OMi Management Pack for Microsoft Exchange Server

Software Version: 1.00

Operations Manager i for Linux and Windows® operating systems

User Guide

Document Release Date: June 2017
Software Release Date: September 2014

Hewlett Packard Enterprise

Legal Notices

Warranty

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

The information contained herein is subject to change without notice.

Restricted Rights Legend

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

Copyright Notice

Trademark Notices

Adobe® is a trademark of Adobe Systems Incorporated.

Microsoft® and Windows® are U.S. registered trademarks of Microsoft group of companies.

Documentation Updates

To check for recent updates or to verify that you are using the most recent edition of a document, go to: https://softwaresupport.hpe.com/.

This site requires that you register for an HPE Passport and to sign in. To register for an HPE Passport ID, click **Register** on the HPE Software Support site or click **Create an Account** on the HPE Passport login page.

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

Support

Visit the HPE Software Support site at: https://softwaresupport.hpe.com/.

Most of the support areas require that you register as an HPE Passport user and to sign in. Many also require a support contract. To register for an HPE Passport ID, click **Register** on the HPE Support site or click **Create an Account** on the HPE Passport login page.

To find more information about access levels, go to: https://softwaresupport.hpe.com/web/softwaresupport/access-levels.

HPE Software Solutions Now accesses the Solution and Integration Portal website. This site enables you to explore HPE product solutions to meet your business needs, includes a full list of integrations between HPE products, as well as a listing of ITIL processes. The URL for this website is https://softwaresupport.hpe.com/km/KM01702731.

Contents

Chapter 1: Introduction 5
Chapter 2: Getting Started 6
Task 1: Adding Nodes to BSM Console 6
Task 2: Enable the Enrichment Rule 7
Task 3: Deploying the Exchange Discovery Aspect 7
Task 4: Verifying Discovery 9
Task 5: Deploying the Microsoft Exchange Server Management Templates or Aspects 9
User Privileges 10
Data Collection Process 10
Task 5a: Identifying and Deploying Microsoft Exchange Server Management Templates 11
Task 5b: Deploying Microsoft Exchange Server Aspects 13
Task 6: Verifying Discovery for Extended Topology 15
Checking Topology Synchronization Settings 16
Monitoring Microsoft Exchange Server Environment 17
Event Perspective 17
Health Perspective 19
Performance Perspective 19
Chapter 3: Components 21
Microsoft Exchange Server Management Templates 21
Overview of Microsoft Exchange Server Management Templates 22
Tasks 22
Essential Microsoft Exchange Management Template 24
Extensive Microsoft Exchange Management Template 26
Microsoft Exchange Solution Management Template 29
Microsoft Exchange Server Aspects 39
Tasks 39
Parameters 82
Types of Parameters 82
Tuning Parameters 83

Run-time Service Model (RTSM) Views 84
Configuration Items (CIs) and Configuration Item Types (CITs) 90
Enrichment Rules 91
Health Indicators (HIs) and Event Type Indicators (ETIs) 91
Topology Based Event Correlation (TBEC) Rules 99
Operation Orchestration (OO) Flows 116
Graph Templates 119
Tools 123
Launching Tools 123
Chapter 4: Customization Scenarios 127
Creating Microsoft Exchange Server Management Template 127
Editing Microsoft Exchange Server Management Template 129
Editing Parameters 129
Editing Aspects 130
Chapter 5: Troubleshooting 132
Appendix: Metrics and Datastores 137
Data Stores for 2010 137
Data Stores for 2013 155
Send documentation feedback 173

Chapter 1: Introduction

The OMi Management Pack for Microsoft Exchange Server (OMi MP for Microsoft Exchange Server) works with Operations Manager i (OMi) and enables you to monitor Microsoft Exchange Server 2010 and 2013 environments. Microsoft Exchange Server is a messaging server that is used across the world for exchanging mails, scheduling tasks, and collaboration. OMi MP for Microsoft Exchange Server enables you to manage and monitor your enterprise Exchange environment using out-of-the-box Aspects and Management Templates for monitoring the availability, health, and performance of Microsoft Exchange Servers. The Management Templates consists of a wide range of Aspects which enable monitoring the Exchange service status, server availability, server performance, mail flow, transport queues, and so on. It also includes Health Indicators (HIs), Event Type Indicators (ETIs), and Correlation Rules that analyze the events that occur in the Microsoft Exchange Servers and report the health status.

The Management Templates or Aspects can be seamlessly deployed by administrators for monitoring the Microsoft Exchange Servers in an enterprise environment. The Subject Matter Experts (SMEs) and developers can easily customize the Exchange Server Management Templates.

OMi MP for Microsoft Exchange Server supports the following:

- Automated instance based simplified configuration and deployment.
- Provides a 360 degree monitoring of the health and performance of Microsoft Exchange Servers and its underlying infrastructure.
- Ready to deploy out-of-the-box management solutions to suit different monitoring requirements.
- Monitoring of complete Exchange Server Deployment including the Active Directory and the underlying system infrastructure.

Chapter 2: Getting Started

The following section provides step-by-step information about deploying the components of OMi MP for Microsoft Exchange Server for monitoring Microsoft Exchange Server instances. It also provides information about accessing and viewing the Event, Health, and Performance perspectives of Microsoft Exchange Servers.

Task 1: Adding Nodes to BSM Console

> **Note:** If the Microsoft Exchange Servers that you want to monitor is already being monitored by Smart Plug-in for Microsoft Exchange Server (SPI for Microsoft Exchange Server) then remove the SPI artifacts and datasources from the node hosting the Microsoft Exchange Servers before proceeding further.

> **Note:** If the node already exists in Run-time Service Model (RTSM), you can skip this step and proceed to Task 2.

Before you begin monitoring, you need to add the nodes to the BSM console.

1. Open the Monitored Nodes manager from the Operations Management Administration:

   Admin > Operations Management > Setup > Monitored Nodes

2. In the Node Views pane, click **Predefined Node Filters > Monitored Nodes** and then click  and then click **Computer > Windows**. The Create New Monitored Nodes dialog box appears.
3. Specify the Primary DNS Name, Operating System, Processor Architecture, and a description of the node and click **OK**.

   The newly created node is saved as a Configuration Item (CI) instance in the Run-time Service Model (RTSM).

> **Note:** The node with Operations Agent needs to be activated to OMi server and certificate needs to be granted.

Task 2: Enable the Enrichment Rule

To enable the Enrichment Rule, follow these steps:

1. Open the Enrichment Manager.

   Admin > RTSM Administration > Modeling > Enrichment Manager

2. In the Enrichment Rules pane, select **SoftwareElementDisplayLabelForNewHost** from the list. The Enrichment Rule Properties window appears.
3. Right-click and select **Properties**.
4. Click **Next**.
5. Select **Rule is Active**.
6. Click **Finish**.
7. In the Enrichment Rules pane, click  to save the changes.

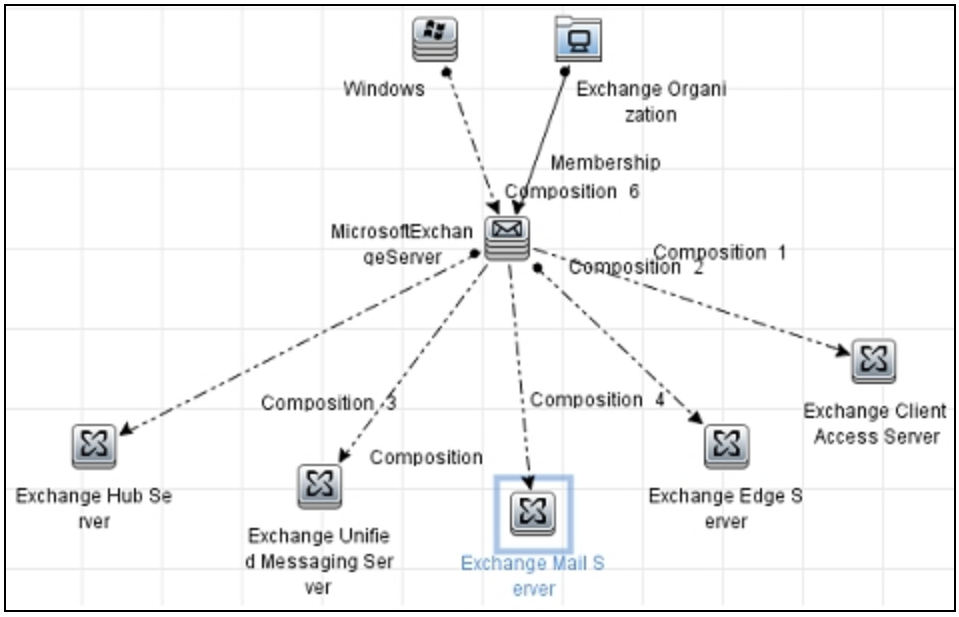
Task 3: Deploying the Exchange Discovery Aspect

The Exchange Discovery Aspect enables you to discover Microsoft Exchange Server instances in the environment.

The Exchange Discovery Aspect deployment discovers the Configuration Item (CIs) of the following CI types (CITs):

- Exchange Organization
- Windows CIs
- Microsoft Exchange Server and the following Exchange Server Roles:
  - Exchange Client Access Server
  - Exchange Mail Server
  - Exchange Unified Messaging Server
  - Exchange Edge Server

- Exchange Hub Server



To discover CIs on the added managed nodes, you can deploy the Exchange Discovery Aspect. To deploy the Exchange Discovery Aspect, follow these steps:

1. Open the Management Templates & Aspects pane:

   Admin > Operations Management > Monitoring > Management Templates & Aspects

2. In the Configuration Folders pane, click **Configuration Folders > Microsoft Application Management > Microsoft Exchange Server > Aspects**.
3. In the Management Templates & Aspects pane, select **Exchange Discovery** and click **Assign and Deploy Item**. The Assign and Deploy Wizard opens.
4. In the **Configuration Item** tab, click the Windows Node CI to which you want to deploy the Exchange Discovery Aspect, and then click **Next**.
5. Click **Finish**.

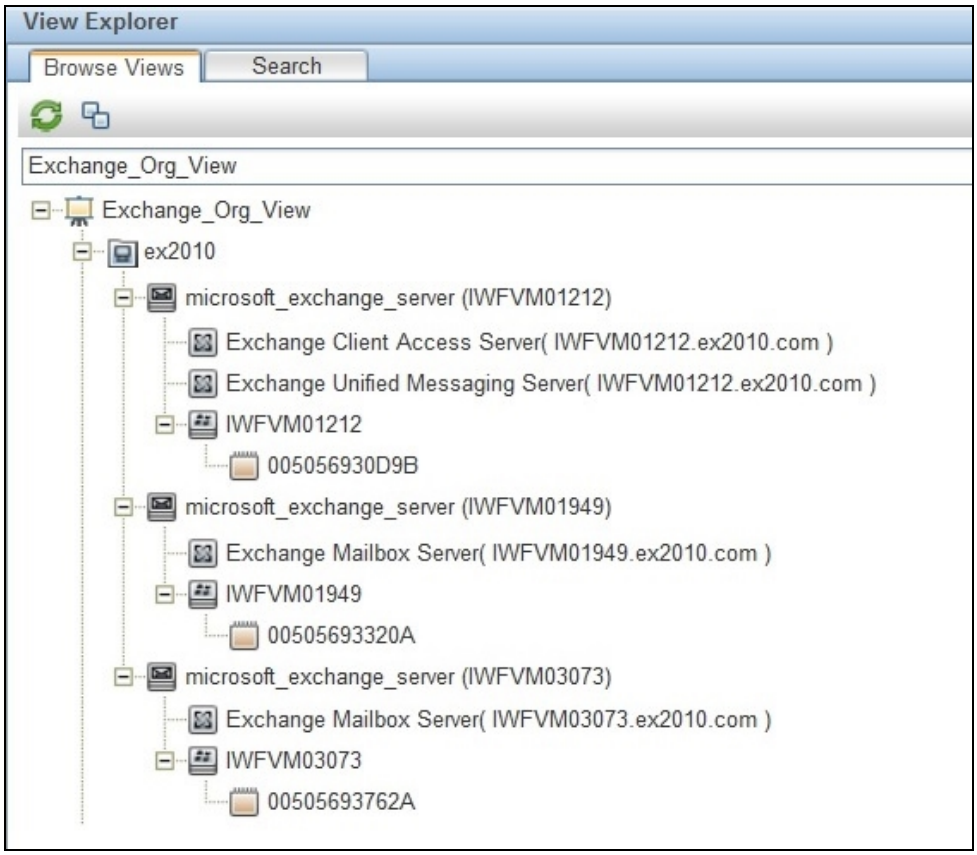
> **Note:** After the Exchange Discovery Aspect is deployed, a message stating the Assignment and deployment jobs created appears. To check the status of the deployment job, go to **Admin > Operations Management > Monitoring > Deployment Jobs**.

Task 4: Verifying Discovery

After you deploy the Exchange Discovery Aspect, you can verify if the CIs are populated in the View Explorer.

1. Click **Applications > Operations Management > Event Perspective**.

   In the View Explorer, select **Exchange_Org_View** from the drop-down list. You can see the CIs associated with the **Exchange_Org_View** as shown in the following figure:



Task 5: Deploying the Microsoft Exchange Server Management Templates or Aspects

This section provides information about required privileges for monitoring, data collection process, and deploying management templates and aspects. For more information about deploying Microsoft

Exchange Server Management Templates, go to "Task 5a: Identifying and Deploying Microsoft Exchange Server Management Template". For more information about deploying Microsoft Exchange Server Aspects, go to "Task 5b: Deploying Microsoft Exchange Server Aspects".

User Privileges

To monitor Microsoft Exchange Servers, provide user credentials with the following privileges:

- View-Only Organization Management
- Server Management
- Records Management
- Local Administrator of Exchange Server

For an Exchange Edge Server, provide user credential with *Local Administrator of Exchange Edge Server* privilege.

Data Collection Process

The frequency (polling interval) at which each Aspect must be monitored is predefined with a default value in a specific frequency parameter. Frequency parameter is an expert parameter that is defined for each of the metrics regardless of whether they are for generating events or not.

Following are the four predefined frequency parameters:

Scheduler Frequency	Default value
Very High	5 mins
High	15 mins
Medium	1 hour
Low	24 hours

After Management Templates and Aspects are deployed, collector is triggered based on the parameter value in a specific Aspect. You can modify the default value of the parameter at following two levels:

- During deployment of the Management Template or Aspects using the Management Templates & Aspects pane.

- After deployment using the Assignments & Tuning pane.

For more information about how to modify the parameter values, see the section Editing Parameters.

Task 5a: Identifying and Deploying Microsoft Exchange Server Management Templates

Before deploying the Microsoft Exchange Server Management Template, you must deploy the Exchange Discovery Aspect. For more information, see Task 3: Deploying the Exchange Discovery Aspect.

Before deploying the Exchange Server Management Templates, you can identify the Exchange Server Management Template suitable for your environment by following these recommendations:

- If you want to monitor the primary areas of Microsoft Exchange Server such as server availability, service availability, mail flow latency, replication status, MAPI connectivity and transport queues you can deploy the Essential Microsoft Exchange Server Management Template.
- If you want to monitor the primary and advanced areas such as SPAM statistics, Blocked Data statistics, Public Folder, Recipient filtering statistics, IMAP4, and POP3 Connects, you can deploy the Extensive Microsoft Exchange Server Management Template.
- If you want to monitor your entire Microsoft Exchange Deployment comprising Microsoft Exchange Servers, Microsoft Active Directory, and the underlying infrastructure, you can deploy the Microsoft Exchange Solution Management Template.

To deploy the Microsoft Exchange Server Management Templates, follow these steps:

1. Open the Management Templates & Aspects pane:

   Admin > Operations Management > Monitoring > Management Templates & Aspects

2. In the Configuration Folders pane:

   Configuration Folders > Microsoft Application Management > Microsoft Exchange Server > Management Templates

3. In the Management Templates & Aspects pane, click the Management Template that you want to deploy, and then click  . The Assign and Deploy wizard opens.

4. In the **Configuration Item** tab, click the Exchange Organization CI to which you want to assign the Management Template, and then click **Next**. You can select multiple items by holding down the **CTRL** or **SHIFT** key while selecting them.
5. Click **Next** to go to Required Parameters.
6. In the **Required Parameters** tab, do the following steps:
   a. Select the **User Name** parameter in the list and click  . The Edit Parameter: USERNAME dialog box opens.
   b. Click **Value**, specify the user name, and then click **OK**.
   c. Select **Password** and click  . The Edit Parameter: PASSWORD dialog box opens.
   d. Enter the password for the user name and then click **OK**.

   > **Note:** You must specify the user name in the `Domain name\\Username` format. For more information about user credentials, see the section *User Privileges*.

   > **Note:** You must specify all the parameters in the **Required Parameters** tab before proceeding to the next step.
7. To accept the CIs and go to **All Parameters**. The **All Parameters** tab opens.
8. To change the default values of the parameters, you can select the parameter and then click  . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.

   > **Note**: In the **All Parameters** tab, you can override the default values of any parameter. You can specify a value for each parameter at the Management Template level. By default, parameters defined as expert parameters are not displayed. To display expert parameters, click  **Hide Expert Parameters**.
9. In the **All Parameters** tab, click **Next** to go to the **Configure Options** tab.
10. *(Optional)*. If you do not want to enable the assignment immediately, clear the **Enable Assigned Objects** check box. You can then enable the assignment later using the Assignments & Tuning pane.
11. Click **Finish**.

***(Optional)*. Perform the following steps only for Microsoft Exchange Edge Server**

1. Open the Assignments & Tuning pane:

   Admin > Operations Management > Monitoring > Assignments & Tuning

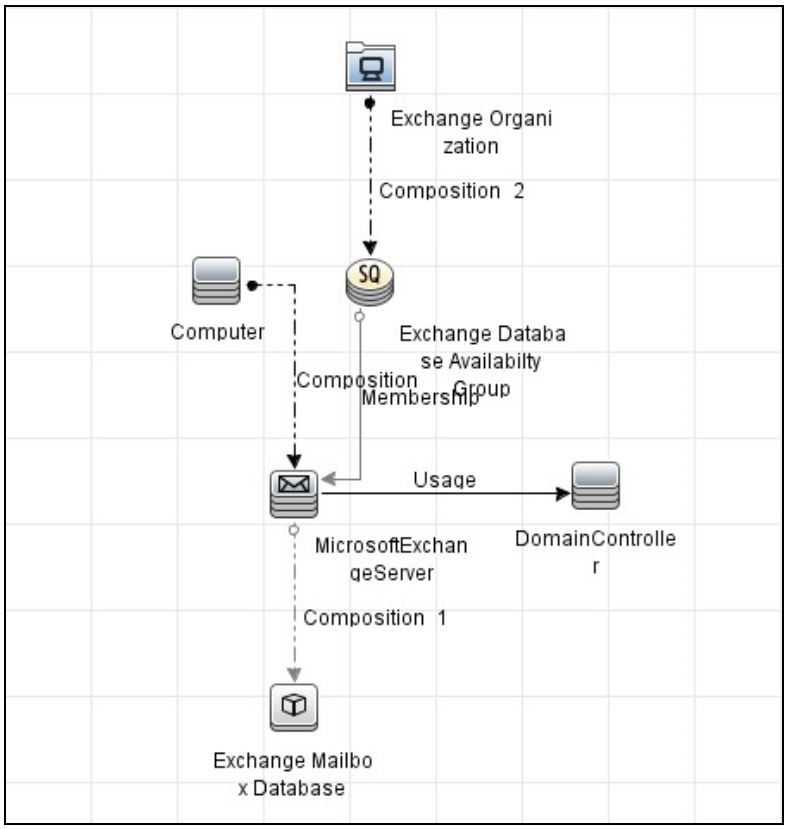
2. In the **Browse Views** tab, select **Exchange_Org_View**.
3. Expand the view, and select the node which hosts the Microsoft Exchange Edge Server.
4. In the Assignments pane, select the **Exchange Discovery and Config** Aspect. This shows the parameters and values in the Assignment Details pane.
5. Edit the user name and password to provide the user credential as mentioned in the section *User Privileges*.

   These new user credentials will be used by the Management Template for the Microsoft Exchange Edge Server.

Task 5b: Deploying Microsoft Exchange Server Aspects

Before deploying the Microsoft Exchange Server Aspects, you must deploy the Exchange Discovery and Config Aspect to discover the additional CIs of the following CITs:

- Exchange Mailbox Databases
- Domain Controllers
- Exchange Database Availability Group



> **Note:** The Exchange Discovery and Config Aspect requires user credentials as input. For information about user credentials, see the section *User Privileges*.

To deploy the Microsoft Exchange Server Aspects, follow these steps:

1. Open the Management Templates & Aspects pane:

   Admin > Operations Management > Monitoring > Management Templates & Aspects

2. In the Configuration Folders pane:

   Configuration Folders > Microsoft Application Management > Microsoft Exchange Server > Aspects

3. In the Management Templates & Aspects pane, click the Aspects folder, and select an Aspect and then click to open the Assign and Deploy wizard.

4. In the **Configuration Item** tab, click the **Configuration Item** to which you want to deploy the Aspect.

   > **Note:**If you want to deploy Aspects to Node CIs, select **Show All CIs of Type Node**.

5. Click **Next** to go to **All Parameters**. To change the default values of the parameters, you can select the parameter and then click  . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.
6. In the **All Parameters** tab, click **Next** to go to the **Configure Options** tab.
7. *(Optional)*. If you do not want to enable the assignment immediately, clear the **Enable Assigned Objects** check box. You can then enable the assignment later using the Assignments & Tuning pane.
8. Click **Finish**.

   The selected Aspect is deployed on the selected CI.

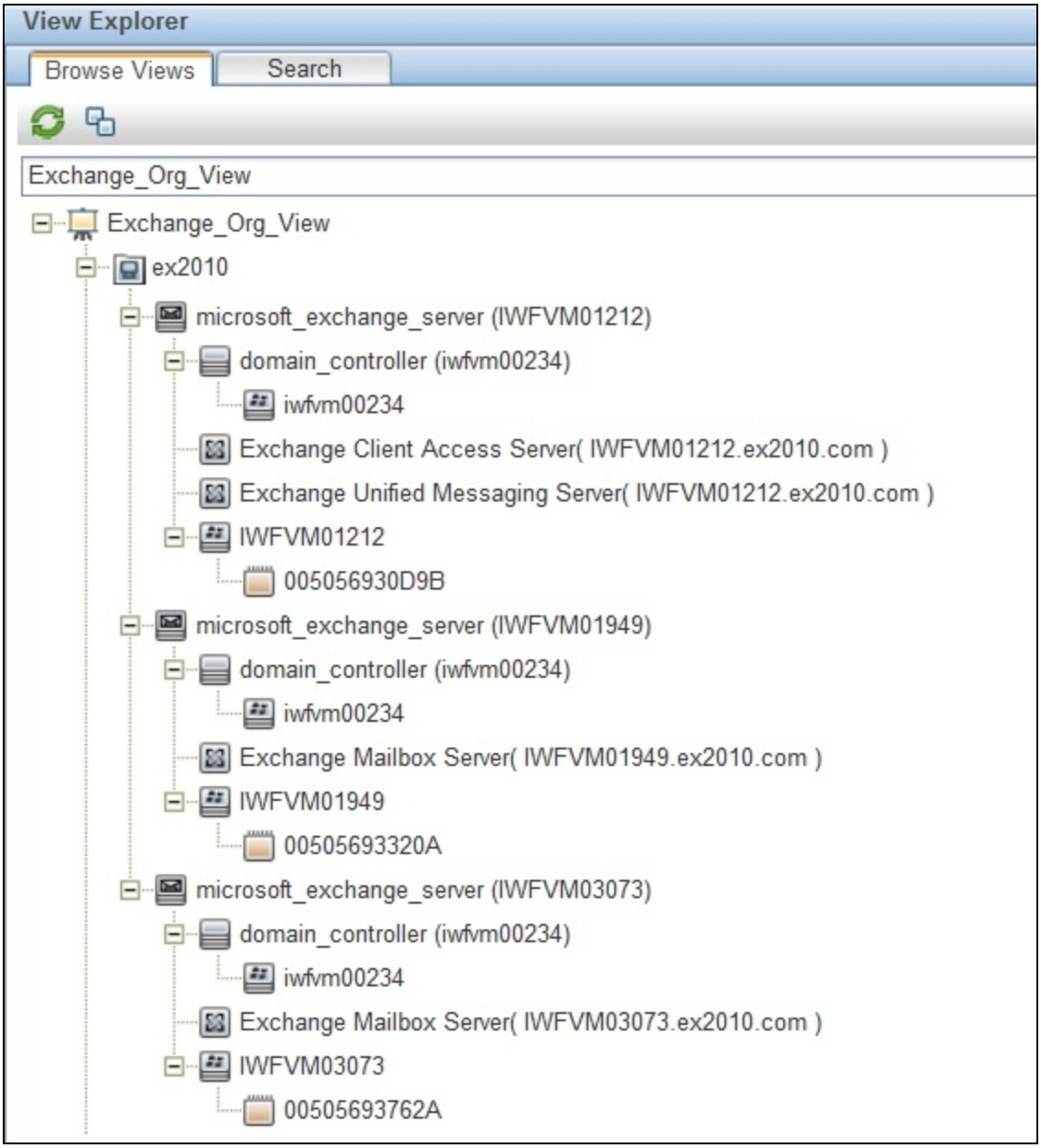
Task 6: Verifying Discovery for Extended Topology

After you deploy the Exchange Server Management Templates or Exchange Discovery and Config Aspect, you can verify if the CIs are populated in the View Explorer.

To view the CIs in the View Explorer, follow these steps:

1. In the BSM Console, click **Applications > Operations Management > Event Perspective**.
2. In the View Explorer, select **Exchange_Org_View** from the drop-down list. You can see the extended topology comprising CIs associated with the **Exchange_Org_View** as shown in the

following figure.



Checking Topology Synchronization Settings

> **Note**: It is recommended to check the Topology Synchronization settings if a node or a CI is monitored by Operations Manager.

To check the topology synchronization settings, follow these steps:

1. Open the Infrastructure Settings from the Operations Management Administration:

   Admin > Platform > Setup and Maintenance > Infrastructure Settings

2. In the Infrastructure Settings manager, select **Applications > Operations Management**.
3. In the **Operations Management - HPOM Topology Synchronization Settings**, the packages for Topology Sync contains the packages that are used for topology synchronization. The package **default;nodegroups;operations-agent** exist by default. Ensure that the **HPOprAds;HPOprExc** packages also are present. If these packages are not present, add them along with other Topology Sync packages.

Monitoring Microsoft Exchange Server Environment

After you deploy the Exchange Server Discovery Aspect and Exchange Server Management Template (s), you can view event related information from the following perspectives.

- Event Perspective
- Health Perspective
- Performance Perspective

Event Perspective

Event Perspective provides complete information of events. In the Event Perspective, you can view the event information of Microsoft Exchange Server CIs and Node CIs that are monitored by OMi MP for Microsoft Exchange Server.

To view Event Perspective of the Microsoft Exchange Server CIs, follow these steps:

1. Open the Operations Management pane:

   Applications > Operations Management

2. In the Operations Management window, click the **Event Perspective** tab. The View Explorer pane appears.

3. In the **Browse Views** tab, select **Exchange_Org_View** that contains the Exchange Server organization and user specific roles. You can also use the **Search** tab to find a Microsoft Exchange Server CI.
4. Click the Microsoft Exchange Server CI or the respective Exchange Server Role CI for which you want to view the Event Perspective. The list of events for the selected Microsoft Exchange Server CI appears in the Event Browser pane.
5. When you click on an event in the Event Browser, the Event Details pane opens where you can view the following details:
   - **General** - Displays the detailed information about the selected event such as Severity, Lifecycle State, Priority, Related CI, and so on.
   - **Additional Info** - Displays more detailed information about the attributes of the selected event.
   - **Source Info** - Displays an overview of the information available about the source of the selected event.
   - **Actions** - Displays the list of actions available for a selected event. There are two types of possible actions: User Action and Automatic Action.
   - **Annotations** - Displays a list of the annotations attached to the selected event.
   - **Custom Attributes** - Displays a list of the attributes that either an administrator or a responsible user manually configured and added to the selected event.
   - **Related Events** - Displays an overview of all the events that are related to the event selected in the Event Browser.
   - **History** - Displays the history of the selected event.
   - **Resolver Hints** - Displays the information used to identify the node and CI associated with an event.
   - **Instructions** - Displays instruction information designed to help operators handle the associated event.
   - **Forwarding** - Displays the transfer of ownership details if any, for the events.

   > **Note**: For more information about Managing Events, see the *Operations Manager i Concepts Guide*.

Health Perspective

The Health Perspective provides a high-level view of the overall health information of the related CIs in the context of events. In the Health Perspective, you can view the health information of the Microsoft Exchange Server CIs that are monitored by OMi MP for Microsoft Exchange Server.

To view the Microsoft Health Perspective of the Exchange Server CIs, follow these steps:

1. Open the Operations Management pane:

   Applications > Operations Management

2. In the Operations Management window, click the **Health Perspective** tab. The View Explorer pane appears.
3. In the **Browse Views** tab, select **Exchange_Org_View** that contains the Exchange Server organization and user specific roles. You can also use the **Search** tab to find a Microsoft Exchange Server CI.
4. Click the Microsoft Exchange Server CI or the respective Exchange Server Role CI for which you want to view the Event Perspective. The list of events for the selected Exchange Server CI appears in the Event Browser pane.
   - Health Top View - Displays a topological view of the CIs that are affected by the selected event.
   - Health Indicators - Displays the Key Performance Indicators (KPIs) and HIs related to the CI that you select from the Health Top View pane.
   - Actions - Displays a list of available actions for a selected event.

   > **Note**: For more information about Managing Events, see the *Operations Manager i Concepts Guide*.

Performance Perspective

Performance Perspective enables you to draw graphs from existing graph templates. You can also plot customized graphs by selecting the required metrics for a selected CI.

To view the Performance Perspective of Microsoft Exchange Server CIs using graphs, follow these steps:

1. Open the Operations Management pane:

   Applications > Operations Management

2. In the Operations Management window, click the **Event Perspective** tab. The View Explorer pane appears.
3. In the **Browse Views** tab, select **Exchange_Org_View** that contains the Exchange Server organization and user specific roles. You can also use the **Search** tab to find Microsoft Server Role CIs.
4. From the **Graphs** tab, click the graph you want to plot and then click  **Draw Graphs**. The selected graph is plotted on the right pane.

> **Note:** For more information about Managing Events, see the *Operations Manager i Concepts Guide*.

Chapter 3: Components

The OMi MP for Microsoft Exchange Server includes the following components for monitoring Microsoft Exchange Server in your environment:

- Microsoft Exchange Server Management Templates
- Microsoft Exchange Server Aspects
- Parameters
- Configuration Items (CIs) and Configuration Item Types (CITs)
- Run-time Service Model (RTSM) Views
- Enrichment Rules
- Health Indicators and Event Type Indicators
- Topology Based Event Correlation (TBEC) Rules
- Graph Templates
- Operations Orchestration (OO) Flows
- Tools

Microsoft Exchange Server Management Templates

The Exchange Server Management Templates provide a complete management solution for monitoring the health and performance of physical and virtual systems in a datacenter environment. By default, OMi MP for Microsoft Exchange Server consists of a set of Management Templates with predefined settings to monitor the Microsoft Exchange Servers in an environment. You can deploy the Microsoft Exchange Server Management Templates with the default parameters and seamlessly monitor the systems in your environment. These management templates comprises of several Aspects which enable you to monitor the systems.

Based on the monitoring requirements, you can also customize or create the Microsoft Exchange Server Management Templates to monitor the systems in your environment.

Overview of Microsoft Exchange Server Management Templates

OMi MP for Microsoft Exchange Server comprises of the following Microsoft Exchange Server Management Templates:

- Essential Microsoft Exchange Management Template
- Extensive Microsoft Exchange Management Template
- Microsoft Exchange Solution Management Template

How to Access Management Templates

1. Select **Admin > Operations Management > Monitoring**.
2. Click **Configuration Folders > Microsoft Application Management > Microsoft Exchange Server > Management Templates**.

Tasks

How to Deploy Microsoft Exchange Server Management Templates

For more information about deploying Microsoft Exchange Management Template, see Task 5a: Deploying Microsoft Exchange Server Management Template.

How to Automatically Assign Microsoft Exchange Server Management Templates and Microsoft Exchange Server Aspects

To automatically assign Microsoft Exchange Server Management Templates or Microsoft Exchange Server Aspects, follow these steps:

1. Open **Automatic Assignment Rules**:

   Admin > Operations Management > Monitoring > Automatic Assignment Rules

   Automatic Assignment Rules consists of Auto-Assignment Rules pane at the top and Parameters pane at the bottom.

2. In the Auto-Assignment Rules pane, click  and select the appropriate option. The Create Auto-Assignment Rule wizard opens.

3. In the **Select Target View** tab, select the view for which you want to create the automatic assignment rule, and then click **Next**.
4. In the **Select Item to Assign** tab, click the Management Template or Aspect that you want to automatically assign to all the CIs, and then click **Next**.

   The latest version of the Management Template or Aspect that you want to assign is selected by default.
5. In the **Required Parameters** tab, enter the user name and password details and click OK. For more information about the credentials, see .

   > **Note:** There are no parameters that have to be edited.
6. *(Optional)*. In the **All Parameters** tab, you can change the default value of parameters by following these steps:

   a. Double-click the parameter you want to edit or select the parameter from the list and click **Edit**. The Edit Parameter window opens.

   b. Modify the value and click **OK**.
7. Click **Next**.
8. *(Optional)*. In the **Configure Option** tab, clear the **Activate Auto- Assignment Rule** check box if you do not want to activate the assignment rule immediately. You can activate automatic assignment rules later using the Automatic Assignment Rules window at **Admin > Operations Management > Monitoring > Automatic Assignment Rules**.
9. Click **Finish** to save the changes. The assignment rule is added to the list of auto-assignment rules.

An assignment may trigger an event to be sent to BSM if one of the following situations applies:

- A deployment job fails.
- An auto-assignment fails.
- An auto-assignment succeeds. This behavior can be configured in the Infrastructure settings.

You can check if the automatic assignment rule successfully created the expected assignments as by following these steps:

1. Open the Assignments & Tuning pane:

   Admin > Operations Management > Monitoring > Assignments & Tuning

2. In the **Browse Views** tab, select the view you identified while creating your automatic assignment rule.
3. Expand the view, and select a node that corresponds to the root CI type of the assigned item. Assignments created as a result of Automatic Assignment Rules are shown in the list of assignments at the top of the right pane, and have the value Auto-Assignment in the column Assigned By.

You can consider the following options for tuning the assignment:

- Use the Automatic Assignment Rules pane to tune the parameter values for all assignments triggered by the automatic assignment rule.
- Use the Assignments & Tuning pane to tune, redeploy, delete, and enable or disable individual assignments.

Essential Microsoft Exchange Management Template

The Essential Microsoft Exchange Management Template can be used to monitor the basic features of Exchange Servers in an environment. The Essential Microsoft Exchange Management Template contains the most essential features for monitoring the availability and performance of the Microsoft Exchange Server setup.

How to Access the Essential Microsoft Exchange Management Template

1. Select **Admin > Operations Management > Monitoring**.
2. Click **Configuration Folders > Microsoft Exchange Server > Management Templates > Essential Microsoft Exchange Management Template**.

User Interface Reference

Management Template - General

Name	Essential Microsoft Exchange Management Template
Description	Monitors the most essential features of Microsoft Exchange Server.
Created By	Role of the user who created the Management Template
ID	A unique identifier for the Graphic User Interface (GUI) version of the

	Management Template.
Version ID	A unique identifier for this version of the Essential Microsoft Exchange Server Management Template.
Version	The current version of the Management Template. In this instance, the version of the Management Template is 1.0.
Change Log	The text that describes what is new or modified in this version of the Management Template.

Management Template - Topology View

Topology View	**Exchange_Org_View** is the Topology View for the Essential Microsoft Exchange Management Template. It contains Exchange Server related CITs that you want to manage using the Management Template.
CI Type	The type of CI that the Essential Microsoft Exchange Management Template can be assigned. The Essential Microsoft Exchange Management Template contains the **Exchange Organization** CIT.

Management Template - Aspects

The Essential Microsoft Exchange Management Template contains the following Aspects:

- Exchange Active Sync
- Exchange Availability
- Exchange Discovery and Config
- Exchange Information Store
- Exchange Mail Flow
- Exchange MAPI
- Exchange OWA
- Exchange Replication
- Exchange RPC Performance
- Exchange Service Availability
- Exchange Transport Queues

The Essential Microsoft Exchange Management Template contains the following Infrastructure Aspects:

System Fault Analysis

The System Fault Analysis Aspect monitors the event log file for critical error conditions and instructions. This Aspect consists of the following policy templates:

Resource Bottleneck Diagnosis

The Resource Bottleneck Diagnosis Aspect identifies congestions and bottleneck conditions for system resources such as the CPU, memory, network, and disk. CPU bottleneck monitoring is based on global CPU utilization and load average (Run Queue Length). Memory bottleneck monitoring is based on memory utilization, free memory available, and memory swap out rate. Filesystem monitoring is based on space utilization level for busiest filesystem on the node. Network monitoring is based on packet collision rate, packet error rate, and outbound queue length. This Aspect consists of the following policy templates:

System Infrastructure Discovery

The System Infrastructure Discovery Aspect discovers and gathers information regarding the system resources, operating system, and applications on a managed node. This Aspect consists of the following policy templates:

Extensive Microsoft Exchange Management Template

The Extensive Microsoft Exchange Management Template contains the complete set of Microsoft Exchange Server Aspects and Infrastructure Aspects for monitoring availability, performance, and health of Microsoft Exchange Server. The Extensive Microsoft Exchange Server Management Template can be used for monitoring the advanced features of Microsoft Exchange Server. It provides the in-depth monitoring of Exchange Server deployment.

How to Access the Extensive Microsoft Exchange Management Template

1. Select **Admin > Operations Management > Monitoring**.
2. Click **Configuration Folders > Microsoft Exchange Server > Management Templates > Extensive Microsoft Exchange Management Template**.

User Interface Reference

Management Template - General

Name	Extensive Microsoft Exchange Management Template.
Description	Monitors the most essential features of Microsoft Exchange Server.
ID	A unique identifier for the Graphic User Interface (GUI) version of the Management Template.
Created By	Role of the user who created the Management Template
Version ID	A unique identifier for this version of the Extensive Microsoft Exchange Management Template.
Version	The current version of the Management Template. In this instance, the version of the Management Template is 1.0.
Change Log	The text that describes what is new or modified in this version of the Management Template.

Management Template - Topology View

Topology View	**Exchange_Org_View** is the Topology View for Extensive Microsoft Exchange Management Template. It contains Microsoft Exchange Server related CITs that you want to manage using the Management Template.
CI Type	The type of the CI to which the Management Template can be assigned. The Extensive Microsoft Exchange Management Template contains the **Exchange Organization** CIT.

Management Template - Aspects

The Extensive Microsoft Exchange Management Template includes the following Aspects:

- Exchange Active Sync
- Exchange Active Sync Performance
- Exchange Availability
- Exchange Blocked Data
- Exchange Database Consistency
- Exchange Discovery and Config
- Exchange IMAP4
- Exchange Information Store
- Exchange Mail Flow
- Exchange Mailbox
- Exchange Mailbox Database

- Exchange MAPI
- Exchange Online Address Book
- Exchange OWA
- Exchange POP3
- Exchange Public Folder
- Exchange Recipient Filtering
- Exchange Replication
- Exchange RPC Performance
- Exchange Sender ID Filtering
- Exchange Service Availability
- Exchange SMTP
- Exchange SPAM Statistics
- Exchange Transport Filter
- Exchange Transport Queues
- Exchange Transport
- Exchange Unified Messaging

The Extensive Microsoft Exchange Management Template includes the following Infrastructure Aspects:

CPU Performance

The CPU Performance Aspect monitors the overall CPU performance such as the CPU utilization percentage and spike in CPU usage. Individual CPU performance monitoring is based on total CPU utilization, CPU utilization in the user mode, CPU utilization in the system mode, and interrupt rate. This Aspect consists of the following policy templates:

Bandwidth Utilization and Network IOPS

The Bandwidth Utilization and Network IOPS Aspect monitors IO operations, and performance of the systems in the network. It monitors the network IO operations and performance based on the bandwidth used, outbound queue length and average bytes transferred per second.

Memory and Swap Utilization

The Memory and Swap Utilization Aspect monitors memory performance of the system. Memory performance monitoring is based on memory utilization (in percentage), swap space utilization (in percentage), free memory available (in MBs), and free swap space available (in MBs). This Aspect

consists of the following policy templates:

Space Availability and Disk IOPS

The Space Availability and Disk IOPS Aspect monitors the disk IO operations and space utilization of the system. This Aspect consists of the following policy templates:

System Infrastructure Discovery

The System Infrastructure Discovery Aspect discovers and gathers information regarding the system resources, operating system, and applications on a managed node. This Aspect consists of the following policy templates:

Microsoft Exchange Solution Management Template

The Microsoft Exchange Solution Management Template monitors the Exchange Server components along with basic components of Infrastructure and Active Directory. The Microsoft Exchange Solution Management Template discovers Exchange Server CIs and Domain Controllers associated with the CIs. The Microsoft Exchange Solution Management Template deploys Exchange Server Aspects on the Microsoft Exchange Server and Active Directory Aspects on the Domain Controllers.

How to Access Microsoft Exchange Solution Management Template

1. Select **Admin > Operations Management > Monitoring**.
2. Click **Configuration Folders > Microsoft Exchange Server > Management Templates > Microsoft Exchange Solution Management Template**.

User Interface Reference

Management Template - General

Name	Microsoft Exchange Solution Management Template
Description	Monitors the Exchange Server components along with basic components of Infrastructure and Active Directory.
Created By	Role of the user who created the Management Template
ID	A unique identifier for the Graphic User Interface (GUI) version of the Management Template.
Version ID	A unique identifier for this version of the Essential Microsoft Exchange Server Management Template.
Version	The current version of the Management Template. In this instance,

	the version of the Management Template is 1.0.
Change Log	The text that describes what is new or modified in this version of the Management Template.

Management Template - Topology View

Topology View	**Exchange_Org_View** is the Topology View for the Microsoft Exchange Solution Management Template. It contains Microsoft Exchange Server related CITs that you want to manage using the Management Template.
CI Type	The type of the CI that the Essential Microsoft Exchange Server Management Template can be assigned. The Microsoft Exchange Solution Management Template contains the **Exchange Organization** CIT.

Management Template - Aspects

The Microsoft Exchange Solution Management Template contains the following Aspects:

- Exchange Active Sync
- Exchange Availability
- Exchange Discovery and Config
- Exchange Service Availability
- Exchange MAPI
- Exchange OWA
- Exchange Replication
- Exchange RPC Performance
- Exchange Transport Queues

The Microsoft Exchange Solution Management Template contains the following Infrastructure Aspects:

System Fault Analysis

The System Fault Analysis Aspect monitors the event log file for critical error conditions and instructions. This Aspect consists of the following policy templates:

Resource Bottleneck Diagnosis

The Resource Bottleneck Diagnosis Aspect identifies congestions and bottleneck conditions for system resources such as the CPU, memory, network, and disk. CPU bottleneck monitoring is based on global CPU utilization and load average (Run Queue Length). Memory bottleneck monitoring is

based on memory utilization, free memory available, and memory swap out rate. Filesystem monitoring is based on space utilization level for busiest filesystem on the node. Network monitoring is based on packet collision rate, packet error rate, and outbound queue length. This Aspect consists of the following policy templates:

System Infrastructure Discovery

The System Infrastructure Discovery Aspect discovers and gathers information regarding the system resources, operating system, and applications on a managed node. This Aspect consists of the following policy templates:

The Microsoft Exchange Solution Management Template contains the following Active Directory Aspects:

Microsoft AD Collection Schedule

This Aspect contains the schedule task policies required to trigger the collection on predefined schedules. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
DomainController, DomainController Resource, DomainControllerRole	MSAD_ SCH_ ALL_ MEDIUM	NA	Contains the schedule task policy of frequency MEDIUM for collecting metrics for Microsoft Active Directory (MSAD) every 30 minutes.	Scheduled Task Template
DomainController, DomainController Resource, DomainControllerRole	MSAD_ SCH_ ALL_ VERY_ HIGH	NA	Contains the schedule task policy of frequency VERY_HIGH for collecting metrics for MSAD every 5 minutes.	Scheduled Task Template
DomainController, DomainController Resource, DomainControllerRole	MSAD_ SCH_ ALL_ HIGH	NA	Contains schedule task policy of frequency HIGH for collecting metrics for Microsoft Active Directory once in 15 minutes.	Scheduled Task Template
DomainController, DomainController Resource, DomainControllerRole	MSAD_ Collection Definition	NA	Contains the metric definitions in the XML format which are used by Microsoft Collector to collect metrics.	ConfigFile Template
DomainController, DomainController Resource, DomainControllerRole	MSAD_ SCH_ ALL_LOW	NA	Contains the schedule task policy of frequency LOW for collecting metrics for MSAD once in 24 hours.	Scheduled Task Template

Microsoft AD Directory Access

This Aspect monitors the directory throughput of LDAP in Microsoft Active Directory. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
DomainController	MSAD_IQLDAPActiveThreads	LDAPActiveThreads:VeryHigh / LDAPActiveThreads:Normal, LDAPActiveThreads:VeryHigh / LDAPActiveThreads:Normal	Checks the LDAP Active Threads for the number of LDAP Active Threads of DirectoryServices object.	Measurement Threshold Template
DomainController	MSAD_GlobalCatalogSearches	DirectorySearchRate:VeryHigh / DirectorySearchRate:Normal, DirectorySearchRate:VeryHigh / DirectorySearchRate:Normal	Monitors the number of Directory Searches per second.	Measurement Threshold Template
DomainController	MSAD_GlobalCatalogWrites	DirectoryWriteRate:VeryHigh / DirectoryWriteRate:Normal, DirectoryWriteRate:High / DirectoryWriteRate:Normal	Checks the number of Directory Writes per second.	Measurement Threshold Template
DomainController	MSAD_IQLDAPClientSessions	LDAPClientSessions:VeryHigh / LDAPClientSessions:Normal, LDAPClientSessions:High / LDAPClientSessions:Normal	Checks the LDAP Client Sessions for the number of LDAP Client Sessions for DirectoryServices object.	Measurement Threshold Template
DomainController	MSAD_IQLDAPBindTime	NA	Checks the LDAP Bind Time for the number of LDAP Client Sessions of	Measurement Threshold Template

CI Type	Policy Template	Indicator	Description	Policy Type
			DirectoryServices object.	
DomainController	MSAD_ GlobalCatalogReads	DirectoryReadRate:VeryHigh / DirectoryReadRate:Normal, DirectoryReadRate:High / DirectoryReadRate:Normal	Monitors the number of Directory Reads per second.	Measurement Threshold Template
DomainController	MSAD_ DirectoryAccessSchedule	NA	Maintains the schedule of Essential Directory Access Aspect.	ConfigFile Template

Microsoft AD DNS Response

This Aspect monitors the DNS Server response time and DNS query response time. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
DomainController	MSAD_ DNS_ Server_ Response	NA	Monitors the response time given by the DNS server.	Measurement Threshold Template
DomainController	MSAD_ DNS_ DC_ Response	DNSQueryResponse:VeryHigh / DNSQueryResponse:Normal	Monitors the response time of DNS queries made by the domain controller in milliseconds.	Measurement Threshold Template

Microsoft AD Global Catalog

This Aspect monitors Global Catalog (GC) by monitoring the status and replication consistency of GC. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
DomainControllerRole,	MSAD_	GCConnectivity:Down	Monitors the	Measurement

CI Type	Policy Template	Indicator	Description	Policy Type
DomainController	GCMonitorStatus	/ GCConnectivity:Up	GC Query Status in Active Directory.	Threshold Template
DomainControllerRole, DomainController	MSAD_SCH_ GCCheckStatus	NA	Checks the GC Query Status in Active Directory.	Scheduled Task Template

Microsoft AD Response Time

This Aspect monitors the LDAP and GC query response time. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
DomainController	MSAD_ ResponseTimeGCBind	GCLDAPBindResponseTime:VeryHigh / GCLDAPBindResponseTime:Normal, GCLDAPBindResponseTime:High / GCLDAPBindResponseTime:Normal	Monitors the bind response time of the global catalog on the domain controller in seconds.	Measurement Threshold Template
DomainController	MSAD_SCH_ ResponseLogging	NA	Logs Active Directory Response times	Scheduled Task Template
DomainController	MSAD_ ResponseTimeQuery	DCLDAPQueryResponseTime:VeryHigh / GCLDAPQueryResponseTime:Normal, GCLDAPQueryResponseTime:High / GCLDAPQueryResponseTime:Normal	Monitors the response time of queries made to the domain controller in	Measurement Threshold Template

CI Type	Policy Template	Indicator	Description	Policy Type
			seconds.	
DomainController	MSAD_ ResponseTimeGCQuery	ResponseTime:VeryHigh / ResponseTime:Normal, ResponseTime:High / ResponseTime:Normal	Monitors the response time of queries made to the global catalog on the domain controller in seconds.	Measurement Threshold Template
DomainController	MSAD_SCH_ LDAPStatus	NA	Checks LDAP Query Status in Active Directory.	Scheduled Task Template
DomainController	MSAD_ ResponseTimeBind	DCLDAPBindResponseTime:VeryHigh / DCLDAPBindResponseTime:Normal, DCLDAPBindResponseTime:High / DCLDAPBindResponseTime:Normal	Monitors the bind response time of the domain controller in seconds.	Measurement Threshold Template
DomainController	MSAD_ LDAPCheckStatus	LDAPConnectivity:Down / LDAPConnectivity:Up	Monitors LDAP Query Status in Active Directory.	Measurement Threshold Template

Microsoft AD Services

This Aspect monitors the core Services of Microsoft Active Directory. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
DomainController	MSAD_HMNTFRSPageFaults	NTFRSPageFaultsRate:VeryHigh / NTFRSPageFaultsRate:Normal, NTFRSPageFaultsRate:High / NTFRSPageFaultsRate:Normal	Checks for the number of Page Faults/sec for the NTFRS process.	Measurement Threshold Template
DomainController	MSAD_Rep_ISM_Chk	ISMServiceStatus:Down / ISMServiceStatus:Up	Checks the state of Inter site Replication Service.	Measurement Threshold Template
DomainController	MSAD_HMNTFRSPrivateBytes	NTFRSPrivateBytes:VeryHigh / NTFRSPageFaultsRate:Normal, NTFRSPrivateBytes:High / NTFRSPageFaultsRate:Normal	Checks the Private Bytes counters for NTFRS process.	Measurement Threshold Template
DomainController	MSAD_HMLSASSProcessorTime	LSASSProcessorTime:VeryHigh / LSASSProcessorTime:Normal, LSASSProcessorTime:High / LSASSProcessorTime:Normal	Checks the percentage of processor time the Local Security Authority Subsystem Service (LSASS) process is consuming.	Measurement Threshold Template
DomainController	MSAD_NTFRS_Chk	NTFRSServiceState:Down / NTFRSServiceState:Up	Checks the state of NTFRS Logon Service	Measurement Threshold Template

CI Type	Policy Template	Indicator	Description	Policy Type
DomainController	MSAD_KDC_Chk	NetLogonServiceState:Down / NetLogonServiceState:Up	Checks the state of Kerberos key Distribution Center Service	Measurement Threshold Template
DomainController	MSAD_DFSR_Chk	DFSRServiceState:Down / DFSRServiceState:Up	Checks the state of DSFR Service.	Measurement Threshold Template
DomainController	MSAD_HMNTFRSWorkingSet	NTFRSWorkingSet:VeryHigh / NTFRSWorkingSet:Normal, NTFRSWorkingSet:High / NTFRSWorkingSet:Normal	Checks the Working Set counters of NTFRS process.	Measurement Threshold Template
DomainController	MSAD_HMNTFRSProcessorTime	NTFRSProcessorTime:VeryHigh / NTFRSProcessorTime:Normal, NTFRSProcessorTime:High / NTFRSProcessorTime:Normal	Checks the percentage of processor time the NTFRS process is consuming.	Measurement Threshold Template
DomainController	MSAD_NTDS_Chk	NetLogonServiceState:Down / NetLogonServiceState:Up	Checks the state of NTDS Logon Service.	Measurement Threshold Template
DomainController	MSAD_EssentialSvcSchedule	NA	Maintains the schedule of Essential Service Aspect.	ConfigFile Template

CI Type	Policy Template	Indicator	Description	Policy Type
DomainController	MSAD_HMLSASSWorkingSet	LSASSWorkingSet:VeryHigh / LSASSWorkingSet:Normal, LSASSWorkingSet:High / LSASSWorkingSet:Normal	Checks the Working Set counters of LSASS process.	Measurement Threshold Template
DomainController	MSAD_NetLogon_Chk	NetLogonServiceState:Down / NetLogonServiceState:Up	Checks the state of Net Logon Service.	Measurement Threshold Template
DomainController	MSAD_SAMSS_Chk	SamSsServiceState:Down / SamSsServiceState:Up	Checks the state of Security Accounts Manager Service (SAMSS) Logon Service	Measurement Threshold Template
DomainController	MSAD_HMLSASSPageFaults	LSASSPageFaultsRate:VeryHigh / LSASSPageFaultsRate:Normal, LSASSPageFaultsRate:High / LSASSPageFaultsRate:Normal	Checks the Page Faults/sec for the LSASS process.	Measurement Threshold Template
DomainController	MSAD_HMLSASSPrivateBytes	LSASSPrivateBytes:VeryHigh / LSASSPageFaultsRate:Normal, LSASSPrivateBytes:High / LSASSPageFaultsRate:Normal	Checks the Private Bytes counters for LSASS process.	Measurement Threshold Template

Microsoft AD Discovery

Microsoft AD Discovery Aspect discovers the Microsoft Active Directory server deployment topology and populates the corresponding CIs in the RTSM database.

CI Type	Policy Template	Indicator	Description	Policy Type
nt domaincontroller	MSAD_Discovery	NA	Discovers Microsoft Active Directory Topology.	Service Auto-Discovery Template
nt domaincontroller	MSAD_ CreateDataSource	NA	Creates Microsoft Active Directory Datasource.	Scheduled Task Template

Microsoft Exchange Server Aspects

Microsoft Exchange Server Aspects monitor the system resources operating in a data center environment. The systems can be stand-alone or virtual. Each Microsoft Exchange Server contains policy templates and instrumentation that monitor the health and performance of a system.

How to Access the Exchange Server Aspects

1. Select **Admin > Operations Management > Monitoring**.
2. Click **Configuration Folders > Microsoft Application Management > Microsoft Exchange Server > Aspects**.

Tasks

How to Deploy the Microsoft Exchange Server Aspects

For more information on deploying Microsoft Exchange Server Aspects, see Task 5b:Deploying Microsoft Exchange Server Aspects.

How to Create the Exchange Server Aspects

1. Open the Management Templates & Aspects pane:
   a. Click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.
   b. Click **Configuration Folders > Microsoft Application Management > Microsoft Exchange Server > Aspects**.

2. In the Management Template & Aspects pane, click  , and then select **Create Aspect**. The Add New Aspect dialog box opens.
3. In the **General** tab, specify a **Name**, **ID**, **Version ID**, and **Description** for the Aspect. Click **Next**.
4. In the **CI Types** tab, select one or more CI Types (CITs) from the **Available CI Types** pane to associate with the Aspect and click  to add them to the **Assigned CI Types** pane, and then click **Next**.

   > **Note**: You can use either the **CTRL** or **SHIFT** key to select multiple items.

   > **Note:** For more information on the different types of the available CITs, see Configuration Item Types.

5. In the **Instrumentation** tab, click  **Add Instrumentation** to select the instrumentation category that has to added to an Aspect. For example: MSEX-Core. Click **Next**.
6. In the **Aspects** tab, click  **Add Existing Aspect** to add aspects as nested aspects. The Add Existing Aspect dialog box opens and lists the aspects. Select one or more Aspects by selecting either the **CTRL** or **SHIFT** key. Click **OK**. Click **Next**.
7. In the **Policy Templates** tab, click  **Add Policy Template** to select the policy templates that has to be added to an Aspect. The Add New Policy Template to Aspect dialog box opens and lists the policy templates. For example: MSEX_ActiveSyncErr, MSEX_ActSyLatency, and so on. Select one or more policy templates by selecting either the **CTRL** or **SHIFT** key. Click **OK**. Click **Next**.
8. If no suitable policy templates exist:
   a. Click  and then select **Add New Policy Template**. The Select New Policy Template dialog box opens.
   b. Select a policy template from the **Type** drop-down list. Click **OK**.
   c. In the Policy Related Information window, specify the **Name** and click **OK**. The policy template is added to the list of existing policy templates.
9. Click **Next**.
10. In the **Parameters** tab,you see a list of parameters from the Policy Templates that you assigned to a template.
    a. Click  **Edit**. The Edit Parameter dialog box opens.
    b. Modify the required details and click **OK**.

11. In the Add New Aspect window, click **Finish** to save the Aspect. The new Aspect appears in the Management Templates & Aspects pane.

User Interface Reference

General	Provides an overview of the general attributes such as the Name, Description, Version, ID, Created By, Time Created, and Version ID of the Aspect.
CI Type	Refers to the type of CIs the Aspect can be assigned to. The Microsoft Exchange Server Aspects contain Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, and Exchange Unified Messaging Server CI Types.
Instrumentation	Provides a single package which contains the binaries for discovery, collection, and data logging.
Aspects	Provides an overview of all the Aspects within the Microsoft Exchange Server.
Policy Templates	Provides an overview of all the policy templates within the Microsoft Exchange Server.

The OMi MP for Microsoft Exchange Servercontains the following Aspects:

Exchange Blocked Data

This Aspect comprises blocked mails and blocked recipients collection. Using the Blocked Mails collection, you can monitor details such as the Exchange Server name, IP address, mail ID of the sender, time the mail was blocked, reason for blocking the mail, action taken, domain, message ID and so on. Using the Blocked Recipients collection, you can monitor the Exchange Server name, blocked recipient's email ID, reason for blocking the email ID, and so on. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ BlockedData_ Conf	NA	Maintains the schedule of Blocked Data related collection.	ConfigFile
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ BlockedData_ Conf_2010	NA	Maintains the schedule of Blocked Data related collection.	ConfigFile

Exchange Database Circular Logging

This Aspect monitors and collects the circular logging information of the Exchange Server database.

Circular logging helps you save hard disk space in the Microsoft Exchange transactional logging process. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_ CircularLog_Conf_ 2010	NA	Maintains the schedule of FDS OAB performance.	ConfigFile
	MSEX_ MBCircularLogging	NA	Monitors circular logging feature for Mailbox database.	Windows Event Log Template
	MSEX_ PFCircularLogging	NA	Monitors circular logging feature for Public Folder database.	Windows Event Log Template

Exchange Online Address Book

This Aspect collects the performance metrics of the Exchange Online Address Book (OAB) for Microsoft Exchange Server 2010. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server	MSEX_FDSOABPerf_ Conf_2010	NA	Maintains the schedule of FDS OAB performance.	ConfigFile
Exchange Client Access Server	MSEX_ TotalDownloadTaskQueued	NA	Total Download Task Queued	Measurement Threshold
Exchange Client Access Server	MSEX_ DownloadTaskCompleted	NA	OAB Download Task Completed	Measurement Threshold
Exchange Client Access Server	MSEX_ DownloadTaskQueued	NA	OAB Download Task Queued	Measurement Threshold

Exchange Sender ID Filtering

This Aspect collects and logs for Exchange 2010 data based on the sender's information. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Edge Server	MSEX_SenderPerf_ Conf_2010	NA	Maintains the schedule of FDS OAB performance.	ConfigFile

Exchange Transport Filter

This Aspect collects Transport Filter information such as attachment filtering, content filtering, and so on for Exchange 2010. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Edge Server	MSEX_ TransportFilter_Conf_ 2010	NA	Maintains the schedule of FDS OAB performance.	ConfigFile

Collection Schedule

This is the base Aspect that encapsulates schedule task policies for triggering collections on various roles and different frequencies.

This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ LOW_MB	NA	Contains the schedule task policy of frequency LOW for collecting metrics for MSEX every 1 hour	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ DAILY_ MB	NA	Contains the schedule task policy of frequency LOW for collecting metrics for MSEX every 1 hour	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ MEDIUM_ UM	NA	Contains the schedule task policy of frequency MEDIUM for collecting metrics for MSEX every 30 minutes.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ HIGH_UM	NA	Contains schedule task policy of frequency HIGH for collecting metrics for MSEX once in 15 minutes.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ HIGH_ EDGE	NA	Contains schedule task policy of frequency HIGH for collecting metrics for MSEX once in 15 minutes.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange	MSEX_ SCH_	NA	Contains the schedule task policy of frequency	Scheduled Task

CI Type	Policy Template	Indicator	Description	Policy Type
Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MEDIUM_ EDGE		MEDIUM for collecting metrics for MSEX every 30 minutes.	
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ LOW_UM	NA	Contains the schedule task policy of frequency LOW for collecting metrics for MSEX every 1 hour	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ LOW_ HUB	NA	Contains the schedule task policy of frequency LOW for collecting metrics for MSEX every 1 hour	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ MEDIUM_ CA	NA	Contains the schedule task policy of frequency MEDIUM for collecting metrics for MSEX every 30 minutes.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ MEDIUM_ MB	NA	Contains the schedule task policy of frequency MEDIUM for collecting metrics for MSEX every 30 minutes.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ DAILY_ HUB	NA	Contains the schedule task policy of frequency LOW for collecting metrics for MSEX every 1 hour.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ HIGH_MB	NA	Contains schedule task policy of frequency HIGH for collecting metrics for MSEX once in 15 minutes.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ VERY_ HIGH_ EDGE	NA	Contains the schedule task policy of frequency VERY_HIGH for collecting metrics for MSEX every 5 minutes.	Scheduled Task

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ VERY_ HIGH_UM	NA	Contains the schedule task policy of frequency VERY_HIGH for collecting metrics for MSEX every 5 minutes.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ HIGH_ HUB	NA	Contains the schedule task policy of frequency VERY_HIGH for collecting metrics for MSEX every 5 minutes.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ MEDIUM_ HUB	NA	Contains the schedule task policy of frequency MEDIUM for collecting metrics for MSEX every 30 minutes.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ DAILY_ UM	NA	Contains the schedule task policy of frequency LOW for collecting metrics for MSEX every 1 hour.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ LOW_CA	NA	Contains the schedule task policy of frequency LOW for collecting metrics for MSEX every 1 hour.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ HIGH_CA	NA	Contains schedule task policy of frequency HIGH for collecting metrics for MSEX once in 15 minutes.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ VERY_ HIGH_MB	NA	Contains the schedule task policy of frequency VERY_HIGH for collecting metrics for MSEX once every 5 minutes.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail	MSEX_ SCH_ LOW_	NA	Contains the schedule task policy of frequency LOW for collecting	Scheduled Task

CI Type	Policy Template	Indicator	Description	Policy Type
Server, Exchange Unified Messaging Server	EDGE		metrics for MSEX every 1 hour	
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ DAILY_ CA	NA	Contains the schedule task policy of frequency LOW for collecting metrics for MSEX every 1 hour	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ DAILY_ EDGE	NA	Contains the schedule task policy of frequency LOW for collecting metrics for MSEX every 1 hour	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ VERY_ HIGH_CA	NA	Contains the schedule task policy of frequency VERY_HIGH for collecting metrics for MSEX every 5 minutes.	Scheduled Task
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SCH_ VERY_ HIGH_ HUB	NA	Contains the schedule task policy of frequency VERY_HIGH for collecting metrics for MSEX every 5 minutes.	Scheduled Task

Exchange Active Sync

This Aspect monitors the functionality of Exchange ActiveSync and the following:

- Connectivity of ActiveSync
- Connectivity status of ActiveSync

This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server	MSEX_ ActiveSync_ Conf	NA	Maintains the schedule of Active Sync related collection.	ConfigFile
Exchange	MSEX_	ActiveSyncConnectivity	Result of the Active	Measurement

CI Type	Policy Template	Indicator	Description	Policy Type
Client Access Server	ActSyResult		Sync test.	Threshold
Exchange Client Access Server	MSEX_ ActiveSync_ Conf_2010	NA	Maintains the schedule of Active Sync related collection.	ConfigFile
Exchange Client Access Server	MSEX_ ActSyLatency	ActiveSyncLatency	Latency in milliseconds for the Active Sync test.	Measurement Threshold

Exchange Active Sync Performance

This Aspect monitors the performance of the Exchange ActiveSync. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_ CurrentRequests	NA	Current Requests is the number of HTTP requests received from ASP.NET	Measurement Threshold
Exchange Mail Server	MSEX_ ActiveSync_ Perf_Conf	NA	Maintains the schedule of Active Sync performance related collection.	ConfigFile

Exchange Availability

This Aspect monitors the availability status of the roles of the Microsoft Exchange Server. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ Availability_ Conf_2010	NA	Maintains the schedule of Availability related collection.	ConfigFile
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ Availability_ Conf	NA	Maintains the schedule of Availability related collection.	ConfigFile

Exchange Database Consistency

This Aspect monitors the Exchange Mailbox database. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_ActDbStatusValue	NA	Integer value represents the state of the Mailbox database.	Measurement Threshold
Exchange Mail Server	MSEX_ ActDbContentIndexState	NA	Indicates the content index state of the Active database.	Measurement Threshold
Exchange Mail Server	MSEX_ PassDbContentIndexState	NA	Indicates the content index state of the Passive database.	Measurement Threshold
Exchange Mail Server	MSEX_ PassDbStatusValue	NA	Integer value represents the state of the Mailbox database.	Measurement Threshold
Exchange Mail Server	MSEX_DBSTatus_Conf_ 2010	NA	Maintains the schedule of database status related collection.	ConfigFile
Exchange Mail Server	MSEX_DBSTatus_Conf	NA	Maintains the schedule of database status related collection.	ConfigFile

Exchange Discovery and Config

This Aspect discovers Exchange Server and configures the server with the required settings for monitoring. The Exchange Discovery and Config Aspect helps you to:

- Discovers the Exchange Servers available in the organization and also the roles assigned to each server.
- Takes user name and password as mandatory parameters.
- Creates Exchange data sources and tables. Data collected from Windows services, performance counters, and PowerShell *cmdlets* are logged.
- Registers custom *cmdlets* on the nodes prior to monitoring the nodes.

The Exchange Discovery and Config Aspect discovers the Mailbox Server, Client Access Server, Hub Transport Server, Edge Transport Server, Unified Messaging Server, Exchange Server DAG, Mailbox databases and the file system roles. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Windows NT	MSEX_ CollectionDefinition_ 2010	NA	Maintains the metric definition for collecting Exchange 2010 metrics.	ConfigFile
Windows NT	MSEX_ ConfigureCredentials	NA	Is the configuration file policy template for capturing Exchange login credentials.	ConfigFile
Windows NT	MSEX_Configure	NA	Creates Datasource tables and configures the Exchange custom cmd-lets DLL for enabling Powershell collection.	Scheduled Task
Windows NT	MSEX_ CollectionDefinition_ 2013	NA	Maintains the metric definition for collecting Exchange 2013 metrics.	ConfigFile
Windows NT	MSEX_ ExtensiveDiscovery	NA	Discovers Microsoft Exchange topology and its components.	Service Auto-Discovery

Exchange IMAP4

This Aspect monitors the Exchange IMAP4 connection activity such as connections, failed connections, latency, and rejected connections. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server	MSEX_IMAP_ Conf	NA	Maintains the schedule of IMAP related collection.	ConfigFile
Exchange Client Access Server	MSEX_ ImapLatency	IMAP4Latency	Latency in milliseconds for the IMAP4 test	Measurment Threshold
Exchange Client Access Server	MSEX_ ImapResult	IMAP4Connectivity	Result of the IMAP4 test	Measurment Threshold
Exchange Client Access Server	MSEX_IMAP_ Conf_2010	NA	Maintains the schedule of IMAP related collection.	ConfigFile

Exchange Information Store

This Aspect monitors the Information Store functionality of the Microsoft Exchange Server. This

Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_StoreIRpcRqFlPer	NA	Shows the percentage of failed requests in the total number of RPC requests. Failed means the sum of failed with error code plus failed with exception.	Measurement Threshold
Exchange Mail Server	MSEX_StoreRPCReq	NA	RPC requests is the number of MAPI RPCs that are currently in progress (since the last sample).	Measurement Threshold
Exchange Mail Server	MSEX_AvgDelTime	AverageMailDeliveryTime	Average delivery time of mail in milliseconds	Measurement Threshold
Exchange Mail Server	MSEX_StoreIRpcLtcAvg	RemoteProcedureCallStatus	RPC Latency average (msec) is the average latency in milliseconds of RPC requests. Average is calculated over all RPCs since exrpc32 was loaded.	Measurement Threshold
Exchange Mail Server	MSEX_StoreIRpcRqOs	NA	RPC Requests outstanding is the current number of outstanding RPC requests.	Measurement Threshold
Exchange Mail Server	MSEX_ExchmemAdditionalHeaps	NA	Alerts on number of Additional Exchange memory Heaps.	Measurement Threshold
Exchange Mail Server	MSEX_ExchmemHeapsErrors	NA	ExchmemAdditionalHeaps	Measurement Threshold
Exchange Mail	MSEX_StoreIRpcSlRqPer	NA	RPC Slow requests (%) is the percent of	Measurement

CI Type	Policy Template	Indicator	Description	Policy Type
Server			slow RPC requests among all RPC requests. A slow RPC request is one that has taken more than 500 ms.	Threshold
Exchange Mail Server	MSEX_StoreIRopRqOs	NA	ROP Requests outstanding is the total number of outstanding ROP requests.	Measurement Threshold
Exchange Mail Server	MSEX_StorePerf_Conf	NA	Maintains the schedule of Information Store performance Collection	ConfigFile
Exchange Mail Server	MSEX_ExchmemMemoryErrors	ExchangeMemoryStatus	Exchange Store Memory Errors	Measurement Threshold
Exchange Mail Server	MSEX_ISLargestVMBlock	NA	Largest Free Block of Virtual Memory	Measurement Threshold
Exchange Mail Server	MSEX_StorePerf_Conf_2010	NA	This policy maintains the Schedule of Information store performance Collection	ConfigFile
Exchange Mail Server	MSEX_StoreRPCAvgLat	NA	Average Latency of RPC Process	Measurement Threshold
Exchange Mail Server	MSEX_StoreRPCOPPerSec	NA	Monitors the numer of RPS operations per second.	Measurement Threshold

Exchange MAPI

This Aspect monitors the performance of MAPI-based communications on a Mailbox Server. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_ MapiLatency	MapiLatency	Latency in milliseconds for the MAPI test	Measurement Threshold
Exchange Mail Server	MSEX_MAPI_ Conf	NA	Maintains the schedule of MAPI related collection.	ConfigFile
Exchange Mail Server	MSEX_IMAP_ Conf_2010	NA	Maintains the schedule of IMAP related collection.	ConfigFile
Exchange Mail Server	MSEX_ MapiResult	MapiConnectivity	Result of the MAPI test	Measurement Threshold

Exchange Mail Flow

This Aspect monitors the average latency time on each day for various Mailbox servers. Latency time refers to the time taken to transfer mails from one mailbox server to the other within an organization. The Exchange Mail Flow Aspect monitors the following counters:

- Latency time in seconds
- Result of the Mail Flow test

This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_ MailFlow_Conf	NA	Maintains the schedule of Mail Flow related collection.	ConfigFile
Exchange Mail Server	MSEX_ MailFlowResult	MailFlowStatus	Result of the Mail Flow test	Measurement Threshold
Exchange Mail Server	MSEX_ LatencySeconds	NA	Latency in seconds for Mail Flow test	Measurement Threshold
Exchange Mail Server	MSEX_ MailFlow_Conf_ 2010	NA	Maintains the schedule of Mail Flow related collection.	ConfigFile

Exchange Mailbox

This Aspect monitors the details related to performance such as the replication activity, MAPI connectivity, Information Store, and Outlook Client latency of the Microsoft Exchange Mailbox Server. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_MailboxData_Conf_2010	NA	Maintains the schedule of Mailbox related collection.	ConfigFile
Exchange Mail Server	MSEX_MailboxData_Conf	NA	Maintains the schedule of Mailbox related collection.	ConfigFile

Exchange Mailbox Database

This Aspect monitors the performance of the Exchange Server mailbox database. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_MailboxDB_Conf	NA	Maintains the schedule of Mailbox database related collection.	ConfigFile
Exchange Mail Server	MSEX_MdbPgFltStalls	NA	Database Page Fault Stalls/sec is the rate of page faults that cannot be serviced because there are no pages available for allocation from the database cache. If this counter is nonzero most of the time, the clean threshold may be too low.	Measurement Threshold
Exchange Mail Server	MSEX_DatabaseLogWritesRate	NA	Monitors Database log writes per second	Measurement Threshold
Exchange Mail Server	MSEX_ISDBCacheSize	NA	Monitors the database cache size	Measurement Threshold
Exchange Mail Server	MSEX_MdbIOWrtAvgLtyAtt	NA	I/O Database Writes (Attached) Average Latency is the average length of time, in milliseconds, for each database Write operation.	Measurement Threshold
Exchange Mail Server	MSEX_MdbIORdsAvgLty	NA	I/O Database Reads Average Latency is the average length of time, in milliseconds, for each database Read operation.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_ MdbIOWrtAvgLtyRec	NA	I/O Database Writes (Recovery) Average Latency is the average length of time, in milliseconds, for each database Write operation.	Measurement Threshold
Exchange Mail Server	MSEX_ MdbIOLgWrtAvgLty	NA	I/O Log Writes Average Latency is the average length of time, in milliseconds, for each log file Write operation.	Measurement Threshold
Exchange Mail Server	MSEX_ LogThreadsWaiting	NA	Monitors the number of log threads waiting monitor	Measurement Threshold
Exchange Mail Server	MSEX_ ISDBCacheSizeMB	NA	Monitors the database cache size in MB	Measurement Threshold
Exchange Mail Server	MSEX_MdbCchHitPer	NA	Database Cache % Hit is the percentage of database file page requests that were fulfilled by the database cache without causing a file operation. If this percentage is too low, the database cache size may be too small.	Measurement Threshold
Exchange Mail Server	MSEX_ MdbIORdsAvgLtyRec	NA	I/O Database Reads (Recovery) Average Latency is the average length of time, in milliseconds, per database read operation.	Measurement Threshold
Exchange Mail Server	MSEX_MdbLgRecStalls	NA	Log Record Stalls/sec is the number of log records that cannot be added to the log buffers per second because they are full. If this counter is non-zero most of the time, the log buffer size may be a bottleneck.	Measurement Threshold
Exchange Mail Server	MSEX_MailboxDB_ Conf_2010	NA	Maintains the schedule of Mailbox database related collection.	ConfigFile

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_MdbLgThdWait	NA	Log Threads Waiting is the number of threads waiting for their data to be written to the log in order to complete an update of the database. If this number is too high, the log may be a bottleneck.	Measurement Threshold
Exchange Mail Server	MSEX_MdbCchSize	NA	Database Cache Size (MB) is the amount of system memory, in megabytes, used by the database cache manager to hold commonly used information from the database file(s) to prevent file operations.	Measurement Threshold
Exchange Mail Server	MSEX_MdbLgBytWrt	NA	Log Bytes Write per second is the rate at which bytes are written to the log.	Measurement Threshold
Exchange Mail Server	MSEX_ MdbIOLgRdsAvgLty	NA	I/O Log Reads Average Latency is the average length of time, in milliseconds, per log file read operation.	Measurement Threshold
Exchange Mail Server	MSEX_ MdbIORdsAvgLtyAttcg	NA	I/O Database Reads (Attached) Average Latency	Measurement Threshold

Exchange OWA

This Aspect monitors the Outlook Web Access functionality such as average search time of the Microsoft Exchange Server. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server, Exchange Mail Server	MSEX_OwaResult	OWAConnectivity	Result of the Outlook Web Access test	Measurement Threshold
Exchange Client Access Server, Exchange Mail Server	MSEX_OwaLatency	OWALatency	Latency in milliseconds for the Outlook Web Access test	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server, Exchange Mail Server	MSEX_OWA_Conf	NA	This policy maintains the Schedule of OWA related Collection	ConfigFile
Exchange Client Access Server, Exchange Mail Server	MSEX_OWA_Perf_ Conf	NA	This policy maintains the Schedule of OWA performance related Collection	ConfigFile
Exchange Client Access Server, Exchange Mail Server	MSEX_ OwaAvgSearchTime	NA	Average Search Time is the average time that elapsed while waiting for a search to complete.	Measurement Threshold
Exchange Client Access Server, Exchange Mail Server	MSEX_OWA_Conf_ 2010	NA	This policy maintains the Schedule of OWA related Collection	ConfigFile

Exchange POP3

This Aspect monitors the availability and performance of Exchange POP3. It monitors the number of users connected to a Client Access Server through the POP3 protocol. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server	MSEX_ Pop3Perf_ Conf_2010	NA	Maintains the schedule of Pop3Perf collection.	ConfigFile
Exchange Client Access Server	MSEX_ PopResult	POP3Connectivity	Result of the POP3 test.	Measurement Threshold
Exchange Client Access Server	MSEX_ PopLatency	POP3Latency	Latency in milliseconds for the POP3 test.	Measurement Threshold
Exchange Client Access Server	MSEX_ Pop3Perf_Conf	NA	Maintains the schedule of Pop3Perf collection.	ConfigFile

Exchange Public Folder

This Aspect monitors the Exchange Public Folder details. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_PublicFolder_ Conf_2010	NA	Maintains the schedule of PublicFolder related collection.	ConfigFile
Exchange Mail Server	MSEX_ PublicFolderPerf_ Conf_2010	NA	Maintains the schedule of FDS OAB performance.	ConfigFile
Exchange Mail Server	MSEX_PublicFolder_ Conf	NA	Maintains the schedule of PublicFolder related collection.	ConfigFile
Exchange Mail Server	MSEX_ PFAvgDeliveryTime	NA	Average delivery time of public folder	Measurement Threshold
Exchange Mail Server	MSEX_ PFReplicationQueue	NA	Public folder replication Queue length	Measurement Threshold

Exchange RPC Performance

This Aspect monitors the RPC counters in Exchange 2010. Remote Procedure Calls (RPCs) are used by Outlook Clients to communicate with an Exchange Server. A delay in processing the RPC requests may affect the mail transfer by the Outlook Client.

This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_ RPCClients_Conf_ 2010	NA	Maintains the schedule of database status related collection.	ConfigFile
Exchange Mail Server	MSEX_ RpcClientLatGt10	NA	Number successful RPC with latency of 10	Measurement Threshold
Exchange Mail Server	MSEX_ RpcClientLatGt5	NA	Number of successful RPC with latency of 5	Measurement Threshold
Exchange Mail Server	MSEX_ RpcClientLatGt2	NA	Number of successful RPC with latency of 12	Measurement Threshold
Exchange Mail Server	MSEX_ RPCClients_Conf	NA	Maintains the schedule of database status related collection.	ConfigFile
Exchange Mail Server	MSEX_userCount	NA	Monitors the user count.	Measurement Threshold

Exchange Replication

This Aspect monitors the replication of mailbox databases in a Database Availability Group (DAG). This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server	MSEX_Replication_Conf_2010	NA	Maintains the schedule of Replication related collection.	ConfigFile
Exchange Mail Server	MSEX_CopyQueueLength	MailflowLatency	Copy Queue Length	Measurement Threshold
Exchange Mail Server	MSEX_Replication_Conf	NA	Maintains the schedule of Replication related collection.	ConfigFile
Exchange Mail Server	MSEX_ReplayQueueLength	NA	Replay Queue Length	Measurement Threshold

Exchange SMTP

This Aspect monitors the Exchange SMTP functionality. This Aspect consists of the following policy template:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_SMTPPerf_Conf	NA	Maintains the schedule of SMTP related collection.	ConfigFile

Exchange SPAM Statistics

This Aspect monitors and collects total number of spam messages encountered, the number of spam messages deleted, quarantined, and rejected for the Microsoft Exchange Server. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ContentFilter_Conf	NA	Maintains the schedule of SPAM related collection.	ConfigFile
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ContentFilter_Conf_2010	NA	Maintains the schedule of SPAM related collection	ConfigFile

Exchange Service Availability

This Aspect monitors the availability of services of the Microsoft Exchange Server. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ HostControllerServState	NA	Indicates the state of the Microsoft Exchange Host Controller service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ EdgeSyncServState	EdgeSyncServiceStatus	Indicates the state of the Microsoft Exchange Edge Sync service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchang	MSEX_MonServState	NA	Indicates the state of the service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
e Hub Server, Exchange Mail Server, Exchange Unified Messaging Server				
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_TransportServState	TransportServiceStatus	Indicates the state of the Microsoft Exchange Transport service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ FastSearchServState	NA	Indicates the state of the Microsoft Exchange Fast Search service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_UMServState	UnifiedMessagingStatus	Indicates the state of the Microsoft Exchange Unified Messaging service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_SAServState	SystemAttendantStatus	Indicates the state of the Microsoft System Attendant service	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchang	MSEX_ EdgeCredServState	EdgeCredentialServiceStatus	Indicates the state of the service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
e Hub Server, Exchange Mail Server, Exchange Unified Messaging Server				
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_Services_Conf	NA	Indicates the schedule of Exchange services related collection.	ConfigFile
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ HealthMgrServState	NA	Indicates the state of the Microsoft Exchange Health Manager service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_StoreServState	InformationStoreServiceStatus	Indicates the state of the Microsoft Exchange Information Store service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ReplServState	NA	Indicates the state of the Microsoft Exchange Replication service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchang	MSEX_PopServState	POP3ServiceStatus	Indicates the state of the service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
e Hub Server, Exchange Mail Server, Exchange Unified Messaging Server				
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ADAMServState	ADAMServiceStatus	Indicates the state of the service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ImapBeServState	NA	Indicates the state of the service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_DiagServState	NA	Indicates the state of the Microsoft Exchange Diagnostics service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ MbReplicationServState	ReplicationServiceStatus	Indicates the state of the Microsoft Exchange Mailbox Replication service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchang	MSEX_ FeTransportServState	NA	Indicates the state of the Microsoft Exchange Frontend Transport Service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
e Hub Server, Exchange Mail Server, Exchange Unified Messaging Server				
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ AdTopologyServState	ADTopologyServiceStatus	Indicates the state of the AD Topology service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_FDSServState	FileDistributionServiceStatus	Indicates the state of the service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ ServiceHostServState	ExchangeServiceHostStatus	Indicates the state of the Microsoft Exchange Service Host service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_RpcServState	NA	Indicates the state of the Microsoft Exchange RPC services.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchang	MSEX_ MbAssistantsServState	MailboxAssistantServiceStatus	Indicates the state of the Microsoft Exchange Mailbox Assistants service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
e Hub Server, Exchange Mail Server, Exchange Unified Messaging Server				
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_WSBServState	NA	Indicates the state of the Microsoft Exchange Server Extension for Windows Server Backup service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ThrottlingServState	NA	Indicates the state of the Microsoft Exchange Throttling service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_PopBeServState	NA	Indicates the state of the service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ TransportLogSearchServState	NA	Indicates the state of the Microsoft Exchange Transport Log Search service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchang	MSEX_ AntiSpamUpdateServState	NA	Indicates the state of the Microsoft Exchange Antispam Update service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
e Hub Server, Exchange Mail Server, Exchange Unified Messaging Server				
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_DeliveryServState	NA	Indicates the state of the Microsoft Exchange Delivery service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ SubmissionServState	MailSubmissionServiceStatus	State of the Microsoft Exchange Submission service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_Services_Conf_2010	NA	Maintains the schedule of Exchange services related collection.	ConfigFile
Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Exchange Unified Messaging Server	MSEX_UMCRServState	NA	Indicates the state of the Microsoft Exchange Unified Messaging Call Router service.	Measurement Threshold
Exchange Client Access Server, Exchange Edge Server, Exchang	MSEX_ImapServState	IMAP4ServiceStatus	Indicates the state of the service.	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
e Hub Server, Exchange Mail Server, Exchange Unified Messaging Server				

Exchange Transport

This Aspect monitors the Exchange Transport functionality such as the following counters:

- Delayed DSNs
- Failed DSNs
- Log Record Stalls/sec
- Log Threads Waiting

This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_DsnDelay	NA	Number of delay DSNs is the number of delivery status notifications (DSNs) that have been generated.	Measurement Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ DsnFailedTtl	NA	Number of failed DSNs is the total number of failed delivery status notifications (DSNs) that have been generated.	Measurement Threshold
Exchange Edge Server, Exchange	MSEX_ TrpDbLgRecStalls	NA	Log Record Stalls/sec is the number of log	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
Hub Server, Exchange Mail Server			records that cannot be added to the log buffers per second because they are full. If this counter is non-zero most of the time, the log buffer size may be a bottleneck.	
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_Transport_Conf_2010	NA	Maintains the schedule of Transport related collection.	ConfigFile
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_Transport_Conf	NA	Maintains the schedule of Transport related collection.	ConfigFile
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_TrpDbThdWait	DatabaseInstanceStatus	Log Threads Waiting is the number of threads waiting for their data to be written to the log to complete an update of the database. If this number is too high, the log may be a bottleneck.	Measurement Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_TrpDbVerBkt	NA	Total number of version buckets allocated	Measurement Threshold

Exchange Transport Queues

This Aspect monitors the Transport queues of the Microsoft Exchange Server. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ ActNonSmtpDeliveryQLen	NA	Length of the Active Non-Smtp Delivery Queue Length	Measurement Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ IntActRemDelQLen	NA	Internal Active Remote Delivery Queue Length	Measurement Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ ActMailboxDeliveryQLen	ActiveMailboxDeliveryQueueLength	Length of the Active Mailbox Delivery Queue Length	Measurement Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ RetryNonSmtpDelQLen	NA	Length of the Retry Non-Smtp Delivery Queue Length	Measurement Threshold
Exchang	MSEX_	NA	Internal	Measureme

CI Type	Policy Template	Indicator	Description	Policy Type
e Edge Server, Exchange Hub Server, Exchange Mail Server	InAggDelQLenAll		Aggregate Delivery Queue Length (All Internal Queues)	nt Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_PoisonQLen	PoisonQueueLength	Length of the Poison Queue Length	Measurement Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ RetryMBDelQLen	NA	Length of the Retry Mailbox Delivery Queue Length	Measurement Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ExLgtDelDIen	NA	External Largest Delivery Queue Length	Measurement Threshold
Exchange Edge Server, Exchange Hub Server,	MSEX_ ExActRemDelQLen	RemoteDeliveryQueueLength	External Active Remote Delivery Queue Length	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server				
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_InLgtDelQLen	LargestDeliveryQueueLength	Internal Largest Delivery Queue Length	Measurement Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ InRtRemDelQLen	NA	Internal Retry Remote Delivery Queue Length	Measurement Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_AggShdQLen	AggregateDeliveryQueueLength	Aggregate Shadow Queue Length	Measurement Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ SubmissionQLen	SubmissionQueueLength	Length of the Submission Queue Length	Measurement Threshold
Exchang	MSEX_ TransportQueue_Conf_	NA	Maintains	ConfigFile

CI Type	Policy Template	Indicator	Description	Policy Type
e Edge Server, Exchange Hub Server, Exchange Mail Server	2010		the schedule of Transport Queue collection.	
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ ExAggDelQLenAll	NA	External Aggregate Delivery Queue Length (All External Queues)	Measurement Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ UnReachableQLen	UnreachableQueueLength	Unreachable Queue Length	Measurement Threshold
Exchange Edge Server, Exchange Hub Server, Exchange Mail Server	MSEX_ ExRtRemDelQLen		External Retry Remote Delivery Queue Length	Measurement Threshold
Exchange Edge Server, Exchange Hub Server,	MSEX_ TransportQueue_Conf	NA	Maintains the schedule of Transport Queue collection.	ConfigFile

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server				

Exchange Unified Messaging

This Aspect monitors the details related to the Unified Messaging PIN, Unified Messaging IP Gateways, and Unified Messaging hunt groups. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ UnifiedMessaging_ Conf	NA	Maintains the schedule of UM related collection.	ConfigFile
Exchange Mail Server, Exchange Unified Messaging Server	MSEX_ UnifiedMessaging_ Conf_2010	NA	Maintains the schedule of UM related collection.	ConfigFile

Exchange Weekly Statistics

This Aspect collects various data such as the TopSender, TopRecipient, TopSource, TopDestination, and Blocked mails details on a weekly basis. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Microsoft Exchange Server	MSEX_SCH_ TopDestination	NA	Indicates the schedule for top destination collection.	Scheduled Task
Microsoft Exchange Server	MSEX_SCH_ TopSender	NA	Indicates the schedule for top sender collection.	Scheduled Task
Microsoft Exchange Server	MSEX_SCH_ TopRecipient	NA	Indicates the schedule for top recipient collection.	Scheduled Task
Microsoft Exchange Server	MSEX_SCH_ TopSource	NA	Indicates the schedule for top source collection.	Scheduled Task

Exchange Recipient Filtering

This Aspect collects and logs the recipient information for Exchange 2010. This Aspect consists of the following policy template:

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Edge Server	MSEX_RecpientPerf_ Conf_2010	NA	Maintains the schedule of FDS OAB performance.	ConfigFile

Exchange Event Logs

This Aspect forwards the information and warning events from the Windows Event Logs. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Microsoft Exchange Server	MSEX_ MSExchange_ Messaging_ Policies_Events	NA	Monitors the application event log for events from the source Microsoft Exchange Messaging policies.	Windows Event Log
Microsoft Exchange Server	MSEX_Ed_ MSExchange_ EdgeSync_Errors_ and_Warnings	NA	Monitors the application event log for events from the source Exchange EdgeSync on the Microsoft Exchange Server and shows all warnings and errors.	Windows Event Log
Microsoft Exchange Server	MSEX_Ed_ MSExchange_ Message_Security	NA	Monitors the error and warning events logged by the source Microsoft Exchange Message Security in the application event log on the Microsoft Exchange Server. It also shows the event IDs of Edge Transport.	Windows Event Log
Microsoft Exchange Server	MSEX_ ApplicationWarnings	NA	Forwards all application warnings for various event sources of Microsoft Exchange 2013 Servers.	Windows Event Log
Microsoft Exchange Server	MSEX_POP3	NA	Monitors Exchange ActiveSync Information Messages	Windows Event Log
Microsoft Exchange Server	MSEX_ActiveSync_ Warn	NA	Monitors Microsoft Exchange POP3	Windows Event Log
Microsoft Exchange Server	MSEX_CAS_Evt_ MSExchange_OWA	NA	Microsoft Exchange OWA critical errors	Windows Event Log
Microsoft	MSEX_	NA	Monitor Exchange ActiveSync warning	Windows

CI Type	Policy Template	Indicator	Description	Policy Type
Exchange Server	MailboxServer_ Assistants		messages	Event Log
Microsoft Exchange Server	MSEX_ MSExchange_ Store_Driver_ Events	NA	Monitor the Exchange Mailbox assistants	Windows Event Log
Microsoft Exchange Server	MSEX_Exchange_ 2010_Application_ Info	NA	Report the events generated for the source Microsoft Exchange Store driver.	Windows Event Log
Microsoft Exchange Server	MSEX_Repl_ Warnings_in_ Application_Event_ Log	NA	Forwards all application information for various event sources of Microsoft Exchange 2013 servers.	Windows Event Log
Microsoft Exchange Server	MSEX_Exchange_ 2010_Application_ Warnings	NA	Application Event Log - Notify All Errors	Windows Event Log
Microsoft Exchange Server	MSEX_Mailbox_ MailSubmission	NA	Application Event Log - Notify All Errors	Windows Event Log
Microsoft Exchange Server	MSEX_Exchange_ DatabaseCopy_ Status	NA	Updates the service map when important database status changes occur in members of a DAG.	Windows Event Log
Microsoft Exchange Server	MSEX_ InformationWorker	NA	Monitors Mail Submission for a Mailbox Server.	Windows Event Log
Microsoft Exchange Server	MSEX_IMAP4	NA	Application Event Log - Notify All Errors	Windows Event Log
Microsoft Exchange Server	MSEX_ Autodiscover_Warn	NA	Monitors Exchange Autodiscover warning messages.	Windows Event Log

Exchange Error Logs

This Aspect monitors the Windows event logs for any errors. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Microsoft Exchange Server	MSEX_Autodiscover-Err	NA	Monitors Exchange Autodiscover error messages for Exchange 2010.	Windows Event Log
Microsoft Exchange Server	MSEX_Forward_ ExBPA_Event_Log_ Errors	NA	Forwards all the BPA logs from the Application event log for Exchange 2010.	Windows Event Log
Microsoft Exchange Server	MSEX_ ApplicationErrors	NA	Forwards all application errors for various event sources of Exchange 2013 servers.	Windows Event Log
Microsoft Exchange Server	MSEX_ActiveSync_ Errors	NA	Monitors Exchange ActiveSync error messages for Exchange 2010.	Windows Event Log
Microsoft Exchange Server	MSEX_Exchange_ 2010_Application_ Errors	NA	Application event log - Notify all errors for Exchange 2010.	Windows Event Log
Microsoft Exchange Server	MSEX_Replication_ Errors_in_Application_ Event_Log	NA	Monitors Replication errors in Event Log for Exchange 2010.	Windows Event Log
Microsoft Exchange Server	MSEX_Forward_ MSExchangeAL_Errors	NA	Forwards all errors from event source MSExchangeAL for Exchange 2010.	Windows Event Log

Exchange Discovery

This Aspect discovers Exchange Server CIs without taking any credentials. This Aspect consists of the following policy template:

CI Type	Policy Template	Indicator	Description	Policy Type
Windows	MSEX_ Discovery	NA	Discovers the Exchange Server CIs.	Service Auto-Discovery

Exchange Information Logs

This Aspect forwards the Exchange information events from Windows Event Logs. This Aspect consists of the following policy templates:

CI Type	Policy Template	Indicator	Description	Policy Type
Microsoft Exchange Server	MSEX_ ApplicationInfo	NA	Forwards all application information for various event sources of Exchange 2013 Servers.	Windows Event Log
Microsoft Exchange Server	MSEX_Exchange_ 2010_Application_ Info	NA	Application Event Log - Notify All Errors for Exchange 2010	Windows Event Log
Microsoft Exchange Server	MSEX_ ActiveSync_Info	NA	Monitors Exchange ActiveSync information messages for Exchange 2010.	Windows Event Log

Parameters

Parameters are variables that forms an integral part of Microsoft Exchange Server Management Templates, Aspects, and Policy Templates. Each parameter corresponds to a variable. Parameters contain default values that are used for monitoring the different components of Microsoft Exchange Server deployment. You can also modify the values of the variables to suit your monitoring requirements.

Types of Parameters

Parameters are grouped as follows:

- **Mandatory** - These parameters contain the essential information required by the policy templates. For example: User Name and Password are mandatory parameters.
- **Expert** - These parameters are used by SMEs and Administrators. For example: frequency of High, Low, and Very High are expert parameters.

The OMi MP for Microsoft Exchange Server includes the following parameters for monitoring Microsoft Exchange Server in an environment:

Parameter	Description	Default Value
Frequency of High Scheduler	Frequency for the scheduler which is expected to run for high intervals (in minutes).	15

Parameter	Description	Default Value
Frequency of Low Scheduler	Frequency for the scheduler which is expected to run for short intervals (in hours).	24
Frequency of Medium Scheduler	Frequency for the scheduler which is expected to run for medium intervals (in hours).	1
Frequency of Very High Scheduler	Frequency for the scheduler which is expected to run for very high intervals (in minutes).	5
Frequency of Daily Scheduler	Frequency for the scheduler which is expected to run once in 24 hours.	24
User Name and Password	Logon credentials for Microsoft Exchange Server	NA

Tuning Parameters

This section provides information about editing parameters the Microsoft Exchange Server Management Templates and Aspects that are deployed to the CIs. To edit the parameters, follow these steps:

1. Open the Assignments & Tuning pane:

   Admin > Operations Management > Monitoring > Assignments & Tuning

2. In the **Browse Views** tab, select **Exchange_Org_View** that contains the CI for which you want to tune parameters. Alternatively, you can use the **Search** tab to find a CI.
3. In the list of CI, click a CI. The Assignment Details pane lists the current parameter values.
4. You can change the default values of Parameters in the Assignment Details pane by following these steps:

   a. Click  . The Edit Parameter dialog box opens.

   b. Select the parameter you want to edit and click  . The Edit Parameter dialog box opens.

   c. Change the value and click **OK**. The new parameter values are deployed to the relevant CIs.

Run-time Service Model (RTSM) Views

A View helps you visualize the context of an event. A typical View shows a subset of CIs and their relationships with other neighboring CIs. Using Views, you can visualize the topology of an OMi MP for Microsoft Exchange Server environment. In addition, Views can be used to do the following:

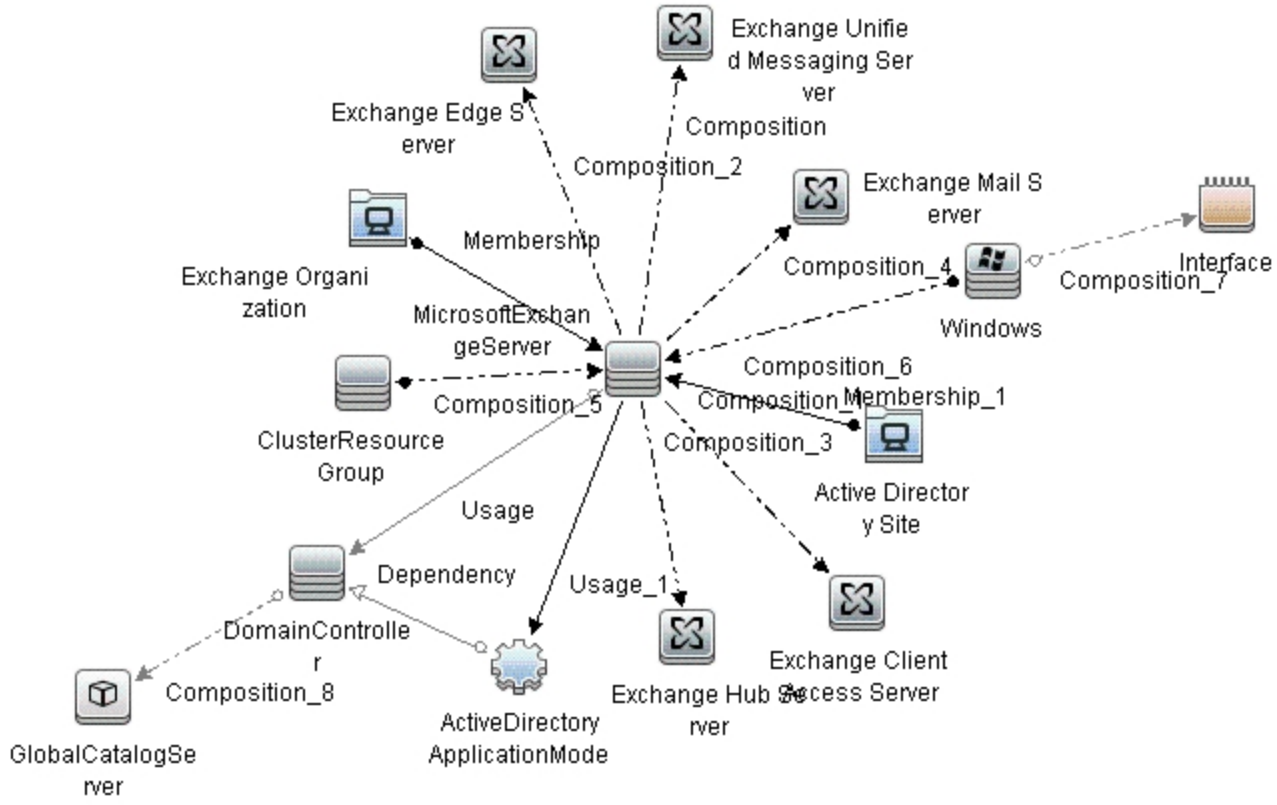
- Manage the Event Perspective of Microsoft Exchange Server CIs
- Manage the Health Perspective of Microsoft Exchange Server CIs
- Assigning and Tuning the Management Templates, Aspects, and Policy Templates

How to Access the RTSM Views

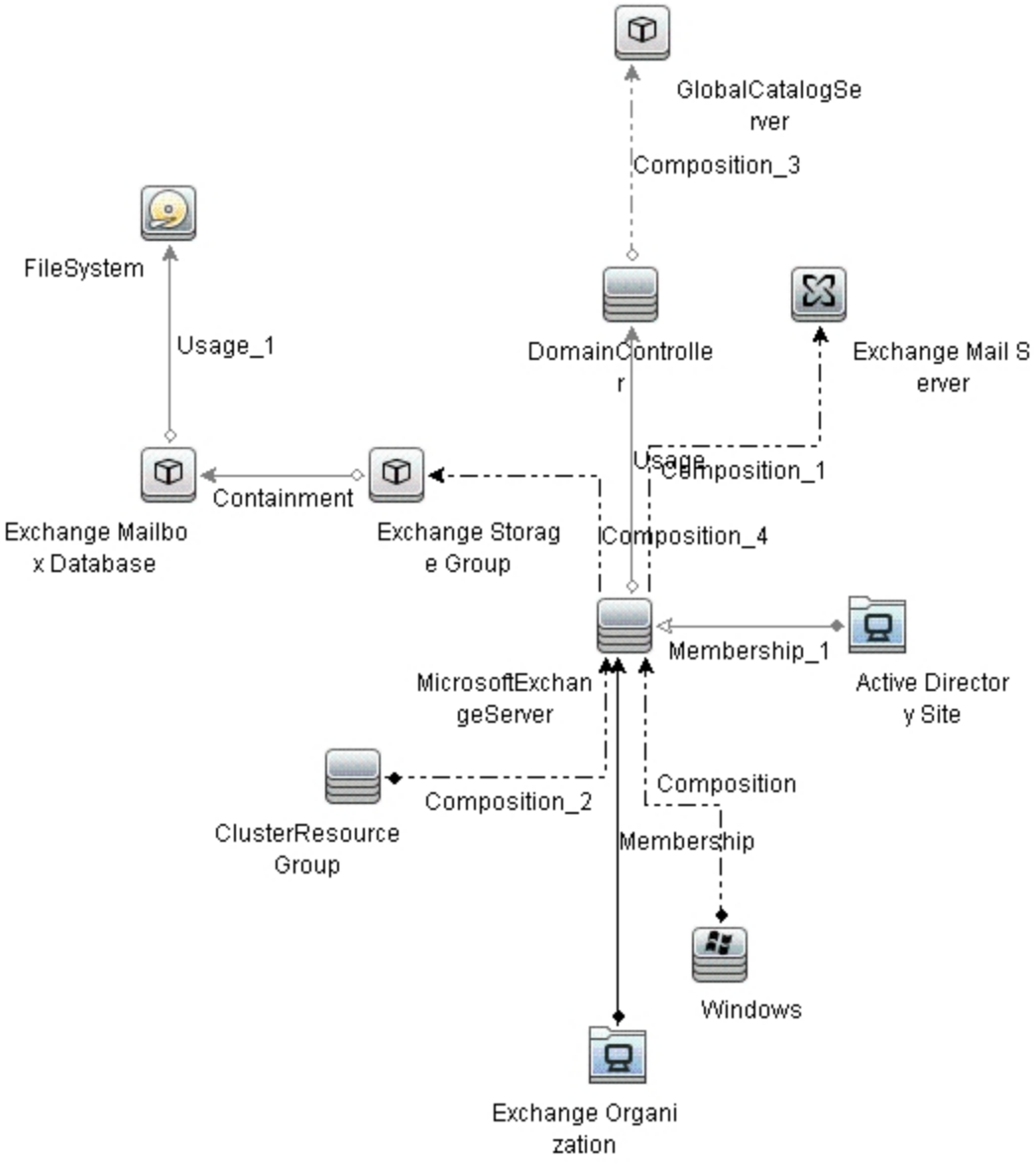
1. Select **Admin > RTSM Administration > Modeling > Modeling Studio > Resources**.
2. Select **Views** from the **Resource Type** drop down list.
3. Select **Operations Management > Exchange Server** from the list.

The RTSM package in the Microsoft Exchange Server Content Pack contains the following views:

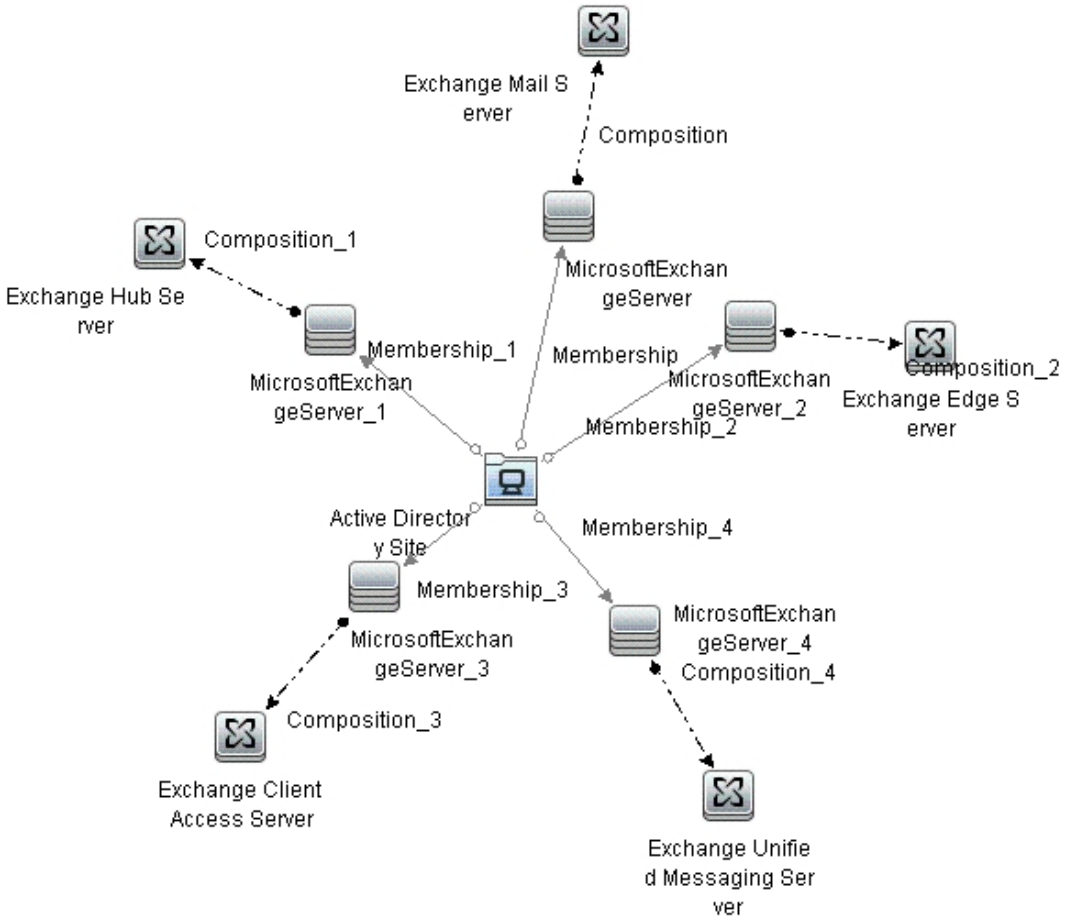
- **Exchange_Org_View**: This view displays various components such as the Exchange Organization, Exchange Unified Messaging Server, Exchange Client Access Server, Exchange Edge Server, Exchange Hub Server, Exchange Mail Server, Active Directory Site, Active Directory Application Mode, Domain Controller, and Computer CI types in a pictorial view.



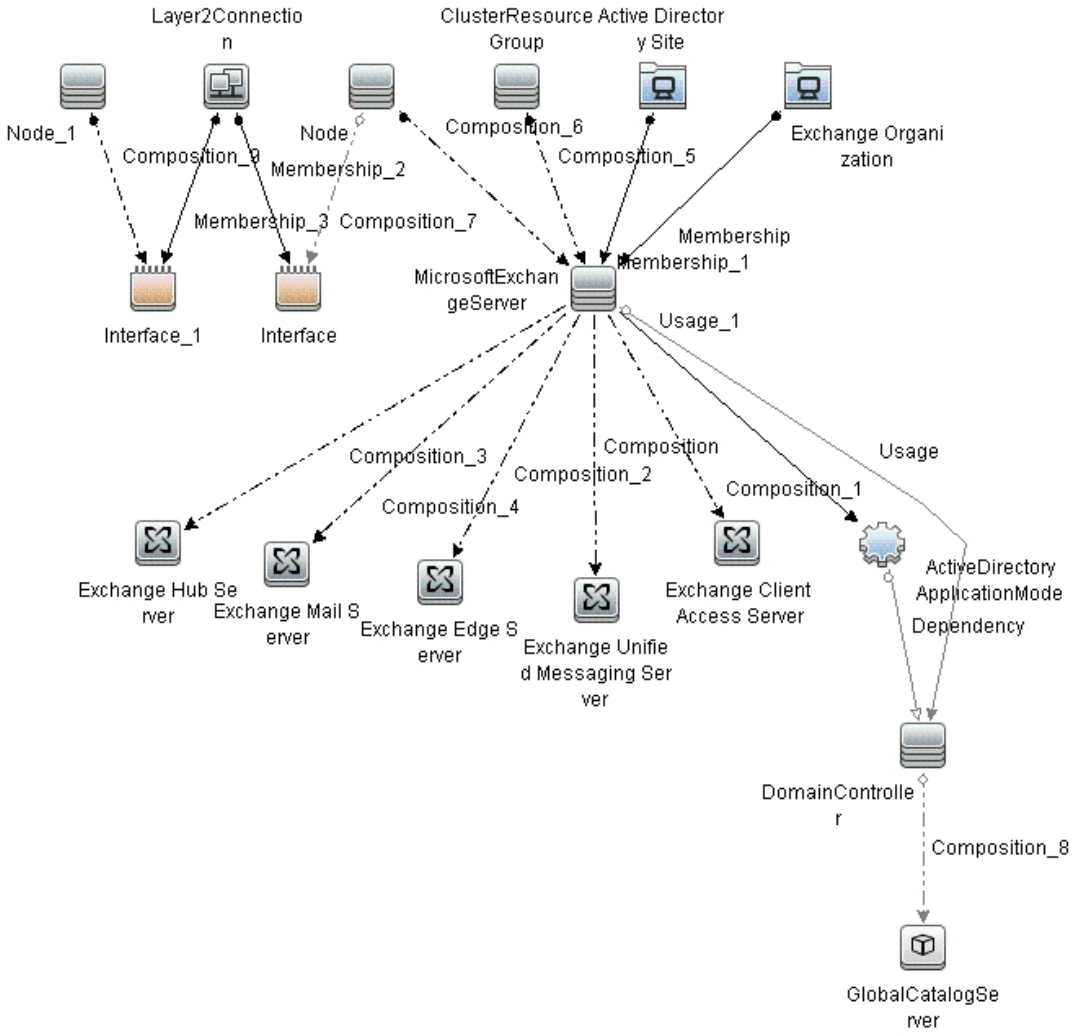
- **Exchange_Mail_View**: This view displays various components such as the Exchange Organization, Exchange Mail Server, Domain Controller, Microsoft Exchange Server, Exchange Storage Group, Clustered Resource Group, Active Directory Site, Exchange Mailbox Database, and Computer (Windows) CI types in a pictorial view.



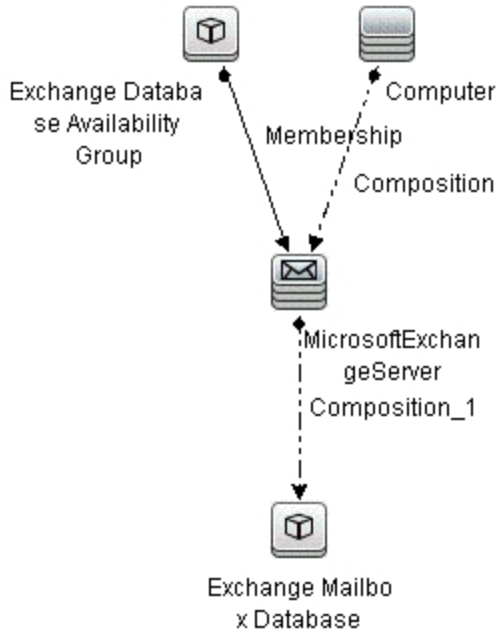
- **Exchange_Site_View**: This view displays various components such as the Exchange Organization, Exchange Mail Server, Exchange Hub Server, Exchange Edge Server, Active Directory Site, and Exchange Unified Messaging Server types in a pictorial view.



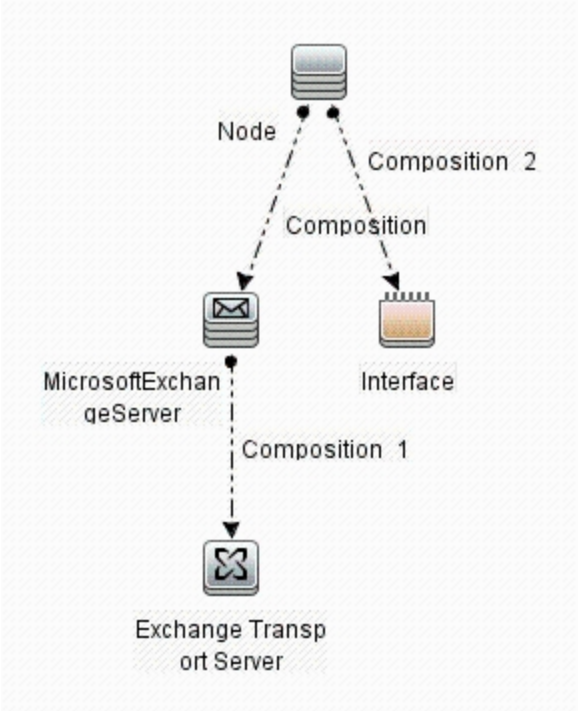
- **Exchange_Network_Deployment_View**: This view refers to the Exchange Organization, Exchange Mail Server, Exchange Hub Server, Exchange Edge Server, Active Directory Site, Active Directory Application Mode, Exchange Unified Messaging Server, and Node CI types.



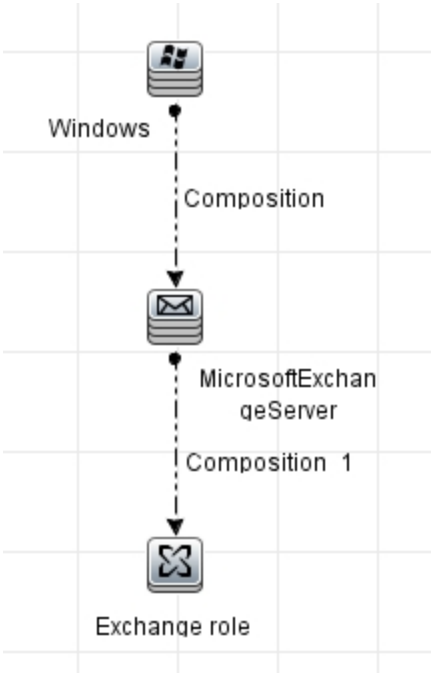
- **Exchange_DAG_View:** This view displays various components such as the Exchange Organization, Exchange Database Availability Groups, Exchange Servers (which are members of the Exchange DAG), Exchange Mailbox Databases, and Computer CI types in a pictorial view.



- **Exchange_Transport_View:** This view displays various components such as the Exchange Organization, Exchange Transport Server, Exchange Servers, and Node CI types in a pictorial view.



  - **Exchange_Server_View:** This view displays various components such as the Microsoft Exchange Server, Exchange Role, and Windows CI types in a pictorial view.



Configuration Items (CIs) and Configuration Item Types (CITs)

CIs are components that need to be managed to deliver an IT Service. CIs typically include IT Services, hardware, and software. CIT describes the type of a CI and its attributes. The OMi MP for Microsoft Exchange Server uses the following CITs:

- Exchange Organization
- Exchange Database Availability Group
- Microsoft Exchange Server
- Exchange Hub Server
- Exchange Mail Server
- Exchange Client Access Server
- Exchange Unified Messaging Server
- Exchange Edge Server

Enrichment Rules

Enrichment rules can be used for several purposes, including:

- Adding new CIs and relationships to the RTSM
- Deleting specific CI instances from the RTSM
- Updating the attribute values of specific CI instances in the RTSM

How to Access Enrichment Rules

1. Click **Admin > RTSM Administration > Modeling > Enrichment Manager**.
2. Select **Operations Management > Exchange Server**.

The OMi MP for Microsoft Exchange Server Content Pack contains the following enrichment rules:

- ADAM_Depends_DomainController
- ExchangeServer_Uses_GlobalCatalog
- ExchangeServer_IsMemberOf_ActiveDirectorySite
- ExchangeServer_Uses_DomainController
- ExchangeRoleLabelUpdate

Health Indicators (HIs) and Event Type Indicators (ETIs)

Health Indicators (HIs) analyze the events that occur in Microsoft Exchange Server CIs and report the health of the Microsoft Exchange Server CIs. Event Type Indicators (ETIs) are categorization of events based on the type of occurrence. ETIs helps to track the health of the related configuration item (CI).

How to Access Heath Indicators and Event Type Indicators

1. Select **Admin > Operations Management > Monitoring > Indicators**.
2. In the CI Type pane, select **Configuration Item > Infrastructure Element > Application Resource > Microsoft Exchange Resource > Exchange Role**.

The OMi MP for Microsoft Exchange Server includes the following Health Indicators and Event Type Indicators to monitor the Microsoft Exchange Server-related events in your environment:

CI Type	HI/ETI	Description	Value
Exchange Mail Server	Average Time For PF Delivery	Indicates the average time taken for Public Folder Posts or messages to be delivered to recipients on the Exchange Mail Server.	Normal, High, Very High
Exchange Mail Server	Public Folder Replication Queue Length	Indicates the number of Replication messages waiting to be processed.	Normal, High, Very High
Exchange Hub Server	Load Exchange Topology	Indicates if the Exchange Topology Information could be read or loaded from Active Directory.	Down
Exchange Mail Server	Public Folder Receive Queue Length	Indicates the number of messages in Public Store's Receive Queue	Normal, High, Very High
Exchange Hub Server	Submission Thread Count	Indicates the percentage of Submission Threads currently running on the Exchange Hub Server. If the value is *Very High*, then no new threads are created and mail submission will fail.	Normal, High, Very High
Exchange Mail Server	Hub Server Reachability	Indicates if the Exchange Hub Servers are reachable from the Exchange Mail Server.	Up, Down
Exchange Client Access Server	Active Sync Connectivity	Indicates the availability of Active Sync connections on the Exchange Client Access Server.	Up, Down
Exchange Client Access Server	Active Sync Latency	Indicates the latency in accessing a user mailbox using Active Sync.	Normal, High, Very High
Exchange Client Access Server	IMAP4 Latency	Indicates the latency in IMAP4 connections on the Client Access Server.	Normal, High, Very High
Exchange Client Access Server	Exchange Service Host Status	Indicates the status of the Microsoft Exchange service host.	Up, Down

CI Type	HI/ETI	Description	Value
Exchange Client Access Server , Exchange Unified Messaging Server	File Distribution Service Status	Indicates the status of the Microsoft Exchange File Distribution service.	Up, Down
Exchange Client Access Server	POP3 Latency	Indicates the latency in POP3 connections on the Client Access Server.	Normal, High, Very High
Exchange Client Access Server	IMAP4 Connectivity	Indicates the availability of IMAP4 connections on the Exchange Client.	Up, Down
Exchange Client Access Server	IMAP4 Service Status	Indicates the status of Microsoft Exchange IMAP4 service.	Up, Down
Exchange Client Access Server	IMAP4 Status	Indicates the status of IMAP4 operations on the Exchange Client Access Server.	Critical, Normal
Exchange Client Access Server	OWA Connectivity	Indicates the availability of OWA connections on the Exchange Client Access Server.	Up, Down
Exchange Client Access Server	OWA Latency	Indicates the latency in performing OWA operations on the Exchange Client Access Server.	Normal, High, Very high
Exchange Client Access Server	POP3 Connectivity	Indicates the availability of POP3 connections on the Exchange Client Access Server.	Up, Down
Exchange Client Access Server	POP3 Service Status	Indicates the status of Microsoft Exchange POP3 service.	Up, Down

CI Type	HI/ETI	Description	Value
Exchange Transport Server, Exchange Mail Server	Retry Non SMTP Delivery Queue Length	Indicates the number of messages in retry in the non-SMTP gateway delivery queues.	Normal, High, Very High
Exchange Client Access Server	POP3 Status	Indicates the status of POP3 operations on the Exchange Client Access Server.	Critical, Normal
Exchange Mail Server	Mail Submission Status	Indicates the status of Mail Submission on the Exchange Mail Server.	Up, Down
Exchange Mail Server, Exchange Unified Messaging Server	Exchange Service Host Status	Indicates the status of the Microsoft Exchange service host.	Up, Down
Exchange Unified Messaging Server	File Distribution Service Status	Indicates the status of the Microsoft Exchange File Distribution service.	Up, Down
Exchange Edge Server	ADAM Service Status	Indicates the status of the Microsoft Exchange ADAM service.	Up, Down
Exchange Edge Server	Edge Credential Service Status	Indicates the status of credential service status for the Exchange Edge Server.	Up, Down
Exchange Mail Server	Active Directory Access	Indicates the status of Active Directory accessibility from the Exchange Mail Server and the Microsoft Exchange Server.	Up, Down
Exchange Mail Server	Average Mail Delivery Time	Indicates the Average Mail Delivery Time on the Exchange Mail Server.	Normal, High, Very high
Exchange Mail Server	Average Time for PF Delivery	Indicates the average time taken for Public Folder Posts or messages to be delivered to recipients on the Exchange Mail Server.	Normal, High, Very High
Exchange	Database Instance	Indicates the status of the Exchange Database	Critical,

CI Type	HI/ETI	Description	Value
Mail Server	Status	Instance.	Normal
Exchange Mail Server	Exchange Service Host Status	Indicates the status of the Microsoft Exchange Service Host.	Up, Down
Exchange Mail Server	Exchange Memory Status	Indicates the status of memory used and available for the Microsoft Exchange process.	Normal, Critical
Exchange Mail Server	Information Store Service Status	Indicates the status of the Microsoft Exchange Information Store Service.	Up, Down
Exchange Mail Server	Mailbox Assistant Service Status	Indicates the status of the Microsoft Exchange Mailbox Assistants Service.	Up, Down
Exchange Mail Server	Mailbox Receive Queue Length	Indicates the number of messages in the Mailbox Store's Receive Queue.	Normal, High, Very High
Exchange Mail Server	Mail Flow Latency	Indicates the latency in Mail Flow from the given Microsoft Exchange Mail Server.	Normal, High, Very High
Exchange Mail Server	Mail Flow Status	Indicates the status of mail flow on the Microsoft Exchange Mail Server.	Up, Down
Exchange Mail Server	Mail Submission Service Status	Indicates the status of Microsoft Exchange Mail Submission Service.	Up, Down
Exchange Mail Server	MAPI Connectivity	Indicates the status of MAPI Connectivity on the Exchange Mail Server.	Up, Down
Exchange Mail Server	MAPI Latency	Indicates the latency in MAPI Connectivity on the Exchange Mail Server.	Normal, High, Very High
Exchange Mail Server	Public Receive Queue Length	Indicates the number of messages in the Public Store's receive queue.	Normal, High, Very High
Exchange Mail Server	Public Replication Queue Length	Indicates the number of Replication messages waiting to be processed.	Normal, High, Very High
Exchange Mail Server	Replication Service Status	Indicates the status of the Microsoft Exchange Replication service.	Up, Down

CI Type	HI/ETI	Description	Value
Exchange Mail Server	Search Status	Indicates the status of the Search operation.	Up, Down
Exchange Mail Server	Search Latency	Indicates the latency in performing an Exchange search.	Normal, High, Very High
Exchange Mail Server	System Attendant Status	Indicates the status of the Microsoft Exchange System Attendant Service.	Up, Down
Exchange Hub Server, Exchange Mail Server	Edge Sync Service Status	Indicates the status of synchronization service status for the Exchange Hub Server.	Up, Down
Exchange Mailbox Database, Exchange Mail Server	Available Transaction Log Disk Space	Indicates the degree of available free disk space for Exchange transaction logs on the Exchange Mail Server.	Near Capacity, Low, Normal
Exchange Mailbox Database	Available Database Disk Space	Indicates the space available in the disk containing the database.	Near Capacity, Low, Normal
Microsoft Exchange Server	AD Topology Service Status	Indicates the status of the Microsoft Exchange Active Directory topology service.	Up, Down
Microsoft Exchange Server	Create Item Status	Indicates the status of Create Item operation performed using the Microsoft Exchange web services.	Up, Down
Microsoft Exchange Server	Create Item Latency	Indicates the latency in performing the Create Item operation using the Microsoft Exchange web services.	Normal, High, Very High
Microsoft Exchange Server	Delete Item Status	Indicates the status of the Delete Item operation performed using the Exchange web services.	Up, Down
Microsoft Exchange Server	Delete Item Latency	Indicates the latency in performing the operation Delete Item operation using the Microsoft Exchange web services.	Normal, High, Very High

CI Type	HI/ETI	Description	Value
Microsoft Exchange Server	GC Bind Time	Indicates the time taken to bind with the Global Catalog (GC).	Normal, High, Very High
Microsoft Exchange Server	GC Search Time	Indicates the time taken to perform GC search.	Normal, High, Very High
Microsoft Exchange Server	Get Folder Status	Indicates the status of Get Folder operation performed using the Exchange web services.	Up, Down
Microsoft Exchange Server	Get Folder Latency	Indicates the latency in performing the Get Folder operation using the Microsoft Exchange web services.	Normal, High, Very High
Microsoft Exchange Server	Sync Folder Status	Indicates the status of Sync Folder operation performed using the Microsoft Exchange web services.	Up, Down
Microsoft Exchange Server	Sync Folder Latency	Indicates the latency in performing the operation Sync Folder using the Microsoft Exchange web services.	Normal, High, Very High
Exchange Transport Server, Exchange Mail Server	Active Mailbox Delivery Queue Length	Indicates the number of messages in the Active Mailbox queues.	Normal, High, Very High
Exchange Transport Server, Exchange Mail Server	Aggregate Delivery Queue Length	Indicates the number of messages queued for delivery in all queues.	Normal, High, Very High
Exchange Transport Server	Delayed DSN Count	Indicates the number of **Delayed Delivery** status notifications which were generated on the Exchange Transport Server. Very High Values can indicate overload.	Normal, High, Very High
Exchange Transport Server	Failed DSN Count	Indicates the number of Failure Delivery Status Notifications generated.	Normal, High, Very High

CI Type	HI/ETI	Description	Value
Exchange Transport Server, Exchange Mail Server	Largest Delivery Queue Length	Indicates the number of messages in the largest delivery queue.	Normal, High, Very High
Exchange Transport Server, Exchange Mail Server	Poison Queue Length	Indicates the length of Poison Queue on the Exchange Transport Server.	Normal, High, Very High
Exchange Transport Server, Exchange Mail Server	Remote Delivery Queue Length	Indicates the length of remote delivery queues on the Microsoft Exchange Transport Server and Exchange Mail Server.	Normal, High, Very High
Exchange Transport Server	Retry Non SMTP Delivery Queue Length	Indicates the number of messages in retry in the non-SMTP gateway delivery queues.	Normal, High, Very High
Exchange Transport Server, Exchange Mail Server	Submission Queue Length	Indicates the length of submission queue on the Exchange Transport Server.	Normal, High, Very High
Exchange Transport Server, Exchange Mail Server	Transport Service Status	Indicates the status of Microsoft Exchange Transport service.	Up, Down
Exchange Transport Server, Exchange Mail Server	Unreachable Queue Length	Indicates the length of the Unreachable Queue on the Exchange Transport Server and Exchange Mail Server.	Normal, High, Very High
Exchange Hub Server	Edge Synchronization Status	Indicates the status of Edge Synchronization	Up
Exchange Unified Messaging Server	Speech Engine Status	Indicates the status of the Microsoft Exchange Speech Engine service.	Up, Down
	Unified Messaging	Indicates the availability of Unified Messaging	Up,

CI Type	HI/ETI	Description	Value
	Connectivity	connections on the Microsoft Exchange Unified Messaging Server.	Down
	Unified Messaging Status	Indicates the status of the Microsoft Exchange Unified Messaging service.	Up, Down

Topology Based Event Correlation (TBEC) Rules

In event correlation, rules are applied to identify commonly occurring events or combinations of events and helps handling of such events by automatically identifying events that can be withheld, removed or need a new event to be generated and displayed to the operators.

How to Access the Correlation Rules

Admin > Operations Management > Event Correlation > Topology Based Event Correlation

The OMi MP for Microsoft Exchange Servercontent pack includes rules to correlate Exchange Server-related events.

For more information about how the correlation rules work, see the *Operations Manager i Concepts Guide*.

Exchange::Clustered Server: Memory Load >> Exchange Memory Status

Description: Memory Load Impacts Memory Available for Exchange		
Cause		
CIT: ClusterResourceGroup	ETI: Memory Load	Value: Paging
Symptom		
CIT: Exchange Mail Server	HI: Exchange Memory Status	Value: Critical

Exchange::Clustered Server: Memory Usage Level >> Exchange Memory Status

Description: Memory Usage Level Impacts Memory Available for Exchange		
Cause		
CIT: ClusterResourceGroup	HI: Memory Usage Level	Value: Near Capacity
Symptom		
CIT: Exchange Mail Server	HI: Exchange Memory Status	Value: Critical

Exchange:: Clustered Server: Page File Usage >> Exchange Memory Status

Description: Page File Usage on the Computer which hosts Exchange Mail Server Impacts Exchange Memory Status		
Cause		
CIT: Cluster Resource Group	HI: Page File Usage	Value: Near Capacity
Symptom		
CIT: Exchange Mail Server	HI: Exchange Memory Status	Value: Critical

Exchange::Clustered Server: Ping Availability >> Hub Server Reachability & Mail Submission Status

Description: Ping Availability of Exchange Mail Server Impacts Mail Submission and Hub Server Reachability		
Cause		
CIT: ClusterResourceGroup	HI: Ping Availability	Value: Unavailable
Symptom 1		
CIT: Exchange Mail Server	ETI: Hub Server Reachability	Value: Down
Symptom 2		
CIT: Exchange Mail Server	ETI: Mail Submission Status	Value: Down

Exchange:: DomainController: DC LDAP Bind Response Time >> Client Accessibility

Description: LDAP Bind Response Time Impacts Client Accessibility		
Cause		
CIT: DomainController	HI: DC LDAP Bind Response Time	Value: Very High
Symptom 1		
CIT: Exchange Client Access Server	HI: OWA Latency	Value: Very High
Symptom 2		
CIT: Exchange Client Access Server	HI: Active Sync Latency	Value: Very High

Exchange::DomainController: DC LDAP Bind Response Time >> Mail Flow Latency

Description: LDAP Bind Response Time Impacts Mail Flow Latency		
Cause		
CIT: Domain Controller	HI: DC LDAP Bind Response Time	Value: Very High
Symptom		
CIT: Exchange Client Access Server	HI: Mail Flow Latency	Value: Very High

Exchange::DomainController: DC LDAP Bind Response Time >> Transport Queue Length

Description: LDAP Bind Response Time Impacts Transport Queue Length		
Cause		
CIT: DomainController	HI: DC LDAP Bind Response Time	Value: Very High
Symptom 1		
CIT: Exchange Hub Server	HI: Active Mailbox Delivery Queue Length	Value: Very High
Symptom 2		
CIT: Exchange Hub Server	HI: Remote Delivery Queue Length	Value: Very High
Symptom 3		
CIT: Exchange Hub Server	HI: Delayed DSN Count	Value: Very High
Symptom 4		
CIT: Exchange Hub Server	HI: Submission Queue Length	Value: Very High

Exchange::DomainController: DC LDAP Query Response Time >> Client Accessibility

Description: LDAP Query Response Time Impacts Client Accessibility		
Cause		
CIT: Domain Controller	HI: DC LDAP Query Response Time	Value: Very High
Symptom 1		
CIT: Exchange Client Access Server	HI: OWA Latency	Value: Very High
Symptom 2		
CIT: Exchange Client Access Server	ETI: Active Sync Latency	Value: Very High

Exchange:: DomainController: DC LDAP Query Response Time >> Mail Flow Latency

Description: LDAP Query Response Time Impacts Mail Flow Latency		
Cause		
CIT: DomainController	HI: DC Query Response Time	Value: Very High
Symptom		
CIT: Exchange Mail Server	HI: Mail Flow Latency	Value: Very High

Exchange::DomainController:DC LDAP Query Response Time >> Transport Queue Length

Description: LDAP Query Response Time Impacts Transport Queue Length		
Cause		
CIT: DomainController	HI: DC LDAP Query Response Time	Value: Very High
Symptom 1		
CIT: Exchange Hub Server	HI: Active Mailbox Delivery Queue Length	Value: Very High
Symptom 2		
CIT: Exchange Hub Server	HI: Remote Delivery Queue Length	Value: Very High
Symptom 3		
CIT: Exchange Hub Server	HI: Delayed DSN Count	Value: Very High
Symptom 4		
CIT: Exchange Hub Server	HI: Submission Queue Length	Value: Very High

Exchange::Exchange Client Access Server:IMAP4 Service Status >> IMAP4 Connectivity

Description: IMAP4 Service impacts IMAP4 Connectivity		
Cause		
CIT: Exchange Client Access Server	HI: IMAP4 Service Status	Value: Down
Symptom		
CIT: Exchange Client Access Server	HI: IMAP4 Connectivity	Value: Down

Exchange::Exchange Client Access Server: POP3 Service Status >> POP3 Connectivity

Description: POP3 Service impacts POP3 Connectivity		
Cause		
CIT: Exchange Client Access Server	HI: POP3 Service Status	Value: Down

Description: POP3 Service impacts POP3 Connectivity		
Symptom		
CIT: Exchange Client Access Server	HI: POP3 Connectivity	Value: Down

Exchange::Exchange Hub Server:Active Mailbox Delivery Queue Length >> Mail Flow Latency

Description: Active Mailbox Delivery Queue Length Impacts Mail Flow Latency		
Cause		
CIT: Exchange Hub Server	HI: Active Mailbox Delivery Queue Length	Value: Very High
Symptom		
CIT: Exchange Mail Server	HI: Mail Flow Latency	Value: Very High

Exchange::Exchange Hub Server:Submission Queue Length >> MAPI Latency

Description: Submission Queue Length Impacts Mapi Latency		
Cause		
CIT: Exchange Hub Server	HI: Submission Queue Length	Value: Very High
Symptom		
CIT: Exchange Mail Server	HI: Mapi Latency	Value: Very High

Exchange::Exchange Hub Server:Submission Thread Count >> Mail Submission Status

Description: Submission Thread Count Impacts Mail Submission on Exchange Mail Server		
Cause		
CIT: Exchange Hub Server	ETI: Submission Thread Count	Value: Very High
Symptom		
CIT: Exchange Mail Server	ETI: Mail Submission Status	Value: Down

Exchange::Exchange Hub Server:Transport Service Status >> Mail Submission Status & Mail Flow Status

Description: Transport Service Impacts Mail Submission and Mail Flow		
Cause		
CIT: Exchange Hub Server	HI: Transport Service Status	Value: Down
Symptom 1		

Description: Transport Service Impacts Mail Submission and Mail Flow		
CIT: Exchange Mail Server	HI: Mail Flow Status	Value: Down
Symptom 2		
CIT: Exchange Mail Server	ETI: Mail Submission Status	Value: Down

Exchange::Exchange Mail Server:Hub Server Reachability >> Mail Submission Status

Description: Hub Server Reachability Impacts Mail Submission		
Cause		
CIT: Exchange Mail Server	ETI: Hub Server Reachability	Value: Down
Symptom		
CIT: Exchange Mail Server	ETI: Mail Submission Status	Value: Down

Exchange::Exchange Mailbox Database:Available Database Disk Space >> Information Store Service Status

Description: Available Database Disk Space Impacts Information Store Service		
Cause		
CIT: Exchange Mailbox Database	HI: Available Transaction Log Disk Space	Value: Down
Symptom		
CIT: Exchange Mail Server	HI: Information Store Service Status	Value: Down

Exchange::Exchange Mail Server:Information Store Service Status >> Client Accessibility

Description: Information Store Service Impacts Client Accessibility		
Cause		
CIT: Exchange Mail Server	HI: Information Store Service Status	Value: Down
Symptom 1		
CIT: Exchange Client Access Server	HI: Active Sync Connectivity	Value: Down
Symptom 2		
CIT: Exchange Client Access Server	HI: IMAP4 Connectivity	Value: Down
Symptom 3		

Description: Information Store Service Impacts Client Accessibility		
CIT: Exchange Client Access Server	HI: OWA Connectivity	Value: Down
Symptom 4		
CIT: Exchange Client Access Server	HI: POP3 Connectivity	Value: Down

Exchange::Exchange Mail Server:Information Store Service Status >> Mail Flow Status & MAPI Connectivity

Description: Information Store Service Impacts Mail Flow and MAPI Connectivity		
Cause		
CIT: Exchange Mail Server	HI: Information Store Service Status	Value: Down
Symptom 1		
CIT: Exchange Mail Server	HI: Mail Flow Status	Value: Down
Symptom 2		
CIT: Exchange Mail Server	HI: MAPI Connectivity	Value: Down

Exchange::Exchange Mail Server:Mail Submission Service Status >> Mail Flow Status

Description: Mail Submission Service Impacts Mail Flow		
Cause		
CIT: Exchange Mail Server	HI: Mail Submission Service Status	Value: Down
Symptom		
CIT: Exchange Mail Server	HI: Mail Flow Status	Value: Down

Exchange::Exchange Mailbox Database:Available Transaction Log Disk Space >> Information Store Service Status

Description: Available Transaction Log Disk Space Impacts Information Store Service's status		
Cause		
CIT: Exchange Mailbox Database	HI: Available Transaction Log Disk Space	Value: Near Capacity
Symptom		
CIT: Exchange Mail Server	HI: Information Store Service Status	Value: Down

Exchange::Exchange Unified Messaging Server:Speech Engine Status >> Unified Messaging Status

Description: Speech Engine Service Impacts Unified Messaging Service		
Cause		
CIT: Exchange Unified Messaging Server	HI: Speech Engine Status	Value: Down
Symptom		
CIT: Exchange Unified Messaging Server	HI: Unified Messaging Status	Value: Down

Exchange::File System:Disk Usage Level >> Available Database Disk Space

Description: Disk Usage Level Impacts Available Database Disk space		
Cause		
CIT: File System	HI: Disk Usage Level	Value: Near Capacity
Symptom 1		
CIT: Exchange Mailbox Database	HI: Available Database Disk Space	Value: Near Capacity
Symptom 2		
CIT: Exchange Mailbox Database	HI: Available Transaction Log Disk Space	Value: Near Capacity

Exchange::GlobalCatalog:GC Query Response Time >> Exchange GC Search Time

Description: GC Query Response Time Impacts Exchange GC Search		
Cause		
CIT: Global Catalog	HI: GC LDAP Query Response Time	Value: Very High
Symptom		
CIT: Microsoft Exchange Server	HI: GC Search Time	Value: Very High

Exchange::Microsoft Exchange Server:AD Topology Service Status >> Client Access Services

Description: Active Directory Topology Service Impacts Client Access Services		
Cause		
CIT: MicrosoftExchangeServer	HI: AD Topology Service Status	Value: Down
Symptom 1		

Description: Active Directory Topology Service Impacts Client Access Services		
CIT: Exchange Client Access Server	HI: File Distribution Service Status	Value: Down
Symptom 2		
CIT: Exchange Client Access Server	HI: Exchange Service Host Status	Value: Down
Symptom 3		
CIT: Exchange Client Access Server	HI: IMAP4 Service Status	Value: Down
Symptom 4		
CIT: Exchange Client Access Server	HI: POP3 Service Status	Value: Down

Exchange::Microsoft Exchange Server:AD Topology Service Status >> Hub Transport Services

Description: Active Directory Topology Service Impacts Hub Transport Services		
Cause		
CIT: MicrosoftExchangeServer	HI: AD Topology Service Status	Value: Down
Symptom 1		
CIT: Exchange Hub Server	HI: Transport Service Status	Value: Down
Symptom 2		
CIT: Exchange Hub Server	HI: Edge Sync Service Status	Value: Down

Exchange::Microsoft Exchange Server:AD Topology Service Status >> Mail Server Services

Description: Active Directory Topology Service Impacts Mail Server Services		
Cause		
CIT: MicrosoftExchangeServer	HI: AD Topology Service Status	Value: Down
Symptom 1		
CIT: Exchange Mail Server	HI: Mail Submission Service Status	Value: Down
Symptom 2		
CIT: Exchange Mail Server	HI: Mailbox Assistant Service Status	Value: Down
Symptom 3		

Description: Active Directory Topology Service Impacts Mail Server Services		
CIT: Exchange Mail Server	HI: Replication Service Status	Value: Down
Symptom 4		
CIT: Exchange Mail Server	HI: Exchange Service Host Status	Value: Down
Symptom 5		
CIT: Exchange Mail Server	HI: Active Directory Access	Value: Down
Symptom 6		
CIT: Exchange Mail Server	HI: Mapi Connectivity	Value: Down
Symptom 7		
CIT: Exchange Mail Server	HI: Mail Flow Status	Value: Down

Exchange::Microsoft Exchange Server:AD Topology Service Status >> Unified Messaging Services

Description: Active Directory Topology Service Impacts Unified Messaging Services		
Cause		
CIT: MicrosoftExchangeServer	HI: AD Topology Service Status	Value: Down
Symptom 1		
CIT: Exchange Unified Messaging Server	HI: File Distribution Service Status	Value: Down
Symptom 2		
CIT: Exchange Unified Messaging Server	HI: Unified Messaging Status	Value: Down

Exchange::Microsoft Exchange Server:GC Search Time >> Client Accessibility

Description: GC Search Time Impacts Client Accessibility		
Cause		
CIT: MicrosoftExchangeServer	HI: GC Search Time	Value: Very High
Symptom 1		
CIT: Exchange Client Access Server	HI: OWA Latency	Value: Very High
Symptom 2		
CIT: Exchange Client Access Server	HI: Active Sync Latency	Value: Very High

Exchange::Microsoft Exchange Server:GC Search Time >> Mail Flow Latency

Description: GC Search Time Impacts Mail Flow Latency		
Cause		
CIT: MicrosoftExchangeServer	HI: GC Search Time	Value: Very High
Symptom		
CIT: Exchange Mail Server	HI: Mapi Flow Latency	Value: Very High

Exchange::Microsoft Exchange Server:GC Search Time >> Transport Queue Length

Description: GC Search Time Impacts Transport Queue		
Cause		
CIT: MicrosoftExchangeServer	HI: GC Search Time	Value: Very High
Symptom 1		
CIT: Exchange Hub Server	HI: Active Mailbox Delivery Queue Length	Value: Very High
Symptom 2		
CIT: Exchange Hub Server	HI: Remote Delivery Queue Length	Value: Very High
Symptom 3		
CIT: Exchange Hub Server	HI: Delayed DSN Count	Value: Very High
Symptom 2		
CIT: Exchange Hub Server	HI: Submission Queue Length	Value: Very High

Exchange::Network Interface:Interface Communication Status >> Client Accessibility

Description: Network Interface Communication status impacts Client Accessibility		
Cause		
CIT: Interface	HI: Interface Communication Status	Value: Unavailable
Symptom 1		
CIT: Exchange Client Access Server	HI: IMAP4 Latency	Value: Very High
Symptom 2		
CIT: Exchange Client Access Server	HI: POP3 Latency	Value: Very High

Description: Network Interface Communication status impacts Client Accessibility		
Symptom 3		
CIT: Exchange Client Access Server	HI: IMAP4 Connectivity	Value: Down
Symptom 4		
CIT: Exchange Client Access Server	HI: POP3 Connectivity	Value: Down
Symptom 5		
CIT: Exchange Client Access Server	HI: OWA Connectivity	Value: Down
Symptom 6		
CIT: Exchange Client Access Server	HI: Active Sync Connectivity	Value: Down

Exchange::Network Interface:Interface Communication Status >> Hub Server Reachability

Description: Network Interface Communication status impacts Hub Server Reachability		
Cause		
CIT: Network Interface	HI: Interface Communication Status	Value: Unavailable
Symptom 1		
CIT: Exchange Mail Server	ETI: Hub Server Reachability	Value: Down

Exchange::Network Interface:Interface Communication Status >> Mailbox Queue Lengths

Description: Network Interface Communication status impacts Mailbox Queue Lengths		
Cause		
CIT: Interface	HI: Interface Communication Status	Value: Unavailable
Symptom 1		
CIT: Exchange Mail Server	HI: Mailbox Receive Queue Length	Value: Very High
Symptom 2		
CIT: Exchange Mail Server	HI: Public Folder Replication Queue Length	Value: Very High
Symptom 3		
CIT: Exchange Mail Server	HI: Public Folder Receive Queue Length	Value: Very High

Description: Network Interface Communication status impacts Mailbox Queue Lengths		
Symptom 4		
CIT: Exchange Mail Server	HI: Average Mail Delivery Time	Value: Very High
Symptom 5		
CIT: Exchange Mail Server	HI: Average Time for PF Delivery	Value: Very High

Exchange::Network Interface:Interface Communication Status >> Transport Queue Lengths

Description: Network Interface Communication status impacts Transport Queue Lengths		
Cause		
CIT: Interface	HI: Interface Communication Status	Value: Unavailable
Symptom 1		
CIT: Exchange Transport Server	HI: Unreachable Queue Length	Value: Very High
Symptom 2		
CIT: Exchange Transport Server	HI: Largest Delivery Queue Length	Value: Very High
Symptom 3		
CIT: Exchange Transport Server	HI: Retry Non SMTP Delivery Queue Length	Value: Very High
Symptom 4		
CIT: Exchange Transport Server	HI: Aggregate Delivery Queue Length	Value: Very High

Exchange::Network Interface:Interface Utilization >> Client Accessibility

Description: Network Interface Utilization impacts Client Accessibility		
Cause		
CIT: Interface	HI: Interface Utilization	Value: High
Symptom 1		
CIT: Exchange Client Access Server	HI: IMAP4 Latency	Value: Very High
Symptom 2		
CIT: Exchange Client Access Server	HI: POP3 Latency	Value: Very High

Description: Network Interface Utilization impacts Client Accessibility		
Symptom 3		
CIT: Exchange Client Access Server	HI: IMAP4 Connectivity	Value: Down
Symptom 4		
CIT: Exchange Client Access Server	HI: POP3 Connectivity	Value: Down
Symptom 5		
CIT: Exchange Client Access Server	HI: OWA Connectivity	Value: Down
Symptom 6		
CIT: Exchange Client Access Server	HI: Active Sync Connectivity	Value: Down

Exchange::Network Interface:Interface Utilization >> Hub Server Reachability

Description: Network Interface Utilization impacts Hub Server Reachability		
Cause		
CIT: Interface	HI: Interface Communication Status	Value: High
Symptom 1		
CIT: Exchange Mail Server	ETI: Hub Server Reachability	Value: Down

Exchange::Network Interface:Interface Utilization >> Mailbox Queue Lengths

Description: Network Interface Utilization impacts Mailbox Queue Lengths		
Cause		
CIT: Interface	HI: Interface Utilization	Value: High
Symptom 1		
CIT: Exchange Mail Server	HI: Mailbox Receive Queue Length	Value: Very High
Symptom 2		
CIT: Exchange Mail Server	HI: Public Replication Queue Length	Value: Very High
Symptom 3		
CIT: Exchange Mail Server	HI: Public Receive Queue Length	Value: Very High
Symptom 4		
CIT: Exchange Mail Server	HI: Average Mail Delivery Time	Value: Very High
Symptom 5		

Description: Network Interface Utilization impacts Mailbox Queue Lengths		
CIT: Exchange Mail Server	HI: Average Time for PF Delivery	Value: Very High

Exchange::Network Interface:Interface Utilization >> Transport Queue Lengths

Description: Network Interface Utilization impacts Transport Queue Lengths		
Cause		
CIT: Interface	HI: Interface Utilization	Value: High
Symptom 1		
CIT: Exchange Transport Server	HI: Unreachable Queue Length	Value: Very High
Symptom 2		
CIT: Exchange Transport Server	HI: Largest Delivery Queue Length	Value: Very High
Symptom 3		
CIT: Exchange Transport Server	HI: Retry Non SMTP Delivery Queue Length	Value: Very High
Symptom 4		
CIT: Exchange Transport Server	HI: Aggregate Delivery Queue Length	Value: Very High

Exchange::Network Interface:Network IO >> Client Accessibility

Description: Network IO Impacts Client Accessibility		
Cause		
CIT: Interface	HI: Interface Utilization	Value: High
Symptom 1		
CIT: Exchange Client Access Server	HI: Active Sync Latency	Value: Very High
Symptom 2		
CIT: Exchange Client Access Server	HI: OWA Latency	Value: Very High

Exchange::Network Interface:Network IO >> Mail Flow Latency

Description: Network IO Impacts Mail Flow Latency
Cause

Description: Network IO Impacts Mail Flow Latency		
CIT: Interface	HI: Interface Utilization	Value: High
Symptom		
CIT: Exchange Mail Server	HI: Mail Flow Latency	Value: Very High

Exchange::Network Interface:Network IO >> Transport Queue Length

Description: Network IO Impacts Transport Queue Length		
Cause		
CIT: Interface	HI: Interface Utilization	Value: High
Symptom 1		
CIT: Exchange Hub Server	HI: Active Mailbox Delivery Queue Length	Value: Very High
Symptom 2		
CIT: Exchange Hub Server	HI: Remote Delivery Queue Length	Value: Very High
Symptom 3		
CIT: Exchange Hub Server	HI: Delayed DSN Count	Value: Very High
Symptom 4		
CIT: Exchange Hub Server	HI: Submission Queue Length	Value: Very High

Exchange::Windows:CPU Load >> Edge Transport Queue Length

Description: CPU Load Impacts Edge Transport Queue Length		
Cause		
CIT: Windows	HI: CPU Load	Value: Bottlenecked
Symptom 1		
CIT: Exchange Edge Server	HI: Submission Queue Length	Value: Very High
Symptom 2		
CIT: Exchange Edge Server	HI: Active Mailbox Delivery Length	Value: Very High
Symptom 3		
CIT: Exchange Edge Server	HI: Aggregate Delivery Queue Length	Value: Very High

Exchange::Windows:CPU Load >> Hub Transport Queue Length

Description: CPU Load Impacts Hub Transport Queue Length		
Cause		
CIT: Windows	HI: CPU Load	Value: Bottlenecked
Symptom 1		
CIT: Exchange Hub Server	HI: Submission Queue Length	Value: Very High
Symptom 2		
CIT: Exchange Hub Server	HI: Active Mailbox Delivery Length	Value: Very High
Symptom 3		
CIT: Exchange Hub Server	HI: Aggregate Delivery Queue Length	Value: Very High

Exchange::Windows:CPU Load >> OWA Latency & Active Sync Latency

Description: CPU Load Impacts OWA and Active Sync Latency		
Cause		
CIT: Windows	HI: CPU Load	Value: Bottlenecked
Symptom 1		
CIT: Exchange Client Access Server	HI: OWA Latency	Value: Very High
Symptom 2		
CIT: Exchange Client Access Server	HI: Active Sync Latency	Value: Very High

Exchange::Windows:Logical Disk Free Space >> Exchange Database

Description: Available Disk Space on Logical Disk Impacts Exchange Database		
Cause		
CIT: Windows	HI: Logical Disk Free Space	Value: Near Capacity
Symptom		
CIT: Exchange Mail Server	HI: Database Instance Status	Value: Critical

Exchange::Windows: Memory Load >> Exchange Memory Status

Description: Memory Load Impacts Memory Available for Exchange		
Cause		
CIT: Windows	HI: Memory Load	Value: Paging

Description: Memory Load Impacts Memory Available for Exchange		
Symptom		
CIT:Exchange Mail Server	HI: Exchange Memory Status	Value: Critical

Exchange::Windows: Memory Usage Level >> Exchange Memory Status

Description: Memory Usage Level Impacts Memory Available for Exchange		
Cause		
CIT: Windows	HI: Memory Usage Level	Value: Near Capacity
Symptom		
CIT: Exchange Mail Server	HI: Exchange Memory Status	Value: Critical

Exchange::Windows: PageFile Usage >> Exchange Memory Status

Description: Page File Usage on the Computer which hosts Exchange Mail Server Impacts Exchange Memory Status		
Cause		
CIT: Windows	HI: Page File Usage	Value: Near Capacity
Symptom		
CIT: Exchange Mail Server	HI: Exchange Memory Status	Value: Critical

Exchange::Windows: Ping Availability >> Hub Server Reachability & Mail Submission Status

Description: Ping Availability of Hub Server Impacts Mail Submission and Hub Server Reachability		
Cause		
CIT: Windows	HI: Ping Availability	Value: Unavailable
Symptom 1		
CIT: Exchange Mail Server	ETI: Mail Submission Status	Value: Down
Symptom 2		
CIT: Exchange Mail Server	ETI: Hub Server Reachability	Value: Down

Operation Orchestration (OO) Flows

Orchestration is the coordination of automating tasks. You can automate tasks across different environments and tools.

The OMi MP for Microsoft Exchange Server includes the following operation orchestration (OO) flows.

When creating the mapping for the OO flows, you can set default values for the attributes listed in the following table. You need not specify these values each time you run the flows:

Attribute	Description
omServerPort	Port number of the OM Tool Web Service (WS). This is an optional attribute.
omServerUser	User name for the OM Server that will be used in the OM Tool WS.
omServerPassword	Password for the OM Server that will be used in the OM Tool WS.

The following section lists the Microsoft Exchange Server OO Flows:

Check Client Access Server Health

You can use this flow to check the health of the Microsoft Exchange Client Access Server.

You must map this flow to the CIT **Exchange Client Access Server**.

You can check the following:

- If the Microsoft Exchange Client Access Server is pingable.
- If all the required Microsoft Exchange Client Access Server services are running.
- If the latency in querying the Global Catalog Server (GC) from Microsoft Exchange Client Access Server is below the threshold specified in the OO flow.

The following table lists the user input items when executing this OO Flow.

Flow input	Description
omNode	Fully Qualified Domain Name (FQDN) of the Microsoft Exchange Client Access Server. This must be a managed node for the OM Server, specified for the input **omServer**. You must specify this value each time you run the OO flow.
omCmdTimeout	Used when running the remote command on the node. This is an optional attribute and the default value is 100000.
threshold	Threshold for GC Query Latency in milliseconds. This is an optional attribute and the default value is 100 milliseconds.
omServer	FQDN of the OM Server. You can map this input to the event attribute **Originating Server**.

Check Mailbox Server Health

You can use this flow to check the health of the Microsoft Exchange Mailbox Server.

You must map this flow to the CIT **Exchange Mail Server**.

You can check for the following:

- If the Microsoft Exchange Mailbox Server is pingable.
- If all the required Microsoft Exchange Mailbox Server services are running.
- If the latency in querying the GC from the Microsoft Exchange Mailbox Server is below the threshold specified in the OO flow.
- Status of Mail Flow and verify if the Mail Flow Latency is less than the threshold specified in the OO Flow.

The following table lists the user input items when executing this OO Flow.

Flow input	Description
omNode	FQDN of the Microsoft Exchange Mailbox Server. This must be a managed node for the OM Server, specified for the input **omServer**. You must specify this value each time you run the OO flow.
omCmdTimeout	Timeout value to be used when running the remote command on the node. This is an optional attribute and the default value is 100000.
threshold	Threshold for GC Query Latency in milliseconds. This is an optional attribute and the default value is 50 milliseconds.
maillatency	Threshold for Mail Flow Latency in milliseconds. This is an optional attribute and the default value is 20 milliseconds.
omServer	FQDN of the OM Server. You can map this input to the event attribute **Originating Server**.

Check Replication Health

You can use this flow to check the health of the replication on Microsoft Exchange Mailbox Server.

You must map this flow to the CIT **Exchange Mail Server**.

The flow checks the following:

- If the Microsoft Exchange Mailbox Server is pingable.
- If all the required Microsoft Exchange Mailbox Server services are running.
- If the Replication Service is running on the Microsoft Exchange Mailbox Server.

The following table lists the user input items when executing this OO Flow.

Flow input	Description
omNode	FQDN of the Microsoft Exchange Mailbox Server. This must be a managed node

Flow input	Description
	for the OM Server, specified for the input **omServer**. You must specify this value each time you run the OO flow.
omCmdTimeout	Timeout value to be used when running the remote command on the node.This is an optional attribute and the default value is 100000.
threshold	Threshold for GC Query Latency in milliseconds. This is an optional attribute and the default value is 50 milliseconds.
omServer	FQDN of the OM Server. You can map this input to the event attribute **Originating Server**.

Graph Templates

Graphs represent pictorial representation of metrics. The OMi MP for Microsoft Exchange Server contains a set of graph templates mapped to the Computer CI type.

How to Access Exchange Server Graph Templates

1. Click **Admin > Operations Management > Operations Console > Performance Graph Mappings**.
2. Click **Infrastructure Element > Running Software > Application Resource > Microsoft Exchange Resource > Exchange Role**.

The following table lists the graph templates present in the Exchange Server graph family:

CI Type: Exchange Mail Server				
Category	**Graph Name**	**Description**	**Metric Name**	**Table in Data Store**
Information Store	MAPI RPC Latency Levels (Exchange Server 2010)	Shows the number of successful RPCs with Outlook Client latency levels.	ISCLATENCY10 ISCLATENCY5 ISCLATENCY2	EXSPI_ISCLIENT
Information Store	MAPI RPC Performance	Shows metrics of Information	RPCREQUESTS RPCOPERATIONSPERSEC	EXSPI_ISPERF

CI Type: Exchange Mail Server				
	(Exchange Server 2010)	Store RPC requests and RPC operations rate (operations per second).		
Information Store	Outlook Client Failures (Exchange Server 2010)	Shows the percentage of RPCs failed in different categories.	ISCRPCFUNAV/ISCRPCFAIL*100 ISCRPCFBUSY/ISCRPCFAIL*100 ISCRPCFCANCEL/ISCRPCFAIL*100 ISCRPCFCALLFAIL/ISCRPCFAIL*100 ISCRPCFACCESSDENY/ISCRPCFAIL*100 ISCRPCFOTHER/ISCRPCFAIL*100	EXSPI_ISCLIENT
Information Store	Outlook Client RPC Performance (Exchange Server 2010)	Shows the Outlook Client's RPC performance.	ISCRPCATTEMPT ISCRPCSUCCEED ISCRPCSUCCEED	EXSPI_ISCLIENT
Information Store	Information Store Users and Connections (Exchange Server 2010)	Shows information store user and connection count metrics, for the current day.	ISUSERCNT ISCONNECTCNT ISACTIVEUSERCNT ISACTIVECONNECTCNT ISACTIVEANONUSERCNT	EXSPI_ISPERF
Information Store	Virtual Memory 16MB Free Block Trend (Exchange Server 2010)	Shows Information Store virtual memory 16 MB free block usage trend.	ISVM16MBFREE	EXSPI_ISPERF
Information Store	Virtual Memory Large Free	Shows Information Store virtual	ISVMLARGEFREEBB/1024/1024	EXSPI_ISPERF

CI Type: Exchange Mail Server				
	Block Megabytes Usage (Exchange Server 2010)	memory large free block megabytes usage.		
Information Store	Virtual Memory Largest Block Size (Exchange Server 2010)	Shows the change of the Information Store Virtual Memory Largest Block Size.	ISVMLARGESTBLOCK/1024/1024	EXSPI_ ISPERF
Mailbox	Mailbox Store Delivery Time (Exchange Server 2010)	Shows hourly metrics for the average delivery times of local messages to Exchange Server's private mailboxes.	MBDELIVERYTIME	EXSPI_ MBPERF
Mailbox	Mailbox Store Message Volume (Exchange Server 2010)	Shows the Exchange Server's private mailbox volume.	MBLOCALDELIVER MBDELIVER MBSENT MBSUBMITTED MBRECIPIENT	EXSPI_ MBPERF

CI Type: Exchange Hub Server				
Category	**Graph Name**	**Description**	**Metric Name**	**Table in Data Store**
Transport Server	Transport Server Queues	Shows the Exchange Server's Transport Server queue lengths.	POISON_Q_ LENGTH SUB_Q_ LENGTH	EXSPI_ TRANSQ

CI Type: Exchange Hub Server				
			AGGDEL_ ALLQ_LEN UNREACH_ Q_LENGTH RET_MD_Q_ LEN ACT_REM_ DQLENGTH RET_REM_ DQLENGTH LARG_DQ_ LENGTH ACTIVE_ MDQ_ LENGTH	

CI Type: Client Access Server				
Category	**Graph Name**	**Description**	**Metric Name**	**Table in Data Store**
Client Access	IMAP4 Connections	Shows the IMAP4 connection activity.	IMAP4CON IMAP4FAILEDCON IMAP4REJECTEDCON	EXSPI_ IMAP4PERF
Client Access	POP3 Connections	Shows the POP3 connection activity.	POP3CON POP3FAILEDCON POP3REJECTEDCON	EXSPI_ POP3PERF

How to View Graphs

Performance Perspective enables you to populate graphs from existing graph templates. You can also plot customized graphs by selecting the required metrics for a selected CI.

To view the Performance Perspective of Microsoft Exchange Server CIs using graphs, follow these steps:

1. Open the Operations Management pane:

   Applications > Operations Management

2. In the Operations Management window, click **Performance Perspective** tab. The View Explorer pane appears.
3. In the **Browse Views** tab, for example, select **Exchange_Mail_View** deployment. The performance pane appears, which lists the default graphs available for the Exchange Mail Server deployment.
4. Click the graph you want to plot from the **Graphs** tab, and then click **Draw Graphs**. The selected graph is plotted on the right pane.

> **Note:** For more information about Managing Events, see the *Operations Manager i Concepts Guide*.

Tools

The OMi MP for Microsoft Exchange Server is packaged with tools which enable administering and troubleshooting the Exchange Server CIs. Tools enable operators to perform actions in the context of an event from the Event Browser. Following are the different types of tools available.

- **Executables** - Native commands that are launched locally on a host through a deployed Operations Manager Agent.
- **Scripts** - Different kinds of scripts that are executed on a host through a deployed Operations Manager Agent.

How to Access Tools

1. Select **Admin > Operation Management > Operations Console > Tools**.
2. In the CI Types pane, click **InfrastructureElement > RunningSoftware > MailServer > MicrosoftExchangeServer**.

Launching Tools

As an administrator, you want to configure and manage tools. Do the following to deploy tools:

1. Select **Applications > Operations Management > Browse Views**.
2. Select a View. A list of CIs are shown under the view you select.
3. Select a CI and right-click. Select **Launch Tool**.

4. Click **Next**. You can preview the execution of the tool.
5. Click **Run Tool**.

   The tool runs in the background and displays the result in the **Execution Result** tab.

The OMi MP for Microsoft Exchange Server contains the following tools of Microsoft Exchange Server:

CI Type	Tool Name	Tool Description/Reason
Microsoft Exchange Server	MSEX Delete Data Sources	Deletes the existing data sources. You use this tool to reconfigure the data sources.
Microsoft Exchange Server	Exchange Server Disable Collection Manager Trace	Disables the tracing for the Collection Manager components.
Microsoft Exchange Server	Exchange Server Enable Collection Manager Trace	Helps you trace the Collection Manager components. You can get troubleshooting details using this tool. The parameters to be passed are: `$TRACELEVEL`. `$TRACELEVEL` is the trace level which is a value between `0` to `4` where `4` is the maximum value.
Microsoft Exchange Server	Exchange Server Register Custom `cmdlet` for Exchange Server 2010	Registers necessary custom PowerShell `cmdlets` on the nodes for Microsoft Exchange Server 2010. Run this tool before you start monitoring the nodes. Use this tool when you find that PowerShell does not collect data. **Note:** Enabling Trace creates DAT files in the `%ovagentdir%/bin/MSEX/dsi` folder.
Microsoft Exchange Server	MSEX Register Custom `cmdlet` for Exchange Server 2013	Registers necessary custom PowerShell `cmdlets` on the nodes for Microsoft Exchange Server 2013. Run this tool before you start monitoring the nodes. Use this tool when you find that PowerShell does not collect data.

How to Enable or Disable Tracing

To enable and disable tracing for the various Management Pack components, follow these steps:

From the BSM Console

1. Select the Microsoft Exchange Server where you want to enable or disable tracing
2. Enable the trace by running the tool **MSEX Enable Collection Manager Trace** on the Microsoft Exchange Server.
3. Disable tracing by running the tool **MSEX Disable Collection Manager Trace** on the Microsoft Exchange Server.

From the Managed Node:

1. Login to the node hosting the Microsoft Exchange Server where you want to enable or disable tracing
2. From the command prompt, run the following commands to enable tracing:

   ```
   cd %ovagentdir%\bin\instrumentation
   MsTraceUtil.exe -s MSEX -l 4
   ```

3. From the command prompt, run the following commands to disable tracing:

   ```
   cd %ovagentdir%\bin\instrumentation
   MsTraceUtil.exe -s MSEX -l 0
   ```

Trace file location:

All the trace files are created in the folder `%ovdatadir%\bin\MSEX\log`. Following are the various log files created:

Discovery Log Files

- `%ovdatadir%\bin\MSEX\log\Exchange_Basic_Discovery.log`
- `%ovdatadir%\bin\MSEX\log\Exchange_Discovery.log`

Log Files related to scheduling and data collection

- `%ovdatadir%\bin\MSEX\log\MSEX_[FREQ]_[ROLE]_COLL_Trace.log`

  FREQ: Frequency at which collection is scheduled, it could have either of the values (VERY_ HIGH, HIGH, MEDIUM, LOW, DAILY).

  ROLE: Exchange Mailbox Role for which the collection is scheduled, it could have either of the values (MB, CA, HUB, EDGE, UM).

  Examples

  ```
  MSEX_LOW_CA_COLL_Trace
  MSEX_HIGH_MB_COLL_Trace
  ```

- `%ovdatadir%\bin\MSEX\log\MSEX_[COLL-ID]_COLL_Trace.log`

  Example:

  COLL-ID: Collection ID that is scheduled. This is generated if a specific collections is executed using a schedule task or manually from command prompt.

Example: `MSEX_C10008_COLL_Trace.log` is generated when you run the following command.

%OvDataDir%\bin\instrumentation\MSEXCollectionManager.exe -s MSEX -c C10008 -o p

Chapter 4: Customization Scenarios

OMi Management Pack for Microsoft Exchange Server can be customized to suit your monitoring requirements. You can edit the existing Exchange Server Management Templates or create new Management Templates to monitor the Microsoft Exchange Servers in your environment. The following section provides information about customization scenarios for monitoring Microsoft Exchange Server.

- Creating Microsoft Exchange Server Management Template
- Editing Microsoft Exchange Server Management Template

Creating Microsoft Exchange Server Management Template

The following section provides information on creating Management Templates for Microsoft Exchange Server:

1. Open the Management Templates & Aspects pane:

   Admin > Operations Management > Monitoring > Management Templates & Aspects

2. In the Configuration Folders pane, select **Configuration Folders > Microsoft Application Management > Microsoft Exchange Server > Management Templates**.

3. If you want to create a new configuration folder, click  **Create Configuration Folder**. The Create Configuration Folder pane opens.

4. Provide a name and description to the new configuration folder. For example, you can name the new configuration folder as `<Test>`.

5. Click **OK**. The new configuration folder is created.

6. In the Management Templates & Aspects pane, select the new configuration folder and click  **Create Management Template**. The Create Management Template window opens.

7. In the **General** tab, specify a **Name** and a **Version** to the new Management Template and click **Next**.

8. In the **Topology View** tab, select a topology view from the drop-down list. For example, Exchange_Org_View. The Topology View displays all the CI types that you want to manage with this Management Template.
9. Click an item in the topology map or select the CI type from the **CI Type** drop-down list to which the Management Template can be assigned. For example, you can select Exchange Organization.
10. Click **Next**.
11. In the **Aspects** tab, add the Aspects to the Management Template. To add an existing Aspect, follow these steps:
    a. Select the Aspect you want to add from the Available Aspects matching the CI Types pane. You can use **CTRL** or **SHIFT** key to select multiple Aspects.
    b. Click  to move the Aspect to the Selected Aspects pane. The Aspect is added to the Management Template.

    > **Note:** If you are using any of the Exchange Aspects then it is mandatory to include the Aspect Exchange Discovery and Config as part of the Management Template. This Aspect is assigned to Windows CI Type and can be included by selecting the Windows CIT hosting the Microsoft Exchange Server.
12. Click **Next**.
13. In the **Parameters** tab, you see a list of all the parameters from the Aspects that you added to this Management Template. You can edit the default values of a parameter.

    To edit parameters:
    a. Double-click the parameter or select the parameter from the list, and then click  **Edit**. The Edit Parameter dialog box opens.
    b. Modify the default value of the parameter and click **OK**.

    > **Note:** The Aspect Exchange Discovery and Config requires user credentials as parameters. You can provide user credentials as default value. Refer the *User Privileges* in the *OMi MP for Microsoft Exchange Server Installation Guide.*
14. Click **Finish** in the Create Management Template window. The new Management Template appears in the Management Templates & Aspects pane.

Editing Microsoft Exchange Server Management Template

You can edit the Microsoft Exchange Server Management Templates and modify the following components:

- Parameters
- Aspects

Editing Parameters

Use Case: You are using the Essential Microsoft Exchange Management Template to monitor Microsoft Exchange Server set up in your environment. You are monitoring the latency of Mail Flow that has high threshold. You want to minimize the latency of the mail flow. To monitor the latency of mail flow, you must monitor the Threshold of Latency in seconds.

You can edit the parameters at two levels - Before deployment and after deployment.

Before Deployment:

1. Open the Management Templates & Aspects pane:

   Admin > Operations Management > Monitoring > Management Templates & Aspects

2. In the Configuration Folders pane:

   Configuration Folders > Microsoft Application Management > Microsoft Exchange Server > Management Templates

3. Select Essential Microsoft Exchange Management Template from the list, and then click  . The Edit Management Template window opens.
4. Select the Exchange Mail Flow Aspect and click the **Parameters** tab. The Parameters list populates.
5. Select the **Threshold of Latency in seconds** parameter you want to modify, and then click  . The Edit Parameter dialog box opens.
6. You can change the default threshold value in the Constant Value (*Numeric*) section. Click **OK**.

7. In the Edit Management Template window, click **OK**. The version of the Essential Microsoft Exchange Management Template is incremented.

After Deployment

1. Open the Assignments & Tuning pane:

   Click **Admin > Operations Management > Monitoring > Assignments & Tuning**

2. In the **Browse Views** tab, select **Exchange_Org_View** that contains the CI for which you want to edit the value.
3. In the list of CIs, select Exchange Mailbox Server CI for which you want to change the threshold. The Assignment Details pane shows the current parameter values.
4. You can change the value of the default parameter values by following these steps:
   a. Double-click the **Threshold of Latency in seconds** parameter. The Edit Parameter dialog box opens.
   b. Change the value and click **OK**. The updated parameter is assigned to the selected CIs.

Editing Aspects

Use Case: You are using the Essential Microsoft Exchange Management Template to monitor primary components of Microsoft Exchange Server deployment. You do not want to use some of the Aspects which are part of the Essential Microsoft Exchange Management Template. In this scenario, you can remove the Aspects associated with the Management Template using the following steps:

To remove Aspects from the Essential Microsoft Exchange Management Template:

1. Open the Management Templates & Aspects pane:

   Click **Admin > Operations Management > Monitoring > Management Templates & Aspects**

2. In the Configuration Folders pane:

   Click **Configuration Folders > Microsoft Application Management > Microsoft Exchange Server > Management Templates**.

3. Select the Essential Microsoft Exchange Management Template and click  . The Edit Management Template appears.

4. Click the **Aspects** tab. The Aspects associated with the Essential Microsoft Exchange Server Management Template appears.
5. Select the Aspect you want to remove in the Selected Aspects pane and click  to move the aspect to the Available Aspects pane. You can use **CTRL** or **SHIFT** key to select multiple Aspects.

   > **Note:** Moving the Aspect(s) from Selected Aspects pane to the Available Aspects pane removes the Aspect(s) associated with the Management Template. Do not remove the Aspect Exchange Discovery and Config from the Management Template.

6. Click **OK**. The version of the Essential Microsoft Exchange Management Template is incremented.

Chapter 5: Troubleshooting

The following section provides information about troubleshooting scenarios. Some of the troubleshooting procedures must be run on the managed node:

Discovery fails for Microsoft Exchange Edge Server

Problem: Discovery fails with the following errors reported in `%ovdatadir%\log\system.txt` file.

```
agtrep (6344/912): (agtrep-149) Runtime exception occured when executing command =
C:\Windows\system32\cmd.exe /C ""C:/ProgramData/HP/HP BTO
Software/bin/instrumentation/Exchange_Discovery.exe""" : "(xpl-153) LogonUser
(domain\exuser1) failed."
```

```
0: ERR: Wed Sep 10 14:51:58 2014: agtrep (6344/912): (agtrep-133) No output
received from discovery policy action
```

Solution: Modify the incorrect user credentials specified for the Aspect Exchange Discovery and Config by following these steps:

1. Open the Assignments & Tuning pane:

   Admin > Operations Management > Monitoring > Assignments & Tuning
2. In the **Browse Views** tab, select **Exchange_Org_View**.
3. Expand the view, and select the node hosting the Microsoft Exchange Edge Server.
4. In the Assignments pane, select the **Exchange Discovery and Config** Aspect. This shows the parameters and values in the Assignment Details pane.
5. Edit the user name and password to provide the user credential as mentioned in prerequisite section.
6. These new user credentials will be used by the Management Template for the Microsoft Exchange Edge Server.

Exchange Server CIs on a node do not appear on BSM console

Problem: Exchange Server CIs are not appearing on the BSM console.

Solution: To verify the discovery, follow these steps:

1. Check if the following Aspects are deployed on managed node:
   - Exchange Discovery
   - Exchange Discovery and Config

2. If the Microsoft Exchange Aspects are not deployed, then deploy these Aspects one by one on the managed node.

   > **Note:** The The Exchange Discoery and Config Aspect requires user credentials. Specify the required user credentials as mentioned in the *User Privileges* section in the *OMi MP for Microsoft Exchange Server Installation Guide*.

3. If there are no errors, follow these steps:
   a. Delete all the files under this folder `%ovdatadir%/tmp/agtrep` except `agtrep` folder.
   b. On the command prompt, run `ovagtrep –clearall`.
   c. Redeploy the following aspects on the managed node:
      - Exchange Discovery
      - Exchange Discovery and Config
4. If the problem persists, check the following log files to check for any reported errors:
   - `%ovdatadir%\bin\MSEX\log\Exchange_Basic_Discovery.log`
   - `%ovdatadir%\bin\MSEX\log\Exchange_Discovery.log`
   - `%ovdatadir%\log\System.txt`

Multiple Data Sources

Problem: There are duplicate entries of EXSPI_DATA datasource.

Solution: If the node was previously managed by Smart Plug-In for Microsoft Exchange Server and the older datasources are not deleted, then you can see multiple entries. Delete the SPI datasources by performing the following steps:

1. Before deleting the datasource take backup of Smart Plug-In for Microsoft Exchange Server data sources on HP Reporter or any other reporting solution being used. For example, on HP Reporter, use the command `gathercoda –h <hostname>`.
2. On the managed node open the file `%ovdatadir%\conf\perf\datasources` using a text editor.
3. Check if the file contains the following entry:

   ```
   DATASOURCE=EXSPI_DATA  LOGFILE="C:\ProgramData\HP\HP BTO
   Software\bin\EXSPI\dsi\log\EXSPI_DATA.log"
   ```

4. If the file contains the preceeding entry then perform the below steps else perform step 5:
   a. Open the file `%ovdatadir%\conf\dsi2ddf\nocoda.opt`. If the file does not exist then create the file. Ensure the file extension is opt and not txt

b. Add the entry EXSPI_DATA to this file and save.

c. From the command prompt, run the command:

```
ddfutil "C:\ProgramData\HP\HP BTO Software\bin\EXSPI\dsi\log\EXSPI_DATA.log"
-rm all
```

d. Remove the entry EXSPI_DATA from the file and save

`%ovdatadir%\conf\dsi2ddf\nocoda.opt`

5. Check if the file `%ovdatadir%\conf\dsi2ddf\ddflbd.mwc` contains the following entry:

```
DATASOURCE=EXSPI_DATA  LOGFILE="C:\ProgramData\HP\HP BTO
Software\bin\EXSPI\dsi\log\EXSPI_DATA.log”
```

6. If the file contains the preceding entry, then from the command prompt run the command:

```
ddfutil "C:\ProgramData\HP\HP BTO Software\bin\EXSPI\dsi\log\EXSPI_DATA.log" -
rm all
```

Data Logging

Problem: Data is not getting logged for Exchange classes.

Solution: To identify the root cause, perform the following steps:

1. Identify the Class or Table for which data is not getting logged. Refer Appendix: Metrics and Datastores to identify the associated Aspect and Policy Template for the Class or Table.

   As an example, let us consider that data is not getting logged for the class EXSPI_MDBPERF for Exchange 2013 Server. Based on the section Appendix: Metrics and Datastores, we can identify the corresponding Aspect and Policy Template Name as below:

   Aspect: Exchange Mailbox Database

   Policy Template Name: MSEX_MailboxDB_Conf

2. Check if this Aspect is assigned to the node. If not, assign the Aspect to the managed node. This will schedule the data collection. If the Aspect was already assigned, then continue with the next steps.

3. On the managed node from the command prompt, run the command `ovpolicy -list -poltype configfile`. Check if the output has the policy template MSEX_MailboxDB_Conf. If not redeploy the Exchange Mailbox Database Aspect. If the policy template is already deployed then continue with the next steps.

4. Check if the Exchange Discovery and Config Aspect is deployed to the node with the required credentials. For more information about user credentials, see the section *User Privileges* in the *OMi MP for Microsoft Exchange Server Installation Guide*. If not, redeploy the Aspect with the

correct credentials. If the Aspect was already deployed with the required credentials then continue with the below steps.

5. Run the collection manually by performing the following steps:
   a. Enable the trace by running the tool **MSEX Enable Collection Manager Trace** on the Microsoft Exchange Server.
   b. Navigate to **Admin->Operations Management > Monitoring > Management Template & Aspects**.
   c. Select the Aspect **Exchange Mailbox Database**.
   d. Select the policy template **MSEX_MailboxDB_Conf** from the list of policies grouped in the Aspect Exchange Mailbox Database. This is a ConfigFile policy template.
   e. Open the policy to identify the collections it will schedule. In this case there is one collection with the following details:

      Collection name = MSEX_CollMbDbPerf

      Collection ID = MSEX_C10008

      Collection role = MB
   f. Log on to the managed node as an Microsoft Exchange Administrator:
   g. On the managed node, from the command prompt, run the command:

      ```
      %OvDataDir%\bin\instrumentation\MSEXCollectionManager.exe -s MSEX -c C10008 -o p
      ```

      If the Microsoft Exchange Administrator user is able to run the above command, the command returns data. Hence, the issue could be with the user credentials provided to Management Template or Aspect during deployment. Check the user credentials assigned to the Exchange Discovery and Config Aspect. See the Task 5b: Identifying and Deploying Microsoft Exchange Server Management Templates and redeploy the Exchange Discovery and Config Aspect with required user credentials.
   h. Check the trace file `MSEX_C10013_COLL_Trace.log` in the directory `%ovdatadir%\bin\MSEX\log` for further details.
   i. Disable tracing post analysis by running the tool **MSEX Disable Collection Manager Trace**.

Not Receiving Events

Problem: Events are not received for the Microsoft Exchange Management Template.

Solution: Check the deployment of Management Templates or Aspects on all nodes. To check the deployment, follow these steps:

1. Identify the Exchange Server Template for which alerts are not being generated.
2. Run the `ovpolicy -list -all` command at the command prompt. Check if the template is present in the output.
3. If the policy template is not deployed, re-deploy the Aspect or the Management Template.
4. Enable the trace by running the tool **MSEX Enable Collection Manager Trace** on the Microsoft Exchange Server. Check the log files created in the folder `%ovdatadir%\bin\MSEX\log` for further details.
5. Disable tracing post analysis by running the tool **MSEX Disable Collection Manager Trace**.

Appendix: Metrics and Datastores

Data stores define the way in which you can store metric data.

Data Stores for 2010

The OMi MP for Microsoft Exchange Servercreates the following data tables for Microsoft Exchange Server 2010 metrics in the data store on the node to facilitate the data-collection procedure.

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
EXSPI_ BLOCKEDRCPTS	Exchange Blocked Data	MSEX_ BlockedData_ Conf_2010	TIMESTAMP	TEXT
			SERVER_NAME	TEXT
			RECIPIENTADDRESS	TEXT
			AGENT	TEXT
			REASON	TEXT
			REASONDATA	TEXT
			ISHUBTRANSPORTSERVER	TEXT
EXSPI_ BLOCKEDMAILS	Exchange Blocked Data	MSEX_ BlockedData_ Conf_2010	TIMESTAMP	TEXT
			SERVER_NAME	TEXT
			IPADDRESS	TEXT
			SENDERADDRESS	TEXT
			ACTION_TAKEN	TEXT
			REASON	TEXT

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			REASONDATA	TEXT
			DOMAIN	TEXT
			AGENT	TEXT
			ISHUBTRANSPORTSERVER	TEXT
			REMOTEENDPOINT	TEXT
			MESSAGEID	TEXT
EXSPI_ AVAILABILITY	Exchange Availability	MSEX_ Availability_Conf_ 2010	SERVER_NAME	TEXT
			ADSITE_NAME	TEXT
			SERVER_ROLE	TEXT
			AVAILABILITY	UINT64
EXSPI_ ATTACHFILTER	Exchange Transport Filter	MSEX_ TransportFilter_ Conf_2010	INSTANCE_ NAME	TEXT
			SERVER_NAME	TEXT
			MSGFILTERPERSEC	UINT64
			MSGATT_ FILTERED	UINT64
EXSPI_ CONNFILTER	Exchange Transport Filter	MSEX_ TransportFilter_ Conf_2010	INSTANCE_ NAME	TEXT
			SERVER_NAME	TEXT
			CONNIPALLOWLIST	UINT64
			CONNIPBCKLISTPVD	UINT64
			CONNIPBCKLIST	UINT64
			CONNIPALLOWLISTPVD	UINT64
EXSPI_ CONTFILTER	Exchange Transport	MSEX_ TransportFilter_	INSTANCE_ NAME	TEXT

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
	Filter	Conf_2010		
			SERVER_NAME	TEXT
			MSGWITHSCL1	UINT64
			MSGWITHSCL0	UINT64
			MSGWITHSCL2	UINT64
			MSGWITHSCL3	UINT64
			MSGWITHSCL4	UINT64
			MSGWITHSCL5	UINT64
			MSGWITHSCL6	UINT64
			MSGWITHSCL7	UINT64
			MSGWITHSCL8	UINT64
			MSGWITHSCL9	UINT64
			MSGQUARANTINED	UINT64
			MSGDELETED	UINT64
			MSGBYPASSSCAN	UINT64
			MSGSCANNED	UINT64
			MSGREJECTED	UINT64
EXSPI_ISCLIENT	Exchange RPC Performance	MSEX_ RPCClients_ Conf_2010	ISC_NAME	TEXT
			ISCLATENCY10	UINT64
			ISCLATENCY5	UINT64
			ISCLATENCY2	UINT64
			ISCRPCATTEMPT	UINT64
			ISCRPCSUCCEED	UINT64

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			ISCRPCFAIL	UINT64
			ISCRPCFUNAV	UINT64
			ISCRPCFBUSY	UINT64
			ISCRPCFCANCEL	UINT64
			ISCRPCFCALLFAIL	UINT64
			ISCRPCFACCESSDENY.	UINT64
			ISCRPCFOTHER	UINT64
EXSPI_MFLAT	Exchange Mail Flow	MSEX_MailFlow_ Conf_2010	ORIGIN_ SERVER	TEXT
			ORIGIN_SITE	TEXT
			DESTIN_ SERVER	TEXT
			DESTIN_SITE	TEXT
			LATENCY_ SECONDS	REAL64
			RESULT	UINT64
			ISREMOTETEST	TEXT
			STATUS	TEXT
EXSPI_PRTAGT	Exchange SMTP	MSEX_ SMTPPerf_Conf_ 2010	INSTANCE_ NAME	TEXT
			SERVER_NAME	TEXT
			SENDBCK_ LOPNPXY	UINT64
			SENDBCK_ LCKEDRSRL	UINT64
			SENDBCK_ ROPENPXY	UINT64
			SENDBCK_LCKEDLSRL	UINT64
			SENDBYPASS_ LSRLCALC	UINT64

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			SENDPROCESSED	UINT64
EXSPI_ RECPFILTER	Exchange Recipient Filtering	MSEX_ RecpientPerf_ Conf_2010	INSTANCE_ NAME	TEXT
			SERVER_NAME	TEXT
			RECPREJ_ RECPVLDATION	UINT64
			RECPREJ_ BCKLIST	UINT64
EXSPI_ SENDERID	Exchange Sender ID Filtering	MSEX_ SenderPerf_Conf_ 2010	INSTANCE_ NAME	TEXT
			SERVER_NAME	TEXT
			MSGBYPASSED	UINT64
			MSGSOFTFAILED	UINT64
			MSGNEUTRALRESULT	UINT64
			MSGFAILMALDOMAIN	UINT64
			MSGVALIDATED	UINT64
			MSGPASSRESULT	UINT64
			MSGTEMPERROR	UINT64
			MSGNONERESULT	UINT64
			MSGFAIL_ NONEXISTDMN	UINT64
			MSGPERMERROR	UINT64
			MSGMISSORGIP	UINT64
			MSGWITHNOPRA	UINT64

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			MSGFAIL_ NOTPERMIT	UINT64
EXSPI_ UMAVAILABILITY	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf_2010	INSTANCE_ NAME	TEXT
			CALLS_DISCN_ EXT_ERR	UINT64
			CALLS_DISCN_ INT_ERR	UINT64
			HUB_ACCESS_ FAIL	UINT64
			MSERV_ ACCESS_FAIL	UINT64
			DIR_ACCESS_ FAIL	UINT64
EXSPI_UMFAX	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf_2010	INSTANCE_ NAME	TEXT
			FAX_MSG	UINT64
			FAX_ INCOMPLETE	UINT64
			PCT_SUCCESS_CALLS	REAL64
EXSPI_ UMGENERAL	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf_2010	DELAYED_ CALLS	UINT64
			TOTAL_CALLS	UINT64
			INSTANCE_NAME	TEXT
EXSPI_UMHUNT	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf_2010	UMHUNT_PILOT	TEXT
			UMHUNT_DIAL	TEXT
			UMHUNT_NAME	TEXT
EXSPI_ UMIPGWAY	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf_2010	UMIPGWAY_ ADD	TEXT
			UMIPGWAY_ OUT	TEXT

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			UMIPGWAY_EN	TEXT
			UMIPGWAY_ PORT	UINT64
			UMIPGWAY_SIM	TEXT
			UMIPGWAY_ NAME	TEXT
EXSPI_UMPIN	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf_2010	UMPIN_USER	TEXT
			UMPIN_EXP	TEXT
			UMPIN_FRST	TEXT
			UMPIN_LOCK	TEXT
EXSPI_UMSRV	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf_2010	UMSRV_NAME	TEXT
			UMSRV_CALLS	UINT64
			UMSRV_FAX	UINT64
			UMSRV_TTS	UINT64
			UMSRV_ASR	UINT64
			UMSRV_ STATUS	TEXT
EXSPI_ UMSUBACCESS	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf_2010	INSTANCE_NAME	TEXT
			VOICE_MSG_ SENT	UINT64
			EMAIL_MSGQ_ ACCESSED	UINT64
			AVER_SUB_ CALL_DURA	UINT64
			EMAIL_MSG_ HEARD	UINT64
EXSPI_PFDETAIL	Exchange Public Folder	MSEX_ PublicFolder_ Conf_2010	PF_NAME	TEXT

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			PF_SVRNAME	TEXT
			PF_DBNAME	TEXT
			PF_SIZE	UINT64
			PF_POSTCOUNT	UINT64
			PF_LASTACCESS	TEXT
EXSPI_ PFSUMMARY	Exchange Public Folder	MSEX_ PublicFolder_ Conf_2010	INSTANCE_KEY	TEXT
			DATABASE_NAME	TEXT
			SERVER_NAME	TEXT
			EDBPATH	TEXT
			EDBSIZE	REAL64
			EDBFREE	REAL64
			EDBTOTAL	REAL64
			FOLDER_COUNT	UINT64
			FOLDER_MSGCNT	UINT64
EXSPI_ RECPFILTER	Exchange Recipient Filtering	MSEX_ RecpientPerf_ Conf_2010	INSTANCE_NAME	TEXT
			SERVER_NAME	TEXT
			RECPREJ_RECPVLDATION	UINT64
			RECPREJ_BCKLIST	UINT64
EXSPI_ REPLSUMM	Exchange Replication	MSEX_ Replication_Conf_ 2010	REPL_IDENTITY	TEXT
			REPL_STATUS	TEXT

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			REPL_LSTCPLOGTIME	TEXT
			REPL_LSTINSLOGTIME	TEXT
			REPL_LSTRPLLOGTIME	TEXT
			REPL_LSTLOGGEN	TEXT
			REPL_LSTLOGCP	TEXT
			REPL_LSTLOGINS	UINT64
			REPL_LSTLOGRPL	UINT64
			REPL_LSTBCKPTIME	UINT64
			REPL_LSTIBCKPTIME	UINT64
			REPL_CPQLEN	UINT64
			REPL_RPLQLEN	UINT64
EXSPI_ SMTPSEND	Exchange SMTP	MSEX_ SMTPPerf_Conf_ 2010	INSTANCE_NAME	TEXT
			SERVER_NAME	TEXT
			ADMINDISPLAY_NAME	TEXT
			SMTPBYTESEND	UINT64
			SMTPMSGSEND	UINT64
			SMTPMSGBYTESEND	UINT64
			SMTPCONNCURR	UINT64
			SMTPCONNTOT	UINT64
EXSPI_ SMTPRECV	Exchange SMTP	MSEX_ SMTPPerf_Conf_ 2010	INSTANCE_NAME	TEXT
			SERVER_NAME	TEXT
			ADMINDISPLAY_NAME	TEXT
			SMTPBYTERECV	UINT64

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			SMTPMSGRECV	UINT64
			SMTPMSGBYTERECV	UINT64
			SMTPCONNCURR	UINT64
			SMTPCONNTOT	UINT64
EXSPI_ SENDFILTER	Exchange Sender ID Filtering	MSEX_ SenderPerf_Conf_ 2010	INSTANCE_NAME	TEXT
			SERVER_NAME	TEXT
			MSGEVALUATED	UINT64
			MSGFILTERED	UINT64
EXSPI_ SPAMSTATS	Exchange SPAM Statistics	MSEX_ ContentFilter_ Conf_2010	TIMESTAMP	TEXT
			SERVER_NAME	TEXT
			INSTANCE	UINT64
			DELETED	UINT64
			QUARANTINED	UINT64
			REJECTED	UINT64
EXSPI_AGCFG	Exchange Transport	MSEX_Transport_ Conf_2010	AGCFG_ID	TEXT
			AGCFG_EN	TEXT
			AGCFG_PRI	UINT64
EXSPI_ DATABASESUM M	Exchange Database Consistency	MSEX_ DBSTatus_Conf_ 2010	DB_IDENTITY	TEXT
			DB_STATUS	TEXT
			DB_STATUSVALUE	UINT64
			DB_CISTATE	UINT64

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			DB_STATE	UINT64
EXSPI_DEST	Exchange Weekly Statistics	MSEX_SCH_ TopDestination	DEST_ADDR	TEXT
			DOMAIN_NAME	TEXT
			DEST_KEY	TEXT
			SERVER_NAME	TEXT
			ADSITE_NAME	TEXT
			IS_INTERNAL	TEXT
			NUM_BYTES_DR	UINT64
			NUM_MSGS_DR	UINT64
EXSPI_ IMAP4PERF	Exchange IMAP4	MSEX_IMAP_ Conf_2010	INSTANCE_NAME	TEXT
			SERVER_NAME	TEXT
			ADMINDISPLAY_NAME	TEXT
			IMAP4CON	UINT64
			IMAP4FAILEDCON	UINT64
			IMAP4REJECTEDCON	UINT64
EXSPI_ISPERF	Exchange Information Store	MSEX_StorePerf_ Conf_2010	INSTANCE_NAME	TEXT
			RPCREQUESTS	UINT64
			RPCOPERATIONSPERSEC	UINT64
			ISVMLARGESTBLOCK	UINT64
			ISVMLARGEFREEBB	UINT64
			ISVM16MBFREE	UINT64
			ISUSERCNT	UINT64

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			ISCONNECTCNT	UINT64
			ISANONUSERCNT	UINT64
			ISACTIVEUSERCNT	UINT64
			ISACTIVECONNECTCNT	UINT64
			ISACTIVEANONUSERCNT	UINT64
			EXCHMEMADDHEAPS	UINT64
			EXCHMEMHEAPERR	UINT64
			EXCHMEMMEMERR	UINT64
EXSPI_ MBDETAIL	Exchange Mailbox	MSEX_ MailboxData_ Conf_2010	MB_IDENTITY	TEXT
			MB_NAME	TEXT
			MB_SVRNAME	TEXT
			MB_DBNAME	TEXT
			MB_SIZE	UINT64
			MB_MSGCOUNT	UINT64
			MB_LASTACCESS	TEXT
			MB_DISCONNECT	TEXT
			MB_DELCOUNT	UINT64
			MB_DELSIZE	UINT64
			MB_STGLIMIT	TEXT
			MB_DAGNAME	TEXT
EXSPI_MBPERF	Exchange Information Store	MSEX_StorePerf_ Conf_2010	INSTANCE_NAME	TEXT
			SERVER_NAME	TEXT
			MBDELIVERYTIME	UINT64

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			MBLOCALDELIVER	UINT64
			MBDELIVER	UINT64
			MBSENT	UINT64
			MBSUBMITTED	UINT64
			MBRECIPIENT	UINT64
			MBACTIVELOGON	UINT64
			MBLOGON	UINT64
			MBLOGONPEAK	UINT64
			MBRECOVERITEMS	UINT64
			MBRECOVERSIZE	UINT64
EXSPI_ MBSUMMARY	Exchange Mailbox	MSEX_ MailboxData_ Conf_2010	INSTANCE_KEY	TEXT
			DATABASE_NAME	TEXT
			SERVER_NAME	TEXT
			EDBPATH	TEXT
			EDBSIZE	UINT64
			EDBFREE	UINT64
			EDBTOTAL	UINT64
			MAILBOX_USRCNT	UINT64
			MAILBOX_MSGCNT	UINT64
			DAG_NAME	TEXT
EXSPI_PFPERF	Exchange Public Folder	MSEX_ PublicFolderPerf_ Conf_2010	INSTANCE_NAME	TEXT
			SERVER_NAME	TEXT
			PFDELIVERYTIME	UINT64

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			PFDELIVER	UINT64
			PFSENT	UINT64
			PFSUBMITTED	UINT64
			PFRECIPIENT	UINT64
			PFACTIVELOGON	UINT64
			PFLOGON	UINT64
			PFLOGONPEAK	UINT64
			PFRECOVERITEMS	UINT64
			PFRECOVERSIZE	UINT64
			PFREPRCVD	UINT64
			PFREPSENT	UINT64
			PFREPQ	UINT64
EXSPI_ POP3PERF	Exchange POP3	MSEX_Pop3Perf_ Conf_2010	INSTANCE_NAME	TEXT
			SERVER_NAME	TEXT
			ADMINDISPLAY_NAME	TEXT
			POP3CON	UINT64
			POP3FAILEDCON	UINT64
			POP3REJECTEDCON	UINT64
			POP3DELE	UINT64
			POP3RETR	UINT64
EXSPI_RECP	Exchange Weekly Statistics	MSEX_SCH_ TopRecipien	SERVER_NAME	TEXT
			ADSITE_NAME	TEXT
			MBOX_NAME	TEXT

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			EMAIL_ADDR	TEXT
			NUM_BYTES_RR	TEXT
			NUM_MSGS_RR	TEXT
			DAG_NAME	TEXT
EXSPI_SENDER	Exchange Weekly Statistics	MSEX_SCH_ TopSender	SERVER_NAME	TEXT
			ADSITE_NAME	TEXT
			MBOX_NAME	TEXT
			EMAIL_ADDR	TEXT
			NUM_BYTES_SR	UINT64
			NUM_MSGS_SR	UINT64
			DAG_NAME	TEXT
EXSPI_SOURCE	Exchange Weekly Statistics	MSEX_SCH_ TopSource	SOURCE_ADDR	TEXT
			DOMAIN_NAME	TEXT
			SOURCE_KEY	TEXT
			SERVER_NAME	TEXT
			ADSITE_NAME	TEXT
			IS_INTERNAL	TEXT
			NUM_BYTES_SRC	UINT64
			NUM_MSGS_SRC	UINT64
EXSPI_TRANSQ	Exchange Transport Queues	MSEX_ TransportQueue_ Conf_2010	INSTANCE_NAME	TEXT
			ACT_MDQ_LENGTH	UINT64

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			ACT_NonSMTP_DQLENG	UINT64
			POISON_Q_LENGTH	UINT64
			RET_MD_Q_LEN	UINT64
			RETRY_NONSMTP_QLEN	UINT64
			SUB_Q_LENGTH	UINT64
			UNREACH_Q_LENGTH	UINT64
			AGGDEL_ALLQ_LEN	UINT64
			ACT_REM_DQLENGTH	UINT64
			RET_REM_DQLENGTH	UINT64
			LARG_DQ_LENGTH	UINT64
			SERVER_NAME	TEXT
EXSPI_UMAUTO_ATTENDENT	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf_2010	INSTANCE_NAME	TEXT
			BUSS_HR_CALLS	UINT64
			OPER_TRANSFERS	UINT64
			OUT_OF_HR_CALLS	UINT64
			AVERAGE_CALL_TIME	TEXT
EXSPI_ UMCALLANSWER	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf_2010	INSTANCE_NAME	TEXT
			AV_VMSG_SIZE	UINT64
			CALL_ANSMISSED_CALLS	UINT64
EXSPI_UMMBOX	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf_2010	UMMBOX_NONUSR	TEXT
			UMMBOX_ANONYCALL	TEXT

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			UMMBOX_SPCH	TEXT
			UMMBOX_DIAL	TEXT
			UMMBOX_DNAME	TEXT
			UMMBOX_FAX	TEXT
			UMMBOX_MISSCALL	TEXT
			UMMBOX_NAME	TEXT
			UMMBOX_PRISMTP	TEXT
			UMMBOX_SNAME	TEXT
			UMMBOX_SUBACC	TEXT
			UMMBOX_TUIBOOK	TEXT
			UMMBOX_TUICALL	TEXT
			UMMBOX_TUIMAIL	TEXT
			UMMBOX_EN	TEXT
			UMMBOX_MPOL	TEXT
			UMMBOX_OPER	TEXT
EXSPI_UMPLCY	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf_2010	UMPLCY_GREET	UINT64
			UMPLCY_FAXID	TEXT
			UMPLCY_LOGON	TEXT
			UMPLCY_COMPT	TEXT
			UMPLCY_PNLIFE	TEXT
			UMPLCY_PNHIST	UINT64
			UMPLCY_PASS	UINT64
			UMPLCY_DIAL	TEXT
			UMPLCY_SUBSC	TEXT

Table in Data Store	Aspect Name	Policy Template Name	Metrics	Metric Data Type CODA / PA
			UMPLCY_PNRST	UINT64
			UMPLCY_MSCALL	TEXT
			UMPLCY_FLAG	UINT64
			UMPLCY_NAME	TEXT
EXSPI_FDSOAB	Exchange Online Address Book	MSEX_ FDSOABPerf_ Conf_2010	INSTANCE_NAME	TEXT
			SERVER_NAME	TEXT
			TASK_QUEUED	UINT64
			TASKS_COMPLETED	UINT64
EXSPI_FDSUM	Exchange Online Address Book	MSEX_ FDSOABPerf_ Conf_2010	INSTANCE_NAME	TEXT
			SERVER_NAME	TEXT
			TASK_QUEUED	UINT64
			TASKS_COMPLETED	UINT64
EXSPI_ HUBTRANSDSN	Exchange Transport	MSEX_Transport_ Conf_2010	INSTANCE_NAME	TEXT
			SERVER_NAME	TEXT
			FAIL_DSNs_TOTAL	REAL64
			FAIL_DSNs_TOTAL	REAL64

Data Stores for 2013

The OMi MP for Microsoft Exchange Server creates the following data tables for Microsoft Exchange Server 2013 metrics in the data store on the node to facilitate the data-collection procedure.

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
EXSPI_MAPICHK	Exchange IMAP4	MSEX_MAPI_ Conf	MAPIKEY	TEXT
			MAPISRV	TEXT
			MAPIDB	TEXT
			MAPIRSLT	UINT64
			MAPILAT	UINT64
			MAPIERR	TEXT
EXSPI_ AVAILABILITY	Exchange Availability	MSEX_ Availability_Conf	SERVER_NAME	TEXT
			ADSITE_NAME	TEXT
			SERVER_ROLE	TEXT
			AVAILABILITY	TEXT
EXSPI_ ASYNCPERF	Exchange Active Sync Performanc e	MSEX_ ActiveSync_Perf_ Conf	MSEX_ ACTKEY	Text
			MSEX_ ACTSRV	Text
			MSEX_ ACTDB	Text
			MSEX_ ACTRSLT	UINT64
			MSEX_ ACTLAT	UINT64
			MSEX_ ACTERR	TEXT
EXSPI_ IMAPCHK	Exchange IMAP4	MSEX_IMAP_ Conf	IMAPKEY	TEXT

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
			IMAPSRV	TEXT
			IMAPDB	TEXT
			IMAPRSLT	UINT64
			IMAPLAT	UINT64
			IMAPERR	TEXT
EXSPI_ IMAP4PERF	Exchange IMAP4	MSEX_IMAP_ Conf	MAPIKEY	TEXT
			APISRV	TEXT
			MAPIDB	TEXT
			MAPIRSLT	UINT64
			MAPILAT	UINT64
			MAPIERR	TEXT
EXSPI_ MDBPERF	Exchange Mailbox	MSEX_ MailboxData_Conf	MDBNAME	TEXT
			MDBTBOPEN	REAL64
			MDBTBCLS	REAL64
			MDBLGBYWR	REAL64
			MDBLGBYGEN	REAL64
			MDBLGTHWT	UINT64
			MDBLGRECSTL	REAL64
			MDBVERBK	UINT64
			MDBCHMISS	REAL64
			MDBCHHIT	REAL6

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
				4
			MDBPFLTST	REAL64
			MDBCHSZ	UINT64
			MDBIOARD	REAL64
			MDBIOARAL	REAL64
			MDBIORRD	REAL64
			MDBIORALREC	REAL64
			MDBIORD	REAL64
			MDBIORAL	REAL64
			MDBIOLRD	REAL64
			MDBIOLRAL	REAL64
			MDBIOAWR	REAL64
			MDBIOAWAL	REAL64
			MDBIORWR	REAL64
			MDBIORWAL	REAL64
			MDBIOWR	REAL64
			MDBIOWAL	REAL64

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
			MDBIOLWR	REAL64
			MDBIOLWAL	REAL64
EXSPI_MFLAT	Exchange Mail Flow	MSEX_MailFlow_Conf	ORIGIN_ SERVER	TEXT
			ORIGIN_SITE	TEXT
			DESTIN_ SERVER	TEXT
			DESTIN_SITE	TEXT
			LATENCY_ SECONDS	REAL64
			STATUS	TEXT
EXSPI_ OWACHK	Exchange OWA	MSEX_OWA_ Conf	OWAKEY	TEXT
			OWASRV	TEXT
			OWADB	TEXT
			OWARSLT	UINT64
			OWALAT	UINT64
			OWAERR	TEXT
EXSPI_ POPCHK	Exchange POP3	MSEX_Pop3Perf_ Conf	POPKEY	TEXT
			POPSRV	TEXT
			POPDB	TEXT
			POPRSLT	UINT64
			POPLAT	UINT64
			POPERR	TEXT
EXSPI_ SERVSTAT	Exchange Service Availability	MSEX_Services_ Conf.	SERVNAME	TEXT

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
			SRVDISPNAME	TEXT
			SERVSTATUS	TEXT
			SERVSTATE	UINT32
EXSPI_ DATA: EXSPI_ TRNDBPERF	Exchange Transport	MSEX_Transport_ Conf	TRDBNAME	TEXT
			TRDBTHWT	UINT64
			TRDBLGCKP	UINT64
			TRDBRCSTS	REAL64
			TRDBVERBK	UINT64
			TRDBIODRS	REAL64
			TRDBDRAL	REAL64
			TRDBLGRDS	REAL64
			TRDBLGRAL	REAL64
			TRDBWRSC	REAL64
			TRDBWRAL	REAL64
			TRDBLGWRS	REAL64
			TRDBLGWAL	REAL64
EXSPI_ UMAVAIL	Exchange Unified Messaging	MSEX_ UnifiedMessaging_Conf	INSTANCE	TEXT
			HUB_ ACCESS_FAIL	REAL6

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
				4
			DIR_ ACCESS_FAIL	REAL64
			CALLS_ DISCN_ EXT_ ERR	REAL64
			CALLS_ DISCN_ INT_ERR	REAL64
			MSERV_ ACCESS_FAIL	REAL64
EXSPI_ BLOCKEDRCPTS	Exchange Blocked Data	MSEX_ BlockedData_ Conf	TIMESTAMP	TEXT
			SERVER_NAME	TEXT
			RECIPIENTADDRESS	TEXT
			AGENT	TEXT
			REASON	TEXT
			REASONDATA	TEXT
			ISHUBTRANSPORTSERVER	TEXT
EXSPI_PFDETAIL	Exchange Public Folder	MSEX_ PublicFolder_Conf	PF_NAME	TEXT
			PF_SVRNAME	TEXT
			PF_DBNAME	TEXT
			PF_SIZE	UINT64
			PF_POSTCOUNT	UINT64
			PF_LASTACCESS	TEXT
EXSPI_ PFSUMMARY	Exchange Public Folder	MSEX_ PublicFolder_Conf	INSTANCE_KEY	TEXT

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
			DATABASE_NAME	TEXT
			SERVER_NAME	TEXT
			EDBPATH	TEXT
			EDBSIZE	UINT64
			EDBFREE	UINT64
			EDBTOTAL	UINT64
			FOLDER_COUNT	UINT64
			FOLDER_MSGCNT	UINT64
EXSPI_ CLIENTPERF	Exchange RPC Performanc e	MSEX_ RPCClients_Conf	RPCCLIENTINST	TEXT
			RPCACTUSERCNT	UINT64
			RPCCNNCNT	UINT64
			RPCCLRPCATM	UINT64
			RPCCLSUCC	UINT64
			RPCCLFAILED	UINT64
			RPCCLLTGT2	UINT64
			RPCCLLTGT5	UINT64
			RPCCLLTGT10	UINT64
			RPCOPRSEC	UINT64
			RPCPACKSEC	UINT64
			RPCCLREQ	UINT64
			RPCCLAVGLAT	UINT64
			RPCDISOPRSEC	UINT64
			RPCDISQLEN	UINT64
EXSPI_	Exchange	MSEX_	REPL_IDENTITY	TEXT

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
REPLSUMM	Replication	Replication_Conf		
			REPL_STATUS	TEXT
			REPL_LSTCPLOGTIME	TEXT
			REPL_LSTINSLOGTIME	TEXT
			REPL_LSTRPLLOGTIME	TEXT
			REPL_LSTLOGGEN	UINT64
			REPL_LSTLOGCP	UINT64
			REPL_LSTLOGINS	UINT64
			REPL_LSTLOGRPL	UINT64
			REPL_LSTBCKPTIME	UINT64
			REPL_LSTIBCKPTIME	UINT64
			REPL_CPQLEN	UINT64
			REPL_RPLQLEN	UINT64
EXSPI_ SMTPSEND	Exchange SMTP	MSEX_ SMTPPerf_Conf	INSTANCE_NAME	TEXT
			SMTPCONNCURR	UINT64
			SMTPCNCRSEC	UINT64
			SMTPCONNTOT	UINT64
			SMTPMSGSNSEC	UINT64
			SMTPMSGSEND	UINT64
			SMTPMSGBYTESEND	UINT64
			SMTPMBYSNSEC	UINT64
			SMTPBYTESEND	UINT64
			SMTPBYSNTSEC	UINT64
			SMTPRCPSENT	UINT64

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
			SMTPAVRCPMSG	UINT64
			SMTPAMBYTMSG	UINT64
			SMTPAVMSGCNN	UINT64
			SMTPAVBYCNN	UINT64
			SMTPDNSERR	UINT64
			SMTPCNNFAIL	UINT64
			SMTPSCKERR	UINT64
			SMTPPROCERR	UINT64
EXSPI_ SMTPRECV	Exchange SMTP	MSEX_ SMTPPerf_Conf	INSTANCE_NAME	TEXT
			SMTPCONNCURR	UINT64
			SMTPCNNCRSEC	UINT64
			SMTPCONNTOT	UINT64
			SMTPRECSEC	UINT64
			SMTPMSGRECV	UINT64
			SMTPMBYTERCSEC	UINT64
			SMTPMSGBYTERECV	UINT64
			SMTPAVBYMSG	UINT64
			SMTPAVRCMSG	UINT64
			SMTPAVBYTCN	UINT64
			SMTPAVMSGCN	UINT64
			SMTPBYTERVSEC	UINT64
			SMTPBYTERECV	UINT64
			INSTANCE_NAME	TEXT
			SERVER_NAME	TEXT

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
			MSGEVALUATED	UINT64
			MSGFILTERED	UINT64
EXSPI_ SPAMSTATS	Exchange Weekly Statistics	MSEX_SCH_ TopSource	INSTANCE	TEXT
			DELETED	TEXT
			QUARANTINED	UINT64
			REJECTED	UINT64
			SCANNED	UINT64
			MSGBYPASSED	UINT64
			MSGSCL0	UINT64
			MSGSCL1	UINT64
			MSGSCL2	UINT64
			MSGSCL3	UINT64
			MSGSCL4	UINT64
			MSGSCL5	UINT64
			MSGSCL6	UINT64
			MSGSCL7	UINT64
			MSGSCL8	UINT64
			MSGSCL9	UINT64
			MSGSCLUNK	UINT64
EXSPI_AGCFG	Exchange Transport	MSEX_Transport_ Conf	AGCFG_ID	TEXT
			AGCFG_EN	TEXT
			AGCFG_PRI	UINT64
EXSPI_ BLOCKEDMAILS	Exchange Blocked	MSEX_ BlockedData_	TIMESTAMP	TEXT

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
	Data	Conf		
			SERVER_NAME	TEXT
			IPADDRESS	TEXT
			SENDERADDRESS	TEXT
			ACTION_TAKEN	TEXT
			REASON	TEXT
			REASONDATA	TEXT
			DOMAIN	TEXT
			AGENT	TEXT
			ISHUBTRANSPORTSERVER	TEXT
			REMOTEENDPOINT	TEXT
			MESSAGEID	TEXT
EXSPI_DATABASESUMM	Exchange Database Consistency	MSEX_DBSTatus_Conf	DB_IDENTITY	TEXT
			DB_STATUS	TEXT
			DB_STATUSVALUE	UINT64
			DB_CISTATE	UINT64
			DB_STATE	UINT64
EXSPI_DEST	Exchange Weekly Statistics	MSEX_SCH_TopDestination	DEST_ADDR	TEXT
			DOMAIN_NAME	TEXT
			DEST_KEY	TEXT
			SERVER_NAME	TEXT
			ADSITE_NAME	TEXT

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
			IS_INTERNAL	TEXT
			NUM_BYTES_DR	UINT64
			NUM_MSGS_DR	UINT64
EXSPI_ HUBTRANSDSN	Exchange Transport	MSEX_Transport_ Conf	DSNINS	TEXT
			FAIL_DSNS_TOTAL	UINT64
			DELAY_DSNS	UINT64
			DSNRELAY	UINT64
			DSNDEL	UINT64
			DSNEXPND	UINT64
			DSNFAILHR	UINT64
			DSNDLYHR	UINT64
EXSPI_ MBDETAIL	Exchange Mailbox	MSEX_ MailboxData_Conf	MB_IDENTITY	TEXT
			MB_NAME	TEXT
			MB_SVRNAME	TEXT
			MB_DBNAME	TEXT
			MB_SIZE	UINT64
			MB_MSGCOUNT	UINT64
			MB_LASTACCESS	TEXT
			MB_DISCONNECT	TEXT
			MB_DELCOUNT	UINT64
			MB_DELSIZE	UINT64
			MB_STGLIMIT	TEXT
			MB_DAGNAME	TEXT
EXSPI_ MBSUMMARY	Exchange Mailbox	MSEX_ MailboxData_Conf	INSTANCE_KEY	REAL64

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
			DATABASE_NAME	TEXT
			SERVER_NAME	TEXT
			EDBPATH	TEXT
			EDBSIZE	REAL64
			EDBFREE	REAL64
			EDBTOTAL	REAL64
			MAILBOX_USRCNT	UINT64
			MAILBOX_MSGCNT	UINT64
			DAG_NAME	TEXT
EXSPI_ OWAPERF	Exchange OWA	MSEX_OWA_ Conf	OWAINST	TEXT
			OWAAVGSCHTM	REAL64
			OWAAVGRESTM	REAL64
			OWARQFLDPSEC	REAL64
			OWALGPSEC	REAL64
			OWAPXUSRQPSEC	REAL64
			OWAREQPSEC	REAL64
			OWASTRLGFLPER	REAL64
			OWAPXRESAVG	REAL64

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
EXSPI_ POP3PERF	Exchange POP3	MSEX_Pop3Perf_ Conf	INSTANCE_NAME	TEXT
			POP3FAILEDCON	UINT64
			POP3CON	UINT64
			POP3REJECTEDCON	UINT64
			POP3CONRT	UINT64
			POP3CONCUR	UINT64
			POP3UATHCN	REAL64
			POP3CURCN	UINT64
			POP3CNFAIL	UINT64
			POP3TTLCN	UINT64
			POP3ACTSSL	UINT64
			POP3SSLCN	UINT64
			POP3ATHFL	UINT64
			POP3ATHRT	UINT64
			POP3ATHTTL	REAL64
			POP3DELRT	UINT64
EXSPI_QINFO	Exchange Transport Queues	MSEX_ TransportQueue_ Conf	QINFO_ID	TEXT
			QINFO_DLVTYPE	TEXT
			QINFO_NHCNNT	TEXT
			QINFO_NHDOMAIN	TEXT
			QINFO_MSGCNT	UINT64
			QINFO_LSTERR	TEXT

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
EXSPI_SOURCE	Exchange Weekly Statistics	MSEX_SCH_ TopSource	SOURCE_ADDR	TEXT
			DOMAIN_NAME	TEXT
			SOURCE_KEY	TEXT
			SERVER_NAME	TEXT
			ADSITE_NAME	TEXT
			IS_INTERNAL	TEXT
			NUM_BYTES_SRC	REAL64
			NUM_MSGS_SRC	UINT64
EXSPI_ STOREIPERF	Exchange Information Store	MSEX_StorePerf_ Conf	STINAME	TEXT
			STIRPCRQST	UINT64
			STIRPCRQSC	UINT64
			STIRPCRQFL	UINT64
			STIRPCRQFE	UINT64
			STIRPCRQFP	UINT64
			STIRPCRQOS	UINT64
			STIRPCRQSS	UINT64
			STIRPCLTTL	UINT64
			STIRPCLTAV	UINT64
			STIRPCSLRQ	UINT64
			STIRPCSPRQ	UINT64
			STIRPCSLTL	UINT64
			STIRPCSRQA	UINT64

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
			STIRPCBYST	UINT64
			STIRPCBYSA	UINT64
			STIRPCBYRC	UINT64
			STIRPCBYRA	UINT64
			STIROPRQST	UINT64
			STIROPRQCP	UINT64
			STIROPRQOS	UINT64
EXSPI_ STOREPERF	Exchange Information Store	MSEX_StorePerf_ Conf	STORENAME	UINT64
			RPCREQ	UINT64
			RPCOPPERSEC	REAL64
			RPCAVGLAT	REAL64
			ACTMBS	UINT64
			MSGDLPSEC	REAL64
			MSGSUBPSEC	REAL64
			MAPIMSGCRT	REAL64
			MAPIMSGOP	REAL64
			MAPIMSGMOD	REAL64
			PERRPCREQ	REAL64
			QRMBCNT	UINT64

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
			NACTBGTSK	UINT64
EXSPI_TRANSQ	Exchange Transport Queues	MSEX_ TransportQueue_ Conf	INSTANCE_NAME	TEXT
			ACT_MDQ_LENGTH	UINT64
			ACT_NONSMTP_DQLENG	UINT64
			POISON_Q_LENGTH	UINT64
			RET_MD_Q_LEN	UINT64
			RETRY_NONSMTP_QLEN	UINT64
			SUB_Q_LENGTH	UINT64
			UNREACH_Q_LENGTH	UINT64
			ACT_XREM_DQLENGTH	UINT64
			ACT_IREM_DQLENGTH	UINT64
			RET_XREM_DQLENGTH	UINT64
			RET_IREM_DQLENGTH	UINT64
			LARG_IDQ_LENGTH	UINT64
			LARG_XDQ_LENGTH	UINT64
			AGSHDQLEN	UINT64
			AGGDEL_IALLQ_LEN	UINT64
			AGGDEL_XALLQ_LEN	UINT64
EXSPI_ ACTSYCHK	Exchange Active Sync	MSEX_ ActiveSync_Conf	EXSPI_ACTKEY	TEXT
			EXSPI_ACTSRV	TEXT
			EXSPI_ACTDB	TEXT
			EXSPI_ACTRSLT	UINT64
			EXSPI_ACTLAT	UINT64

Table in Data Store	Aspects	Policy Template Name	Metrics	Metric Data Type CODA / PA
			EXSPI_ACTERR	TEXT
EXSPI_RECP	Exchange Recipient Filtering	MSEX_ RecpientPerf_ Conf	SERVER_NAME	TEXT
			ADSITE_NAME	TEXT
			MBOX_NAME	TEXT
			RECIP_EMAIL	TEXT
			NUM_BYTES_RR	REAL64
			NUM_MSGS_RR	UINT64
			DAG_NAME	TEXT
EXSPI_SENDER	Exchange Weekly Statistics	MSEX_SCH_ TopSender	SERVER_NAME	TEXT
			ADSITE_NAME	TEXT
			MBOX_NAME	TEXT
			SENDER_EMAIL	TEXT
			NUM_BYTES_SR	REAL64
			NUM_MSGS_SR	UINT64
			DAG_NAME	TEXT

Send documentation feedback

If you have comments about this document, you can contact the documentation team by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

Feedback on User Guide (OMi Management Pack for Microsoft Exchange Server 1.00)

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to docfeedback@hpe.com.

We appreciate your feedback!