

HP OpenView Smart Plug-in for Microsoft® Exchange Server

For HP OpenView Operations for UNIX®

Software Version:11.00

User Guide

Document Release Date: May 2007
Software Release Date: May 2007



Legal Notices

Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notices

© Copyright 2003 – 2007 Hewlett-Packard Development Company, L.P.

Trademark Notices

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

UNIX® is a registered trademark of The Open Group.

Documentation Updates

This manual's title page contains the following identifying information:

- Software version number, which indicates the software version
- Document release date, which changes each time the document is updated
- Software release date, which indicates the release date of this version of the software

To check for recent updates, or to verify that you are using the most recent edition of a document, go to:

http://ovweb.external.hp.com/lpe/doc_serv/

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

Support

You can visit the HP software support web site at:

www.hp.com/go/hpsoftwaresupport

HP Software online support provides an efficient way to access interactive technical support tools. As a valued support customer, you can benefit by using the support site to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- Look up HP support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract.

To find more information about access levels and HP Passport, go to:

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

Contents

| | | |
|----------|---|-----------|
| 1 | Concepts | 9 |
| | What the Exchange SPI Does | 10 |
| | OVO UNIX 8 DCE and HTTPS Agents | 10 |
| | Upgrading an Exchange node from DCE to HTTPS: | 10 |
| | How the Exchange SPI Works | 11 |
| | How the Data Collection Occurs | 11 |
| | Exchange Organization | 12 |
| | Exchange SPI Components | 13 |
| | Exchange SPI Service Discovery | 13 |
| | Exchange SPI Service Maps | 13 |
| | Exchange SPI Policy Groups and Policies | 14 |
| | Microsoft Exchange Server Version and EXSPI Prefix | 15 |
| | Policy Groups | 15 |
| | Policy Types | 16 |
| | Exchange SPI Application Groups and Applications | 17 |
| | Exchange 2000 and 2003 Applications | 18 |
| | Exchange 5.5 Applications | 20 |
| | Exchange SPI Message Groups and Messages | 21 |
| | Exchange SPI Reports and Graphs | 22 |
| | Exchange SPI Reports | 22 |
| | Exchange SPI Graphs | 22 |
| 2 | User Privileges | 23 |
| | Introduction | 23 |
| | User Privileges | 24 |
| | Creating a Service Account with Proper Access Permissions | 25 |
| | Exchange 5.5 nodes in a Windows NT Domain | 26 |
| | Create User Account | 26 |
| | Grant Exchange Access Permissions to User Account | 30 |
| | Exchange 5.5 nodes in a Windows 2000 Domain | 32 |
| | Create User Account | 32 |
| | Grant Exchange Access Permissions to User Account | 37 |
| | Exchange 2000/2003 nodes in Windows 2000/2003 Domain | 39 |
| | Enable Viewing of Administrative Groups folder | 39 |
| | Create User Account | 39 |
| 3 | Installation and Configuration | 45 |
| | Pre-Installation Task | 45 |
| | Prerequisite | 46 |
| | Add Nodes | 46 |

| | |
|--|-----------|
| Distribute the Exchange SPI Actions, Monitors, and Commands | 47 |
| Update the remactconf.xml File | 49 |
| Run the EXSPI Node Config Application | 49 |
| Initiate Data Collection for Exchange 2007 | 50 |
| Assign/Distribute Policies | 53 |
| Assign Responsibilities for OVO Operator | 55 |
| Enable Message Tracking | 56 |
| Enabling Message Tracking for Exchange 5.5 | 56 |
| Enabling Message Tracking for Exchange 2000 and 2003 | 57 |
| Run the EXSPI MBOX Config Application and Create Mailboxes | 58 |
| Set Up Message Ping Server Connections and Alarms | 59 |
| Removing the Exchange SPI | 65 |
| 1. Remove Exchange SPI software from the management server | 65 |
| 2. De-assign Exchange SPI Policies from Managed Nodes | 65 |
| 3. Remove Exchange SPI from Managed Nodes | 66 |
| 4. Delete Policies, Applications and Message Groups from the Management Server | 66 |
| 5. Delete Exchange SPI Spec Files from the Management Server | 67 |
| 4 Using Exchange SPI | 69 |
| Introduction | 69 |
| Daily Tasks | 70 |
| Exspi Policy Group Requirements | 71 |
| Policies requiring a service account with special Exchange privileges | 71 |
| Exchange SPI Service Discovery | 78 |
| Mechanism for Gathering Service Information | 78 |
| Turning off Discovery failure messages: | 79 |
| To Reload The Configuration | 79 |
| Manual Update | 80 |
| Using Exchange SPI Service Views | 81 |
| Views Are Snapshots | 81 |
| Calculation and Propagation Rules in Discovery Process | 82 |
| Data Collection Policies for Exchange Messaging Ports | 83 |
| Command line parameters | 83 |
| Metric Id's for Ports: | 83 |
| Default values for Protocol Ports | 83 |
| Policies calling exspi_ports.exe | 83 |
| Port settings: | 85 |
| Changing the Data Collection Agent Setup | 86 |
| To override the use of HP OpenView Performance Agent: | 86 |
| Command Line Parameters | 87 |
| 5 Clustering Support | 89 |
| Using Exchange SPI in high availability environments | 89 |
| Exchange Cluster Configuration application | 91 |
| Data Collection on virtual servers | 92 |
| Seeing virtual servers in reports and graphs | 93 |
| Setting up End-to-End Message Ping on an Exchange Cluster | 93 |

| | |
|--|------------|
| Exchange Cluster Service Map | 93 |
| What happens during a failover: | 94 |
| 6 Customizations | 95 |
| Introduction | 95 |
| Choosing metrics to monitor Exchange | 96 |
| Basic Customization | 97 |
| Creating Custom Groupings. | 97 |
| Creating Custom Policies | 97 |
| Modifying Message Generation | 97 |
| Modifying Metric Policy Conditions. | 99 |
| Customizing the Threshold | 100 |
| Customizing Schedules. | 101 |
| The Tag Feature | 103 |
| Advanced Customization | 104 |
| Changing the Windows User Account name | 104 |
| Changing the Mailbox name | 104 |
| Returning to original factory settings. | 105 |
| 7 Integration with Reporter | 107 |
| Introduction | 107 |
| Data Collection for Graphing and Reporting | 108 |
| Exchange SPI Reports | 110 |
| Installing Exchange SPI Report Policies | 110 |
| Reports for Exchange 2007 Servers | 110 |
| Reports for Exchange 2003 Servers | 112 |
| Client Access | 112 |
| Exchange Server | 113 |
| Information Store | 113 |
| Mailbox Store | 113 |
| Messaging. | 113 |
| Public Folder Store | 114 |
| Reports for Exchange 2000 Servers | 114 |
| Chat | 114 |
| Conferencing | 114 |
| Client Access | 114 |
| Exchange Server | 115 |
| Information Store | 115 |
| Instant Messaging | 115 |
| Mailbox Store | 115 |
| Messaging. | 116 |
| Public Folder Store | 116 |
| Reports for Exchange 5.5 Servers | 117 |
| Exchange Server | 117 |
| Information Store | 117 |
| Mailbox Database | 117 |
| Messaging. | 117 |
| Public Folder Database | 117 |

| | |
|---|------------|
| Using Exchange 5.5 Reports and Graphs | 119 |
| Distributing the Data Collection Policies | 119 |
| Configure/Distribute Reporter Collection Policies | 119 |
| 1. Complete the Advanced Configuration procedure | 119 |
| 2. Distribute Reporter Collection policies | 119 |
| Deinstalling Exchange SPI Reporter | 119 |
| Exchange SPI OVPM Graphs | 121 |
| Installing Exchange SPI Graph policies | 121 |
| Exchange 2003 OVPM Graphs | 122 |
| Exchange 2000 OVPM Graphs | 125 |
| Exchange 5.5 OVPM Graphs | 127 |
| Additional Exchange 5.5 PerfView Graphs in the Application Bank | 128 |
| Information Store | 128 |
| Messaging | 129 |
| System Information | 129 |
| Transaction Log Disk Space | 130 |
| | 130 |
| 8 Troubleshooting | 131 |
| Introduction | 131 |
| Self-Healing Information for Enhanced Troubleshooting | 132 |
| Using the Self-Healing Info application | 132 |
| Verifying Exchange SPI Installation on the Management Server | 133 |
| The Exchange SPI Error Log | 134 |
| Turning on Tracing | 135 |
| Disabling Tracing | 136 |
| Common Errors | 137 |
| Verifying MSXSPI account has right privileges | 138 |
| Verifying MeasureWare Integration | 139 |
| Advanced Configuration Policy Failures | 140 |
| Exchange Service Discovery Failures | 141 |
| A File Names | 143 |
| Introduction | 143 |
| Management Server Files | 144 |
| Policies for opccfgupld (OVO Upload Facility) | 144 |
| Miscellaneous Management Server Files | 145 |
| Management Server/Managed Node Files | 146 |
| Monitor Files | 146 |
| Command Files | 147 |
| Windows Managed Node Files | 149 |
| Monitor policies | 149 |
| Logging and Trace Files | 150 |
| B spimetadata.xml File | 151 |
| Elements of the spimetadata.xml File | 154 |
| Index | 155 |

1 Concepts

This chapter introduces the basic concepts of the HP OpenView Smart Plug-in for Microsoft Exchange Server (Exchange SPI), which works together with HP OpenView Operations for UNIX versions 7.x and 8.x, to monitor Microsoft Exchange 5.5, 2000, 2003, and 2007.

The chapter includes the following sections:

- What the Exchange SPI does
- OVO UNIX 8.0 DCE and HTTPS agents
- How the Exchange SPI works
- Exchange organization
- Exchange SPI components:
 - Exchange SPI Discovery
 - Exchange SPI Service Maps
 - Exchange SPI Policy groups and Policies
 - Exchange SPI Application groups and Applications
 - Exchange SPI Message groups and Messages
 - Exchange SPI Reports and Graphs

What the Exchange SPI Does

The Exchange SPI enables you to oversee your distributed Exchange environment from a central, easy-to-use console. With the help of the Exchange SPI, you can:

- Increase Exchange availability and performance
- Reduce support costs associated with the Exchange services
- Improve capacity management and planning for Exchange

With the Exchange SPI integrated into the HP OpenView Operations (OVO), you can apply the HP OpenView performance and problem management processes that you use for networks and systems to monitor Microsoft Exchange Server.

After you install and configure, the Exchange SPI will monitor critical Exchange application/database resources including:

- Processes (for monitoring the amount of CPU time being used by core Exchange processes)
- Inactive Processes (for monitoring core Microsoft Exchange processes for activity and status)
- Exchange Services (for monitoring Exchange Server processes for activity levels)
- Message Transfer Agent (MTA) and Simple Mail Transfer Protocol (SMTP) message process data
- MTA Work Queue and SMTP Queues
- IS Public and Private/Mailbox Average Delivery Time
- Cluster environments.

The Exchange SPI sends the information to the OVO console through messages and alerts. You can also view the information in the form of reports or graphs.

OVO UNIX 8 DCE and HTTPS Agents

The Exchange SPI supports the new HTTPS agent, which comes with out-of-the-box HTTP authentication and SSL encryption, with server and client certificates, guaranteeing secure communication with the HP OpenView Operations central management servers. The new agent is available for all popular operating system platforms, including HP-UX, Microsoft Windows, Linux, and Solaris.

When you upgrade from OVO 7.x to OVO 8.x and install the new agent, no manual configuration is necessary.

Upgrading an Exchange node from DCE to HTTPS:

If an Exchange server node is already managed under a DCE agent, make sure the OVPA log files are cleared before re-managing it under HTTPS.

To clean the log files, run the following command:

```
C:\usr\OV\bin\OpC\monitor\ddfutil.exe  
"C:\usr\OV\exspi\dsi\log\exspi_data" -rm all
```

How the Exchange SPI Works

The Exchange SPI collects data from managed nodes according to rules and schedule specifications contained within the Exchange SPI policies. The Exchange SPI collects data related to health, availability, and performance of Microsoft Exchange Server. The Exchange SPI stores the collected data to a data store on the managed node and sends alert messages to the OVO message browser.

How the Data Collection Occurs

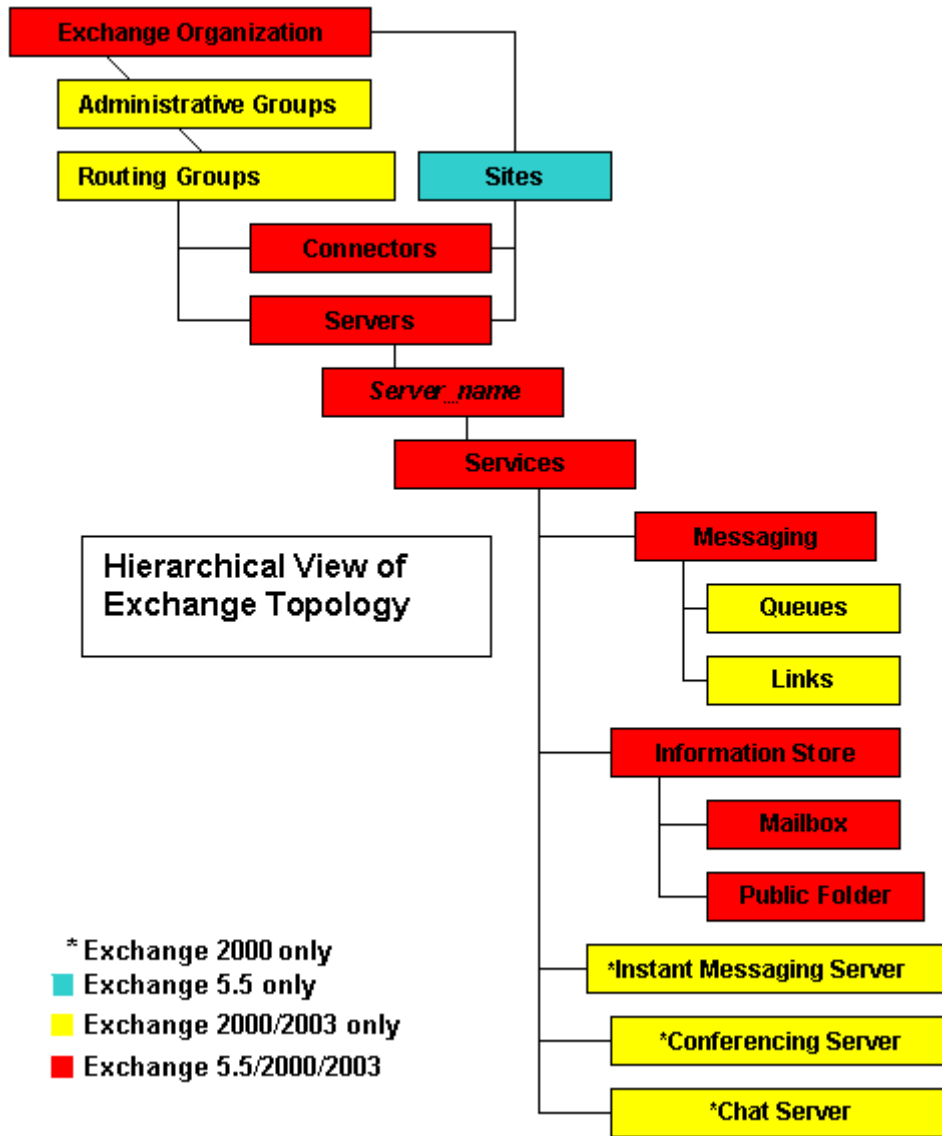
When the collection's scheduled time occurs, the Exchange SPI collector/analyzer program is executed and if required, forwards metric values to OVO and the HP data collecting agent. At the same time, OVO checks against predefined threshold settings and triggers alarms when violations occur.

The collected data is written to a log file residing on the managed node, at pre-defined intervals.

Messages appear in the OVO Message Browser with message details containing instruction text to help diagnose and remedy problems. If PerfView is present, metric values are available as graphs. If Reporter is installed, reports are available.

Exchange Organization

The Exchange organization in an enterprise can be extremely complex, the diagram below might help in keeping an overview:



Exchange SPI Components

The following components appear in the HP OpenView Operations for UNIX when Exchange SPI is installed:

- Exchange SPI service discovery
- Exchange SPI service maps
- Exchange SPI policy groups and policies
- Exchange SPI application groups and applications
- Exchange SPI message groups and messages
- Exchange SPI reports and graphs.

Exchange SPI Service Discovery

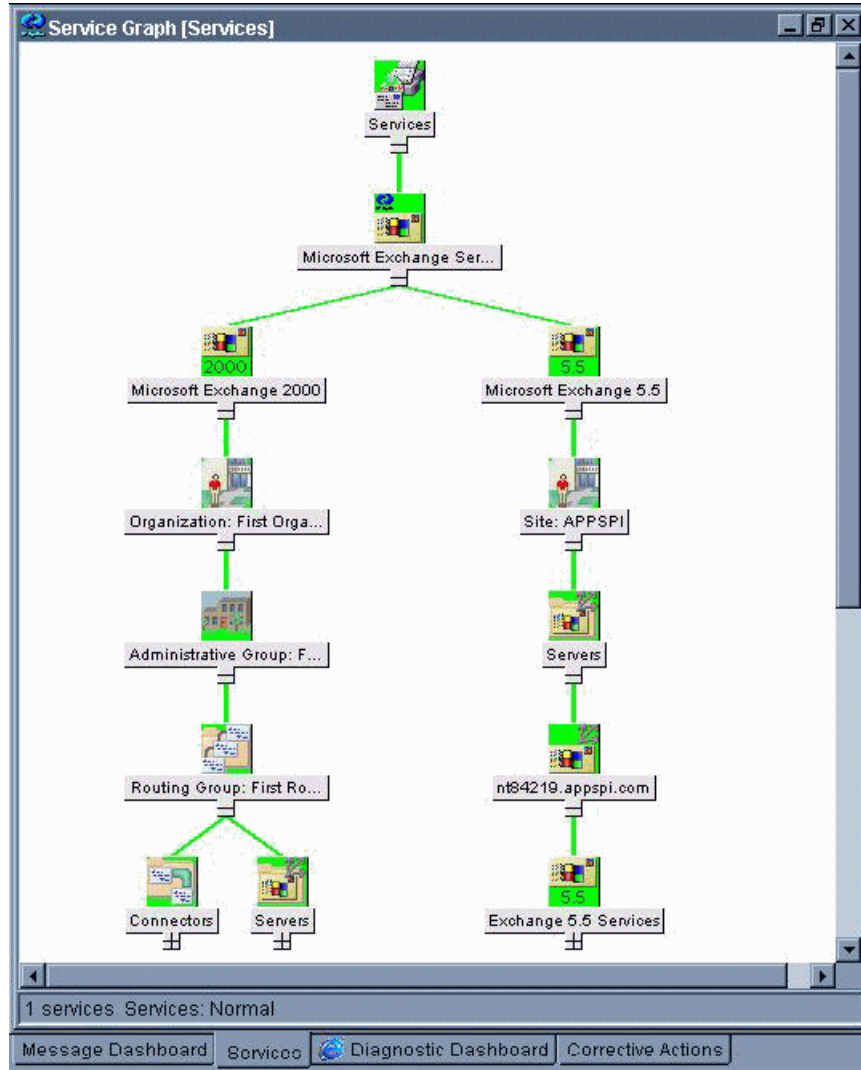
The Exchange SPI discovers Exchange services on OVO managed nodes. Exchange service discovery requires the HP OpenView Service Navigator, which can be installed on the management server with other components when OVO is installed initially, or installed alone at a later date. Refer to the OVO Installation Guide for more details.

See the section Exchange SPI Service Discovery chapter 4 page 93 for more information on Service Discovery functionality.

Exchange SPI Service Maps

The service graph generated by the Exchange SPI Service Discovery application is a snapshot of the Exchange services on the managed nodes at the time at which the application is run. The discovered Exchange topology is maintained in OVO and dynamic views are available of its current state in the service maps and views.

Figure 1 Example Service Map



Exchange SPI Policy Groups and Policies

Policies measure collected data against predefined rules, generating alarms and messages to assist in problem analysis and resolution. Corrective actions are suggested in help text available in the message details.

Installing the Exchange SPI adds the SPI for Exchange policy folder to the OVO console tree. Double click **SPI for Exchange** to display the Exchange 2007, Exchange 2003, Exchange 2000, Exchange 5.5, and Exchange Service Discovery folders beneath. Double-click to open a folder and see the EXSPI policy groups for that version of Microsoft Exchange Server. Selecting a policy group in the console tree will display the policies, or policy sub-groups within that group, in the details pane on the right.



In OVOU 8 and earlier, policies were referred to as templates.

Policies can be distributed as groups or individually. For a complete listing of policies, see the *HP OpenView Smart Plug-in for Microsoft Exchange Server Reference Guide*.

Microsoft Exchange Server Version and EXSPI Prefix

This version of the Exchange SPI monitors Microsoft Exchange 2007, 2003, 2000 and 5.5. policy and policy group names contain the version number in the prefix, where **8X** refers to Exchange 2007, **6X** refers to Exchange 2000 and 2003, **65** to Exchange 2003 only, **60** to Exchange 2000 only, and **55** to Exchange 5.5. For example, where an Exchange 5.5 policy has the name **EXSPI-55 Event Log Errors**, the equivalent Exchange 2000 and 2003 policy is **EXSPI-6X Event Log Errors**.

When policies or policy groups are referred to that work for both versions, they are referred to in this guide as **EXSPI-60/55 <policy name>**.

For a complete listing of policies with detailed policy by policy specifications, see the *HP OpenView Smart Plug-in for Microsoft Exchange Server Reference Guide*.

Policy Groups

The top level of the Policy Groups is:

SPI for MS Exchange

Exchange 2007

Exchange 2000

Exchange 2003

Exchange 5.5

Exchange Service Discovery

Exchange 2000 and Exchange 2003:

The policies for Exchange 2000 and 2003 are organized into Specialized Groups and Standard Groups. In those folders the policies are arranged in the following groups:

EXSPI Specialized Groups

- EXSPI Exchange Server
 - EXSPI Message Delivery
 - EXSPI Server Availability
 - EXSPI Server Transaction Logs
- EXSPI Site Replication Server

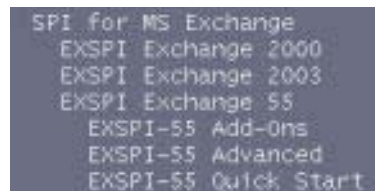
EXSPI Standard Groups (Ex2000) or (Ex2003)

- EXSPI Availability
- EXSPI Client Access (Ex2000) or (Ex2003)
 - EXSPI IMAP4
 - EXSPI MAPI
 - EXSPI OWA
 - EXSPI POP3
- EXSPI Cluster (Ex2000) or (Ex2003)
- EXSPI Directory
- EXSPI Information Store (Ex2000) or (Ex2003)

- EXSPI Epoxy (Ex2000) or (Ex2003)
- EXSPI Full Text Index
- EXSPI Mailbox (Ex2000) or (Ex2003)
- EXSPI Performance (Ex2000) or (Ex2003)
- EXSPI Public Folder (Ex2000) or (Ex2003)
- EXSPI Transaction Log
- EXSPI Virus Scan
- EXSPI Messaging
 - EXSPI MTA
 - EXSPI NNTP
 - EXSPI SMTP
 - EXSPI Tracking Log
- EXSPI OVO Exchange SPI core
 - EXSPI Data Collection
- EXSPI Optional Services (Ex2000)
 - EXSPI Chat Service
 - EXSPI Conferencing Service
 - EXSPI Instant Messaging

For a complete listing of policies, see the *HP OpenView Smart Plug-in for Microsoft Exchange Server Reference Guide*.

Exchange 5.5:



The **EXSPI-55 Quick Start** policy group contains policies that are easy to install and distribute and require no special customization. Many policies in the **EXSPI-55 Add-Ons** and **EXSPI-55 Advanced** policy groups require a more advanced configuration procedure. Before getting started, review policy requirements in [Exspi Policy Group Requirements on page 71](#).

Exchange Service Discovery

This group contains EXSPI_Discovery, EXSPI-6x Exchange Cluster Discovery SysLog and EXSPI-6x Exchange Cluster Discovery policies for service discovery.

Policy Types

Within the Exchange group are:

- **Schedule** policies that determine when and what metrics are collected
- **Monitor** policies that implement the actual metric condition (threshold, object, message text, instructions, etc.)

- **Message** policies that intercept the Exchange SPI messages
- **Logfile encapsulator** policies that monitor for Exchange server related messages in the Windows event log, and send them to the OVO Message browser.

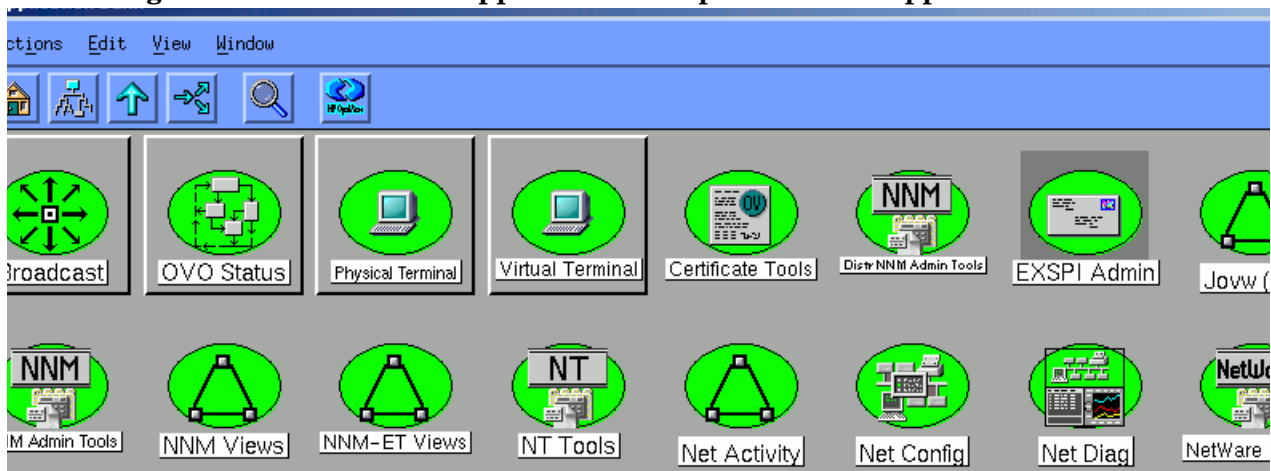
For information on customizing policy settings, see [Basic Customization](#) on page 97.

Exchange SPI Application Groups and Applications

The Exchange SPI applications enable you to perform certain tasks on managed nodes to simplify monitoring Microsoft Exchange Server. Applications also help you configure the managed nodes to facilitate data collection process.

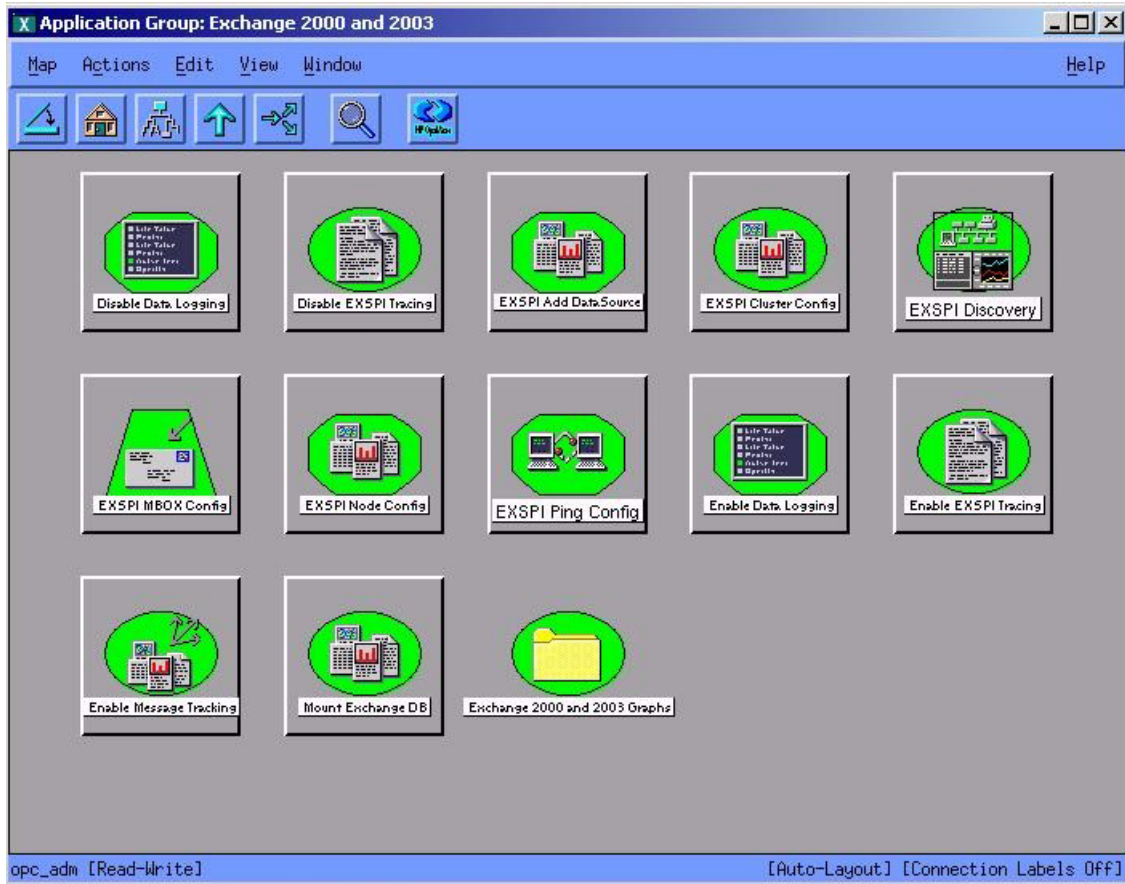
You can view the Exchange SPI applications in the OVO Application Bank window under **EXSPI Admin**, in the **Exchange 2007**, **Exchange 2000 and 2003**, and **Exchange 5.5** application groups. To open the OVO Application Bank, select **Window > Application Bank**.

Figure 2 EXSPI Admin Application Group in the OVO Application Bank Window



Exchange 2000 and 2003 Applications

Figure 3 Exchange 2000 and 2003 Exchange SPI Applications



In the **Exchange 2000 and 2003** group are the following applications:

- **EXSPI Add DataSource**: Exchange SPI application to configure data sources and start the logging of data.
- **EXSPI MBOX Config**: Starts the mailbox configuration program that automatically creates a mailbox.
 - The script supports two options. The syntax is:

```
exspi_e2k_cfg [-m mailBoxName] [ -ou OU ]
```

 - **-m** (optional parameter) is the mailBoxName prefix.
 - **-ou** (optional parameter) is the Organizational Unit.
 - If the **-m** parameter is not specified, the default prefix is MSXSPI.
 - The mailbox enabled service account is created as MSXSPI<hostname>. This mailbox name is added to the exspi\defaults file as line MAILBOX mailBoxName.
 - If the **-ou** parameter is not specified, the mailbox will be created in the USERS container.
 - By default a mailbox named MSXSPI<hostname> is created on the Exchange server where "hostname " is the name of the Exchange server.
 - The mailbox is created hidden from the GAL.

- **EXSPI Node Config:** Configures the service account with special Exchange privileges (MSXSPI) on the managed node. This account is for policies distributed in the Advanced Configuration section.
- **EXSPI Ping Config:** Configures the Advanced Configuration policy: End To End Message Ping.
- **Self-Healing Info:** This application gathers system information (command output, configuration, log and trace files), and writes this data to a file which HP support services can use during troubleshooting. For more information, see [Self-Healing Information for Enhanced Troubleshooting](#) on page 132.
- **Enable Message Tracking** (for Exchange 2000 and 2003 only): Turning message tracking on will cause the Exchange server to write tracking log files. The Exchange SPI track log schedule policy parses these log files to collect data for the four tracklog reports: Exchange Top Destinations, Exchange Top Recipients, Exchange Top Senders, and Exchange Top Sources.
- **Enable EXSPI Tracing:** Enables tracing; default setting is OFF. This application is generally used for troubleshooting. When tracing is turned on the results are written to: %OvAgentDir%\exspi\log\trace. **Note:** The trace file will grow very large. It is advisable to leave tracing enabled only long enough to recreate the problem, or in order to comply with HP support instructions.
- **Disable EXSPI Tracing:** Disables tracing; (default tracing setting is OFF).
- **Enable Data Logging:** Starts Exchange SPI data logging, the default setting is ON. This is normally used after Disable Data Logging, to restart data logging.
- **Disable Data Logging:** Stops Exchange SPI from logging data.
- **EXSPI Cluster Config:** The Exchange Cluster Config application prints apminfo data, which can be used to create the *apminfo.xml* file used by the Exchange SPI to recognize clustered instances. For further information about Exchange SPI monitoring clusters, see [Using Exchange SPI in high availability environments](#) on page 89. **Regarding privileges:** This application can be run as any account that has the ability to read wmi, such as a Domain admin or an Exchange admin account
- **Mount Exchange DB:** This application can search for and mount dismounted mailboxes or public folder store databases. It requires the user name and password of a special account that has Exchange administrative privileges, as the application must be modified with this info before executing, see [Creating a Service Account with Proper Access Permissions](#) on page 25.

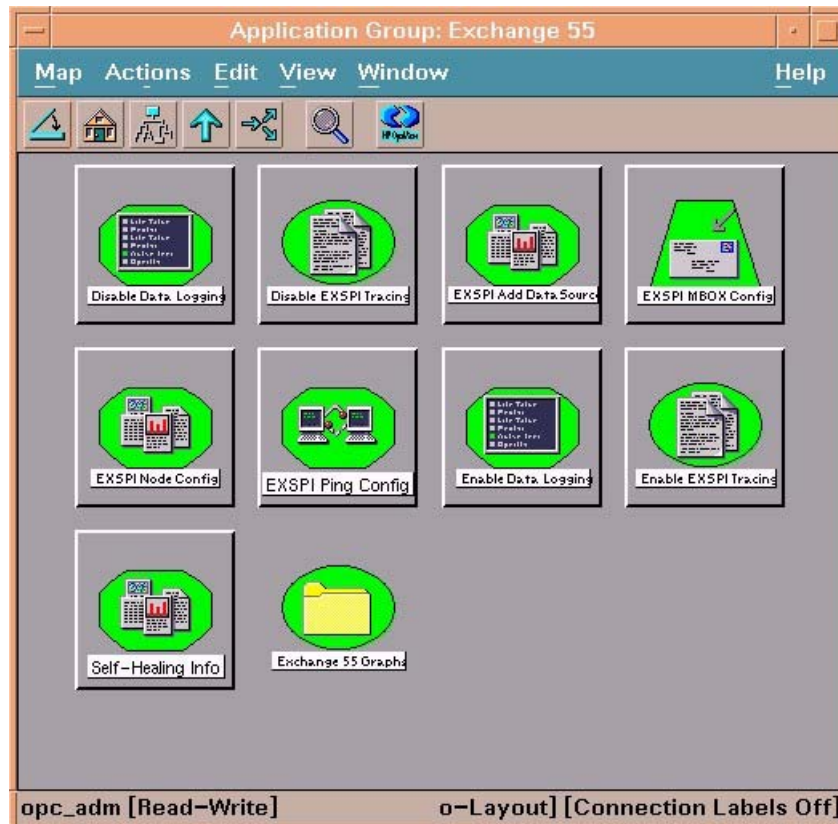
The application can take one or all of the following parameters:

- **-s** Search for dismounted databases.
- **-m** Search for dismounted databases and attempt to mount any found.
- **-p** Print the output.
- **-a** Forward an alarm message to the OVO Management server.
- **-t** Timeout: the time the tool can take to re-mount a dismounted database (in seconds). If not provided, the script will automatically set the timeout value to be 5 seconds. If the database cannot be remounted within the time frame given, you can set a higher timeout value, e.g. 30 seconds. If remounting the dismounted database still fails, and there is not an error in the output of the tool, there is probably a problem with the Exchange information store service.

- **EXSPI List CODA Data Sources:** Lists the data sources and objects in CODA. Run it after executing "EXSPI Add DataSource" so you know if the EXSPI_DATA data source was created or not.

Exchange 5.5 Applications

Figure 4 Exchange 5.5 Exchange SPI Application Group.



In the **Exchange 5.5** group are the following applications:

- **EXSPI Add DataSource:** Exchange SPI application to configure data sources and start the logging of data.
- **EXSPI MBOX Config:** Starts the mailbox configuration program that automatically creates a mailbox.
- **EXSPI Node Config:** Configures the service account with special Exchange privileges (MSXSPI) on the managed node. This account is for policies distributed in the Advanced Configuration section.
- **EXSPI Ping Config:** Configures the Advanced Configuration policy: End To End Message Ping.
- **Self-Healing Info:** This application gathers system information (command output, configuration, log and trace files), and writes this data to a file which HP support services can use during troubleshooting. For more information, see [Self-Healing Information for Enhanced Troubleshooting](#) on page 132.

- **Enable EXSPI Tracing:** Enables tracing; default setting is OFF. This application is generally used for troubleshooting. When tracing is turned on the results are written to: %OvAgentDir%\exspi\log\trace.

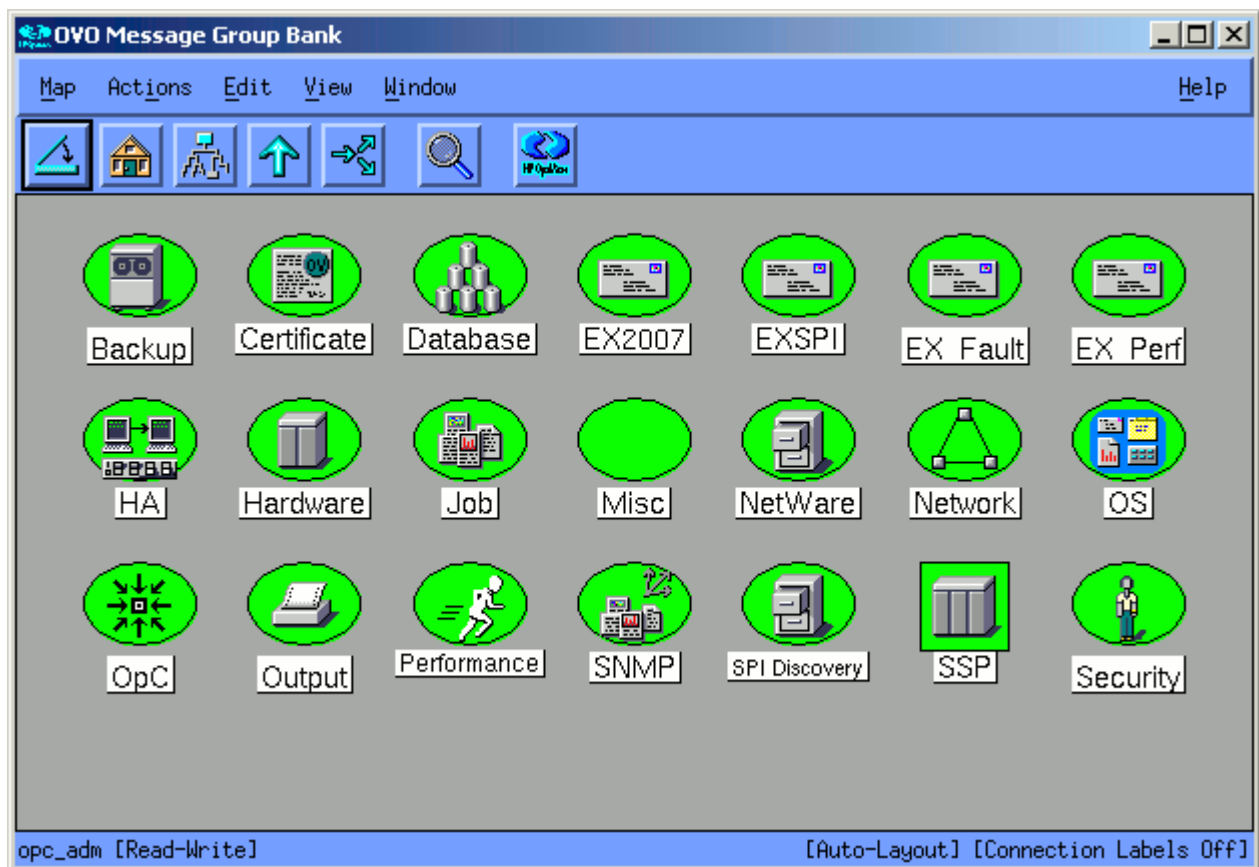


The trace file will grow very large. It is advisable to leave tracing enabled only long enough to recreate the problem, or in order to comply with HP support instructions.

- **Disable EXSPI Tracing:** Disables tracing; (default tracing setting is OFF).
- **Enable Data Logging:** Starts Exchange SPI data logging, the default setting is ON. This is normally used after Disable Data Logging, to restart data logging.
- **Disable Data Logging:** Stops Exchange SPI from logging data.
- **Exchange 5.5 Graphs:** Exchange SPI graphs are located here.

Exchange SPI Message Groups and Messages

Figure 5 OVO Message Group Bank Window



There are three Exchange SPI message groups located in the OVO Message Group Bank window and all messages generated by the Exchange SPI fall into one of these message groups. They are:

- 1 **EXSPI:** contains messages generated by Exchange-SPI programs. They contain instruction text to help to diagnose/remedy problems.
- 2 **EX_Perf:** contains messages regarding Exchange performance.
- 3 **EX_Fault:** contains messages regarding error conditions.

Exchange SPI Reports and Graphs

Exchange SPI Reports

Exchange SPI reports come in a separate package, `EXSPI-Reporter.msi` which is found in the HP OpenView Operations for Unix Application CD-ROM. HP OV Reporter can be used to access the Exchange SPI data source (`EXSPI_DATA`) on managed nodes, and generate reports using Seagate Crystal Reports.

For Exchange 2003 and 2000 reports, see [Exchange SPI Reports](#) on page 110, and [Reports for Exchange 5.5 Servers](#) on page 117, for complete lists of out-of-the-box Exchange SPI reports.

Exchange SPI Graphs

Exchange SPI graphs include HP OpenView Performance Manager (OVPM) graphs for Exchange 5.5, 2000, 2003, 2007 and PerfView graphs for Exchange 5.5. OVPM graphs require an installation procedure. See [Installing Exchange SPI Graph policies](#) on page 121 for details.

For a list of available graphs, see [Exchange 2003 OVPM Graphs](#) on page 122, [Exchange 2000 OVPM Graphs](#) on page 125, and [Exchange 5.5 OVPM Graphs](#) on page 127.

2 User Privileges

Introduction

The Exchange SPI collects data from many sources. In order to collect some types of data, the Exchange SPI requires advanced user credentials.

This chapter outlines:

- Which policies/applications have user account requirements
- For policies and applications requiring specific user permissions, how to create the service account and grant proper access permissions in the following environments:
 - Exchange 5.5 nodes in a Windows NT domain
 - Exchange 5.5 nodes in a Windows 2000 domain
 - Exchange 2000/2003 nodes in a Windows 2000/2003 domain

User Privileges

There are two levels of user privilege needed by the Exchange SPI:

1. \$AGENT_USER

All schedule policies without the "-s" option run as \$AGENT_USER. This level of user privilege is sufficient for the following schedule policies:

- All policies in Exchange 5.5 Quick Start group, and some policies in the Exchange 5.5 Add-Ons and Advanced groups.
- Some Exchange 2000 and 2003 policies in both the Standard and Specialized groups.

See [Exspi Policy Group Requirements](#) on page 71 for more information about which policies require the service account with special Exchange privileges.

2. Service account user with special Exchange privileges

APPLICATIONS

For all versions of Exchange, the following applications need to run with this special type of service account:

- Enable Message Tracking
- EXSPI MBOX Config.

POLICIES

For Exchange 5.5:

Some policies in the Add-Ons and most policies in the Advanced group run under this type of account (all the policies which include the -s parameter):

- EXSPI Advanced > EXSPI End to End Message Ping > EXSPI-55/6X End to End Message Ping. These policies use the mailbox created by the Exchange SPI application EXSPI MBOX Config.
- EXSPI Advanced > EXSPI Reporter Collection > all policies.

For Exchange 2000 and 2003:

All policies in the EXSPI Specialized Groups require to run under this type of account.

See [Exspi Policy Group Requirements](#) on page 71 for more information about which policies require the service account with special Exchange privileges.

Creating a Service Account with Proper Access Permissions

Some policies and applications require a service account for each logon domain where Exchange servers reside (see *Exspi Policy Group Requirements* chapter 4 page 71). This service account enables the Exchange SPI to access information from the Exchange database. This is required only for Exchange 2003, 2000, and 5.5.

The service account must be created and the access privileges granted. Procedures are outlined according to operating system environment, in the following manner:

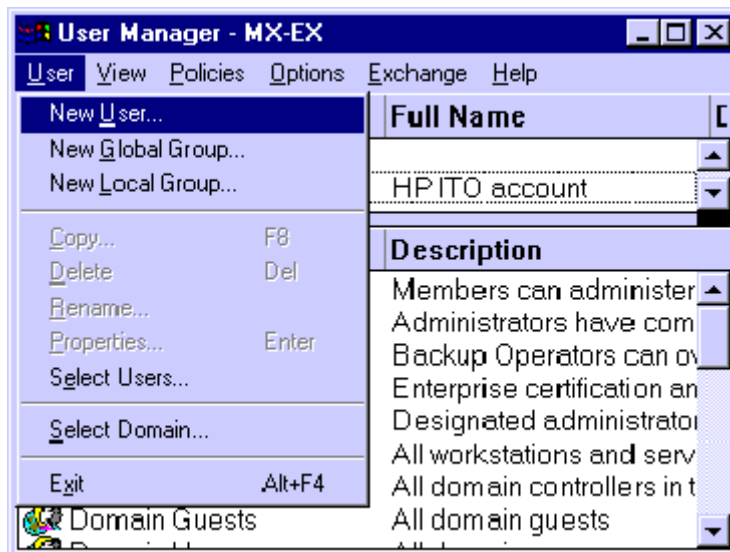
- Case 1: For Exchange 5.5 nodes in a Windows NT Domain (Note: Windows NT is only supported under OVO 7).
- Case 2: For Exchange 5.5 nodes in a Windows 2000 Domain
- Case 3: For Exchange 2000/2003 nodes in a Windows 2000/2003 Domain

Exchange 5.5 nodes in a Windows NT Domain

Create User Account

- 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 6 User Manager dialog



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

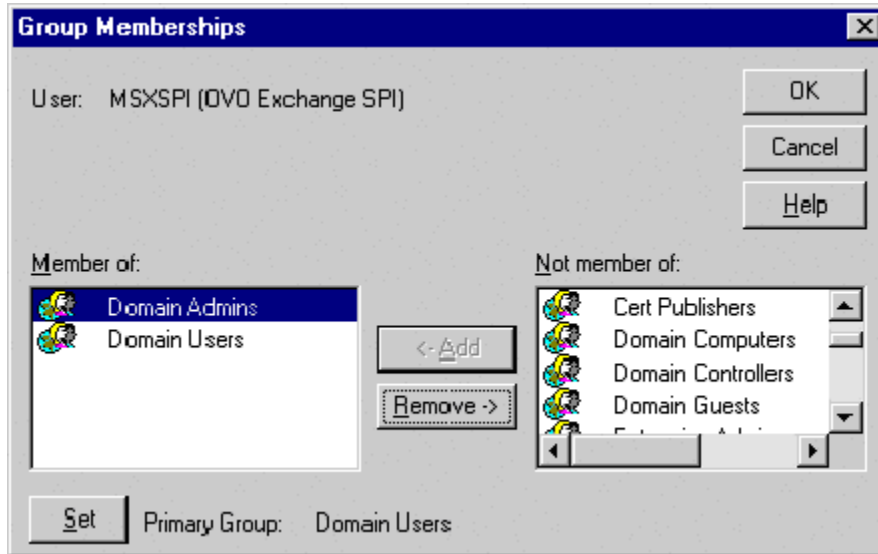
➤ Remember this password; you will need it later to update applications and policies.

Figure 7 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 8 Group Memberships dialog



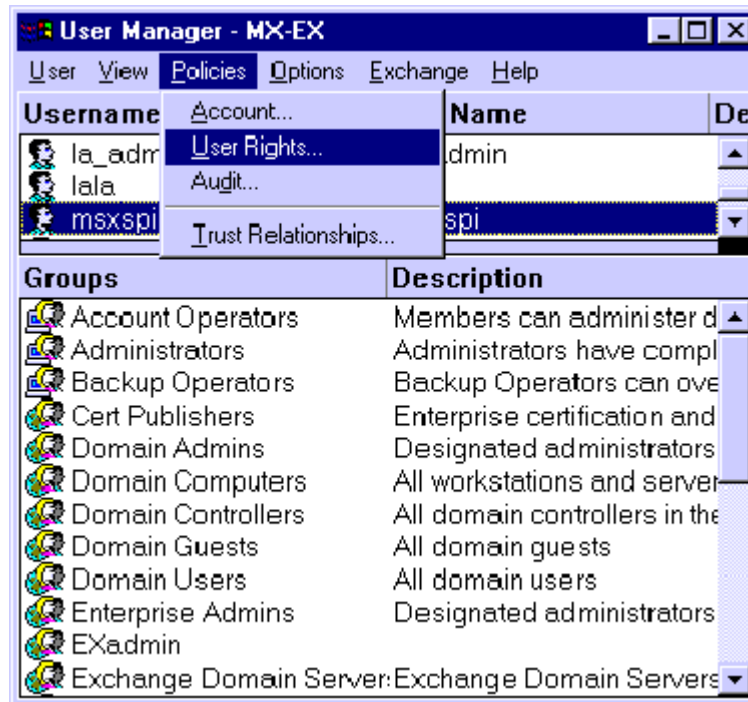
- 6 At the right, from the **Not a member of:** box select the **Domain Admins** user, click **Add**, and **OK** to close the **Group Memberships** window.
- 7 To include necessary information, click buttons in the **New User** window:



| | |
|-----------|--|
| 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. |

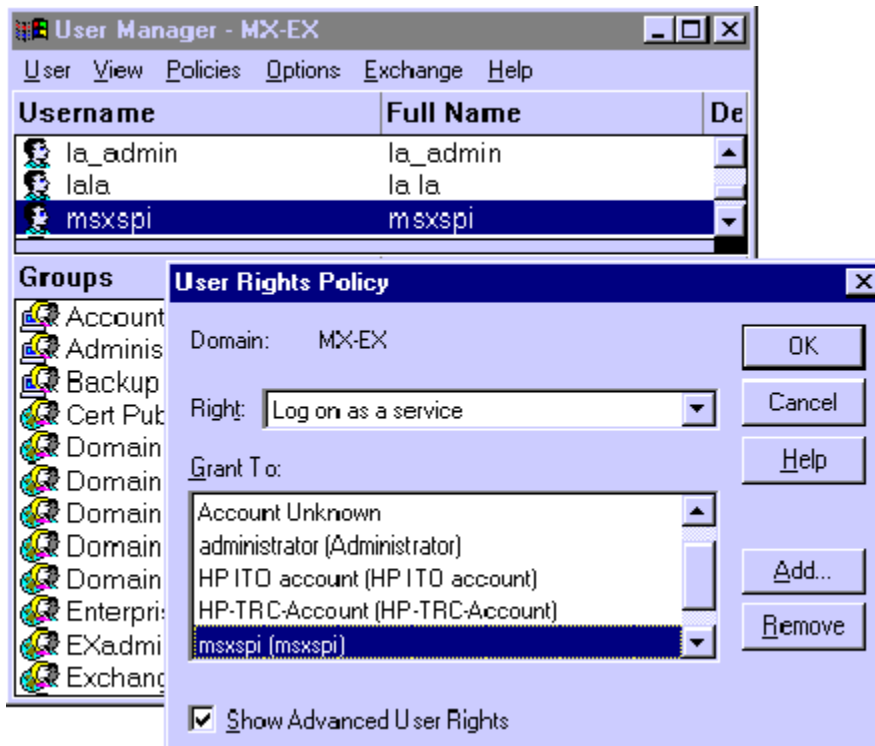
- 8 Click **Add** to add this user. (If the **Exchange Add Mailbox** window is displayed, select **Cancel** to close it).
- 9 Click the **Close** button to close the **New User** window.
- 10 From the **User Manager** menu bar select **Templates > User Rights....**

Figure 9 User Manager dialog



- 11 Check the **Show Advanced User Rights** checkbox.
- 12 From the drop-down list select **Log on as a service** in the **Right** field

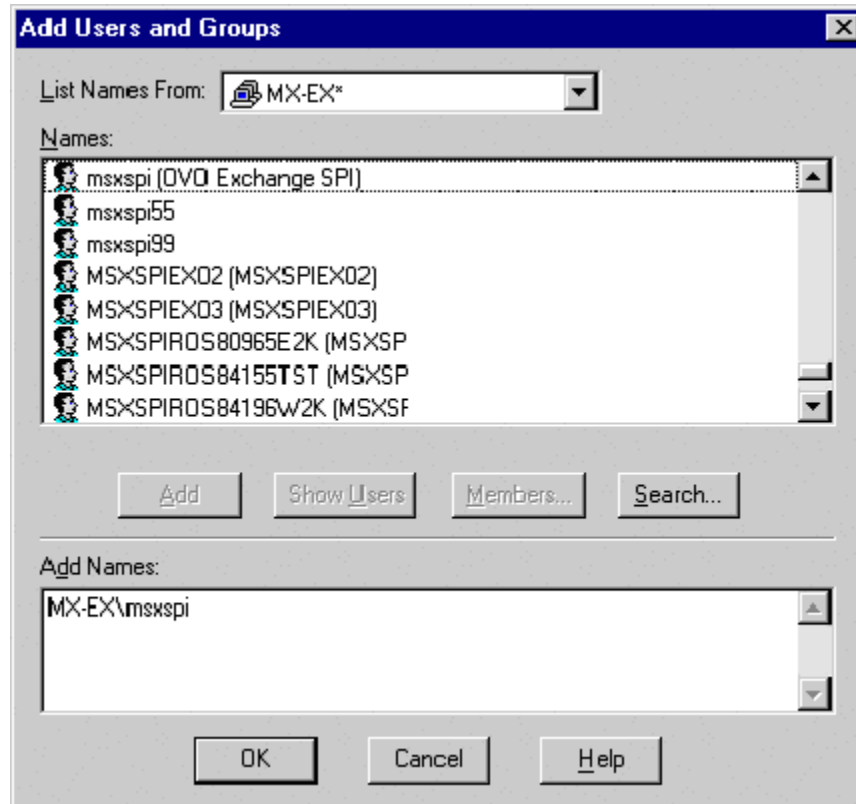
Figure 10 Selecting Log on as a service for User Rights.



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

- 14 Click the **Show Users** button.
- 15 Select the user account just added (*MSXSPI*), click **Add**, then **OK**.

Figure 11 Adding the new User Account



- 16 Repeat steps 12-15 to add the **Profile system performance** right.
- 17 Open **Active Directory Users and Computers**.
- 18 Right-Click on the domain to which the Exchange server belongs and click **Properties**.
- 19 Choose the **Group Policy** tab and select the **Default Domain Policy**.
- 20 Click **Edit**. Browse to **Computer Configuration > Windows Settings > Security Settings > Local Policies > User Rights Assignment**.
- 21 Double-click **Log on as a Batch Job** group policy and add the *MSXSPI* account to this policy.

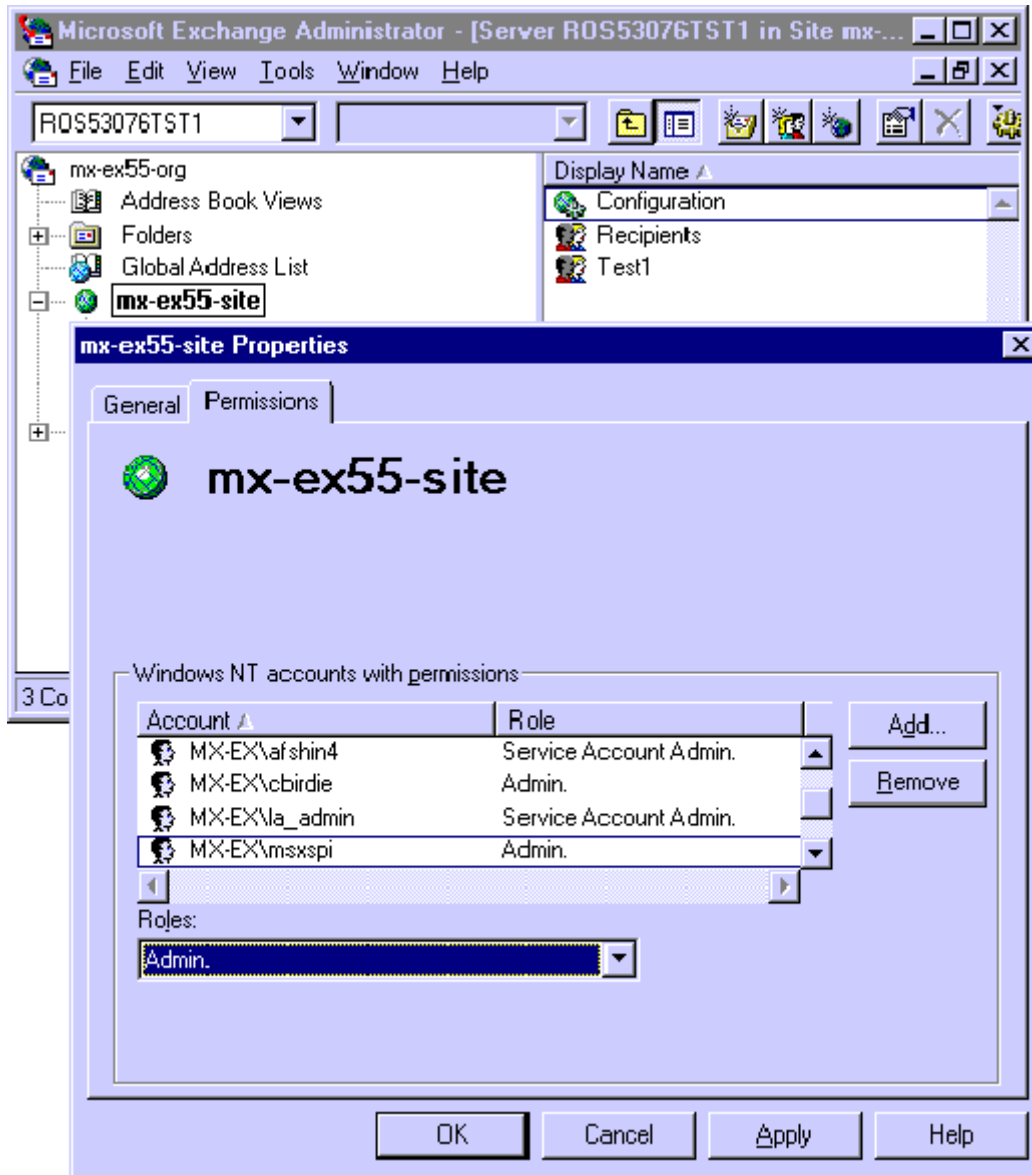
Grant Exchange Access Permissions to User Account

In order for the user account (in this example *MSXSPI*) 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 Advanced policies are to be distributed: In the left pane within the tree, select **<site_name>**.
 - a From the File menu select **Properties**.

- b In the Properties window, select the **Permission** tab and click **Add** to open the **Add Users and Groups** window.
- c Select the user account previously created (*MSXSPT*), and click **Add**.
- d Click **OK** to add the user, and close the **Add Users and Groups** window.
- e Verify the user has the role of **Admin**.

Figure 12 Verifying the User role



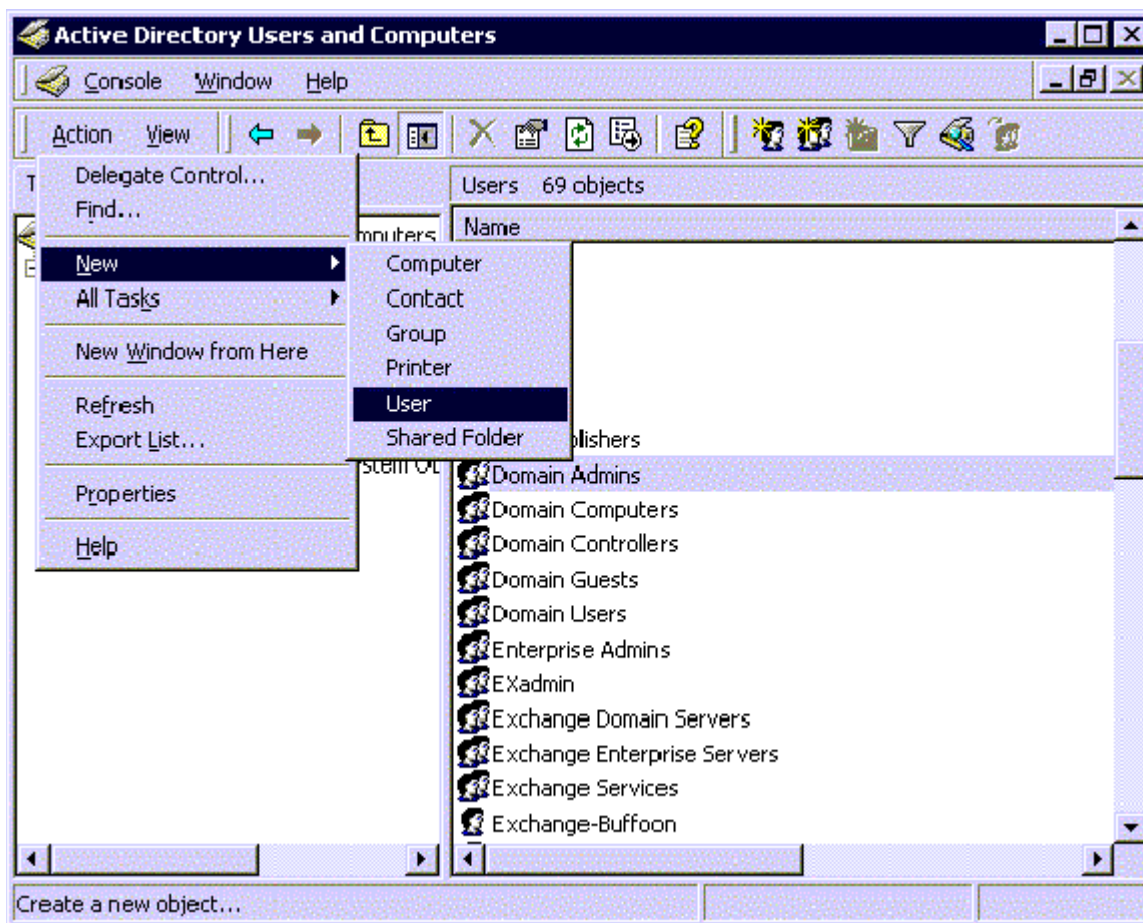
- f Click **OK** to save the changes.

Exchange 5.5 nodes in a Windows 2000 Domain

Create User Account

- 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, right-click **Users**, and select **New > User**.

Figure 13 Selecting New User dialog



- 4 In the dialog box that appears, enter the user name just created (in this example *MSXSPI*) as the **First Name** and as the **User logon name**.

Figure 14 New object dialog

New Object - User

Create in: mx-ex.ov.rose.hp.com/Users

First name: MSXSPI Initials: []

Last name: []

Full name: MSXSPI

User logon name: MSXSPI @mx-ex.ov.rose.hp.com

User logon name (pre-Windows 2000): MX-EX\MSXSPI

< Back Next > Cancel

- 5 In the next window, enter **Password/Confirm Password** for the user account (MSXSPI).
- 6 Select **Password Never Expires**. Then click **Next**

Figure 15 Setting User Privileges.

New Object - User

Create in: mx-ex.ov.rose.hp.com/Users

Password: []

Confirm password: []

User must change password at next logon

User cannot change password

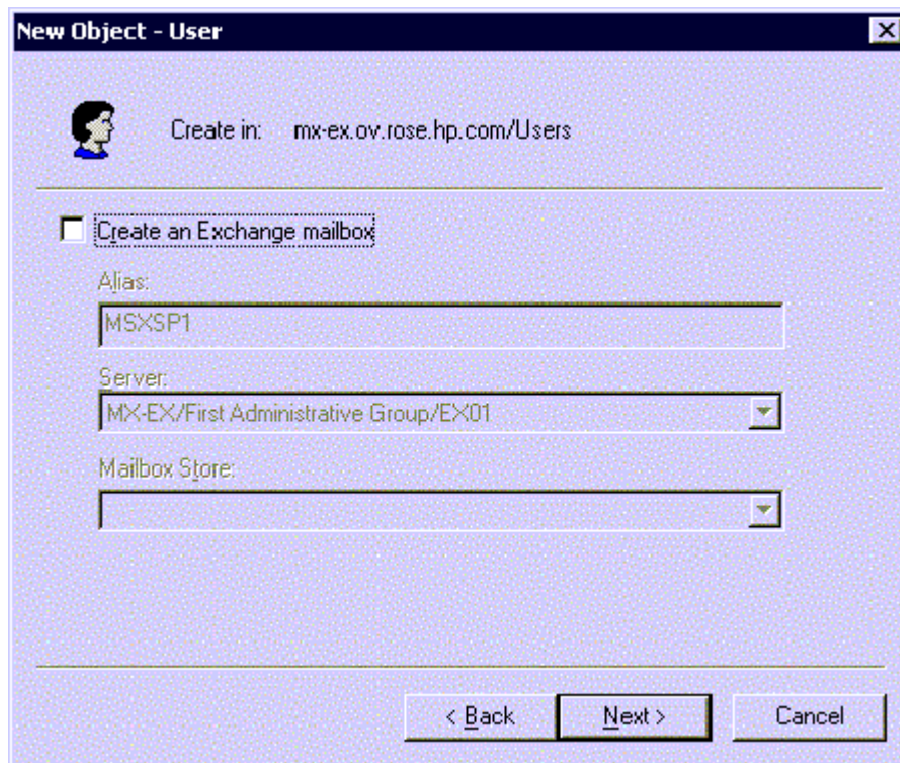
Password never expires

Account is disabled

< Back Next > Cancel

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

Figure 16 Deselect Create 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 (in this example *MSXSPI*) and select **Properties**.
- 10 In the **MSXSPI Properties** page, select the **General** tab. Enter "Exchange SPI for OpenView Operations for Windows" in the **Description** field.

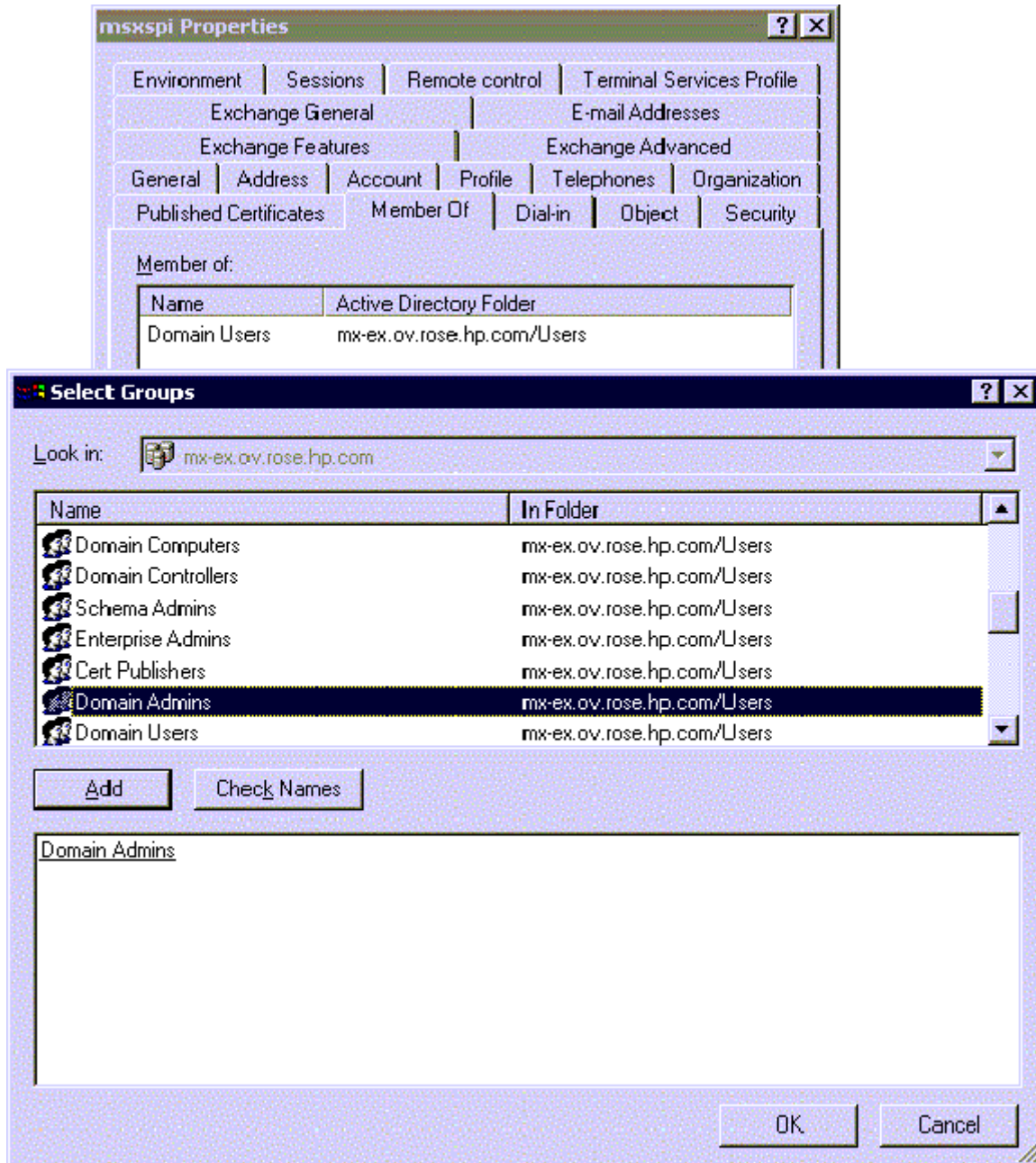
Figure 17 Properties dialog

The screenshot shows the 'msxspi Properties' dialog box with the 'Member Of' tab selected. The dialog contains the following fields and controls:

- Tabbed interface with 'Member Of' selected. Other tabs include: Published Certificates, Dial-in, Object, Security, Environment, Sessions, Remote control, Terminal Services Profile, Exchange General, E-mail Addresses, Exchange Features, Exchange Advanced, General, Address, Account, Profile, Telephones, and Organization.
- User icon and name: msxspi
- First name: Initials:
- Last name:
- Display name:
- Description:
- Office:
- Telephone number:
- E-mail:
- Web page:
- Buttons:

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

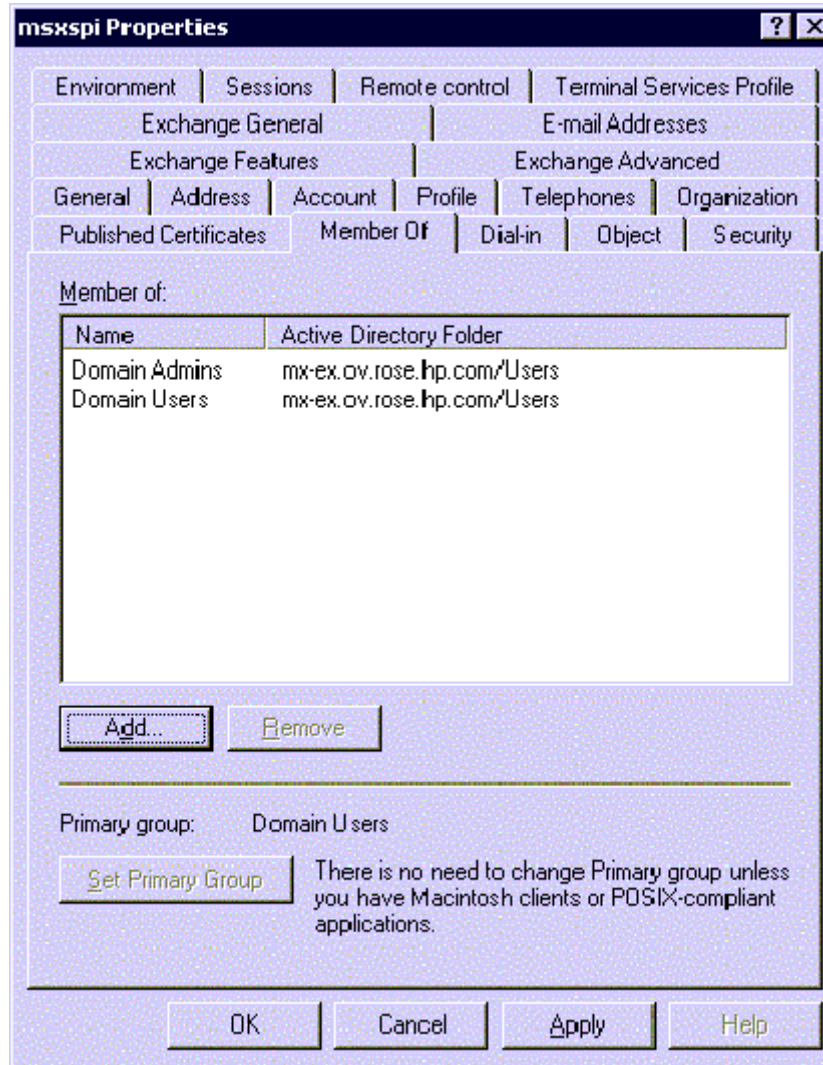
Figure 18 Setting User account privileges



- 12 In the **Select Group** dialog select **Domain Admins** from the top pane. Click **Add**, then **OK**.
- 13 The new user (MSXSPI) is now a member of Domain Admins group. Click **OK** and exit the **Active Directory Users and Computer** dialog.
- 14 Open **Active Directory Users and Computers**.
- 15 Right-click on the domain to which the Exchange server belongs and click **Properties**.
- 16 Choose the **Group Policy** tab and select the **Default Domain Policy**.
- 17 Click **Edit**. Browse to **Computer Configuration > Windows Settings > Security Settings > Local Policies > User Rights Assignment**.

- 18 Double-click the **Log on as a Batch Job** group policy and add the *MSXSPI* account to this policy.

Figure 19 New User with new Membership status



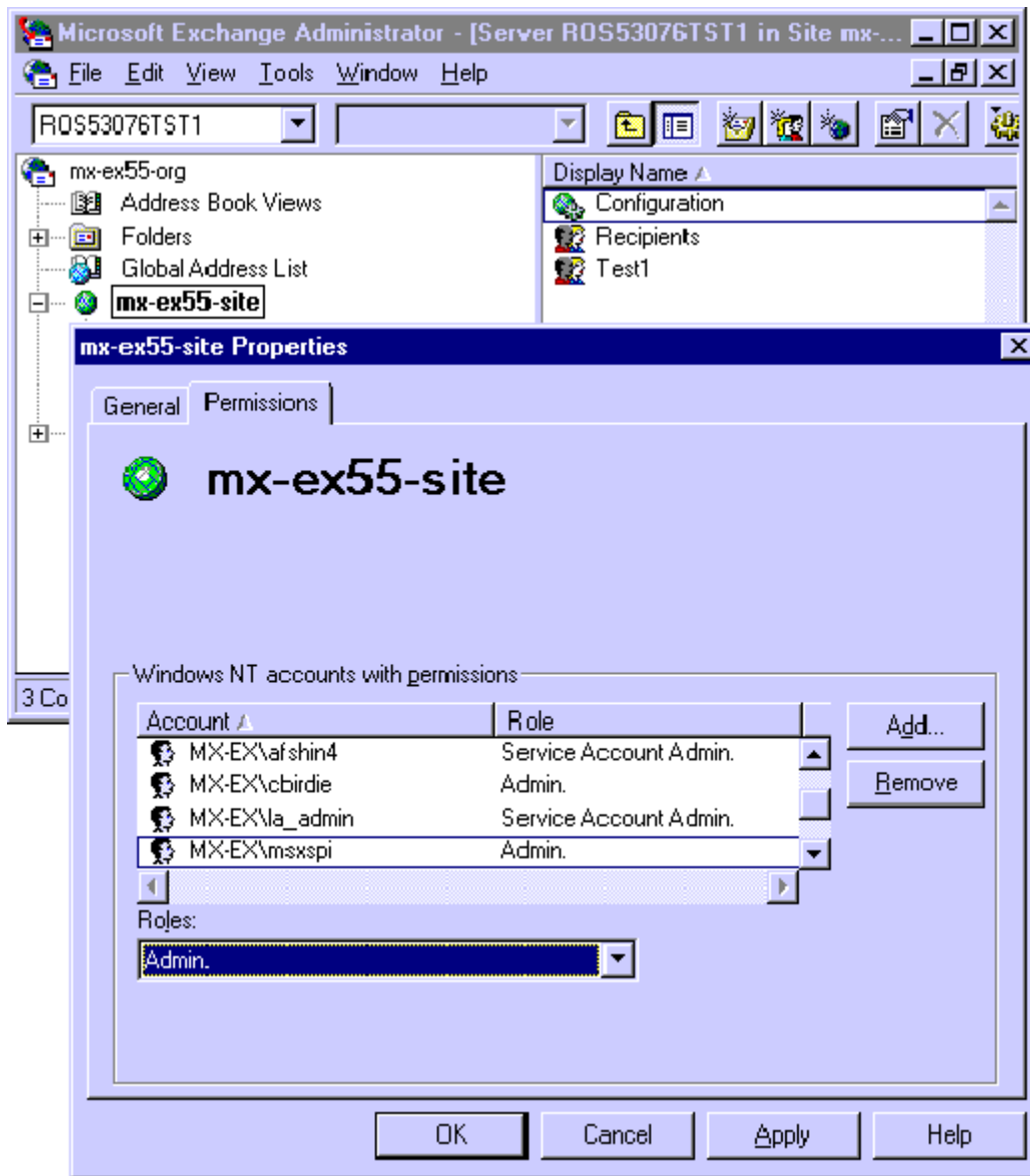
Grant Exchange Access Permissions to User Account

In order for the user account *MSXSPI* 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 Advanced policies are to be distributed:
 - a In the left pane within the tree, select **<site_name>**.
 - b From the File menu select **Properties**. In the Properties window, select the **Permission** tab and click **Add** to open the **Add Users and Groups** window.
 - c Select the user account previously created (*MSXSPI*), and click **Add**.
 - d Click **OK** to add the user, and close the **Add Users and Groups** window.

- e Verify the user has the role of **Admin**.

Figure 20 Verifying User roles.



- f Click **OK** to save the changes.

Exchange 2000/2003 nodes in Windows 2000/2003 Domain

To create a service account with special Exchange privileges for Exchange 2000/2003 nodes the following steps are required:

Task 1: Enable viewing of the Administrative Groups folder

Task 2: Create the service account

Task 3: Add the service account user to the Local Administrators group.

Enable Viewing of Administrative Groups folder

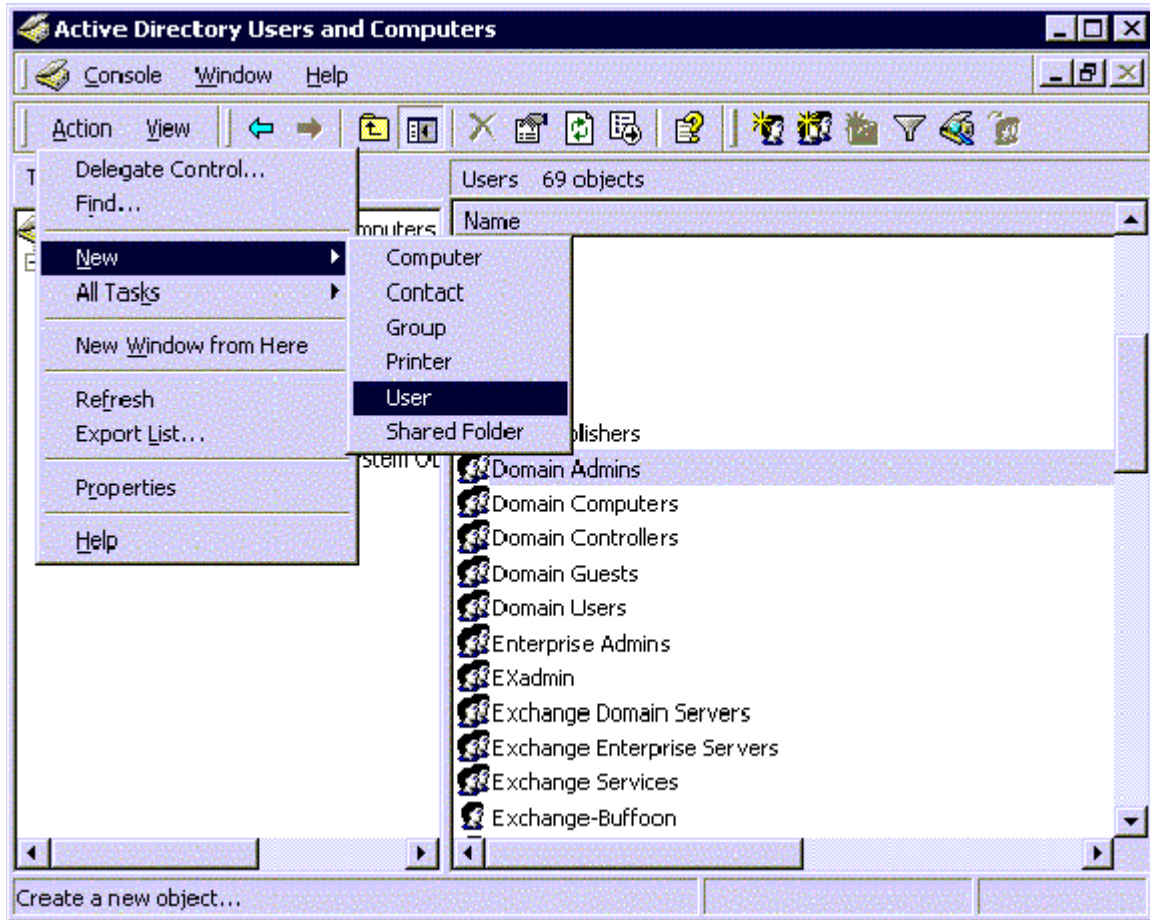
To create the user account it is necessary to first enable viewing the administrative groups folder:

- 1 Open the Exchange server **Properties**
- 2 Select **Display administrative groups**.
- 3 Click **Apply** and **OK**.

Create User 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**.

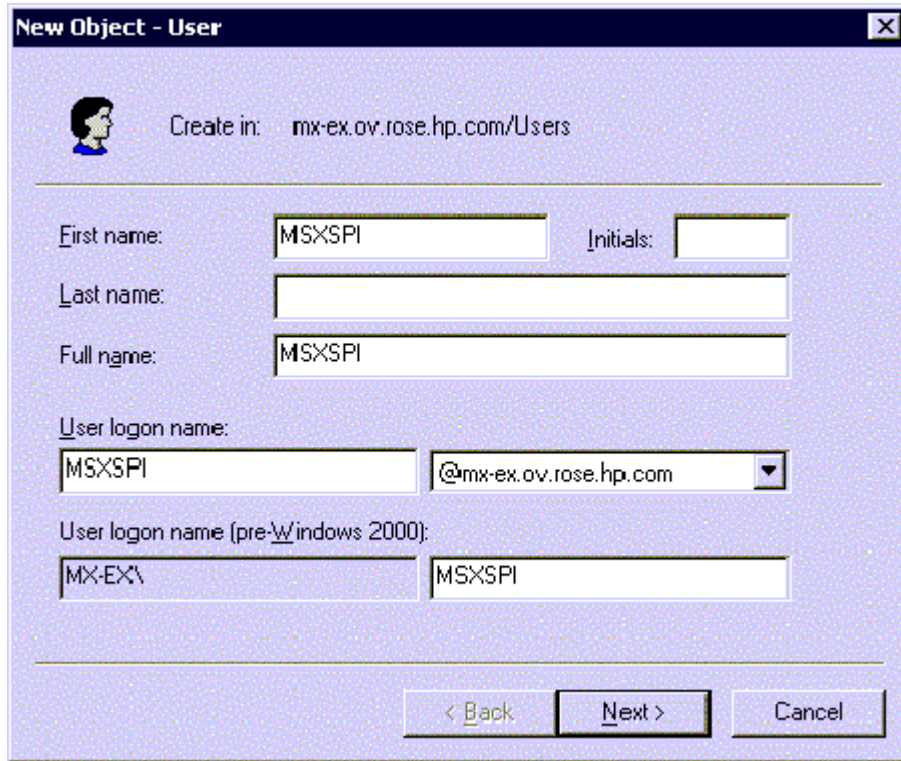
Figure 21 Active Directory Users and Computers dialog



- 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.

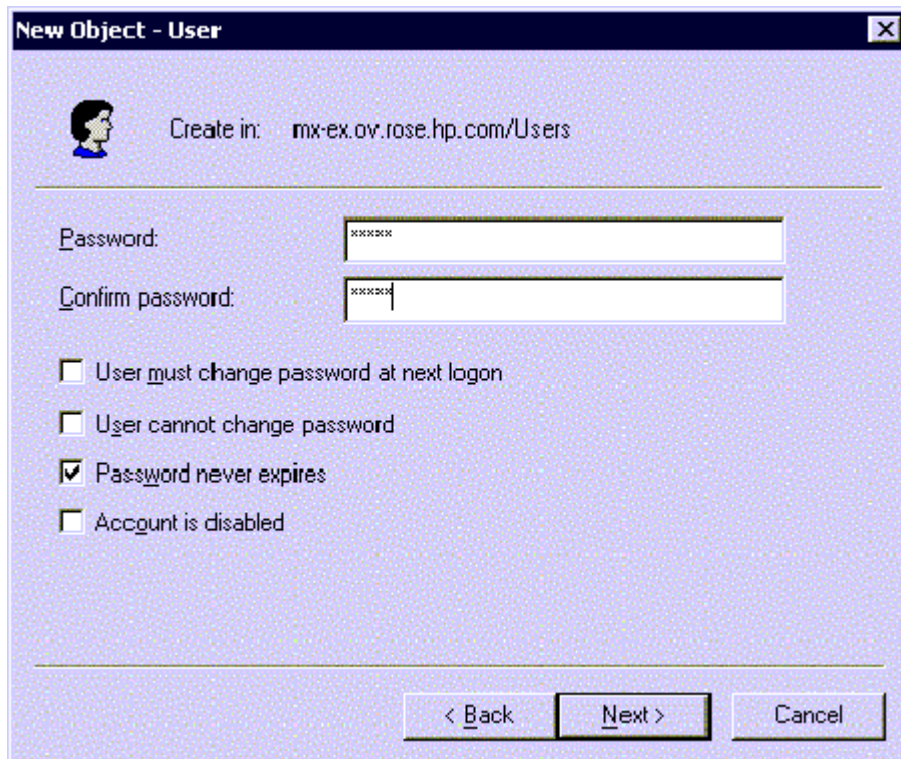
Figure 22 Entering the new service account name



The screenshot shows a dialog box titled "New Object - User" with a close button (X) in the top right corner. Below the title bar is a user icon and the text "Create in: mx-ex.ov.rose.hp.com/Users". The main area contains several input fields: "First name:" with "MSXSPI" entered, "Initials:" with an empty field, "Last name:" with an empty field, "Full name:" with "MSXSPI" entered, "User logon name:" with "MSXSPI" in a text box and "@mx-ex.ov.rose.hp.com" in a dropdown menu, and "User logon name (pre-Windows 2000):" with "MX-EX\" in a text box and "MSXSPI" in another text box. At the bottom are three buttons: "< Back", "Next >", and "Cancel".

- 1 In the next window, enter **Password/Confirm Password** for the service account.
- 2 Select **Password Never Expires**. Then click **Next**.

Figure 23 Setting password properties



The screenshot shows the same "New Object - User" dialog box, but now the "Password:" and "Confirm password:" fields are visible, both containing "*****". Below these fields are four checkboxes: "User must change password at next logon" (unchecked), "User cannot change password" (unchecked), "Password never expires" (checked), and "Account is disabled" (unchecked). At the bottom are three buttons: "< Back", "Next >", and "Cancel".

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

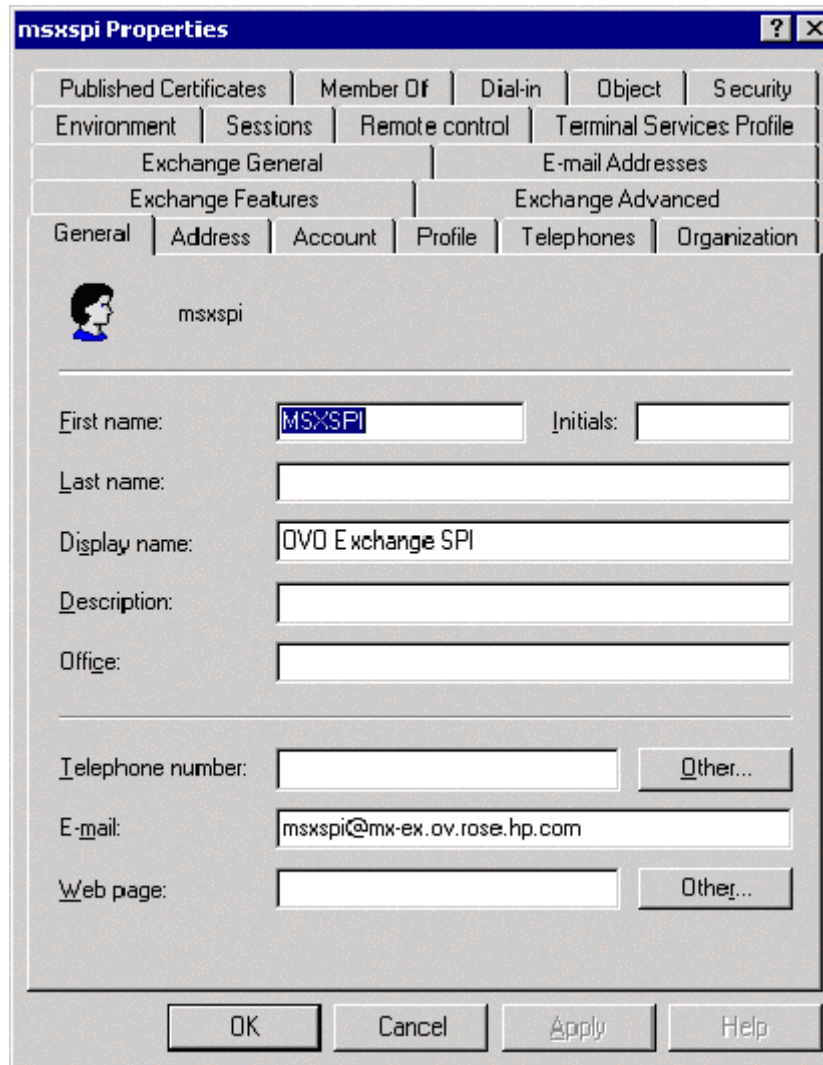
Figure 24 Deselecting creating a mailbox

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

5 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**.

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

Figure 25 Entering names in Properties dialog



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

8 In the **Select Group** dialog select **Exchange Domain Servers** from the top pane.

9 Click **OK** and exit the **Active Directory Users and Computer** dialog.

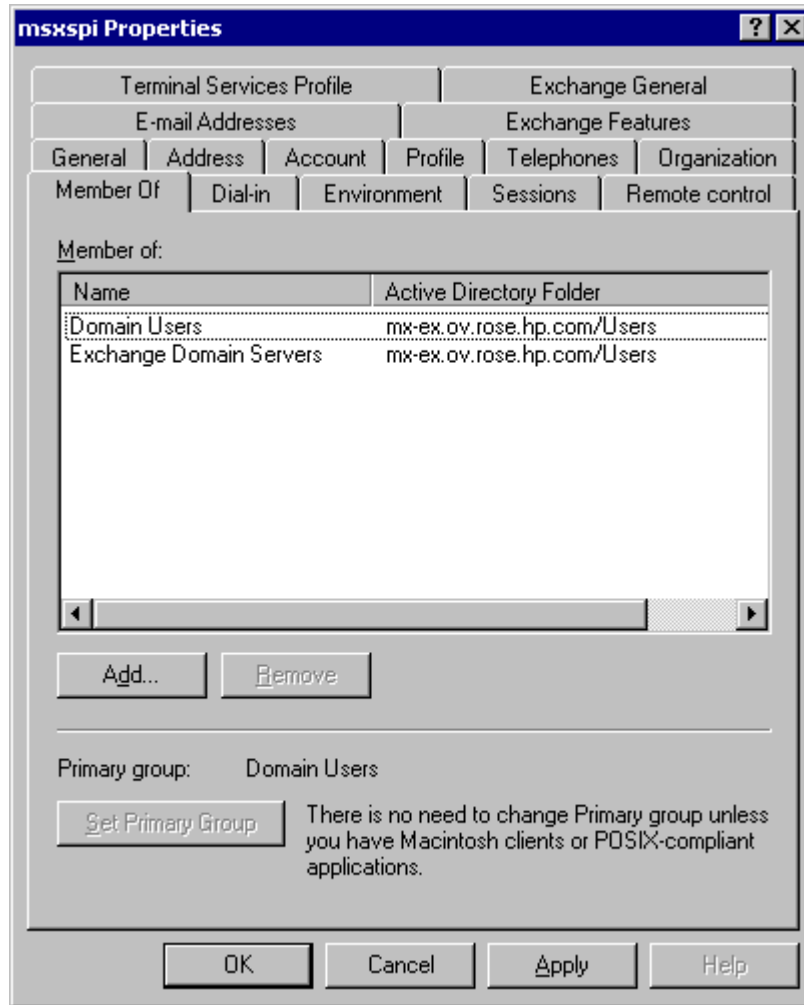
10 Open **Active Directory Users and Computers**.

11 Right-click on the domain to which the Exchange server belongs and click **Properties**.

12 Choose the **Group Policy** tab and select the **Default Domain Policy**.

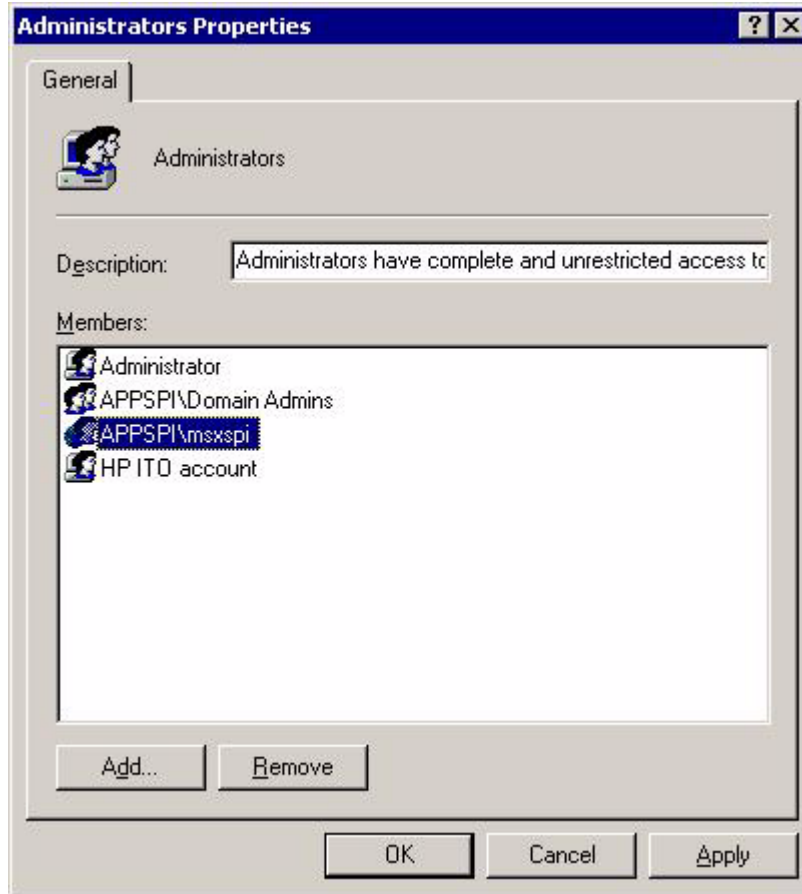
- 13 Click **Edit**. Browse to **Computer Configuration > Windows Settings > Security Settings > Local Policies > User Rights Assignment**.
- 14 Double-click the **Log on as a Batch Job** group policy and add the *MSXSPI* account to this policy.

Figure 26 Confirming membership privileges



- g Add the service account user to the Local Administrators group on the Exchange server.
- a On each targeted Exchange 2000/2003 server, select **Start > Settings > Control Panel**.
- b 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**.
- c 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**. Click **Apply** and then **OK**.

Figure 27 Adding service account user to Local Administrators group



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

3 Installation and Configuration

This chapter offers instructions for installing, configuring and removing Exchange SPI components. It covers the following topics:

- Prior to installing Exchange SPI
- Installing and configuring the Exchange SPI
- Policy Groups: installation considerations
- Installation and Basic Configuration
- Advanced Configuration
- Removing the Exchange SPI
- Deleting Exchange SPI policies, applications and message groups.

Prior to Installation

- This release is targeted at OVO for UNIX 7.x or higher. Verify your current OVO version.
- Before installing this version of the Exchange SPI, you must remove any previous version of the Exchange SPI (see [Removing the Exchange SPI](#) on page 65).
- The installation of Exchange SPI depends on the following pieces of software, verify that they are present on the management server before installing the Exchange SPI:
 - DSI2DDF A.01.30.00 or higher (for OVO7 and OVO8/DCE)
 - DSI2DDF A.02.00.00 or higher (for OVO8/HTTPS).
 - SPI-SHS-OVO (version = A.01.00).
- Exchange SPI reports require HP OpenView Reporter, and the Exchange SPI `EXSPI-Reporter.msi` must be installed on a Windows node in the same domain where Exchange SPI is managing nodes.
- Self healing collector must be present on management server (version 8.01.xx).
- Service Discovery Framework (SPI-SVCDISC-OVO) version A.02.xx must be present on management server.

Pre-Installation Task

Before the start installing the Exchange SPI on the management server, make sure that you have installed OVO UNIX agents on the management server.

Installing the Exchange SPI

To install the Exchange SPI on the OVO management server from the command line interface, follow these steps:

- 1 Insert the Exchange SPI DVD into the CD-ROM drive of the management server.
- 2 Run the following command:

For an HP-UX 11.0 management server, enter:

```
swinstall -s /cdrom/OV_DEPOT/11.OHPUX.sdtape SPI-EXCHANGE-OVO
```

For a Solaris management server, enter:

```
swinstall -s /cdrom/OV_DEPOT/SOLARIS.sdtape SPI-EXCHANGE-OVO
```

The installer installs the Exchange SPI on the management server.

Configuring the Exchange SPI

After you install the Exchange SPI, you must configure it to monitor the Microsoft Exchange Server nodes in your organization. The configuration process involves adding nodes to the management server, enabling the Exchange SPI to discover nodes, and so on.

Prerequisite

Before you start configuring the Exchange SPI, you must create a Microsoft Exchange user account with necessary user privileges, which can be used by the SPI to achieve service discovery.

Create a user on the domain controller with the user name—**msxspi**. This user must be member of the following groups:

- Administrators
- Domain Admins
- Domain Users

In addition, if you want to monitor Microsoft Exchange Server 2007, the **msxspi** user must be a member of the Exchange Organization Administrators group.

If you want to monitor Microsoft Exchange Server 2003/2000, the **msxspi** user must be a member of the Exchange Domain Servers group.

Add Nodes

After you install the Exchange SPI on the OVO management server, a new node group—**EXSPI**—is created. You must add all Microsoft Exchange Server nodes to this group. To add Exchange nodes to the EXSPI node group, follow these steps:

- 1 In the Root window, click **Window** → **Node Group Bank**. The OVO Node Group Bank window opens.
- 2 In the Root window, click **Window** → **Node Bank**. The OVO Node Bank window opens.

- 3 Select a node in the OVO Node Bank window, and then drag and drop the node on **EXSPI** in the OVO Node Group Bank window.
- 4 Repeat step [step 3](#) to add another available node.

Alternatively, follow these steps:

- 1 In the root window, click **Window** → **Node Group Bank**. The OVO Node Group Bank window opens.
- 2 In the OVO Node Group Bank window, double-click **EXSPI**. The Node Group: EXSPI window opens.
- 3 In the Node Group: EXSPI window, click **Actions** → **Node** → **Add**. The Add Node dialog box opens.
- 4 Specify details of the Exchange node that you want to add, and then click **OK**.
- 5 Repeat [step 2](#) to [step 4](#) to add another node.

If you do not select to automatically install agent software on nodes, you must manually install agents on the added nodes. Refer to the following documents for more information on agent installation on nodes:

- *HP OpenView Operations Administrator's Reference*
- *HP OpenView Operations OVO DCE Agent Concepts and Configuration Guide*
- *HP OpenView Operations OVO HTTPS Agent Concepts and Configuration Guide*

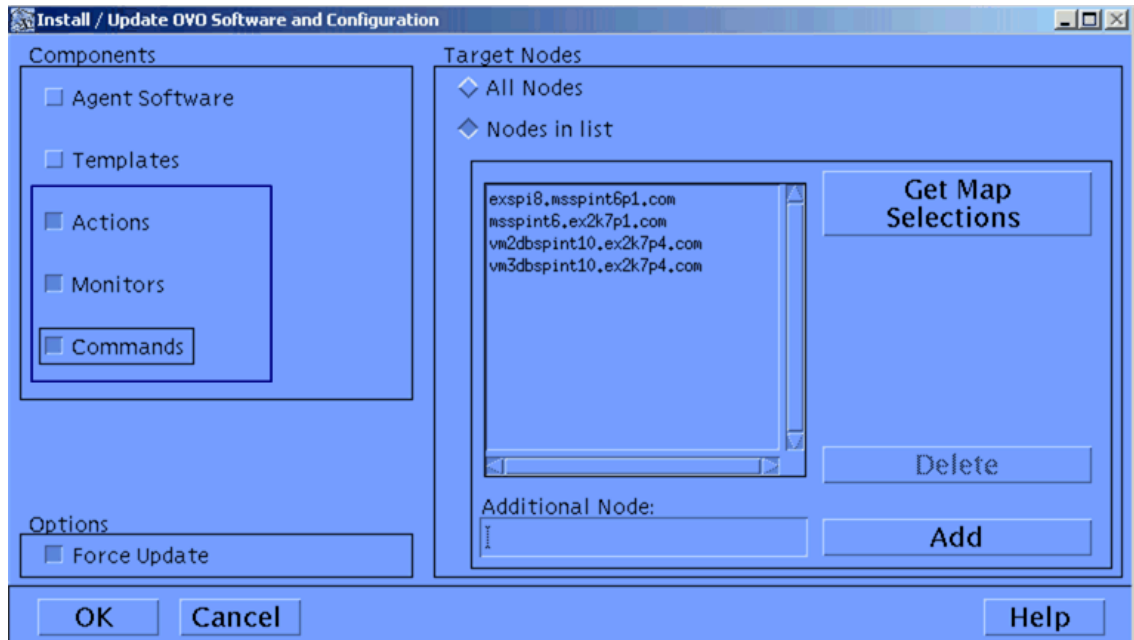
If you want to monitor Microsoft Exchange Server 2007 nodes, agents must run on the nodes with a user account that has privileges to perform the following:

- Act as part of the operating system
- Adjust memory quotas for a process
- Replace a process level token

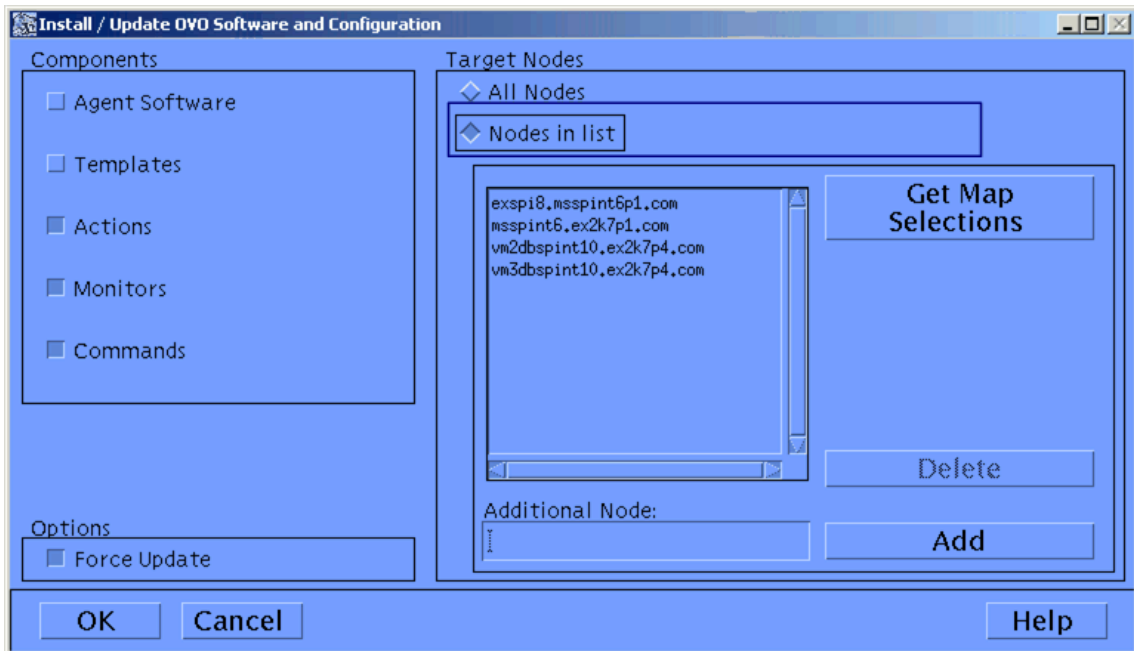
Distribute the Exchange SPI Actions, Monitors, and Commands

To collect data from Microsoft Exchange Server nodes, you the Exchange SPI actions, monitors, and commands must be available on nodes. To distribute the Exchange SPI actions, monitors, and commands, follow these steps:

- 1 In the OVO Node Group Bank window, click **EXSPI**, and then click **Actions** → **Agents** → **Install/Update SW & Config**. The Install/Update OVO Software and Configuration window opens.
- 2 In the Install/Update OVO Software and Configuration window, click the following components:
 - Actions
 - Monitors
 - Commands



- 3 Click **Nodes in list**.



- 4 Click **Force Update**.
- 5 Click **OK**.

After successful distribution, the following message is displayed in the message browser:

The following configuration information was successfully distributed:
 Actions, Commands, Monitors

Update the remactconf.xml File

If you use DCE agent based nodes, you must update the `remactconf.xml` file to enable the discovery policy to run automatic actions on the management server. Follow these steps:

- 1 Open the `remactconf.xml` file from the following location on the management server:

```
/etc/opt/OV/share/conf/OpC/mgmt_sv/
```

- 2 Add the following content to the file:

```
<rule>
  <doc>allow all DCE-agent actions</doc>
  <if>
    <certified>>false</certified>
  </if>
  <allow/>
</rule>
```



If you use HTTPS agent based nodes, verify and make sure that the `remactconf.xml` file in the `/etc/opt/OV/share/conf/OpC/mgmt_sv/` location on the management server contains the following content:

```
<rule>
  <doc>Allow ALL certified actions</doc>
  <allow/>
</rule>
```

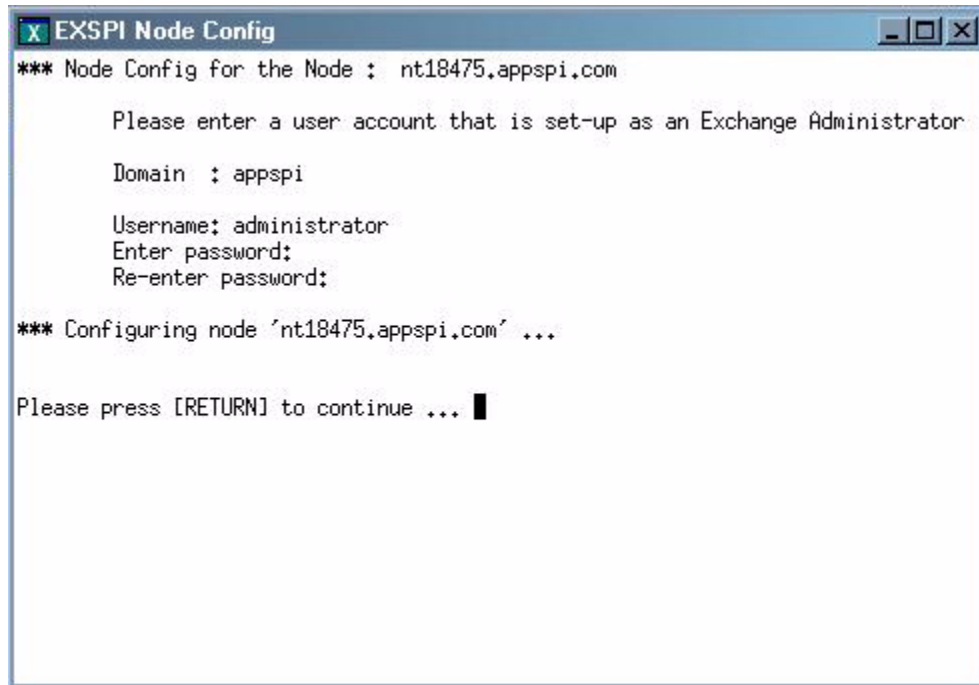
Run the EXSPI Node Config Application

To run the EXSPI Node Config application (EX2007 Node Config for Exchange 2007 nodes), follow these steps:

- 1 Select all the desired Exchange managed nodes.
- 2 Drag these nodes and drop them on the EXSPI Node Config application located in the EXSPI Admin application group.
- 3 When prompted, enter the domain, user and password for the user account (the account mentioned in [Prerequisite](#) on page 46).



When you run this application, be sure to enter the correct domain name, user and password. This domain is not the DNS domain name but the NT domain name.



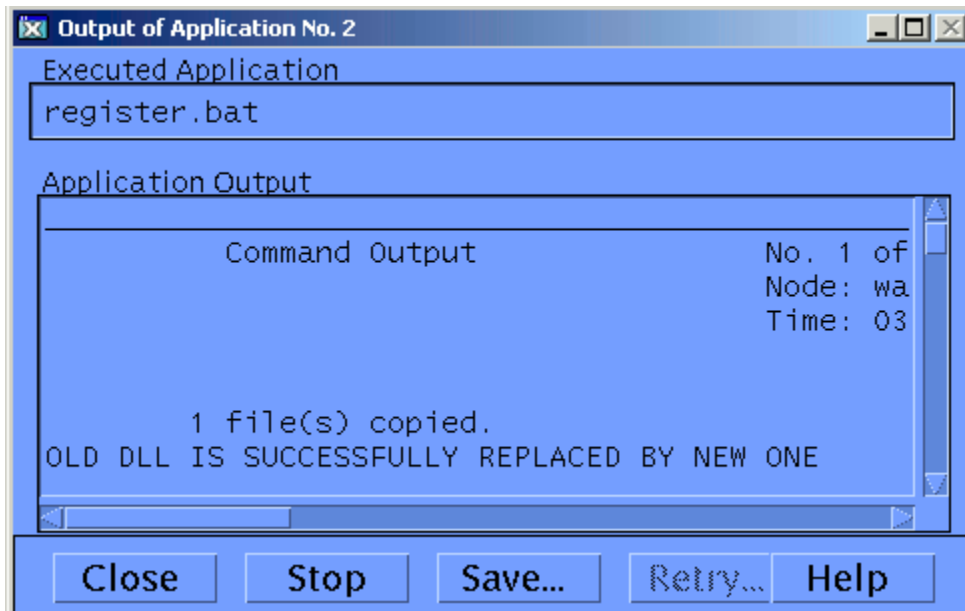
If you add additional nodes after running this application, you must run this application on all newly added nodes.

Initiate Data Collection for Exchange 2007

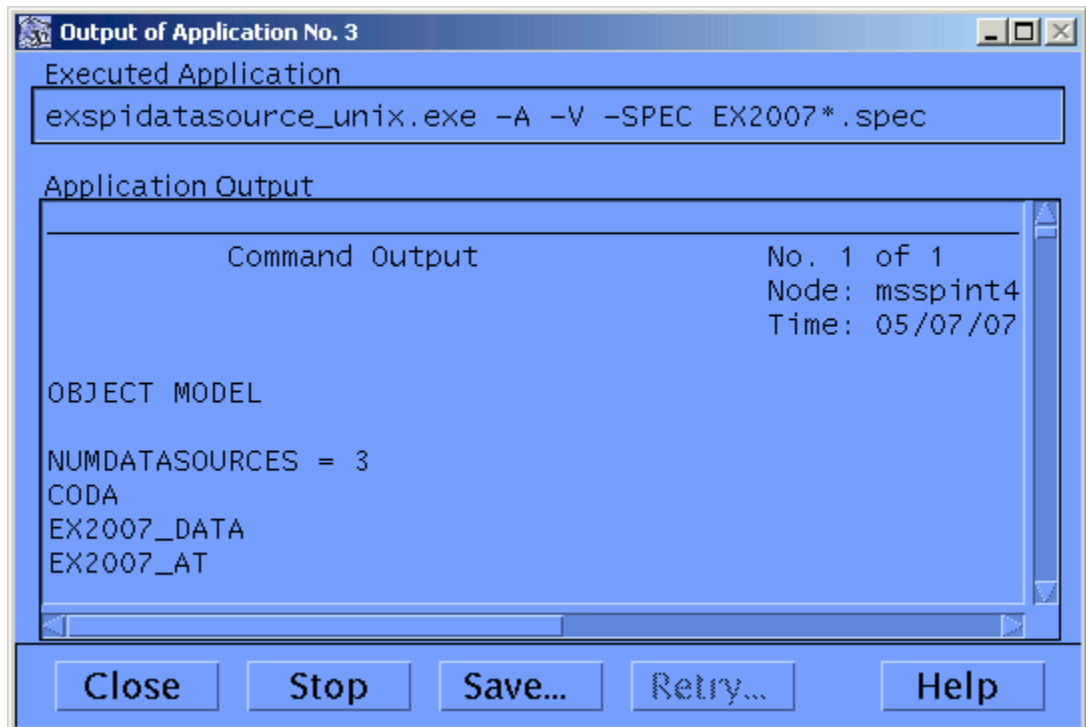
If you are using Microsoft Exchange Server 2007, you must initiate the data collection process on nodes after running the Create DataSources application. The data collection mechanism on Exchange 2007 nodes are governed by two daemons — Collection Manager and PowerShell Collector. Before you start using the SPI for Exchange 2007 nodes, you must perform the following steps to initiate data collection:

- 1 Open the OVO Node Group Bank window.
- 2 In the OVO Node Group Bank window, double-click **EXSPI**. The Node Group:EXSPI window opens.
- 3 Run the Register Data Collector application to register COM components on Exchange 2007 nodes. Perform the following steps:

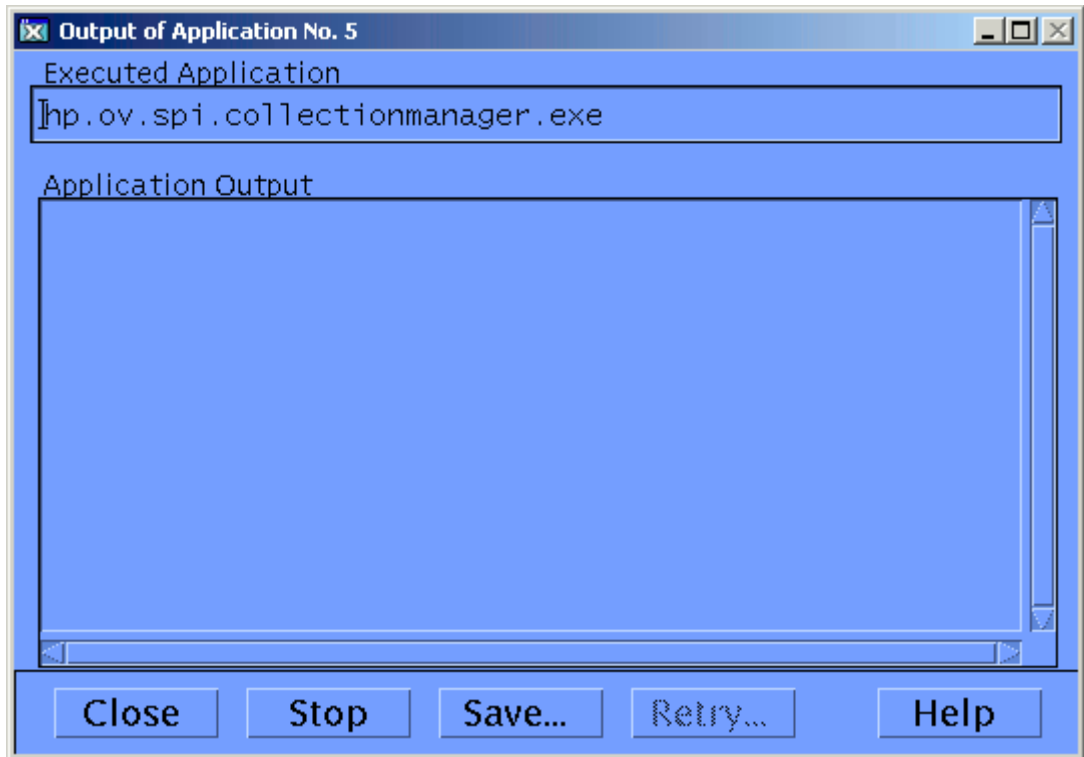
- a From the Node Group:EXSPI window, drag and drop a node on Register Data Collector in the Application Group: Exchange 2007 window. The Output of Application No. 2 window appears.



- b After the window displays output, click **Close**.
 - c Repeat [step a](#) and [step b](#) for all Exchange 2007 nodes.
- 4 Run the Create DataSources application to on nodes. Perform the following steps:
- a From the Node Group:EXSPI window, drag and drop a node on Create DataSources in the Application Group: Exchange 2007 window. The Output of Application No. 3 window appears.

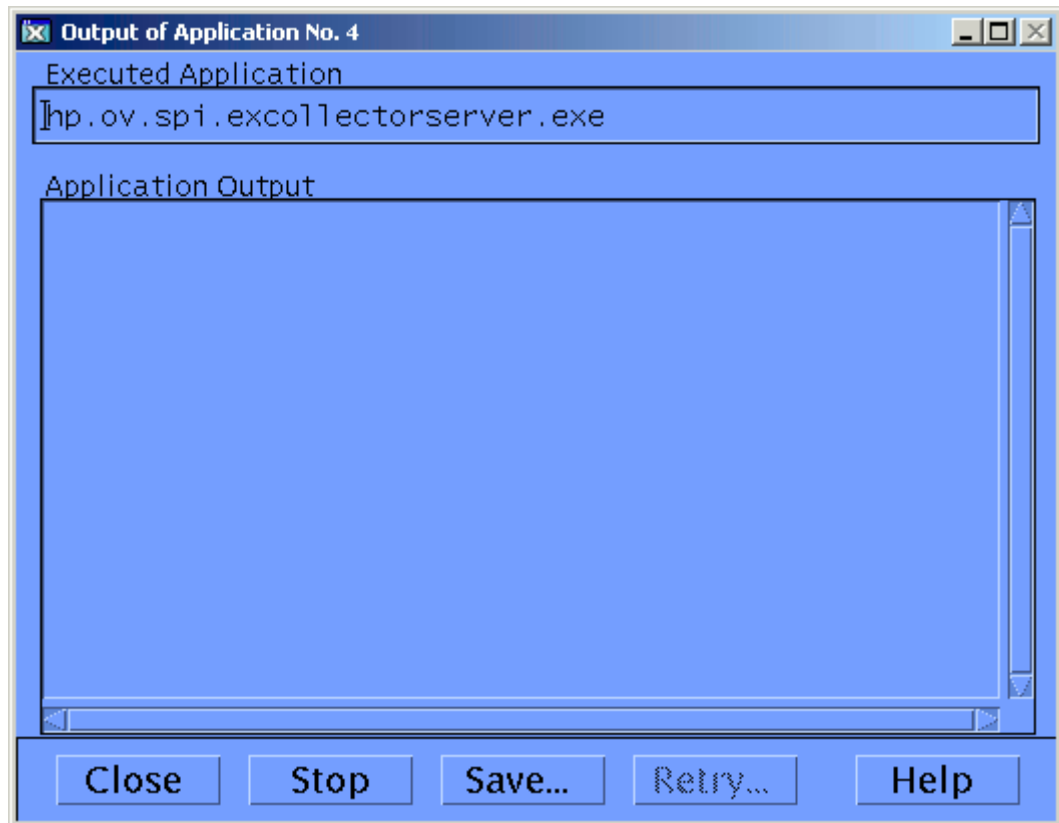


- b After the window displays output, click **Close**.
 - c Repeat [step a](#) and [step b](#) for Exchange 2007 nodes.
- 5 Run the Start ExData Collection Manager application to start the Collection Manager daemons on nodes. Perform the following steps:
 - a From the Node Group:EXSPI window, drag and drop a node on Start ExData Collection Manager in the Application Group: Exchange 2007 window. The Output of Application No. 5 window appears.



- b Click **Close**.
 - c Repeat [step a](#) and [step b](#) for Exchange 2007 nodes.
- 6 Run the Start PowerShell Collector application to start the Start PowerShell Collector daemons on nodes. Perform the following steps:

- a From the Node Group:EXSPI window, drag and drop a node on Start PowerShell Collector in the Application Group: Exchange 2007 window. The Output of Application No. 4 window appears.



- b Click **Close**.
- c Repeat [step a](#) and [step b](#) for Exchange 2007 nodes.

Assign/Distribute Policies

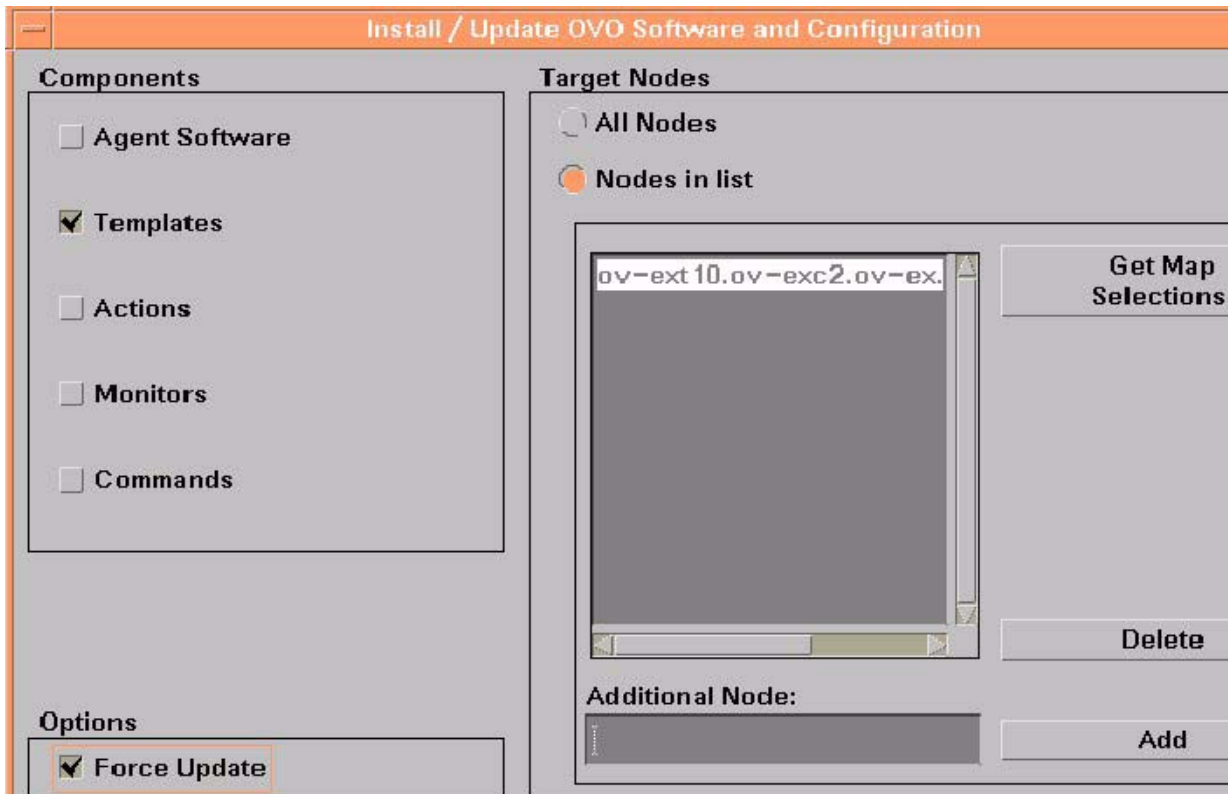


In OVO for UNIX version 8 and earlier, policies were also referred to as templates.

To assign and distribute policies to managed nodes:

- 1 Open the OVO Node Bank.
- 2 Select the desired managed node(s) designated to run Exchange SPI.
- 3 To assign (select) the policies for distribution, click **Actions** → **Agents** → **Assign Templates** from the menu bar.
- 4 In the Define Configuration window, click **Add**.
- 5 In the Add Configuration window, click **Open Template Window...**
- 6 In the Message Source policies window double-click the **SPI for Exchange** group to display the subgroups.
- 7 Select, and double-click **Exchange 2007**, **Exchange 2000**, **Exchange 2003**, or **Exchange 5.5**.

- 8 Select the desired **EXSPI** policy group or individual policies.
 - ▶ For Microsoft Exchange Server 2007, select the Exchange Service Discovery policy (EXSPI_Discovery_2k7) before selecting any other policy.
- 9 Click **Get Template Selections** from the Add Configuration window.
- 10 Click **OK** from the Add Configuration window.
- 11 Click **OK** from the Define Configuration window.
- 12 The desired policies have been selected for distribution. Next, distribute them to the managed nodes.
- 13 To distribute the assigned policies, select **Actions** → **Agents** → **Install/Update SW & Config** from the Node Bank menu.
- 14 In the Install/Update OVO Software and Configuration window, check the Templates checkbox to select it.



- 15 Check the Nodes in List and the Force Update checkboxes.
- 16 If a node was not selected previously, select the node in the node bank and click **Get Map Selections** to list the target node(s), and then click **OK** to distribute policies to the managed node(s).
- 17 The following message appears in the message browser:

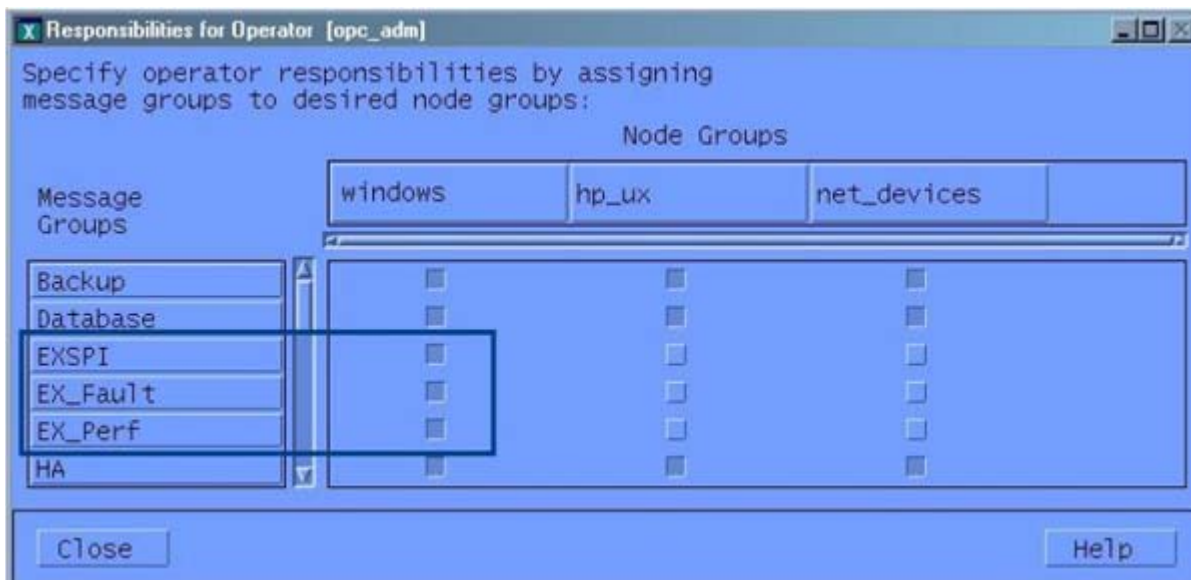

```
The following configuration information was successfully distributed:
Templates
```

Assign Responsibilities for OVO Operator

All Exchange SPI target hosts must be OVO managed nodes running on OVO intelligent agents.

- 1 Log on to OVO as the OVO administrator (`opc_admin`).
 - a Select **Window > User Bank**
 - b Select the **opc_admin** user
 - c Choose **Actions > User > Modify**
 - d Press the **Responsibilities** button and use the Responsibilities for Operator (`opc_admin`) window to view messages.

Figure 28 The Responsibilities for Operator window



- 2 In the Node Group that contains your Exchange managed node, select the following Exchange SPI message groups:
 - EXSPI
 - EX_Fault
 - EX_Perf
- 3 Use the **Actions > Browser > Start/Reload** from the OVO User Bank menu.

Additional Configuration for Microsoft Exchange Server 2003/2000 and 5.5

You need perform some additional configuration steps depending on your requirement if you are using Microsoft Exchange Server 2003/2000 or 5.5.

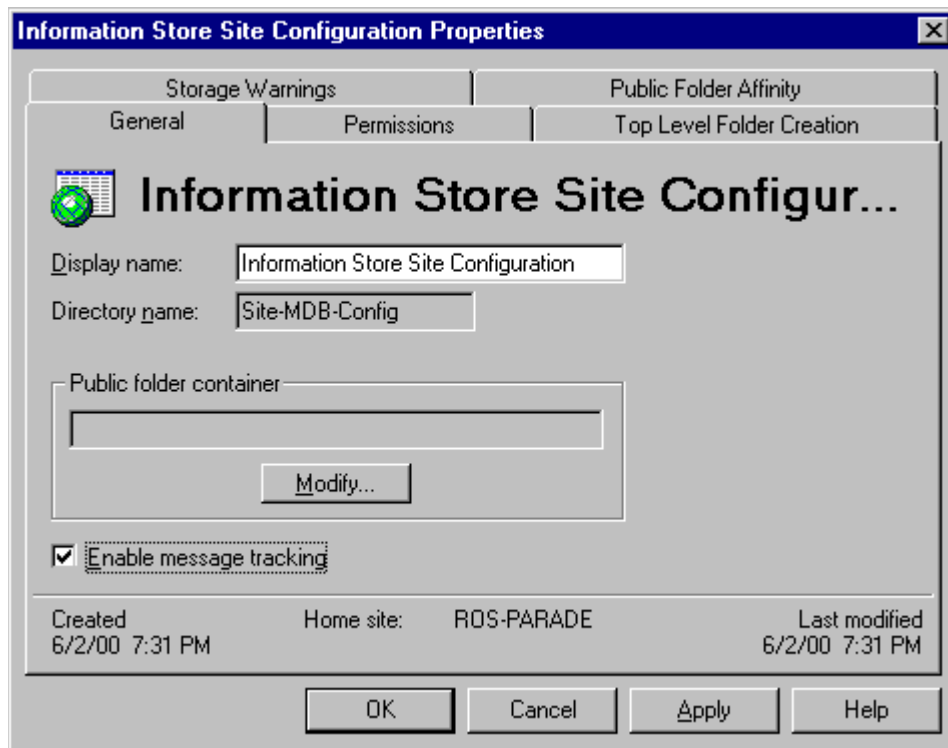
Enable Message Tracking

To ensure that all messages routed through a server are added to the OVO message tracking logs you need to enable message tracking. You can record information about the sender, the message, and the recipient. If you need to log more detailed information, you can also record the subject line of the Email message.

Enabling Message Tracking for Exchange 5.5

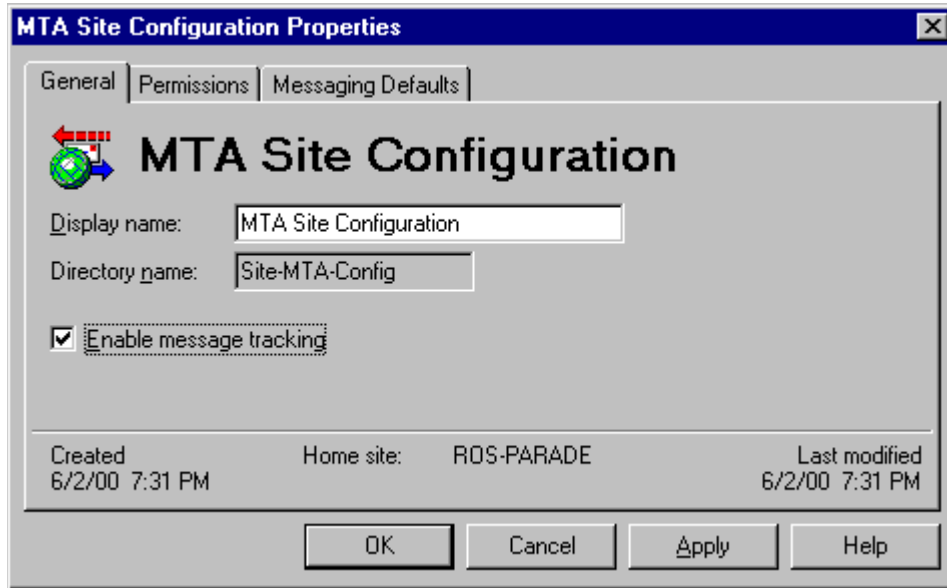
- 1 Select **Start > Programs > Microsoft Exchange > Microsoft Exchange Administrator**.
- 2 Expand the site level and Configuration to view selections beneath it.
- 3 In the details pane double-click **Information Store Site Configuration**.
- 4 In the **Information Store Site Configuration Properties**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

Figure 29 Information Store Site Configuration dialog



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

Figure 30 MTA Site Configuration dialog



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

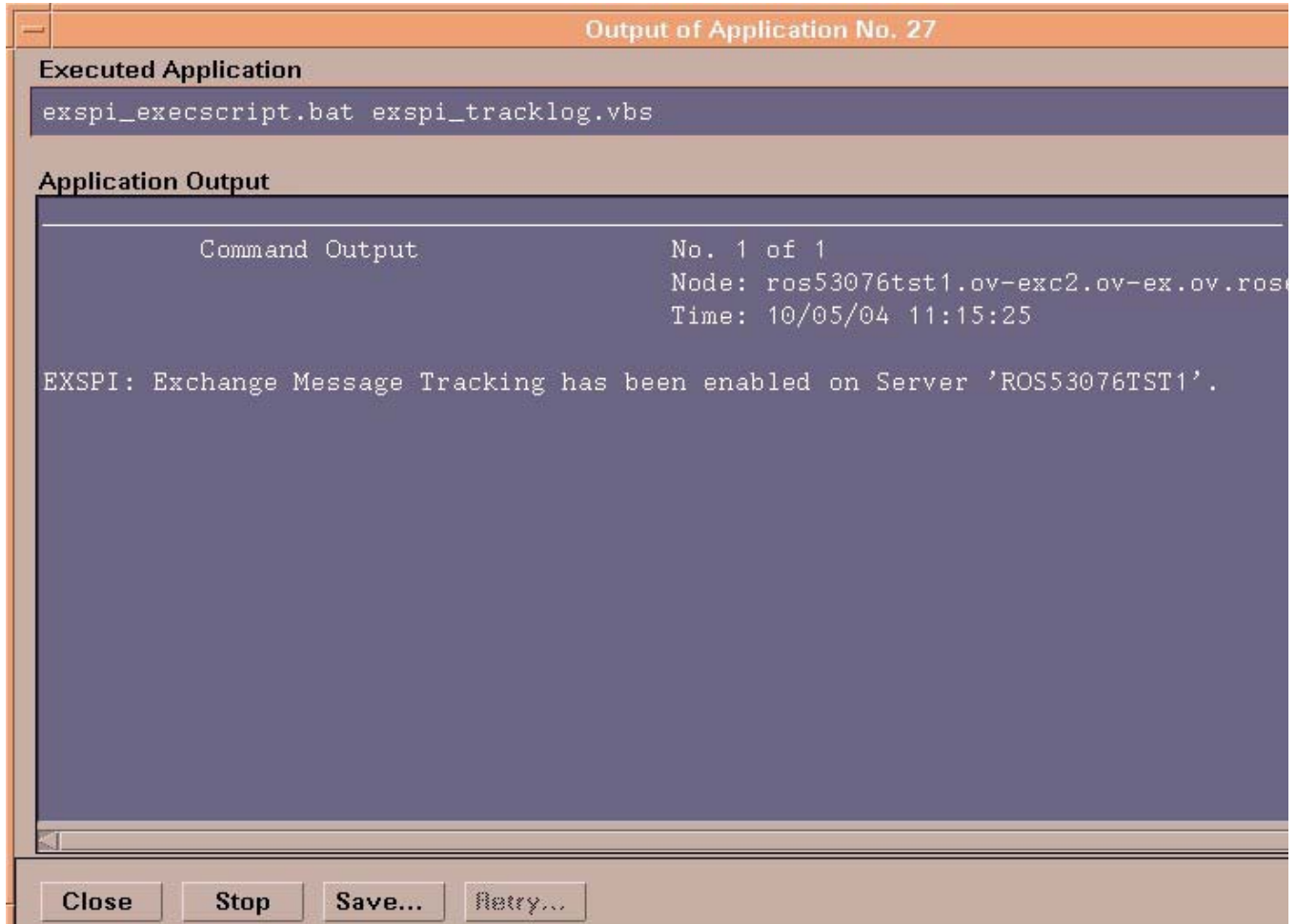
- 6 In the left pane select **Connections**.
- 7 In the right pane select Internet Mail Service, check the Enable message tracking checkbox, and click **OK**.

Enabling Message Tracking for Exchange 2000 and 2003

Use the Exchange SPI application **Enable Message Tracking** to set message tracking on, for servers only. All messages that are routed through the selected servers will then be added to the message tracking logs. This information is collected by the EXSPI-6X Dc-TrackLog Data collection policies. You can record information about the sender, the message, and the recipient. If you need to log more detailed information, you can also record the subject line of Email messages.

The **Enable Message Tracking** application needs to be modified to include the user name and password of a service account that has Exchange administrative privileges. Open the Enable Message Tracking application, and add the *user name* and *password*. to the **Execute as User** field, before executing.

Figure 31 Enabling Message Tracking for Exchange 2000 and 2003



Run the EXSPI MBOX Config Application and Create Mailboxes

In addition to the MSXSPI user, a mailbox is required for accessing mailbox and folder information, necessary for End to End Message Ping and Reporter Collection policies. Use the Exchange SPI application **MBOX Config** (located in the EXSPI Admin application group) to create the mailbox:

- 1 Modify the **MBOX Config** application. The user name and password of a service account with Exchange administrative privileges needs to be given for the application to execute. (Change the **Execute as User** field, add *user name* and *password*.)
- 2 Run the **EXSPI MBOX Config** application to configure mailboxes for the Exchange servers (you can select multiple nodes simultaneously).

For each Exchange server a mailbox is created with the prefix MSXSPI and Windows hostname. For an Exchange 5.5 server, EXSPI MBOX Config application creates a mailbox MSXSPI<host_name> for the primary Windows account MSXSPI. For an Exchange 2000 or 2003 server, it creates the mailbox MSXSPI<host_name> for account MSXSPI<host_name> (which it also creates.)

For example, for the node **rosspi4.rose.hp.com** (Internet name) and Windows name **ROSSPI4** a mailbox is created called MSXSPIROSSPI4.

- ▶ In order to create a different mailbox with a different name, see the procedure [Changing the Mailbox name](#) on page 104.

Figure 32 MBox Config application output

```
Output of Application No. 19

Executed Application
[exspi_execscript.bat exspi_e2k_cfg.vbs

Application Output

Command Output                               No. 1 of 1
Node: ros53076tst1.ov-exc2.ov
Time: 10/14/04 15:53:11

Created mailbox for 'MSXSPIROS53076TST1' successfully.
MAILBOX entry will be added to Defaults file
```

- ▶ If you receive an error in the above step or you cannot automatically create mailboxes, you must manually complete the following on each Exchange server:
 - 1 For each Exchange server create a mailbox with the prefix **MSXSPI** and Windows hostname.
 - a For Exchange 5.5, create this mailbox with primary Windows account **MSXSPI**.
 - b For Exchange 2000 or 2003, create this mailbox with primary Windows account **MSXSPIROSSPI4** (this must first be created).

Set Up Message Ping Server Connections and Alarms

To measure the round trip time required for a message to travel from one server to another and then back to the originating server, you can use the *EXSPI-6X/55 End to End Message Ping* policy group.

- ▶ With Exchange SPI version A.08.00 and later, pinging Exchange 5.5 servers from an Exchange 2000/2003 server, or vice versa, is not supported.

Before you can use the End to End Message Ping policies, you must configure the pair of servers that you want to test.

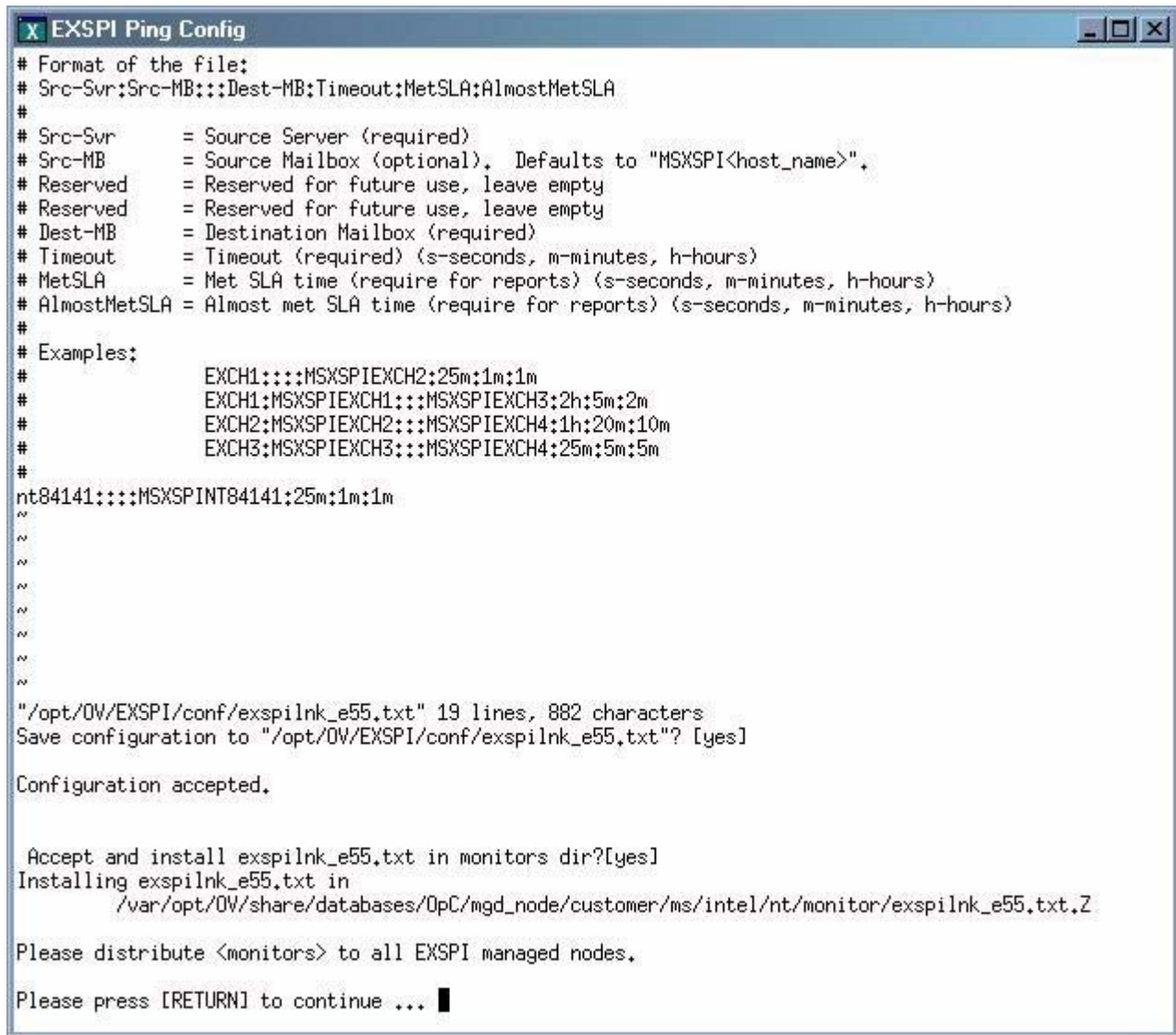
Exchange 5.5 Servers

To configure the servers, complete the following steps:

- 1 Run the **EXSPI Ping Config** application on the OVO management server.

The EXSPI Ping Config application opens a default file as follows:

Figure 33 Format of the file for Exchange 5.5 EXSPI Ping Config



```
X EXSPI Ping Config
# 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
#
nt84141:::MSXSPIEXCH1:25m:1m:1m
~
~
~
~
~
~
~
~
~
~
"/opt/OV/EXSPI/conf/exspilnk_e55.txt" 19 lines, 882 characters
Save configuration to "/opt/OV/EXSPI/conf/exspilnk_e55.txt"? [yes]

Configuration accepted.

Accept and install exspilnk_e55.txt in monitors dir?[yes]
Installing exspilnk_e55.txt in
    /var/opt/OV/share/databases/OpC/mgd_node/customer/ms/intel/nt/monitor/exspilnk_e55.txt.Z

Please distribute <monitors> to all EXSPI managed nodes.

Please press [RETURN] to continue ... █
```

- 2 Enter information about the servers to replace each entry separated by a colon (:) in the format Src-Svr:Src-MB:::Dest-MB:Timeout:MetSLA:AlmostMetSLA

- **Source Server** - The server that the ping originates *from*. Each server where EX-SPI is distributed has the same file, so the EX-SPI collector/analyzer will parse this file and use all lines where the Source Server matches the server where it is run from.
- **Destination Server** - The destination server, used only for SMTP systems, is necessary only when the site directory does not contain the destination mailbox. In this case, SMTP is used and the field would contain the SMTP server name (the server following the "@"; for example, the entry for mailbox "brendan_belcastro@am.exch.hp.com", would contain "am.exch.hp.com."

- **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 OVO. 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 never returns and 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 MeasureWare Agent DSI for reporting (-l option when running exspi_e2k.exe or exspi_e55.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 MeasureWare Agent DSI (-l option when running exspi_e2k.exe or exspi_e55.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 is recognized as 4 seconds.

Procedure for EXSPI Ping Config for Exchange 2000/2003 Servers

- 1 Select the Exchange managed nodes that you wish to configure in the VPO Node Bank.
- 2 Drag these nodes and drop them on the **EXSPI Ping Config** application located in the **EXSPI Admin** application group, under the appropriate Exchange version.
- 3 A window appears with the configuration file, as shown in the figure below.
- 4 Edit the file as necessary, then click **Esc**.
- 5 You will be prompted to save the configuration. Accept the default choice [Yes].

- 6 A validation will be performed to check if the Timeout is greater than the sum of MetSLA and AlmostMetSLA. After validation, you will be prompted to accept and install the configuration file in the monitors directory: `/var/opt/OV/share/databases/OpC/mgd_node/customer/ms/nt/monitor/`
- 7 You have completed configuring the end-to-end Ping, now distribute monitors to the required EXSPI managed nodes. For details about distributing the monitors, see [Distribute the Exchange SPI Actions, Monitors, and Commands](#) on page 47.

The format of the Exchange 2000/2003 EXSPI Ping Config file is:

Src-Srv:Dest-Srv:Timeout:MetSLA:AlmostMetSLA

The user only needs to fill in the following fields:

- Src-Srv
- Dest-Srv
- Timeout (to be entered in seconds, with no suffix)
- MetSLA (to be entered in seconds, with no suffix)
- AlmostMetSLA (to be entered in seconds, with no suffix).

Figure 34 EXSPI Ping Config for Exchange 2000 and 2003

```

x EXSPI Ping Config
# Format of the file:
# Src-Srv:Dest-Srv:Timeout:MetSLA:AlmostMetSLA
#
# Src-Srv      = Source Server (required)
# Dest-Srv     = Destination Server (required)
# Timeout      = Timeout (required) (in seconds)
#              Note: Timeout should be greater than MetSLA + AlmostMetSLA
# MetSLA       = Met SLA time (required for reports) (in seconds)
# AlmostMetSLA = Almost met SLA time (required for reports) (in seconds)
#
# Examples:
#           EXCH1:EXCH2:100:5:5
#           EXCH1:EXCH3:60:5:5
#           EXCH2:EXCH4:100:20:10
#           EXCH3:EXCH4:30:5:5
#
NT84215:NT18475:100:10:10
..
..

```

[Set Up Different Conditions/ Thresholds for Different Server Pairs Using OVO Object Field & Alarming \(OVO High Level Expertise Recommended\)](#)

Alarms can be set to occur with metric EXSPI-60 1002 (Ping). Because you may need to set different thresholds for multiple server pairs, the following examples are offered. The examples show the syntax to insert in the policy Conditions, using the OVO object pattern fields so that you can set differing thresholds. Metric 1002 sends the "FromMailbox,ToMailbox" in the object pattern fields with the following definitions:

FromMailbox = **FromServer:FromMailbox**
 ToMailbox = **[ToServer]:ToMailbox**
 where **[ToServer]** is optional

| Config Entry | Object |
|---|-------------------------------------|
| EXCH1:MSXSPIEXCH2:25m:1m:1m | EXCH1:MSXSPIEXCH1,;MSXSPIEXCH2 |
| EXCH1:MAILBOXEXCH1: MAILOXEXCH3:2h:5m:2m | EXCH1:MAILBOXEXCH1,;MAILOXEXC H3 |
| EXCH2:MAILBOXEXCH2: MAILOXEXCH4:1h:20m:10m | EXCH2:MAILBOXEXCH2,;MAILOXEXC H4 |

| | |
|---|---|
| EXCH3:MSXSPIEXCH3:EXCH4.AM.HP.COM : MSXSPIEXCH4:25m:5m:5m | EXCH3:MSXSPIEXCH3,EXCH4.AM.HP.COM: MSXSPIEXCH4 |
|---|---|

For example:

| ConditionName & Type | Condition Object Pattern | Threshold | Explanation |
|--|---|-----------|---|
| EXSPI-60 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-60 1002.2 +Message on MatchedCondition | EXCH1:MSXSPIEXCH1,; MSXSPIEXCH3 | 240 | Threshold condition for ping between System EXCH1 and mailbox MSXSPIEXCH3 on system EXCH3. Object pattern is case sensitive. |
| EXSPI-60 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-60 1002.4 +Message on Matched Condition | | 60 | A blank object pattern to catch all remaining system pairs. |

After completing the advanced configuration steps, you can assign and distribute policies from any of the various EXSPI policy groups to the managed node(s) running Microsoft Exchange Server.

The EXSPI Advanced/Specialized policy groups contain two logfile policies which capture Exchange warning and information events. Because Exchange generates numerous warning and information events, you might want to assign these policies only for troubleshooting Exchange:

- Logfile EXSPI-6X/55 Exchange Information
- Logfile EXSPI-6X/55 Exchange Warnings

Removing the Exchange SPI

This process completely removes the Exchange SPI installation from the OVO management server. Any customized policies or copies of Exchange SPI default policies residing in other OVO policy groups should also be removed.



If you are upgrading from an earlier version of Exchange SPI, you must remove the old version from the management server and the managed nodes before installing the new Exchange SPI version.

Follow these steps in order to ensure a proper removal of the Exchange SPI:

1. Remove Exchange SPI software from the management server

- 1 Use the `swremove` program to remove the Exchange SPI package

- a Open a terminal window and log on as root.
- b In the terminal window run `swremove` by entering:

```
/usr/sbin/swremove SPI-EXCHANGE-OVO
```



The **swremove** program removes the files from the file system only. The components listed below must be deleted manually:

- 2 Delete the following components manually:
 - a Remove the EXSPI Admin group from the Application bank (see steps 9-12 in [4. Delete Policies, Applications and Message Groups from the Management Server](#) on page 66).
 - b Remove EXSPI, EX_Perf and EX_Fault message groups from the OVO Message group bank (see step 5 in [4. Delete Policies, Applications and Message Groups from the Management Server](#) on page 66).
 - c Delete EXSPI policies (see steps 1-4 in [4. Delete Policies, Applications and Message Groups from the Management Server](#) on page 66).
 - d Delete EXSPI spec files (see [5. Delete Exchange SPI Spec Files from the Management Server](#) on page 67).

2. De-assign Exchange SPI Policies from Managed Nodes

After successfully removing the Exchange SPI from the management server using **swremove**, follow these steps to remove Exchange SPI policies from your managed nodes:

- 1 Open the OVO Node Bank.
- 2 To de-assign the policies from the node, select **Actions>Agents>Assign Templates** from the menu bar.
- 3 In the Define Configuration window select all Exchange SPI policies or policy groups, including any user-customized policies.
- 4 Click **Remove Templates**.
- 5 Click **OK**.

3. Remove Exchange SPI from Managed Nodes

After successfully removing the Exchange SPI from the management server using **swremove**, follow these steps to remove the Exchange SPI software from your managed nodes:

- 1 Select Actions: **Agents>Install/Update SW & Config** from the menu bar.
- 2 Check the following checkboxes to select these components for removal:
 - Policies
 - Actions
 - Monitors
 - Commands
- 3 Click the **Nodes in List Requiring Update** button.
- 4 If you did not select a node previously, click the **Get Map Selections** button to list the target node(s).
- 5 Click the **Force Update** button.
- 6 Click **OK**. The following message appears in the message browser:

```
The following configuration information was successfully distributed:
```

```
Templates Actions Commands Monitors
```

The Exchange SPI policies and software have now been removed from the selected managed node(s). The Exchange SPI policies still reside in the OVO data repository and must be deleted manually. Continue with [4. Delete Policies, Applications and Message Groups from the Management Server](#) on page 66.

4. Delete Policies, Applications and Message Groups from the Management Server

After successful completion of **swremove**, Exchange SPI policies and certain applications (**EXSPI admin group**) and message groups (**EXSPI EX_Perf** and **EX_Fault**), must be deleted manually.

- 1 To delete the Exchange SPI Message Source policies, select **Window: Message Source Templates** from the menu bar.
- 2 Open all Exchange SPI policy groups and use SHIFT+click to select all policies for deletion.
- 3 Select **Delete from All** to delete the policies.
- 4 Click **Yes** to the message: Do you really want to delete the template(s)?
- 5 To delete from the EXSPI messages group, from the menu bar select **Window>Message Group Bank**.
- 6 Select the **EXSPI EX_Perf** and **EX_Fault** message groups.
- 7 From the menu bar select **Actions>Message Group>Delete**.
- 8 Click **Yes** to the message: Do you really want to delete the message groups?
- 9 To delete any Exchange SPI application groups and their contents, select **Window: Application Bank** from the menu bar.
- 10 Select all Exchange **EXSPI Admin** Applications and Graphs.

- 11 From the menu bar select **Action>Application>Delete**.
- 12 Click **Yes** to the message: Do you really want to delete the application groups.

5. Delete Exchange SPI Spec Files from the Management Server

Remove regular and compressed EXSPI spec files (EXSPI*.spec, EXSPI*.spec.Z) from the following directories on the management server:

For DCE:

```
/var/opt/OV/share/databases/OpC/mgd_node/customer/ms/intel/nt/cmds/
```

For HTTPS:

```
/var/opt/OV/share/databases/OpC/mgd_node/customer/ms/x86/ winnt/cmds/
```

4 Using Exchange SPI

Introduction

Like all HP OpenView SMART Plug-Ins, the Exchange SPI is easy to use. This chapter describes some special usage features and functionality, including:

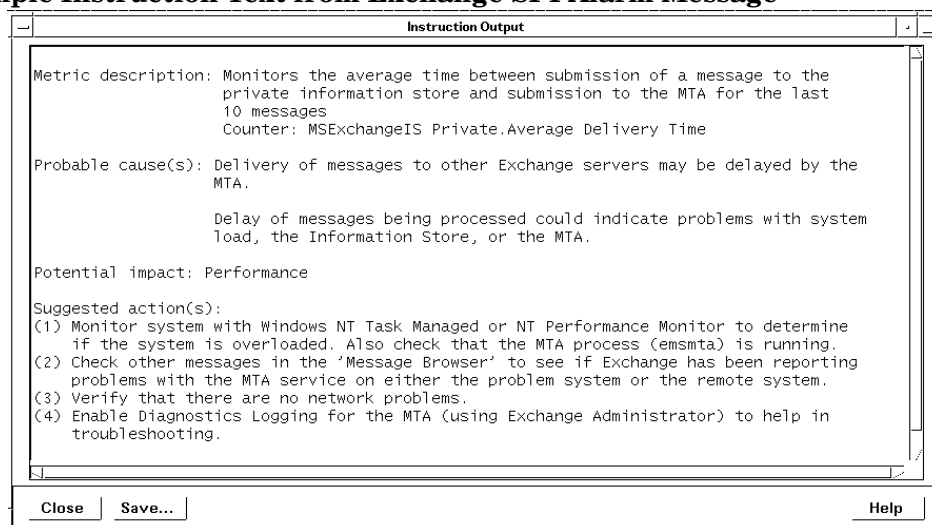
- Daily Tasks
- Exchange SPI policy group requirements
- Exchange SPI Service Discovery
- Using Exchange SPI Service Views
- Data Collection Policies for Exchange 2003 and 2000 Messaging Ports
- Changing the OpenView data collection agent setup
- Command Line Parameters

Daily Tasks

A suggested daily task list for monitoring your Exchange environment with the Exchange SPI:

- 1 Use the OVO message browser to watch for warning and critical messages or multiple alarms. Read the associated instruction text.
- 2 Adjust alarm thresholds if too many alarms are being generated (see [Customizing the Threshold](#) on page 100).
- 3 Use the OVO graphing and reporting applications for additional information, or to view history or see trends.
- 4 Check the active Message Browser frequently. Note the message group a metric belongs to:
 - **EXSPI.** Messages generated by EX-SPI programs. They contain instruction text to help to diagnose/remedy problems.
 - **EX_Perf.** Messages regarding performance.
 - **EX_Fault.** Messages regarding error conditions.
- 5 Click **Perform Action** (if available) from the message or message browser to automatically perform a pre-defined operator action. Click **Details** from the message or message browser to view details of the set action.
- 6 Click **Instructions** from the message browser or the message itself to read and follow suggested instructions to help diagnose/remedy problems (see example below).

Figure 35 Sample Instruction Text from Exchange SPI Alarm Message



- 7 Use MeasureWare Agent to export data if desired. Consult the *MeasureWare Agent User's Guide* for details.

Exspi Policy Group Requirements

Some policies in the SPI for Exchange policy groups require that particular software components/services are installed on Exchange server systems before the distributed policies will work, and some require the existence of a service account with special Exchange privileges. To create such an account, see [Creating a Service Account with Proper Access Permissions](#) on page 25.

Policies requiring a service account with special Exchange privileges

The following list contains all the policies requiring this special service account, by Exchange version:

EXSPI Exchange 55

- EXSPI-55-Dc-Exchange Info
- EXSPI-55-Dc-Mailbox Data
- EXSPI-55-Dc-Mailbox IS Sum Data
- EXSPI-55-Dc-Public Folder Data
- EXSPI-55-Dc-Public IS Sum Data
- EXSPI-55-Dc-Tracklog Data
- EXSPI-55-End to End Message Ping

EXSPI Exchange 2000

- EXSPI-6X Dc-Transaction Log Space Usage
- EXSPI-6X Transaction Log Backup Check
- EXSPI-6X 1h-Public Folder Space Usage
- EXSPI-6X Dc-IS Public Folder Performance
- EXSPI-6X-Dc-Public IS Sum Data
- EXSPI-6X-Dc-Public Folder Data
- EXSPI-6X-Dc-Mailbox Data
- EXSPI-6X-Dc-Mailbox IS Sum Data
- EXSPI-6X-Dc-IS Mailbox Performance
- EXSPI-6X-1h-Mailbox Space Usage
- EXSPI-6X Dc-Full Text Index
- EXSPI-6X-15m-300001
- EXSPI-6X-Dc SMTP Queues
- EXSPI-6X-Dc SMTP Virtual Server Storage
- EXSPI-6X-Dc SMTP Server Performance
- EXSPI-6X SMTP NDR Percentage
- EXSPI-6X SMTP Outbound Connections Refused
- EXSPI-6X MTA Message Delay

EXSPI-6X MTA Rejected Inbound Associations
EXSPI-6X MTA Rejected Inbound Messages
EXSPI-6X MTA Work Queue Length
EXSPI-6X MTA Failed Outbound Associations
EXSPI-6X MTA Failed Conversions
EXSPI-6X Dc-X400 Service MTA Queue
EXSPI-6X Dc-TrackLog Data
EXSPI-60-Dc-InstMsg Enabled Usrs
EXSPI-6X End to End Message Ping

EXSPI Exchange 2003

EXSPI-6X Dc-Transaction Log Space Usage
EXSPI-6X Transaction Log Backup Check
EXSPI-6X 1h-Public Folder Space Usage
EXSPI-6X Dc-IS Public Folder Performance
EXSPI-6X-Dc-Public IS Sum Data
EXSPI-6X-Dc-Public Folder Data
EXSPI-6X-Dc-Mailbox Data
EXSPI-6X-Dc-Mailbox IS Sum Data
EXSPI-6X-Dc-IS Mailbox Performance
EXSPI-6X-1h-Mailbox Space Usage
EXSPI-6X Dc-Full Text Index
EXSPI-6X-15m-300001
EXSPI-6X-Dc SMTP Queues
EXSPI-6X-Dc SMTP Virtual Server Storage
EXSPI-6X-Dc SMTP Server Performance
EXSPI-6X SMTP NDR Percentage
EXSPI-6X SMTP Outbound Connections Refused
EXSPI-6X MTA Message Delay
EXSPI-6X MTA Rejected Inbound Associations
EXSPI-6X MTA Rejected Inbound Messages
EXSPI-6X MTA Work Queue Length
EXSPI-6X MTA Failed Outbound Association
EXSPI-6X MTA Failed Conversions
EXSPI-6X Dc-X400 Service MTA Queue
EXSPI-6X Dc-TrackLog Data
EXSPI-65-ISClientRPCFailRate
EXSPI-6X-Dc-OWA Back End

EXSPI-6X-Dc-OWA Front End
 EXSPI-6X-Dc-POP3 Performance
 EXSPI-6X-POP3FailedConnRate
 EXSPI-6X-POP3RejectedConnRate
 EXSPI-6X-Dc-IMAP4 Performance
 EXSPI-6X-IMAP4FailedConnRate
 EXSPI-6X-IMAP4RejectedConnRate
 EXSPI-6X End to End Message Ping

Table 1 EXSPI Schedule Policy Prerequisites for Exchange 5.5

| EXCHANGE 5.5 Policy Group | Required Manual Configuration |
|---|---|
| EXSPI-55 Advanced EXSPI End to End Message Ping | This policy requires the completion of tasks 1-3 of the Configuring the Exchange SPI on page 46. In addition: <ul style="list-style-type: none"> - Edit the MBOX Config Application to contain User Password - Create mailbox using MBOX Config application - Configure EXSPI End to End Message Ping policy to set up server pairs |
| EXSPI Reporter Collection | Create MSXSPI service account and password |

Table 2 Schedule Policy Prerequisites in Exchange 2000 policy Groups

| Exchange 2000policy Groups | Required Manual Configuration |
|--|--|
| EXSPI Standard Groups | |
| <p>EXSPI INFORMATION STORE (Ex2000)</p> <p>EXSPI Transaction Log EXSPI-6XDc-TransactionLogSpaceUsage EXSPI-6X Transaction Log Backup Check</p> <p>EXSPI Public Folder (Ex2000) EXSPI-6X 1h-Public Folder Space Usage EXSPI-6X Dc-IS Public Folder Performance EXSPI-6X-Dc-Public IS Sum Data EXSPI-6X-Dc-Public Folder Data</p> <p>EXSPI Mailbox (Ex2000) EXSPI-6X-Dc-Mailbox Data EXSPI-6X-Dc-Mailbox IS Sum Data EXSPI-6X-Dc-IS Mailbox Performance EXSPI-6X-1h-Mailbox Space Usage</p> <p>EXSPI Full Text Index EXSPI-6X Dc-Full Text Index</p> | <p>These policies require the completion of tasks 1-3 of the Configuring the Exchange SPI on page 46.</p> |
| <p>EXSPI MESSAGING</p> <p>EXSPI SMTP EXSPI-6X-15m-300001 EXSPI-6X-Dc SMTP Queues EXSPI-6X-Dc SMTP Virtual Server Storage EXSPI-6X-Dc SMTP Server Performance EXSPI-6X SMTP NDR Percentage EXSPI-6X SMTP Outbound Connections Refused</p> <p>EXSPI MTA EXSPI-6X MTA Message Delay EXSPI-6X MTA Rejected Inbound Associations EXSPI-6X MTA Rejected Inbound Messages EXSPI-6X MTA Work Queue Length EXSPI-6X MTA Failed Outbound Associations EXSPI-6X MTA Failed Conversions EXSPI-6X Dc-X400 Service MTA Queue</p> <p>EXSPI Tracking Log EXSPI-6X Dc-TrackLog Data</p> | <p>These policies require the completion of tasks 1-3 of the Configuring the Exchange SPI on page 46.</p> |
| <p>EXSPI OPTIONAL SERVICES</p> <p>EXSPI Instant Messaging EXSPI-60-Dc-InstMsg Enabled Usrs</p> | <p>These policies require the completion of tasks 1-3 of the Configuring the Exchange SPI on page 46.)</p> |

| Exchange 2000policy Groups | Required Manual Configuration |
|---|--|
| EXSPI Specialized Groups | |
| EXSPI Exchange Server EXSPI Message Delivery EXSPI-6X End to End Message Ping | This policy requires the completion of tasks 1-3 of the Configuring the Exchange SPI on page 46. In addition: <ul style="list-style-type: none"> - Edit the MBOX Config Application to contain User Password - Create mailbox using MBOX Config application - Configure EXSPI End to End Message Ping policy to set up server pairs |

Table 3 Schedule Policy Prerequisites in Exchange 2003 Policy Groups

| Exchange 2003 Policy Groups | Required Manual Configuration |
|---|--|
| EXSPI Standard Groups | |
| EXSPI INFORMATION STORE (Ex2003) EXSPI Transaction Log EXSPI-6XDc-TransactionLogSpaceUsage EXSPI-6X Transaction Log Backup Check EXSPI Public Folder (Ex2003) EXSPI-6X 1h-Public Folder Space Usage EXSPI-6X Dc-IS Public Folder Performance EXSPI-6X-Dc-Public IS Sum Data EXSPI-6X-Dc-Public Folder Data EXSPI Mailbox (Ex2003) EXSPI-6X-Dc-Mailbox Data EXSPI-6X-Dc-Mailbox IS Sum Data EXSPI-6X-Dc-IS Mailbox Performance EXSPI-6X-1h-Mailbox Space Usage EXSPI Full Text Index EXSPI-6X Dc-Full Text Index | These policies require the completion of tasks 1-3 of the Configuring the Exchange SPI on page 46. |

| Exchange 2003 Policy Groups | Required Manual Configuration |
|--|---|
| <p>EXSPI MESSAGING</p> <p>EXSPI SMTP</p> <p>EXSPI-6X-15m-300001</p> <p>EXSPI-6X-Dc SMTP Queues</p> <p>EXSPI-6X-Dc SMTP Virtual Server Storage</p> <p>EXSPI-6X-Dc SMTP Server Performance</p> <p>EXSPI-6X SMTP NDR Percentage</p> <p>EXSPI-6X SMTP Outbound Connections Refused</p> <p>EXSPI MTA</p> <p>EXSPI-6X MTA Message Delay</p> <p>EXSPI-6X MTA Rejected Inbound Associations</p> <p>EXSPI-6X MTA Rejected Inbound Messages</p> <p>EXSPI-6X MTA Work Queue Length</p> <p>EXSPI-6X MTA Failed Outbound Associations</p> <p>EXSPI-6X MTA Failed Conversions</p> <p>EXSPI-6X Dc-X400 Service MTA Queue</p> <p>EXSPI Tracking Log</p> <p>EXSPI-6X Dc-TrackLog Data</p> | <p>These policies require the completion of tasks 1-3 of the Configuring the Exchange SPI on page 46.</p> |
| <p>EXSPI CLIENT ACCESS</p> <p>EXSPI Outlook 2003</p> <p>EXSPI-65-ISClientRPCFailRate</p> <p>EXSPI OWA</p> <p>EXSPI Back End:</p> <p>EXSPI-6X-Dc-OWA Back End</p> <p>EXSPI Front End:</p> <p>EXSPI-6X-Dc-OWA Front End</p> <p>EXSPI POP3</p> <p>EXSPI-6X-Dc-POP3 Performance</p> <p>EXSPI-6X-POP3FailedConnRate</p> <p>EXSPI-6X-POP3RejectedConnRate</p> <p>EXSPI IMAP4</p> <p>EXSPI-6X-Dc-IMAP4 Performance</p> <p>EXSPI-6X-IMAP4FailedConnRate</p> <p>EXSPI-6X-IMAP4RejectedConnRate</p> | <p>These policies require the completion of tasks 1-3 of the Configuring the Exchange SPI on page 46.</p> |

| Exchange 2003 Policy Groups | Required Manual Configuration |
|---|--|
| EXSPI Specialized Groups | |
| EXSPI Exchange Server EXSPI Message Delivery EXSPI-6X End to End Message Ping | This policy requires the completion of tasks 1-3 of the Configuring the Exchange SPI on page 46. In addition: <ul style="list-style-type: none"> - Edit the MBOX Config Application to contain User Password - Create mailbox using MBOX Config application - Configure EXSPI End to End Message Ping policy to set up server pairs |

Exchange SPI Service Discovery

The Exchange SPI contains a scheduled data collection policy to discover Exchange services on OVO managed nodes and the EXSPI-6x Exchange Cluster Discovery SysLog and EXSPI-6x Exchange Cluster Discovery for discovering Exchange in cluster environments. The discovery process can be initiated at any time by running the policies on the OVO management server. Out-of-the-box the policies are set to run once a day at 00:24 am in the morning, to discover Exchange services.

The service graph generated by the Discovery policies is a snapshot of the services on the managed nodes at the time at which the policy is run. The discovered Exchange topology is maintained in OVO and is made available in the various dynamic Exchange maps and views.

The views of discovered services enable operators to see at a glance the current operational status of their Exchange environment, and can help them to analyze events in terms of their impact on the overall business service.

Prerequisites for Exchange SPI Service Discovery

- The Service Discovery Component for HP OpenView SPIs(HPUX) (SPI-SVCDISC-OVO, A.02.00 and above) should be installed on the management server.
- Exchange SPI service discovery requires that Windows Scripting Host version 5.6 is present on the managed node. By default, this version is present in Windows 2000/2003. Windows NT users should install the WSH version 5.6 manually, before running Exchange SPI discovery.
- Exchange SPI service discovery requires the OVO Service Navigator, this can be installed together with other OVO components at initial OVO installation. For details on how to install it at a later date, refer to the *OVO Installation Guide*.
- The machine where the OVO management server is installed should also be a managed node of that management server, with the OpenView Operations agent software installed and running successfully.
- It is necessary to create a privileged user with the name “msxspi” on the domain controller of the domain to which each managed Exchange server belongs, and to make this user account a member of the “Administrators”, “Domain Admins”, “Domain Users”, and “Exchange Domain Servers” groups.
- For each managed node where Exchange Service Discovery should run, make sure that the EXSPI Node Config tool is run, using the “msxspi” user account details. Running this tool will write and encrypt the `local.cfg` file with the username and password information of the privileged user account [msxspi] on the managed node.

Mechanism for Gathering Service Information

The mechanism the Exchange SPI uses to gather service information is a simple one: a discovery server on the OVO management server uses the list of managed nodes as parameters to trigger a discovery client on each of the OVO managed nodes listed. The discovery clients on the various OVO managed nodes use discovery modules that are installed

during the installation of the Exchange SPI agent software, to gather information about the services present on the managed nodes. The discovery server writes error messages to the following file:

```
/var/opt/OV/log/SPISvcDisc/discovery_error.log
```

Tracing can be enabled on the Management server by turning 'ON' the SPI_DISC_TRACE variable in the EXSPI_DiscConfig.sh file which is found under:

```
/opt/OV/EXSPI/bin/
```

The trace file (discovery_trace_EXSPI.log) can be found on the management server from the following location:

```
/var/opt/OV/log/SPISvcDisc/
```

The discovery client on the managed node writes generic error information into:

```
%OvAgentDir%\log\SPISvcDisc\discovery.log
```

Apart from these files, EXSPI discovery errors can also be found in EXSPI error log file:

```
%OvAgentDir%\exspi\log\exspierror.
```

If tracing is enabled, any tracing information can be found in:

```
%OvAgentDir%\exspi\log\trace
```

The service configuration files compiled by the discovery process are written to the directory on the management server using the following file-naming conventions:

```
/var/opt/OV/SPISvcDisc/conf/EXSPI/EXSPISvcDisc_<nodename>.xml
```

where nodename is the name of the node on which discovery has run.

The discovery server validates the syntax of the Service configuration file. If the file is valid, discovery server activates the service file and assigns operators to the Root service EXSPI. By default, the operator, opc_adm will be assigned. The activated services can be viewed through Java GUI of OVO/Unix, when logged in as 'opc_adm'.

Turning off Discovery failure messages:

When Exchange SPI Discovery fails to discover services, failure messages are sent to the OVO Management server. To turn off these messages, the user has to modify the file EXSPI_DiscConfig.sh located in /opt/OV/EXSPI/bin on the Management server.

The user has to change MSG_ALLOW=Y to MSG_ALLOW=N. (The default value is **Y**, which means messages are allowed).

Upon successful discovery, a message window will notify that a significant change has occurred in the service configuration on the management server, and it is necessary to reload the configuration and update the service map.

To Reload The Configuration

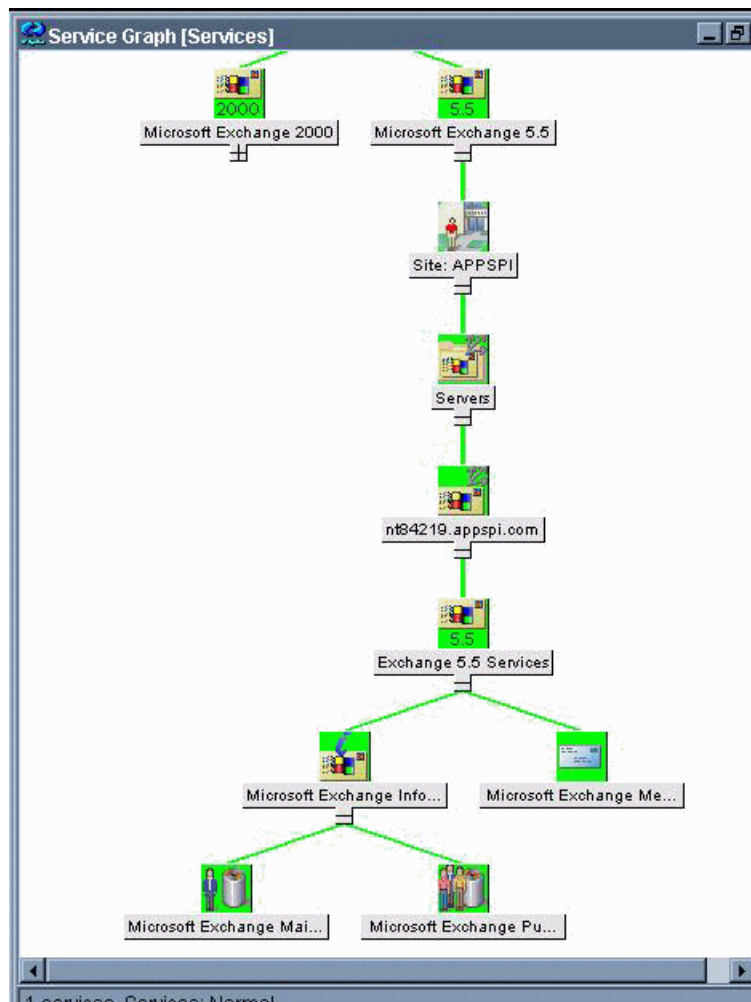
- 1 Logon to the OVO Java console as the OVO Administrator **opc_adm**.
- 2 Select **File-> Reload Configuration**.
- 3 A window will notify that the reload configuration is in progress.
- 4 View the updated service maps.

Using Exchange SPI Service Views

The Exchange SPI integrates with the OpenView Service Navigator to provide an additional perspective on the Exchange organization by offering Service views. This feature is available only if the OpenView Service Navigator software is installed and running and allows individual systems to be seen in terms of the configured hardware, the installed software, and the operating system services that are running.

Exchange SPI discovers Exchange services when the Exchange SPI discovery policies are run, and uses the discovered data to generate the service SPI for Exchange Server tree. Example service views are shown in Exchange 5.5 Service Graph chapter 4 page 101, and Exchange 2000 and 2003 Service View chapter 4 page 103.

Figure 37 Exchange 5.5 Service Graph



Views Are Snapshots

The service graph generated by the Exchange SPI is a snapshot of the services on the managed nodes at the time at which the EXSPI Discovery policies are run. If the service configuration on a managed node subsequently changes, you have to run the discovery process again to have the changes reflected in the service tree.

Calculation and Propagation Rules in Discovery Process

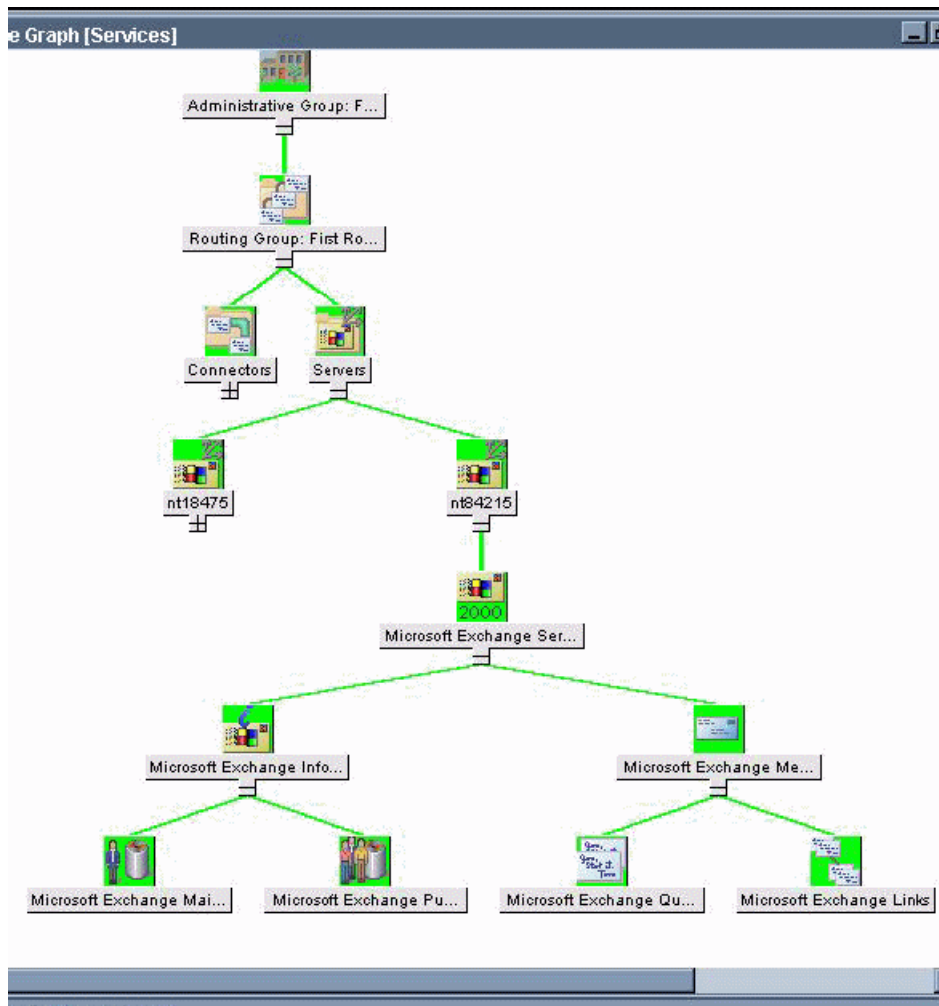
Propagation rules for the objects in the SPI for Exchange Server tree are defined by default as unchanged. This means that a parent service does not change the status of a child object by, for example; attaching a priority to it. Such a scenario would be feasible if a parent service considered the status of one child service to be more important than the status of another child service.

Calculation rules for the SPI for Exchange Server tree are set by default to **Most Critical**. This means that if a parent service has more than one child service, it assumes the status equal to the highest severity of its child services. For more information about calculation and propagation rules, as well as how to go about modifying them, see the *HP OpenView Service Navigator Concepts and Configuration Guide*.



OVO messages are associated with all the low-level services and, in addition, the higher-level services: Exchange Information store and Exchange Messaging

Figure 38 Exchange 2000 and 2003 Service Graph



Data Collection Policies for Exchange Messaging Ports

The EXSPI_PORTS.exe examines the Exchange messaging port availability of an Exchange 2000 or 2003 server.

Command line parameters

Usage Syntax: [-a] [-p] [-l] [-m 60, 61...metric number(s) or ranges 60-63]
[[-x key=value] [...]]

- a: alarming with the management server console
 - p: to print out data collected to stdout
 - l: to log data collected to the embedded performance agent (Coda)
 - m: metric number or range
e.g. -m 1006, 1008-1009
 - x key=value: to specify argument value
e.g., "-x timeout=10" is to set port connection timeout to be 10 seconds.
- Default value for Timeout Interval = 5 seconds.

Metric Id's for Ports:

- SMTP 1006
- POP3 1007
- IMAP4 1008
- HTTP 1009

Message sent to management server console

The <SMTP/POP3/IMAP4/HTTP (whichever is applicable)> protocol (<1006/1007/1008/1009(respectively)>) was not available before timeout (<timeout interval> seconds).

Default values for Protocol Ports

SMTP_PORT = 25
IMAP_PORT = 143
POP3_PORT = 110
HTTP_PORT = 80

Policies calling exspi_ports.exe

Policy Name: EXSPI-6X HTTP Port Response

Description: Determines if the HTTP port is responsive.

Execution Schedule:

MINUTE 0, 10, 20, 30, 40, 50

HOUR 0-23

Schedule Program: `exspi_ports.exe -a -l -m 1009`

USER: \$AGENT_USE

Failure Message Details:

SEVERITY: Warning

Message Group: EXSPI

TEXT: EXSPI-6X HTTP Port Response failed.

Policy Name: EXSPI-6X IMAP4 Port Response

Description: Determines if the IMAP4 port is responsive.

Execution Schedule:

MINUTE 0, 10, 20, 30, 40, 50

HOUR 0-23

Schedule Program: `exspi_ports.exe -a -l -m 1008`

USER: \$AGENT_USER

Failure Message Details:

SEVERITY: Warning

Message Group: EXSPI

TEXT: EXSPI-6X IMAP4 Port Response failed.

Policy Name: EXSPI-6X POP3 Port Response

Description: Determines if the POP3 port is responsive.

Execution Schedule:

MINUTE 0, 10, 20, 30, 40, 50

HOUR 0-23

Schedule Program: `exspi_ports.exe -a -l -m 1007`

USER: \$AGENT_USER

Failure Message Details:

SEVERITY: Warning

Message Group Name: EXSPI

Message Text: EXSPI-6X POP3 Port Response failed.

Policy Name: EXSPI-6X SMTP Port Response

Description: Collects SMTP queue metrics

Execution Schedule:

MINUTE 1, 11, 21, 31, 41, 51

HOUR 0-23

Schedule Program: exspi_ports.exe -a -l -m 1006

USER: \$AGENT_USER

Failure Message Details:

SEVERITY: Warning.

Message Group Name: EXSPI

Message Text: EXSPI-6X SMTP Port Response failed.

Port settings:

First the Exspi_ports binary checks the port entry in

C:\WINDOWS\system32\drivers\etc\services. If the search fails, the binary takes the default entries for the ports from the code.

/*****

Protocol ports

*****/

```
SMTP_PORT          = 25;
IMAP_PORT          = 143;
POP3_PORT          = 110;
HTTP_PORT          = 80;
```

If the SSL inclusion changes the port number you must change the port number in the services file to the new one manually, then Exspi_port takes this modified port number. Exspi_port binary does not modify the services file by passing any parameter.

Changing the Data Collection Agent Setup

The HP OpenView Exchange SPI can detect whether or not you are using OpenView Performance Agent (also known as MeasureWare Agent). If you are, your new Exchange SPI installation will automatically use it as well. As a result, if you use PerfView, your new installation also supports that configuration.

If you decide to use the new HP OpenView subagent included with OVO 7.0 or 8.0, you can configure managed nodes to do so. Note that this configuration does not support PerfView.

To override the use of HP OpenView Performance Agent:

- **For CODA**, change the command parameters to be `-a-Coda EXSPI_*.spec` and launch the application **EXSPI Add DataSource** on the target managed node.
- **For MWA**, change the command parameters to be `-a-MWA EXSPI_*.spec` and launch the **EXSPI Add DataSource** application on the target managed node.

Command Line Parameters

The collector/analyzer executable **exspi_e2k.exe** can be used with the following command line parameters:

| Parameter | Description |
|--|--|
| -m <metric range> | -m (metric range) is used to specify the metric number or range of metric numbers. |
| -t <tag> | -t (tag) allows the collector/analyzer to use a different set of policies than those originally provided with the Exchange SPI when collecting metrics. NOTE: Additional information about the tag feature is found at the end of the "Customizing Exchange SPI" section. |
| -p -m <range> [-v] | -p (print) executes specified metrics and prints their values to standard output, for example: <exspi_e2k.exe or exspi_e55.exe> -p -m 1-1001 |
| -a | -a directs the collector/analyzer to send the metric value to OVO for alarm generating |
| -s | -s executes the collector as the special service account user (MSXSPI). Requires completion of the advanced configuration (see Configuring the Exchange SPI on page 46). |
| -l -m <metric range> -x <extended_option> | Data collection metrics start at 0500. Types: Value: logs the actual value Delta: logs the difference between current and previous Average: logs the average over a specific interval (e.g. 1h) where: -l collector logs data to logfile instead of reporting it to OVO -x <extended_option> is one of: logtype: is either "value, delta, or avg" logfreq: can only be "hourly" and is used only with "avg" runfreq: tells the collector the interval in seconds. If the schedule interval of EXSPI is every 10 minutes, the runfreq option must be set to 10*60 = 600: -x runfreq=600 . The runfreq option can only be used with "avg." mbox: followed by " =<mailbox_name> " allows specification of certain mailboxes with certain metrics, specifically metrics: 611,612,622,623,630,631,632,640 and 641 Example of a command line using this option: exspi -p -m 611 -x mbox=obrab |

5 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.
- 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.

Add the Exchange cluster nodes to be managed.

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 monitor directory on the management server. After modifying this file, you need to redistribute the monitors to the Exchange nodes that are part of the Exchange cluster.



If the Exchange Cluster is managed under OVO 8 / HTTPS then `msexchange.apm.xml` needs to be manually copied from:

```
$OvDataDir\bin\instrumentation
```

to

```
$OvDataDir\bin\instrumentation\conf
```

for each managed node.

Task 3: Create the Cluster 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:

- 1 Launch the Exchange SPI Exchange Cluster Configuration application on an Exchange cluster node, see [Exchange Cluster Configuration application](#) on page 91.
- 2 Save the generated output in a temporary file by clicking on the **Save** button.
- 3 Open this temporary file and remove all the lines above:

```
<?xml version="1.0" ?>
```

- 4 Save the remaining lines as the completed `apminfo.xml` file.

- If the node is managed under OVO 7 and OVO 8 / DCE, save it to:

```
%OvAgentDir%\conf\OpC
```

- If the node is managed under OVO 8 / HTTPS, save it to:

```
<OVO_DATADIR>\conf\conf
```



You can get the full path name for `OVO_DATADIR` by running the following command from a CMD window on the managed node:

```
opcagt -type -verbose
```

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:

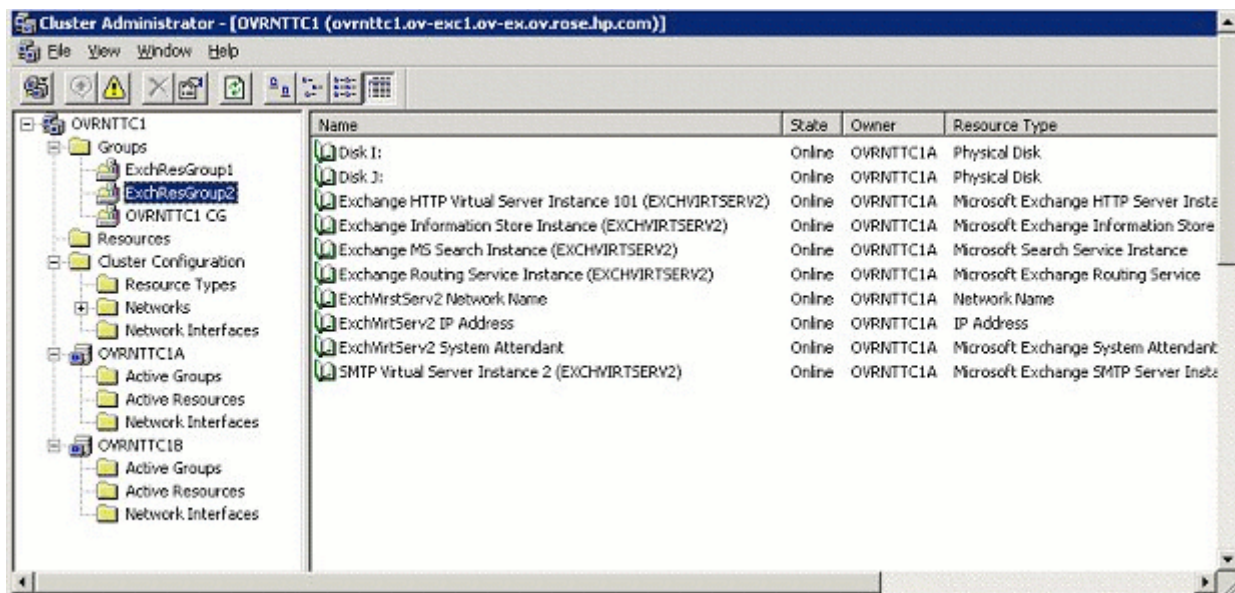
```
opcagt -kill  
opcagt -start
```

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 EXCHVIRTSESV1 and EXCHVIRTSESV2 instances (virtual servers):

```
<?xml version="1.0" ?>
<APMClusterConfiguration>
  <Application>
    <Name>msexchange</Name>
    <Instance>
      <Name>EXCHVIRTSESV1</Name>
      <Package>ExchResGroup1</Package>
    </Instance>
    <Instance>
      <Name>EXCHVIRTSESV2</Name>
      <Package>ExchResGroup2</Package>
    </Instance>
  </Application>
</APMClusterConfiguration>
```

Figure 39 Example Exchange resource group



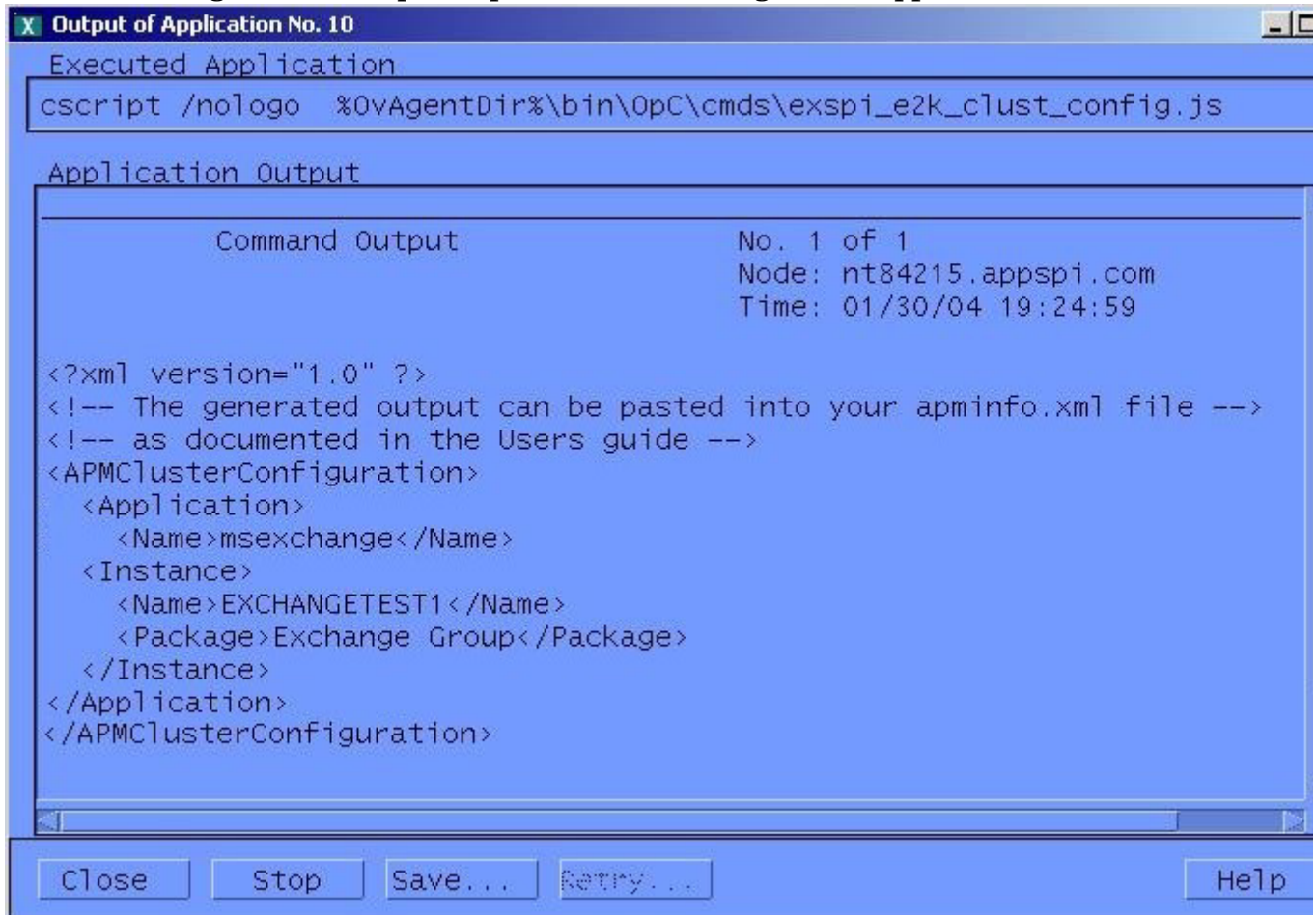
Exchange Cluster Configuration application

Use the Exchange Cluster Configuration application to generate the content of the apminfo.xml file. To execute this application:

- 1 Select all the Exchange managed nodes you wish to configure in the OVO Node Bank.
- 2 Drag these nodes and drop them on the **Exchange Cluster Config** application located in one of the following application groups:
 - **EXSPI Admin > Exchange 2007** application group if you are using Exchange 2007 nodes.

- **EXSPI Admin > Exchange 2000 and 2003** application group if you are using Exchange 2003 or 2000 nodes.
- 3 Use the generated output to construct the `apminfo.xml`. For details, refer to [Create the Cluster Application Configuration File](#) on page 90).

Figure 40 Example output of Cluster Configuration application



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

```

Opcagt -stop
Opcagt -start

```

Data Collection on virtual servers

In order for reports and graphs to show data for any nodes, appropriate data collection policies need to be distributed to those nodes. See the section [Using Exchange 5.5 Reports and Graphs](#) on page 119.

Run the **Enable Message Tracking** application on all nodes in the cluster before distributing the **EXSPI 6.X Dc-TrackingLog Data** policy, so that the tracking log reports will generate. The application 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 **EXSPI MBox Config** application on all nodes in the cluster. The application 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 distributing End-to-End Message Ping.
- 2 Follow the directions in [Set Up Message Ping Server Connections and Alarms](#) on page 59.

Exchange Cluster Service Map

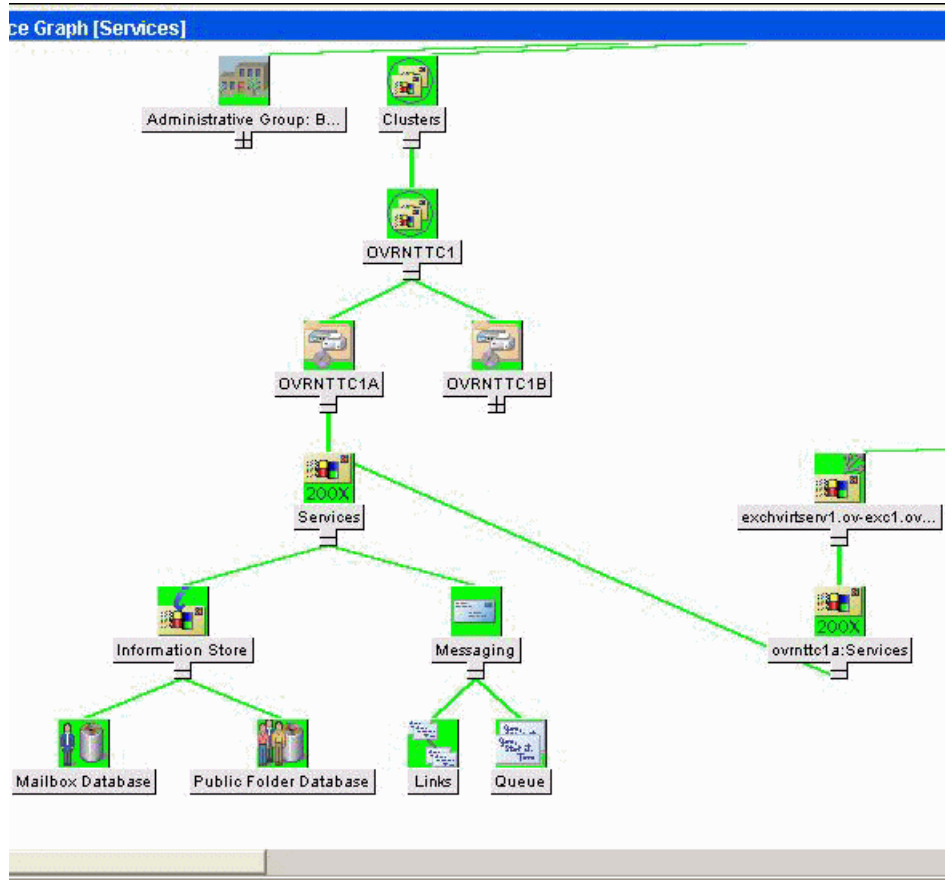
Exchange clusters are represented in the Service Map, and Service map nodes are created in the service map for each Exchange virtual server in a cluster.

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, which 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 41 Service Graph of Clustered Nodes



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 EXCHVIRTSESV1 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-6x Exchange Cluster Discovery SysLog and EXSPI-6x Exchange Cluster Discovery policies must be distributed

6 Customizations

Introduction

This chapter outlines the following customization procedures:

- 1 Choosing metrics to monitor Exchange
- 2 Customizing the Exchange SPI
 - a Basic Customization procedures
 - Creating custom groupings
 - Creating custom policies
 - Modifying message generation
 - Modifying metric policy conditions
 - Customizing the Threshold
 - Customizing Schedules
 - The Tag Feature
 - b Advanced Customization procedures
 - Changing the Windows User Account Name
 - Changing the Mailbox Name
- 3 Returning to original factory settings

Choosing metrics to monitor Exchange

Before beginning customization, first decide which metrics can remain without changing the thresholds, (see “Exchange SPI Metric Specifications” later in this chapter or the *Exchange SPI Reference Manual*).



It is recommended that you make a copy of the original policy group and use the copy for customization purposes

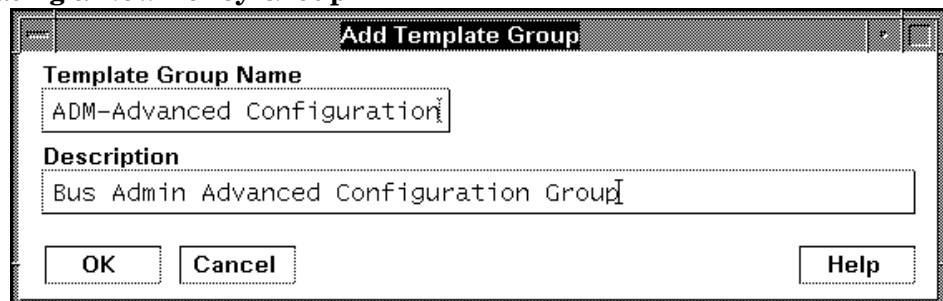
Basic Customization

Creating Custom Groupings

Create custom policy groups as follows:

- 1 Log onto OVO as the OVO Administrator.
- 2 Select **Window>Message Source Templates**.
- 3 In the Message Source policies window select the desired policy group and click the **Add...** button (if Add Logfile... is displayed, pull down the list and select Add Group) and select a name and description for this group.
- 4 To copy policies to the new group:
 - In the Message Source policies window, double-click to open the group containing the desired policies.
 - Select the policies to copy and choose **Edit>Copy from the Message Source Templates** menu to copy the policies.
 - Return to the newly created policy group and choose **Edit>Paste** from the menu.

Figure 42 Creating a New Policy Group



Creating Custom Policies

You can create a custom policy by copying an original policy, making any desired changes, and saving it with a new name.

When the OVO environment scales, the Exchange SPI *tag feature* provides a way to partition policies into groups with each group customized in a specific manner.

Modifying Message Generation

Alarms are generated with `Reset`, without `Reset` or `Continuously`. To change the Metric Generation Type (usually in conjunction with the `Threshold`, `Polling Interval` and `Reset` value) follow these steps:

- 1 Select the **Message Source Templates** window.
- 2 Double-click to open the policy group containing the metric to modify.
- 3 Click the **Modify** button.

Figure 43 Modifying Message Generation

The screenshot shows the 'Modify Threshold Monitor' dialog box. The 'Monitor Name' field contains 'EXSPI-60-0016' and the 'Description' field contains 'MTA Rejected Inbound Associations'. The 'Monitor' dropdown is set to 'External'. The 'Polling Interval' and 'On Node' fields are empty. The 'Threshold Type' section has radio buttons for 'Maximum' and 'Minimum', with 'Maximum' selected. The 'Message Generation' section has radio buttons for 'with Reset' and 'without Reset', with 'with Reset' selected. The 'Message Defaults' section has a 'Severity' dropdown set to 'warning', an 'Object' dropdown set to 'EX_Perf', and a 'Service Name' field containing 'EXSPI_E2K:e2kservices:msg@@<\$MSG_NODE_ID>'. There are also buttons for 'Instructions...', 'Message Correlation...', and 'Adv'.

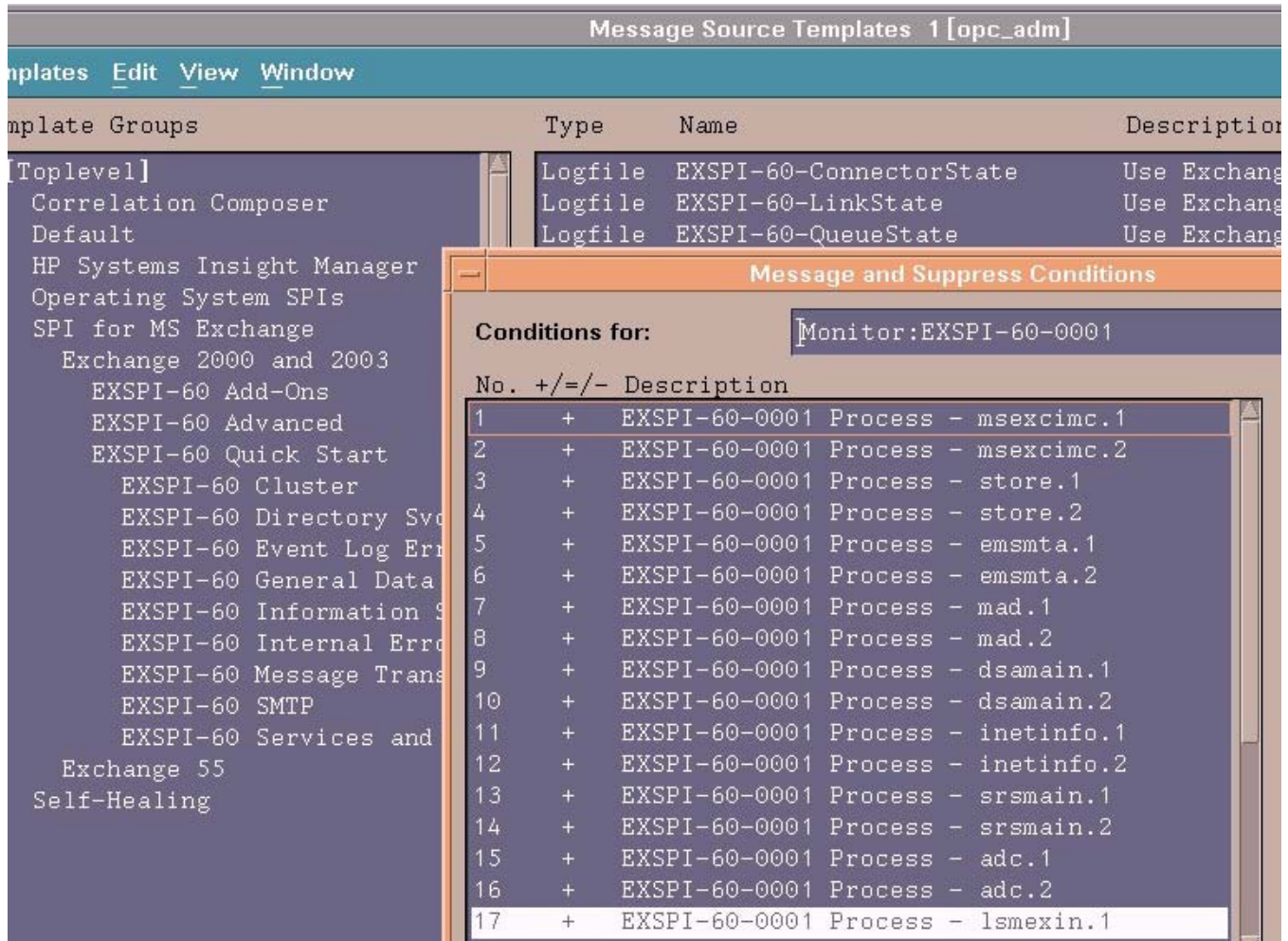
- 4 Select one of the Message Generation types:
 - **with Reset:** Alarms are generated after the monitoring threshold has been exceeded. No additional alarms are generated until metrics drop below a specified Reset threshold and subsequently exceed the monitoring threshold.
 - **without Reset:** Alarms are generated after the monitoring threshold has been exceeded. No additional alarms are generated until metrics drop below the threshold and subsequently exceed it.
 - **Continuous:** Alarms are generated continuously when metrics exceed the threshold.

Modifying Metric Policy Conditions

Modify metric attributes as follows.

- 1 Select the **Message Source Templates** window.
- 2 Double-click the policy group containing the metric to modify.
- 3 Double-click the desired metric
- 4 In the Message and Suppress Conditions window select the condition to modify and click the **Modify** button.

Figure 44 The Message and Suppress Conditions Window



- 5 The Condition window displays.

The following attributes can be easily modified:

Threshold. Set the desired threshold.

Reset. This is a limit under which the object's value must drop (or exceed for minimum thresholds) to return the alarm state of the object to normal. After an object's alarm state has returned to normal, a new message can be issued if the monitored parameter again exceeds (or drops below for minimum thresholds) the threshold value. Do not enter a value if you do not wish to impose a reset limit. Note that you can enter a reset value greater than the threshold value (or less for minimum threshold types), which has the same effect as if you don't specify a reset value.

Duration. Most metrics are defined as `Message Generate type` without `Reset` and without a `Duration`. Please consult the *OVO Concepts Guide* or online `Help` prior to modifying this field.

Severity. Click the `[Severity]` button and select the desired severity setting.

Message Text. Be careful not to modify any of the parameters in a message. Parameters are surrounded by `<>` brackets and begin with `$`.

Actions. This field provides the ability to add custom programs. Two types of actions are available:

Operator initiated: These actions are only performed upon the initiation of an operator.

Automatic: These actions are performed automatically when the metric alarms.

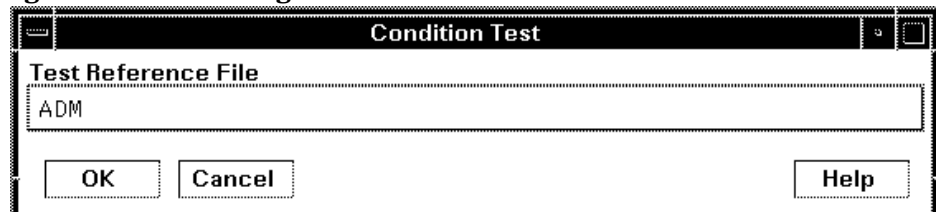
- Some metrics have an operator-initiated action which will display a graph if PerfView is installed on the management server.

Customizing the Threshold

Customize the threshold as needed. To do so, copy the existing condition to use as the default, and modify the original condition to serve as the exception. Follow these steps:

- 1 Double-click the metric you want to customize (for example, EXSPI-60-0001).
- 2 In the `Message and Suppress Conditions` window select the desired condition and select the **Copy** button to make a copy of the condition.
- 3 Enter a name for the condition; for example, EXSPI-6X-0001.3.
- 4 Click **OK** to close EXSPI-6X-0001.3. This will be the default condition.
- 5 Select the original condition, EXSPI-6X-0001.1.
- 6 Click the **Modify** button to display the `Condition` window.
- 7 In the **Object Pattern** field, enter the desired characters to use for pattern matching (see the OVO online help or the *OVO Administrators Task Guide* for pattern matching syntax).
- 8 Click the **Test Pattern Matching...** button to test the pattern and verify pattern matching (you must set up a match file first).
- 9 Change the value in the value in the `Threshold` field.

Figure 45 Testing Pattern Matching from the Condition Window



Customizing Schedules

Schedule policies define the schedule by which the collector/analyzer will gather metric information. To modify a schedule policy, follow these steps:

- 1 Select **Window>Message Source Templates** and double-click the policy group containing the policy to modify.
- 2 Double-click the desired policy
- 3 In the **Modify Scheduled Actions** change any of the schedule information or other parameters.
- 4 Click **OK** to close and save the changes.
- 5 Distribute the policy to the desired managed node(s).

Figure 46 Customizing a Schedule policy

The screenshot shows a Windows-style dialog box titled "Modify Scheduled Action". It contains the following fields and options:

- Scheduled Action Name:** EXSPI-55-15m-Transaction Log
- Description:** Scheduler for metrics in Transaction Log group
- Schedule:**
 - Minute: 0,15,30,45
 - Hour: 0-23
 - Day of the Month: (empty)
 - Month: (empty)
 - Year: (empty)
 - Day of the Week: (empty)
- Command:** exspi_e55.exe -a -m 5 -d
- Execute as user:** HP ITO account
- Options:**
 - Send message before start of action (with "Configure Start Message..." button)
 - Send message if action completed successfully (with "Configure Success Message..." button)
 - Send message if action failed (with "Configure Failure Message..." button)
 - Send Output of Action

Buttons at the bottom: OK, Cancel, and Help.

The Tag Feature

When servers are dedicated to specific sites or business units, you may find it more effective if those servers do not all share the same set of Exchange SPI policies. In such cases, the tag feature is useful in allowing you to change existing policies and rename them. In this way you can associate policy assignments with specific servers and the areas with which they are associated. For example, you might create a business administration group of policies and tag those policies with “ADM-” or a branch office group and tag those with “BR-.”

The tag feature allows you to create custom policies in a quick way. To summarize the steps, you:

- a Make copies of existing monitor policies that you want to modify.
- b (optional) Modify the monitor policy settings.
- c Save each modified policy under the same name with a prefix.
- d Enter each metric and - *<prefix tag>* after the collector/analyzer command in the **Program Monitor or MIB ID** box of the schedule policy.

Using this method allows the collector/analyzer to recognize a set of policies different from those originally provided with the Exchange SPI. This method allows you to enlarge the single set of policies to adjust to differing conditions among the servers you use.

To use this feature, make copies of the original Exchange SPI policies. The names you give these new policies must contain a prefix with the original policy name. To tell the collector/analyzer to use this new policy rather than the original policy, specify the tag option on the schedule policy command line.

New collector policies can also be created in this way, for example:

```
exspi_e2k -m 16 -t ADM-
```

In this case the new collector policy is called "ADM-EXSPI-15min."

Advanced Customization

Changing the Windows User Account name

A Windows user account, used for creating a mailbox, is referenced in the EXSPI MBOX Config application. To change the account name, edit the EXSPI Mbox Config application and change the user name setting. This application requires a user with Exchange administrative privileges.

Changing the Mailbox name

For all schedule policies in the policy group EXSPI-6X Data Collection (Adv), add `-x <mailbox_name>` to the command which is executed under the schedule. For example:

```
exspi_e2k -l-s -m 630,631,632 -x logtype=value -x mbox=MSXSPI
```

The default mailbox `MSXSPI <hostname>` can be changed by supplying the mailbox name to EXSPI MBOX Config:

Use the OVO Customized Startup to start **EXSPI MBOX Config**, and add `-m <mailbox name prefix> [-ou <organizational unit>]` to the Application Parameter box.



Do not add the domain before the user name. The user must be in the domain where the Exchange Server is located, and cannot be a local user.

Returning to original factory settings

To re-install all Exchange SPI policies, applications and message groups with original factory settings, run the following command:

```
/opt/OV/bin/OpC/opccfgupld -verbose -replace /var/opt/OV/share/tmp/  
OpC_appl/EXSPI/exspiset
```



Any customization of the original policies will be overwritten.

7 Integration with Reporter

Introduction

This chapter describes how to install and generate reports within Reporter from Exchange SPI data. It contains the following sections:

- Installing Exchange SPI reports
- Exchange SPI report policy requirements
- Lists of Exchange SPI reports, by Exchange version
- Using Exchange SPI reports and graphs
 - Distributing data collection policies
 - Distributing Reporter Collection policies
- Exchange SPI graphs
- Deinstalling Exchange SPI Reporter policies

Data Collection for Graphing and Reporting

Exchange SPI reports display data collected from EXSPI policies distributed to Exchange servers. The Exchange SPI collects data for graphing and reporting through data collection policies. Exchange and Windows data is collected, summarized, and forwarded to the OVO data collecting agent. Reporter can be used to access the data source EXSPI_DATA and write reports using Seagate Crystal Reports.

Data is collected through data collection policies, see the *HP OpenView Smart Plug-in for Microsoft Exchange Server Reference Guide*, for a complete listing of Schedule Data Collection policies for each Exchange version.

The specific Schedule Data Collection policies that must be distributed for Exchange SPI to generate particular reports are as follows:

Table 4 Data Collection Policies Required for Reports

| Report Name | Policy Name | Report Group |
|---|---|-------------------|
| Exchange 2003 Active Sync Usage | EXSPI-65-Dc-ActiveSync | Client Access |
| Exchange 2003 Active Sync Notifications | EXSPI-65-Dc-ActiveSyncNotify | Client Access |
| Exchange 2003 OMA Sync Usage | EXSPI-65-Dc-OMA | Client Access |
| Exchange 2003 and 2000 IMAP4 Connections | EXSPI-65-Dc-IMAP4 Performance | Client Access |
| Exchange 2003 and 2000 IS Users and Connection | EXSPI-6X-Dc-Information Store Performance | Client Access |
| Exchange 2003 and 2000 Messaging Ports | EXSPI-6X SMTP Port Response EXSPI-6X POP3 Port Response EXSPI-6X IMAP4 Port Response EXSPI-6X HTTP Port Response | Client Access |
| Exchange 2003 and 2000 OWA Usage | EXSPI-6X-Dc-OWA Back End | Client Access |
| Exchange 2003 and 2000 OWA Authentications | EXSPI-6X-Dc-OWA Back End | Client Access |
| Exchange 2003 and 2000 OWA Connections | EXSPI-6X-Dc-OWA Front End | Client Access |
| Exchange 2003 and 2000 POP3 Connections | EXSPI-6X-Dc-POP3 Performance | Client Access |
| Exchange 2003 and 2000 System Information Summary | EXSPI-6X-Dc-Mailbox IS Sum Data EXSPI-6X-Dc-Public IS Sum Data | Exchange Server |
| Exchange 2003 and 2000 Full Text Indexing Stats | EXSPI-6X Dc-Full Text Index | Information Store |
| Exchange 2003 and 2000 Transaction Log Stats | EXSPI-6X Dc-Transaction Log Space Usage | Information Store |
| Exchange 2003 and 2000 Inactive Mailboxes | EXSPI 6X-Dc-Mailbox Data | Mailbox Store |
| Exchange 2003 and 2000 Mailbox Details | EXSPI 6X-Dc-Mailbox Data | Mailbox Store |
| Exchange 2003 and 2000 Mailbox Store Stats | EXSPI-6X-Dc-Mailbox IS Sumdata | Mailbox Store |
| Exchange 2003 and 2000 Mailbox Summary | EXSPI 6X-Dc-Mailbox IS Sum Data | Mailbox Store |

| Report Name | Policy Name | Report Group |
|---|--|---------------------|
| Exchange 2003 and 2000 Mailbox Usage Trends | EXSPI-6X Dc-Mailbox IS Sum Data | Mailbox Store |
| Exchange 2003 and 2000 Mailbox Store Messaging Trends | EXSPI-6X-Dc-IS Mailbox Performance | Mailbox Store |
| Exchange 2003 and 2000 Top 100 Mailboxes | EXSPI-6X-Dc-Mailbox Data | Mailbox Store |
| Exchange 2003, 2000 and 5.5 Message Delivery SLA | EXSPI-6X End to End Message Ping | Messaging |
| Exchange 2003, 2000 and 5.5 Top Destinations | EXSPI-6X Dc-TrackLog Data | Messaging |
| Exchange 2003, 2000 and 5.5 Top Recipients | EXSPI-6X Dc-TrackLog Data | Messaging |
| Exchange 2003, 2000 and 5.5 Top Senders | EXSPI-6X Dc-TrackLog Data | Messaging |
| Exchange 2003, 2000 and 5.5 Top Sources | EXSPI-6X Dc-TrackLog Data | Messaging |
| Exchange 2003 and 2000 All Local Msg Delivery SLA | EXSPI-6X Dc-TrackLog SLA Delivery | Messaging |
| Exchange 2003 and 2000 MTA Msg Trends | EXSPI-6X Dc-MTA Performance | Messaging |
| Exchange 2003 and 2000 MTA Queue Data Stats | EXSPI-6X Dc-X400 Service MTA Queue | Messaging |
| Exchange 2003 and 2000 Message Tracking Stats | EXSPI-6X-Dc-Message Tracking Log Space Usage | Messaging |
| Exchange 2003 and 2000 SMTP Connections | EXSPI-6X Dc-SMTP Server Performance | Messaging |
| Exchange 2003 and 2000 SMTP Msg Trends | EXSPI-6X Dc-SMTP Server Performance | Messaging |
| Exchange 2003 and 2000 Virtual Server Stats | EXSPI-6X Dc-SMTP Virtual Server Storage | Messaging |
| Exchange 2003 and 2000 Exchange Folder Summary | EXSPI-6X-Dc-Public IS Sum Data | Public Folder Store |
| Exchange 2003 and 2000 Exchange Folder Usage Trends | EXSPI-6X-Dc-IS Public Folder Performance | Public Folder Store |
| Exchange 2003 and 2000 Inactive Folders | EXSPI 6X-Dc-Public Folder Data | Public Folder Store |
| Exchange 2003 and 2000 Public Folder Store Stats | EXSPI-6X-Dc-Public IS Sum Data | Public Folder Store |
| Exchange 2003 and 2000 Public Folder Store Msg Tnd | EXSPI-6X-Dc-Public IS Sum Data | Public Folder Store |
| Exchange 2003 and 2000 Top 100 Public Folders | EXSPI-6X-Dc-Public Folder Data | Public Folder Store |

Exchange SPI Reports

Installing Exchange SPI Report Policies

To install Exchange SPI reports on the system where Reporter is installed:

- 1 Double-click **EXSPI-Reporter.msi** on the HP OpenView Operations for Unix Application CD-ROM. This opens the EXSPI-Reporter InstallShield Wizard.
- 2 Click **Next** on the welcoming dialog.
- 3 The next dialog confirms that EXSPI-Reporter is now installed, click **Finish** to exit the wizard.
- 4 Open Reporter to see the **SPI for Exchange** folder under **Reports**.
- 5 Open the SPI for Exchange group of reports, and see the groupings of Exchange reports. As you select each group, see in the details pane the individual reports available in that group.

Reports for Exchange 2007 Servers

The SPI for Microsoft Exchange Server 2007 provides the following reports:

- Exchange 2007 Mailbox Details by Server — This report contains information about mailboxes on the Mailbox Server. This report displays information sorted by disk space usage and grouped by storage group and database. The Exchange 2007 Mailbox Details by Server report uses the EXSPI-8X Get Mailbox Details policy and uses the following metrics from the data store:
 - MB_SIZE
 - MB_MSGCOUNT
 - MB_STGLIMIT
 - MB_LASTACCESS
 - MB_SGNAME
 - MB_DBNAME
- Exchange 2007 Top 100 Mailboxes — This report lists the top 100 mailboxes by disk space usage across all Exchange 2007 Mailbox Servers. The Exchange 2007 Top 100 Mailboxes report uses the EXSPI-8X Get Mailbox Details policy and uses the following metrics from the data store:
 - MB_SIZE
 - MB_MSGCOUNT
 - MB_STGLIMIT
 - MB_LASTACCESS
 - MB_SGNAME
 - MB_DBNAME

- Exchange 2007 Inactive Mailboxes by Server — This report lists the mailboxes that were not used to send mails in 20, 40 and 60 or more days and the number of days for which the mailboxes were not used. The Exchange 2007 Inactive Mailboxes by Server report uses the EXSPI-8X Get Mailbox Details policy and uses the following metrics from the data store:
 - MB_SIZE
 - MB_LASTACCESS
 - MB_SGNAME
 - MB_DBNAME
- Exchange 2007 Mailbox Store Message Trends by Server — This report contains summary and detailed trend graphs showing Mailbox Store message volumes. The Exchange 2007 Mailbox Store Message Trends by Server report uses the EXSPI-8X Dc-IS Mailbox Performance policy and the following metrics from the data store:
 - MBDELIVER
 - MSENT
 - MBSUBMITTED
 - MBRECIPIENT
 - MBLOCALDELIVER
- Exchange 2007 Public Folder Messaging Trends by Server — This report contains summary and detail trend graphs showing Public Folder Store message volumes. The Exchange 2007 Public Folder Messaging Trends by Server report uses the EXSPI-8X Dc-IS Public Folder Performance policy and the following metrics from the data store:
 - PFDELIVER
 - PFSSENT
 - PFSUBMITTED
 - PPRECIPIENT
- Exchange 2007 Users and Connections by Server — This report provides a graph of the average number of users and connections counts for hours of the day over a given time period. The Exchange 2007 Users and Connections by Server report uses the EXSPI-8X Dc-Information Store Performance policy and uses the following metrics from the data store:
 - ISUSERCNT
 - ISACTIVEUSERCNT
 - ISANONUSERCNT
 - ISACTIVEANONUSERCNT
 - ISCONNECTCNT
 - ISACTIVECONNECTCNT
- Exchange 2007 POP3 Connections by Server — This report provides a graph of the average POP3 connections count for hours of the day over a given time period. The Exchange 2007 POP3 Connections by Server report uses the EXSPI-8X Dc-POP3 Performance policy and uses the following metrics from the data store:
 - POP3CON
 - POP3FAILEDCON

- POP3REJECTEDCON
- Exchange 2007 IMAP4 Connections by Server — This report provides a graph of the average IMAP4 connections counts for hours of the day for a given time period. The Exchange 2007 IMAP4 Connections by Server report uses the EXSPI-8X Dc-IMAP4 Performance policy and uses the following metrics from the data store:
 - IMAP4CON
 - IMAP4FAILEDCON
 - IMAP4REJECTEDCON
- Exchange 2007 SMTP Receive Messaging Trends by Server — This report provides a graphs showing the volume of simple mail transport protocol (SMTP) messages received by the receive connectors on transport servers. The Exchange 2007 SMTP Receive Messaging Trends by Server report uses the EXSPI-8X Dc-SMTP Performance for Inbound Connections policy and uses the following metrics from the data store:
 - SMTPMSGSENT
 - SMTPMSGRECEIVE
 - SMTPMSGBYTESENT
 - SMTPMSGBYTERECEIVE
- Exchange 2007 SMTP Send Messaging Trends by Server — This report contains trend graphs showing the volume of simple mail transport protocol (SMTP) messages sent by the send connectors on transport servers. The Exchange 2007 SMTP Send Messaging Trends by Server report uses the EXSPI-8X Dc-SMTP Performance for Outbound Connections policy and uses the following metrics from the data store:
 - SMTPMSGSENT
 - SMTPMSGRECEIVE
 - SMTPMSGBYTESENT
 - SMTPMSGBYTERECEIVE

Reports for Exchange 2003 Servers

Client Access

- **Exchange 2003 ActiveSync Notifications**
- **Exchange 2003 ActiveSync Usage**
- **Exchange 2003 and 2000 IMAP4 Connections**
- **Exchange 2003 and 2000 Messaging Ports Availability**
- **Exchange 2003 and 2000 OWA Authentications**
- **Exchange 2003 and 2000 OWA Connections**
- **Exchange 2003 and 2000 Usage**
- **Exchange 2003 and 2000 POP3 Connections**
- **Exchange 2003 OMA Sync Usage**

Exchange Server

- **Exchange 2003 and 2000 System Information Summary:** Contains summary information about the OS and Exchange versions, mailboxes and public folders.

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:** Provides information concerning usage and availability of storage, by and for the Exchange Transaction log.

Mailbox Store

- **Exchange 2003 and 2000 Inactive Mailboxes:** This report lists all the mailboxes on the server that have not been accessed. The report also lists mailboxes that have not been accessed in 20, 40 and 60 or more days.
- **Exchange 2003 and 2000 Mailbox Details:** Provides detailed information about the mailboxes on the server including summary totals, size distribution, and top mail users.
- **Exchange 2003 and 2000 Mailbox Store Msg Trends**
- **Exchange 2003 and 2000 Mailbox Store Stats:** Provides database volume statistics for Mailbox Store database files, for each managed Exchange Server. The report gives a snapshot of the volume usage, as of the most recent data collection.
- **Exchange 2003 and 2000 Mailbox Summary:** Provides summary information about the mailboxes on the server including summary totals, size distribution, and top mail users.
- **Exchange 2003 and 2000 Mailbox Usage Trends:** Contains graphs showing trends in database size, number of messages, and average size of mailboxes. The trends are associated per storage group and are shown for the time period selected when the report is generated.
- **Exchange 2003 and 2000 Top 100 Mailboxes:** Lists the top 100 mailboxes by disk space usage across all mailbox databases.

Messaging

- **Exchange 2003, 2000, and 5.5 Message Delivery SLA (Service Level Agreement):** Provides a trend graph showing how message delivery, messages read, and directory read service levels are being met across all monitored connections.
- **Exchange 2003, 2000, and 5.5 Top Destinations:** Identifies the top Email destinations (local, other Exchange sites, internet, gateway) for Email being sent by an Exchange server.
- **Exchange 2003, 2000, and 5.5 Top Recipients:** Identifies the top recipients of Email for an Exchange server.
- **Exchange 2003, 2000, and 5.5 Top Senders:** Identifies the top senders of Email for an Exchange server. Only Email sent by users that have Exchange mailboxes is counted. Email sent by clients such as Netscape and UNIX that do not have a corresponding Exchange mailbox are not counted.

- **Exchange 2003, 2000, and 5.5 Top Sources:** Identifies the top Email sources (local, other Exchange sites, internet, gateway) for Email being received by an Exchange server.
- **Exchange 2003 and 2000 Message Delivery SLA from Tracking Log data**
- **Exchange 2003 and 2000 Message Tracking Log Space Usage**
- **Exchange 2003 and 2000 MTA Msg Trends:** Provides trend graphs showing messaging volume for the Message Transfer Agent, Information Store and SMTP server message volume.
- **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 Data Stats**

Public Folder Store

- **Exchange 2003 and 2000 Folder Summary:** Provides summary information about the public folders on the server.
- **Exchange 2003 and 2000 Folder Usage Trends:** Contains graphs showing trends in database size, number of messages and average size of public folders. The trends are shown for the time period selected when the report is generated.
- **Exchange 2003 and 2000 Inactive Folders:** This report lists all the folders on the server that have not been accessed. The report also lists folders that have not been accessed in 20, 40 and 60 or more days.
- **Exchange 2003 and 2000 Public Folder Store Msg Tnd:**
- **Exchange 2003 and 2000 Public Folder Store Stats:** Provides database volume statistics for Public Folder Store database files, for each managed Exchange Server. The report gives a snapshot of the volume usage, as of the most recent data collection.
- **Exchange 2003 and 2000 Top 100 Public Folders:** Lists the top 100 public folders by disk space usage.

Reports for Exchange 2000 Servers

Chat

- **Exchange 2000 Chat Trends:** Provides averaged information on the number of client chat connections and channels for hours of the day over the time period indicated.

Conferencing

- **Exchange 2000 Conferencing Trends:** Provides averaged information on the number of conferences and active MCUs for hours of the day over the time period indicated.
- **Exchange 2000 MCU Trends:** Provides averaged information on the number of conferences and active MCU's for hours of the day over the time period indicated.

Client Access

- **Exchange 2003 and 2000 IMAP4 Connections**

- **Exchange 2003 and 2000 Messaging Ports Availability**
- **Exchange 2003 and 2000 OWA Authentications**
- **Exchange 2003 and 2000 OWA Connections**
- **Exchange 2003 and 2000 Usage**
- **Exchange 2003 and 2000 POP3 Connections**

Exchange Server

- **Exchange 2003 and 2000 System Information Summary:** Contains summary information about the OS and Exchange versions, mailboxes and public folders.

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:** Provides information concerning usage and availability of storage, by and for the Exchange Transaction log.

Instant Messaging

- **Exchange 2000 Instant Messaging Availability Trends:** Shows instant messaging usage trends.
- **Exchange 2000 Instant Messaging Users Growth:** Shows the number of users that are Instant Messaging enabled over the time period indicated.

Mailbox Store

- **Exchange 2003 and 2000 Inactive Mailboxes:** This report lists all the mailboxes on the server that have not been accessed. The report also lists mailboxes that have not been accessed in 20, 40 and 60 or more days.
- **Exchange 2003 and 2000 Mailbox Details:** Provides detailed information about the mailboxes on the server including summary totals, size distribution, and top mail users.
- **Exchange 2003 and 2000 Mailbox Store Msg Trends**
- **Exchange 2003 and 2000 Mailbox Store Stats:** Provides database volume statistics for Mailbox Store database files, for each managed Exchange Server. The report gives a snapshot of the volume usage, as of the most recent data collection.
- **Exchange 2003 and 2000 Mailbox Summary:** Provides summary information about the mailboxes on the server including summary totals, size distribution, and top mail users.
- **Exchange 2003 and 2000 Mailbox Usage Trends:** Contains graphs showing trends in database size, number of messages, and average size of mailboxes. The trends are associated per storage group and are shown for the time period selected when the report is generated.
- **Exchange 2003 and 2000 Top 100 Mailboxes:** Lists the top 100 mailboxes by disk space usage across all mailbox databases.

Messaging

- **Exchange 2003, 2000, and 5.5 Message Delivery SLA** (Service Level Agreement): Provides a trend graph showing how message delivery, messages read, and directory read service levels are being met across all monitored connections.
- **Exchange 2003, 2000, and 5.5 Top Destinations:** Identifies the top Email destinations (local, other Exchange sites, internet, gateway) for Email being sent by an Exchange server.
- **Exchange 2003, 2000, and 5.5 Top Recipients:** Identifies the top recipients of Email for an Exchange server.
- **Exchange 2003, 2000, and 5.5 Top Senders:** Identifies the top senders of Email for an Exchange server. Only Email sent by users that have Exchange mailboxes is counted. Email sent by clients such as Netscape and UNIX that do not have a corresponding Exchange mailbox are not counted.
- **Exchange 2003, 2000, and 5.5 Top Sources:** Identifies the top Email sources (local, other Exchange sites, internet, gateway) for Email being received by an Exchange server.
- **Exchange 2003 and 2000 Message Delivery SLA from Tracking Log data**
- **Exchange 2003 and 2000 Message Tracking Log Space Usage**
- **Exchange 2003 and 2000 MTA Msg Trends:** Provides trend graphs showing messaging volume for the Message Transfer Agent, Information Store and SMTP server message volume.
- **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 Data Stats**

Public Folder Store

- **Exchange 2003 and 2000 Folder Summary:** Provides summary information about the public folders on the server.
- **Exchange 2003 and 2000 Folder Usage Trends:** Contains graphs showing trends in database size, number of messages and average size of public folders. The trends are shown for the time period selected when the report is generated.
- **Exchange 2003 and 2000 Inactive Folders:** This report lists all the folders on the server that have not been accessed. The report also lists folders that have not been accessed in 20, 40 and 60 or more days.
- **Exchange 2003 and 2000 Public Folder Store Msg Tnd:**
- **Exchange 2003 and 2000 Public Folder Store Stats:** Provides database volume statistics for Public Folder Store database files, for each managed Exchange Server. The report gives a snapshot of the volume usage, as of the most recent data collection.
- **Exchange 2003 and 2000 Top 100 Public Folders:** Lists the top 100 public folders by disk space usage.

Reports for Exchange 5.5 Servers

Exchange Server

- **Exchange 5.5 System Information Summary:** Contains summary information about the OS and Exchange versions, mailboxes and public folders.

Information Store

- **Exchange 5.5 User Connections**

Mailbox Database

- **Exchange 5.5 Mailbox Details:** Provides detailed information about the mailboxes on the server.
- **Exchange 5.5 Mailbox Summary:** Provides summary information about the mailboxes on the server including summary totals, size distribution, and top mail users.
- **Exchange 5.5 Mailbox Usage Trends:** Contains graphs showing trends in database size, number of messages, and average size of mailboxes. The trends are associated per storage group and are shown for the time period selected when the report is generated.
- **Exchange Top 100 Mailboxes:** Lists the top 100 mailboxes by disk space usage.

Messaging

- **Exchange 2003, 2000, and 5.5 Message Delivery SLA (Service Level Agreement):** Provides a trend graph showing how message delivery, messages read, and directory read service levels are being met across all monitored connections.
- **Exchange 2003, 2000, and 5.5 Top Destinations:** Identifies the top Email destinations (local, other Exchange sites, internet, gateway) for Email being sent by an Exchange server.
- **Exchange 2003, 2000, and 5.5 Top Recipients:** Identifies the top recipients of Email for an Exchange server.
- **Exchange 2003, 2000, and 5.5 Top Senders:** Identifies the top senders of Email for an Exchange server. Only Email sent by users that have Exchange mailboxes is counted. Email sent by clients such as Netscape and UNIX that do not have a corresponding Exchange mailbox are not counted.
- **Exchange 2003, 2000, and 5.5 Top Sources:** Identifies the top Email sources (local, other Exchange sites, internet, gateway) for Email being received by an Exchange server.
- **Exchange 5.5 IMS Messaging Trends:** Provides trend graphs showing messaging volume for the Internet Mail Service
- **Exchange 5.5 Messaging Trends**
- **Exchange 5.5 Messaging Trends For All Servers**

Public Folder Database

- **Exchange 5.5 Folder Summary:** Provides summary information about the public folders on the server.
- **Exchange 5.5 Folder Usage Trends**

- **Exchange Top 100 Public Folders:** Lists the top 100 public folders by disk space usage.

Using Exchange 5.5 Reports and Graphs

Exchange SPI report and graph generation require that you complete the following:

- Distribute the data collection policies.
- Configure and distribute Exchange SPI reporter collection policies.

Time Interval for Exchange SPI Reports or Graphs

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

Distributing the Data Collection Policies

In order to collect data for reports and graphs the General Data Collection policies in the Quick Start (Exchange 5.5) and EXSPI OVO Exchange SPI core (Exchange 2000 and 2003) policy groups need to be distributed.

For the procedure to distribute policies, see [Assign/Distribute Policies](#) on page 53.

Configure/Distribute Reporter Collection Policies

For any Exchange server system on which you would like to receive reports, you need to distribute Exchange SPI policies from the **EXSPI Advanced > EXSPI Reporter Collection** group.

To configure the Reporter Collection policies two steps are required:

- 1 Complete the Advanced Configuration procedure.
- 2 Distribute Reporter Collection policies.

1. Complete the Advanced Configuration procedure

For detailed steps, see [Configuring the Exchange SPI](#) on page 46.

2. Distribute Reporter Collection policies

The reporter collection policies need to be distributed to any managed nodes where data is to be collected for reporting and graphing. For the procedure to distribute policies, see [Assign/Distribute Policies](#) on page 53.

Deinstalling Exchange SPI Reporter

Remove the Exchange SPI reporter in one of the following ways:

- 1 Using the Windows **Start** menu.
- 2 Using the EXSPI-Reporter InstallShield wizard.

Using the Windows Start menu:

- 1 Select **Start > Settings > Control Panel > Add/Remove Programs**.
- 2 Select **EXSPI-Reporter**.
- 3 Click **Remove**.

Using the EXSPI-Reporter InstallShield wizard.

- 1 Double-click **EXSPI-Reporter.msi**. This opens the EXSPI-Reporter InstallShield Wizard. Click **Next** on the Welcome screen.
- 2 Confirm the next screen by clicking **Remove**.
- 3 The InstallShield Wizard has deinstalled EXSPI-Reporter. Click **Finish**.

Exchange SPI OVPM Graphs

Exchange SPI comes with a set of preconfigured graph policies. These graph policies need to be installed on an OVPM system, and require that OpenView PerfAgent (MW Agent) is running on the managed node.

Installing Exchange SPI Graph policies

There are three policy files: `VPI_GraphsEXSPI2K.txt` for Exchange 2000 OVPM graphs, `VPI_GraphsEXSPI2K3.txt` for Exchange 2003 OVPM graphs, and `VPI_GraphsEXSPI55.txt` for Exchange 5.5 OVPM graphs.

These files are located:

- on the OVO for UNIX management server at `/var/opt/OV/share/databases/OpC/mgd_node/customer/ms/intel/nt/cmds`
- on the Exchange SPI managed nodes
 - on DCE nodes at `\usr\OV\bin\OpC\intel\cmds`
 - on HTTPS nodes at `OVO-DATADIR>\bin\instrumentation`

To install the EXSPI graph policies on an OVPM 5.0 system, copy these files to the graph policy installation directory on the OVPM system:

- on Windows OVPM systems to `<OVInstallDir>/newconfig/OVPM`
- on UNIX OVPM systems to `$OvInstallDir/newconfig/OVPM`

Then follow the installation procedures outlined in the *OpenView Performance Manager Administrator's Guide* in the "Editing Graph Policy Files Directory" section.

Once installed these graphs are located in the Application Bank under: **EXSPI Admin**.

When setup is complete, the following graphs are available:

Exchange 2003 OVPM Graphs

Exchange SPI 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 MExchangeOMA 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 MExchangeDSAccess 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 OVPM 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 MExchangeDSAccess 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 OVPM 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.

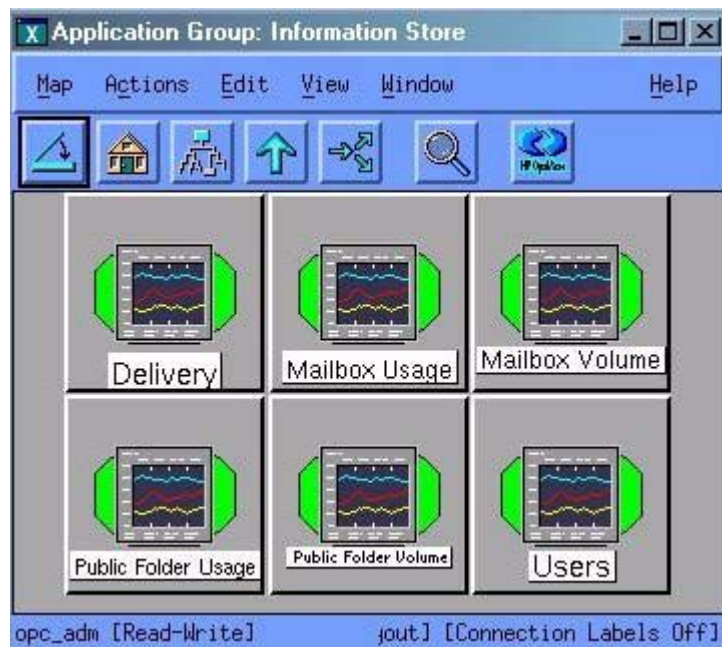
Additional Exchange 5.5 PerfView Graphs in the Application Bank

In the 10.00 release there is a set of preconfigured graphs for Exchange 5.5 that can be viewed in HP PerfView. PerfView graphs require that an OpenView Performance Agent (also known as MeasureWare Agent) is running on the managed node.

These graphs are located in the **Application Bank**, under **Exchange 5.5 Graphs**, in the following groups:

- Information Store
- Messaging
- System Information
- Transaction Log Disk Space

Information Store



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

Mailbox Usage: This graph shows Exchange Server Mailbox usage.

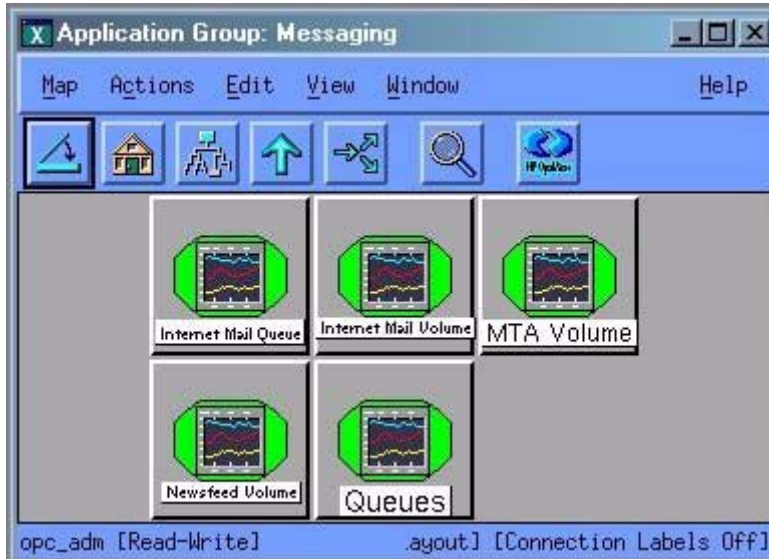
Mailbox Volume: This graph shows Exchange Server Mailbox volume.

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

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

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

Messaging



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

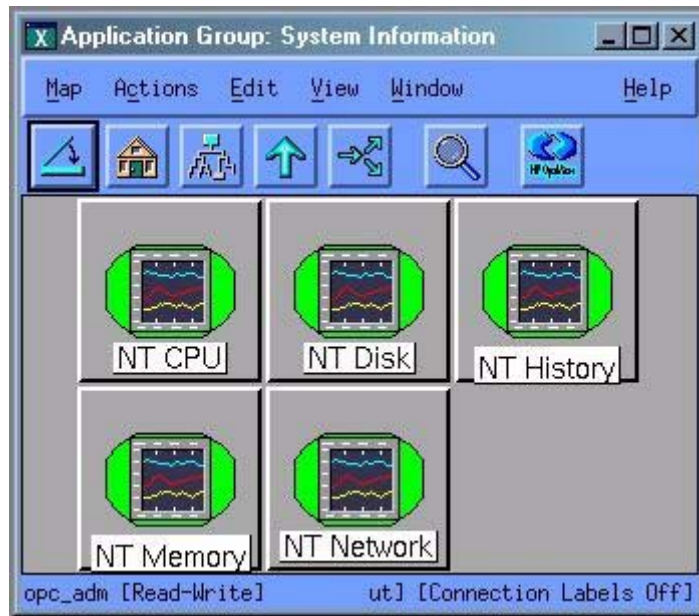
Internet Mail Volume: This graph shows Exchange Server Internet Mail Connector volume.

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

Newsfeed Volume: This graph shows Exchange Server newsfeed volume.

Queues: This graph show Exchange Server queue lengths.

System Information



System Information for the following areas of performance are made available in graph format:

- NT CPU

- NT Disk
- NT History
- NT Memory
- NT Network

Transaction Log Disk Space

This graph shows Transaction Log Disk Space usage on Exchange 5.5 servers.

8 Troubleshooting

Introduction

This chapter offers troubleshooting suggestions for Exchange SPI. It includes the following sections:

- Self-Healing Information for enhanced troubleshooting
- Verifying Software Installation on the Management Server
- The Exchange SPI Error Log
- Turning on/ Disabling Tracing
- Common Errors
- Verifying the MSXSPI account has the right privileges
- Verifying MeasureWare Integration
- Installing Old DSI Log Files
- Advanced Configuration Policy Failures
- Exchange Service Discovery errors

Self-Healing Information for Enhanced Troubleshooting

The Exchange SPI now includes a **Self-Healing Info** application that gathers data useful for troubleshooting issues. The application can be launched on the managed node to gather specific error messages, and other relevant data that can help you diagnose problems.

Even though the **Self-Healing Info** application can work independently, it can also be integrated with HP OpenView Self-Healing Services, available at no cost with your support contract. Self-Healing Services speeds up the problem resolution process by allowing you to easily open an incident and send data straight to a secure HP support site. For more information, see HP OpenView's Software Support Online Web site at:

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



If Self-Healing Services is already installed, you will have to re-start it after installing your SPI. Whenever possible, install the SPI before installing Self-Healing Services. An upgrade to SPIs on a managed node already running Self-Healing Services requires a re-start of Self-Healing Services.

After you install the Self-Healing Services client on the managed node, you no longer need to launch the **Self-Healing Info** application. Self-Healing Services automatically gathers error-related and system data when you submit an incident.

Using the Self-Healing Info application

- 1 Turn on tracing, see [Turning on Tracing](#) on page 135.
- 2 Reproduce your problem.
- 3 Open the **Node Bank** window and locate the node on which you want to run the Self-Healing Info application.
- 4 Open the **Application Bank** window and double-click **EXSPI.Admin**.
- 5 Drag and drop the node onto the **Self-Healing Info** application.
- 6 In the message that appears, note where the compressed file will be stored.
- 7 Send the file to the above-mentioned HP support site for diagnosis.

Verifying Exchange SPI Installation on the Management Server



This utility is not available for Sun Solaris

To check the integrity of Exchange SPI files on the OVO management server, run the following command:

```
/usr/sbin/swverify SPI-EXCHANGE-OVO
```

This command produces output similar to the following:

```
(non-interactive) (jobid=ovruxr13-0161)
  * Session started for user "root@ovruxr13".
  * Beginning Selection
  * Target connection succeeded for "ovruxr13:/".
  * Software selections:
+ DSI2DDF.DSI2DDF,l=/,r=A.02.00.00,a=HP/SunOS,v=HP
SPI-EXCHANGE-OVO.EXSPI,l=/,r=A.08.20.6,a=HP-UX_B.11.00_32/
HP-UX_B.11.00_64,v=HP
+SPI-SHS-OVO.SPI-SHS-AIX,l=/,r=A.01.00.00,a=HP_UX_10/11,v=HP
+SPI-SHS-OVO.SPI-SHS-CORE,l=/,r=A.01.00.00,a=HP_UX_10/11,v=HP
+SPI-SHS-OVO.SPI-SHS-HPUX,l=/,r=A.01.00.00,a=HP_UX_10/11,v=HP
+SPI-SHS-OVO.SPI-SHS-LXx86,l=/,r=A.01.00.00,a=HP_UX_10/11,v=HP
+SPI-SHS-OVO.SPI-SHS-OSF,l=/,r=A.01.00.00,a=HP_UX_10/11,v=HP
+SPI-SHS-OVO.SPI-SHS-SOL,l=/,r=A.01.00.00,a=HP_UX_10/11,v=HP
+SPI-SHS-OVO.SPI-SHS-UX64,l=/,r=A.01.00.00,a=HP_UX_10/11,v=HP
+SPI-SHS-OVO.SPI-SHS-WIN,l=/,r=A.01.00.00,a=HP_UX_10/11,v=HP
+SPI-SVCDISC-OVO.SPI-SVCDISC-AGT-AIX,l=/
,r=A.02.00,a=HP_UX_11,v=HP,fr=A.02.00,fa=HP_UX_11
  +SPI-SVCDISC-OVO.SPI-SVCDISC-AGT-HP,l=/
,r=A.02.00,a=HP_UX_11,v=HP,fr=A.02.00,fa=HP_UX_11
+SPI-SVCDISC-OVO.SPI-SVCDISC-AGT-LNX,l=/
,r=A.02.00,a=HP_UX_11,v=HP,fr=A.02.00,fa=HP_UX_11
+SPI-SVCDISC-OVO.SPI-SVCDISC-AGT-SOL,l=/
,r=A.02.00,a=HP_UX_11,v=HP,fr=A.02.00,fa=HP_UX_11
+SPI-SVCDISC-OVO.SPI-SVCDISC-AGT-TRU64,l=/
,r=A.02.00,a=HP_UX_11,v=HP,fr=A.02.00,fa=HP_UX_11
+SPI-SVCDISC-OVO.SPI-SVCDISC-AGT-WIN,l=/
,r=A.02.00,a=HP_UX_11,v=HP,fr=A.02.00,fa=HP_UX_11
+SPI-SVCDISC-OVO.SPI-SVCDISC-SRV-HP,l=/
,r=A.02.00,a=HP_UX_11,v=HP,fr=A.02.00,fa=HP_UX_11
  * A "+" indicates an automatic selection due to dependency or the
  automatic selection of a patch or reference bundle.
  * Selection succeeded.
  * Beginning Analysis
  * Session selections have been saved in the file:
  /root/users/afshinsu/.sw/sessions/swverify.last
NOTE: More information may be found in the agent logfile using the
command
swjob -a log ovruxr13-0161 @ ovruxr13:/
```

The Exchange SPI Error Log

OVO7 and OVO8/DCE errors are forwarded to the browser and logged to:

```
\usr\OV\exspi\log\exspierror
```

OVO8/HTTPS errors are logged to:

```
<Installation_Directory>\Data\exspi\log\exspierror
```

For example:

```
04/01/02 08:43:57 ERROR exspi(488) [colamain.cpp:333]: EXSPI-60-40:  
Exchange Server Software not installed on this system (Check:  
SOFTWARE\Microsoft\Exchange\Setup). Unable to perform collection!
```

Turning on Tracing

If a problem occurs and you are asked to turn on tracing by the EX-SPI support team, use the **Enable EXSPI Tracing** application for the relevant Exchange version.

- 1 Select all the Exchange managed nodes you wish to configure in the **OVO Node Bank**.
- 2 Drag and drop these nodes on the **Enable EXSPI Tracing** application located in the **EXSPI Admin** application group under the appropriate version.
- 3 Verify whether there are any errors in the **Output of Application** window.

Figure 47 Output of Application window



Disabling Tracing

For disabling the tracing, use **Disable EXSPI Tracing**.



The trace file will grow very large. It is advisable to leave tracing enabled only long enough to recreate the problem, or in order to comply with HP support instructions.

Common Errors

- 1 When re-installing or upgrading Exchange Server, Exchange Setup program shows errors.

Symptom: Exchange Server re-install or upgrade (e.g., new Service Pack), the Exchange Setup generates error messages about DLLs that can't be overwritten.

Solution: Stop OVO (`opcagt -stop`) and MeasureWare (`mwacmd stop`), then retry the operation.

- 2 Schedule policy fails with message:
EXSPI xxxxx Metric Collection failed.

Symptom: The scheduled command failed with an exit code other than 0.

Solution: This error sometimes occur if the system is rebooted just before the collector/analyzer program was executed.

However, if this is not the case do the following: To find out more information about the failure, modify the failing schedule policy, check the **Send Output of Action** check box and re-distribute policies again.

The browser message should now contain an annotation with more information about the failure. Also, check the `exspierror` for more information.

- 3 Error when distributing Exchange 5.5 ConfigFile policies to Windows NT4 managed nodes.

Symptom: During ConfigFile policy distribution to Windows NT nodes, the following system error message box appears and the action fails:

```
OvCfgFile.exe - Entry Point Not Found. The procedure entry point
__lc_collate_cp could not be located in the dynamic link library
MSVCRT.dll.
```

Solution: The Windows managed node does not have the correct version of the Microsoft C Runtime library MSVCRT.dll installed on the managed node (MSVCRT.dll is located in the system32 directory). Upgrade your system by downloading and installing a newer version of MSVCRT.dll as described in Microsoft Knowledge Base article Q259403 at: www.support.microsoft.com/default.aspx?scid=kb;EN-US;q259403 Updating MSVCRT.dll may require a reboot. Afterwards, restart the failed ConfigFile-policy distribution.

Verifying MSXSPI account has right privileges

In order to verify that you have created the MSXSPI account with the right amount of privileges to run advanced metrics such as 5, 841, or 630, do the following:

- 1 Log into your Exchange 2000 or 2003 server as MSXSPI user (in the correct NT domain).
- 2 Open a DOS command prompt window.
- 3 cd to the directory where exspi collector is located (for OVO7 and OVO8/DCE typically in `c:\usr\OV\bin\OpC\monitor`, for OVO8/HTTPS `<InstallDir>\data\bin\instrumentation`).
- 4 Run the following series of commands:

```
exspi_e2k.exe -m 5 -p
exspi_e2k.exe -m 841 -p
exspi_e2k.exe -m 630 -p
```
- 5 These will print the results to the screen.
- 6 If these executed properly and the correct results printed on the screen, your MSXSPI account has the right permissions.

Verifying MeasureWare Integration

To verify MeasureWare integration check the following:

- 1 Is the MeasureWare Agent installed on the Exchange server managed node?
- 2 Is the MeasureWare agent up and running (`mwacmd status` or MeasureWare Agent application in RPM Tools Windows group)? There should be TWO `rep_server` programs running. If not, re-start MeasureWare Agent.
- 3 Verify MeasureWare Agent configuration.
 - a Verify that `perflbd.mwc` (e.g., in `\rpmtools\data`) contains `EXSPI_DATA` data source.
 - b If not, re-run MW setup: First run, Disable Data Logging, wait for MW to re-start, then run Enable Data Logging.
 - c Verify that DSI logfiles were created in `\usr\exspi\dsi\log\EXSPI_DATA`
 - d Check the timestamps of those files; they are updated when the data collectors run.
- 4 Verify `exspi_e2k.exe` or `exspi_e55.exe` data forwarding:
 - **For OVO7 and OVO8/DCE** the collector/analyzer `exspi_e2k.exe` or `exspi_e55.exe` specified in the schedule policies writes MeasureWare data to `\usr\OV\exspi\dsi*.dat` only if the keyword `MW ON` is present in the `\usr\OV\exspi\defaults` file (Note: the defaults file has no file extension.). Check the defaults file for the above keyword. If not present, run **EXSPI Add DataSource**.
 - **For OVO8/HTTPS** the collector/analyzer `exspi_e2k.exe` or `exspi_e55.exe` specified in the schedule policies writes MeasureWare data to `<InstallDir>data\exspi\dsi*.dat` only if the keyword `MW ON` is present in the `<InstallDir>data\exspi\defaults` file. (Note: the defaults file has no file extension.). Check the defaults file for the above keyword. If not present, run **EXSPI Add DataSource**.
- 5 Check whether `*.dat` files are present in `\usr\OV\exspi\dsi`. (for OVO7 and OVO8/DCE), or `<InstallDir>data\exspi\dsi` (for OVO8/HTTPS).
- 6 Check timestamps of `*.dat` files.

Advanced Configuration Policy Failures

Symptom:

The following data collectors fail and a critical message is shown in the OVO browser:

- EXSPI 6X/55 Dc-Private IS Sum. Data
- EXSPI-6X/55 Dc-Public IS Sum. Data
- EXSPI-6X/55 Dc-Mailbox Data
- EXSPI-6X/55 Dc-Public Folder Data

Solution:

These collectors access Exchange directly and require MSXSPI user and **MSXSPI<hostname> mailbox**.

- 1 Verify MSXSPI user, MSXSPI<hostname> mailbox, MSXSPI rights in Exchange and MeasureWare:
- 2 Verify MSXSPI user setup.
 - Use Windows User Manager to verify MSXSPI account. The user must exist in the same domain as that which the Exchange Server is part of. **Note:** there must be no local MSXSPI user.
 - For Exchange 5.5, the MSXSPI user must be part of Domain Admin group.
- 3 Verify MSXSPI rights in Exchange.

The MSXSPI user must have "Receive As" and "Send As" Exchange Admin permissions. See [Creating a Service Account with Proper Access Permissions](#) on page 25.

- 4 Verify MSXSPI<hostname> mailbox.

Use **Exchange Admin** to verify that a MSXSPI<host_name> mailbox exists and click on **Recipients**. In the right pane, a MSXSPI<host_name> user must show up for each server which belongs to the site.

- 5 Verify MeasureWare Agent integration as described in [Verifying MeasureWare Integration](#) on page 139.

Exchange Service Discovery Failures

Symptom:

The error message:

Error: Specified file was not found

Solution:

Verify that the distribution of Exchange SPI commands was successful. Refer to [Distribute the Exchange SPI Actions, Monitors, and Commands](#) on page 47.

Symptom:

Exchange SPI service discovery fails.

Solution:

The following patches allow more than one instance of `opctranm`:

PHSS_28148 – OVO A.07.12 HP-UX 11.0/11.11

ITOSOL_00183 – OVO A.07.12 Solaris

If you do not have these, or the patches that supersede them, the Exchange SPI discovery may fail if there is an instance of `opctranm` running already.

To resolve this, wait till the `opctranm` job is completed before starting Exchange SPI discovery (or) kill the `opctranm` process.

Symptom:

The error message: Problem in Executing `opcservice`

Solution:

Check if the OVO Service Navigator Component is installed.



The OVO Service Navigator Component component is included on the CD with the OVO bundle

A File Names

Introduction

This chapter lists the Exchange SPI file names, along with their descriptions, owners, groups, and permissions. Exchange SPI files are grouped as follows:

- Management server files
- Management server/managed node files
- Managed node files
- Logging and trace files

Management Server Files

Policies for opccfgupld (OVO Upload Facility)

All files listed in this table can be found on the management server in the following directories (the location of these files varies by platform):

/var/opt/OV/share/tmp/OpC_appl/EXSPI/exspiset/C/

Table 5 Management Server Files

| File | Description |
|---------------------------------------|--|
| exspiset.idx | OVO upload control file. This file defines what is being uploaded into OVO: message groups, monitor policies, logfile policies, applications and policy groups. |
| TEMPLATES/LOGFILE /logfile.dat | Definition file for logfile encapsulation. |
| TEMPLATES/MONITOR /monitor.dat | Definition file for OVO policies: collector/analyzer program, external monitor for each metric and file system monitor. Contains all details for monitoring all metrics. |
| TEMPLATES/SCHEDULE /schedule.dat | Definition file for Exchange SPI schedule policies. |
| TEMPLATES/TEMPLGROUP /templgrp.dat | Definition file for OVO policy group structure. |
| TEMPLATES/MSGGROUPS /msggrps.dat | Definition file for OVO message group structure. |
| TEMPLATES/INTERFACE /msgi.dat | Definition file for Exchange SPI specific error message. |

Miscellaneous Management Server Files

Table 6 Miscellaneous Other Management Server Files

| File | Description |
|---|---|
| /etc/opt/OV/share/conf /OpC/mgmt_sv/ reports/exspi_lc.sql | Report that lists all nodes that have Exchange SPI policies assigned (for license check). |
| /opt/OV/EXSPI/bin/exspipv | Script to run PerfView as metric operator actions and bring up graphs. |
| /opt/OV/EXSPI/bin/exspircfg | Script for EXSPI Node Config. |
| /opt/OV/EXSPI/bin/EXSPI_DiscConfig.sh | Script for setting Exchange SPI related variables. |
| /opt/OV/EXSPI/bin/exspipngcfg_e55.sh | Script for End-to-End Ping config for Exchange 5.5 |
| /opt/OV/EXSPI/bin/exspipngcfg_e2k.sh | Script for End-to-End Ping config for Exchange 2000 and 2003 |

Management Server/Managed Node Files

When you run **swinstall**, the following monitor and command files are installed on the Management Server. They are also installed on managed nodes when you distribute monitors, commands and actions from the Management Server to the managed nodes.

Monitor Files

On Management Server:

```
/var/opt/OV/share/databases/OpC/mgd_node/customer/ms/  
intel/nt/monitor/ (for DCE)
```

and

```
/var/opt/OV/share/databases/OpC/mgd_node/customer/ms/x86/ winnt/monitor/  
(for HTTPS)
```

On Managed Node:

```
\usr\OV\bin\OpC\monitor (for DCE)
```

and

```
<OVO-DATADIR>\bin\instrumentation (for HTTPS)
```

Table 7 Monitor Files

| File | Description |
|--------------------|--|
| exspi_e2k.exe | Exchange 2000/2003 SPI Collector/Analyzer program. |
| exspi_e55.exe | Exchange 5.5 SPI Collector/Analyzer program. |
| msexchange.apm.xml | Policy list for cluster fail-over |
| OVAMTLog2k.dll | Tracking.Log access library for Exchange 2000/2003 |
| OVAMTLog55.dll | Tracking.Log access library for Exchange 5.5 |
| OVAMDa.dll | LDAP access library |
| hpudm.txt | Internal data file |
| end-to-end.xml | End-to-End configuration file |



All files in Table 3: Monitor Files, are in compressed ".Z" format to improve distribution performance.

Command Files

Command files are located in the following directories:

Management Server:

/var/opt/OV/share/databases/OpC/mgd_node/customer/ms/
intel/nt/cmds (for DCE)

and

/var/opt/OV/share/databases/OpC/mgd_node/customer/ms/
x86/winnt/cmds (for HTTPS)

Managed Node:

\usr\OV\bin\OpC\intel\cmds (for DCE)

and

<OVO-DATADIR>\bin\instrumentation (for HTTPS)

All files in this table are in compressed ".Z" format to improve distribution performance.

Table 8 Command Files

| File | Description |
|---|---|
| exspitra.vbs | Turns EXSPI Tracing on/off -v ON -v OFF |
| exspimwd.vbs | Turns data forwarding to MeasureWare on/off (collector/ analyzer will only forward data to MeasureWare if set to on: -v ON -v OFF |
| exspienc.exe | For configuring managed node; part of the advanced configuration. |
| exspi_e2k_cfg.vbs | For configuring an Exchange 2000 or 2003 server mailbox. |
| exspi_e55_cfg.exe | For configuring an Exchange 5.5 server mailbox. |
| exspi_perfmon.exe | For perfmon counter data logging and threshold alarming. |
| EXSPI_DataObjects.xml | |
| EXSPI Coda data source and objects.doc | |

| File | Description |
|--|--|
| EXSPI_asnotify.spec/ EXSPI_async.spec EXSPI_deliv.spec/ EXSPI_dsaccess.spec EXSPI_ftdata.spec/ EXSPI_imap4perf.spec EXSPI_isclient.spec/ EXSPI_isperf.spec EXSPI_m0660.spec/ EXSPI_m0661.spec EXSPI_m0662.spec/ EXSPI_m0663.spec EXSPI_m1002.spec/ EXSPI_mbdetail.spec EXSPI_mbperf.spec/ EXSPI_mbsummary.spec EXSPI_mtadata.spec/ EXSPI_multi.spec EXSPI_oma.spec EXSPI_owabe.spec EXSPI_owafe.spec EXSPI_pfdetail.spec EXSPI_pfperf.spec EXSPI_pfsummary.spec EXSPI_pop3perf.spec EXSPI_ports.spec EXSPI_single.spec EXSPI_smtpdata.spec EXSPI_smtpq.spec EXSPI_srs.spec EXSPI_translog.spec | Data log specification |
| exspi_e2k_clust_config.js | Generates xml output, which can be used for editing the apminfo.xml file |
| exspi_dbmount.vbs (NOTE: This file is also present under monitor and actions directories) - | Checks and mounts dismounted information store(s) |

Windows Managed Node Files

Monitor policies

When policies are distributed from the management server to the Windows managed nodes, the monitor policies are encrypted and stored in the following directory:

```
%OAgentDir%\conf\OpC\\
```

Logging and Trace Files

Logging and trace files are located in the following directory on the managed node:

`%OAgentDir%\exspi\log`

Table 9 Logging and Trace Files

| File | Description |
|------------|---|
| trace | When TRACE ON is set in %OAgentDir%\exspi\defaults, tracing and debug information is written to %OAgentDir%\exspi\log. This file can get very large. |
| exspierror | Error information when the Exchange SPI collector/analyzer encounters an error condition. Messages written to this file are also sent to the OVO message browser. |

B spimetadata.xml File

The `spimetadata.xml` file contains the information related to the collection mechanism of the Exchange SPI for Microsoft Exchange Server 2007 nodes. The example below shows a sample `spimetadata.xml` file with all basic elements. It is not recommended to modify the `spimetadata.xml` file manually as incorrect modification can lead to incorrect operation of the Exchange SPI.

Sample spimetadata.xml File

```
<?xml version="1.0" encoding="utf-8"?>
<CollectionDefinitions>
  <MetricSets>
    <MetricSet>
      <Name>MetrciSet1</Name>
      <Parameters>
      </Parameters>
      <SourceDefinition>
        <Type>
        </Type>
        <Command>Get-ReplicationAge</Command>
        <DataSource>
        </DataSource>
        <DataObject>
        </DataObject>
      </SourceDefinition>
      <Metric>
        <Name>CopyQueueLength</Name>
        <Datatype>System.Int64</Datatype>
        <Description>
        </Description>
        <Type>
        </Type>
      </Metric>
    </MetricSet>
  </MetricSets>
</CollectionDefinitions>
```

```

    <Metric>
      <Name>StorageGroupName</Name>
      <Datatype>System.String</Datatype>
      <Description>
      </Description>
      <Type>
      </Type>
    </Metric>
  </MetricSet>
</MetricSets>
<Collections>
  <Collection>
    <Name>1</Name>
    <DisplayName>New Collection</DisplayName>
    <Description>New Collection</Description>
    <Interval>00:05:00</Interval>
    <CollectionSet>
      <MetricSetNameRef>MetrciSet1</MetricSetNameRef>
    </CollectionSet>
    <Calculations />
    <Filters />
    <PublishMetrics>
      <PublishSetNameRef>Replication_Publish</PublishSetNameRef>
    </PublishMetrics>
    <AlertSets>
      <ThresholdSetNameRef>OpcMonCallForReplication</ThresholdSetNameRef>
      <AlarmSetNameRef>OpcMsgForReplicationAge</AlarmSetNameRef>
    </AlertSets>
  </Collection>
</Collections>
<PublishedSets>
  <PublishedSet>
    <Name>Replication_Publish</Name>
    <Database>DATASOURCENAME</Database>
    <ClassName>TABLENAME</ClassName>
    <IndexBy>DAY</IndexBy>
    <RollBy>MONTH</RollBy>

```



```

<Capacity>720</Capacity>
<Metrics>
  <Metric>
    <MetricRef>
      <SetNameRef>SGNAME</SetNameRef>
      <MetricNameRef>StorageGroupName</MetricNameRef>
    </MetricRef>
  </Metric>
  <Metric>
    <MetricRef>
      <SetNameRef>CPQLEN</SetNameRef>
      <MetricNameRef>CopyQueueLength</MetricNameRef>
    </MetricRef>
  </Metric>
</Metrics>
</PublishedSet>
</PublishedSets>
<AlertSets>
  <AlarmSets>
    <AlarmSet>
      <Name>OpcMsgForReplicationAge</Name>
      <Rules>
        <Rule>
          <MetricSetName>MetrciSet1</MetricSetName>
          <MetricName>CopyQueueLength</MetricName>
          <ArithmeticOperator>GreaterThan</ArithmeticOperator>
          <ValueToCompare>0</ValueToCompare>
          <LogicalOperator>LastRule</LogicalOperator>
        </Rule>
      </Rules>
      <MessageDetails>
        <Application>MyApp</Application>
        <Object>MyObj</Object>
        <Text>Sending Messge with warning as severity and value of
%CopyQueueLength%</Text>
        <Severity>Warning</Severity>
        <ServiceID>

```

```

        </ServiceID>
        <MessageKey>
        </MessageKey>
    </MessageDetails>
</AlarmSet>
</AlarmSets>
<ThresholdSets>
    <ThresholdSet>
        <Name>OpcMonCallForReplication</Name>
        <MetricSetName>MetrciSet1</MetricSetName>
        <MetricName>CopyQueueLength</MetricName>
        <ThresholdPolicy>Any Threshold Policy Name</ThresholdPolicy>
        <AutoBaseline IsEnable="False" />
    </ThresholdSet>
</ThresholdSets>
</AlertSets>
</CollectionDefinitions>

```

Elements of the spimetadata.xml File

The `spimetadata.xml` file consists of the following major elements:

MetricSets — The `MetricSets` element contains the following information:

- Metrics to be collected from the nodes
- Cmdlet to be used to collect the metrics
- Type of the metric data

PublishedSet — The `PublishedSet` element describes the mechanism to store the metric data to a data store.

AlertSets — The `AlertSets` element contains the information on calculating the metric data with a threshold value and the mechanism to generate an alarm in the event of threshold violation.

Collections — The `Collections` element contains the `Collection` sub-element. The `Collection` sub-element holds all information on individual collection configurations. Each `Collection` element contains the following information:

- Name of the collection
- `MetricSets` to be used
- Mechanism to store metric data on a data store
- Mechanism to generate alarm in the event of threshold violation

Index

Symbols

\$Agent User, 24

A

actions

- automatic in policies, 100
- operator initiated, 100

alarms, changing the threshold type for, 97

applications

- Disable Data Logging, 19, 21
- Disable EXSPI Tracing, 19, 21
- Enable Data Logging, 19, 21
- Enable EXSPI Tracing, 19, 21
- Enable Message Tracking, 19
- EXSPI Add DataSource, 18, 20
- EXSPI Admin, 18, 20
- EXSPI MBOX Config, 18, 20
- EXSPI Node Config, 19, 20
- EXSPI Ping Config, 19, 20
- Mount Exchange DB, 19
- Self-Healing Info, 19, 20

C

clustered application configuration file, 90

cluster environments, configuring Exchange SPI for, 89

command files, 146
UNIX, 147

command line parameters, 87
changing calculations for metrics, 87
metric range, 87
print, 87
tag feature, 87, 103

components

- Message Group Bank
 - EX_Fault, 70
 - EX_Perf, 70
 - EXSPI, 70

configuration

- advanced, 46
- basic, 46
- mailboxes, 58
- Message Browser, 55

Create User Account

- (Ex2000&2003)/Windows 2000&2003), 39
- (Ex5.5/NT4), 26
- (Ex5.5/W2k), 32, 39

Crystal, report writer used with Service Reporter, 108

customization

- changing the Mailbox Name, 104
- changing the Windows User Account Name, 104
- choosing metrics to monitor, 105
- creating custom groupings, 97
- modifying metric conditions, 97
- modifying metric policies for all databases, 97
- of thresholds, 100
- schedules, 101
- using the tag feature, 103

D

daily tasks, 70

data collection

- for graphing and reporting, 110

de-assigning Exchange SPI templates from managed nodes, 65

deinstalling Exchange SPI, 65

deleting Exchange SPI policies, 66

disabling tracing, 136

Discovery Process, calculation and propagation rules, 82

E

Enabling Message Tracking

- Exchange 2000/2003, 57
- Exchange 5.5, 56

enabling tracing, 135

End-To-End Message Ping, 59

error log, 134

errors

common, 137

Exchange Cluster Config, 19

Exchange organization, 12

EXSPI_Discover, 16

exspi_e2k.exe/exspi_e55.exe, 146

exspi_lc.sql, 145

exspi_ports.exe, 83

EXSPI Admin, 18, 20

exspierror, 150

exspimwd.bat, 147

EXSPI Node Config, 49

exspipv, 145

exspiset.idx, 144

exspitra.vbs, 147

F

files

command files, 146

on the management server, 144

G

Grant Exchange access permissions to User Account

for (Ex5.5/NT4), 30

for (Ex5.5/W2k), 37

graphs, 22, 121

Exchange 2000 graphs, 125

Exchange 2003 graphs, 125

Exchange 5.5, 127

Information Store, 128

Messaging, 129

System Information, 129

H

high availability environments, 89

I

installation, 46

installing Exchange SPI report policies, 110

prior to, 45

verifying on management server, 132

instruction text, 11

L

logfile.dat, 144

M

managed node files, 146

exspierror, 150

logging and trace files, 150

monitor policies, 149

trace, 150

Windows, 149

management server/managed node files

monitor files, 146

management server/managed node monitor files

UNIX, 146

management server files, 144, 145

logfile.dat, 144

monitor.dat, 144

msggrps.dat, 144

msgi.dat, 144

schedule.dat, 144

set0.idx, 144

tplgrp.dat, 144

message text, modifying, 100

message tracking

enable, 56

enabling on Exchange 2000 and 2003 servers, 57

metric conditions, as contained in monitor policies,
16

metrics

changing calculations for using command line
parameter, 87

showing values for, using -p parameter, 87

monitor policies, 149

msexchange.apm.xml, 89

msexchange.apm.xml, modifying, 89

msgi.dat, 144

O

operator initiated actions, in policies, 100

OVAMTLog.dll, 146

OVO UNIX 8.0 DCE and HTTPS Agent, 10

P

PerfView, using, 130

PerfView graph, 100

- policies
 - actions as defined in, 100
 - advanced configuration policy failures, 140
 - customizing, 75, 97
 - customizing message text, 100
 - customizing thresholds in, 99
 - distributing reporter collection policies, 119
 - distributing data collection policies, 119
 - duration interval, setting/resetting thresholds, 100
 - duration settings, 100
 - Exchange Service Discovery Failures, 141
 - for opccfgupld (OVO upload facility), 144
 - logfile encapsulator policies, 17
 - message policies, 17
 - monitor policies, 16
 - policy group prerequisites for Exchange 2000 and 2003, 74, 75
 - policy group prerequisites for Exchange 5.5, 73
 - policy groups, 15
 - policy groups requirements, 71
 - policy types, 16
 - re-installing, 105
 - Reporter Collection, 119
 - schedule policies, 16
 - severity alert setting, 100
- policy failures
 - advanced configuration, 140
- prerequisites, Service Discovery, 78
- procedures
 - service accounts
 - creating in Windows 2000/2003/Ex2000 or 2003, ?? to 42

R

- reports, 22
 - Exchange 2000/2003 list, 112, 114
 - Exchange 5.5 list, 113, 116, 117
 - requirements, 110

S

- schedule.dat, 144
- Self-Healing Info, 132
- Self-Healing Services, 132
- server connections
 - setting up, 59
- service accounts
 - creating
 - Windows 2000 & 2003/Ex 2000 & 2003, ?? to 42

- Service account user with special Exchange privileges, 24
- Service Discovery, 13, 78
- Service Maps, 13
- Service Views, 81
- severity setting in policies, 100
- swinstall, using to re-install policies, 105

T

- thresholds
 - changing, 100
 - continuously (with no reset), 98
 - without reset, 98
 - with reset, 98
- tmplgrp, 144
- tmplgrp.dat, 144
- trace files, 150
- tracing
 - turning on, 135
- Troubleshooting, 131

U

- user accounts with special Exchange access permissions, how to create, 25
- user privileges, 24

