HP OpenView Smart Plug-in for Microsoft Exchange Server

For the UNIX Operating System

Software Version: A.09.00

Users Guide

December 2005

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Contents

1 Concepts

Introduction

This chapter introduces the basic concepts of the HP OpenView Smart Plug-in for Microsoft® Exchange Server (Exchange SPI), version A.09.00, which works together with HP OpenView Operations for UNIX versions 7.*x* and *8.x*, to monitor Microsoft Exchange 5.5, 2000 and 2003.

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 Template groups and Templates
    - 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 adds Exchange 5.5, 2000 and 2003 server-monitoring capabilities to HP OpenView Operations for UNIX, allowing you to oversee your distributed Exchange environment from a central, easy-to-use console. In so doing, you can:

— Increase Exchange availability and performance

— Lower support costs associated with the Exchange service

— Improve capacity management and planning for Exchange

With the Exchange SPI integrated into the OVO console, you can apply the HP OpenView performance and problem management processes that you use for networks and systems to monitor MS Exchange.

After setup, 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 MS 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.

Information comes to you in the OpenView Operations console through messages, alerts, reports and 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 remanaging 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

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

How 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.

Where data is stored

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

How data is displayed

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 Organization
    Administrative Groups
    Routing Groups          Sites
        Connectors
        Servers
            Server_name
                Services
                    Messaging
                        Queues
                        Links
                    Information Store
                        Mailbox
                        Public Folder
                    *Instant Messaging Server
                    *Conferencing Server
                    *Chat Server
```

Hierarchical View of Exchange Topology

* Exchange 2000 only
■ Exchange 5.5 only
■ Exchange 2000/2003 only
■ Exchange 5.5/2000/2003
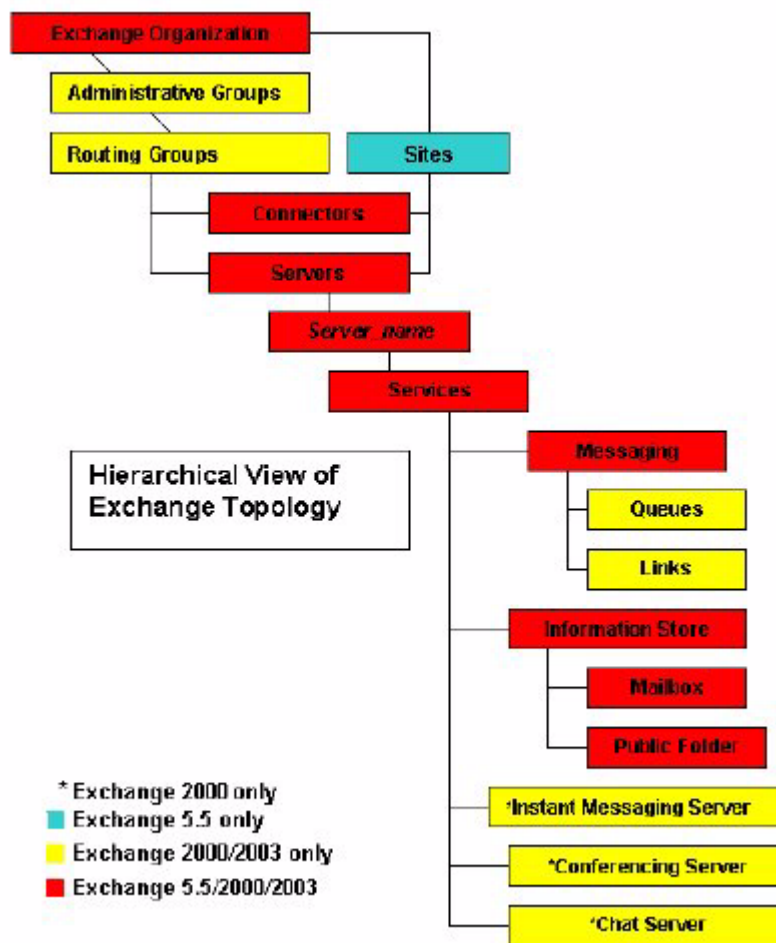
Exchange SPI Components

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

1 Exchange SPI Template groups and Templates

2 Exchange SPI Application groups and Applications

3 Exchange SPI Message groups and Messages

4 Exchange SPI Reports and Graphs

1. Exchange SPI Template Groups and Templates

Figure 1   Exchange SPI template groups
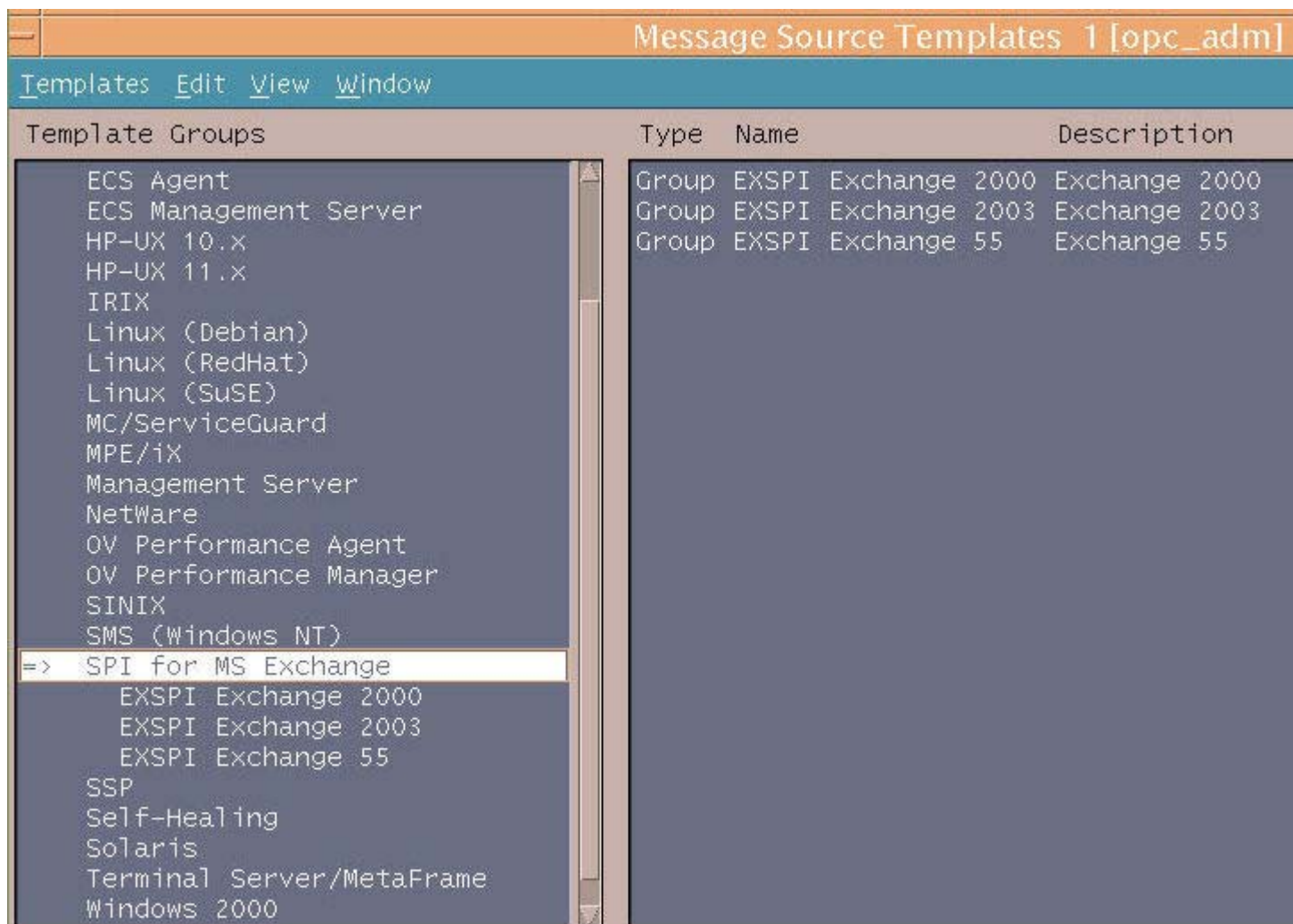
Templates

Installing the Exchange SPI adds the **SPI for Exchange** template folder to the OVO console tree. Double click **SPI for Exchange** to display the **Exchange 2003, Exchange 2000**, and **Exchange 5.5** folders beneath. Double click to open a folder and see the EXSPI template

groups for that version of Exchange. Selecting a template group in the console tree will display the templates, or template sub-groups within that group, in the details pane on the right.

> In OVOU 8 and later, templates are also referred to as policies.

Templates 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.

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

MS Exchange Version and EXSPI Prefix

This version of the Exchange SPI monitors MS Exchange 2003, 2000 and 5.5. Template and Template group names contain the version number in the prefix, where **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 template has the name **EXSPI-55 Event Log Errors**, the equivalent Exchange 2000 and 2003 template is **EXSPI-6X Event Log Errors**.

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

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

Template Groups

Exchange 2000 and Exchange 2003:

The templates for Exchange 2000 and 2003 are organized into Specialized Groups and Standard Groups. In those folders the templates 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 templates, see the *HP OpenView Smart Plug-in for Microsoft Exchange Server Reference Guide*.

Exchange 5.5:
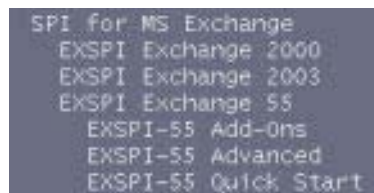
The **EXSPI-55 Quick Start** template group contains templates that are easy to install and distribute and require no special customization. Many templates in the **EXSPI-55 Add-Ons** and **EXSPI-55 Advanced** template groups require a more advanced configuration procedure. Before getting started, review template requirements in Exspi Template Group Requirements on page 73.

Template Types

Within the Exchange group are:

- **Schedule** templates that determine when and what metrics are collected

- **Monitor** templates that implement the actual metric condition (threshold, object, message text, instructions, etc.)

- **Message** templates that intercept the Exchange SPI messages

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

For information on customizing template settings, see Basic Customization on page 89.

> ▶ This version of the Exchange SPI monitors MS Exchange 2003, 2000 and 5.5. Template names contain the version number in the prefix: **65** is for Exchange 2003, **60** for Exchange 2000, **6X** for Exchange 2000 and 2003, and **55** for Exchange 5.5 only.

2. Exchange SPI Application groups and Applications

The Exchange SPI applications display in the VPO Application Bank under **EXSPI Admin**, in the **Exchange 2000 and 2003**, and **Exchange 5.5** application groups. To open the VPO Application Bank select **Window > Application Bank**.

Figure 2   EXSPI Admin application group in the VPO Application Bank window.
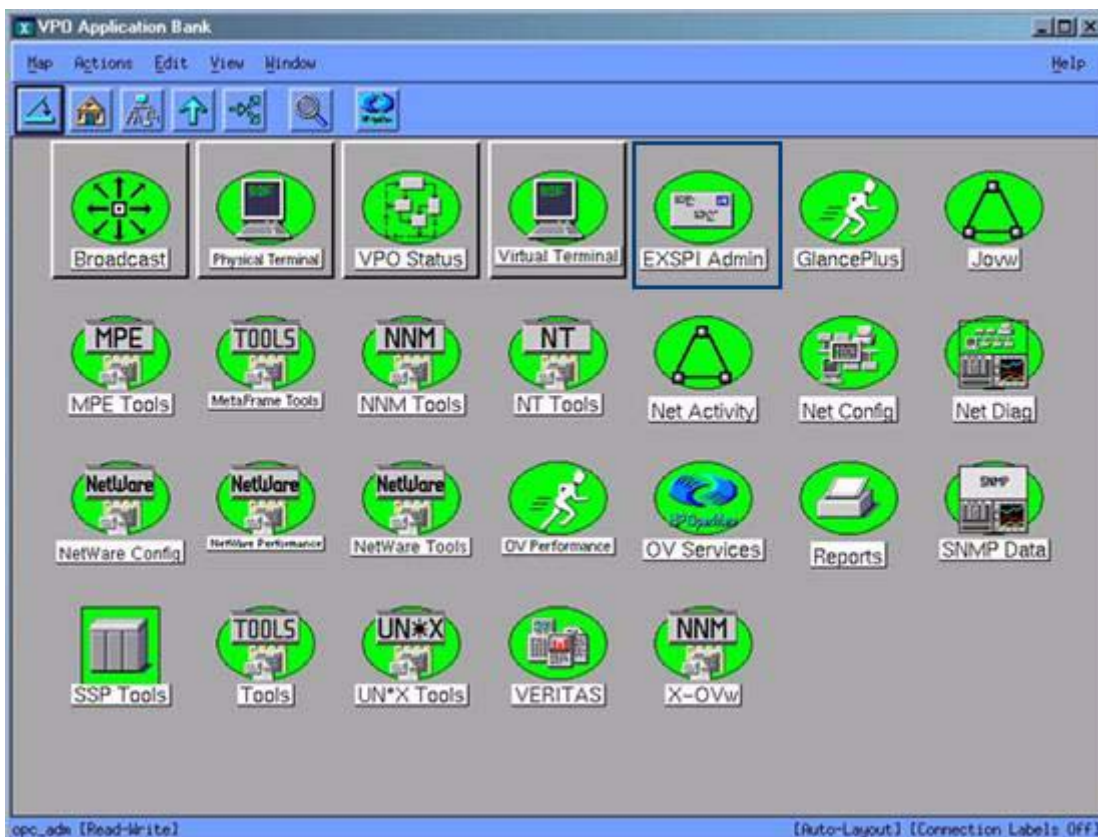
Figure 3   Exchange 2000 and 2003 Exchange SPI Applications
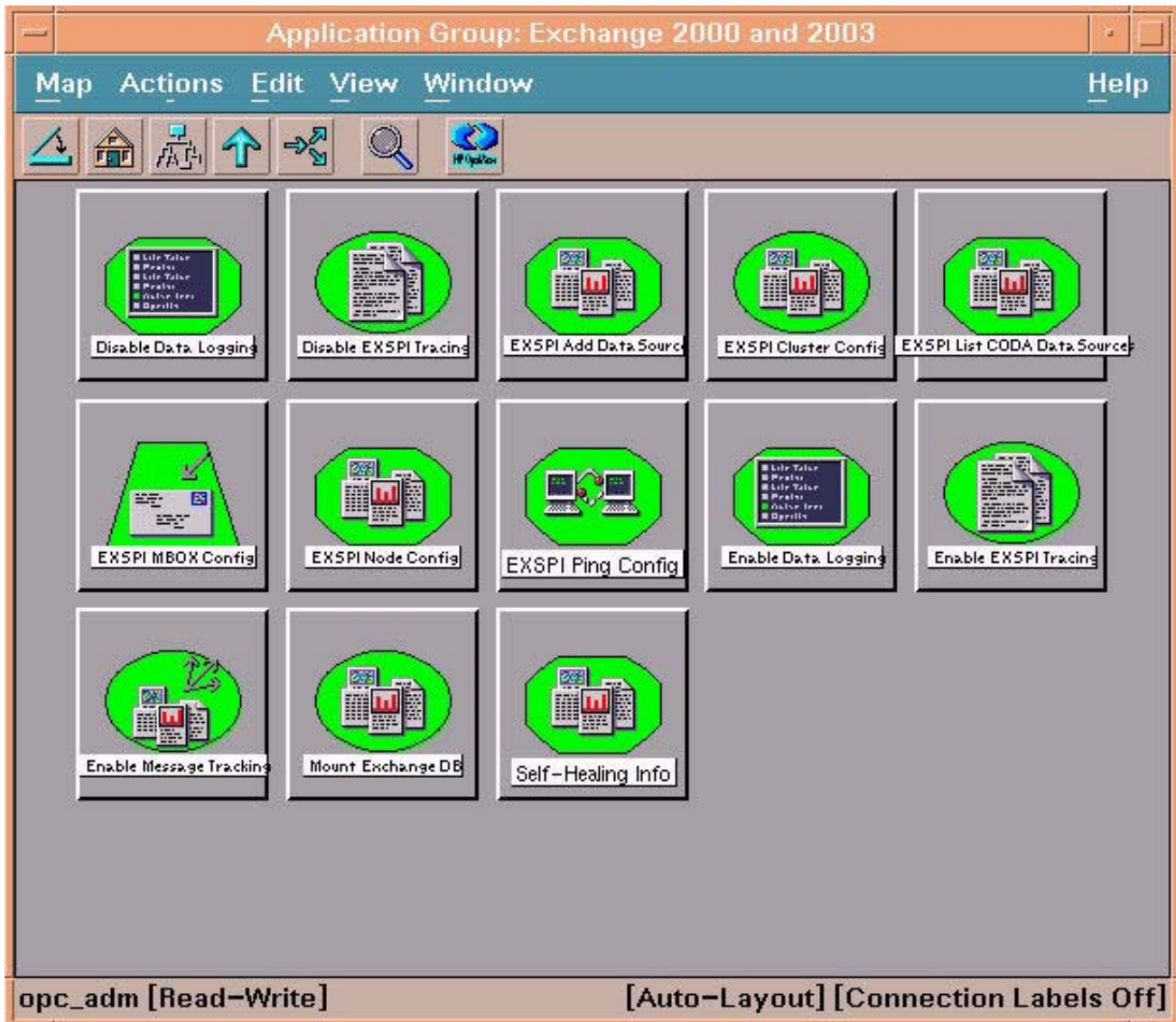
In the **Exchange 2000 and 2003** group are the following applications:

- *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 templates distributed in the Advanced Configuration section.

- ***EXSPI Ping Config***: Configures the Advanced Configuration Template: 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 124.

- ***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 template 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 81. **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.
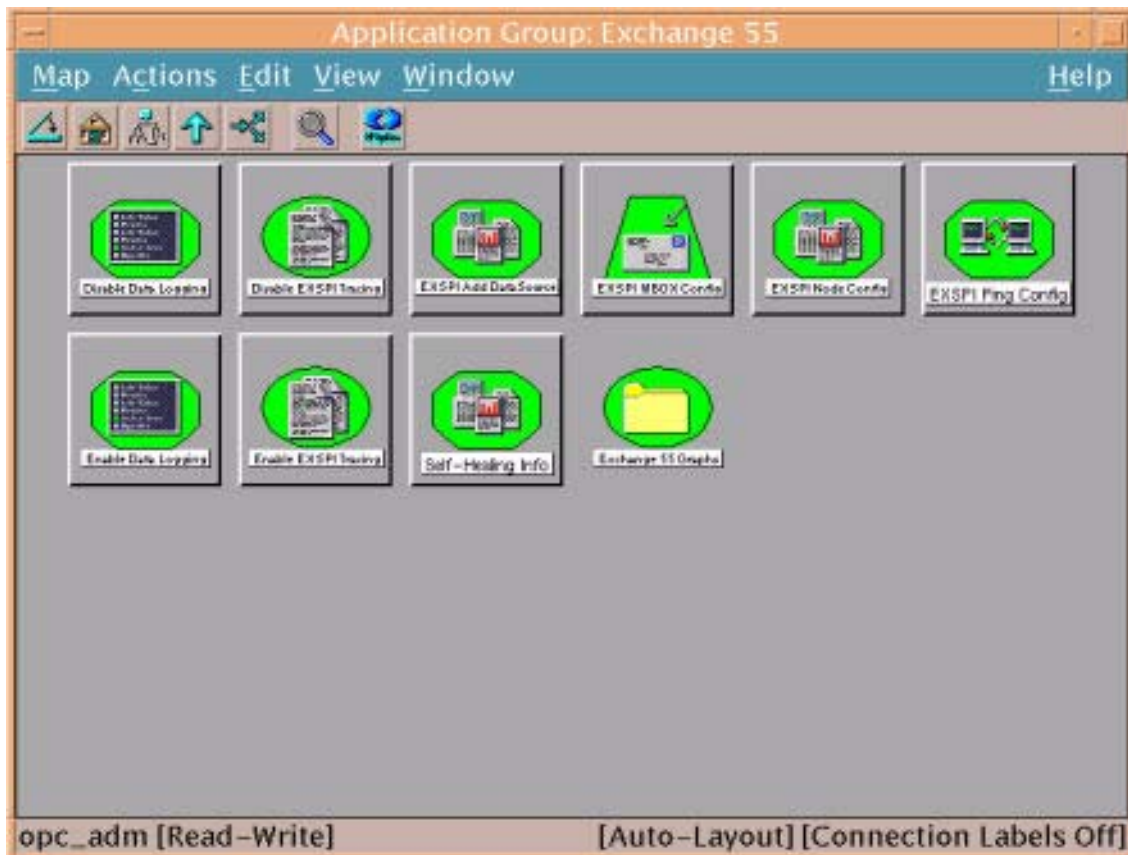
In the **Exchange 5.5** group are the following applications:

- **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 templates distributed in the Advanced Configuration section.

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- *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.

3. 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.

4. 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 102, and Reports for Exchange 5.5 Servers on page 108, for complete lists of out-of-the-box Exchange SPI reports.

Exchange SPI Graphs

Exchange SPI graphs include OVPM graphs for Exchange 5.5, 2000, 2003 and PerfView graphs for Exchange 5.5. OVPM graphs require an installation procedure. See Installing Exchange SPI Graph Templates on page 112 for details.

For a list of available graphs, see Exchange 2003 OVPM Graphs on page 113, Exchange 2000 OVPM Graphs on page 116, and Exchange 5.5 OVPM Graphs on page 118.

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 templates/applications have user account requirements

- For templates 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 2 levels of user privilege needed by the Exchange SPI:

1. **$AGENT_USER**

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

-- All templates in Exchange 5.5 Quick Start group, and some templates in the Exchange 5.5 Add-Ons and Advanced groups.

-- Some Exchange 2000 and 2003 templates in both the Standard and Specialized groups.

See Exspi Template Group Requirements on page 73 for more information about which templates 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.

TEMPLATES

For Exchange 5.5:

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

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

— EXSPI Advanced > EXSPI Reporter Collection > all templates.

For Exchange 2000 and 2003:

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

See Exspi Template Group Requirements on page 73 for more information about which templates require the service account with special Exchange privileges.

Creating a Service Account with Proper Access Permissions

Some templates and applications require a service account for each logon domain where Exchange servers reside (see *Exspi Template Group Requirements* chapter 4 page 73). This service account enables the Exchange SPI to access information from the Exchange database.

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 1   User Manager dialog
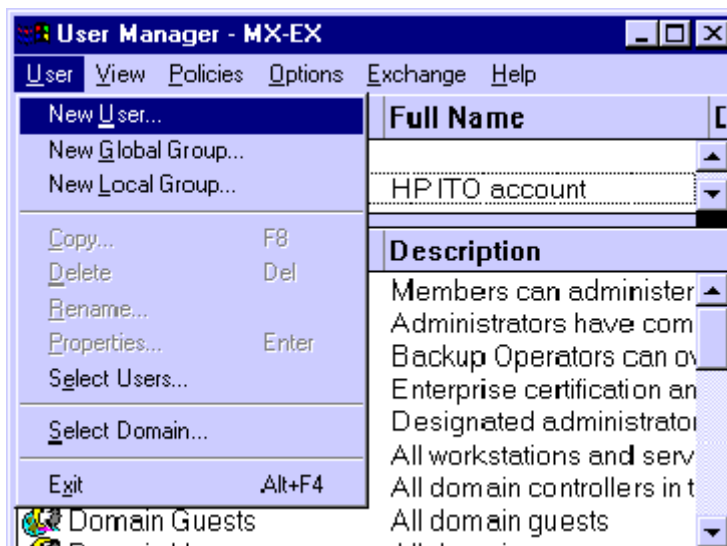
Username:	MSXSPI
Full Name:	OVO Exchange SPI
Description:	Exchange SPI for OVO
Password/Confirm Password:	*********

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

Figure 2   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 3   Group Memberships dialog
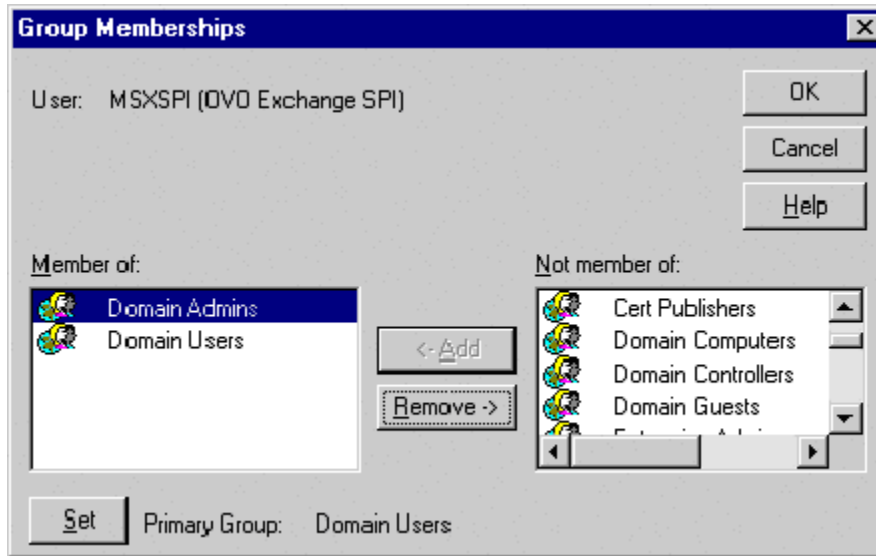
6   At the right, from the **Not a member of**: box select the **Domain Admins** user, click **Add**, and **OK** to close the **Group Memberships** window.

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 4   User Manager dialog
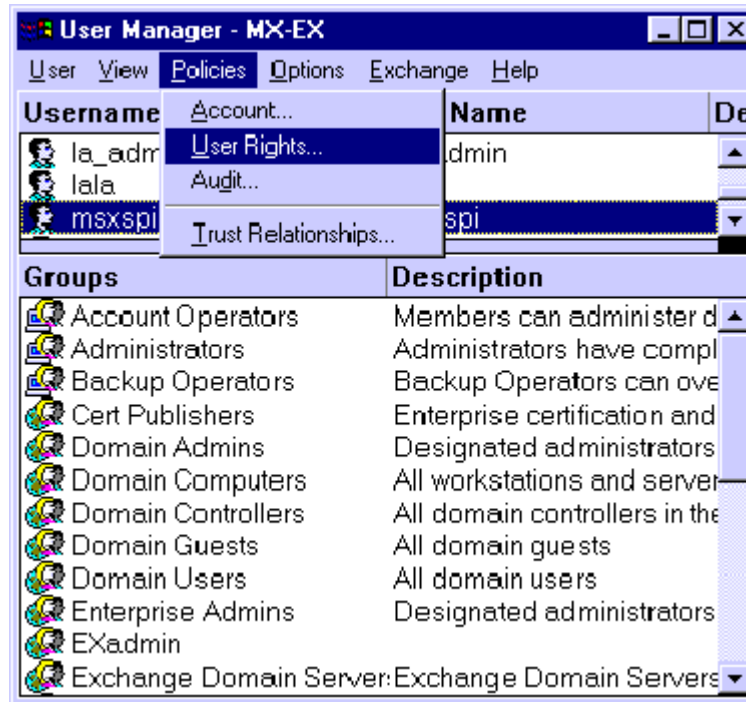
11   Check the **Show Advanced User Rights** checkbox.

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

Figure 5   Selecting Log on as a service for User Rights.
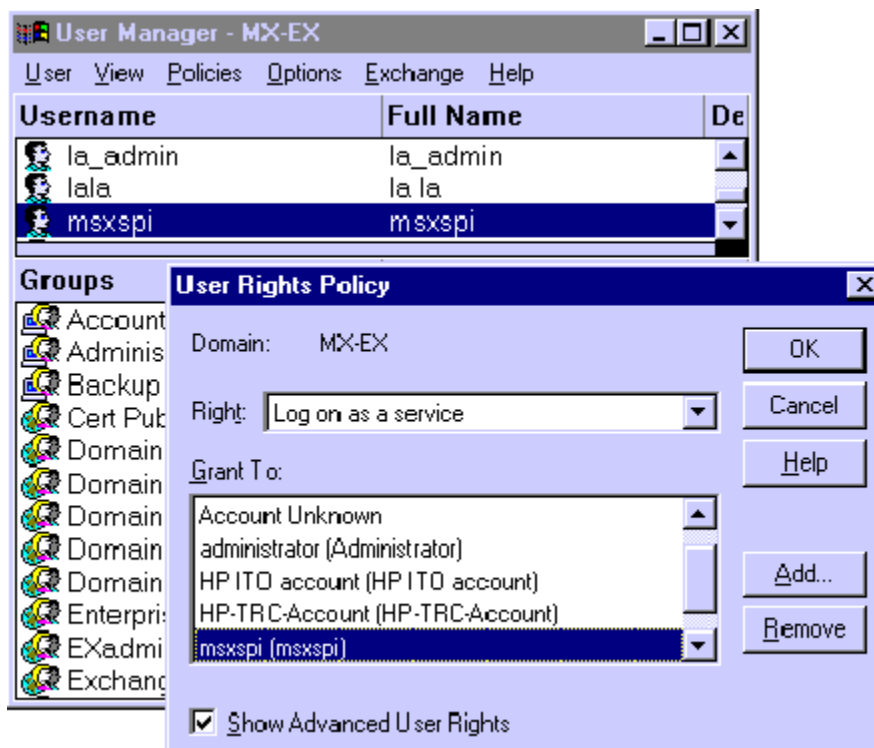
13   Click the **Add** button to open the **Add Users and Groups** window.

14 Click the **Show Users** button.

15 Select the user account just added (*MSXSPI*), click **Add**, then **OK**.

Figure 6   Adding the new User Account
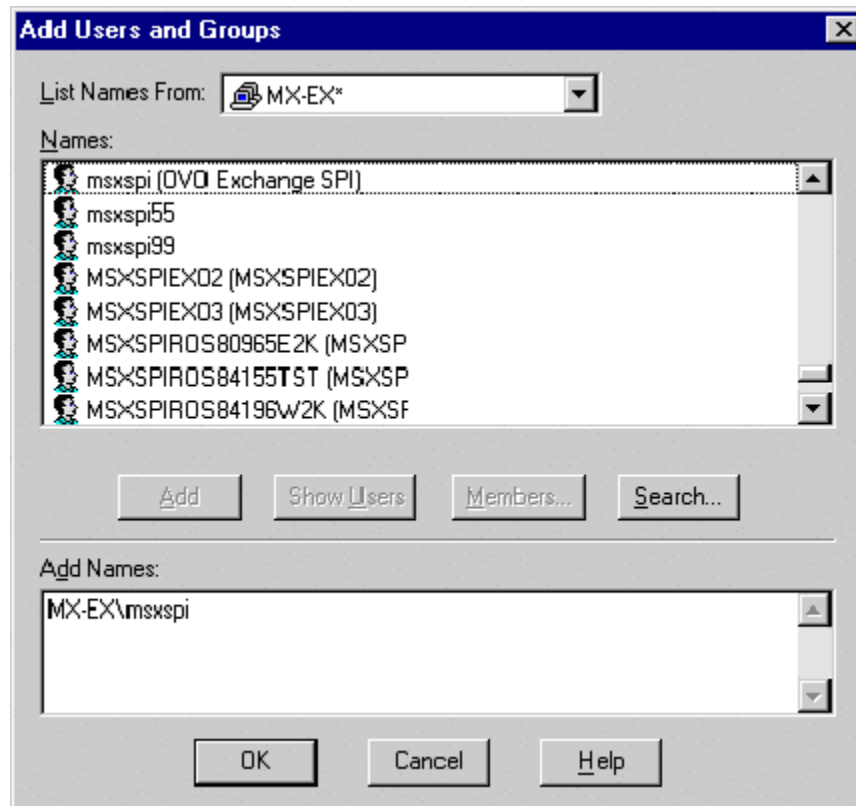
16 Repeat steps 12-15 to add the **Profile system performance** right.

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 templates 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 (*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 7   Verifying the User role
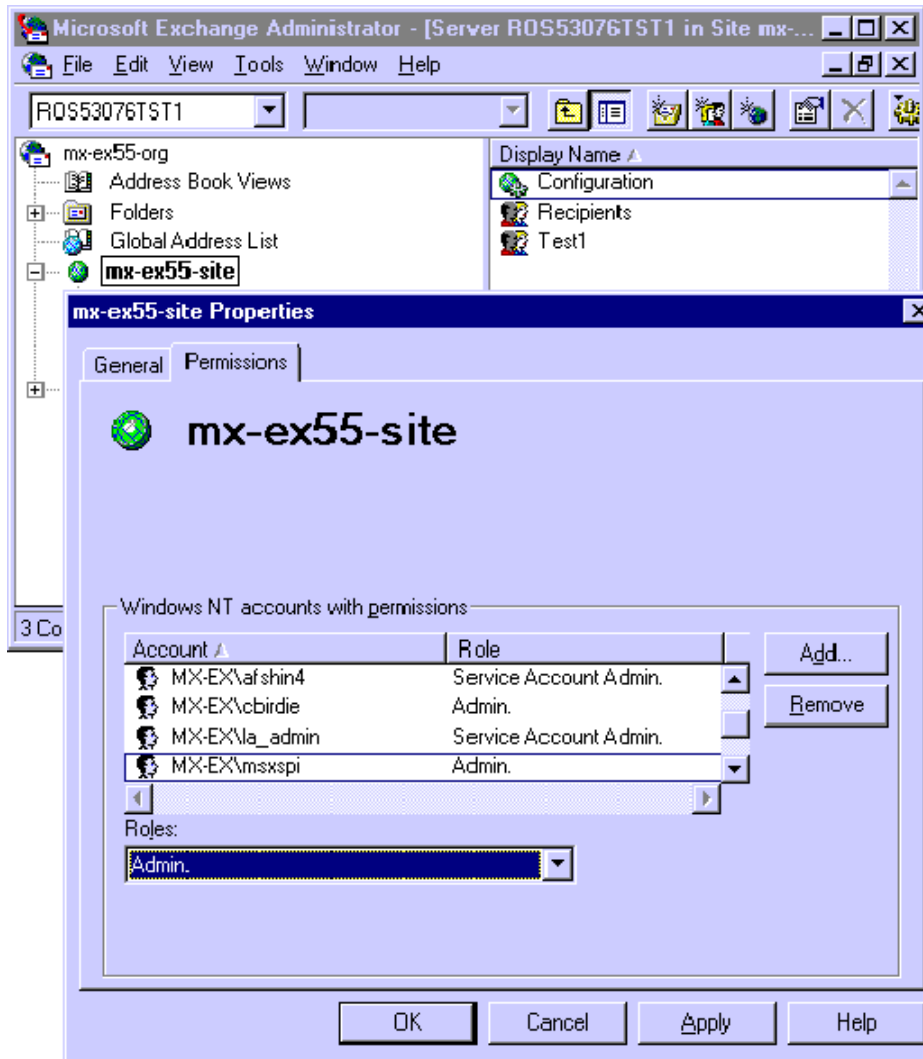
f   Click **OK** to save the changes.

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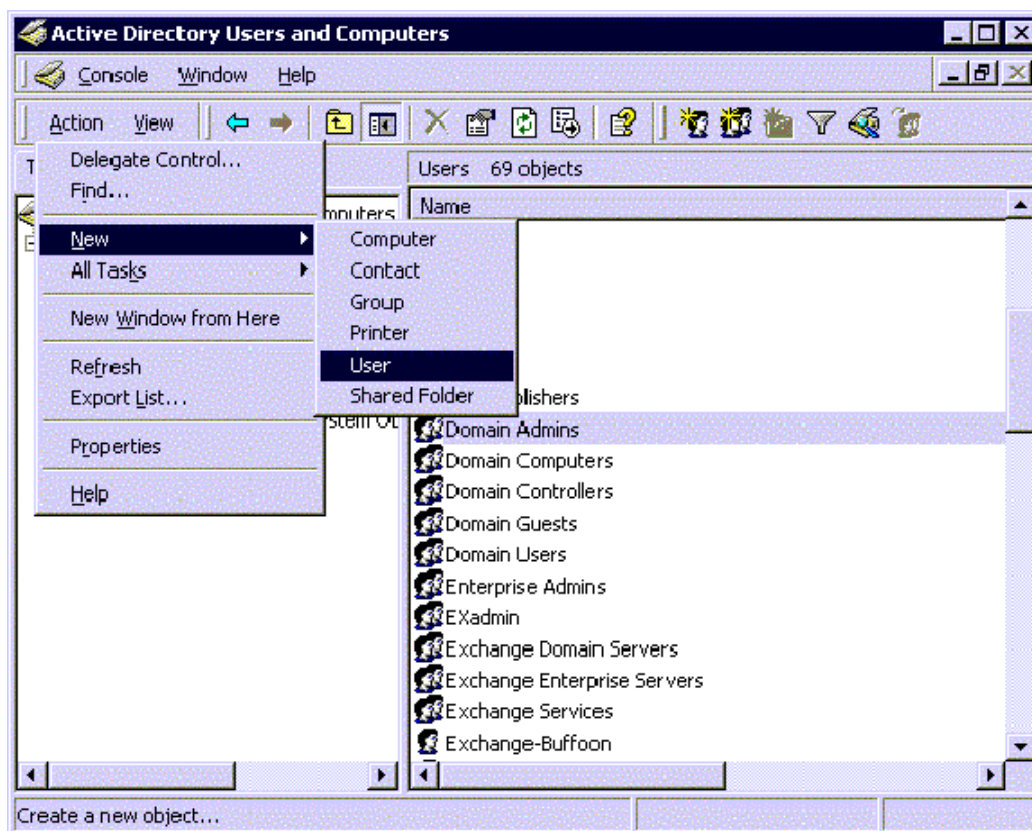
4 In the dialog box that appears, enter the user name just created (in this example *MSXSPI*) as the **First Name** and as the **User logon name**.

Figure 9   New object dialog

5   In the next window, enter **Password/Confirm Password** for the user account (MSXSPI).

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

Figure 10   Setting User Privileges.

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

Figure 11   Deselect Create an Exchange Mailbox
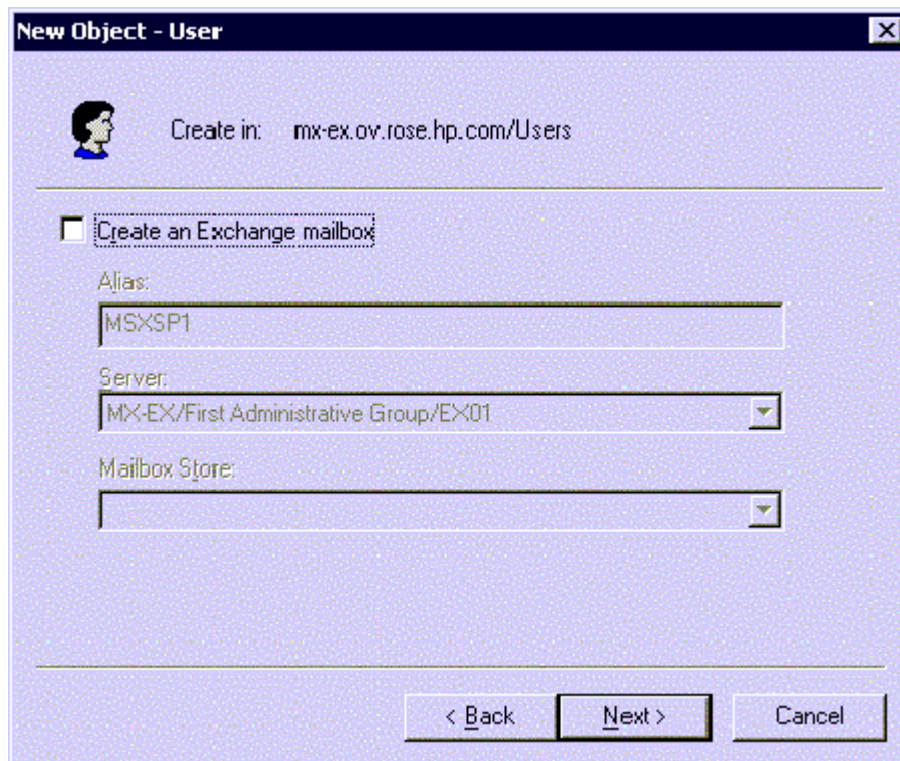
8   In the next dialog, complete creating the user by clicking **Finish**.

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 12   Properties dialog

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

Figure 13 Setting User account privileges
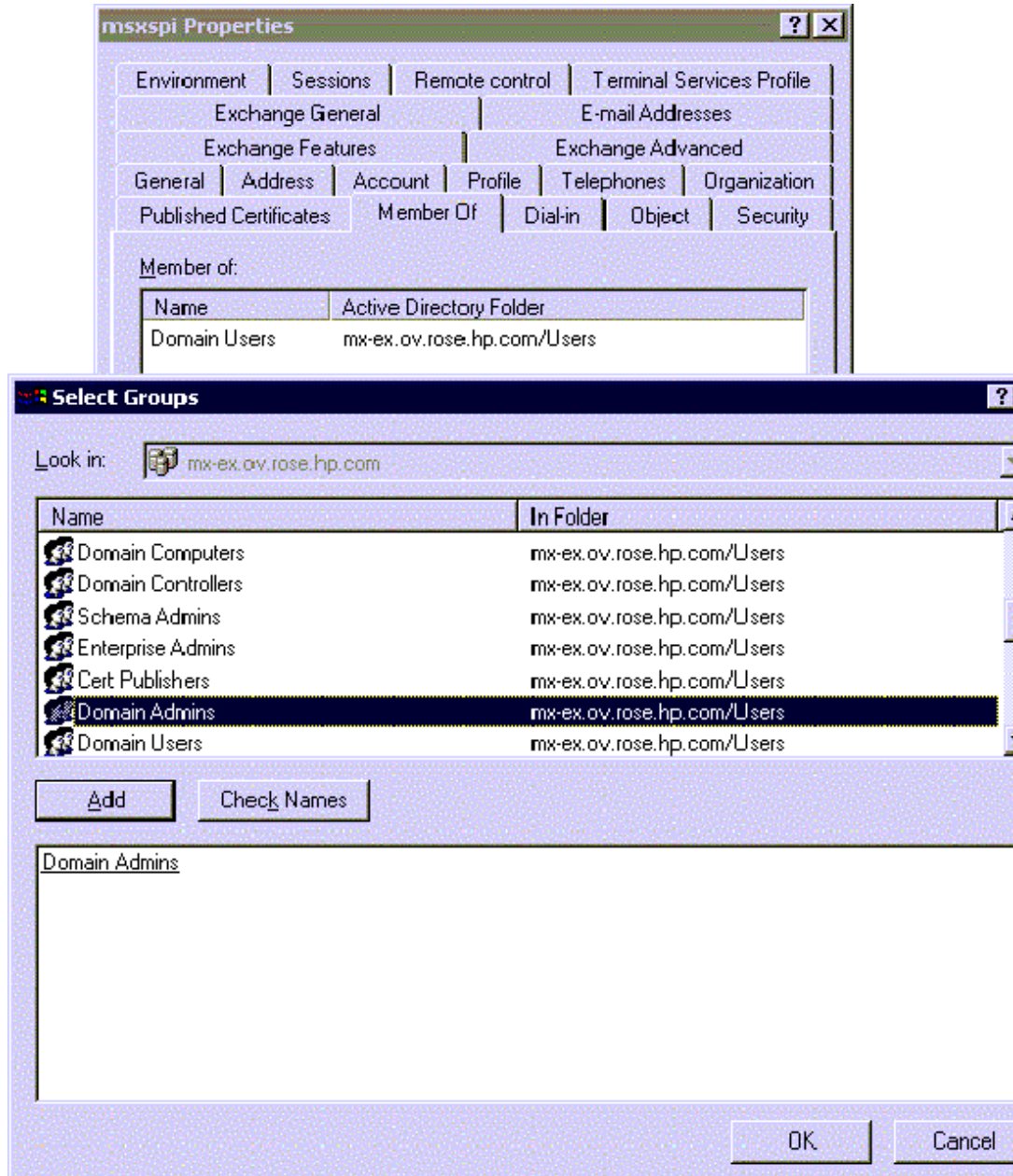
12 In the **Select Group** dialog select **Domain Admins** from the top pane. Click **Add**, then **OK**.

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

Figure 14   New User with new Membership status
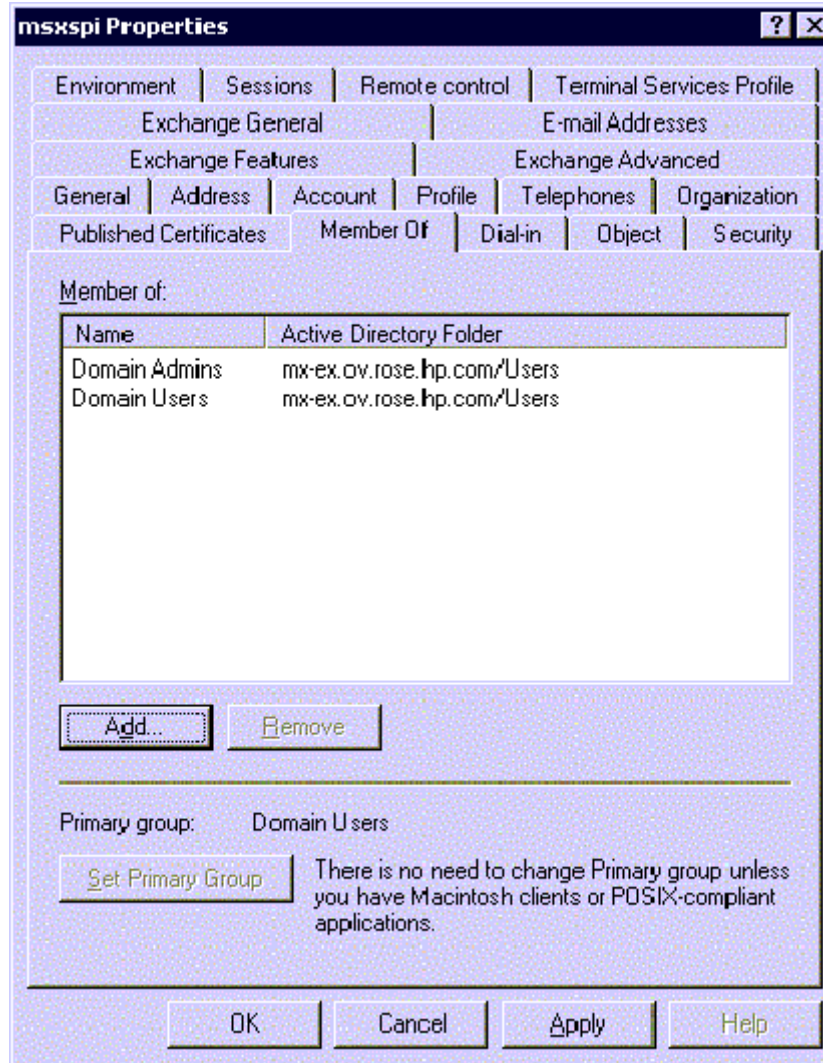
Grant Exchange Access Permissions to User Account

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 templates 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 15   Verifying User roles.
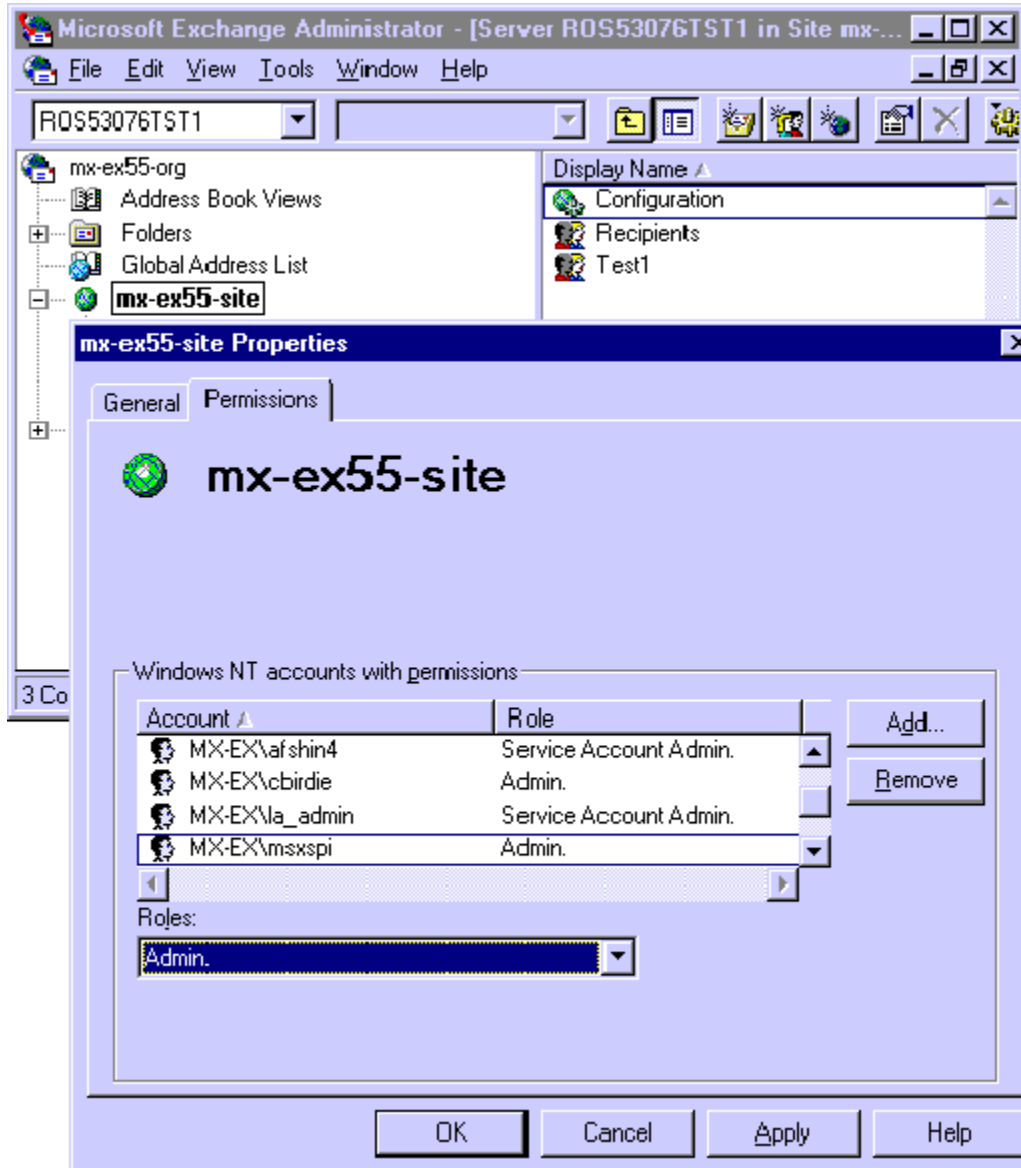
f   Click **OK** to save the changes.

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**.

Figure 16 Exchange Server Properties Dialog
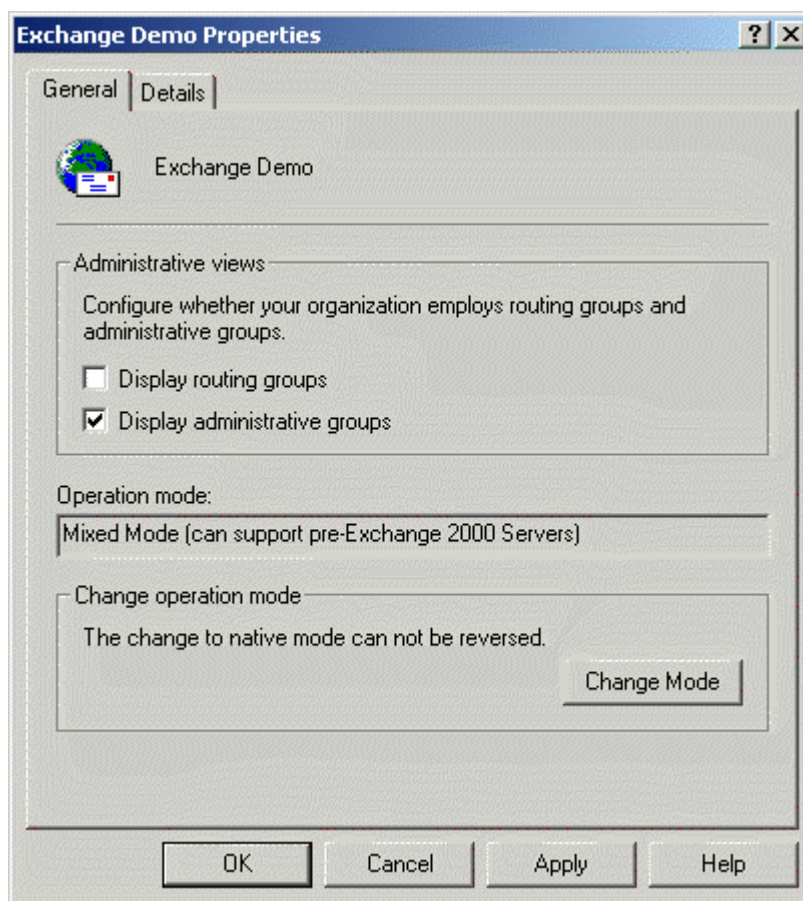
Create User Account

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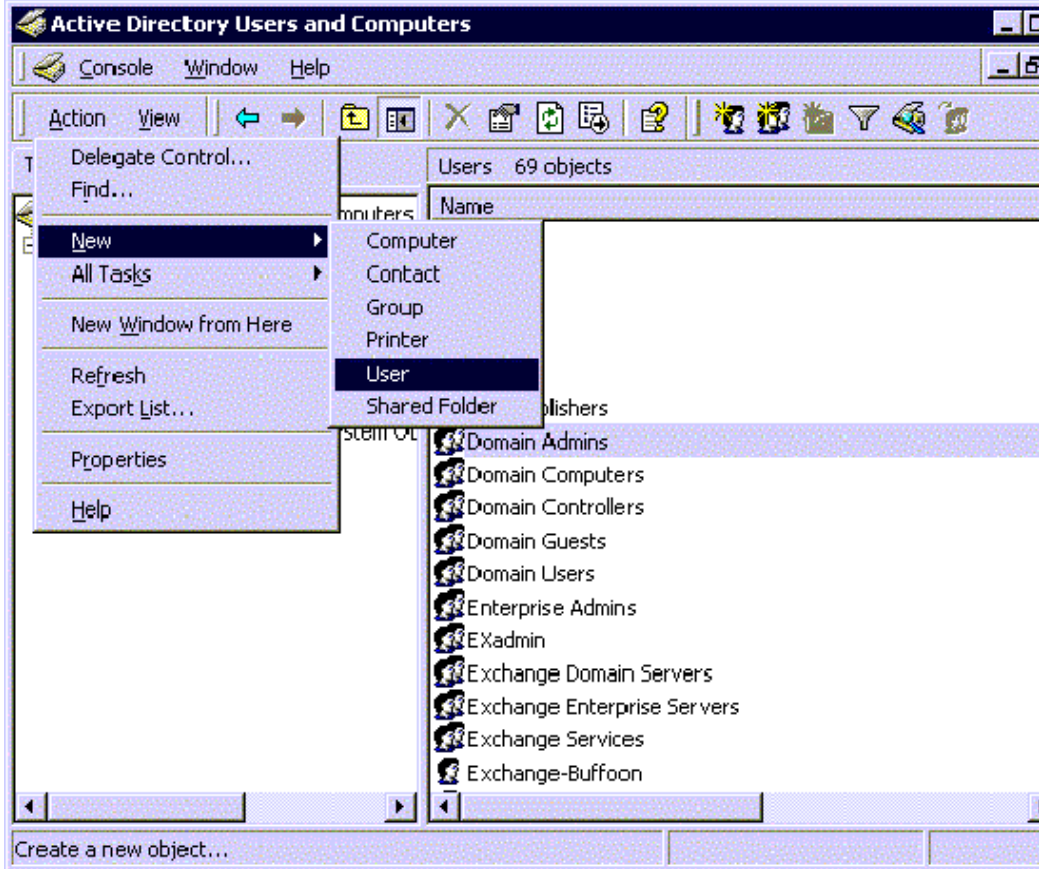
4 In the **New Object - User** dialog, enter a user name for the new service account into the **First Name** and the **User logon name** fields.

▶ You must create a service account with these privileges in each Windows domain.

Figure 18 Entering the new service account name

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

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

Figure 19 Setting password properties

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

Figure 20 Deselecting creating a mailbox
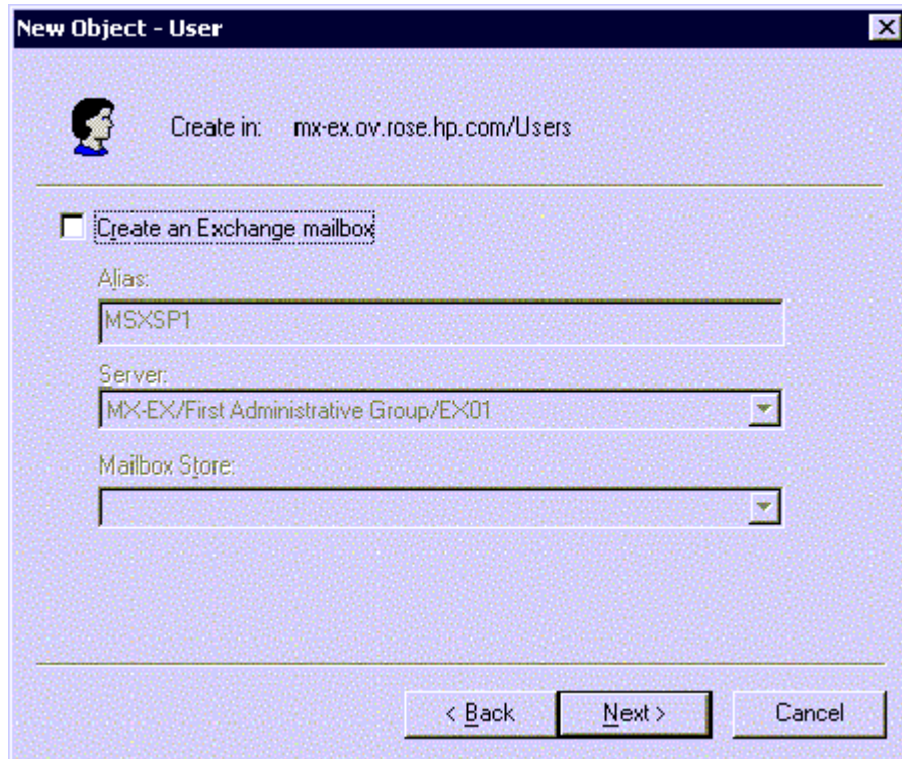
4   In the next dialog, complete creating the user by clicking **Finish**.

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 21 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.

Figure 22 Confirming membership privileges
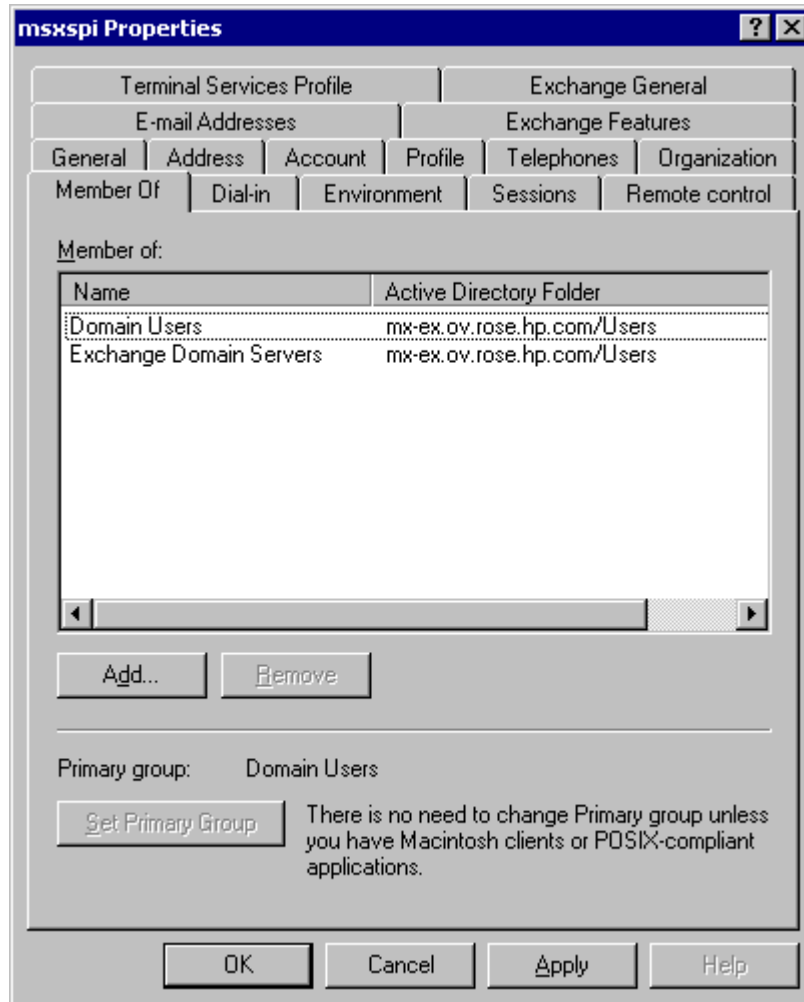
g   Add the service account user to the Local Administrators group on the Exchange server.

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 23 Adding service account user to Local Administrators group
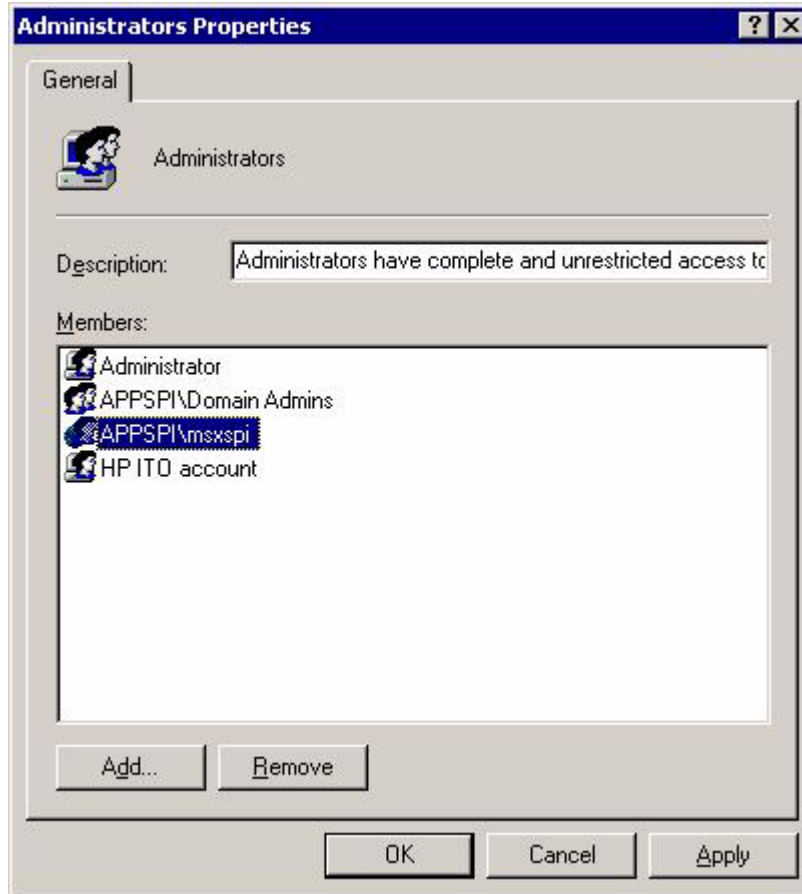
▶ It can sometimes take a few hours for new group membership and rights to be applied to a service account.

3 Installation & Configuration

Introduction

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
- Template Groups: installation considerations
- Installation and Basic Configuration
- Advanced Configuration
- Removing the Exchange SPI
- Deleting Exchange SPI templates, applications and message groups.

Prior to Installation

- This release is targeted at OVO for UNIX 7.*x* or higher. Please verify your current OVO version.

- Before installing this version of the Exchange SPI, any previous version of the Exchange SPI must be removed, see Deinstalling Exchange SPI on page 67.

- 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).

- Every installation of the Exchange SPI requires a basic configuration procedure which is detailed in the section Installation and Basic Configuration on page 50.

- A more advanced configuration procedure is required before distributing some templates, for example those for collecting Exchange folder and mailbox information, and testing connections between servers. See Advanced Configuration on page 57 for the advanced configuration procedures.

- Some templates require a service account with special Exchange privileges. See Exspi Template Group Requirements on page 73 for template requirements, and see Creating a Service Account with Proper Access Permissions on page 25 for procedures.

- Exchange SPI requires a data collection agent - OpenView Performance Agent [also known as MeasureWare Agent] or OpenView Operations Subagent 12 [included with OpenView Operations 7.0 and 8.0], to collect data for reporting and graphing purposes. Use the Exchange SPI application **EXSPI Add DataSource** to configure the data source and start logging data.

- 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.

Template Groups: installation considerations

After installation, you can view the Exchange SPI templates using the **Templates**>**Reload Templates** command in the Message Source Templates window.

⚠ Templates are customized for Exchange versions: only deploy templates with prefix EXSPI-65 or EXSPI-6X to agents running Exchange 2003, templates with prefix EXSPI-60 or EXSPI-6X to agents running Exchange 2000, and templates with prefix EXSPI-55- to agents running Exchange 5.5.

Exchange SPI templates are located under the SPI for Exchange group and can be distributed as groups or individually.

For Exchange 5.5

Template names are prefixed with **55** for Exchange 5.5. The requirements for each group are as follows:

  — **EXSPI-*xx*-Quick Start** templates, in general require the HP ITO Account, see Exspi Template Group Requirements on page 73.

— **EXSPI-*xx*-Add-Ons** templates are designed to monitor specific software components, which may or may not be installed on the MS Exchange Server (for example, Lotus Notes must be installed for the EXSPI-60 Lotus Notes Connector templates to work). Select templates for the software components you are using on the targeted MS Exchange Server.

— **EXSPI-*xx*-Advanced** templates and **EXSPI-*xx*-Add-Ons** generally require a service account with special Exchange privileges. See Creating a Service Account with Proper Access Permissions on page 25 for details.

All data collection templates require that a data collection agent (the OV Performance or OVO subagent) is installed and running on the managed node.

For Exchange 2000 and 2003

— Exchange 2000 template names are prefixed with **60**

— Exchange 2003 template names are prefixed with **65**.

— Templates for both Exchange 2000 and 2003 have the prefix **6X**.

Templates are grouped as follows:

• EXSPI Specialized Groups

• EXSPI Standard Groups.

For more information on templates and template groups, see Exspi Template Group Requirements on page 73.

Installation and Basic Configuration

The **Basic** Exchange SPI configuration is designed to get you started quickly, using those templates that require only the HP ITO Account as a basis for server monitoring. Many templates require use of a service account with special Exchange privileges, see Exspi Template Group Requirements on page 73 for more information. The more **Advanced** configuration procedure is covered later in this chapter.

Basic installation and configuration requires completion of the following tasks:

Task 1:   Install Exchange SPI on the management server.

Task 2:   Add nodes to the node group EXSPI.

Task 3:   Install OVO agents on all MS Exchange server systems (required if the OVO Windows agent is not yet distributed).

Task 4:   Install OVO agents on the management server (needed for some of the OV utilities that are used by Exchange SPI applications).

Task 5:   Assign responsibilities for the OVO Operator.

Task 6:   Distribute Exchange SPI actions, commands, monitors to the Exchange servers.

Task 7:   Run the **EXSPI Add Data Source** application, and configure data sources.

Task 8:   Assign and distribute EXSPI templates to managed nodes running MS Exchange server.

Task 1: Install Exchange SPI on Management Server

Prerequisite: It is not necessary to stop OVO sessions before beginning the Exchange SPI installation, however the following need to be installed on the management server:

- OpenView Operations (OVO) for UNIX version 7.*x* or higher

- DSI2DDF A.01.30.00 or higher for OVO7 and OVO8/DCE, and DSI2DDF A.02.00.00 or higher for OVO8/HTTPS.

▶ The instructions that follow show the command line usage of swinstall. For HP-UX systems you can also use the graphical user interface (GUI), but the procedure is not covered here.

The Exchange SPI is available on the *HP OPenView Operations for UNIX Applications CD-ROM*. There are two CDs in the Applications CD-ROM set, the first contains the products' management server install packages, and the second contains the *OpenView Reporter* and *OpenView Performance Manager* integrations for the applications. At this point use the first CD.

For an **HP-UX 11.0** management server, enter:

```
swinstall -s /cdrom/OV_DEPOT/11.0HPUX.sdtape SPI-EXCHANGE-OVO
```

For a **Solaris** management server, enter:

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

Task 2: Add Nodes to the Node group EXSPI

Upon installation Exchange SPI creates a Node Group **EXSPI**. All Exchange nodes to be managed should be added to this node group, so that tasks such as installing agent software, running applications, and distributing actions/commands/monitor/templates can be done for the whole node group, instead of needing to select each node.

Task 3: Install OVO Agents on MS Exchange servers

Install an OVO Windows agent on all MS Exchange servers. (If you need details for installing the OVO agent, refer to the *OVO Installation Guide for the Management Server.*)

Task 4: Install OVO Agent on OVO management server

Install an OVO UNIX agent on the OVO Management Server. (For details on installing the OVO agent, refer to the *OVO Installation Guide for the Management Server.*)

➤ This is required for the Exchange SPI applications that run on the management server.

Task 5: 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_adm).

   a Select **Window > User Bank**

   b Select the **opc_adm** user

   c Choose **Actions > User > Modify**

   d Press the **Responsibilities** button and use the Responsibilities for Operator (opc_adm) window to view messages.

Figure 24 The Responsibilities for Operator window
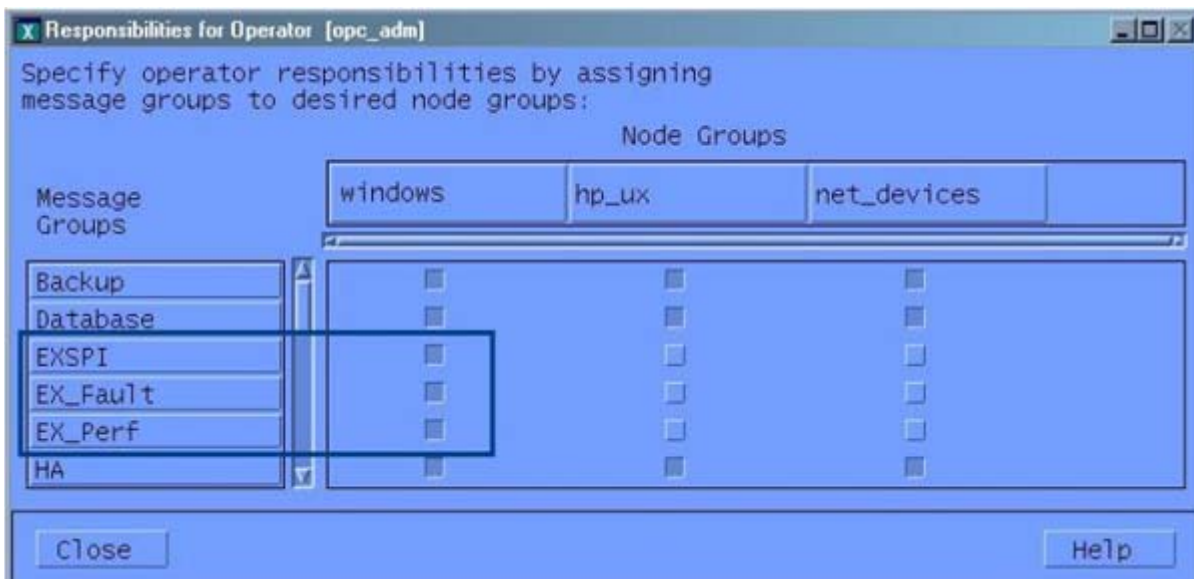
2   In the Node Group that contains your Exchange managed node, select the following
    Exchange SPI message groups:

    — EXSPI

    — EX_Fault

    — EX_Perf

3   Use the **Actions** > **Browser > Start/Reload** from the OVO User Bank menu.

Task 6: Distribute Exchange SPI actions, commands, monitors

To collect Exchange data, you must complete the following steps:

1   Distribute Exchange SPI actions, commands, monitors to the Exchange servers by
    selecting **Actions>Agents>Install/Update SW & Config** from the OVO Node Bank
    menu.

Figure 25 Install/Update OVO Software and Configuration window
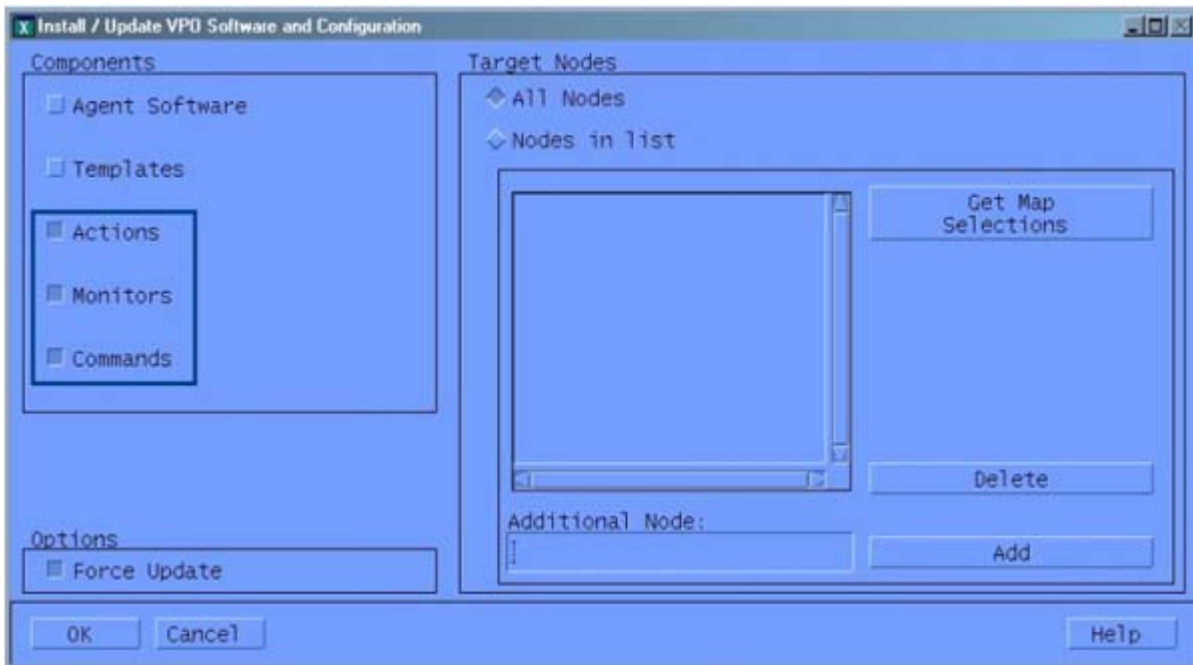
2   In the Install/Update OVO Software and Configuration window check the following
    checkboxes to select components:

    • Actions

    • Monitors

    • Commands

3   Check the **Nodes in List Requiring Update** checkbox.

4   Check the **Force Update** checkbox.

5   If a node was not selected previously, select the node in the Node Bank and use **Get Map
    Selections** to add the Exchange server(s) to the target node(s) list.

6   Click **OK**.

7   The following message is displayed in the message browser:

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

Task 7: Run the EXSPI Add DataSource application and Configure Datasources

The OVO data collection agent collects, logs, and timestamps data from individual systems. If you use OV Performance Agent (MeasureWare Agent), you can use PerfView to graph the data; if you use OpenView Reporter, you can use it to generate reports displayed as Web pages.

1   At the OVO console, from the Window menu, select **Application Bank>EXSPI Admin,** then the relevant Exchange version folder.

2   To create data sources for the OVO data collection agent, run **EXSPI Add DataSource** for each managed node.

Figure 26 Adding Datasource for HP OpenView Subagent (CODA)
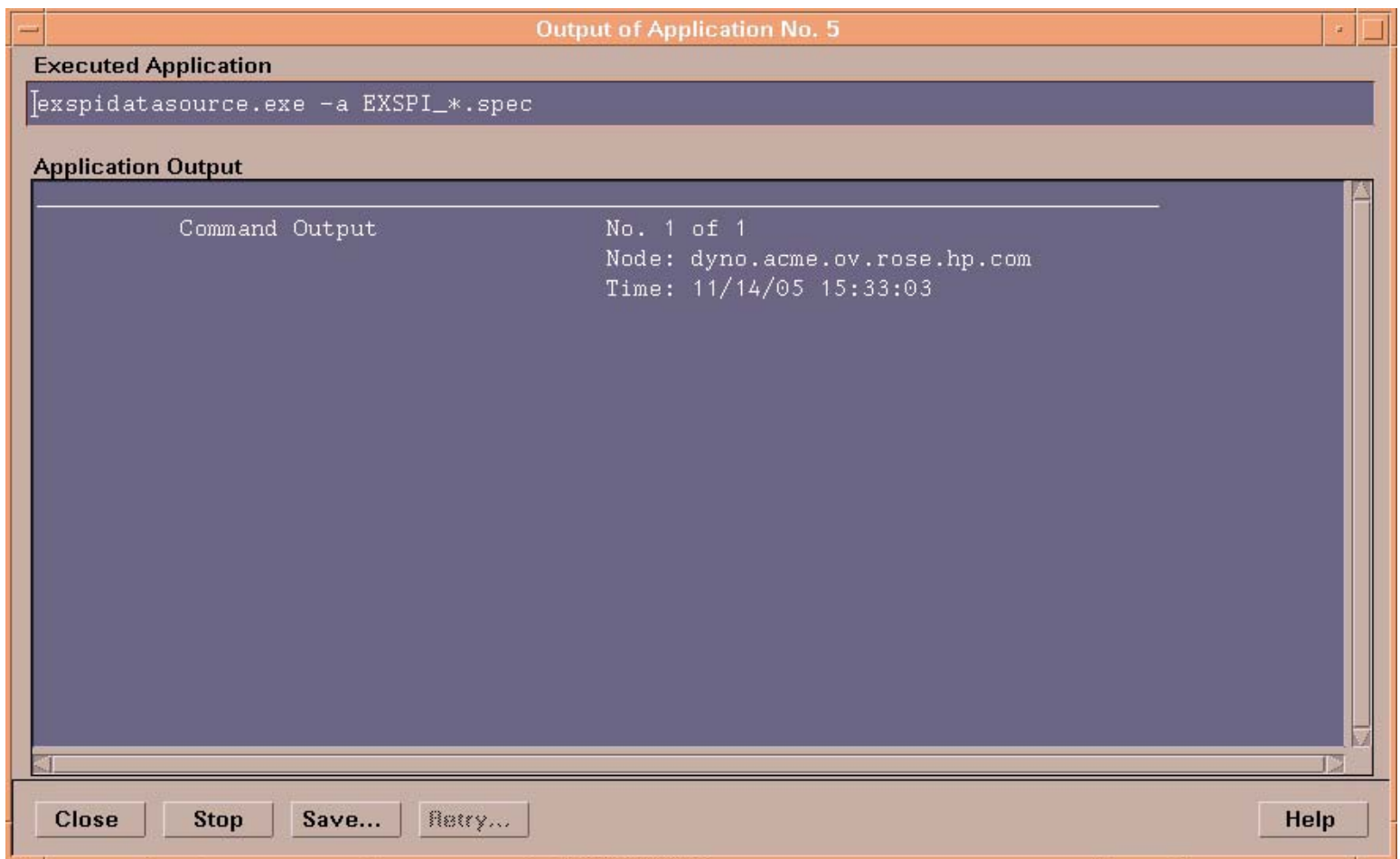
Figure 27 Adding Datasource for OV Performance Agent (MWA)
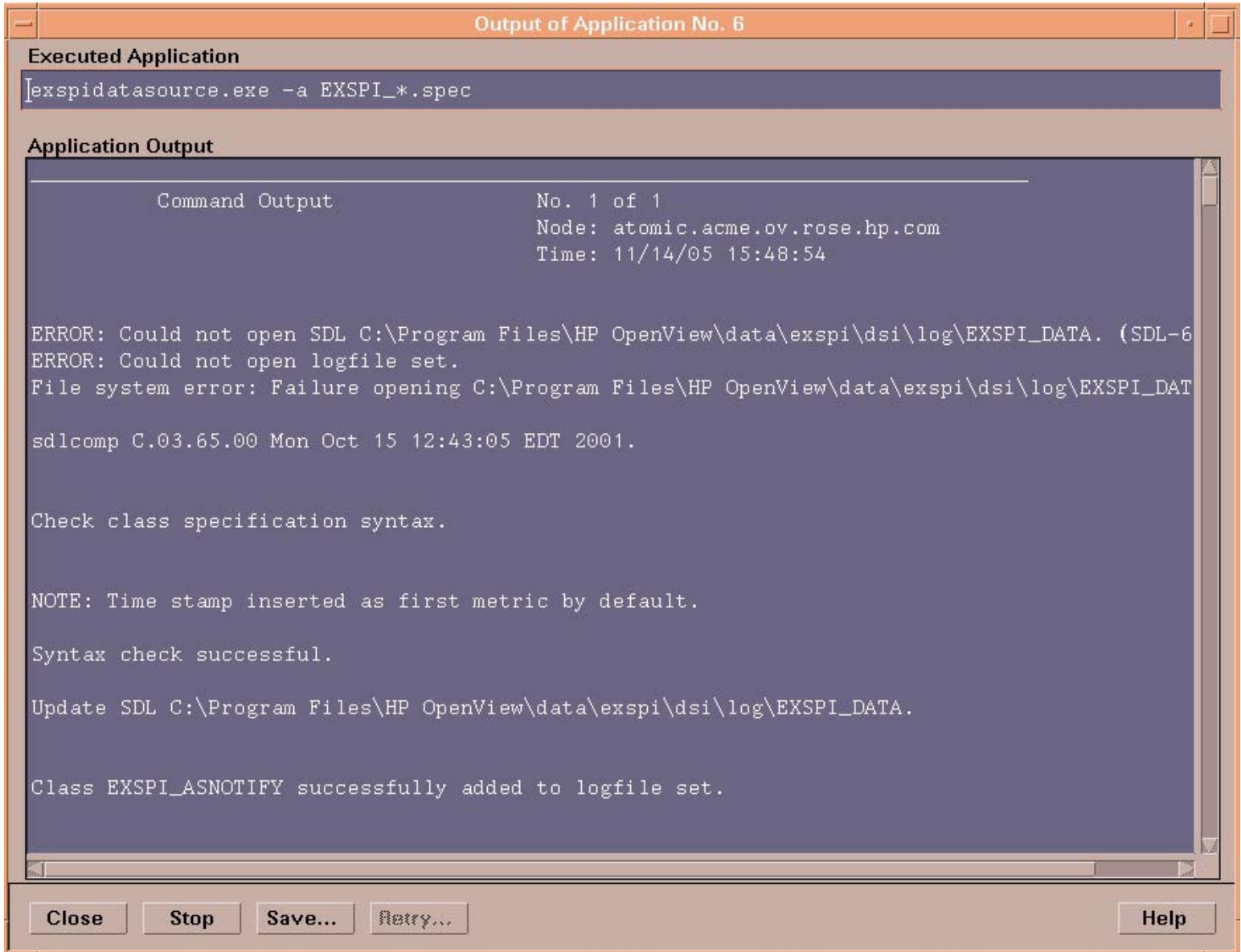
Task 8: Assign/Distribute Templates

▶ In OVO for UNIX version 8 and later, templates are also referred to as policies.

To assign and distribute templates 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 templates for distribution, select **Actions>Agents>Assign Templates** from the menu bar.

4   In the Define Configuration window select **Add**.

5   In the Add Configuration window select **Open Template Window...**.

6   In the Message Source Templates window double-click the **SPI for Exchange** group to display the subgroups.

7   Select, and double-click **Exchange 2000, Exchange 2003** or **Exchange 5.5**.

8   Select the desired **EXSPI** template group or individual template(s).

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 templates have been selected for distribution. Next, distribute them to the managed nodes.

13 To distribute the assigned templates, 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.

Figure 28 Distributing templates
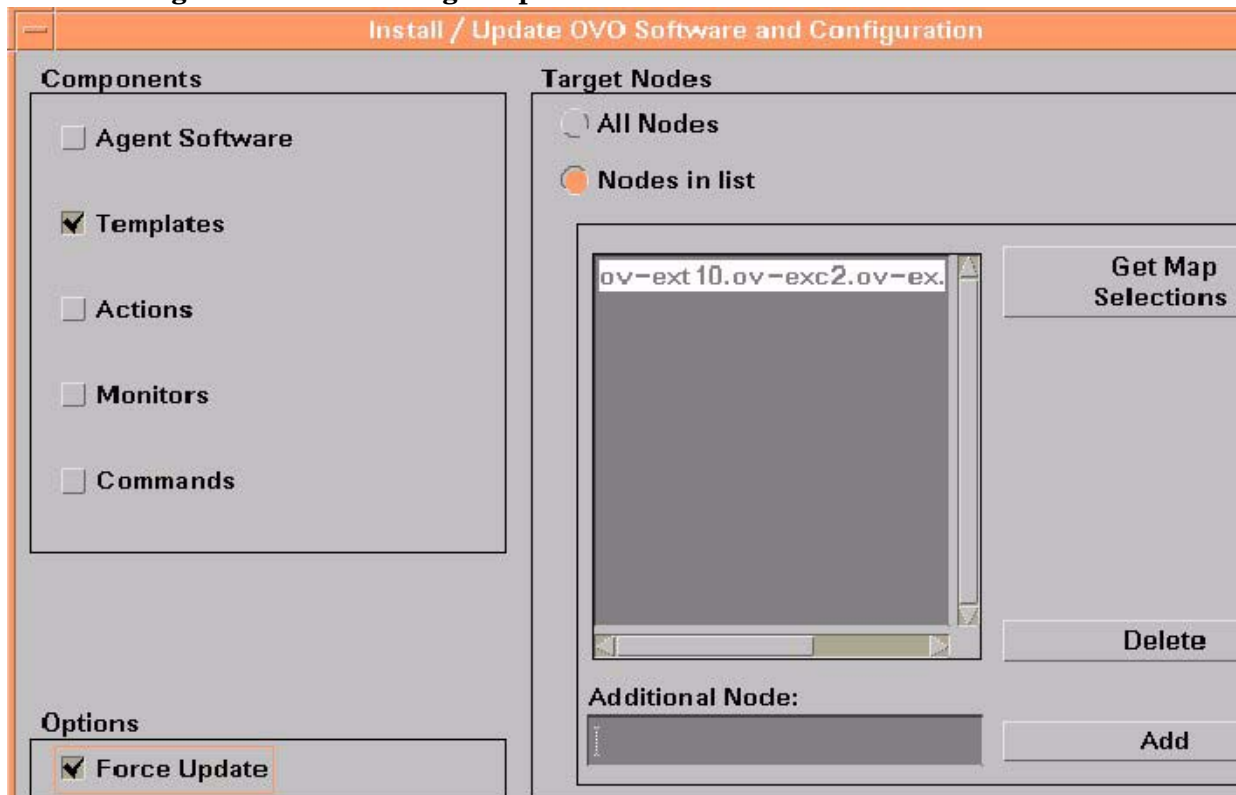
15 Check the **Nodes in List** and the **Force Update** checkboxes.

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), then click **OK** to distribute templates to the managed node(s).

17 The following message displays in the message browser:

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

You have completed the standard Exchange SPI installation and configuration process. Exchange SPI templates are distributed to the selected managed nodes and Exchange SPI monitors will begin running.

Advanced Configuration

Prerequisite: Complete tasks in the section Installation and Basic Configuration on page 50.

Advanced configuration covers the distribution of templates that require a service account with special Exchange privileges. When finished, you will have completed the following tasks:

Task 1:   Create the service account.

Task 2:   Grant Exchange access permissions to the user.

Task 3:   Run the **EXSPI Node Config** application.and configure the service account on managed nodes.

Task 4:   Enable message tracking.

Task 5:   Run the **EXSPI MBOX Config** application, and create a MSXSPI<*host_name*> mailbox for each Exchange server.

Task 6:   Run the **EXSPI Ping Config** application to configure MS Exchange servers for End to End Message Ping.

Task 7:   Assign/distribute templates from the Add-Ons and Advanced Groups (Exchange 5.5), Standard and Specialized Groups (Exchange 2000 and 2003)

The Exchange SPI can be configured to accommodate cluster environments where fail-overs allow uninterrupted Exchange availability, see Using Exchange SPI in high availability environments on page 81 for more information.

Task 1: Create the special service account

A service account with special Exchange privileges is needed for each Windows logon domain where your managed Exchange servers reside. See the procedures in Creating a Service Account with Proper Access Permissions on page 25 for details on creating this type of account in Windows NT and Windows 2000/2003 operating environments.

Task 2: Grant Exchange access permissions to service account

See the procedures in User Privileges on page 24, where the procedures for granting proper access permissions for each combination of Exchange/Windows environment is outlined.

Task 3: Run EXSPI Node Config application and configure service account on managed nodes

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 (created in Task 1: Create the special service account on page 57). **NOTE:** 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.

Figure 29 EXSPI Node configuration window

```
X  EXSPI Node Config                                          _ | □ | X |
*** Node Config for the Node :  nt18475.appspi.com

        Please enter a user account that is set-up as an Exchange Administrator

        Domain  : appspi

        Username: administrator
        Enter password:
        Re-enter password:
*** Configuring node 'nt18475.appspi.com' ...


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

.
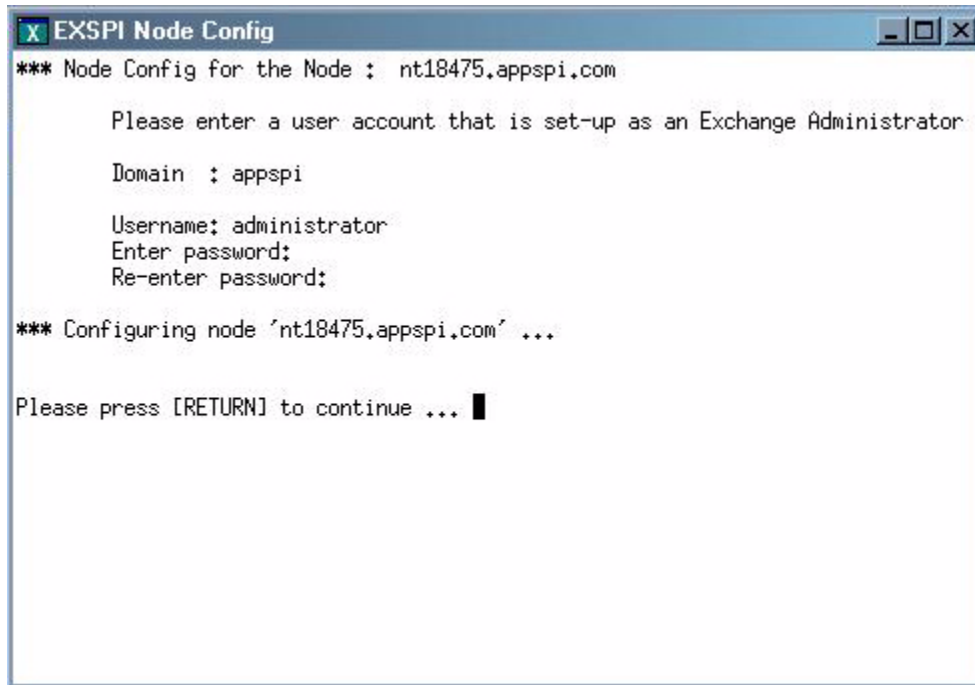
➤ If Exchange nodes are managed at a later date, perform this procedure for all newly managed Exchange nodes

Task 4: 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.

4a: 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 30 Information Store Site Configuration dialog
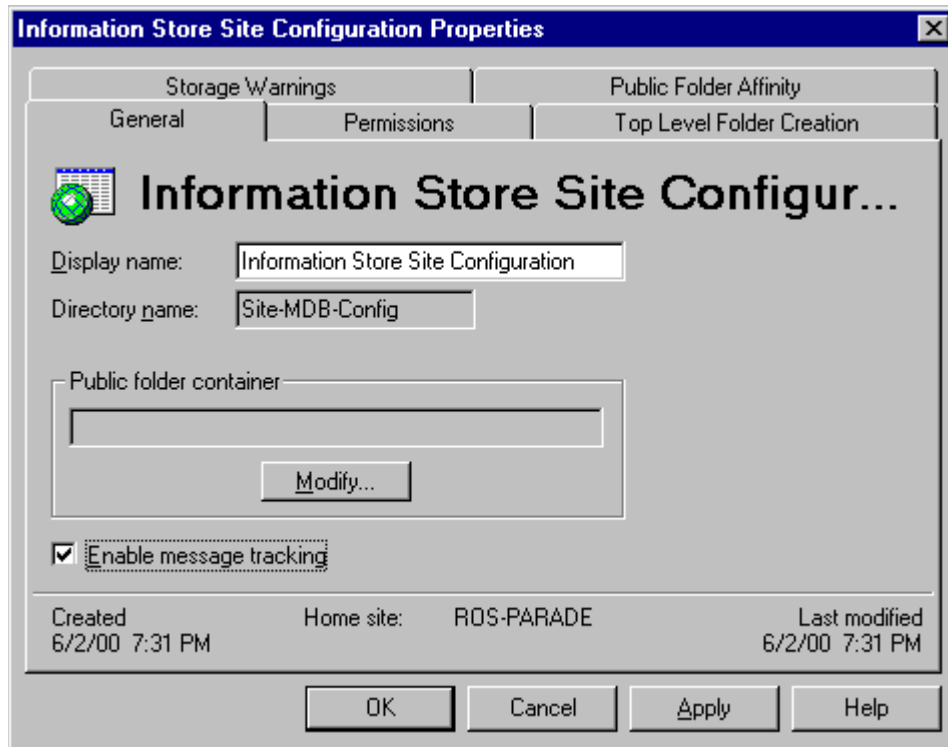
5   Repeat steps 3 and 4 for MTA Site Configuration.

Figure 31 MTA Site Configuration dialog
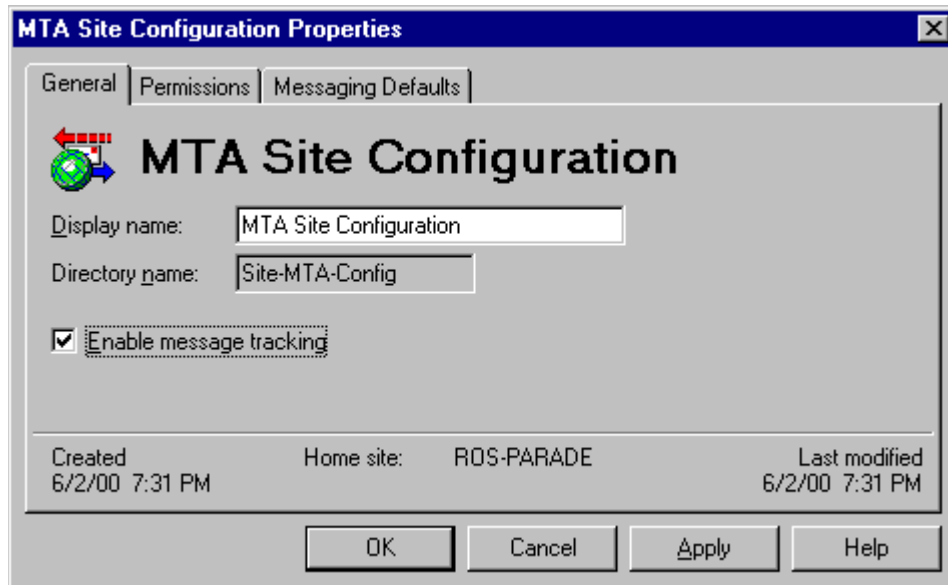
▶   If the Internet Mail Service connector does not exist, skip the following steps.

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**.

4b: 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 templates.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 32 Enabling Message Tracking for Exchange 2000 and 2003
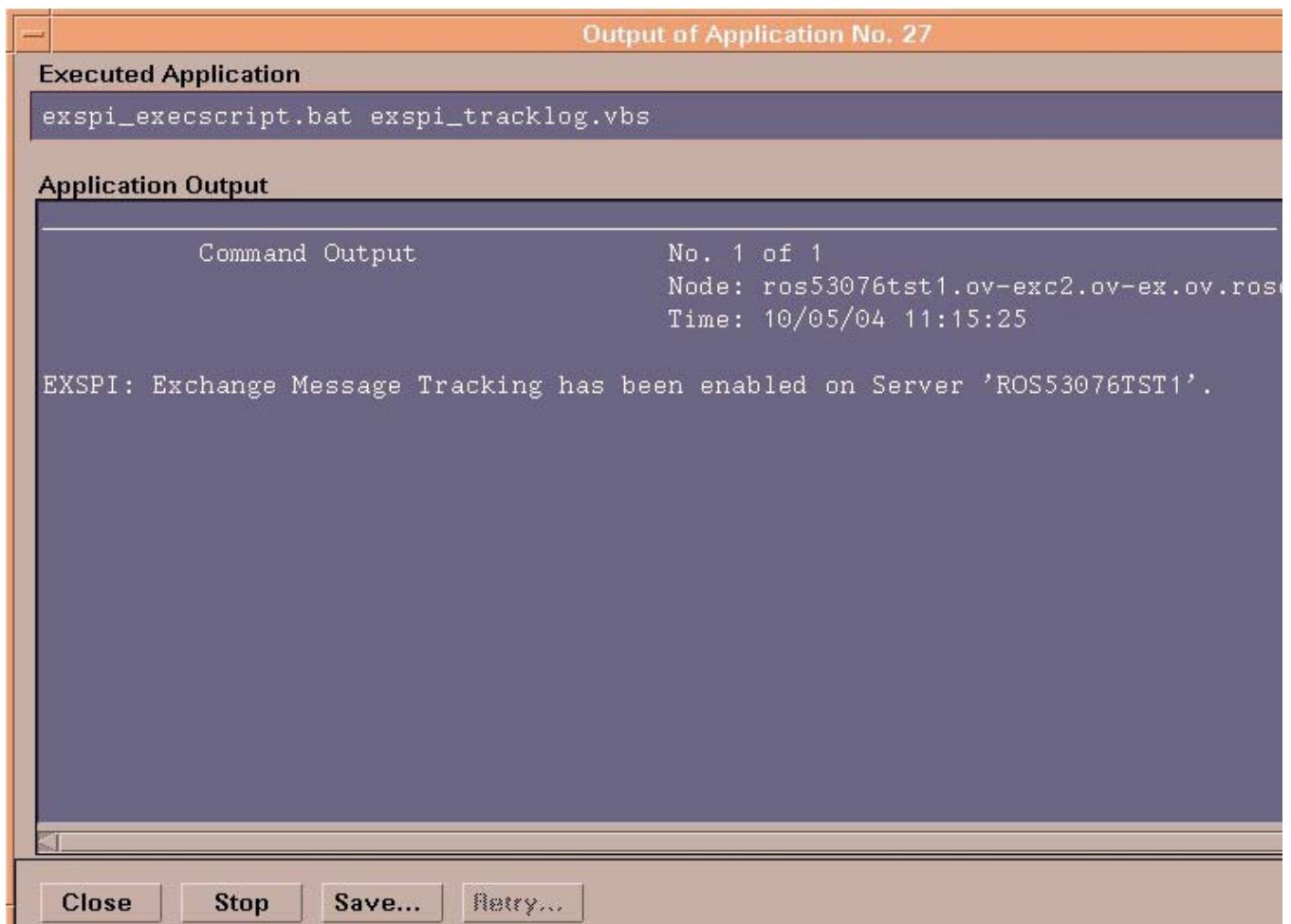
Task 5: Run the EXSPI MBOX Config application and create mailboxes

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 templates. Use the Exchange SPI application **MBOX Config** (located in the EXSPI Admin application group) to create the mailbox:
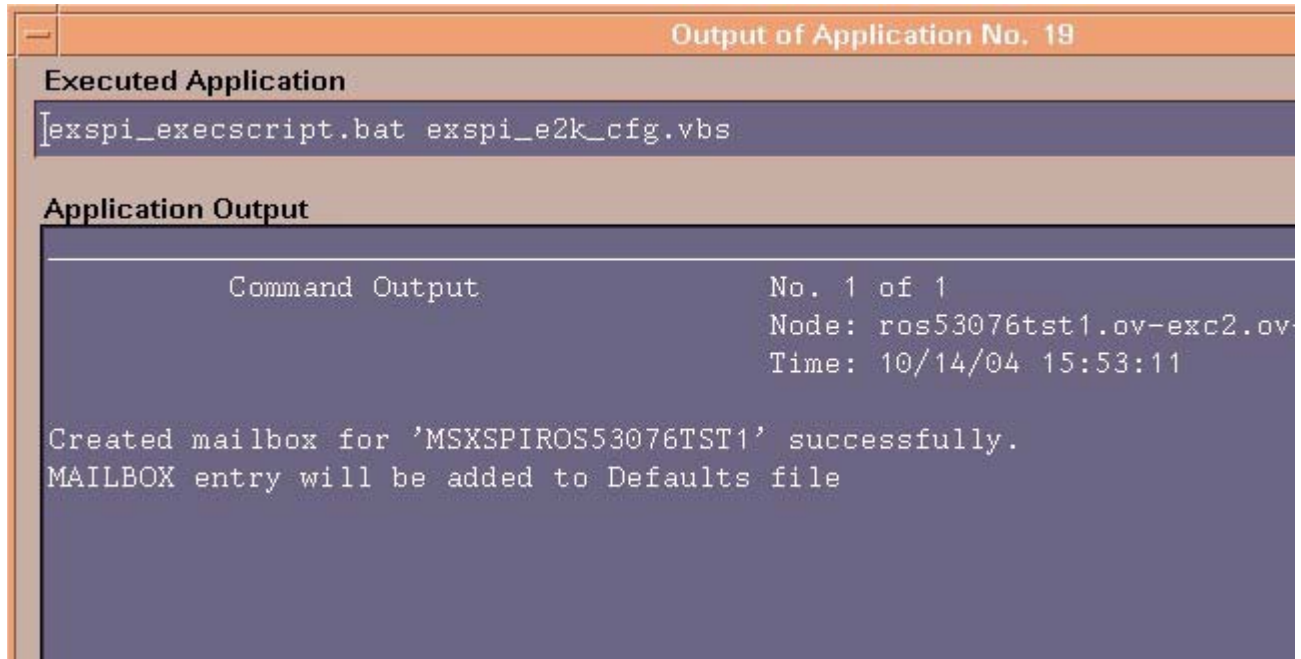
1   Modify the **MBOX Config** application. The user name and password of a service account with Exchange administrative privileges needs to be given for the application to execute. (Change the **Execute as User** field, add *user name* and *password*.)

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

Figure 33 MBox Config application output

> 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).

Task 6: 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* template 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 templates, you must configure the pair of servers that you want to test.

For 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 34 Format of the file for Exchange 5.5 EXSPI Ping Config

```
X  EXSPI Ping Config                                                    _ | □ | X |

# 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:::::MSXSPINT84141:25m: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-Srv: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

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 35 EXSPI Ping Config for Exchange 2000 and 2003

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 template 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,:MAILOXEXCH3

EXCH2:MAILBOXEXCH2: MAILOXEXCH4:1h:20m:10m	EXCH2:MAILBOXEXCH2,:MAILOXEXCH4
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.

Task 7: Assign/Distribute Templates

After completing the advanced configuration steps, you can assign and distribute templates from any of the various EXSPI template groups to the managed node(s) running MS Exchange server. Please refer to for procedures.

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

— Logfile EXSPI-6X/55 Exchange Information

— Logfile EXSPI-6X/55 Exchange Warnings

▶ You have now completed the advanced configuration installation process. The Exchange SPI is ready to use.

Deinstalling Exchange SPI

This process completely removes the Exchange SPI installation from the OVO management server. Any customized templates or copies of Exchange SPI default templates residing in other OVO template 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 Templates, Applications and Message groups from the management server on page 68).

   b Remove EXSPI, EX_Perf and EX_Fault message groups from the OVO Message group bank (see step 5 in 4. Delete Templates, Applications and Message groups from the management server on page 68).

   c Delete EXSPI templates (see steps 1-4 in 4. Delete Templates, Applications and Message groups from the management server on page 68).

   d Delete EXSPI spec files (see 5. Delete Exchange SPI spec files from the management server on page 69).

2. De-assign Exchange SPI templates from managed nodes

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

1 Open the OVO Node Bank.

2 To deassign the templates from the node, select **Actions>Agents>Assign Templates** from the menu bar.

3 In the Define Configuration window select all Exchange SPI templates or template groups, including any user-customized templates.

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:

 •   Templates

 •   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 templates and software have now been removed from the selected managed node(s). The Exchange SPI templates still reside in the OVO data repository and must be deleted manually. Continue with

4. Delete Templates, Applications and Message groups from the management server

After successful completion of **swremove**, Exchange SPI templates 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 templates, select **Window: Message Source Templates** from the menu bar.

2   Open all Exchange SPI template groups and use SHIFT+click to select all templates for deletion.

3   Select **Delete from All** to delete the templates.

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 template group requirements
- 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 92).

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 36 Sample Instruction Text from Exchange SPI Alarm Message

```
┌─┐                          Instruction Output                          ┌─┬─┐
│─│                                                                      │ ·│ │
│ Metric description: Monitors the average time between submission of a message to the
│                     private information store and submission to the MTA for the last
│                     10 messages
│                     Counter: MSExchangeIS Private.Average Delivery Time
│
│ Probable cause(s): Delivery of messages to other Exchange servers may be delayed by the
│                    MTA.
│
│                    Delay of messages being processed could indicate problems with system
│                    load, the Information Store, or the MTA.
│
│ Potential impact: Performance
│
│ Suggested action(s):
│ (1) Monitor system with Windows NT Task Managed or NT Performance Monitor to determine
│     if the system is overloaded. Also check that the MTA process (emsmta) is running.
│ (2) Check other messages in the 'Message Browser' to see if Exchange has been reporting
│     problems with the MTA service on either the problem system or the remote system.
│ (3) Verify that there are no network problems.
│ (4) Enable Diagnostics Logging for the MTA (using Exchange Administrator) to help in
│     troubleshooting.
│
│  ┌───────┐ ┌───────┐                                              ┌───────┐
│  │ Close │ │ Save… │                                              │ Help  │
│  └───────┘ └───────┘                                              └───────┘
└────────────────────────────────────────────────────────────────────────────┘
```

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

Exspi Template Group Requirements

▶ Important Microsoft Information on the Web: Before you distribute Exchange SPI templates, please refer to the Microsoft article "PRB: Performance Object Is Not Displayed in Performance Monitor" at this URL: **http://support.microsoft.com/support/kb/articles/Q248/9/93.ASP**. The article contains information on editing the Windows registry so that performance objects (tracked by Performance Monitor) are always enabled. A disabled performance object could cause an Exchange SPI template to fail. By following the instructions in the article, you can ensure that templates are able to collect Exchange performance data as expected.

Some templates in the SPI for Exchange template groups require that particular software components/services are installed on Exchange server systems before the distributed templates 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.

Templates requiring a service account with special Exchange privileges

The following list contains all the templates 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 Template Prerequisites for Exchange 5.5

EXCHANGE 5.5 Template Group	Required Manual Configuration
EXSPI-55 Advanced EXSPI End to End Message Ping	This template requires the completion of tasks 1-3 of the Advanced Configuration on page 57. In addition: - Edit the MBOX Config Application to contain User Password - Create mailbox using MBOX Config application - Configure EXSPI End to End Message Ping template to set up server pairs
EXSPI Reporter Collection	Create MSXSPI service account and password

Table 2   Schedule Template Prerequisites in Exchange 2000 Template Groups

Exchange 2000Template Groups	Required Manual Configuration
EXSPI Standard Groups	
EXSPI INFORMATION STORE (Ex2000) **EXSPI Transaction Log** EXSPI-6XDc-TransactionLogSpaceUsage EXSPI-6X Transaction Log Backup Check **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 **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 **EXSPI Full Text Index** EXSPI-6X Dc-Full Text Index	These templates require the completion of tasks 1-3 of the Advanced Configuration on page 57.
EXSPI MESSAGING **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 **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 **EXSPI Tracking Log** EXSPI-6X Dc-TrackLog Data	These templates require the completion of tasks 1-3 of the Advanced Configuration on page 57.
EXSPI OPTIONAL SERVICES **EXSPI Instant Messaging** EXSPI-60-Dc-InstMsg Enabled Usrs	These templates require the completion of tasks 1-3 of the Advanced Configuration on page 57.)

Exchange 2000 Template Groups	Required Manual Configuration
EXSPI Specialized Groups	

EXSPI Exchange Server
   EXSPI Message Delivery
      EXSPI-6X End to End Message Ping
	This template requires the completion of tasks 1-3 of the Advanced Configuration on page 57.
	In addition:
	 - Edit the MBOX Config Application to contain User Password
	- Create mailbox using MBOX Config application
	- Configure EXSPI End to End Message Ping template to set up server pairs

Table 3   Schedule Template Prerequisites in Exchange 2003 Template Groups

Exchange 2003 Template 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 templates require the completion of tasks 1-3 of the Advanced Configuration on page 57.

Exchange 2003Template Groups	Required Manual Configuration
EXSPI MESSAGING **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 **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 **EXSPI Tracking Log** EXSPI-6X Dc-TrackLog Data	These templates require the completion of tasks 1-3 of the Advanced Configuration on page 57.
EXSPI CLIENT ACCESS **EXSPI Outlook 2003** EXSPI-65-ISClientRPCFailRate **EXSPI OWA** EXSPI Back End: EXSPI-6X-Dc-OWA Back End EXSPI Front End: EXSPI-6X-Dc-OWA Front End **EXSPI POP3** EXSPI-6X-Dc-POP3 Performance EXSPI-6X-POP3FailedConnRate EXSPI-6X-POP3RejectedConnRate **EXSPI IMAP4** EXSPI-6X-Dc-IMAP4 Performance EXSPI-6X-IMAP4FailedConnRate EXSPI-6X-IMAP4RejectedConnRate	These templates require the completion of tasks 1-3 of the Advanced Configuration on page 57.

Exchange 2003Template Groups	Required Manual Configuration
EXSPI Specialized Groups	

EXSPI Exchange Server
   EXSPI Message Delivery
      EXSPI-6X End to End Message Ping
	This template requires the completion of tasks 1-3 of the Advanced Configuration on page 57.
	In addition:
	 - Edit the MBOX Config Application to contain User Password
	- Create mailbox using MBOX Config application
	- Configure EXSPI End to End Message Ping template to set up server pairs

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 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 templates 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 Advanced Configuration on page 57).
-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 templates 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 templates on the managed node, in order that these templates 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 templates, 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 clustered application configuration file

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

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

To generate the content of this file:

1 Launch the Exchange SPI Exchange Cluster Configuration application on an Exchange cluster node, see Exchange Cluster Configuration application on page 83.

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
```

The following is an example apminfo.xml file, where ExchResGroup1 and ExchResGroup2 are the names of the Exchange resource groups corresponding to EXCHVIRTSERV1 and EXCHVIRTSERV2 instances (virtual servers):

```
<?xml version="1.0" ?>
<APMClusterConfiguration>
    <Application>
        <Name>msexchange</Name>
            <Instance>
                <Name>EXCHVIRTSERV1</Name>
                <Package>ExchResGroup1</Package>
            </Instance>

<Instance>

<Name>EXCHVIRTSERV2</Name>
                <Package>ExchResGroup2</Package>
            </Instance>

    </Application>
</APMClusterConfiguration>
```

Figure 37 Example Exchange resource group
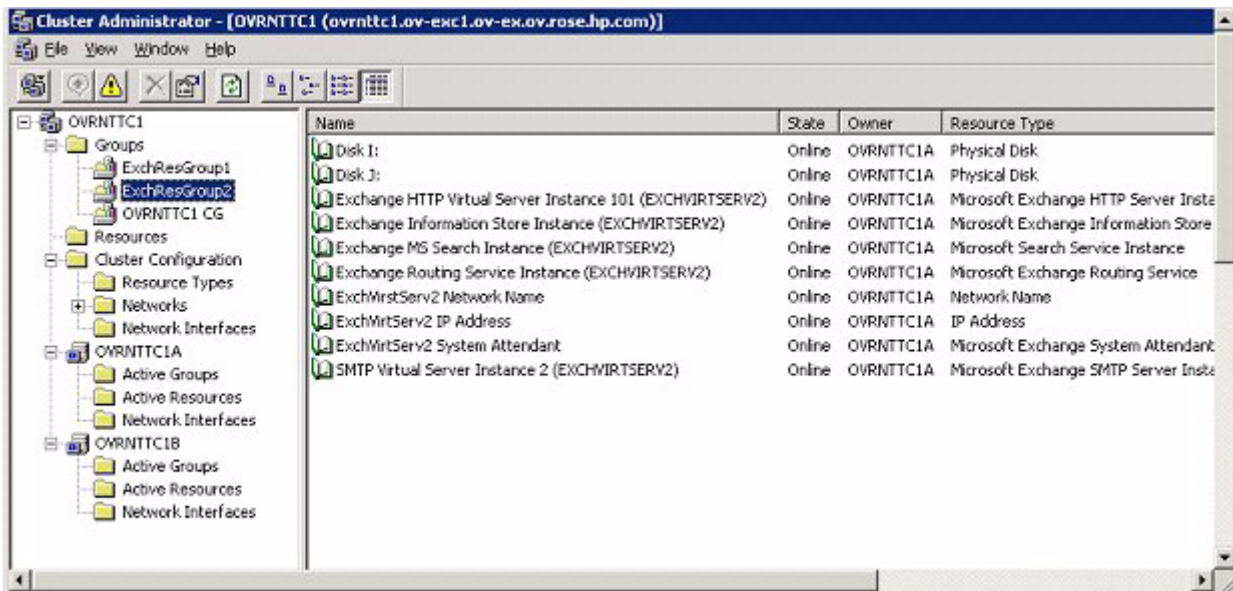
Exchange Cluster Configuration application

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 the **EXSPI Admin > Exchange 2000 and 2003** application group.

3   Use the generated output to construct the apminfo.xml. For details, refer to Create the clustered application configuration file on page 82).

Figure 38 Example output of Cluster Configuration application

```
X  Output of Application No. 10                                        _ □
   Executed Application
   cscript /nologo  %OvAgentDir%\bin\OpC\cmds\exspi_e2k_clust_config.js

   Application Output

            Command Output              No. 1 of 1
                                        Node: nt84215.appspi.com
                                        Time: 01/30/04 19:24:59


   <?xml version="1.0" ?>
   <!-- The generated output can be pasted into your apminfo.xml file -->
   <!-- as documented in the Users guide -->
   <APMClusterConfiguration>
     <Application>
       <Name>msexchange</Name>
     <Instance>
       <Name>EXCHANGETEST1</Name>
       <Package>Exchange Group</Package>
     </Instance>
   </Application>
   </APMClusterConfiguration>


   ◁                                                        ▷

   Close      Stop      Save...    Retry...              Help
```
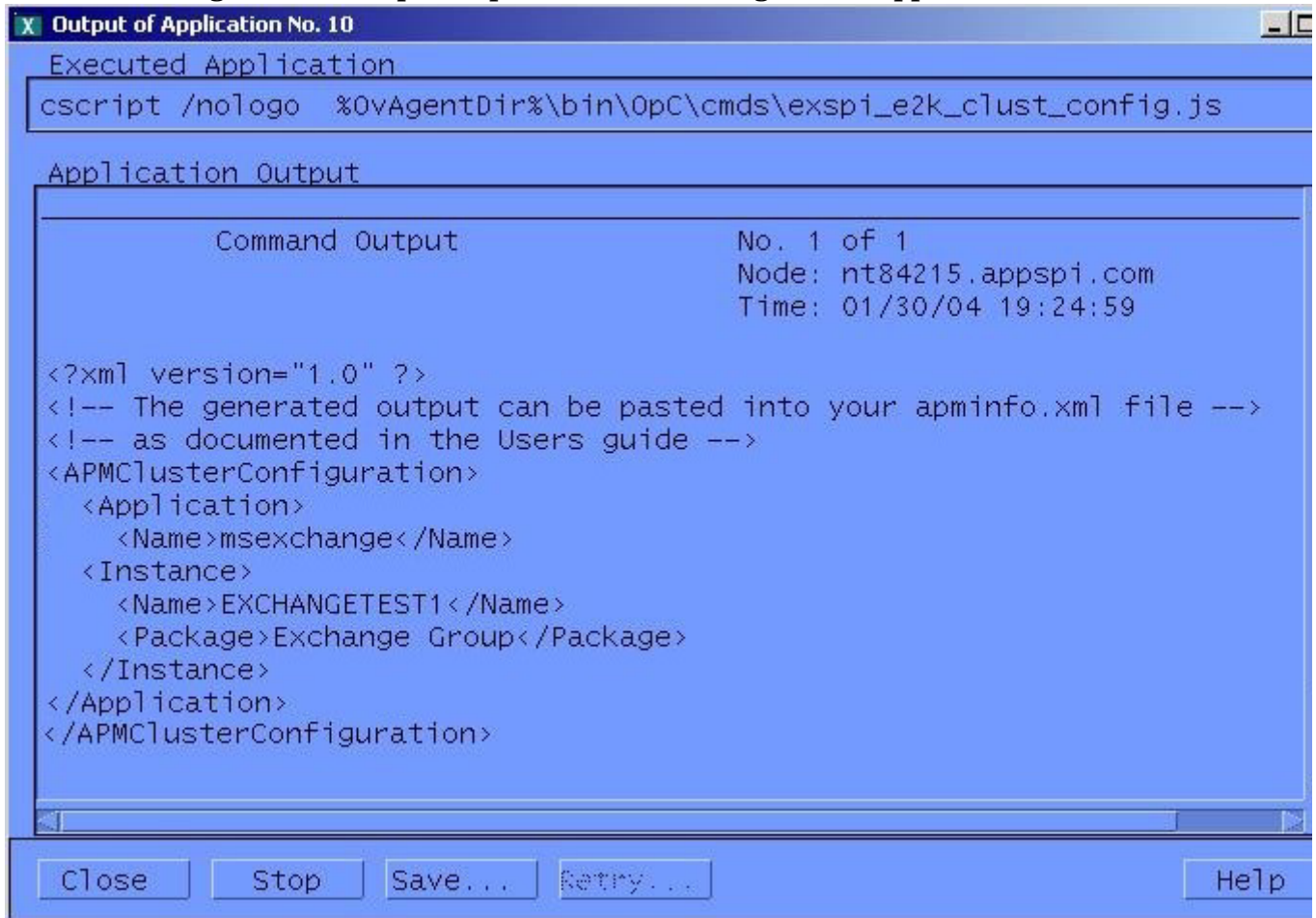
> ▶ After constructing and saving `apminfo.xml`, you need to restart the agent on the node, using
> the following commands:
>
> `Opcagt -kill`
>
> `Opcagt -start`

Data Collection on virtual servers

In order for reports and graphs to show data for any nodes, appropriate data collection
templates need to be distributed to those nodes. See the section Using Exchange 5.5 Reports
and Graphs on page 110.

Run the **Enable Message Tracking** application on all nodes in the cluster before
distributing the **EXSPI 6.X Dc-TrackingLog Data** template, 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 Task 6: Set Up Message Ping server connections and alarms on page 63.

What happens during a failover:

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

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

▶ For this mechanism to work EXSPI-60-Exchange cluster discovery Event Log template 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 templates

        — Modifying message generation

        — Modifying metric template 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 template group and use the copy for customization purposes

Basic Customization

Creating Custom Groupings

Create custom template groups as follows:

1   Log onto OVO as the OVO Administrator.

2   Select **Window>Message Source Templates**.

3   In the Message Source Templates window select the desired template 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 templates to the new group:

   *   In the Message Source Templates window, double-click to open the group containing the desired templates.

   *   Select the templates to copy and choose **Edit>Copy from the Message Source Templates** menu to copy the templates.

   *   Return to the newly created template group and choose **Edit>Paste** from the menu.

Figure 39 Creating a New Template Group
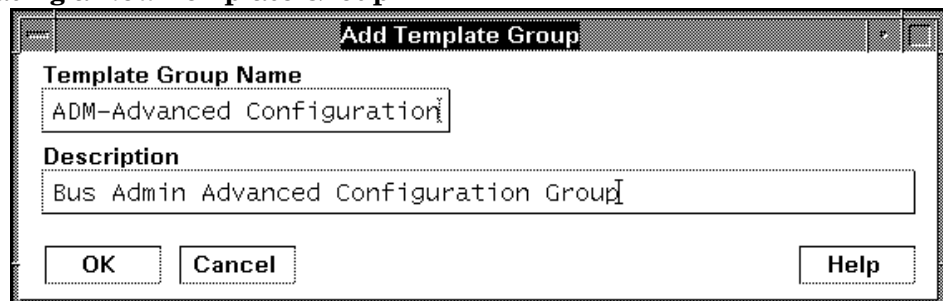
Creating Custom Templates

You can create a custom template by copying an original template, 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 templates 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 template group containing the metric to modify.

3   Click the **Modify** button.

Figure 40 Modifying Message Generation

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 Template Conditions

Modify metric attributes as follows.

1   Select the **Message Source Templates** window.

2   Double-click the template 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 41 The Message and Suppress Conditions Window
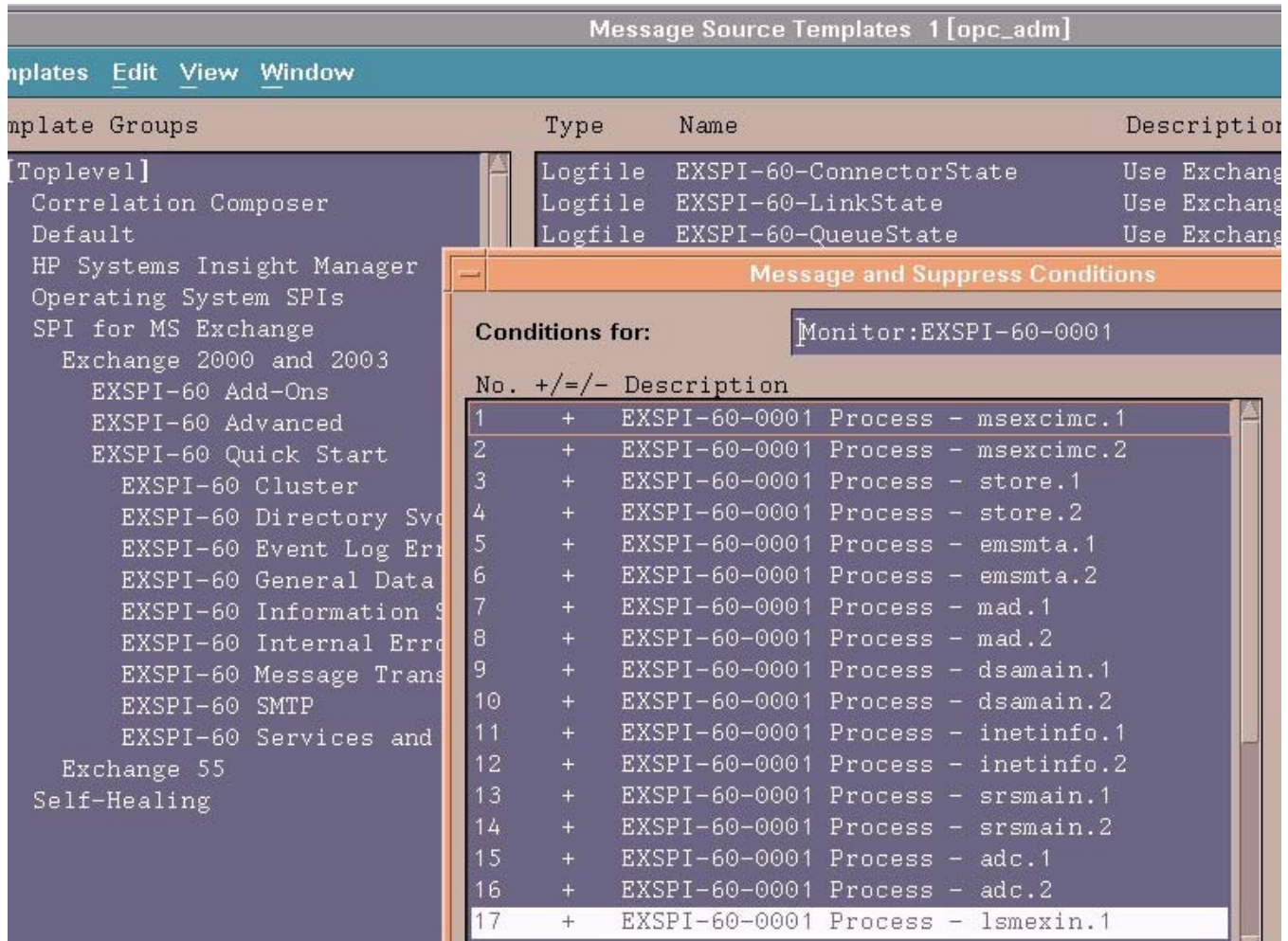
5   The `Condition` window displays.

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 42 Testing Pattern Matching from the Condition Window
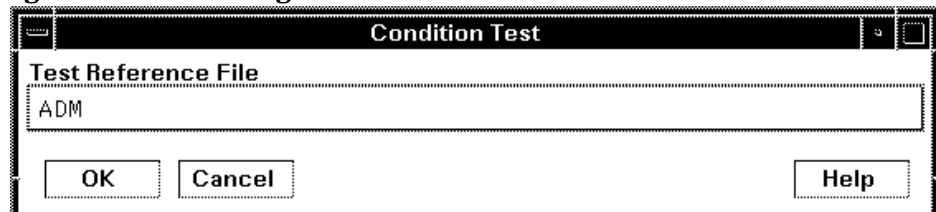
Customizing Schedules

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

1 Select **Window>Message Source Templates** and double-click the template group containing the template to modify.

2 Double-click the desired template

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 template to the desired managed node(s).

Figure 43 Customizing a Schedule Template

```
┌─────────────────────────────────────────────────────────────────────────┐
│ ▬              Modify Scheduled Action                              ▪ ▫  │
├───────────────────────────────────────────────────────────────────────────┤
│                                                                           │
│  Scheduled Action Name          Description                               │
│  ┌──────────────────────────┐   ┌──────────────────────────────────────┐ │
│  │ EXSPI-55-15m-Transaction Log│   │ Scheduler for metrics in Transaction Log group│ │
│  └──────────────────────────┘   └──────────────────────────────────────┘ │
│  Schedule                                                                 │
│  ┌──────────────────────────────────────────────────────────────────────┐│
│  │  Minute            │ 0,15,30,45                                       ││
│  │  Hour              │ 0-23                                             ││
│  │                                                                       ││
│  │  Day of the Month  │                                                  ││
│  │  Month             │                                                  ││
│  │  Year              │                                                  ││
│  │                                                                       ││
│  │  Day of the Week   │                                                  ││
│  └───────────────────────────────────────────────────────────────────────┘│
│                                                                           │
│  Command              │ exspi_e55.exe -a -m 5 -s                         │
│  Execute as user      │ HP ITO account                                   │
│                                                                           │
│  ┌───────────────────────────────────────────────────────────────────────┐│
│  │  ☐ Send message before start of action                                ││
│  │     [ Configure Start Message... ]                                    ││
│  │  ☐ Send message if action completed successfully                      ││
│  │     [ Configure Success Message... ]                                  ││
│  │  ☒ Send message if action failed                                      ││
│  │     [ Configure Failure Message... ]                                  ││
│  │  ☒ Send Output of Action                                              ││
│  └───────────────────────────────────────────────────────────────────────┘│
│                                                                           │
│  [ OK ]  [ Cancel ]                                          [ 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 templates. In such cases, the tag feature is useful in allowing you to change existing templates and rename them. In this way you can associate template assignments with specific servers and the areas with which they are associated. For example, you might create a business administration group of templates and tag those templates with "ADM-" or a branch office group and tag those with "BR-."

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

a   Make copies of existing monitor templates that you want to modify.

b   (optional) Modify the monitor template settings.

c   Save each modified template 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 template.

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

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

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

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

In this case the new collector template 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 templates in the template 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 templates, 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 templates 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 template requirements
- Lists of Exchange SPI reports, by Exchange version
- Using Exchange SPI reports and graphs
    - Distributing data collection templates
    - Distributing Reporter Collection templates
- Exchange SPI graphs
- Deinstalling Exchange SPI Reporter templates

Data Collection for Graphing and Reporting

Exchange SPI reports display data collected from EXSPI templates distributed to Exchange servers. The Exchange SPI collects data for graphing and reporting through data collection templates. 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 templates, see the *HP OpenView Smart Plug-in for Microsoft Exchange Server Reference Guide,* for a complete listing of Schedule Data Collection templates for each Exchange version.

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

Table 4   Data Collection Templates Required for Reports

Report Name	Template 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	Template 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 Templates

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 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 templates.
- Configure and distribute Exchange SPI reporter collection templates.

➤ **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 Templates

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

For the procedure to distribute templates, see Task 8: Assign/Distribute Templates on page 54.

Configure/Distribute Reporter Collection Templates

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

To configure the Reporter Collection templates two steps are required:

1 Complete the Advanced Configuration procedure.

2 Distribute Reporter Collection templates.

1. Complete the Advanced Configuration procedure

For detailed steps, see Advanced Configuration on page 57.

2. Distribute Reporter Collection templates

The reporter collection templates need to be distributed to any managed nodes where data is to be collected for reporting and graphing. For the procedure to distribute templates, see Task 8: Assign/Distribute Templates on page 54.

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 templates. These graph templates need to be installed on an OVPM system, and require that OpenView PerfAgent (aka MW Agent) is running on the managed node.

Installing Exchange SPI Graph Templates

There are three template 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 templates on an OVPM 5.0 system, copy these files to the graph template 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 Template 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 MSExchangeOMA last response time in seconds.

POP3 Connections: This graph shows the POP3 connection activity.

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

Directory Service

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

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

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

Information Store

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

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

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

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

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

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

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

Mailbox Store

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

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

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

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

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

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

Messaging

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

MTA Queues: This graph shows Exchange server queue lengths.

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

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

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

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

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

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

Public Folder Store

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

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

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

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

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

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

Exchange 2000 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 MSExchangeDSAccess cache hit and miss ratio for Exchange 2000 and 2003 servers.

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

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

Information Store

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

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

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

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

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

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

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

Mailbox Store

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

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

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

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

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

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

Messaging

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

MTA Queues: This graph shows Exchange server queue lengths.

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

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

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

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

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

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

Public Folder Store

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

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

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

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

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

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

Exchange 5.5 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 A.09.00 release there is a set of preconfigured graphs for Exchange 5.5 that can be viewed in HP PerfView. PerView 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
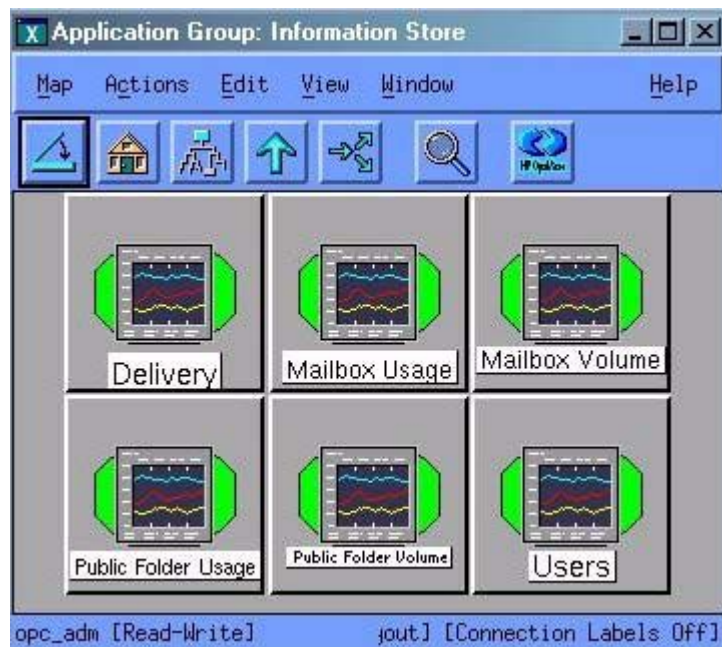
Delivery: This graph shows hourly metrics for the average delivery times of messages to Exchange Server private and public mailboxes.

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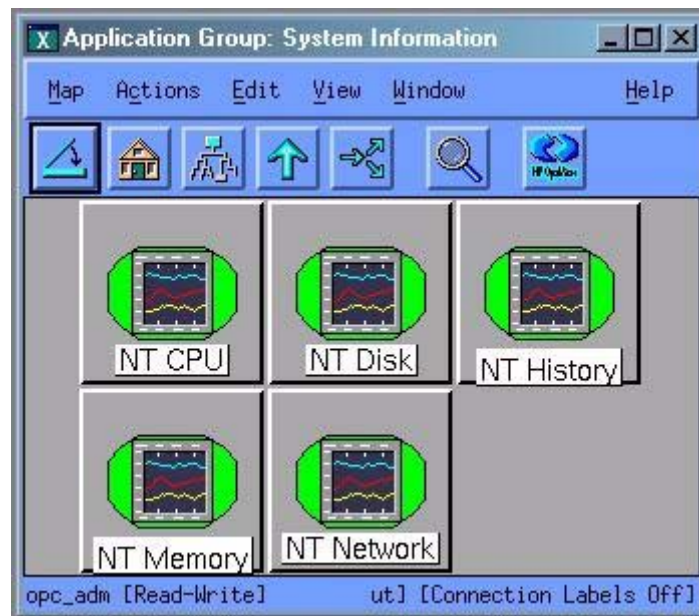
System Information for the following areas of performance are made available in graph format:

— 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 Template Failures

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 127.

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 44 Output of Application window
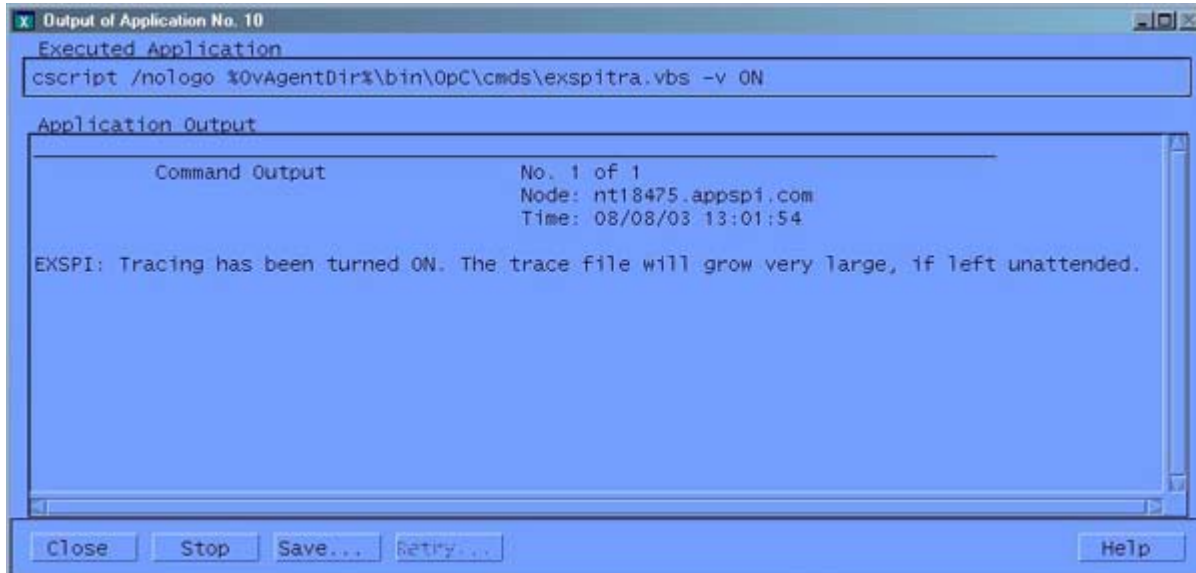
Disabling Tracing

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 template 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 template, check the **Send Output of Action** check box and re-distribute templates 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 templates to Windows NT4 managed nodes.

   Symptom: During ConfigFile template 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-template 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 templates 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 templates 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 Template 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<*hostnam*e> mailbo**x.

7 Verify MSXSPI user, MSXSPI<hostname> mailbox, MSXSPI rights in Exchange and MeasureWare:

8 Verify MSXSPI user setup.

— Use Windows User Manager to verify MSXSPI account. The user must exist in the same domain as 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.

9 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.

10 Verify MSXSPI<*hostnam*e> mailbox.

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

11 Verify MeasureWare Agent integration as described in Verifying MeasureWare Integration on page 131.

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

Templates 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 templates, logfile templates, applications and template groups.
`TEMPLATES/LOGFILE /logfile.dat`	Definition file for logfile encapsulation.
`TEMPLATES/MONITOR /monitor.dat`	Definition file for OVO templates: 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 templates.
`TEMPLATES/TEMPLGROUP /templgrp.dat`	Definition file for OVO template 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 templates 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	Template 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 Templates

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

```
%OVAgentDir%\conf\OpC\<hostname>\
```

Logging and Trace Files

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

`%OVAgentDir%\exspi\log`

Table 9   Logging and Trace Files

File	Description
trace	When TRACE ON is set in `%OVAgentDir%\exspi\defaults`, tracing and debug information is written to `%OVAgentDir%\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.

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