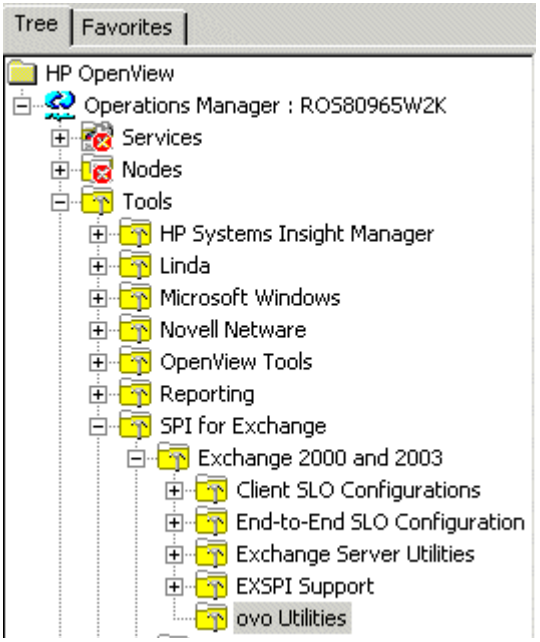
Exchange Cluster Configuration tool

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 > ovo Utilities folder.

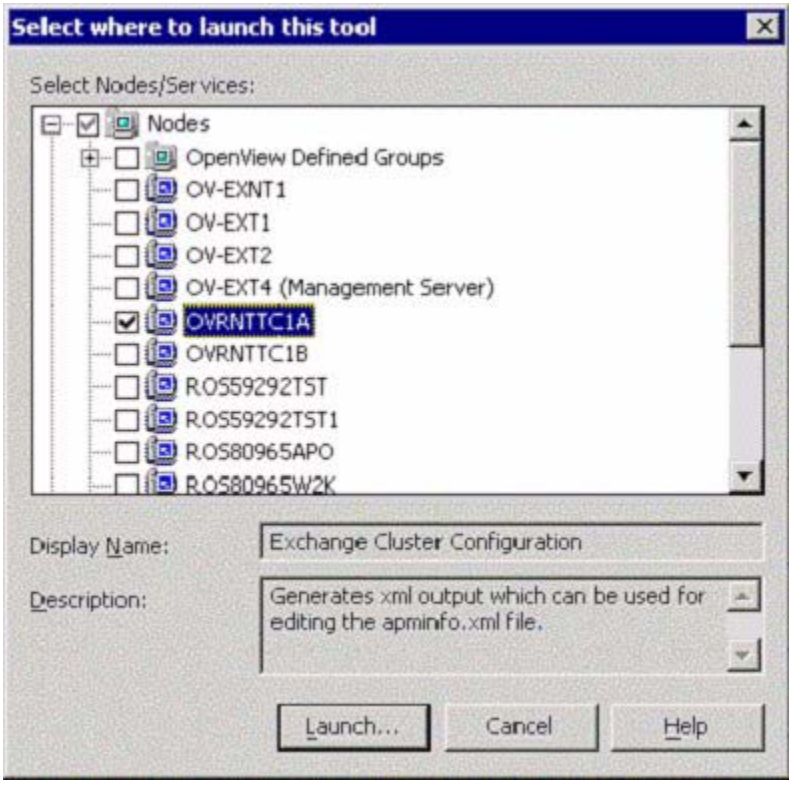
Figure 12 Location of Exchange Cluster Configuration tool



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 13 Select nodes dialog



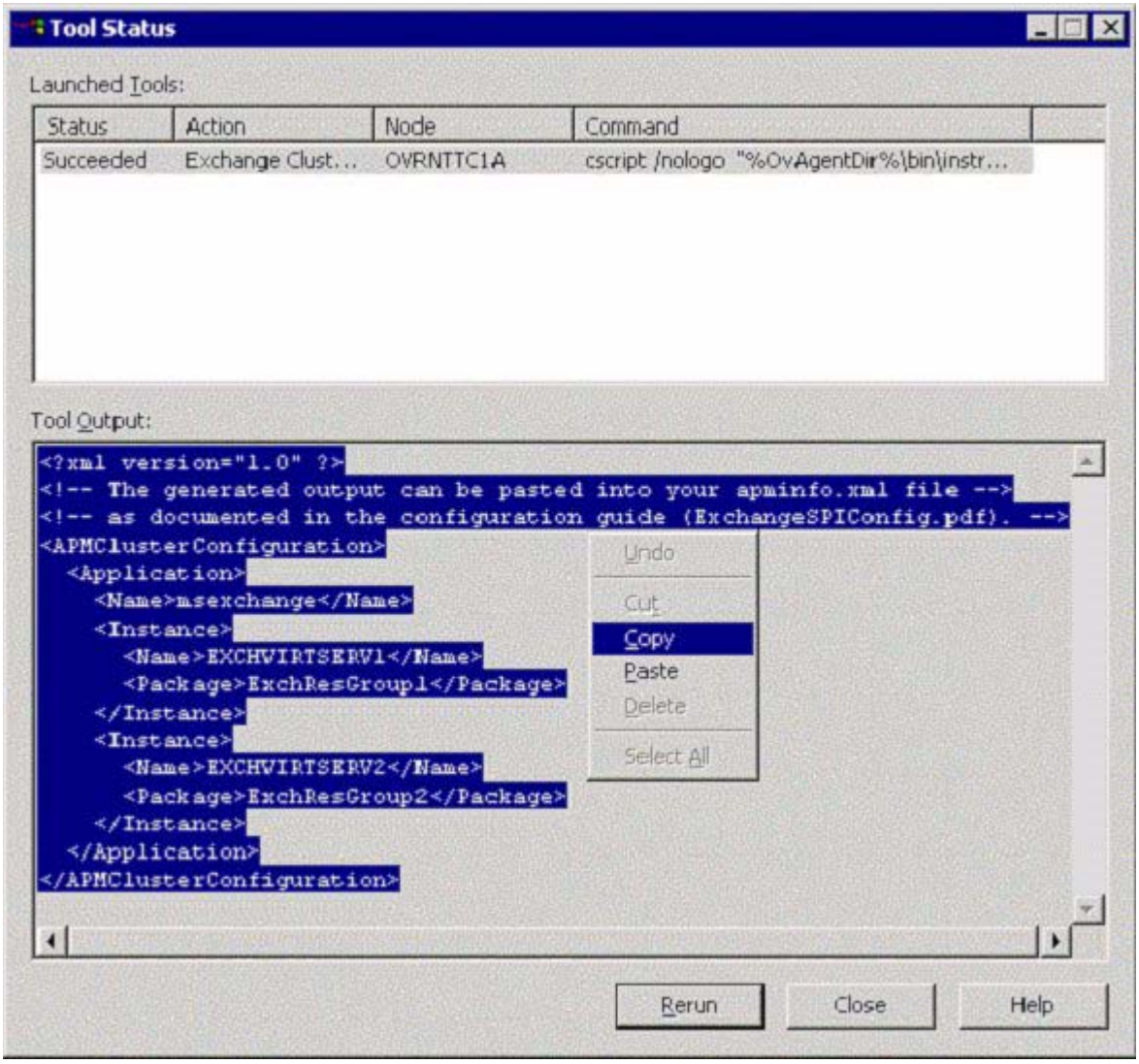
4 Select **Launch** to start the tool running on the selected nodes.

5 Use the generated output to construct the `apminfo.xml`. (Please refer to the section "Create the clustered application configuration file" on page 126).

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

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

Figure 14 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 “” on page 134.

Run the **Enable Message Tracking** tool on all nodes in the cluster before deploying the **EXSPI 6.X Dc-TrackLog Data** policy, so that the 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 for Message Delivery SLAs” on page 111.

Exchange Cluster Service Map

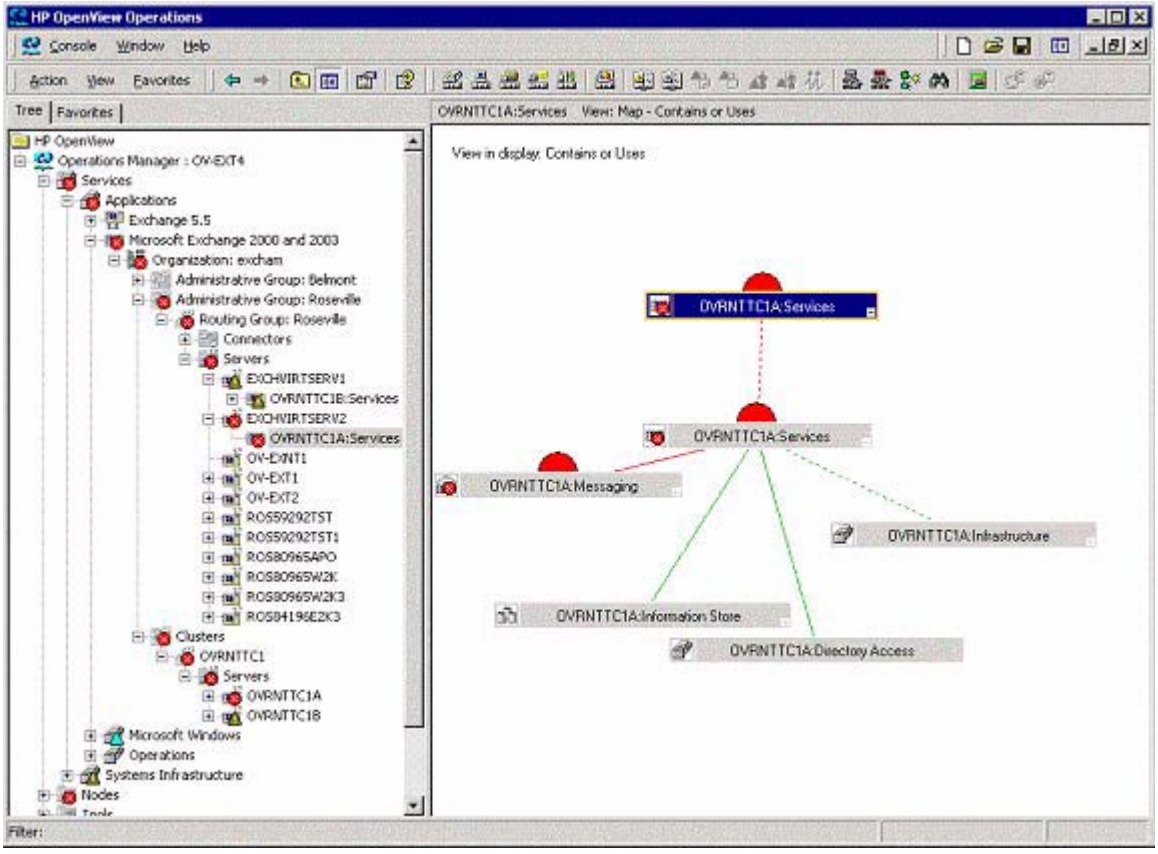
Exchange clusters are represented in the Service Map, and Service map nodes will be created in the service map for each Exchange virtual server in a cluster. Since the cluster is properly modeled in the service map, Exchange SPI instrumentation and Quick Start policies are auto-deployed to all managed 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 15 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).

7

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:

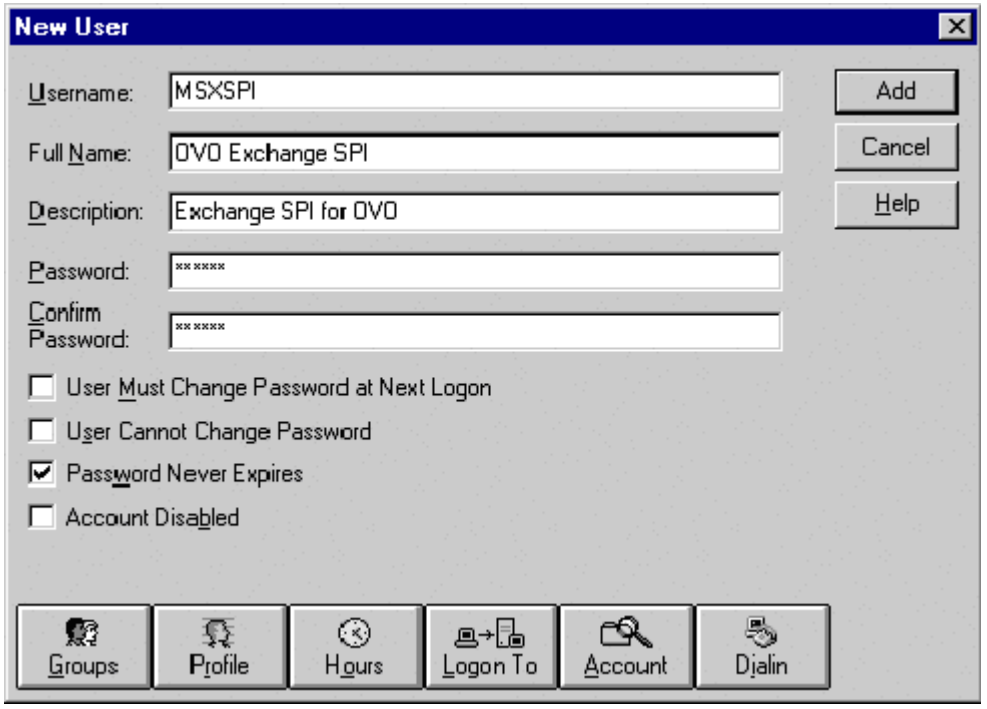
Figure 16 User Manager dialog

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 17 New User dialog

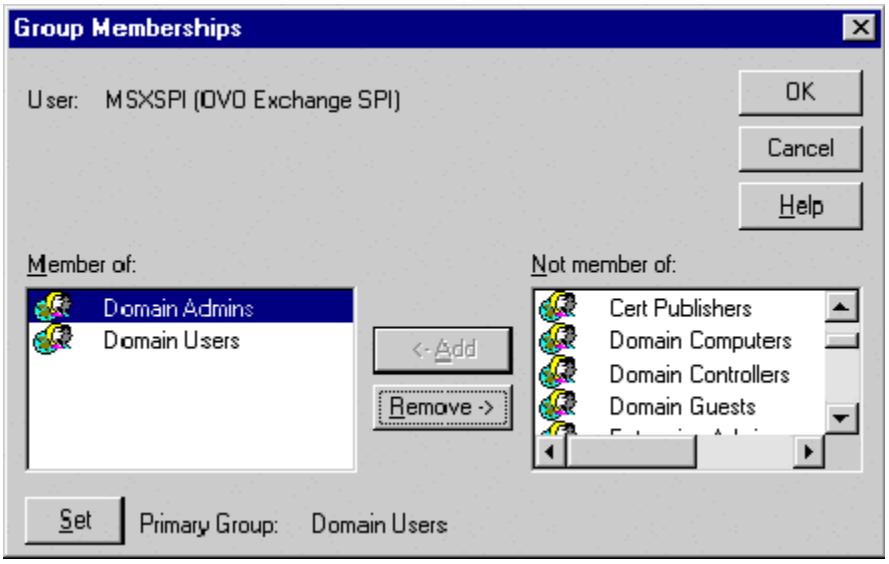


This password must be entered *but will not be authenticated later.*

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 18 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:

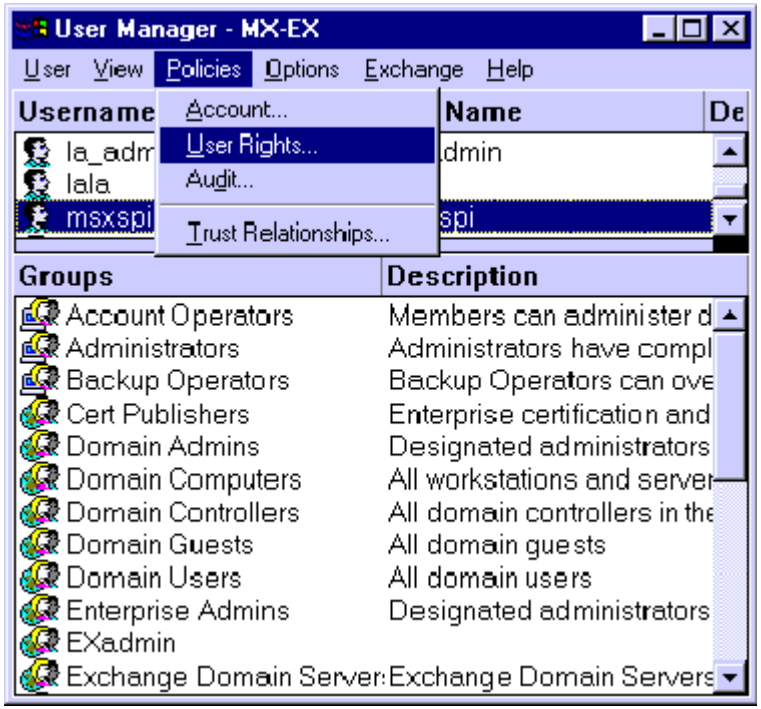
Profile:	No User Profile should be specified.
Hours:	All hours of the day and week should be allowed.
Logon To:	All workstations should be specified.
Account:	Should never expire/should be Global Account.

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....**

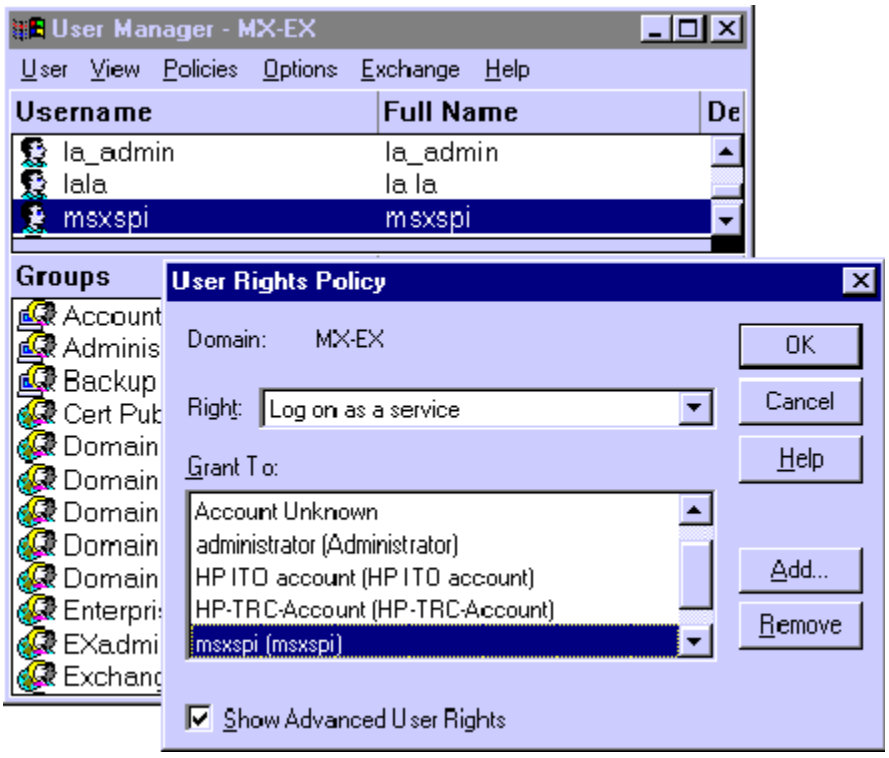
Figure 19 User Manager window



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 20 Selecting Log on as a service for User Rights.

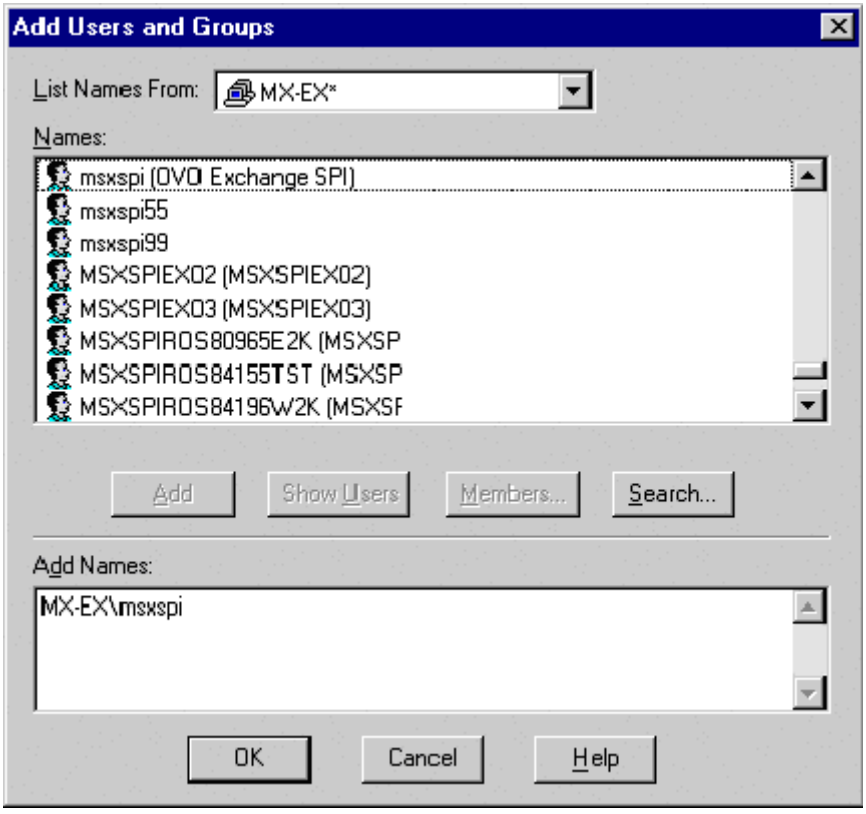


13 Click the **Add** button to open the **Add Users and Groups** window.

14 Click the **Show Users** button.

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

Figure 21 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**.

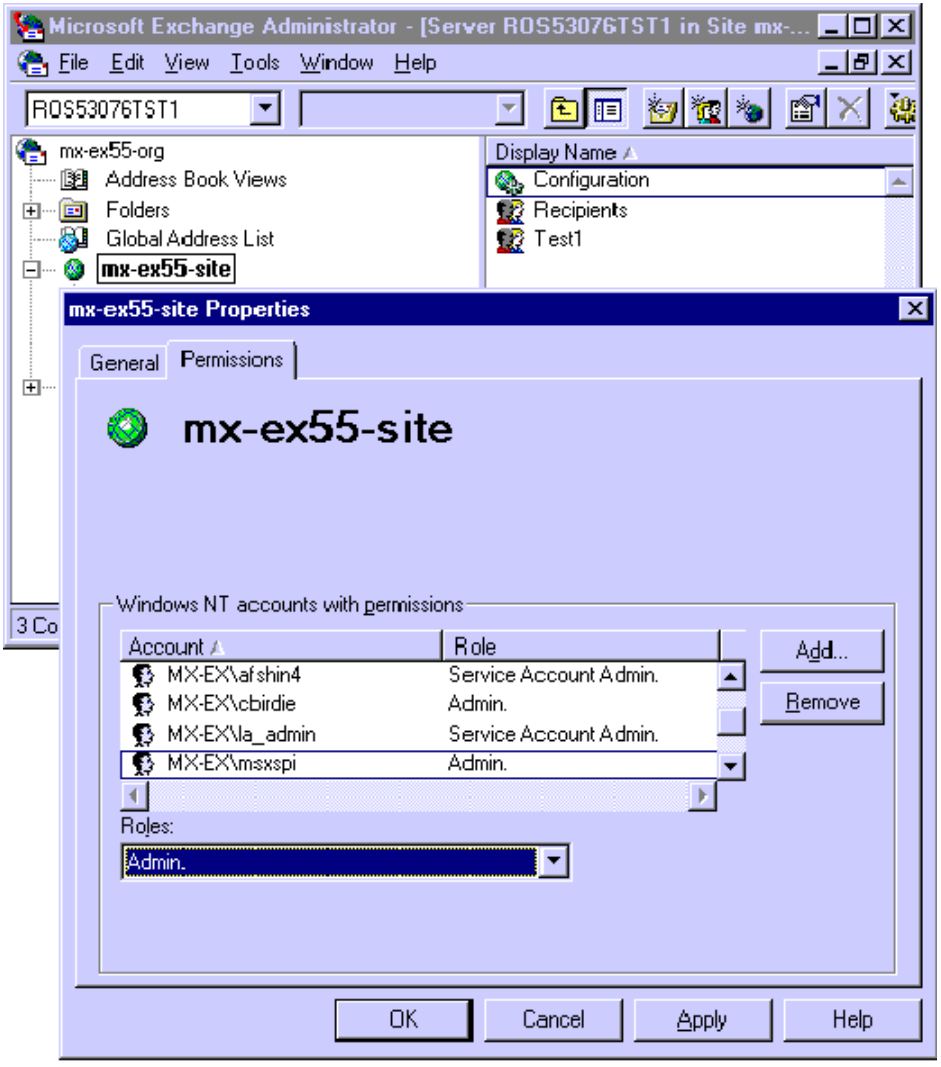
c In the Properties window, select the **Permission** tab and click **Add** to open the **Add Users and Groups** window.

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 22 Verifying the User role



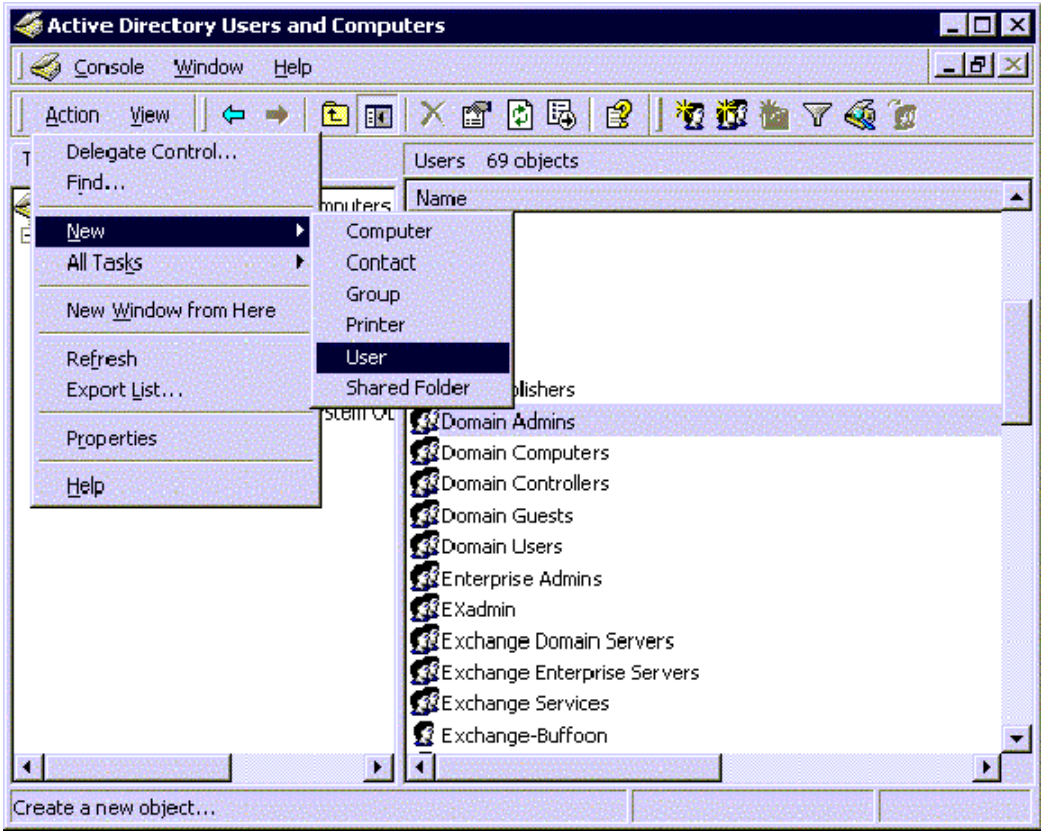
g Click **OK** to save the changes.

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**.

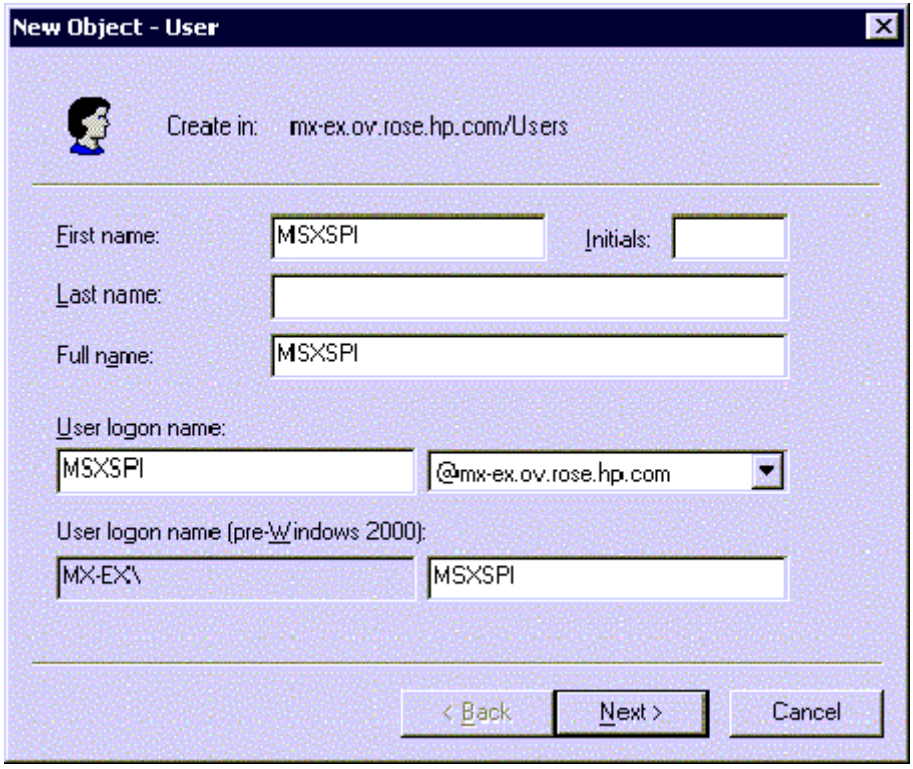
Figure 23 Selecting New User dialog



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.

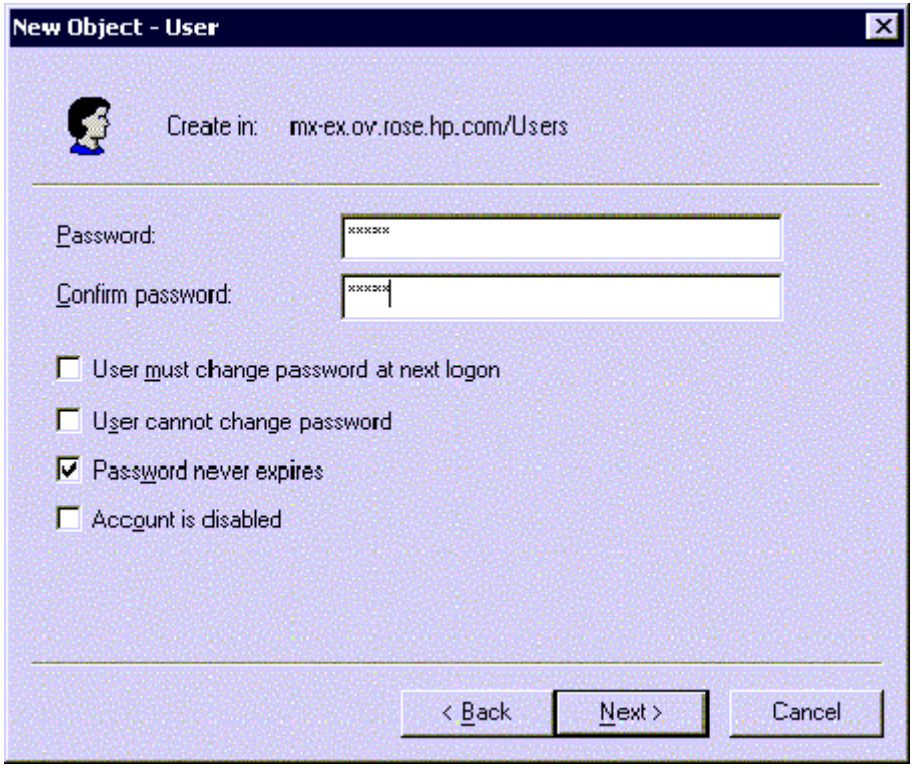
Figure 24 New object dialog



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

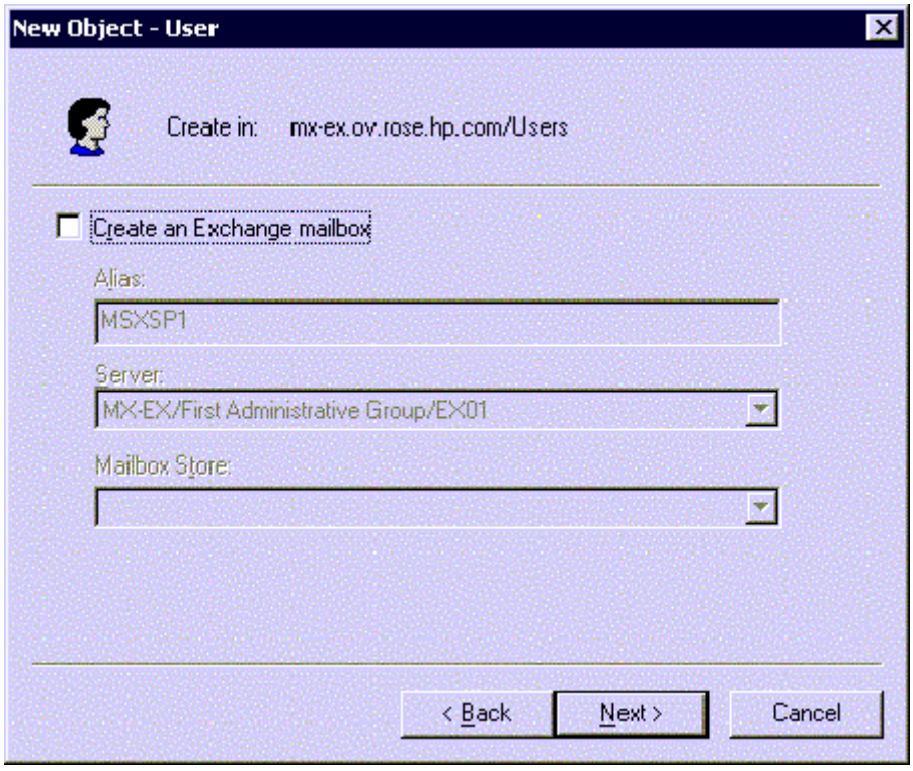
6 Select **Password Never Expires**. Then click **Next**

Figure 25 Setting user privileges.



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

Figure 26 Creating an Exchange Mailbox

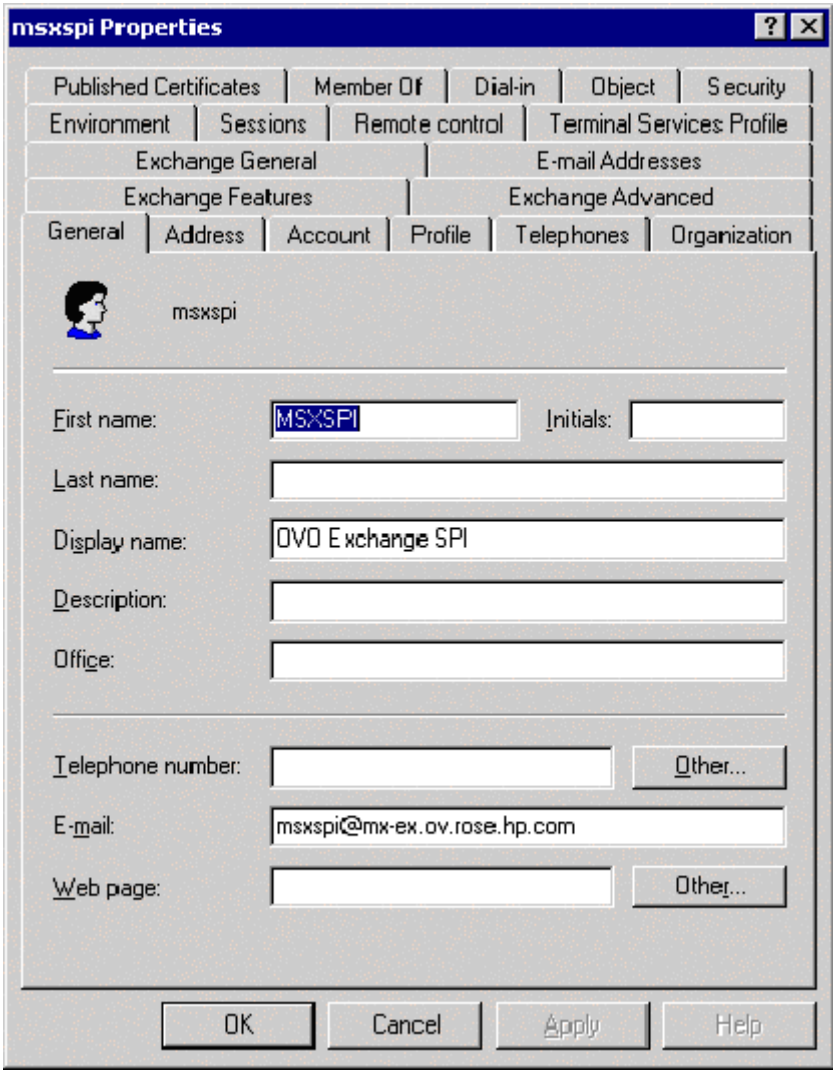


8 In the next dialog, complete creating the user by clicking **Finish**.

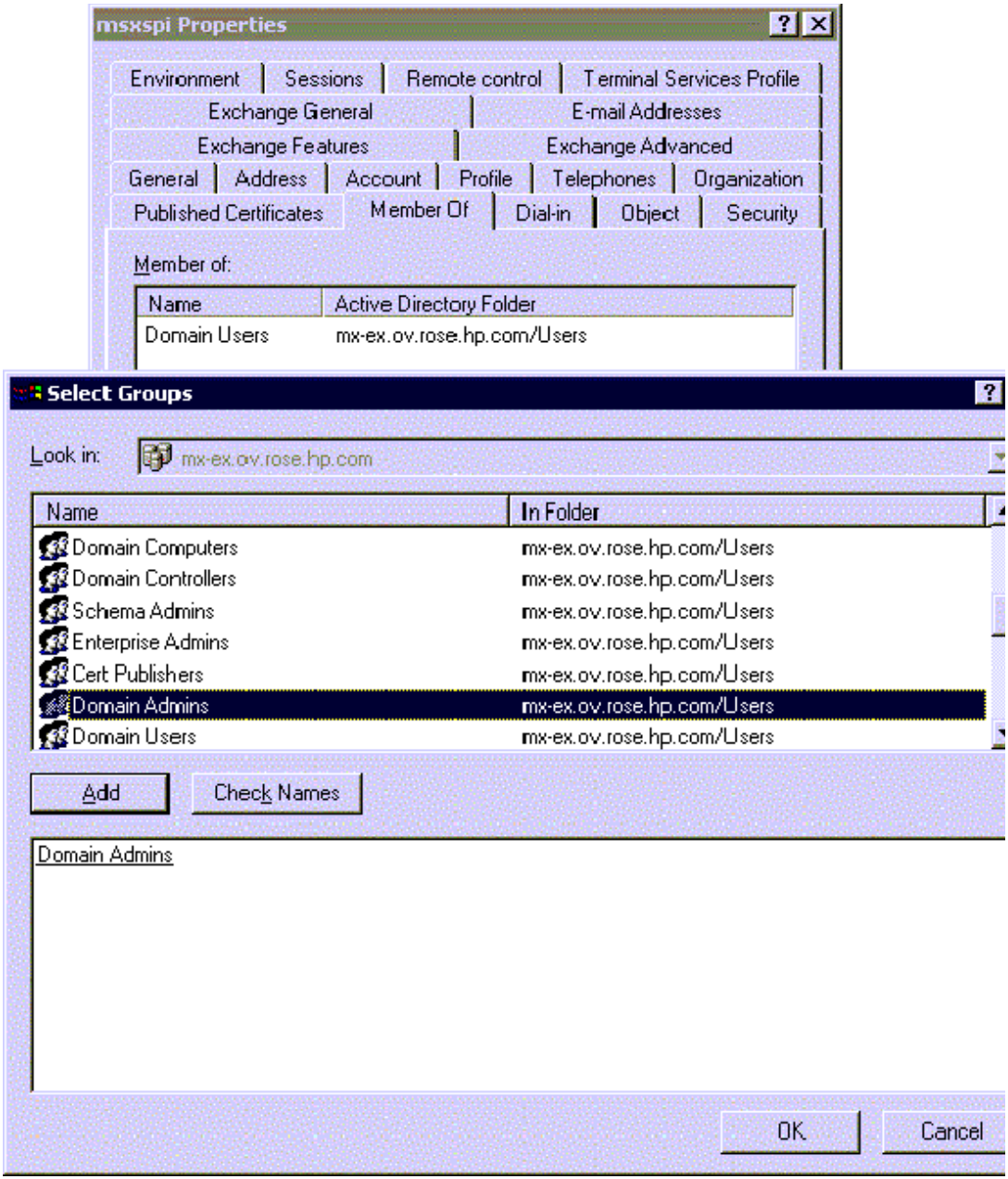
9 You are now back at the **Active Directory Users and Computers** dialog. In the right pane, right-click on the user just created and select **Properties**.

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

Figure 27 Properties dialog



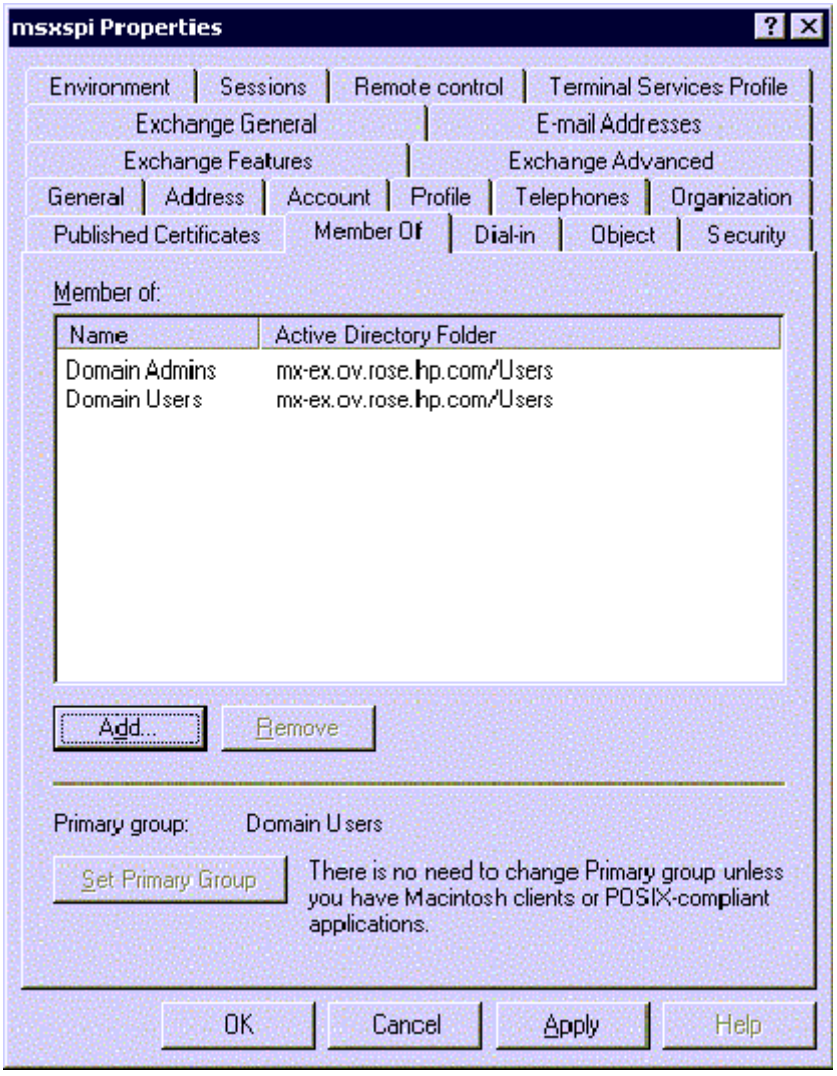
11 Select the **Member Of** tab. Click **Add**.



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 28 New User with new membership status

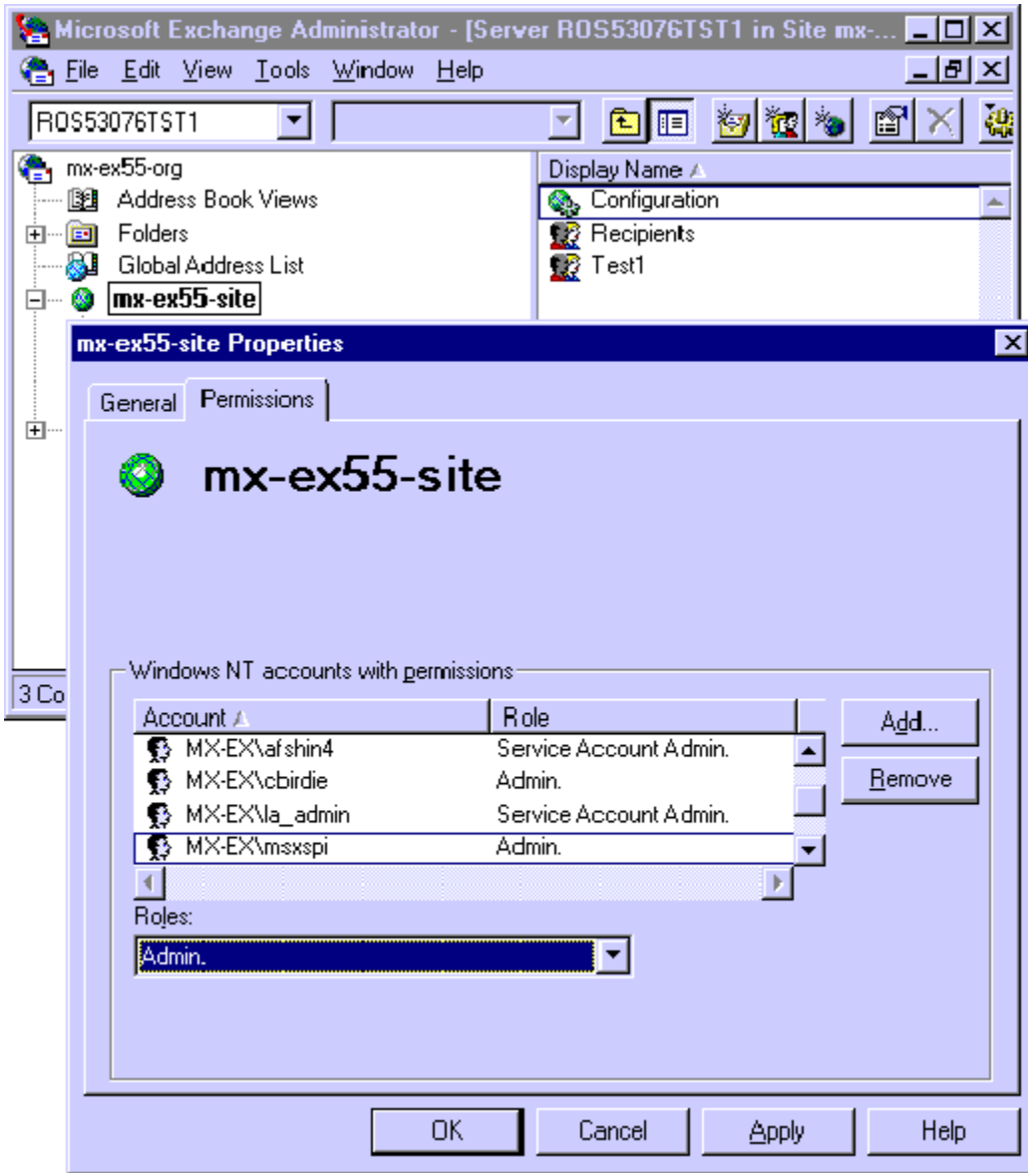


Task 2: Grant Exchange access permissions to service account (W2k/EX5.5)

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 29 Verifying User roles.



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

8

Customizing policies and uninstalling the Exchange SPI

This chapter outlines the procedures for:

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

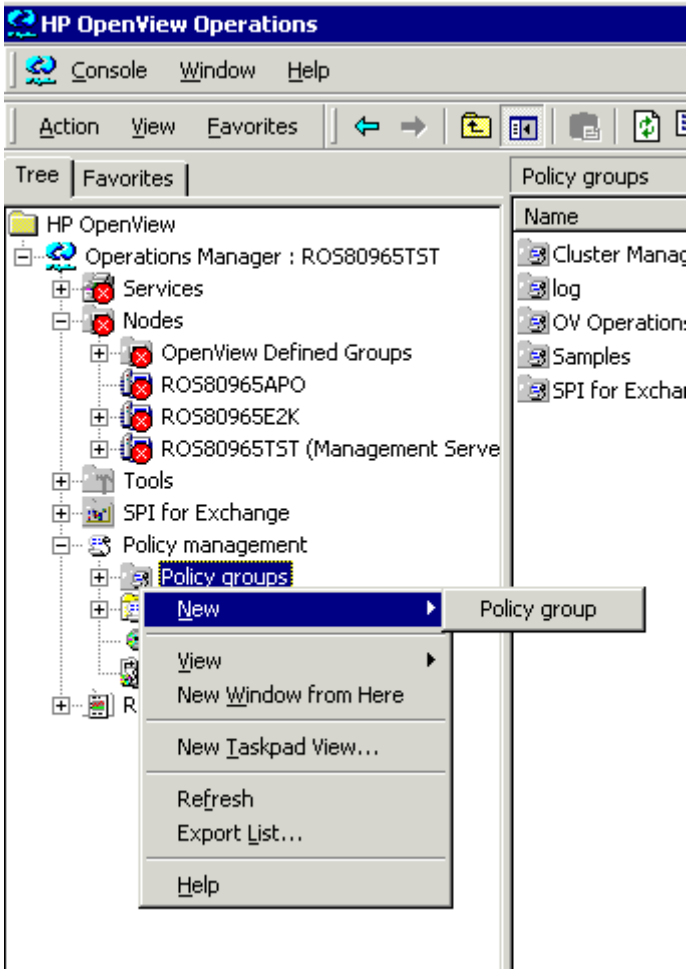
Customizing policies using the tag feature

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 30 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**.

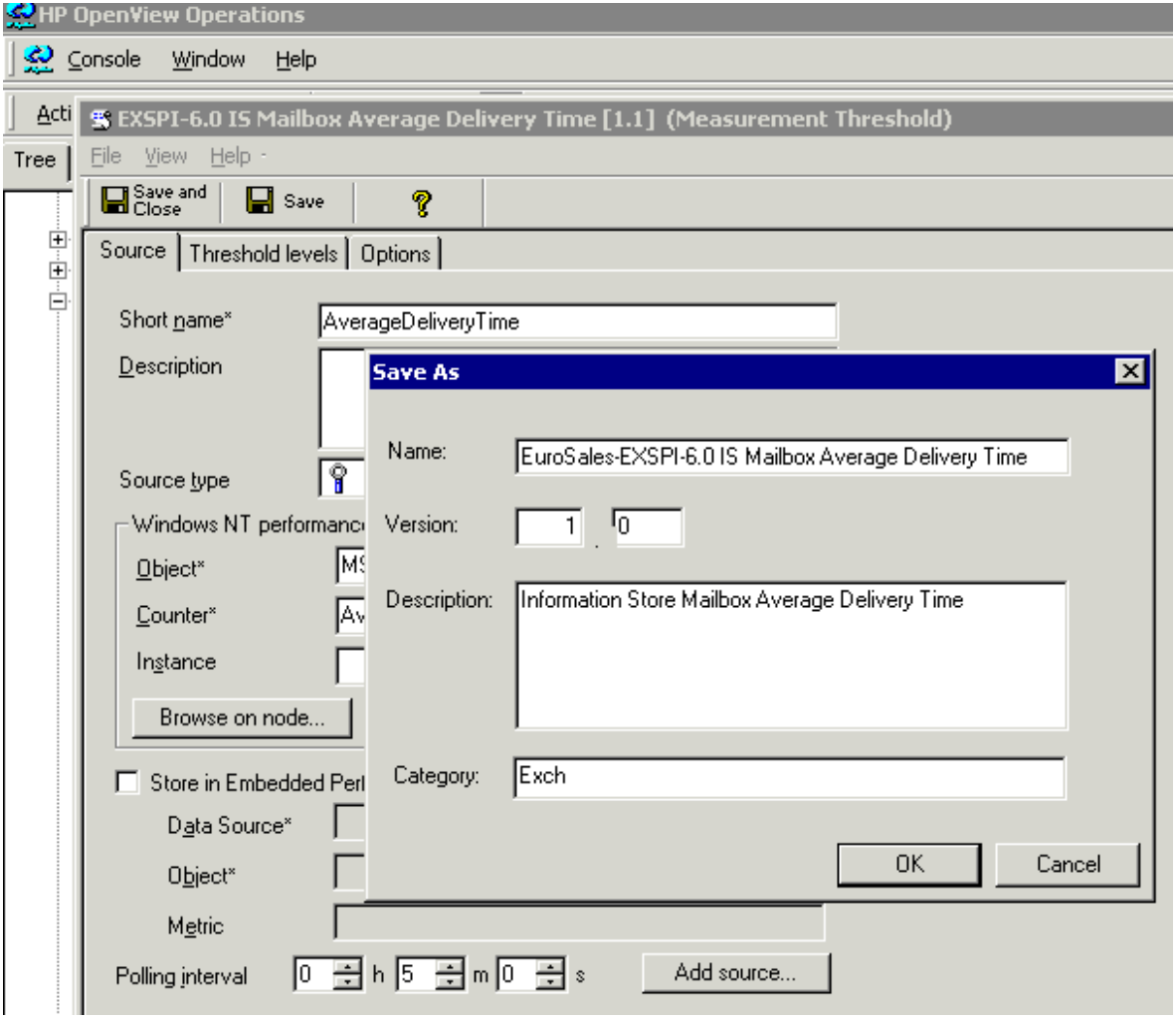
Task 2: Tag the policies

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.X IS Mailbox Average Delivery Time.

Figure 31 Customizing a policy

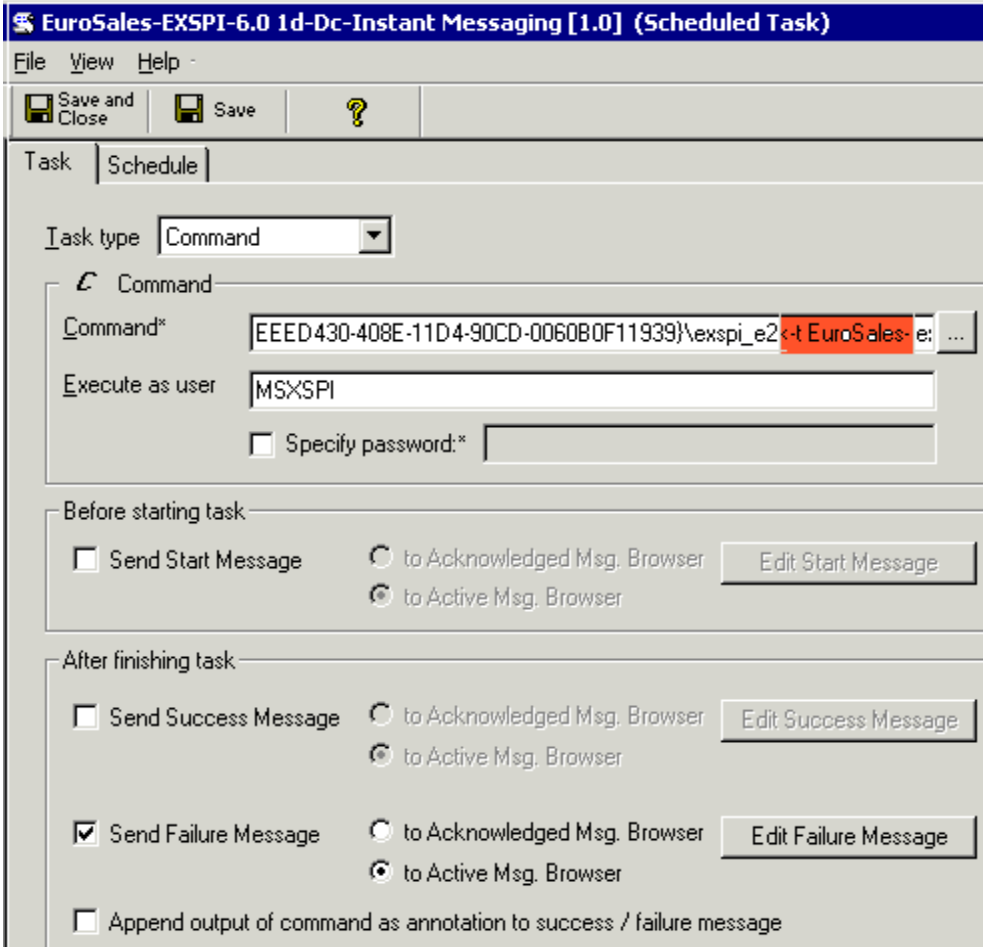


3 After saving any renamed policies, double-click the scheduled task policy that you copied to the new group together with the other policies. (In the example EXSPI-6.X Id-Dc-Instant Messaging is used.)

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

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:

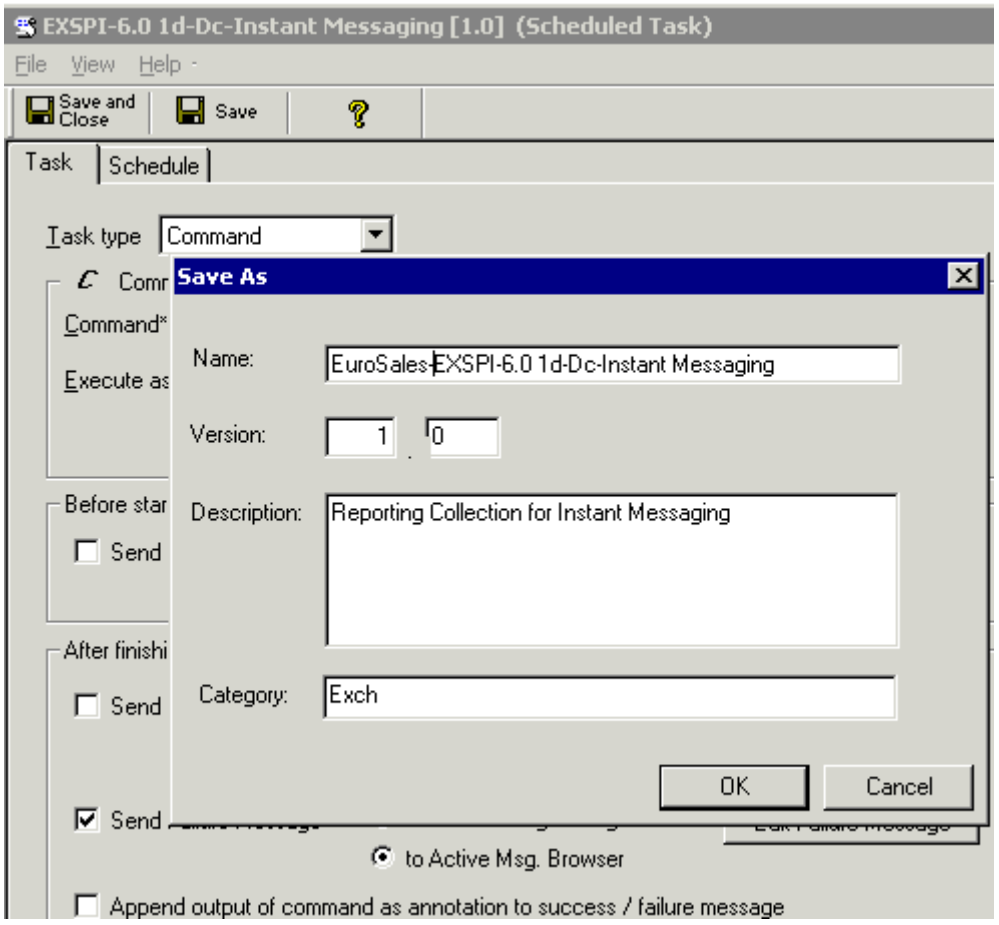
Figure 32 Example of an edited Command



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.X Id-Dc-Instant Messaging scheduled task policy to *EuroSales*-EXSPI-6.X Id-Dc-Instant Messaging.

Figure 33 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 Delete customer versions of factory policies.

5 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: Delete Exchange SPI customized policies from the management server

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

Task 5: Uninstall Exchange SPI programs from the management server

1. Insert the Smart Plug-ins, New and Upgraded, CD for OpenView Operations/ Performance for Windows Version A.0.7.5, CD Volume 1.
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.

A

Exchange SPI Instrumentation Files

EXSPI Exchange Discovery Instrumentation

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

Exchange 200X EXSPI Instrumentation

exspi_e2k.exe	Collector used through schedules
exspidatasource.exe	Creates database schema
EXSPI*.spec	Database schema definitions
ovam*.dll	Tracking log collection library
hpudm.txt	Metric definitions
exspitra.vbs	Turn Exchange SPI data collection tracing on and off
exspi_tracklog.vbs	Turn Exchange tracking log file generation on

exspi_e2k_cfg	Create mailbox
exspi_dbmount.vbs	Checks mount/dismount Information Store
exspi_StartService.vbs	Starts a service
end-to-end.xml	End-to-End Config file. This file exists after the execution of End-to-End Config tool
exspi_e2k_clust_config.js	For Cluster Configuration
spi_msexch*.* shs*.*	Self healing Service support files
exspi_ports.exe	Determines if SMTP, HTTP, POP3, and IMAP4 ports are responding
exspi_checkMemCfg.wsf exspi_checkMemoryConfig.vbs exspi_cMemoryConfig.vbs	Check memory settings for Exchange Mailbox and public Folder Servers
exspi_e2k_tlog.js exspi_e2k_tlog.vbs exspi_e2k_tlog.wsf exspi_e2k_tlog_lib.vbs	Used for gathering tracking log data. (Average delivery time for email sent on current server).
exspi_cml_cfg.wsf exspi_cmr_cfg.wsf exspi_cms_cfg.wsf	Tools for creating Mapi client SLA values.
exspi_agent.vbs exspi_core.vbs	Shared scripts with agent functions
exspi_e2k_client_lib.vbs	Shared script for Client response time scripts

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

Exchange 5.5 EXSPI Instrumentation

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

B

Service Reporter schema

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

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

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

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

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

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

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

EXSPI_OMA
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
OMASENT
OMAIGNORE
OMADISCARD
OMARESPONSE

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

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

EXSPI_SMTPPERF
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
SMTPMSGSENT
SMTPMSGRECEIVE
SMTPBYTESENT
SMTPBYTERECEIVE
SMTPMSGBYTESENT
SMTPMSGBYTERECEIVE
SMTPINBOUNDCON
SMTPOUTBOUNDCON
SMTPOUTBOUNDCONREF

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

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

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

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

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

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

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

EXSPI_OWAFE
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
INSTANCE_NAME
OWACONNECTIONS
OWAMAXCONNECTIONS

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

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

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

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

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

EXSPI_M0660
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
COUNTER_0660
INSTANCE_0660
NUM_BYTES_0660
NUM_MSGS_0660
SERVER_NAME

EXSPI_0661
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
COUNTER_0661
INSTANCE_0661
NUM_BYTES_0661
NUM_MSGS_0661
SERVER_NAME

EXSPI_0662
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
DEST_TYPE_0662
INSTANCE_0662
NUM_BYTES_0662
NUM_MSGS_0662
SERVER_NAME

EXSPI_0663
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SRC_TYPE_0663
INSTANCE_0663
NUM_BYTES_0663
NUM_MSGS_0663
SERVER_NAME

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

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

EXSPI_CML
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SERVER_NAME
STORAGEGROUP_NAME
DATABASE_NAME
INSTANCEVAL
LOGONSIZE
SLA
SLAAPPROACH
TIMEOUT
MEASUREDTIME
RUNTIME
INTERVAL_KEY

EXSPI_CMS
ID
SYSTEMNAME
DATETIME
GMT
SHIFTNAME
SERVER_NAME
STORAGEGROUP_NAME
DATABASE_NAME
INSTANCEVAL
SENDSIZE
SLA
SLAAPPROACH
TIMEOUT
MEASUREDTIME
RUNTIME
INTERVAL_KEY

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

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

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

C

Embedded Performance Component (EPC) schema

EXSPI_ASNOTIFY
ASNTOTAL
ASNSENT
ASNIGNORE
ASNDISCARD
ASNEXPIRED
ASNBIFURCATED

EXSPI_ASYNC
ASYNCUSERS
ASYNCSENDMAIL
ASYNCCMDS
ASYNCCLIENTITEMS
ASYNCSERVERITEMS
ASYNCAD
ASYNCCONNECT
ASYNCPENDING

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

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

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

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

EXSPI_DSACCESS
CACHEMISSESPERSEC
CACHEHITSPERSEC

EXSPI_FTIDATA
SERVER_NAME
INSTANCE_NAME
FTILOCATION
FTISIZ
FTIFREE
FTITOTAL
FTIFP

EXSPI_IMAP4
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
IMAP4CON
IMAP4FAILEDCON
IMAP4REJECTEDCON
IMAP4UID

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

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

EXSPI_M0660
INSTANCE_KEY
SERVER_NAME
INSTANCE_0660
NUM_BYTES_0660
NUM_MSGS_0660
COUNTER_0660

EXSPI_M0661
INSTANCE_KEY
SERVER_NAME
INSTANCE_0661
NUM_BYTES_0661
NUM_MSGS_0661
COUNTER_0661

EXSPI_M0662
INSTANCE_KEY
SERVER_NAME
INSTANCE_0662
NUM_BYTES_0662
NUM_MSGS_0662
DEST_TYPE_0662
COUNTER_0662

EXSPI_M0663
INSTANCE_KEY
SERVER_NAME
INSTANCE_0663
NUM_BYTES_0663
NUM_MSGS_0663
SRC_TYPE_0663
COUNTER_0663

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

EXSPI_MBDETAIL
INSTANCE_KEY
INTERVAL_KEY
MAILBOX_NAME
SERVER_NAME
STORAGEGROUP_NAME
DATABASE_NAME
MAILBOX_SIZE
MAILBOX_QUOTA
MAILBOX_MSGCNT
MAILBOX_LASTACCESS

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

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

EXSPI_MTADATA
SERVER_NAME
INSTANCE_NAME
MTADATABASEPATH
MTADATABASESIZE
MTADATABASEFREE
MTADATABASETOTAL
MTADATABASEFP

EXSPI_MTAPERF
MTAWORKQ
MTAMSGIN
MTAMSGOUT
MTARCPIN
MTARCPOUT
MTABYTESIN
MTABYTESOUT

EXSPI_MTLDATA
SERVER_NAME
MTLPATH
MTLSIZE
MTLCNT
MTLFREE
MTLTOTAL
MTLFP

EXSPI_MULTI
INSTANCE_KEY
SERVER_NAME
METRIC_ID
VALUE_ID
INSTANCE
VALUE
INTERVAL_KEY

EXSPI_OMA
OMASENT
OMAIGNORE
OMADISCARD
OMARESPONSE

EXSPI_OWABE
INSTANCE_NAME
SERVER_NAME
OWAMSGSSENT
OWAMSGSOPEN
OWAAUTHS
OWAAUTHSCACHE
OWARECENTAUTHS

EXSPI_OWAFE
INSTANCE_NAME
OWACONNECTIONS
OWAMAXCONNECTIONS

EXSPI_PFDETAIL
INSTANCE_KEY
INTERVAL_KEY
FOLDER_NAME
SERVER_NAME
STORAGEGROUP_NAME
DATABASE_NAME
FOLDER_SIZE
FOLDER_MSGCNT
FOLDER_LASTACCESS

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

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

EXSPI_POP3
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
POP3CONN
POP3FAILEDCON
POP3REJECTEDCON
POP3DELE
POP3RETR

EXSPI_PORTS
SERVER_NAME
PORT_NAME
PORT_NUMBER
SERVICE_PROVIDER
SENT_BYTE
RECV_BYTE
RESP_TIME
CONFIG_TIMEOUT

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

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

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

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

EXSPI_SMTPQ
INSTANCE_NAME
SERVER_NAME
ADMINDISPLAY_NAME
REMOTERETRYQ
REMOTEQ
LOCALRETRYQ
LOCALQ
PENDINGROUTINGQ
CATEGORIZERQ

EXSPI_SRS
SRSDIRPATH
SERVER_NAME
SSRSDIRSIZE
SRSDIRFREE
SRSDIRTOTAL
SRSDIRPF
INTERVAL_KEY

EXSPI_TRANSLOG
STORAGEGROUP_NAME
SERVER_NAME
TRANSLOGFILEPATH
TRANSLOGFILESIZE
TRANSLOGFILEFREE
TRANSLOGFILETOTAL
TRANSLOGFILEFP
INTERVAL_KEY

D

Creating service accounts for Exchange 2000 or 2003

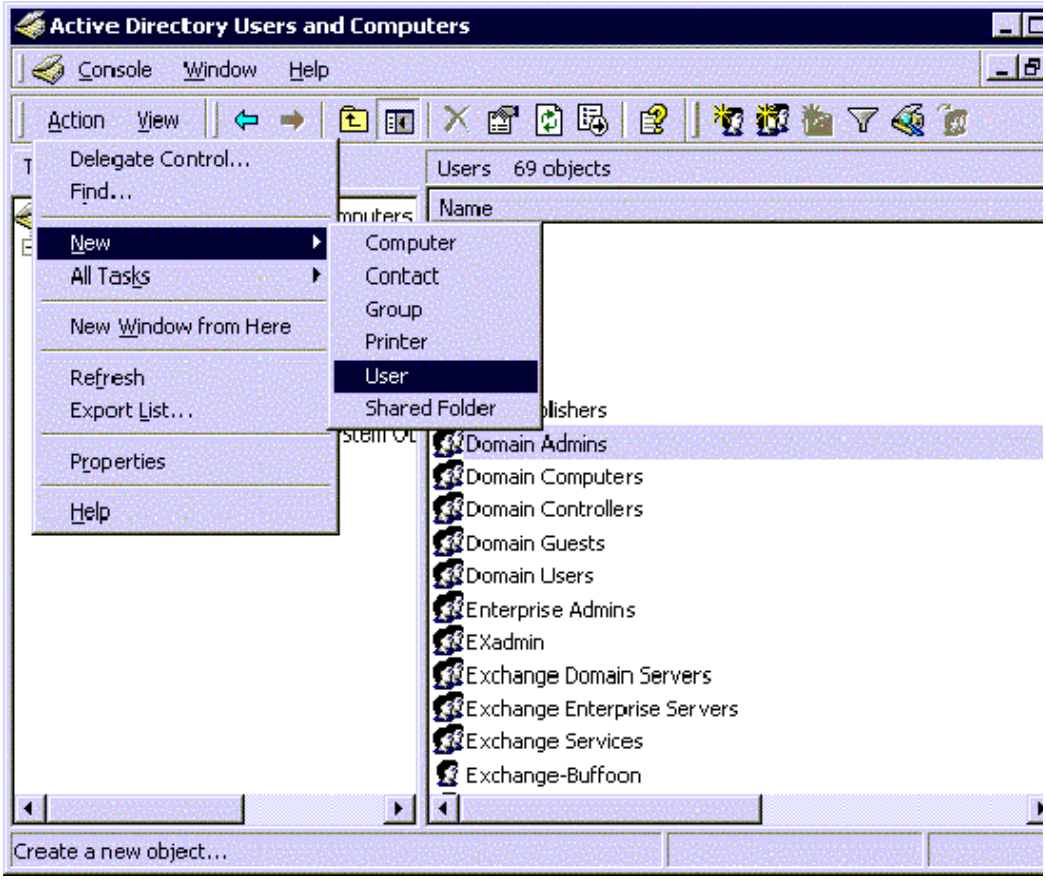
The Exchange SPI collects data from many sources. In order to collect the many types of data, the Exchange SPI requires advanced user credentials. The simplest way to obtain these credentials is to have the OVO management agent run as Local System. If this is not possible in your organization, you'll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

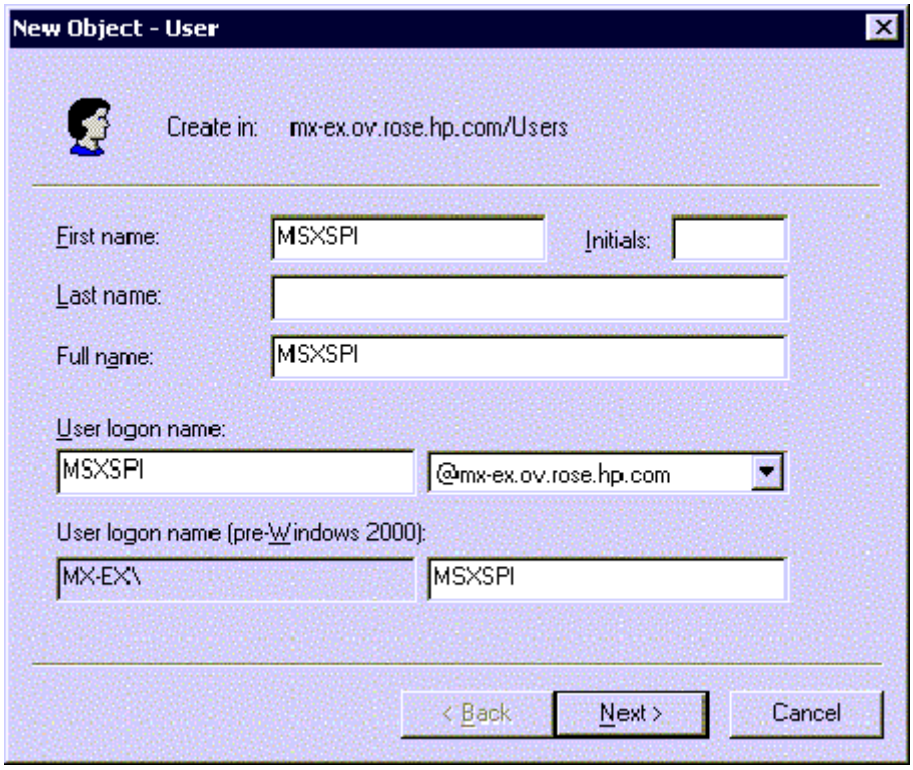
3 Expand the Active Directory Users and Computers and right-click **Users** and select **New > User**,



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.

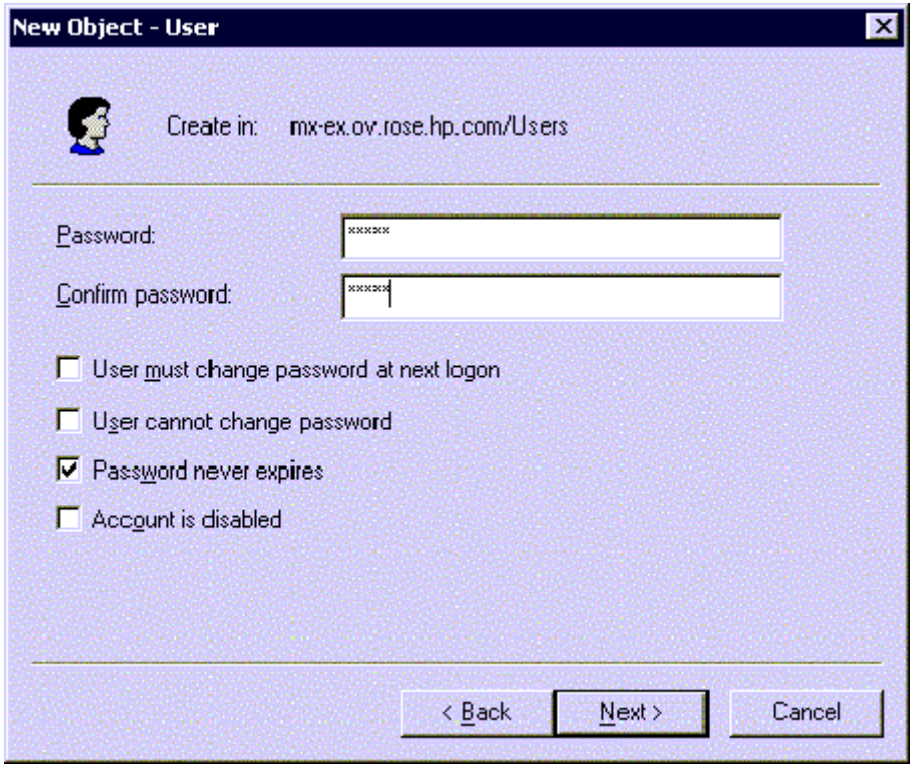
Figure 34 Entering the new service account name



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

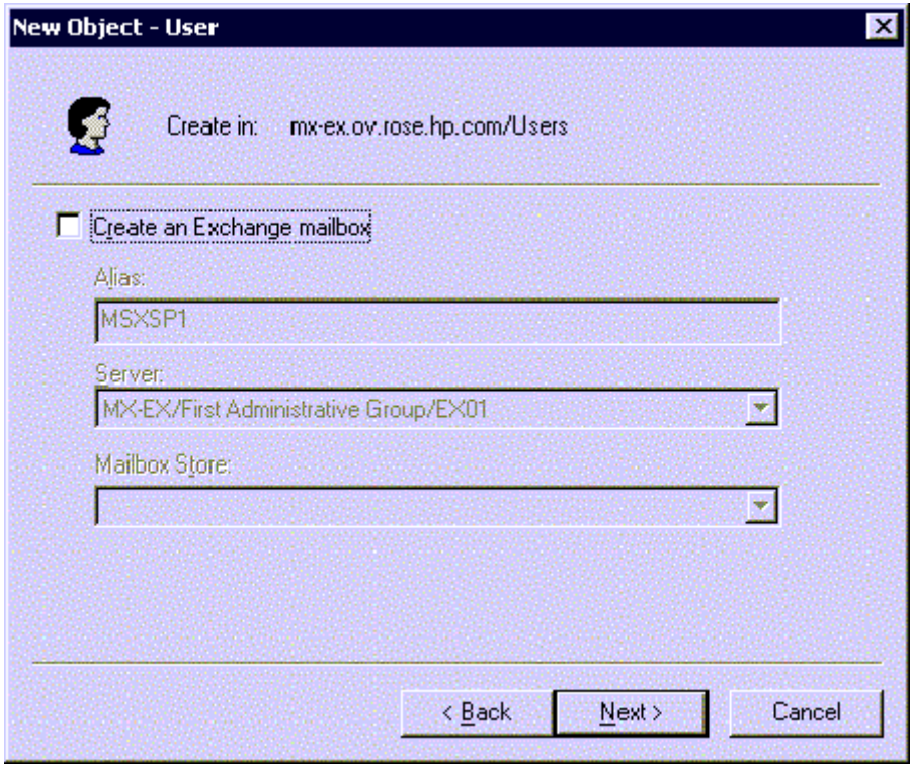
6 Select **Password Never Expires**. Then click **Next**.

Figure 35 Setting password properties



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

Figure 36 Deselecting creating a mailbox

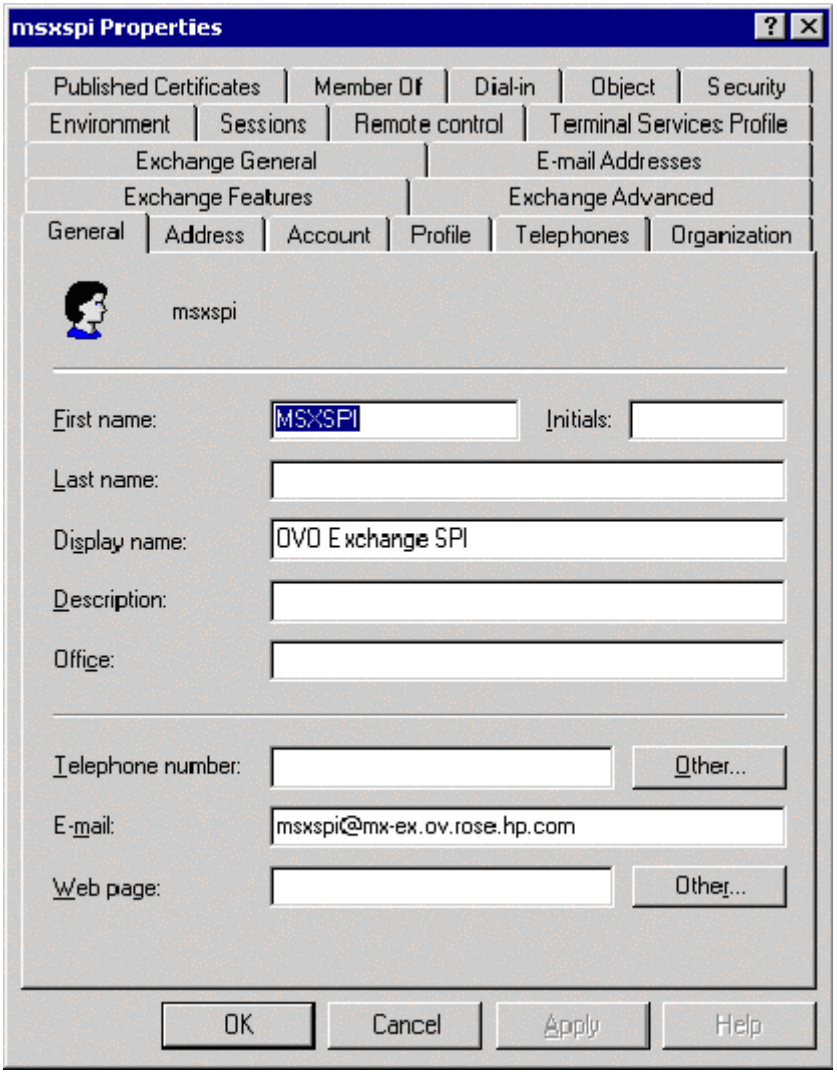


8 In the next dialog, complete creating the user by clicking **Finish**.

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 37 Entering names in Properties dialog

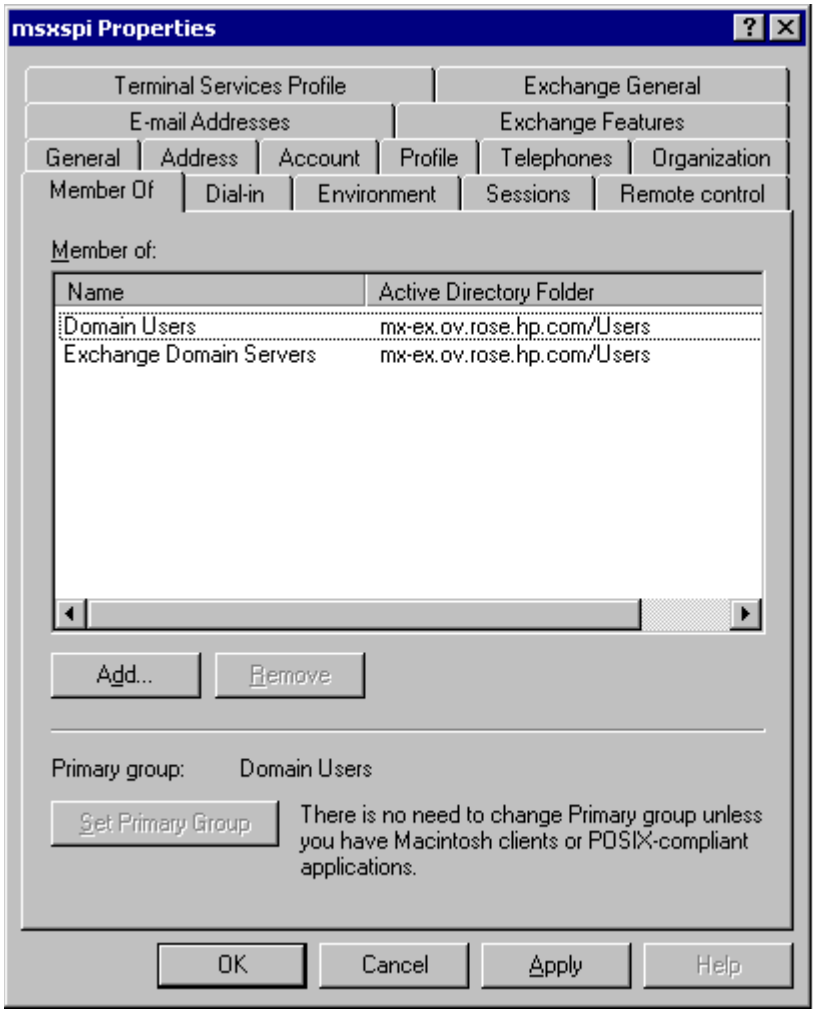


11 Select the **Member Of** tab, and click **Add**.

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 38 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.

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.

index

M

O

P

Q

R

S

T

U

V