Foglight™ for Exchange 5.6.9

User and Reference Guide

Legend

⚠ CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

⚠ WARNING: A WARNING icon indicates a potential for property damage, personal injury, or death.

ⓘ IMPORTANT NOTE, NOTE, TIP, MOBILE, or VIDEO: An information icon indicates supporting information.

Contents

Navigation basics

This guide has been prepared to assist you in becoming familiar with Foglight for Exchange. It provides basic navigation techniques, describes the dashboards, views and reports included with Foglight for Exchange, and provides information about the rules that are available for your monitored system.

This chapter describes the basic techniques used to navigate through Foglight for Exchange. It is intended to introduce you to the layout of the Foglight user interface and how to navigate through the dashboards and views provided with Foglight for Exchange:

- Foglight browser interface panels
- Drill down actions
- Breadcrumb trail
- Time range
- Lists
- Alarms and state indicators
- Mouse-over actions
- Foglight for Exchange roles

For more information about Foglight navigation, see the *Foglight User Guide* or online help.

Foglight browser interface panels

Depending on who you log in as, you may see either the contents of the first bookmark (the Welcome page is the default) listed under Bookmarks, or a home page. For further details about these Foglight pages, see the *Foglight User Guide* or online help.

Typically the browser interface is divided into three panels:

- Navigation panel
- Display panel
- Action panel

Figure 1. Foglight browser interface panels
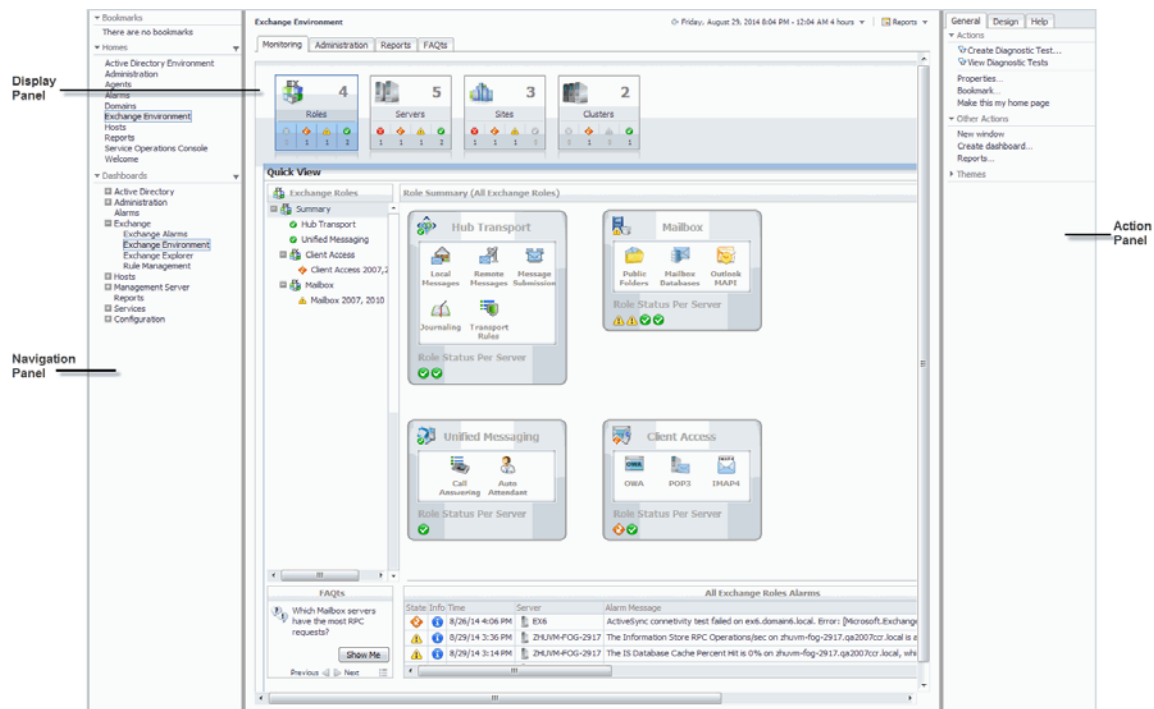
Navigation panel

The navigation panel, at the left of the browser interface, operates like a drawer and is open by default. To close the navigation panel, click the arrow to the far left of the Foglight browser interface. Click the arrow again to open the navigation panel.

The navigation panel contains an expandable view of all the dashboards available to the current user. To access a specific dashboard, open the appropriate module (for example, Exchange) and select the dashboard to view it in the display panel.

The navigation panel also provides access to the Foglight Administration and Configuration areas, and may provide access to some cartridge-specific navigational views (for example, the Exchange Infrastructure view for the Exchange Explorer dashboard.)

If you do not see any dashboards in the navigation panel, the user ID with which you signed in may not have been assigned to a group. For details, see the *Foglight User Guide* or online help.

Display panel

The display panel is the large panel in the middle of the browser interface and is used to view current dashboards and reports, as well as to create new dashboards and reports. You can increase the size of the display panel by resizing the navigation panel, or if open, by closing the action panel.

Action panel

The action panel, at the right of the browser interface, operates like a drawer and is closed by default. To open the action panel, click the arrow to the far right of the Foglight browser interface. Click the arrow again to close the action panel.

The action panel lists the actions and tasks you can perform within the currently displayed dashboard. It also contains the views and data that you can add to a dashboard or report, and provides access to the online help files.

Drill down actions

Use the graphical and text links in views to drill down to additional details that may assist you in diagnosing problems. Depending on the link, you drill down to a different dashboard or smaller view called a popup that appears over the dashboard you are currently viewing.

You can drill down from many different parts of a view, including names of monitored components (such as Exchange servers or Exchange roles), the **view in Explorer** links in a dashboard, and items like charts, tables, cylinders and icons.

> ⓘ | NOTE: When your cursor is positioned over a drillable component, the cursor will change to a selector icon, typically a hand with a pointing finger.

For example, in the Exchange Alarms dashboard, click on a server name. This displays a dialog allowing you to select either the Explorer or the Quick View. Select the **Quick View** link to display the selected server's summary information on the Exchange Environment dashboard.

Breadcrumb trail

As you drill down into more detailed views within a dashboard, the names of the previous views are displayed in a breadcrumb trail at the top of the current dashboard. In addition to providing you with context, this breadcrumb trail displays the name of the current view and provides a simple mechanism for returning to any of its parent levels.

The following breadcrumb trail was created while drilling down from the Exchange Environment dashboard into the Rule Management dashboard. Each item within the breadcrumb trail is a link to a previously viewed parent level.

Figure 2. Breadcrumb trail

Time range

By default, Foglight for Exchange displays metrics, alerts and messages that have occurred within the last four hours. This time range is configurable using the Time Range popup located in the upper right corner of the browser interface.

Figure 3. Time range
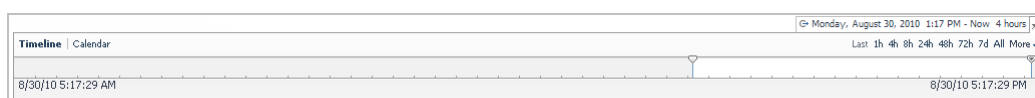
Using the Time Range popup, you can select from predefined time ranges or you can specify a custom range using either the slide time bar or calendar precision controls to specify a date and time. When you modify the time range for a dashboard or view, it adjusts the range for all of the views contained within and drilldowns accessed from that dashboard or view. It does not adjust the time range for any parent views.

For more information about modifying the time range, see the *Foglight User Help*.

Lists
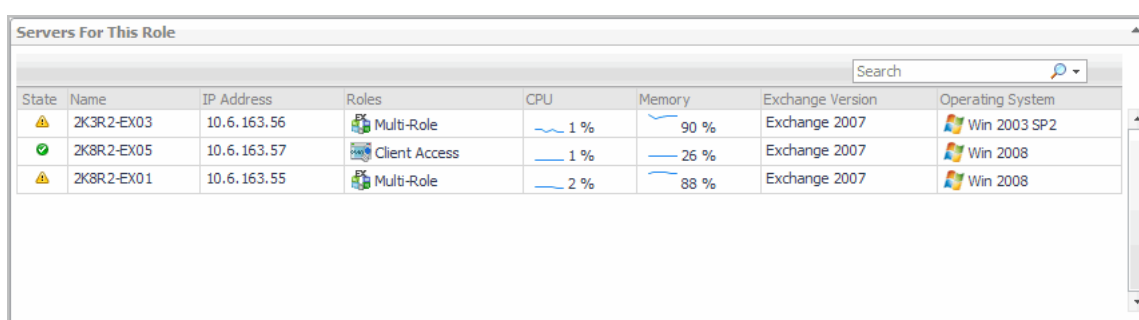
The lists displayed throughout Foglight for Exchange allow you to define the sort criteria and order, hide columns, and filter content based on user-defined search criteria:

- Sorting content
- Hiding columns
- Filtering content

Sorting content

Some views in the Foglight for Exchange dashboards contain sortable lists. An example of a sortable list is the Servers For This Role view on the Exchange Explorer dashboard.

Figure 4. Servers For This Role view

An arrow in the column heading identifies the sort criteria and order, ascending or descending, being used to display information.

To change the sort criteria in a list:

1 Click on the column heading to be used to sort the list.

2 The sort order is in ascending order, but can be changed to descending order by clicking on the heading a second time.

   The list is redrawn according to your specification.

Hiding columns

The Foglight for Exchange lists display a default set of columns; however, you can customize the content of the lists by hiding columns.

To hide columns in the list:

1 Select the ⊞ button in the upper right corner of the list to display the Show Columns dialog.

2 On the Show Columns dialog, click a column heading from the list to clear the corresponding check box.

3 Select **Apply** to display the list displaying only the columns that are currently selected in the Show Columns dialog.

Filtering content

Many of the lists displayed in the Foglight for Exchange dashboards and views allow you to filter the information displayed using the search controls at the top of the list. You can either conduct a search on all of the columns in the list or specify the columns to be searched.

Figure 5. Filtering content

To filter a list based on content in any of the fields:

1   Enter a text string into the text field.

> ⓘ **NOTE:** Select the Use Regular Expression option that appears when you select the arrow control to the right of the Search field to specify a regular expression which allows you to enter a search pattern using wildcard characters instead of a literal text string.
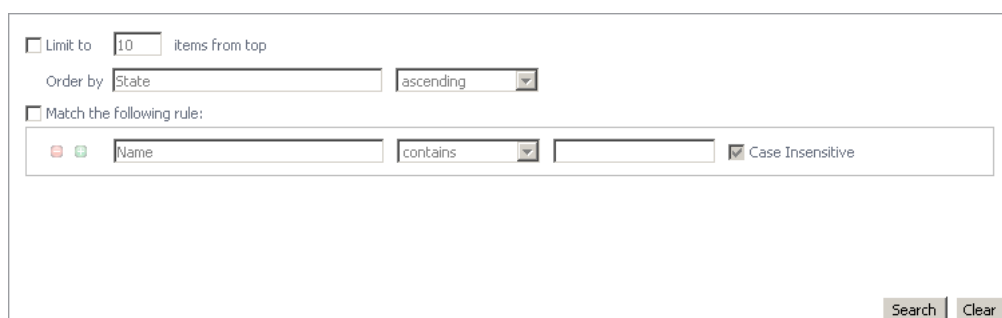
The list now displays the entries found as a result of your search.

2   To clear the search string and display the original list, select ⊠.

To specify individual fields to be searched:

1   Click the arrow control and select **Advanced Search**.

A dialog appears allowing you to enter the search criteria to be used to filter your list and sort the results.

2   To define the number of items to be included in the list and the sort criteria and order of the results, select the **Limit to nn items from top** check box.

3   By default, the top 10 items are displayed. To change this value, enter a different number in the value field.

4   The **Order by** field contains the column heading currently selected as the sort criteria. To change the sort criteria, click in the **Order by** field and select the column heading to be used. Use the arrow control to define the sort order: ascending or descending.

5   To define the search criteria, select the **Match the following rule** check box and specify the following information:

    •   Click in the first field to specify the column to be searched.

    •   Use the arrow control to define the comparison operator to be used (for example, does not contain, starts with, ends with.)

    •   Enter the text string to be matched.

    •   The **Case Insensitive** check box is selected by default and will find matches regardless of case. For a case-sensitive search, clear this check box.

6 To add an additional search rule, select [+] and repeat the previous step to specify the additional search criteria.

> ⓘ | NOTE: When multiple rules are specified, the 'and' operator is used and all rules must be met in order for an entry to be included in the search results.

7 Once you have entered your search criteria, select **Search** to close the dialog and conduct the search.

8 The results of your search is displayed in the list.

9 To clear the search string and display the original list, select [×].

Alarms and state indicators

Foglight for Exchange uses state indicators to show the severity level of alarms that have fired or the status of Exchange objects. The following state indicators and colors are used throughout the interface:

Table 1. Alarms and state indicators

⊗	Fatal (red)	There is a strong indication that the server is experiencing conditions which will degrade performance.
◈	Critical (orange)	Indicates that the current metric values point strongly towards performance-related problems with the specified component.
⚠	Warning (yellow)	Represents a possible performance problem, based on calculations on current server metrics against best-practices thresholds.
✓	Normal (green)	Indicates the component is operating within normal thresholds.
		A normal severity level indicates that there have been no warning, critical or fatal events fired. Foglight does not record events that are successful; it can only determine that there are no events that had problems.

The Foglight alarm types respond to thresholds that are defined within the Foglight for Exchange rules. As metrics change and move through thresholds, alarms are raised. As a metric moves through thresholds, the severity of an alarm changes, which causes the associated state indicators to change.

For detailed information about the Foglight for Exchange rules and metrics, see Foglight for Exchange rules on page 164.

Mouse-over actions

Many items within the Foglight for Exchange dashboards display additional information when you hover your cursor over them. For example:

- Hover over a graph title to display a description of the graph

> ⓘ | NOTE: Clicking on a counter or graph displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

- Hover over the data point to display details (actual value and date/time stamp) that corresponds to the data point

Foglight for Exchange roles

Foglight controls user access using the concept of users, groups and roles. Each user can belong to one or more groups. The roles assigned to those groups determine the set of actions that the user can access.

Foglight comes with a set of built-in roles. In addition to these built-in roles, Foglight for Exchange comes with the following additional built-in roles which control access to the dashboards in Foglight for Exchange.

- **EX Administrator.** Allows access to all dashboards in Foglight for Exchange.

- **EX QuickView User.** Allows access to the Exchange Environment dashboard in Foglight for Exchange.

- **EX Report User.** When implemented, this role will allow access to the Report Management dashboard and Exchange reports.

  ⓘ | **NOTE:** The EX Report User role is available starting with cartridges installed with Foglight Management Server 5.6.2.

The Users & Security dashboard allows you to manage user access. To access this dashboard, on the navigation panel, select **Dashboards** > **Administration** > **Users & Security Management**. For more information on managing users and security, see the *Foglight Administration and Configuration Guide* or online help.

Exploring the Foglight for Exchange dashboards

Foglight for Exchange includes dashboards which aid in the monitoring, analysis and investigation of an Exchange environment's health and performance.

These dashboards provide real-time views into the present state and relationships of the major components in your Exchange environment, including:

- **Exchange Server Roles.** There are five Exchange server roles that allow administrators to split up the functions of an Exchange server and place each role, or a combination of roles, on different servers. The views provided allow you to monitor the health of the servers hosting these Exchange roles.

- **Exchange Servers.** An Exchange server is any server that has Exchange services installed on it.

- **Sites.** A site is a logical grouping of computers within Active Directory® that have reliable connectivity. The views provided allow you to monitor the health of the sites that are hosting Exchange servers.

- **Clusters.** A cluster is composed of individual servers running cluster software which enables these computers to work together as a computer cluster, to provide failover and improve performance and availability over that of a single computer.

This chapter explains how to access the Exchange dashboards, describes the layout of each dashboard, and explains how to navigate through the embedded views of each dashboard:

- Accessing the Foglight for Exchange dashboards
- Exchange Alarms dashboard
- Exchange Environment dashboard
- Exchange Explorer dashboard
- Exchange Rule Management dashboard

For a description of the metrics captured in each of the embedded views, see Foglight for Exchange views.

Accessing the Foglight for Exchange dashboards

To access the dashboards:

1   On the navigation panel, under Dashboards, click the expansion state box to the left of **Exchange**.

2   Click one of the dashboard items.

- Click **Exchange Alarms** to display a list of the current alarms triggered within Foglight for Exchange.

- Click **Exchange Environment** to display the Exchange Environment dashboard, which includes the following tabs:

    - **Monitoring**: displays a summary of the Exchange servers being monitored and their current state.

- **Administration**: allows you to perform administrative tasks, including:
  - Deploy the Exchange agent package, create and activate Exchange agents, and start or stop collecting data.
  - View and manage rules that exist in your environment.
  - View a list of diagnostic tests that are available, as well as run a test immediately or define a schedule for when a test is to be run.
  - View, edit and enable/ disable the optional metric collections that are configurable for Exchange agents.
- **Reports**: allows you to build, view, and manage custom reports.
- **FAQTs**: displays questions relating to a selected object.
- Click **Exchange Explorer** to display performance metrics and alarms for an Exchange server or group of servers.
- Click **Rule Management** to view and manage Foglight for Exchange rules.

Exchange Alarms dashboard

The Exchange Alarms dashboard shows the alarms that have been triggered but not cleared within Foglight for Exchange. It can be used to isolate alarms specific to your Exchange environment.

Figure 6. Exchange Alarms dashboard

The Alarms List on this view is a sortable list that displays the outstanding Foglight for Exchange alarms. Each alarm row in the Alarms List contains the following information.

Table 2. Alarms List information

Severity	The icon in this column indicates the severity of the alarm.
Info	Selecting the Info icon ⓘ displays a metrics popup which consists of a trend graph or history, the diagnostic time range, a description of the metric and troubleshooting tips.
Server	Displays the name of the Exchange server where the alarm occurred. Clicking the server name displays a popup menu where you can choose to view details about the selected server in either the Exchange Explorer dashboard or Quick View in the Exchange Environment dashboard.

Table 2. Alarms List information

Time	Displays the date and time when the alarm occurred.
Alarm Message	Displays the alarm message.

Clicking an alarm's severity icon, object icon, alarm message, or time displays a popup where you can acknowledge or clear the alarm. This popup provides pertinent information about the selected alarm, such as the rule of origin of the alarm, the history of the alarm, and all of the notes attached to the alarm. For more information about managing alarms, see the *Foglight User Guide* or online help.

Exchange Environment dashboard

The Exchange Environment dashboard includes the following tabs:

- **Monitoring**: displays a summary of the Exchange servers being monitored and their current state. For details, see Exchange Environment > Monitoring tab.

- **Administration**: allows you to perform administrative tasks, including:

  - Deploy the Exchange agent package, create and activate Exchange agents, and start or stop collecting data.

  - View and manage rules that exist in your environment.

  - View a list of diagnostic tests that are available, as well as run a test immediately or define a schedule for when a test is to be run.

  - View, edit and enable/ disable the optional metric collections that are configurable for Exchange agents.

  For details, see Exchange Environment > Administration tab.

- **Reports**: allows you to manage custom Exchange reports. For details, see Exchange Environment > Reports tab.

- **FAQts**: displays questions relating to a selected object. For details, see Exchange Environment > FAQts tab.

Exchange Environment > Monitoring tab

The Monitoring tab provides a summary of the Exchange servers in your environment, the Exchange roles performed by these servers, and the sites where these servers reside. This tab consists of the following views:

- Exchange Environment Overview

- Quick View

Exchange Environment Overview

The Exchange Environment Overview is located across the top of the Exchange Environment dashboard. It provides you with an overview of your Exchange environment.

Figure 7. Exchange Environment Overview
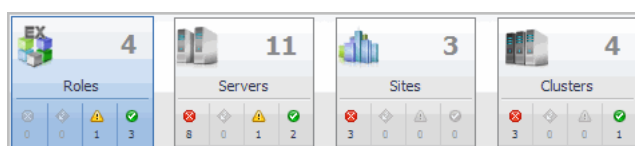
The overview contains a tile for the following object types in your Exchange infrastructure: roles, servers, sites and clusters. Each tile shows the number of corresponding objects of that type in your Exchange infrastructure as well as a count of objects of that type in each of the alarm states (fatal, critical, warning, and normal).

Clicking a tile displays summary information for that object type in the Quick View. Clicking an alarm state (for example, warning) on a tile displays summary information in the Quick View for the objects of that type that are in the selected alarm state.

Quick View

The Quick View is located across the middle of the Exchange Environment dashboard.

Figure 8. Quick View
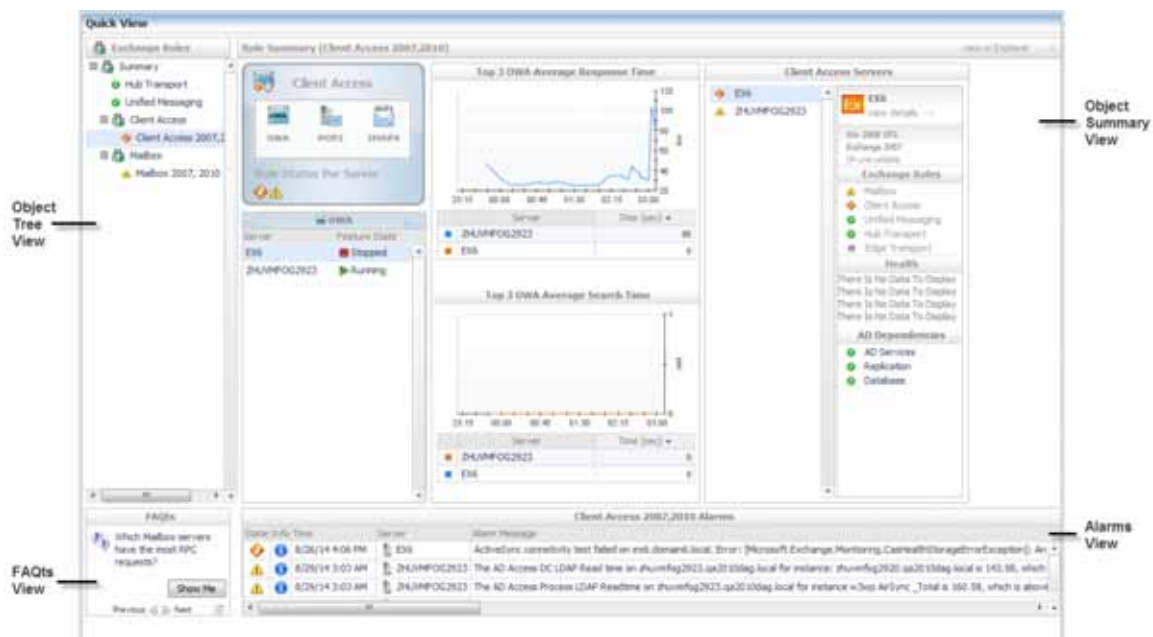
Purpose

The Quick View displays summary information pertaining to the component selected from the Exchange Environment Overview and Object Tree view. For example,

- Select an object tile in the Exchange Environment Overview to view summary information for all objects of the selected type.

- Select an alarm indicator in an object tile in the Exchange Environment Overview to view summary information for the objects of that type in the selected alarm state.

- Select an object item from the Object Tree view (as described below) to view summary information for that individual object.

Description of embedded views

The Quick View consists of the following embedded views:

- Object Tree view

- Object Summary view

- FAQts view

- Alarms view

Object Tree view

The Object Tree view is located at the left of the Quick View and displays objects based on the tile selected in the Exchange Environment Overview. Use the Object Tree view to select a single object or a group of objects of a particular type for display in the Object Summary view.

Object Summary view

The Object Summary view is located to the right of the Object Tree view and displays summary information for a single object or a group of objects, depending on what is selected in the Object Tree view.

The Object Summary view displays role, server, site, and cluster controller tiles (with the tile type reflecting the selected object type) or a number of embedded views which is determined by the item selected in the Exchange Environment Overview and Object Tree view. A role, server, site, or cluster controller tile provides a quick and easy view into the items that make up the selected Exchange object and the alarm states of these items.

In addition, in the top right of the Overview Summary view there is a link to the Exchange Explorer dashboard. This enables you to quickly navigate to the Exchange Explorer for more detailed metrics about the selected object or group of objects.

The following table lists the information displayed when the different object tiles are selected.

Table 3. Object Summary view information

Item Selected in Overview	Item Selected in Object Tree	Views Displayed in Object Summary View
Roles Tile	Summary	A role tile for each Exchange role defined in your Exchange environment.
Roles Tile - Alarm Indicator	Summary	A role tile for each Exchange role in the selected state.
Roles Tile or Alarm Indicator	Role Item	In addition to a role tile for the selected role, the following embedded views are displayed based on the feature selected on the role tile: • Server list • Top 3 graphs • Exchange Servers Details
Servers Tile	Summary	A server tile for each Exchange server in your environment.
Servers Tile - Alarm Indicator	Summary	A server tile for each Exchange server in the selected state.
Servers Tile or Alarm Indicator	Server Item	In addition to a server tile for the selected server, the following embedded views are displayed: • Host Monitor View • AD Dependencies • Server Health View • Exchange Roles View
Sites Tile	Summary	A site tile for each site in your Exchange environment.
Sites Tile - Alarm Indicator	Summary	A site tile for each site in the selected state.
Sites Tile or Alarm Indicator	Site Item	In addition to a site tile for the selected site, the following embedded views are displayed: • Server Listing • Site By Category View • Exchange Roles Top 3
Clusters Tile	Summary	A cluster tile for each cluster in your Exchange environment.

Table 3. Object Summary view information

Item Selected in Overview	Item Selected in Object Tree	Views Displayed in Object Summary View
Clusters Tile - Alarm Indicator	Summary	A cluster tile for each cluster(s) in the selected state.
Clusters Tile or Alarm Indicator	Cluster Item	In addition to a cluster tile for the selected cluster, the following embedded views are displayed: • Windows Cluster • Cluster IP • Exchange Servers • Databases

FAQts view

A FAQts view is displayed in the lower left corner of the Quick View on the Exchange Environment dashboard and displays questions relating to the selected object. The questions in this view are scoped to the object tile selected in the Exchange Environment Overview. For example, select the role tile to view the questions about the different Exchange roles.

Figure 9. FAQts view
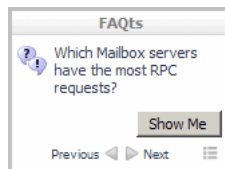
Use the **Previous** and **Next** buttons to scroll through the questions available for the selected object. Use the **Show Me** button to display the answer to the displayed question. Select the ▦ button to display a list of all relevant questions from which to select.

Alarms view

The Alarms view that appears at the bottom of the Quick View in the Exchange Environment dashboard displays a sortable list of all the outstanding alarms for the item selected in the Object Tree view.

ⓘ | NOTE: An Alarms view also appears at the bottom of the Exchange Explorer dashboard when you are viewing an object in the Exchange Explorer Primary view. It displays the outstanding alarms for the item selected in the Exchange Infrastructure view.

Exchange Environment > Administration tab

The Administration tab includes the following components, and allows you to perform administrative tasks, as follows:

• Tasks list:

  • **Deploy Agent Package**: Deploy the Exchange agent package, create Exchange agent instances on one or more servers at a time, activate or deactivate Exchange agents, and start and stop collecting data.

  • **Rule Management**: View and manage rules that exist in your environment. For more information, see Foglight for Exchange rules.

  • **Diagnostic Tests**: View a list of diagnostic tests that are available, as well as run a test immediately or define a schedule for when a test is to be run. For more information, see Running diagnostic tests.

- **Metrics Management**: View, edit, and enable/ disable the optional metric collections that are configurable for Exchange agents. For more information, see Managing Exchange metrics and Appendix: Exchange metrics.

- Agents view: Add and configure Exchange agents on one or more servers. Once added, the Agent Management view displays all of the Exchange agents configured to monitor Exchange metrics. For more information on using the Agent Setup wizard and the Agent Management view to manage your Exchange agents, see Managing Exchange agents.

Figure 10. Exchange Environment > Administration tab

Exchange Environment > Reports tab

The Reports tab allows you to manage custom Exchange reports. It consists of the following components:

- Tasks list

- Recent Report History view

- About Reports view

- Reports view

Figure 11. Exchange Environment > Reports tab
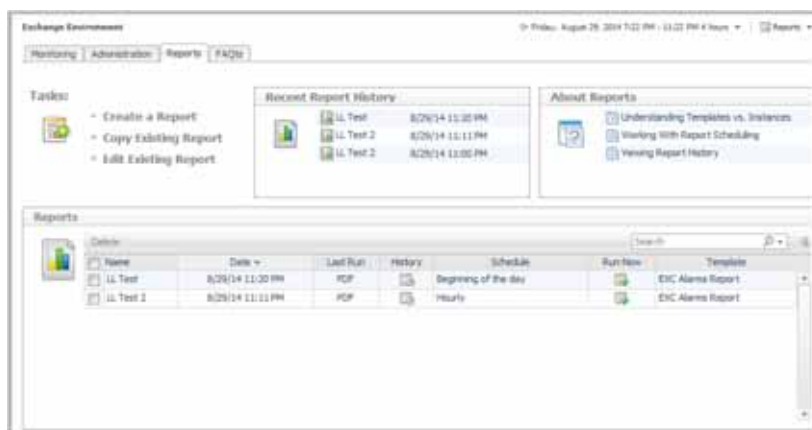
Tasks list

From the Tasks list, you can create a report, copy an existing report, or edit an existing report for your Exchange environment:

- Click **Create a Report** to select and generate a report using the Create a Report wizard.

- Click **Copy Existing Report** to duplicate an existing report using the Copy Existing Report wizard.

- Click **Edit Existing Report** to modify an existing report using the Edit Existing Report wizard.

Create a Report wizard

To create a report:

1. Start the **Create a Report** wizard.

2. On the **Basic Configuration** page, define the following settings, then click **Next**:

   - **Scheduled Report Name**: Type a valid name for the report.

   - **Report Templates**: Select the template on which you want to base your report. The Report Inputs section is populated with the template's report parameters. Use the default parameters to quickly create a report, or optionally change the report parameters to customize the report to better meet your requirements. For more details about Exchange template reports, see Foglight for Exchange reports.

3. On the **Advanced Configuration** page, define the following settings, then click **Finish**:

   - **Schedule**: Select the report schedule from the list of available options.

   - **Retained Results**: Type the number of results retained for the report.

   - **Enabled**: Select the check box if you want to enable the report. Clear the check box if you want to disable the report.

   - **Report Format**: Select the report format from the list of available options.

   - **Email Recipients**: Type the email addresses of the recipients to be notified when the report is generated.

   The scheduled report is created and appears in the Reports view.

Copy Existing Report wizard

To copy an existing report:

1. Start the **Copy Existing Report** wizard.

2. On the **Select Report** page, select the report to be copied, then click **Next**.

3. On the **Edit Report Configuration** page, define the following settings, then click **Finish**:

   - **Scheduled Report Name**: Type a valid name for the new report.

   - **Report Templates**: The report template can not be modified, only the report parameters in the Report Inputs section at the bottom of the page.

   - **Schedule**: Select the report schedule from the list of available options.

   - **Retained Results**: Type the number of results retained for the report.

   - **Enabled**: Select the check box if you want to enable the report. Clear the check box if you want to disable the report.

   - **Report Format**: Select the report format from the list of available options.

   - **Email Recipients**: Type the email addresses of the recipients to be notified when the report is generated.

   The scheduled report is created and appears in the Reports view.

Edit Existing Report wizard

To edit an existing report:

1. Start the **Edit Existing Report** wizard.

2 On the **Select Report** page, select the report to be edited, then click **Next**.

3 On the **Edit Report Configuration** page, define the following settings, then click **Finish**:

- **Scheduled Report Name**: Change the report name, as necessary.

- **Report Templates**: The report template and its parameters can not be modified.

- **Schedule**: Select the report schedule from the list of available options.

- **Retained Results**: Type the number of results retained for the report.

- **Enabled**: Select the check box if you want to enable the report. Clear the check box if you want to disable the report.

- **Report Format**: Select the report format from the list of available options.

- **Email Recipients**: Type the email addresses of the recipients to be notified when the report is generated.

The new report settings are saved and the updated scheduled report appears in the Reports view.

Recent Report History view

The Recent Report History view provides information about the most recent report instances run in your environment.

About Reports view

The About Reports view enables you to get answers to common questions about Exchange reports.

Clicking a question from the list displays a dialog box that provides information about the selected topic.

Reports view

The Reports view displays all of the report instances configured in your Exchange environment.

The view contains the following information for each configured report instance.

Table 4. Reports view - information

Column	Description
⊙	Use the selection check boxes to select report instances for running or removal.
Name	Displays the name of the report.
Date	Indicates the date and time when the report was last run.
Last Run	Indicates the report type.
History	Click the icon in this column to open the Report History dialog box, and review the history of the selected report. To view the report content, click one item in the list.
Schedule	Displays the time when the report is scheduled to run.
Run Now	Click the icon in this column to manually run a selected report. The Run Now dialog box opens, displaying the status of the report generation. When the report is complete, you can view the report content by clicking the **Download**.
Template	Displays the template used for a scheduled report.

To delete one or several reports from the list, select the report(s) and click the **Delete** button at the top left corner of the view.

To search for a particular report, type the report name on the `Search` box at the top right corner of the view, then click **Enter**.

Exchange Environment > FAQts tab

In addition to the FAQts embedded view in the Quick View, a FAQts view appears as a navigation tab at the top of the dashboard. The FAQts navigation tab provides a list of all the questions available for all Exchange object types.

ⓘ | NOTE: The FAQts navigation tab is also available in the Exchange Explorer dashboard when you are viewing an object in the Exchange Explorer Primary view.

Purpose

The FAQts view enables you to get answers to common questions about your Exchange environment.

Figure 12. FAQts view
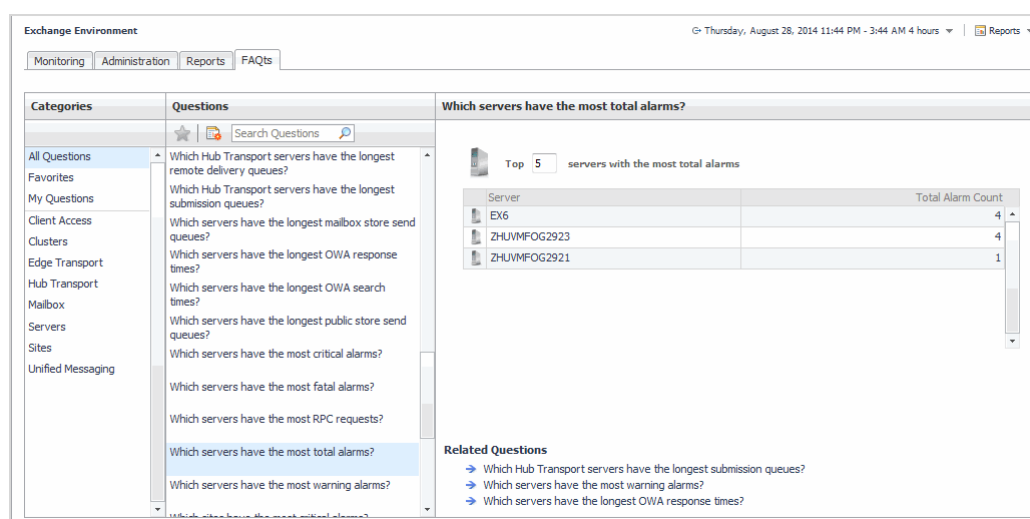
Description of embedded views

The FAQts navigation tab is made up of the following embedded views:

- Categories view
- Questions view
- Answer view

Categories view

The Categories view lists the categories (that is, servers, sites, Mailbox role, Client Access role, Unified Messaging role, Hub Transport role and Edge Transport role) for which questions can be answered by Foglight. It also contains a **Favorites** and **My Questions** category which allows you to customize the list of questions displayed.
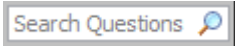
By default, **All Questions** is selected. Click a category to view a list of questions relating to a type of Exchange object or click **Favorites** or **My Questions** to view your customized list of questions.

Questions view

The Questions view lists the questions available for the category selected in the Categories view.

Click a question from the list to have Foglight gather and report an answer.

Use the buttons at the top of the Questions view as follows.

Table 5. Questions view

⭐	Mark the selected question as a 'favorite'. Questions marked as a 'favorite' will be displayed when the **Favorites** category is selected. NOTE: The star icon will appear yellow ⭐ when you select a question that is already marked as a favorite.
📄	Create a report based on selected questions.
Search Questions 🔍	If the list of questions is long, you can narrow it down by entering a text string in the **Search** field. Enter a word or text string and select the search button 🔍 to display only those questions that contain the word or string entered. To clear the filter and return to the original list of questions, click ❌ .

Answer view

The Answer view provides an answer to the question selected in the Questions view. The answer is provided in the following form:

Top *x <objects of category> ...*

where *x* is the number of objects of the category selected in the Categories view.

It also lists related questions from which you can select. Selecting a related question will refresh the Answer view displaying the answer to the selected question.

Exchange Explorer dashboard

The Exchange Explorer dashboard has a hierarchial interface that you can use to view various performance metrics and alarms within your Exchange infrastructure. It provides informative views through which you can quickly and easily access detailed information about any of the objects in your Exchange environment.

Figure 13. Exchange Explorer dashboard
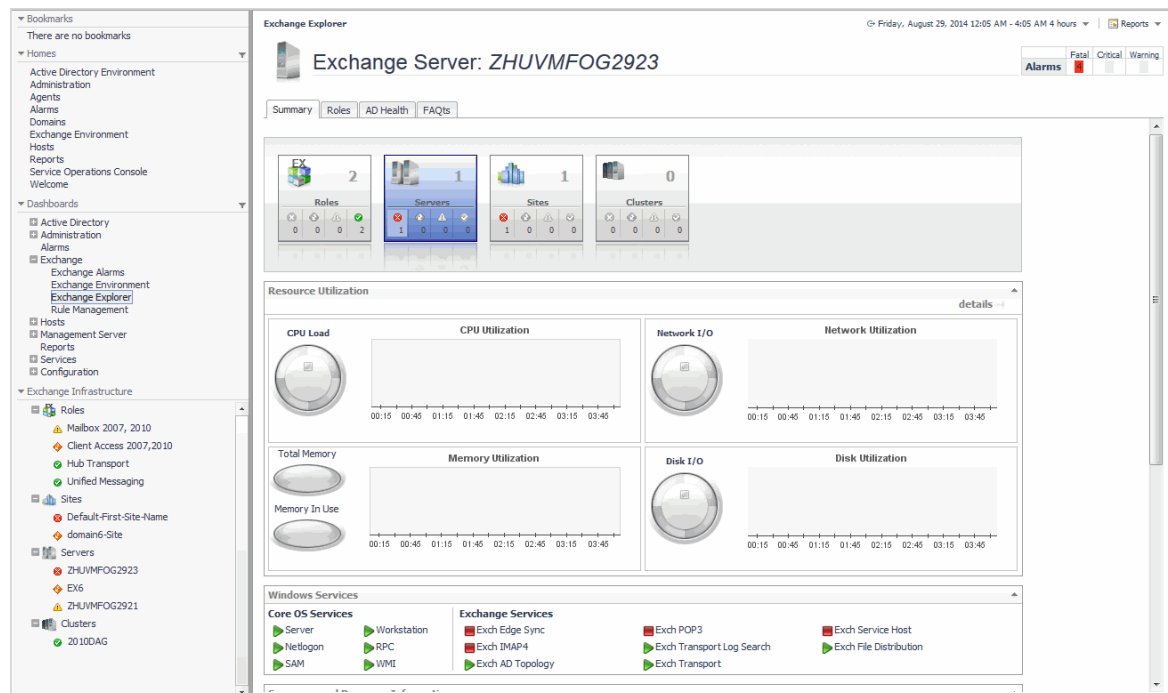
The Exchange Explorer dashboard contains the following views:

- Exchange Infrastructure view
- Exchange Explorer Primary view

Exchange Infrastructure view

The Exchange Infrastructure view is located in the navigation panel, under the Dashboard list. It provides an organized view of the Exchange objects that are monitored by Foglight for Exchange.

The Exchange Infrastructure view is organized into a tree using object type containers for branches. The top-level containers are the main Exchange object types (that is, Roles, Sites, Servers and Clusters) and each object type container contains every object of that particular type that is managed by Foglight for Exchange. Click the expansion state box to the left of a container to expand the view to display the individual objects.

To the left of each object, a status indicator represents the alarm of highest severity that is outstanding for that object.

Clicking an object type container or object in the Exchange Infrastructure view refreshes all of the views in the Exchange Explorer Primary view to display information pertaining to the selected object.

Exchange Explorer Primary view

The Exchange Explorer has a Primary view which takes up the entire display panel of the browser interface. This view displays information based on the object type container or object selected in the Exchange Infrastructure view.

Purpose

The Primary view displays performance metrics and alarms related to the objects within an object type container or an individual Exchange object.

The heading area located across the top of the Primary view consists of the following main components:

- an object icon and name

- an alarm summary for the selected object type container or object

- navigation tabs

The object icon and name to the left of the heading specify the object type container or individual object that is selected in the Explorer Infrastructure view.

The alarm summary at the right of the heading shows you the number of alarms at each severity level that are outstanding for the selected object. Clicking an alarm count displays a popup that lists the active alarms for the object. From this popup you can display additional details about an individual alarm.

The navigation tabs are located immediately below the selected object's name. These navigation tabs vary from object to object, but generally contain an object summary tab, a FAQts tab, and one or more tabs of other relevant information. The following table lists the navigation tabs displayed based on the item selected in the Exchange Infrastructure view.

Table 6. Exchange Infrastructure view - Tabs Displayed in the Primary View

Item Selected in Exchange Infrastructure View	Tabs Displayed in Primary View
Object Container (Roles, Sites, or Servers)	• Summary (All) • FAQts
Exchange Role Object	• Summary • FAQts
Site Object	• Summary • FAQts
Server Object	• Summary • Roles • AD Health • FAQts
Cluster Object	• Summary • FAQts

Description of embedded views

The Primary view changes in appearance and content, depending on which navigation tab is selected. The metrics and amount of detail displayed varies depending on the type of object you selected in the Exchange Infrastructure view.

The Primary view may contain the following embedded views (navigation tabs):

- Summary view

- Exchange Server Roles view

- Exchange Server AD Health view

- FAQts view

- Exchange Server Managed Availability view

Summary view

Selecting the **Summary** navigation tab displays the Summary view just below the heading. This view provides an inventory, in the form of tiles, of the objects that are related to the object or object container selected in the Exchange Infrastructure view. Each tile shows how many objects of the corresponding object type there are, as well as the count of objects of that type in each of the alarm states (fatal, critical, warning, and normal).

More detailed information for the selected object or object container is displayed in views below the Summary view.

On a tile, click the object type icon, the object type name, or the object count, to view an inventory popup that lists all objects of the corresponding type, along with their respective states. Click an object in the inventory popup to view details for that object in the Primary Summary view.

On a tile, click an alarm state or the number below it to view an alarms popup that shows the outstanding alarms of that state for the corresponding object type. Click an alarm in the alarms popup to view details about the selected alarm.

ⓘ | NOTE: If the alarm state has a count of zero, you cannot select that alarm state. When you click a normal state icon or count, the Exchange Explorer page is refreshed, but you do not see the alarms popup because there are no alarms associated with the normal state.

More detailed information associated with the object or object container selected in the Exchange Infrastructure view is displayed in views below the Summary view. The following table lists the embedded views displayed when the different objects or object containers are selected.

Table 7. Exchange Enterprise View - Embedded Views in Summary View

Item Selected in Exchange Enterprise View	Embedded Views in Summary View
Sites, Servers, or Clusters Object Container	• Top 3 CPU Consumers • Top 3 Memory Consumers • Top 3 Network Consumers • Top 3 Storage Consumers • Exchange Servers • Alarms
Roles Object Container	• Exchange Servers • Alarms
Mailbox Role	• Mailbox Features • Servers For This Role • Alarms
Client Access Role	• Client Access Features • Servers For This Role • Alarms
Hub Transport Role	• Hub Transport Features • Servers For This Role • Alarms
Edge Transport Role	• Edge Transport Features • Servers For This Role • Alarms
Unified Messaging Role	• Unified Messaging Features • Servers For This Role • Alarms
Site Object	• Servers In This Site • Top 3 CPU Consumers • Top 3 Memory Consumers • Top 3 Network Consumers • Top 3 Storage Consumers • Roles • Alarms

Table 7. Exchange Enterprise View - Embedded Views in Summary View

Item Selected in Exchange Enterprise View	Embedded Views in Summary View
Server Object	• Resource Utilization • Windows Services • Summary and Resource Information • Alarms
Cluster Object	• Windows Cluster Summary Information • Exchange Servers In This Cluster • Databases • Top 3 CPU Consumers • Top 3 Memory Consumers • Top 3 Network Consumers • Top 3 Storage Consumers • Alarms

Exchange Server Roles view

When an individual server is selected in the Exchange Infrastructure view, the **Roles** navigation tab appears. The content of this view is based on the Exchange role selected at the top of the Exchange Server Roles view. By default, each role view displays performance metrics and information for the Exchange roles being performed by the selected Exchange server. Additional metrics can optionally be displayed by enabling the corresponding collection group on the Exchange Metrics Management dashboard.

Exchange Server AD Health view

When an individual server is selected in the Exchange Infrastructure view, the **AD Health** navigation tab appears. This tab displays the Exchange Server AD Health view, which displays performance metrics about the DCs in your Active Directory® environment.

FAQts view

Selecting the **FAQts** navigation tab displays a list of all the questions available for all Exchange object types.

ⓘ | NOTE: The FAQts navigation tab is also available in the Exchange Environment dashboard. See Exchange Environment > FAQts tab for more information.

Exchange Server Managed Availability view

When an individual Exchange 2013 server is selected in the Exchange Infrastructure view, the **Managed Availability** navigation tab appears.

The **Managed Availability Recovery Action results** view on this tab displays a list of actions that the Managed Availability process triggered to address availability and latency issues or errors, in order to resume the service. For each action, the list displays the time when it was logged. In addition, the **Message** column contains the description of the recovery action. Click the **Probe Results** column to review the detected errors that possibly triggered the recovery action.

Exchange Rule Management dashboard

The Exchange Rule Management dashboard contains a sortable list of the conditional severity rules used by the Foglight for Exchange. From this dashboard you can quickly see which conditional rules are enabled/disabled, the states (fatal, critical or warning) with active conditions, recommended alarm threshold values, rules with current alarms, and a brief description of each rule.

For a description of the Exchange Rule Management dashboard and for more information on the Foglight for Exchange rules and how to enable, disable or modify them, see Foglight for Exchange rules.

Managing Exchange agents

The Exchange agents collect data from remote Exchange servers, which is then used to populate the health and performance metrics presented throughout the Foglight for Exchange dashboards and views.

Foglight for Exchange provides an additional dashboard that can be used to manage Exchange agent instances. Therefore, the Exchange agent instances can be created and managed using one of the following dashboards:

- Agent Status dashboard (**Dashboards** > **Administration** > **Agents** > **Agent Status**)

- Exchange Environment dashboard > Administration tab (**Dashboards** > **Exchange Environment** > **Administration tab**)

This chapter describes the Deploy Agent Package dialog, the Agent Setup wizard which is used to add and configure new Exchange agents and the Agent Management view which is populated with information about each Exchange agent instance. It also provides a description of the Exchange agent properties used to connect to the target server from which data is to be collected.

For more details, see these topics:

- Agent Status dashboard

- Exchange agent management

- Exchange agent properties

Agent Status dashboard

The Agent Status dashboard allows you to deploy agent packages and create agent instances one host at a time. Once an agent is created, use this dashboard to view agent information and edit the properties of one or more agents.

For more information about using the Agent Status dashboard to create and manage agent instances, see "Deploying agent packages to monitored hosts" in the *Foglight Administration and Configuration Help.*

Exchange agent management

The Exchange Environment dashboard > Administration tab allows you to deploy the Exchange agent package, create Exchange agent instances for one or more servers at a time, activate or deactivate Exchange agents, and start and stop collecting data.

The Administration tab consists of the following components:

- Tasks list

- Agent Management view

Tasks list

The Tasks list, in the upper left corner of the view, contains a list of tasks that can be performed from this view.

Figure 14. Tasks list

Clicking the **Deploy Agent Package** link on this list displays the Deploy Agent Package dialog, to specify the Foglight Agent Manager host to be used to deploy the Exchange agent package.

Deploy Agent Package

The Deploy Agent Package dialog appears when you select the **Deploy Agent Package** link in the Tasks list at the top of the Administration tab. This dialog contains a list of installed Foglight Agent Manager hosts.

To deploy the Exchange agent package:

1   Select the Deploy Agent Package link.

     The Deploy Agent Package dialog appears.
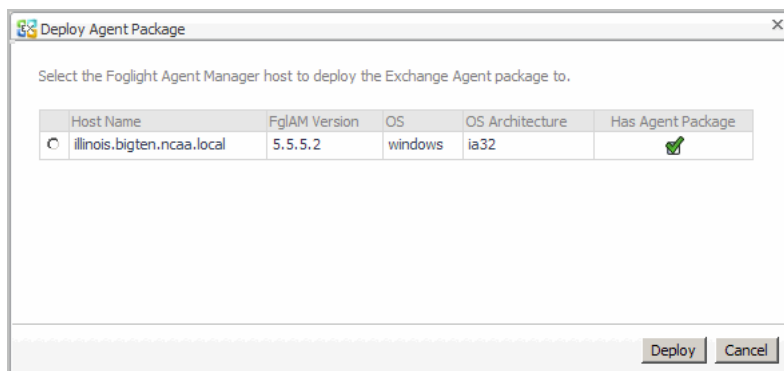
2   *S*elect the Foglight Agent Manager host to which the Exchange Agent package is to be deployed, and click **Deploy**.

     ⓘ | NOTE: To deploy the Exchange agent package to additional Foglight Agent Manager hosts, repeat Step 2 for each host.

3   Once successfully deployed, a confirmation dialog appears. Select the Close button in the upper right corner to close this dialog.

     ⓘ | NOTE: Because you are only deploying agent packages at this time, the newly deployed package will NOT appear in the Agent Management view.

Agent Management view

Once Exchange agent instances are added, the Agent Management view displays all of the agent instances configured to monitor Exchange metrics.

Figure 15. Agent Management view

The Agent Management view contains the following information for each configured Exchange agent instance.

Table 8. Agent Management view table
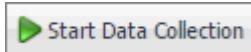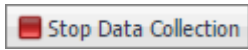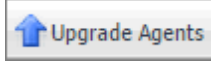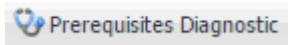
Column	Description
⊙	Use the selection check boxes to select agent instances for activation/ deactivation, starting/stopping data collection, editing properties, or removal.
Exchange Server	Displays the name of the servers being monitored by an Exchange agent instance.
Active	Indicates whether the agent instance for an Exchange server is activated. A green check mark in this check box indicates that the agent is active.
Data Collection	Indicates whether the agent instance is currently collecting data. A green check mark in this check box indicates that the agent is collecting data.
Agent Name	Displays the name of the agent instance created for an Exchange server.
Foglight Agent Manager Host	Displays the name of the Foglight Agent Manager Host assigned to each Exchange agent instance.
Private Properties	Click the Edit icon in this column to update the private agent properties using the **Agent Edit** wizard. For more information, see Edit private agent properties on page 35.
Secondary Properties	Click the Edit icon in this column to open the **Shared Properties** dialog box and review the properties defined. To enable / disable a powershell cmdlet, select / clear the **Monitor** check box for that cmdlet.
Download Log	Click the icon in this column to download the agent log.
Agent Version	Displays the agent version. A green check mark icon indicates that the agent version is up to date.

Use the buttons at the top of this list to manage your Exchange agent instances, as described in the following table.

Table 9. Agent Management view toolbar

Button	Description
⊕ Add	Select to launch the Agent Setup wizard to add and configure new Exchange agent instances. For more information, see Add and configure new agents on page 33.
🔄 Refresh	Select to refresh the information displayed in the Agent list. NOTE: Neither the Browser refresh icon nor F5 will refresh the Agent Management list.
⏻ Activate	Select to activate the selected agent instance(s).
⊖ Deactivate	Select to deactivate the selected agent instance(s).

Table 9. Agent Management view toolbar

Button	Description
▶ Start Data Collection	Select to start collecting data on the selected agent instance(s).
■ Stop Data Collection	Select to stop collecting data on the selected agent instance(s).
⊖ Remove	Select to remove the selected agent instance(s).
⬆ Upgrade Agents	Create and automatically assign credentials for Exchange agents created before version 5.6.6.
🔍 Prerequisites Diagnostic	Verify agent configuration. For more information, see Inspect agent prerequisites on page 36.

Add and configure new agents

The **Agent Setup** wizard guides you through the process of adding and configuring Exchange agent instances on one or more servers.

To add and configure a new agent:

1 At the top of the Agent Management view, click **Add** to launch the Agent Setup wizard.

2 On the **Prepare** page, carefully read the instructions about the steps that you need to take before proceeding with the wizard.

   You can either manually configure your Exchange environment for monitoring, or download and run a script that automatically configures the Exchange servers. To download the script, click **Script for configuring the Exchange settings**.

   When done, click **Next**.

3 On the **Select the Agent Manager Host** page, select the Foglight Agent Manager host to be used for the new Exchange agent instances.

   The table displays the following Foglight Agent Manager information (the same information is displayed on the Administration > Agents > Agent Hosts dashboard):

   • Host Name

   • Agent Manager version

   • OS type

   • OS Architecture

   The **Has Agent Package** column indicates whether the Exchange agent package is already deployed to the Agent Manager host(s). A green check in this column indicates that the Exchange agent package has been deployed.

   ⓘ | NOTE: This value is not aware of a package's version. Therefore, if you have upgraded the cartridge, you must deploy the new agent package even if this column indicates that the FglAM host already has an agent package.

   Click **Next**.

4 On the **Select Auto-Discover or Manual Configuration** page, indicate if you want to manually configure an agent to monitor a single Exchange server, or search your domain and auto-discover Exchange servers and create one or several agents. Click **Next**.

   • If you selected **Auto Discover**, continue with Step 5.

   • If you selected **Manual**, continue with Step 7.

5   On the **Select the Search Domain** page, specify the domain to be used to search for Exchange servers where Exchange agent instances are to be created and activated.

- **Domain**: Type the fully qualified name (*myDomain.com*) of a domain to search for Exchange servers.

- **User Name**: Type the user principal name (*myUser@myDomain.com*) of the account to be used to query Active Directory® on the selected domain.

- **Password**: Enter the password associated with the above user account.

- **Enable SSL For LDAP**: Selecting this check box if security LDAP is required.

Click **Next**.

6   On the **Select Servers** page, select one or more Exchange servers that you want to monitor.

ⓘ | **NOTE:** All selected servers will use the same user credentials for access.

This page displays the following information about the Exchange servers found on the selected domain:

- **Exchange Server**: The name of the Exchange server found on the selected domain.

- **Has Agent**: Indicates whether an Exchange agent instance has already been created for an Exchange server. A green check mark in this check box indicates that an agent instance is already created to monitor the Exchange server.

Click **Next**.

7   On the **Configure Agent Properties** page, review the Exchange agent properties, and edit them, as necessary.

- **Exchange Server(s)**: The name of one or more Exchange servers found on the selected domain.

- **Domain Controller**: The name of the domain controller found on the selected domain.

- **Is a Virtual Host**: Indicates if the selected Exchange server runs on a virtual host.

- **Virtual Environment**: The type of the virtual environment: VMware® or Hyper-V®. This property only appears if the selected Exchange server runs on a virtual host.

- **Communication Protocol**: Selects to run the WMI query through DCOM or WinRM.

- **WinRM Port**: The WinRM port number on the monitored server. This property only appears if the **Communication Protocol** is set to **WinRM through HTTP** or **WinRM through HTTPS**.

- **LDAP Authentication Scheme**: The authentication scheme used to connect to the LDAP server: **Simple** (default) or **Kerberos**.

- **Enable SSL For LDAP**: Indicates if the LDAP connection is secure or not (default).

- **Enable ActiveSync Collection**: Indicates if the collection of ActiveSync **Top N** users is disabled or enabled.

- **IIS Log Folder**: The file path to the IIS log on the Exchange Client Access Server.

- **ActiveSync Collection Time**: The time when the ActiveSync collection task starts.

- **Top N Users**: The number of top N users for which data is submitted to the Management Server.

Click **Next**.

8   On the **Assign and Validate Credentials** page, review the available credentials, and edit them, as necessary.

- To create a new credential, click **Add host(s) to a new credential**.

   - In the **Create New Credential and Assign** dialog box, create a credential that you want to use to access the monitored resource. Type a new credential name, domain, user name, password, and lockbox, and click **Submit**.

- To select an existing credential, click **Add host(s) to a new credential**.

- In the **Select Existing Credential** dialog box, select an existing credential, and click **Submit**.

Click **Next**.

9 On the **Summary** page, review the configuration settings chosen for the new agent, and its prerequisite diagnostics, including:

- **Agent Name**: The name of the selected Exchange agent instance.

- **Agent Creation Result**: **Success** or **Error**.

- **Diagnostic Result**:

  - **Success**: The agent instance can connect to the monitored Exchange server and collect data.

  - **Error**: The agent instance cannot connect to the monitored Exchange server instance and collect data. Click this link to find out what causes this error. Carefully review the information in the popup that appears in order address the problem.

Click **Finish**.

The **Agent Setup** wizard closes. The Exchange agent is now added and configured, and appears in the **Agent Management** view, on the **Administration** tab.

Edit private agent properties

The **Agent Edit** wizard guides you through the process of editing private agent properties.

To edit private agent properties:

1 In the Agent Management view, in the row containing the agent whose properties you want to edit, click the **Private Properties** column.

2 In the **Agent Setup** wizard, on the **Configure Agent Properties** page, review the Exchange agent properties, and edit them, as necessary.

- **Exchange Server(s)**: The name of one or more Exchange servers found on the selected domain.

- **Domain Controller**: The name of the domain controller found on the selected domain.

- **Is a Virtual Host**: Indicates if the selected Exchange server runs on a virtual host.

- **Virtual Environment**: The type of the virtual environment: VMware® or Hyper-V®. This property only appears if the selected Exchange server runs on a virtual host.

- **Communication Protocol**: Selects to run the WMI query through DCOM or WinRM.

- **WinRM Port**: The WinRM port number on the monitored server. This property only appears if the **Communication Protocol** is set to **WinRM through HTTP** or **WinRM through HTTPS**.

- **LDAP Authentication Scheme**: The authentication scheme used to connect to the LDAP server: **Simple** (default) or **Kerberos**.

- **Enable SSL For LDAP**: Indicates if the LDAP connection is secure or not (default).

- **Enable ActiveSync Collection**: Indicates if the collection of ActiveSync **Top N** users is disabled or enabled.

- **IIS Log Folder**: The file path to the IIS log on the Exchange Client Access Server.

- **ActiveSync Collection Time**: The time when the ActiveSync collection task starts.

- **Top N Users**: The number of top N users for which data is submitted to the Management Server.

Click **Next**.

3 On the **Assign and Validate Credentials** page, review the available credentials, and edit them, as necessary.

- To create a new credential, click **Add host(s) to a new credential**.

    - In the **Create New Credential and Assign** dialog box, create a credential that you want to use to access the monitored resource. Type a new credential name, domain, user name, password, and lockbox, and click **Submit**.

- To select an existing credential, click **Add host(s) to a new credential**.

    - In the **Select Existing Credential** dialog box, select an existing credential, and click **Submit**.

    Click **Next**.

4   On the **Summary** page, review the newly updated configuration settings, then click **Finish**.

    The **Agent Edit** wizard closes. The private properties are now updated.

Inspect agent prerequisites

If any monitoring agents are unable to collect data or connect to the monitored Exchange servers, you can inspect the underlying cause using the **Prerequisites Diagnostic** button on the Agent Management toolbar.

To examine agent prerequisites:

1   In the Agent Management view, select the row containing the agent whose prerequisites you want to examine, and click **Prerequisites Diagnostic** on the toolbar.

2   Observe the results in the **Prerequisites Diagnostic** dialog box.

- **Agent Name**: The name of the selected Exchange agent instance.

- **Monitored Host**: The name of the host on which the monitored Exchange server is running.

- **Diagnostic Result**:

    - **Success**: The agent instance can connect to the monitored Exchange server and collect data.

    - **Error**: The agent instance cannot connect to the monitored Exchange server instance and collect data. Click this link to find out what causes this error. Carefully review the information in the popup that appears in order address the problem.

Exchange agent properties

The primary properties for an Exchange agent instance are required to connect to the target server from which data is to be collected. These properties are either specified when the agent instance is configured or they have a pre-defined default value.

To display an agent's properties page, use one of the following methods:

- From the navigation panel, navigate to **Dashboards > Administration > Agents > Agent Properties**. On the Agent Properties dashboard, select an agent. The Properties panel is displayed, showing the current properties for the selected agent instance.

- From the navigation panel, navigate to **Dashboards > Administration > Agents > Agent Status**. On the Agent Status dashboard, select an agent from the list and click **Edit > Edit Properties**. The Agent Status dashboard refreshes, showing the current properties for the selected agent instance.

Figure 16. Exchange agent properties

For more information on using the Agent Status dashboard to edit agent properties, see the *Foglight Administration and Configuration Help*.

The following tables describe the properties that can be modified for either an individual or all Exchange agent instances, by clicking **Modify the private properties for this agent** or **Modify the properties of all ExchangeAgent agents** links, respectively.

- Configuration

- Monitor

- Data Collection Scheduler

> ⓘ | NOTE: It is recommended to configure the agent properties that are to be applied globally to the majority of the Exchange agent instances, then modify the private properties of those individual agents, as required.

Configuration

Use the properties in the Configuration panel to specify the target server from which data is to be collected, to define what cartridge is to be used to collect the host metrics, and specify whether the target server is a virtual machine.

> ⓘ | NOTE: The properties defined here apply to either a single Exchange agent or all agents with the type of ExchangeAgent based on the option selected in the Property Scope area at the top of the Agent Status dashboard.

Table 10. Configuration panel

Property	Default	Description
Host Name	N/A	The fully qualified domain name (*myServer.myDomain.com*) of the target server from which data is to be collected.
Domain Controller Name	N/A	The fully qualified domain name (*myServer.myDomain.com*) of a domain controller, in the same domain where the Exchange server(s) reside. This domain controller is used to capture Active Directory® related information which Exchange is dependant upon. NOTE: This prerequisite must be met on this domain controller not just the Exchange server.
Host Collector		The host metrics (CPU, Memory, Network, Storage) displayed in Foglight for Exchange can be collected by the Foglight for Exchange, Foglight for Hyper-V, or Foglight for VMware cartridge. NOTE: If you have Foglight for Hyper-V or Foglight for VMware cartridge installed, it is best to select the corresponding option and use the metrics collected by that cartridge. If you are collecting host metrics on a virtual machine using the Exchange cartridge, performance counters may be subject to known inconsistencies because in-guest performance counters can be skewed by virtualization. To collect the most accurate host metrics on a virtual machine, use the Foglight for VMware or Foglight for Hyper-V cartridge to collect these metrics. Select the host collector to be used to collect host metrics: • **Exchange (included)** - if selected, all host collections are collected based on the interval set in the collection schedule. • **Hyper-V (must be installed)** - if selected, the logical disk space metrics are collected based on the interval set in the collection schedule; all other host metrics are collected based on the settings in the Foglight for Hyper-V cartridge. The "Memory In Use" is not available and will be blank in this configuration. • **VMware (must be installed)** - if selected, the host collections are skipped regardless of the value in the collection schedule. That is, all host collections are collected based on the settings in the Foglight for VMware cartridge.
Communication Protocol	DCOM	Selects to run the WMI query through **DCOM**, **WinRM Through HTTP**, or **WinRM Through HTTPS**.
WinRM Port	5985	Determines the WinRM port number in the monitored server.
Enable SSL For LDAP	False	Enables/ disables security LDAP connection.
LDAP Authentication Scheme	Basic	Supports both *Basic* and *Kerberos* authentication schemes, when connected to LDAP server.
Network Connection TimeOut	21000	Specifies how long (milliseconds) the system waits for a response from the remote server before it times out. That is, this is the time in milliseconds that a data collection query will run before it is presumed to have failed and the network connection is terminated.
ActiveSync Activities Collection	True	Enable or disable the collection of ActiveSync topN users.
ActiveSync Activity Log Folder		Defines the IIS log path in the Exchange Client Access Server.

Table 10. Configuration panel

Property	Default	Description
ActiveSync Activity Collection Time		Defines when to start the ActiveSync collection task.
ActiveSync Top Email Sender and Receiver		Determines the number of top N users for which data is submitted to the Management Server

Monitor

The selection made in the Monitor panel of the agent properties page defines the services that are to be monitored by the selected agent(s).

ⓘ | NOTE: The setting in this section is global and applies to all agents with the type of ExchangeAgent.

The services monitored by default are listed in the following table.

Table 11. Monitored services

Server Role	Service Name
HubTransport	MSExchangeEdgeSync
	MSExchangeTransport
	MSExchangeTransportLogSearch
	MSExchangeADTopology
	Netlogon
	IISADMIN
	W3SVC
UnifiedMessaging	MSExchangeUM
	MSSpeechService
	MSExchangeADTopology
	Netlogon
	IISADMIN
	W3SVC
EdgeTransport	MSExchangeAntispamUpdate
	EdgeCredentialSvc
	ADAM_MSExchange
	MSExchangeTransport
	MSExchangeTransportLogSearch
ClientAccess	MSExchangePop3
	MSExchangeImap4
	MSExchangeServiceHost
	MSExchangeFDS
	MSExchangeADTopology
	Netlogon
	IISADMIN
	W3SVC

Server Role	Service Name
Mailbox	MSExchangeIS
	MSExchangeMailSubmission
	MSExchangeMailboxAssistants
	MSExchangeRepl
	MSExchangeSA
	MSExchangeSearch
	MSExchangeServiceHost
	MSExchangeTransportLogSearch
	MSExchangeADTopology
	Netlogon
	IISADMIN
	W3SVC
win2k3	RpcSs
	NtLmSsp
	SamSs
win2k8	LanmanWorkstation
	LanmanServer
	RpcSs
	SamSs
	Winmgmt

Data Collection Scheduler

The selection made in the Data Collection Scheduler panel defines the data collection schedule to be used to collect performance metrics.

ⓘ | NOTE: The settings in this section are global and apply to all agents with the type of ExchangeAgent.

The following table lists the collectors being used by the cartridge and the default collection interval for each (as defined in the *defaultSchedule*).

The collections marked with an asterisk indicate collections with corresponding sections on the Exchange Metrics Management dashboard. When using the *defaultSchedule*, you can use either this setting on the agent properties page or the Metrics Management dashboard to modify these collection intervals. For those collectors not marked with an asterisk or if you are using a user-defined data collection schedule, you must use this setting to manage the data collection intervals. For more information on the Exchange Metrics Management dashboard, see Managing Exchange metrics.

Table 12. Data Collection Scheduler

Collector Name	Default Collection Interval
Transport Detail*	4 minutes
Unified Messaging Detail*	4 minutes
AD Access Cache Detail	4 minutes
Information Store Detail*	4 minutes
Information Store File Sizes Detail	30 minutes
Client Access Detail*	4 minutes
ASPNET Detail	4 minutes
Cluster Detail	4 minutes

Table 12. Data Collection Scheduler

Collector Name	Default Collection Interval
Host Hardware Detail	1 minute
Dot Net Framework Detail	4 minutes

Reporting on your Exchange environment

Foglight for Exchange comes with a set of pre-defined reports that can be run from the Reports dashboard. Using this dashboard, operators can run reports, build custom reports, and view generated reports. Advanced Operators can also schedule and manage reports.

To access the Reports dashboard, from the Foglight navigation pane, select **Dashboards > Reports**. From the Reports dashboard, click the links provided as described below:

- Click **Build a Custom Report** to choose the building blocks for your custom report using the Create a Report wizard.

- Click **Run a Report** to quickly generate a one-time report based on a template, using the Run a Report wizard.

- Click **Manage Reports** to access the Manage Reports dashboard, where you can download, delete and view details about generated reports.

> ⓘ NOTE: You can also create a new report using the General tab on the Action panel to the right of any dashboard. Select the Create report option under the Other Actions list to launch the Create Report wizard to define the components to be used to build a new report.

For more information on using the Foglight reporting features, see the *Foglight User Guide or* online help.

Foglight for Exchange reports

Several different report templates are available with Foglight for Exchange, and together they provide a detailed analysis of the performance and health of your Microsoft® Exchange environment over time.

Each report template uses report parameters to define the content of the report. Use a template's default report parameters to quickly generate or schedule a report or optionally change the report parameters to customize the report to better meet your requirements.

The following table contains an alphabetical list of the Foglight for Exchange reports. It also provides a brief description of the report and the report parameters used to define the content. Report parameters marked with an asterisk (*) are required and you must specify this parameter before the report can be generated.

> ⓘ NOTE: If you are using the Templates by Module tab on the Generate Report dialog, click the expansion box to the left of the Exchange entry to view the Exchange reports.

Table 13. Foglight for Exchange report templates

Report Name	Report Description	Input Parameters: Default Value
ActiveSync Activities Report	Displays the data for the top N users that sent and received emails by using ActiveSync.	• * lastNDate: Null • ClientAccessRoles • EndDate: Today
Client Access FAQTS	Displays the Client Access FAQTS.	• Time Range: Last 4 hours • * servers

Table 13. Foglight for Exchange report templates

Report Name	Report Description	Input Parameters: Default Value
Diagnostic Test - History	Displays the result for all runs of an Exchange Diagnostic Test.	• Time Range: Last 4 hours • * Test • Target Server Filter: Null
Edge Transport FAQTS	Displays the Edge Transports FAQTS.	• Time Range: Last 4 hours • * servers
EXC Alarms Report	Displays a list of the outstanding Foglight for Exchange alarms.	• Time Range: Last 4 hours
EXC Servers Available CPU and Memory - Detail	Shows the top and bottom Exchange Servers based on available CPU and memory.	• Time Range: Last 4 hours • serverCount: 25
EXC Servers Available CPU and Memory - Summary	Shows the top and bottom five Exchange Servers based on available CPU and memory.	• Time Range: Last 4 hours
EXC Servers Logical Disks With X% Or Less Free Storage - Detail	Displays the server count, logical disk count, total disk space available, and total disk space used for all Exchange Servers with *x*% or less free storage. It also displays additional details.	• Time Range: Last 4 hours • * percent:
EXC Servers Logical Disks With X% Or Less Free Storage - Summary	Displays the server count, logical disk count, total disk space available, and total disk space used for all Exchange Servers with *x*% or less free storage.	• Time Range: Last 4 hours • * percent:
EXC Servers Logical Disks With X% Or More Free Storage - Detail	Displays the server count, logical disk count, total disk space available, and total disk space used for all Exchange Servers with *x*% or more free storage. It also displays additional details.	• Time Range: Last 4 hours • * percent:
EXC Servers Logical Disks With X% Or More Free Storage - Summary	Displays the server count, logical disk count, total disk space available, and total disk space used for all Exchange Servers with *x*% or more free storage.	• Time Range: Last 4 hours • * percent:
EXC Servers Utilization - Detail	Shows the top and bottom Exchange Servers based on CPU Used Hz, CPU percent privileged time, memory consumed, disk utilization, disk transfer rate and network transfer rate for the specified time range. It also displays additional details. NOTE: The CPU Used Hz metric can be used to compare relative CPU utilization across different systems.	• Time Range: Last 4 hours • serverCount: 25
EXC Servers Utilization - Summary	Shows the top and bottom five Exchange Servers based on CPU Used Hz, CPU percent privileged time, memory consumed, disk utilization, disk transfer rate and network transfer rate for the specified time range. NOTE: The CPU Used Hz metric can be used to compare relative CPU utilization across different systems.	• Time Range: Last 4 hours
Hub Transport FAQTS	Shows the Hub Transport FAQTS.	• Time Range: Last 4 hours • * servers

Table 13. Foglight for Exchange report templates

Report Name	Report Description	Input Parameters: Default Value
Mail Flow Report	Displays the summary of a Mailflow Diagnostic Test.	• Time Range: Last 4 hours • * Test • Target Server Filter: Null • Destination Filter: Null
Mailbox FAQTS	Shows the Mailbox FAQTS.	• Time Range: Last 4 hours • * servers
Replication Report	Displays the summary of a Replication Health Diagnostic Test.	• Time Range: Last 4 hours • * Test • Target Server Filter: Null
Servers FAQTS	Shows the Servers FAQTS.	• Time Range: Last 4 hours • * servers
Sites FAQTS	Shows the Sites FAQTS.	• Time Range: Last 4 hours
Unified Messaging FAQTS	Shows the Unified Messaging FAQTS.	• Time Range: Last 4 hours • * servers

Foglight for Exchange views

Foglight displays monitoring data in views that group, format, and display data. The main types are described below.

Dashboards are top-level views that contain lower-level views. The dashboards supplied with Foglight, as well as those created by users, are accessible from the navigation panel.

Lower-level views can be added to dashboards or can be accessed by drilling down from a dashboard. They receive and display data directly from the Foglight Management Server or from other views. Some views filter or select data that appears in other views in the same dashboard. Some are tree views with expandable nodes for selecting servers, applications or data.

This chapter provides a description of the metrics displayed in the lower-level views on the Foglight for Exchange dashboards. The beginning of the chapter explains which views are available to monitor the health of your Exchange servers broken down by Exchange role, server or site.

- Role views
- Exchange Server views
- Site views
- Cluster views

The latter part of the chapter provides a detailed description of the information and metrics displayed in the embedded views.

- Description of Embedded views

Role views

Server roles allow administrators to split up the functions of an Exchange server and place each role, or a combination of roles, on different servers. There are five server roles that can be installed in an Exchange organization:

- Edge Transport is installed on a stand alone server that is not a member of the Active Directory® domain and routes mail between the Exchange organization and the Internet. It provides protection against spam and viruses.
- Hub Transport is the mail routing server responsible for routing mail within the Exchange organization.
- Client Access is the server that users connect to using their mail client, mobile device or web browser. The Client Access role is installed in every Exchange organization and every Active Directory site that has the Mailbox server role installed.
- Mailbox which holds the Exchange databases where the user mailboxes and public folders reside.
- Unified Messaging is responsible for merging your VOIP infrastructure with your Exchange system.

The following views are available to monitor the health and performance of the servers hosting these Exchange roles.

- Exchange Roles Environment Summary (All Exchange Roles) view
- Client Access 2013 Role Environment Summary view
- Edge Transport Role Environment Summary view

- Hub Transport Role Environment Summary view

- Mailbox Role Environment Summary view

- Unified Messaging Role Environment Summary view

- Exchange Roles Explorer Summary (All Roles) view

- Client Access 2013 Role Explorer Summary view

- Edge Transport Role Explorer Summary view

- Hub Transport Role Explorer Summary view

- Mailbox 2013 Role Explorer Summary view

- Unified Messaging Role Explorer Summary view

Exchange Roles Environment Summary (All Exchange Roles) view

The Exchange Roles Environment Summary (All Exchange Roles) view displays a role tile for each Exchange role (Hub Transport, Mailbox, Client Access, and Unified Messaging) in your Exchange environment. These role tiles list the Exchange features enabled in each role and the overall role status per Exchange server.

The following table lists the Exchange features for which additional data is available for each type of Exchange role.

ⓘ | NOTE: Exchange features that are not enabled in your Exchange environment will be disabled on the role tile.

Table 14. Exchange Roles Environment Summary (All Exchange Roles) view
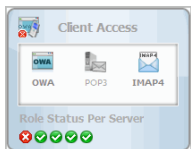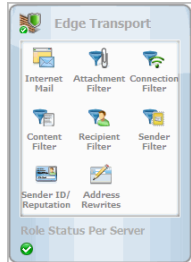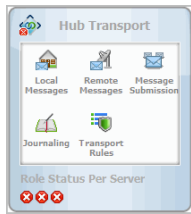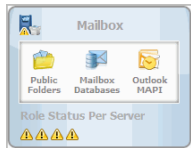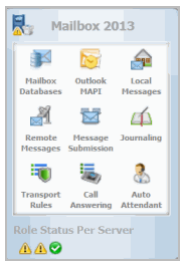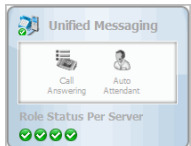
Exchange Role		Exchange Features
Client Access 2007, 2010		• OWA • POP3 • IMAP4
Client Access 2013		• OWA • POP3 • IMAP4
Edge Transport		• Internet Mail • Attachment Filter • Connection Filter • Content Filter • Recipient Filter • Sender Filter • Sender ID/Reputation • Address Rewrites

Table 14. Exchange Roles Environment Summary (All Exchange Roles) view

Exchange Role		Exchange Features
Hub Transport		• Local Messages • Remote Messages • Message Submission • Journaling • Transport Rules
Mailbox 2007, 2010		• Public Folders • Mailbox Databases • Outlook MAPI
Mailbox 2013		• Mailbox Databases • Outlook MAPI • Local Messages • Remote Messages • Message Submission • Journaling • Transport Rules • Call Answering • Auto Attendant
Unified Messaging (UM)		• Call Answering • Auto Attendant

How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Environment**.

2 From the Monitoring tab, select the **Roles** tile.

3 From the Object Tree view, select **Summary**.

The Exchange Roles Environment Summary (All Exchange Roles) view appears in the Object Summary view of the Quick View on the Exchange Environment dashboard.

To view metrics and information regarding an individual Exchange role, click that role tile or select the role from the Object Tree view.

Client Access 2013 Role Environment Summary view

The Client Access Role Environment Summary view displays a role tile for the selected role, showing the Exchange features and the role status per server. In addition to the role tile, this view provides additional metrics and information that pertains to the selected Exchange role.

Figure 17. Client Access 2013 Role Environment Summary view
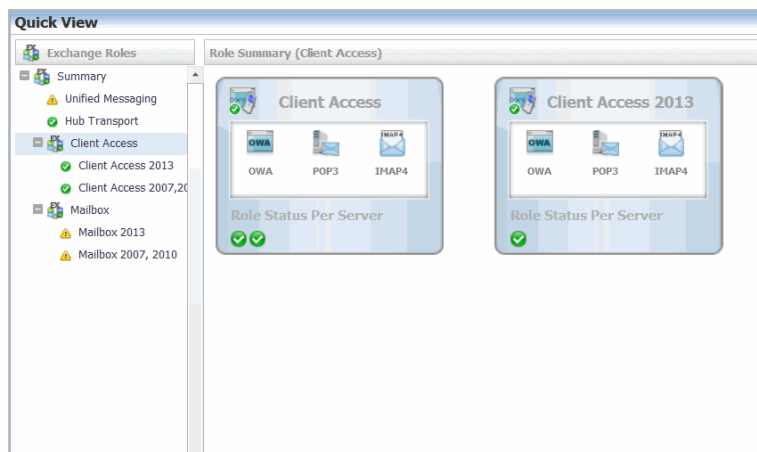
How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Environment**.

2 From the Monitoring tab, select the **Roles** tile.

3 Click the **Client Access** tile (or from the Object Tree view, select **Client Access**).

The Client Access Role Environment Summary view appears in the Object Summary view of the Quick View on the Exchange Environment dashboard.

Embedded views

In addition to the role tile, the following embedded views are displayed:

- Server Role Feature State view

- Top 3 ASP.NET Current Requests views

- Top 3 ASP.NET Requests In App Queue views

- Role Servers view

Edge Transport Role Environment Summary view

The Edge Transport Role Environment Summary view displays a role tile for the selected role, showing the Exchange features and the role status per server. In addition to the role tile, this view provides additional metrics and information that pertains to the selected Exchange role.

Figure 18. Edge Transport Role Environment Summary view
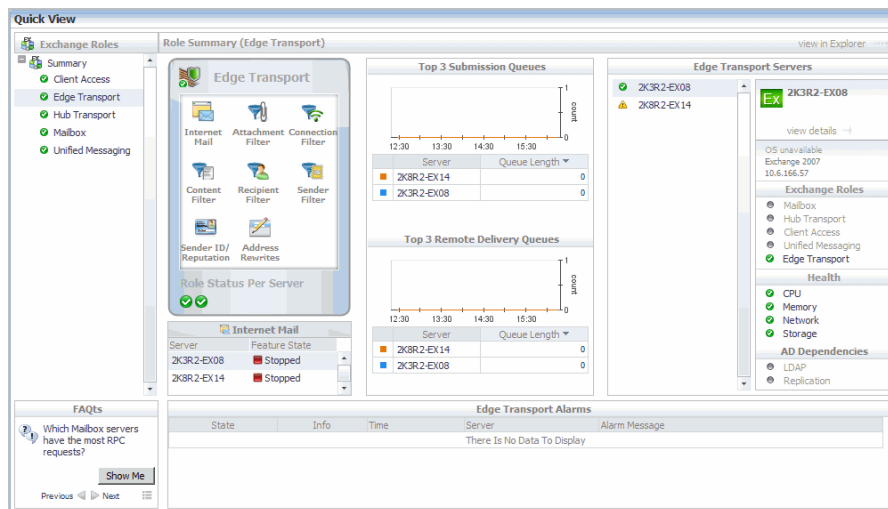
How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Environment**.

2 From the Monitoring tab, select the **Roles** tile.

3 Click the **Edge Transport** tile (or from the Object Tree view, select **Edge Transport**).

The Edge Transport Role Environment Summary view appears in the Object Summary view of the Quick View on the Exchange Environment dashboard.

Embedded views

In addition to the role tile, the following embedded views are displayed:

* Server Role Feature State view

* Top 3 Submission Queues view

* Top 3 Remote Delivery Queues view

* Role Servers view

Hub Transport Role Environment Summary view

The Hub Transport Role Environment Summary view displays a role tile for the selected role, showing the Exchange features and the role status per server. In addition to the role tile, this view provides additional metrics and information that pertains to the selected Exchange role.

Figure 19. Hub Transport Role Environment Summary view
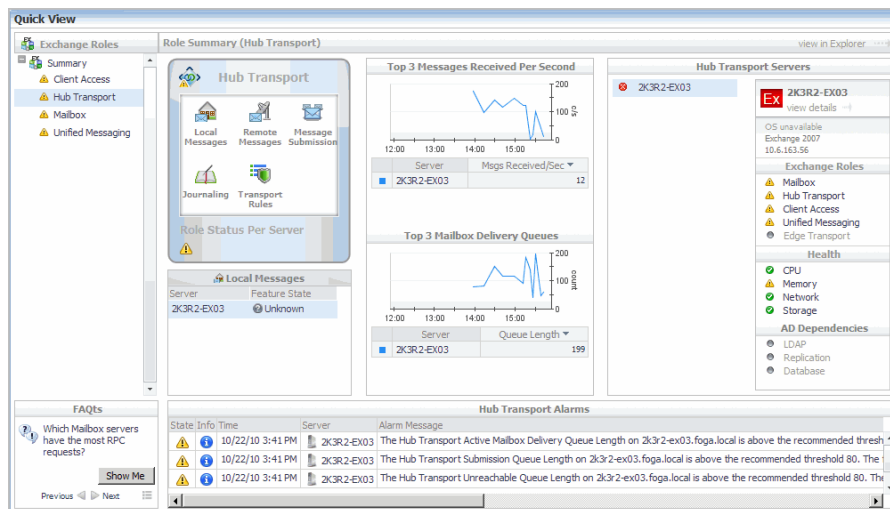
How to get here

1 From the Foglight navigation panel, select **Dashboards** > **Exchange** > **Exchange Environment**.

2 From the Monitoring tab, select the **Roles** tile.

3 Click the **Hub Transport** tile (or from the Object Tree view, select **Hub Transport**).

The Hub Transport Role Environment Summary view appears in the Object Summary view of the Quick View on the Exchange Environment dashboard.

Embedded views

In addition to the role tile, the following embedded views are displayed:

- Server Role Feature State view
- Top 3 Messages Received/sec view
- Top 3 Mailbox Delivery Queues view
- Role Servers view

Mailbox Role Environment Summary view

The Mailbox Role Environment Summary view displays a role tile for the selected role, showing the Exchange features and the role status per server. In addition to the role tile, this view provides additional metrics and information that pertains to the selected Exchange role.

Figure 20. Mailbox Role Environment Summary view
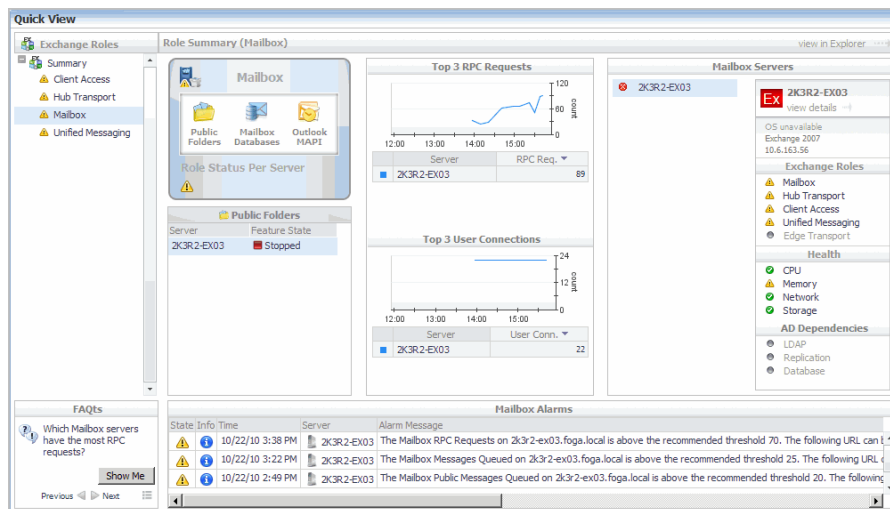
How to get here

1. From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Environment**.

2. From the Monitoring tab, select the **Roles** tile.

3. Click the **Mailbox** tile (or from the Object Tree view, select **Mailbox)**.

   The Mailbox Role Environment Summary view appears in the Object Summary view of the Quick View on the Exchange Environment dashboard.

Embedded views

In addition to the role tile, the following embedded views are displayed:

- Server Role Feature State view

- Top 3 RPC Requests view

- Role Servers view

Unified Messaging Role Environment Summary view

The Unified Messaging Role Environment Summary view displays a role tile for the selected role, showing the Exchange features and the role status per server. In addition to the role tile, this view provides additional metrics and information that pertains to the selected Exchange role.

Figure 21. Unified Messaging Role Environment Summary view
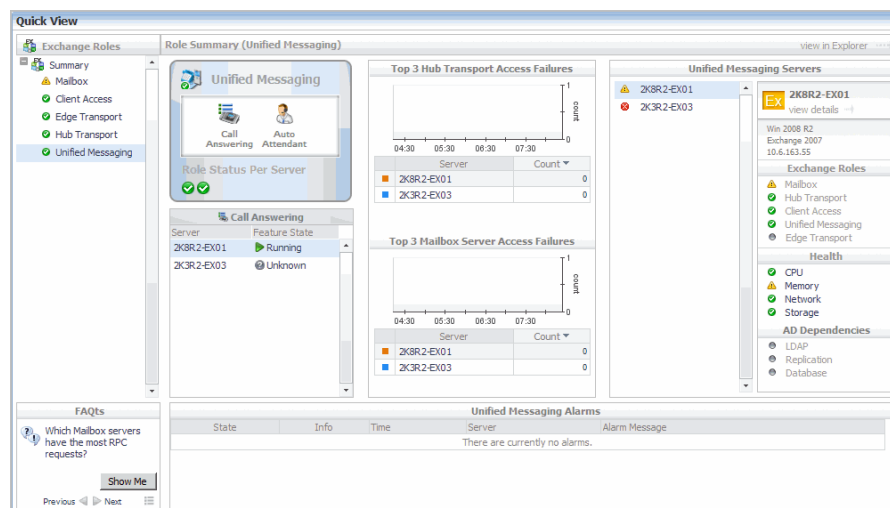
How to get here

1 From the Foglight navigation panel, select **Dashboards** > **Exchange** > **Exchange Environment**.

2 From the Monitoring tab, select the **Roles** tile.

3 Click the **Unified Messaging** tile (or from the Object Tree view, select **Unified Messaging**).

   The Unified Messaging Role Environment Summary view appears in the Object Summary view of the Quick View on the Exchange Environment dashboard.

Embedded views

In addition to the role tile, the following embedded views are displayed:

• Server Role Feature State view

• Top 3 Hub Transport Access Failures view

• Top 3 Mailbox Server Access Failures view

• Role Servers view

Exchange Roles Explorer Summary (All Roles) view

The Exchange Roles Explorer Summary (All Roles) view displays a list of all the Exchange servers assigned to the different Exchange roles in your environment.

Figure 22. Exchange Roles Explorer Summary (All Roles) view
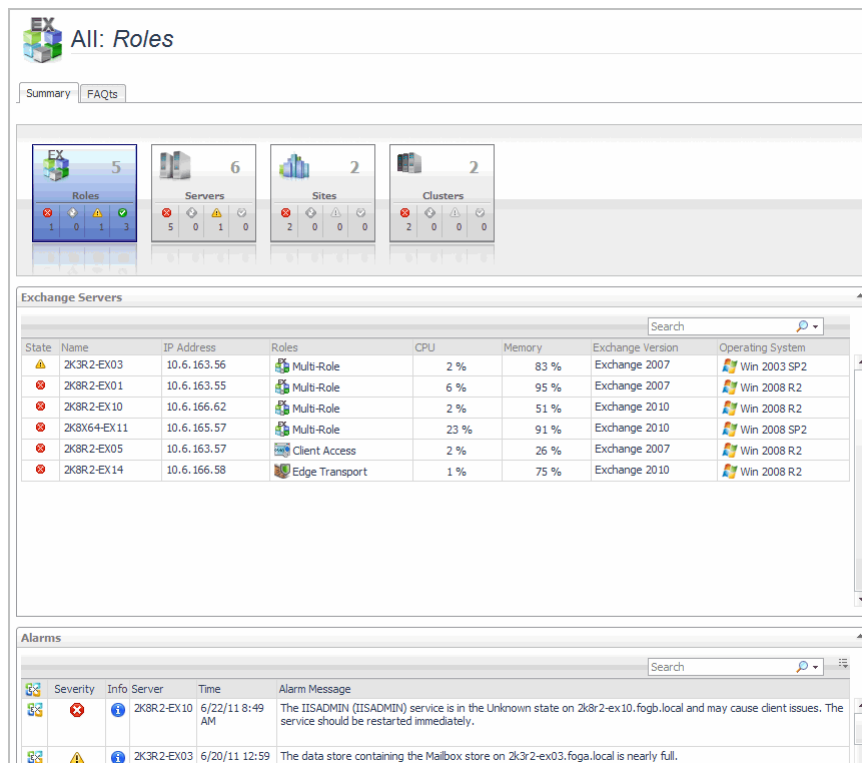
How to get here

1 From the Foglight navigation panel, select **Dashboards** > **Exchange** > **Exchange Explorer**.

2 From the Exchange Infrastructure view, select the **Roles** container object.

The Exchange Roles Explorer Summary (All Roles) view appears in the Primary view on the Exchange Explorer dashboard.

(i) | NOTE: You can also click the view in Explorer link on the Exchange Roles Environment Summary (All Exchange Roles) view.

Embedded views

This view is made up of the following embedded views:

- Exchange Servers view (Exchange Explorer Summary)

- Alarms view

Client Access 2013 Role Explorer Summary view

The Client Access Role Explorer Summary view displays more detailed metrics about the selected Client Access role.

Figure 23. Client Access 2013 Role Explorer Summary view
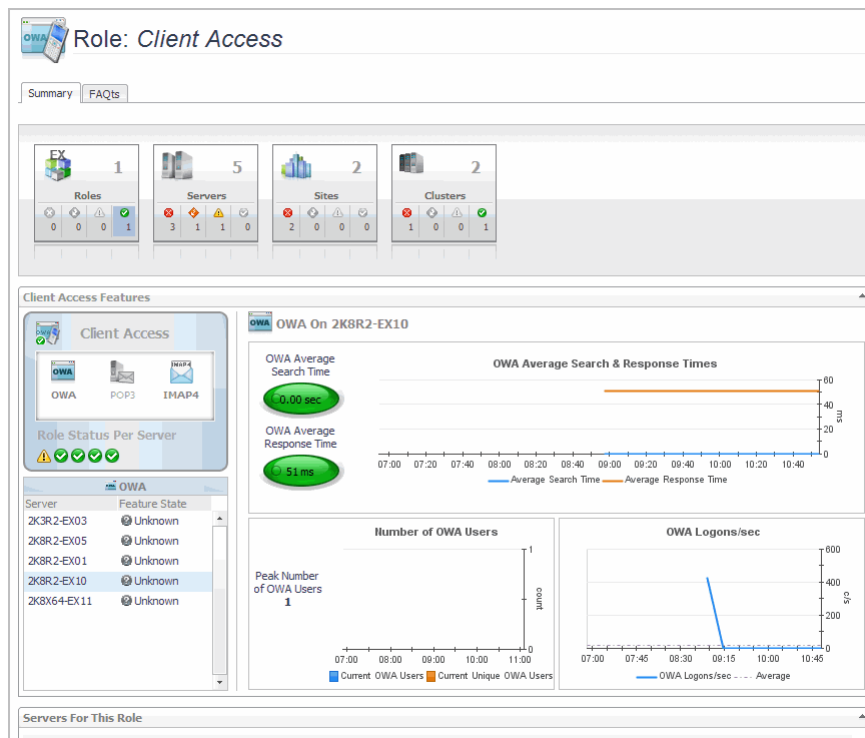
How to get here

1   From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2   Use one of the following methods to display this view:

  •   From the Exchange Infrastructure view (under the Dashboards in the navigation panel), select **Client Access** under the Roles object container.

  •   From the Roles tile (at the top of the Summary view), click the Roles icon, title or count. On the Roles inventory dialog, select **Client Access**.

  The Client Access Role Explorer Summary view appears in the Primary view on the Exchange Explorer dashboard.

  ⓘ   **NOTE:** You can also click the view in Explorer link on the Client Access Role Environment Summary view.

3   On the Client Access tile, select the feature for which data is to be displayed.

4   On the server list below the role tile, select the server for which data is to be displayed.

  The Client Access Features view displays metrics based on the feature selected in the role tile and the server selected in the server list.

Embedded views

In addition to the role tile and current alarms, this view is made up of the following embedded views:

  •   Server Role Feature State view

  •   Client Access Features view

  •   Servers For This Role view

Edge Transport Role Explorer Summary view

The Edge Transport Role Explorer Summary view displays more detailed metrics about the selected Edge Transport role.

Figure 24. Edge Transport Role Explorer Summary view
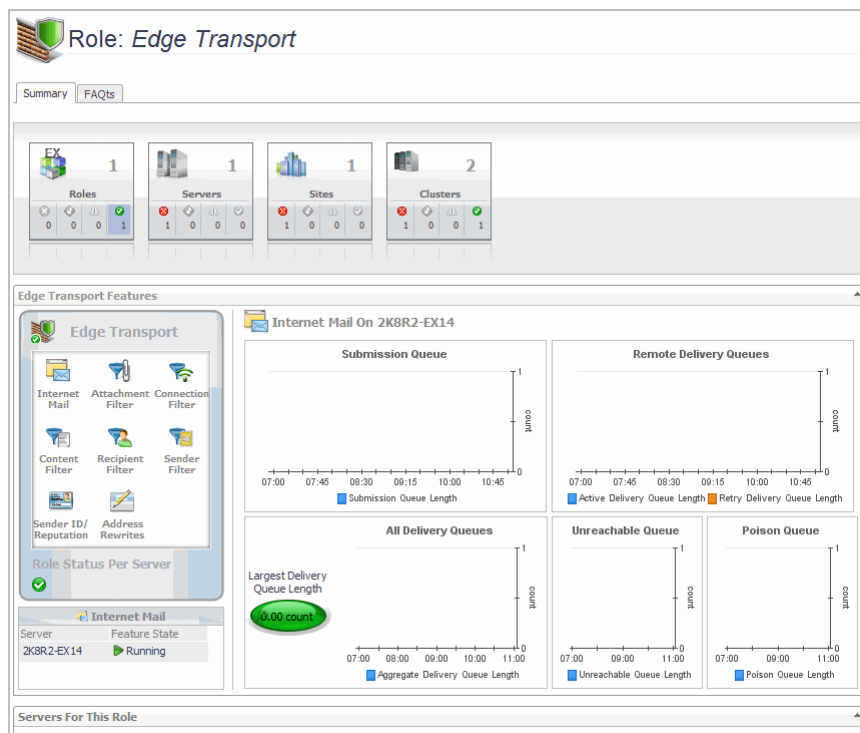
How to get here

1 From the Foglight navigation panel, select **Dashboards** > **Exchange** > **Exchange Explorer**.

2 Use one of the following methods to display this view:

- From the Exchange Infrastructure view (under the Dashboards in the navigation panel), select **Edge Transport** under the Roles object container.

- From the Roles tile (at the top of the Summary view), click the Roles icon, title or count. On the Roles inventory dialog, select **Edge Transport.**

The Edge Transport Role Explorer Summary view appears in the Primary view on the Exchange Explorer dashboard.

> ⓘ NOTE: You can also click the view in Explorer link on the Edge Transport Role Environment Summary view.

3 On the Edge Transport tile, select the feature for which data is to be displayed.

4 On the server list below the Edge Transport tile, select the server for which data is to be displayed.

The Edge Transport Features view displays metrics based on the feature selected in the tile and the server selected in the server list.

Embedded views

In addition to the role tile and current alarms, this view is made up of the following embedded views:

- Server Role Feature State view

- Edge Transport Features view
- Servers For This Role view

Hub Transport Role Explorer Summary view

The Hub Transport Role Explorer Summary view displays more detailed metrics about the selected Hub Transport role.

Figure 25. Hub Transport Role Explorer Summary view
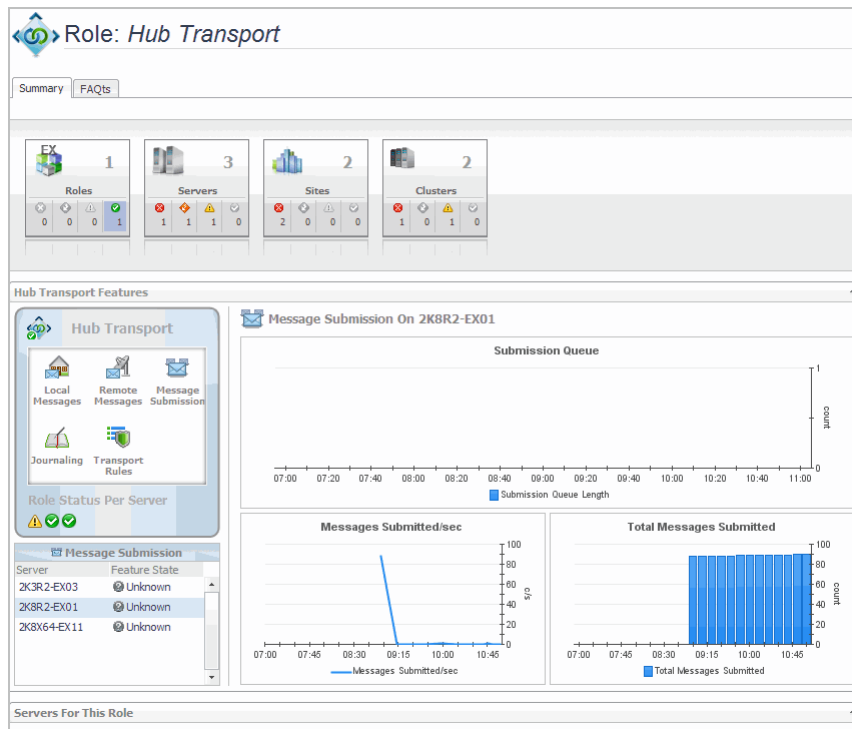
How to get here

1   From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2   Use one of the following methods to display this view:

- From the Exchange Infrastructure view (under the Dashboards in the navigation panel), select **Hub Transport** under the Roles object container.

- From the Roles tile (at the top of the Summary view), click the Roles icon, title or count. On the Roles inventory dialog, select **Hub Transport.**

The Hub Transport Role Explorer Summary view appears in the Primary view on the Exchange Explorer dashboard.

> ⓘ | **NOTE:** You can also click the view in Explorer link on the Hub Transport Role Environment Summary view.

3   On the Hub Transport tile, select the feature for which data is to be displayed.

4   On the server list below the tile, select the server for which data is to be displayed.

The Hub Transport Features view displays metrics based on the feature selected in the tile and the server selected in the server list.

Embedded views

In addition to the role tile and current alarms, this view is made up of the following embedded views:

- Server Role Feature State view
- Hub Transport Features view
- Servers For This Role view

Mailbox 2013 Role Explorer Summary view

The Mailbox Role Summary view displays more detailed metrics about the selected Mailbox role.

Figure 26. Mailbox 2013 Role Explorer Summary view
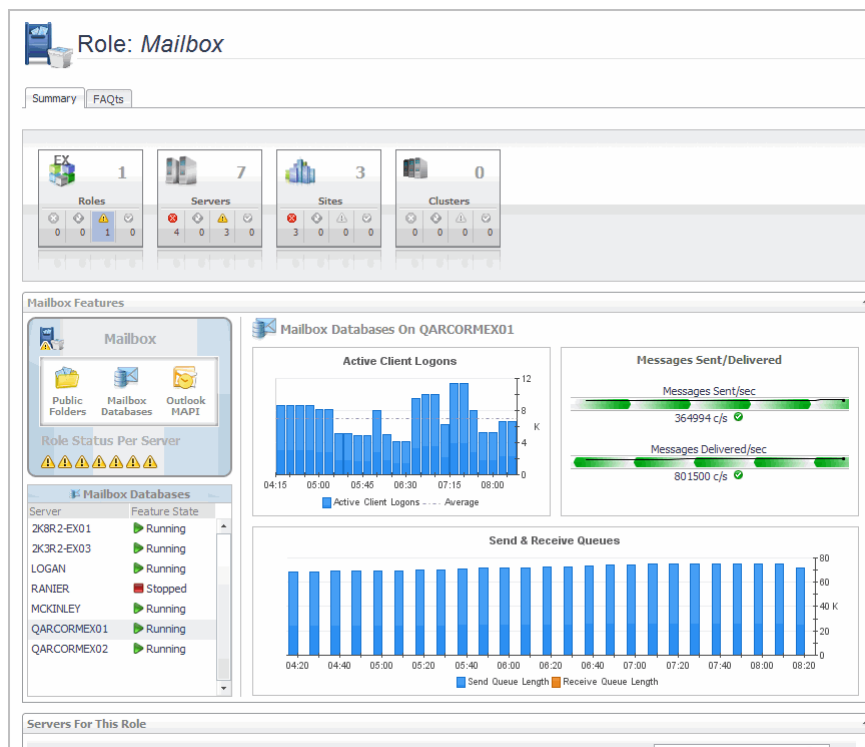
How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2 Use one of the following methods to display this view:

- From the Exchange Infrastructure view (under the Dashboards in the navigation panel), select **Mailbox** under the Roles object container.
- From the Roles tile (at the top of the Summary view), click the Roles icon, title or count. On the Roles inventory dialog, select **Mailbox**.

The Mailbox Role Explorer Summary view appears in the Primary view on the Exchange Explorer dashboard.

> ⓘ | NOTE: You can also click the view in Explorer link on the Mailbox Role Environment Summary view.

3 On the Mailbox tile, select the feature for which data is to be displayed.

4 On the server list below the tile, select the server for which data is to be displayed.

The Mailbox Features view displays metrics for the feature selected in the tile and the server selected in the server list.

Embedded views

In addition to the role tile and current alarms, this view is made up of the following embedded views:

- Server Role Feature State view
- Mailbox Features view
- Servers For This Role view

Unified Messaging Role Explorer Summary view

The Unified Messaging Role Summary view displays more detailed metrics about the selected Mailbox role.

Figure 27. Unified Messaging Role Explorer Summary view
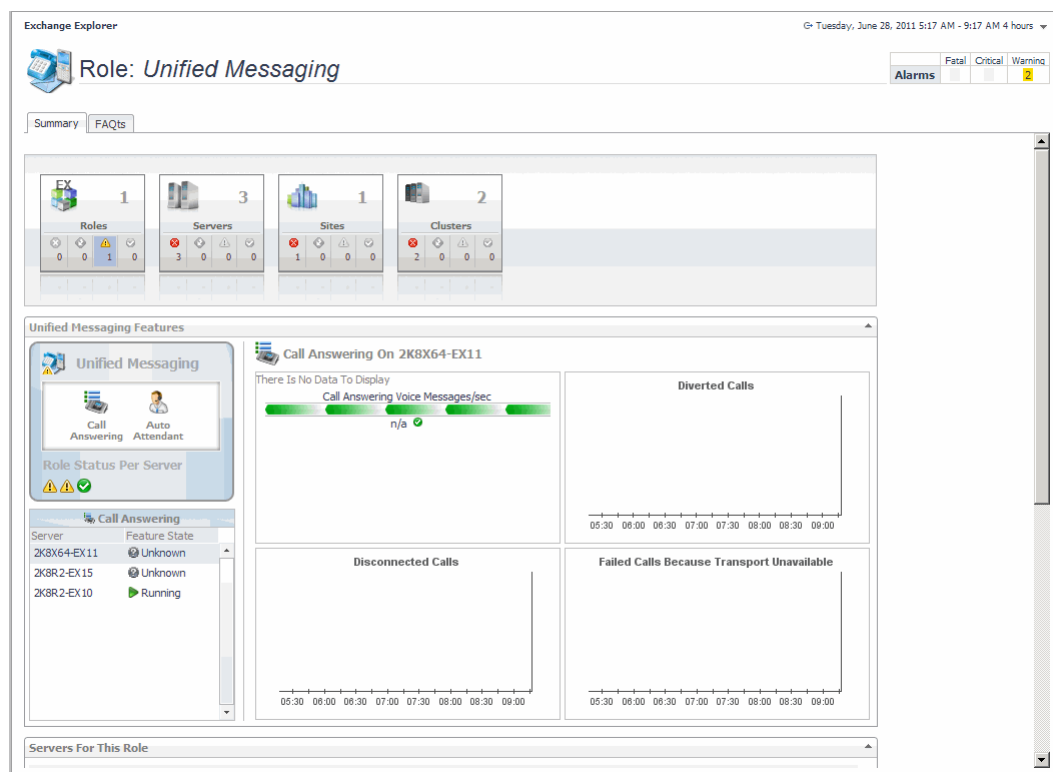
How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2 Use one of the following methods to display this view:

- From the Exchange Infrastructure view (under the Dashboards in the navigation panel), select **Unified Messaging** under the Roles object container.

- From the Roles tile (at the top of the Summary view), click the Roles icon, title or count. On the Roles inventory dialog, select **Unified Messaging.**

The Unified Messaging Role Explorer Summary view appears in the Primary view on the Exchange Explorer dashboard.

ⓘ | **NOTE:** You can also click the view in Explorer link on the Unified Messaging Role Environment Summary view.

3 On the Unified Messaging tile, select the feature for which data is to be displayed.

4 On the server list below the tile, select the server for which data is to be displayed.

The Unified Messaging Features view displays metrics for the feature selected in the tile and the server selected in the server list.

Embedded views

In addition to the role tile and current alarms, this view is made up of the following embedded views:

- Server Role Feature State view
- Unified Messaging Features view
- Servers For This Role view

Exchange Server views

An Exchange server is any server that has Exchange services installed on it. The following views are available to monitor the health of your Exchange servers:

- Exchange Servers Environment Summary (All Exchange Servers) view
- Exchange Server Environment Summary view
- Exchange Servers Explorer Summary (All Exchange Servers) view
- Exchange Server Explorer Summary view
- Resource Utilization Details view
- Exchange Server Roles view
- Exchange Server AD Health view
- Exchange Server Managed Availability view

Exchange Servers Environment Summary (All Exchange Servers) view

The Exchange Servers Environment Summary (All Exchange Servers) view displays a server tile for each monitored Exchange server in your environment. These server tiles display summary Exchange related data about the Exchange servers being monitored.

Figure 28. Exchange Servers Environment Summary (All Exchange Servers) view

An Exchange Server tile displays the following information:

- name of the Exchange server
- current state of the highest alarm on the Exchange server

- whether the server is a Mail Server or a Role Server

- Exchange version installed on the server

- Exchange roles assigned to the server

- number of mailboxes on the Mail Server

- Windows® operating system running on the Exchange server

- the [icon] icon in the lower left corner indicates that the Exchange server is a virtual machine that is being monitored by Foglight for VMware or Foglight for Hyper-V. In addition, the tile is outlined in blue when the server is a virtual machine that is being monitored by one of these cartridges.

ⓘ | NOTE: If you would prefer to view a list of Exchange servers, instead of tiles for each server, select the **Toggle View** icon. You can then use the search controls to the right to filter your list of servers.

How to get here

1 From the Foglight navigation panel, select **Dashboards** > **Exchange** > **Exchange Environment**.

2 From the Monitoring tab, select the **Servers** tile.

3 From the Object Tree view, select **Summary**.

The Exchange Servers Environment Summary (All Exchange Servers) view appears in the Object Summary view of the Quick View on the Exchange Environment dashboard.

To view metrics and information about an individual server, click that server's tile or select the server from the Object Tree view.

Exchange Server Environment Summary view

The Exchange Server Environment Summary view displays a server tile for the selected Exchange server that lists the Exchange features enabled on the server. In addition to the Exchange server tile, this view displays resource metrics and environment information about the selected Exchange server.

ⓘ | NOTE: If the Server Health metrics are not appearing on this view, check the Host Collector setting on the agent's properties page. The VMware option is selected by default. If Foglight for Exchange or Foglight for Hyper-V cartridge is being used to collect the host metrics, this setting must be set to the appropriate option.

Figure 29. Exchange Server Environment Summary view
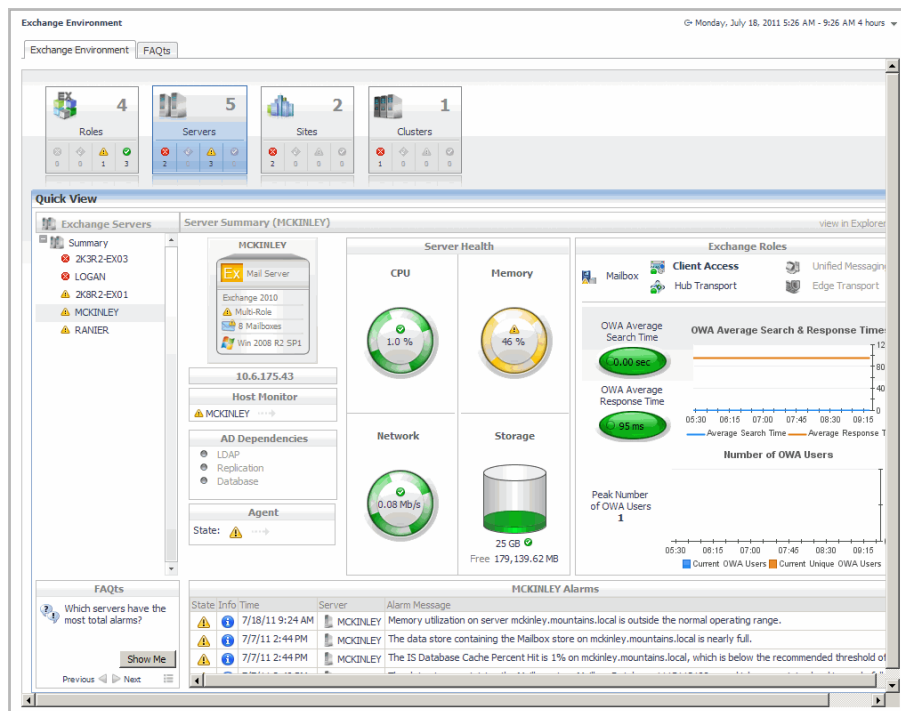
How to get here

1   From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Environment**.

2   From the Monitoring tab, select the **Servers** tile.

3   From the Object Tree view, select an individual server object.

    The Exchange Server Environment Summary view appears in the Object Summary view of the Quick View on the Exchange Environment dashboard.

ⓘ | NOTE: You can also click a server tile in the Exchange Servers Environment Summary (All Exchange Servers) view to display this view.

Embedded views

In addition to the Exchange server tile, the following embedded views are displayed:

*   IP Address view

*   Host Monitor view

*   AD Dependencies view

*   Agent State view

*   Server Health view

*   Exchange Roles Server Summary view

Exchange Servers Explorer Summary (All Exchange Servers) view

The Exchange Servers Explorer Summary (All Exchange Servers) view displays more detailed resource metrics and information about all of the monitored Exchange servers in your environment.

Figure 30. Exchange Servers Explorer Summary (All Exchange Servers) view
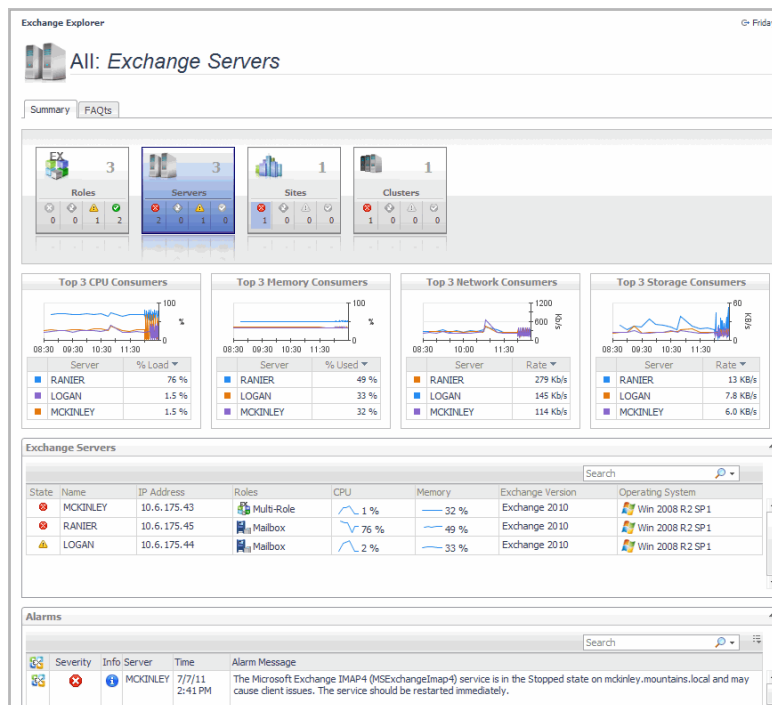
How to get here

1   From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2   From the Exchange Infrastructure view (under Dashboards in the navigation panel), select the **Servers** container object.

The Exchange Servers Explorer Summary (All Exchange Servers) view appears in the Primary view on the Exchange Explorer dashboard.

ⓘ   NOTE: You can also click the view in Explorer link on the Exchange Servers Environment Summary (All Exchange Servers) view.

Embedded views

In addition to the current Exchange server alarms, this view is made up of the following embedded views:

- Top 3 ASP.NET Current Requests views
- Top 3 Memory Consumers view
- Top 3 Network Consumers view
- Top 3 Storage Consumers view
- Exchange Servers view (Exchange Explorer Summary)

Exchange Server Explorer Summary view

The Exchange Server Explorer Summary view displays more detailed resource metrics and information about the selected Exchange server.

ⓘ   NOTE: If the resource utilization metrics and data are not appearing on this view, check the Host Collector setting on the agent's properties page. The VMware option is selected by default. If Foglight for Exchange or Foglight for Hyper-V cartridge is being used to collect the host metrics, this setting must be set to the appropriate option.

Figure 31. Exchange Server Explorer Summary view

How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2 Use one of the following methods to display this view:

   • From the Exchange Infrastructure view (under Dashboards in the navigation panel), select an individual server object.

   • From the Servers tile (at the top of the Summary view), select the Servers icon, title or count. On the Exchange Servers Inventory dialog, select an individual server.

3 Select the **Summary** navigation tab.

   The Exchange Server Explorer Summary view appears in the Primary view on the Exchange Explorer dashboard.

ⓘ | NOTE: You can also click the view in Explorer link on the Exchange Server Environment Summary view for the selected server.

Embedded views

In addition to the current Exchange Server alarms, this view is made up of the following embedded views:

   • Resource Utilization view

   • Windows Services view

   • Summary and Resource Information view

Resource Utilization Details view

The Resource Utilization Details view displays more detailed information about the selected server's resources.

Figure 32. Resource Utilization Details view
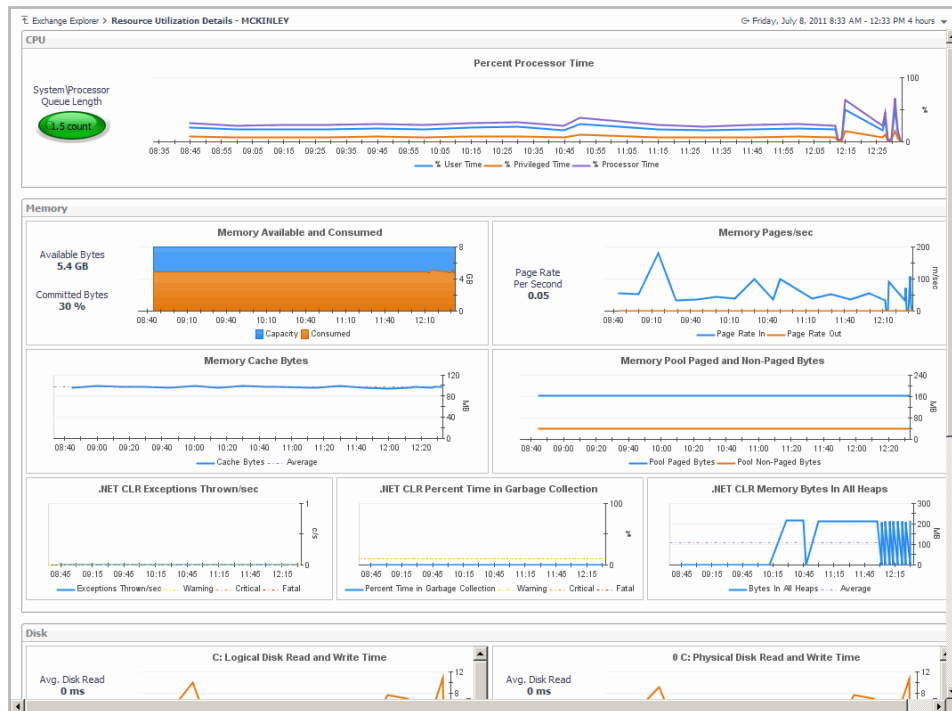
How to get here

1   From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2   Use one of the following methods to display this view:

   • From the Exchange Infrastructure view (under Dashboards in the navigation panel), select an individual server object.

   • From the Servers tile (at the top of the Summary view), select the Servers icon, title or count. On the Exchange Servers Inventory dialog, select an individual server.

3   Select the **Summary** navigation tab.

4   Click the **Resource Utilization** title or the **Details** in the upper right-hand corner of the Resource Utilization view.

   The Resource Utilization Details view appears in the Primary view on the Exchange Explorer dashboard.

Embedded views

This view is made up of the following embedded views:

   • CPU view

   • Memory view

   • Disk view

   • Network view

Exchange Server Roles view

The Exchange Server Roles view displays performance metrics and information for the Exchange roles being performed by the selected Exchange server. The content of this view is based on the Exchange role selected at the top of the view.

Figure 33. Exchange Server Roles view
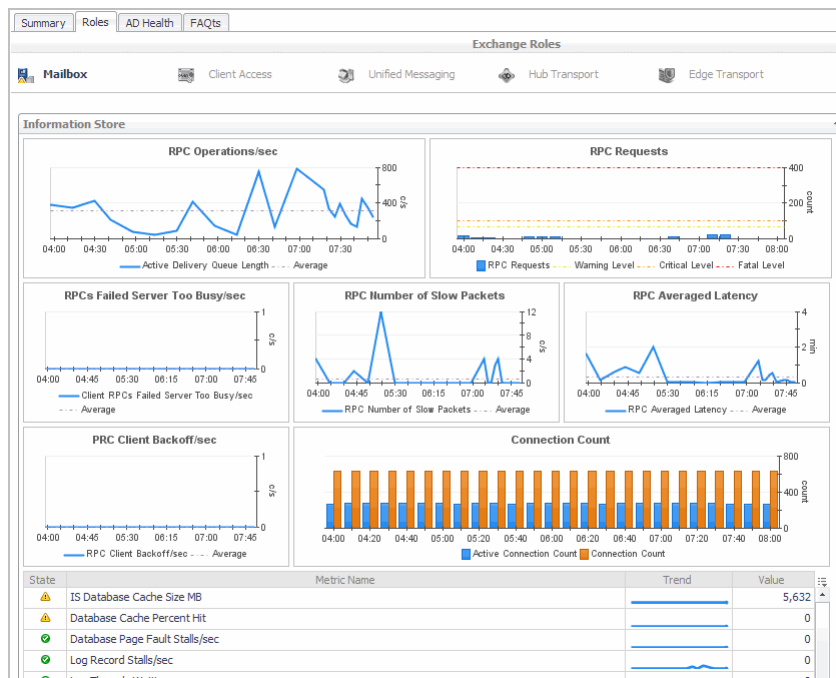
How to get here

1 From the Foglight navigation panel, select **Dashboards** > **Exchange** > **Exchange Explorer**.

2 Use one of the following methods to display this view:

  • From the Exchange Infrastructure view (under Dashboards in the navigation panel), select an individual server object.

  • From the Servers tile (at the top of the Summary view), select the Servers icon, title or count. On the Exchange Servers Inventory dialog, select an individual server.

3 Select the **Roles** navigation tab.

  The Exchange Server Roles view appears in the Primary view on the Exchange Explorer dashboard.

Embedded views

The embedded views in this view are dependant upon the Exchange role selected at the top of the Exchange Server Roles view. Based on the Exchange role selected, this view is made up of the following embedded views:

ⓘ | NOTE: To display an optional embedded view, enable the collection and display of the corresponding collection group on the Exchange Metrics Management dashboard.

Table 15. Exchange Server Roles view

Exchange Server Role	Default Embedded Views *Denotes a view deprecated in Exhange 2013.	Optional Embedded Views *Denotes a view deprecated in Exhange 2013.
Client Access	• Outlook Web Access • IIS Health • ActiveSync	• CAS AB Load • CAS AB Service • CAS ActiveSync • CAS Control Panel Load • CAS Load • CAS OAB Download • CAS RPC Client Access • CAS RPC Client Access Load • CAS RPC HTTP
Client Access 2013	• Outlook Web Access • IIS Health	• CAS AB Load • CAS AB Service • CAS ActiveSync • CAS Control Panel Load • CAS Load • CAS OAB Download • CAS RPC Client Access • CAS RPC Client Access Load • CAS RPC HTTP
Edge Transport	• Transport Queues • Transport Mail Database • SMTP Receive • Transport Load • Transport Rules • Transport DC Connectivity • Agents	• Edge Agents • Transport Dumpster • Transport Extensibility Agents • Transport Load Server Drives • Transport Queues
Hub Transport	• Transport Queues • Transport Mail Database • SMTP Receive • Transport Load	• Transport Dumpster • Transport Edge Sync • Transport Extensibility Agents • Transport Load Server Drives • Transport Queues

Table 15. Exchange Server Roles view

Exchange Server Role	Default Embedded Views *Denotes a view deprecated in Exhange 2013.	Optional Embedded Views *Denotes a view deprecated in Exhange 2013.
Mailbox	• Information Store • Store Transport • All Mailbox Stores* • All Public Folder Stores* • Storage Groups and Stores • Cluster Replication • Availability • Transport Queues • Transport Load • Transport Mail Database • SMTP Receive • Outlook Web Access • IMAP4 • POP3	• Store Calendar Attendant • Store Client Search* • Store Content Indexing* • Store Database • Store Mailbox Assistant • Store Public Load* • Store Resource Booking • Store RPC Client Throttling* • Store Transport • Store User Load* • UM General • UM General Current • Auto Attendant General • Auto Attendant Transfers • Auto Attendant Calls • Auto Attendant Directory Access • UM Availability • UM Fax • UM Call Answer • UM Call Answer General • UM Subscriber Access General • UM Subscriber Access Calendar • UM Subscriber Access Directory • UM Subscriber Access Message • Transport Queues • Transport Load Store Drivers • Submission Extensibility Agent • Transport Extensibility Agent • Delivery Extensibility Agent • CAS ActiveSync • CAS Load • CAS AB Service • CAS AB Load • CAS Control Panel Load • RPC Client Access • RPC Client Access Load

Table 15. Exchange Server Roles view

Exchange Server Role	Default Embedded Views *Denotes a view deprecated in Exhange 2013.	Optional Embedded Views *Denotes a view deprecated in Exhange 2013.
Unified Messaging	• Availability	• Auto Attendant Calls • Auto Attendant Directory Access • Auto Attendant General • Auto Attendant Transfers • UM Availability • UM Call Answer General • UM Call Answer • UM Fax • UM General Current • UM General • UM Subscriber Access Calendar • UM Subscriber Access Directory • UM Subscriber Access General • UM Subscriber Access Message

Exchange Server AD Health view

The Exchange Server AD Health view displays performance health information about the DCs in your Active Directory® environment.

ⓘ NOTE: The details in the Domain Controllers view at the bottom of this view is only displayed for DCs that are being monitored by Foglight for Active Directory.

Figure 34. Exchange Server AD Health view
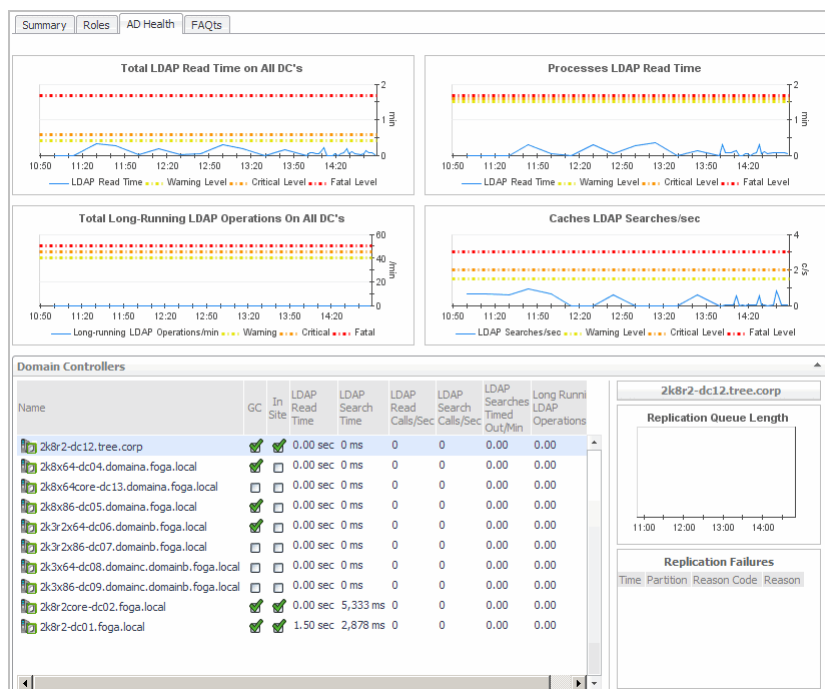
How to get here

1. From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2. Use one of the following methods to display this view:

   - From the Exchange Infrastructure view (under Dashboards in the navigation panel), select an individual server object.

   - From the Servers tile (at the top of the Summary view), select the Servers icon, title or count. On the Exchange Servers Inventory dialog, select an individual server.

3. Select the **AD Health** navigation tab.

   The Exchange Server AD Health view appears in the Primary view on the Exchange Explorer dashboard.

Embedded views

This view is made up of the following embedded views:

- Top 3 ASP.NET Current Requests views

- Processes LDAP Read Time view

- Total Long-Running LDAP Operations On All DCs view

- Cached LDAP Searches/sec view

- Domain Controllers view

Exchange Server Managed Availability view

When an individual Exchange 2013 server is selected in the Exchange Infrastructure view, the **Managed Availability** navigation tab appears. The Managed Availability process addresses availability and latency issues or errors by triggering applicable actions. These actions are displayed on the **Managed Availability** view.

Figure 35. Exchange Server Managed Availability view
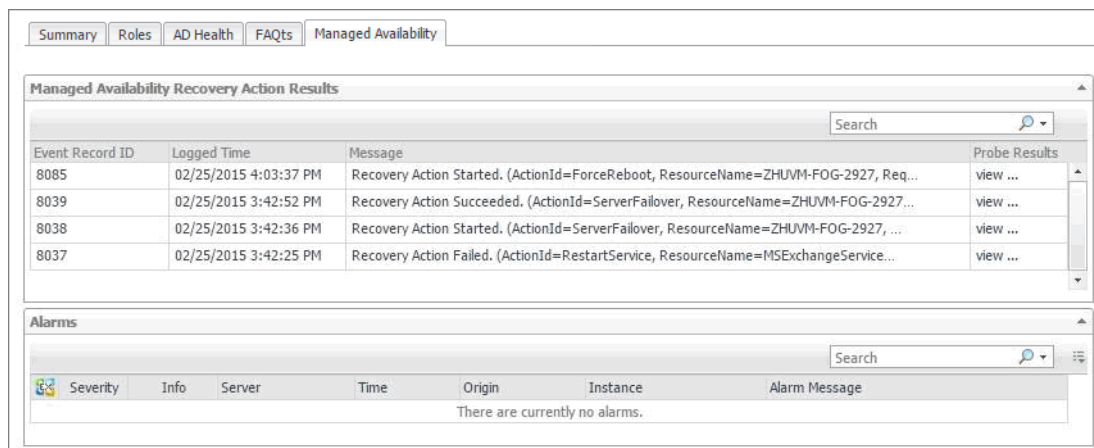
How to get here

1. From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2. Use one of the following methods to display this view:

   - From the Exchange Infrastructure view (under Dashboards in the navigation panel), select an individual server object.

   - From the Servers tile (at the top of the Summary view), select the Servers icon, title or count. On the Exchange Servers Inventory dialog, select an individual server.

3   Select the **Managed Availability** navigation tab.

   The Exchange Server **Managed Availability** view appears in the Primary view on the Exchange Explorer dashboard.

Embedded views

This view contains the following embedded view:

- Managed Availability Recovery Actions view

Site views

The following views are available to monitor the health of the sites within your Active Directory® environment that are hosting Exchange servers:

- Exchange Sites Environment Summary (All Sites) view
- Exchange Site Environment Summary view
- Exchange Sites Explorer Summary (All Sites) view
- Exchange Site Explorer Summary view

Exchange Sites Environment Summary (All Sites) view

The Exchange Sites Environment Summary (All Sites) view displays a site tile for each site in your environment that is hosting one or more Exchange servers. It provides summary data about the Exchange roles being performed within each site. It also displays the number of roles in each of the alarm states (fatal, critical and warning) for each site.

Figure 36. Exchange Sites Environment Summary (All Sites) view

A site tile displays the following information:

- name of the site
- number of users in the site
- number of site alarms in each state
- number of Mailbox roles in the site and number of roles in each alarm state
- number of other Exchange roles in the site and number of roles in each alarm state

How to get here

1   From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Environment**.

2   From the Monitoring tab, select the **Sites** tile.

3   From the Object Tree view, select **Summary**.

The Exchange Sites Environment Summary (All Sites) view appears in the Object Summary view of the Quick View on the Exchange Environment dashboard.

To view metrics and data about an individual site, select that site's tile or select the site's name from the Object Tree view.

Exchange Site Environment Summary view

The Exchange Site Environment Summary view displays a site tile for the selected site that lists the Exchange roles being performed in the selected site. In addition to the site tile, this view displays more detailed environment information about the Exchange servers in the selected site.

Figure 37. Exchange Site Environment Summary view
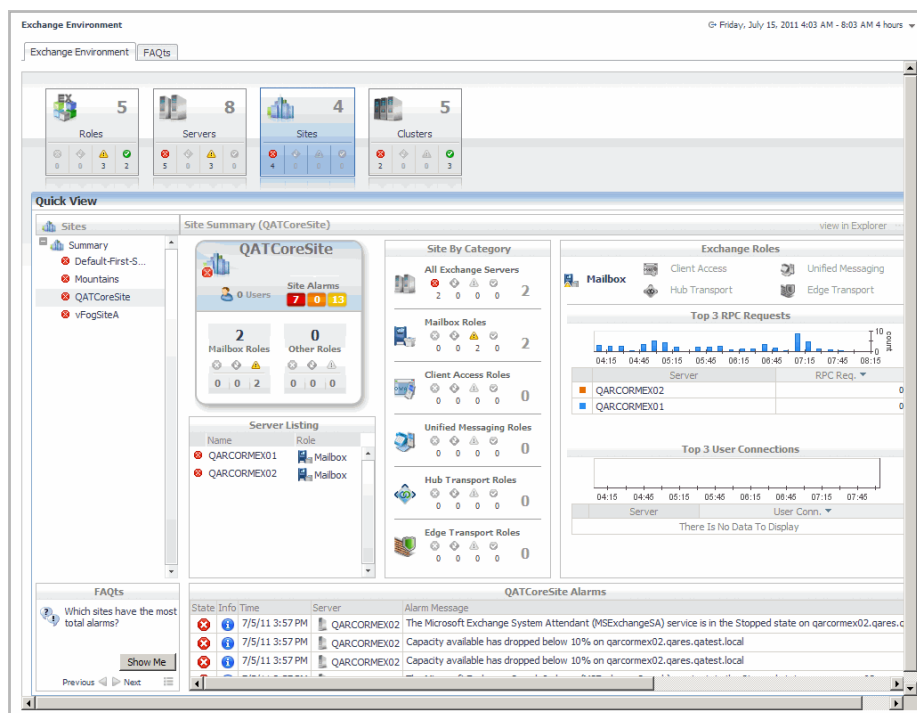
How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Environment**.

2 From the Monitoring tab, select the **Sites** tile.

3 From the Object Tree view, select an individual site object.

The Exchange Site Environment Summary view appears in the Object Summary view of the Quick View on the Exchange Environment dashboard.

ⓘ | NOTE: You can also click a site tile in the Exchange Sites Environment Summary (All Exchange Sites) view to display this view.

Embedded views

In addition to the site tile and current alarms for the selected site, the following embedded views are displayed:

- Server Listing view
- Site By Category view

- Exchange Roles Top 3 view

Based on the Exchange role selected, the Exchange Roles Top 3 view consists of the following metrics.

Table 16. Exchange Roles Top 3 view - Metrics Displayed

Exchange Roles Top 3 view	Metrics Displayed
Mailbox 2013	• Top 3 RPC Requests • Top 3 OWA Average Response Time • Top 3 Mailbox Delivery Queues
Client Access 2013	• Top 3 ASP.Net® Current Requests • Top 3 ASP.NET Requests In App Queue
Mailbox	• Top 3 RPC Requests • Top 3 User Connections
Client Access	• Top 3 OWA Average Response Times • Top 3 OWA Average Search Times
Hub Transport	• Top 3 Messages Received /sec • Top 3 Mailbox Delivery Queues
Unified Messaging	• Top 3 Hub Transport Access Failures • Top 3 Mailbox Server Access Failures
Edge Transport	• Top 3 Submission Queues • Top 3 Remote Delivery Queues

Exchange Sites Explorer Summary (All Sites) view

The Exchange Sites Explorer Summary (All Sites) view displays detailed resource metrics and information about the Exchange servers in all monitored sites in our Exchange environment.

Figure 38. Exchange Sites Explorer Summary (All Sites) view
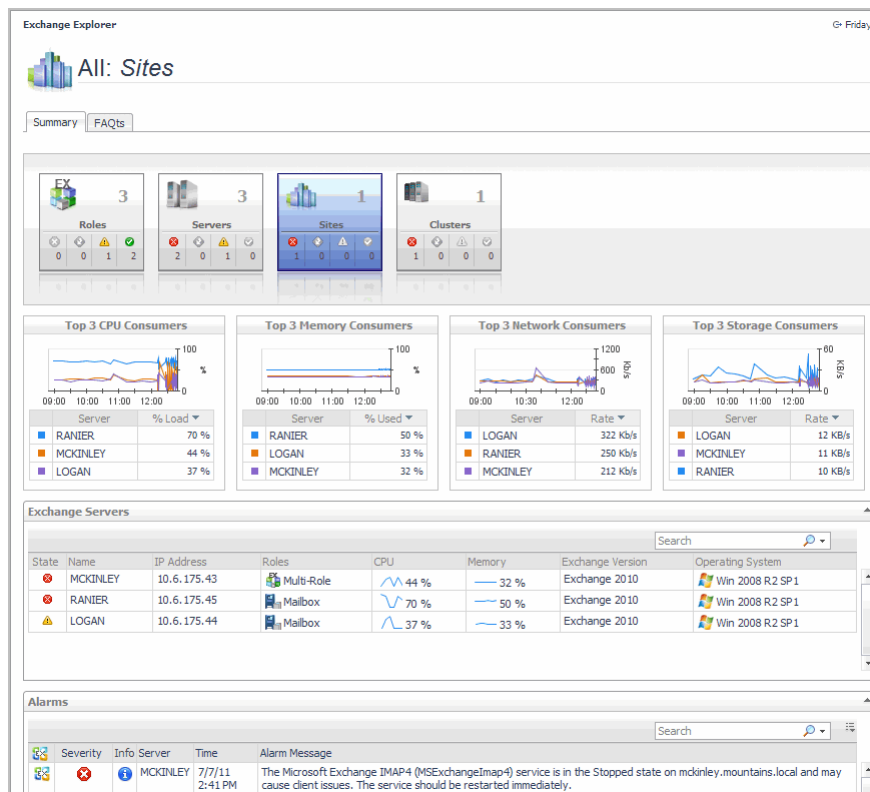
How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2 From the Exchange Infrastructure panel (under Dashboards in the navigation panel), select the **Sites** object container.

The Exchange Sites Explorer Summary (All Sites) view appears in the Primary View on the Exchange Explorer dashboard.

Embedded views

In addition to the current site alarms, this view is made up of the following embedded views:

- Top 3 ASP.NET Current Requests views
- Top 3 Memory Consumers view
- Top 3 Network Consumers view
- Top 3 Storage Consumers view
- Exchange Servers view (Exchange Explorer Summary)

Exchange Site Explorer Summary view

The Exchange Site Explorer Summary view displays more detailed resource metrics and information about the Exchange servers in the selected site.

Figure 39. Exchange Site Explorer Summary view
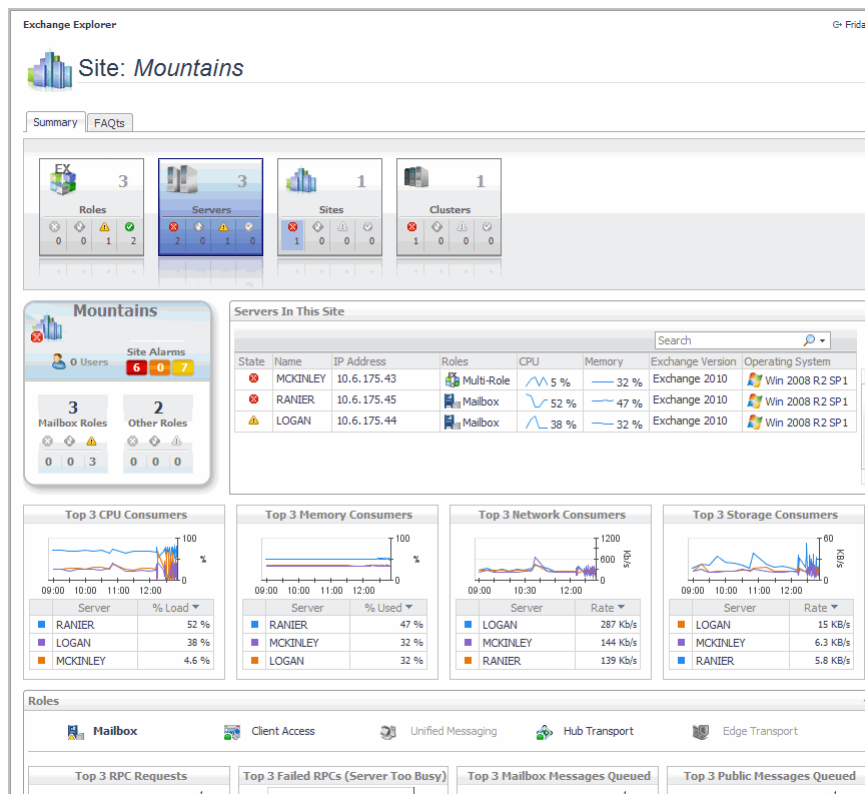
How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2 Use one of the following methods to display this view:

   • From the Exchange Infrastructure view (under Dashboards in the navigation panel), select an individual site object.

   • From the Sites tile (at the top of the Summary view), select the Sites icon, title or count. On the Sites Inventory dialog, select an individual Site object.

3 Select the **Summary** navigation tab.

   The Exchange Site Explorer Summary view appears in the Primary view on the Exchange Explorer dashboard.

ⓘ | NOTE: You can also click the view in Explorer link on that site's Exchange Site Environment Summary view.

Embedded views

In addition to the site tile and current alarms, this view is made up of the following embedded views:

   • Servers In This Site view

   • Top 3 ASP.NET Current Requests views

   • Top 3 Memory Consumers view

   • Top 3 Network Consumers view

   • Top 3 Storage Consumers view

   • Roles Explorer view

Cluster views

A cluster is a group of individual computers that act like a single system enabling the availability of a service or application to client computers in the network. Foglight for Exchange provides metrics about the following high availability frameworks:

- Single Copy Cluster (SCC) - a clustered mailbox server deployment available in Exchange Server 2007.

- Cluster Continuous Replication (CCR) - a clustered mailbox server deployment available in Exchange Server 2007.

- Database Availability Group (DAG) - can contain of up to16 Exchange Server 2010 Mailbox servers which are configured to replicate mailbox databases between the Mailbox servers that are members of the DAG.

The following views are available to monitor the health of the Exchange clusters in your environment.

- Exchange Clusters Environment Summary (All Clusters) view

- Exchange Cluster Environment Summary view

- Exchange Clusters Explorer Summary (All Clusters) view

- Exchange Cluster Explorer Summary view

Exchange Clusters Environment Summary (All Clusters) view

The Exchange Clusters Environment Summary (All Clusters) view displays a cluster tile for each Exchange cluster in your environment. It provides summary data about the active and passive nodes or databases in each cluster.

Figure 40. Exchange Clusters Environment Summary (All Clusters) view
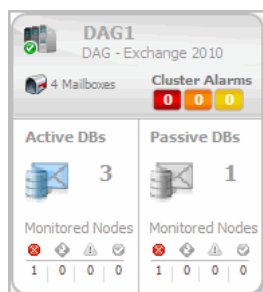
A cluster tile displays the following information:

- name of the cluster

- Exchange version

- number of mailboxes in the cluster

- number of cluster alarms in each state

- number of active and passive nodes or databases

- number of monitored nodes on the active and passive databases in each alarm state

How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Environment**.

2 From the Monitoring tab, select the **Clusters** tile.

3 From the Object Tree view, select **Summary**.

The Exchange Clusters Environment Summary (All Clusters) view appears in the Object Summary view of the Quick View on the Exchange Environment dashboard.

To view metrics and information about an individual cluster, click that cluster's tile or select the cluster from the Object Tree view.

Exchange Cluster Environment Summary view

The Exchange Cluster Environment Summary view displays a cluster tile for the selected cluster that lists the active and passive nodes or databases included in the selected cluster. In addition to the cluster tile, this view displays more detailed environment information about the Exchange cluster.

Figure 41. Exchange Cluster Environment Summary view
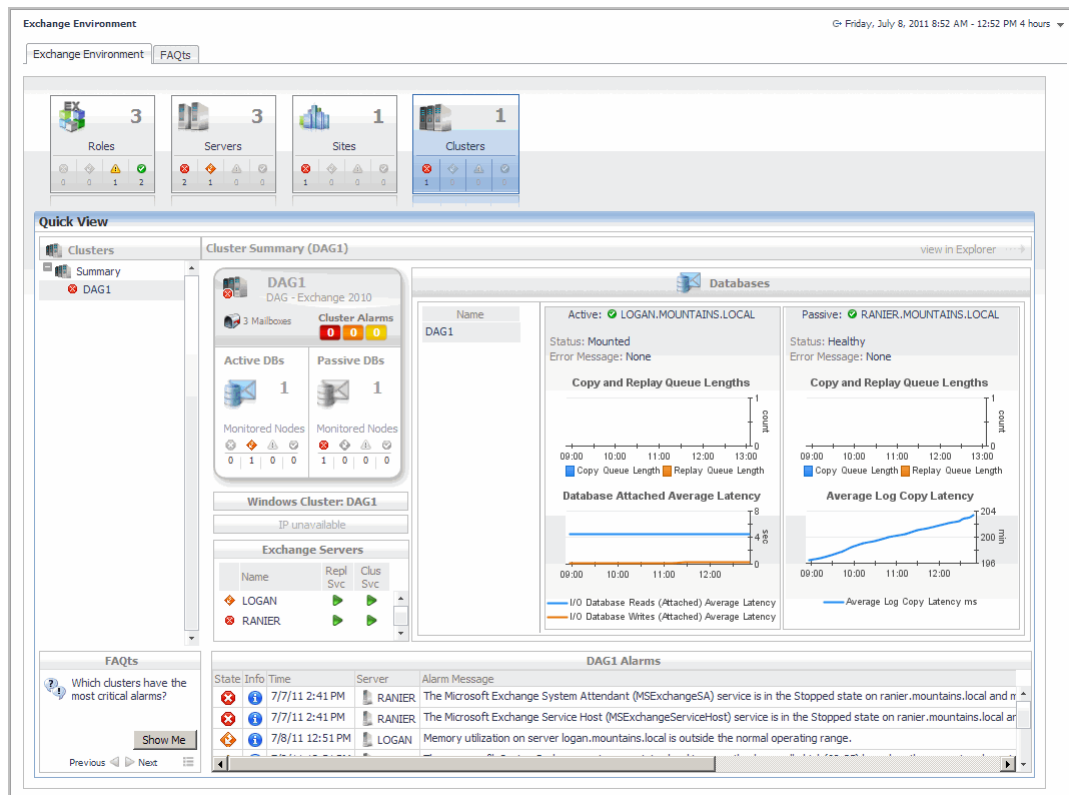
How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Environment**.

2 From the Monitoring tab, select the **Clusters** tile.

3 From the Object Tree view, select an individual cluster object.

The Exchange Cluster Environment Summary view appears in the Object Summary view of the Quick View on the Exchange Environment dashboard.

ⓘ NOTE: You can also click a cluster tile in the Exchange Clusters Environment Summary (All Clusters) view to display this view.

Embedded views

In addition to the cluster tile and current cluster alarms, the following embedded views are displayed:

• Windows Cluster view

- Cluster IP view

- Exchange Servers view (Exchange Cluster Environment Summary)

- Cluster Summary view

Exchange Clusters Explorer Summary (All Clusters) view

The Exchange Clusters Explorer Summary (All Clusters) view displays detailed resource metrics and information about the Exchange clusters being monitored.

Figure 42. Exchange Clusters Explorer Summary (All Clusters) view
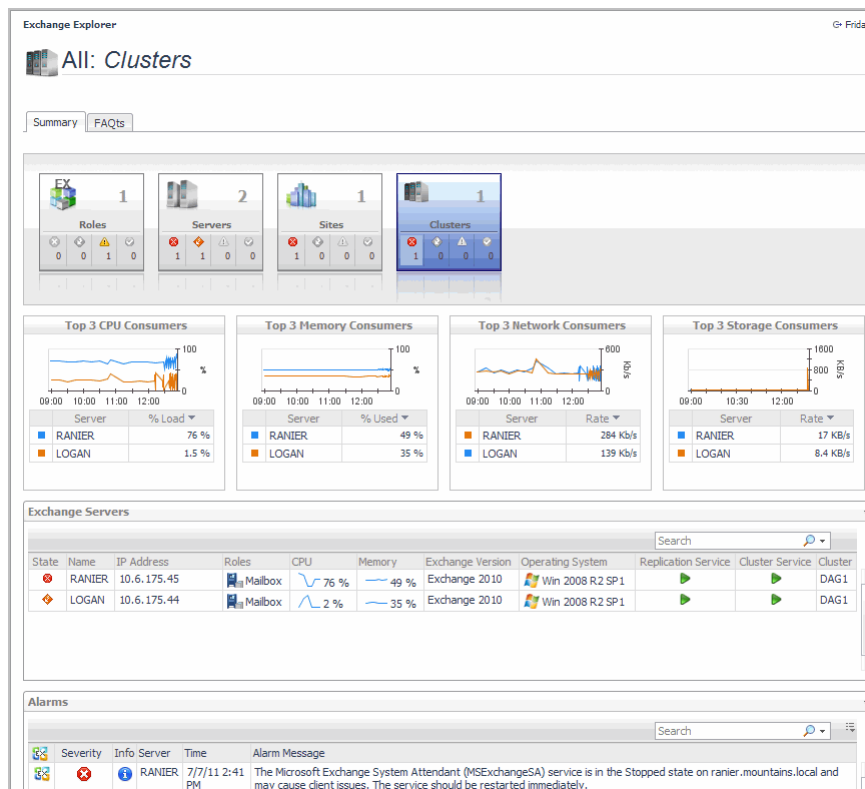
How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2 From the Exchange Infrastructure panel, select the **Clusters** object container.

The Exchange Clusters Explorer Summary (All Clusters) view appears in the Primary view on the Exchange Explorer dashboard.

Embedded views

In addition to the current cluster alarms, this view is made up the following embedded views:

- Top 3 ASP.NET Current Requests views

- Top 3 Memory Consumers view

- Top 3 Network Consumers view

- Top 3 Storage Consumers view

- Exchange Servers view (Exchange Explorer Summary)

Exchange Cluster Explorer Summary view

The Exchange Cluster Explorer Summary view displays more detailed resource metrics and information about the selected Exchange cluster.

Figure 43. Exchange Cluster Explorer Summary view
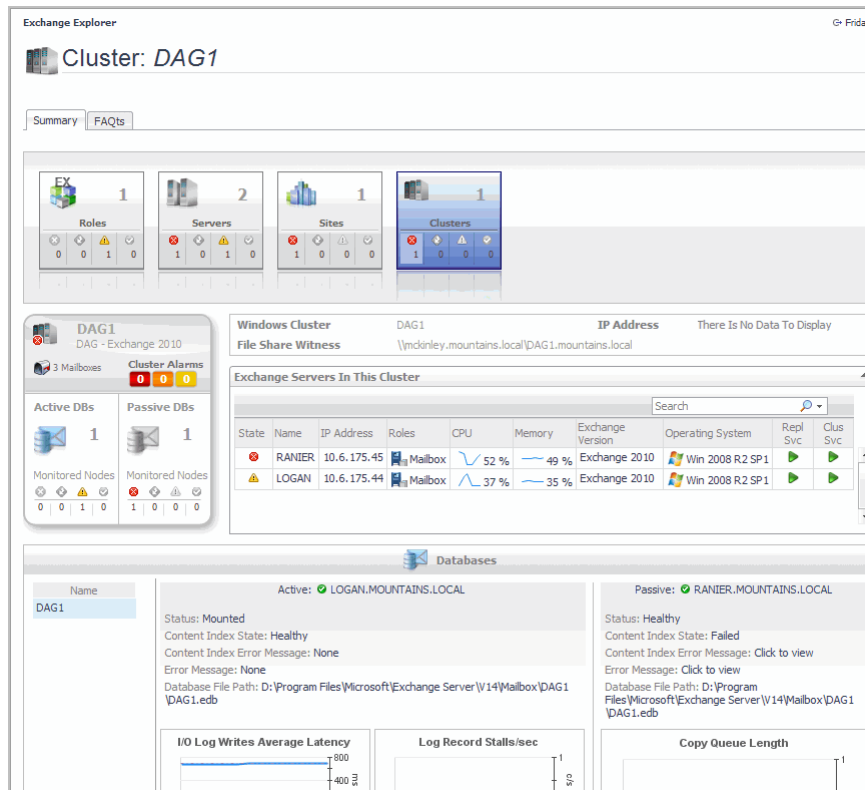
How to get here

1 From the Foglight navigation panel, select **Dashboards > Exchange > Exchange Explorer**.

2 Use one of the following methods to display this view:

- From the Exchange Infrastructure view (under Dashboards in the navigation panel), select an individual cluster object.
- From the Clusters tile (at the top of the Summary view), select the Clusters icon, title or count. On the Other Items Inventory dialog, select an individual cluster.

3 Select the **Summary** navigation tab.

The Exchange Cluster Explorer Summary view appears in the Primary view on the Exchange Explorer dashboard.

ⓘ | NOTE: You can also click the view in Explorer link on that cluster's Exchange Cluster Environment Summary view.

Embedded views

In addition to the cluster tile and current alarms, this view is made up of the following embedded views:

- Cluster Summary and Resource Information view

- Exchange Servers in This Cluster view
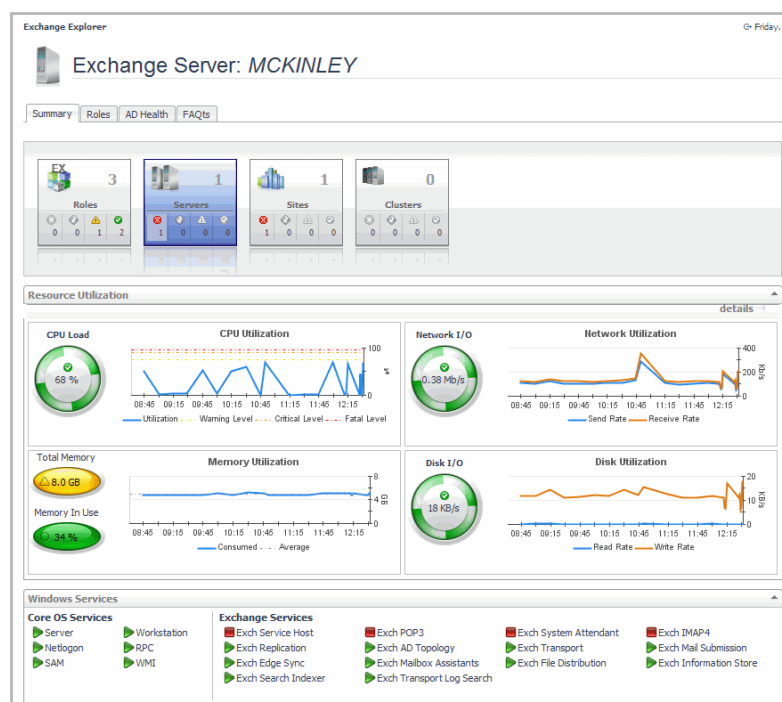
- Cluster Database Details view

- Cluster Storage Group Details view

- Top 3 ASP.NET Current Requests views

- Top 3 Memory Consumers view

- Top 3 Network Consumers view

- Top 3 Storage Consumers view

Description of Embedded views

The remainder of this chapter provides a detailed description of the information and metrics presented in the embedded views introduced earlier in this chapter.

- Active CCR Storage Group view

- Active DAG Database view

- Active SCC Storage Group view

- AD Dependencies view

- Agent State view

- Auto Attendant Calls view

- Auto Attendant Directory Access view

- Auto Attendant General view

- Auto Attendant Transfers view

- Cached LDAP Searches/sec view

- CAS AB Load view

- CAS AB Service view

- CAS ActiveSync view

- CAS Control Panel Load view

- CAS Load view

- CAS OAB Download view

- CAS RPC Client Access view

- CAS RPC Client Access Load view

- CAS RPC HTTP view

- Client Access Features view

- Cluster Database Details view

- Cluster IP view

- Cluster Storage Group Details view

- Cluster Summary and Resource Information view

- Cluster Summary view

- CPU view

- Disk view

- Domain Controllers view

- Edge Agent view

- Edge Transport Features view

- Exchange Roles Server Summary view

- Exchange Roles Top 3 view

- Exchange Server Roles view

- Exchange Servers in This Cluster view

- Exchange Servers view (Exchange Cluster Environment Summary)

- Exchange Servers view (Exchange Explorer Summary)

- Host Monitor view

- Hub Transport Features view

- IP Address view

- Mailbox Features view

- Mailbox Store Assistant view

- Memory view

- Network view

- Passive CCR Storage Group view

- Passive DAG Database view

- Processes LDAP Read Time view

- Resource Utilization view

- Roles Explorer view

- Role Servers view

- Server Health view

- Server Listing view

- Server Role Feature State view

- Servers For This Role view

- Servers In This Site view

- Site By Category view

- Store Calendar Attendant view

- Store Client Search view

- Store Content Indexing view

- Store Database view

- Store Public Load view

- Store Resource Booking view

- Store RPC Client Throttling view

- Store Transport view

- Store User Load view

- Summary and Resource Information view

- Top 3 ASP.NET Current Requests views

- Top 3 ASP.NET Requests In App Queue views

- Top 3 ASP.NET Current Requests views

- Top 3 Hub Transport Access Failures view
- Top 3 Mailbox Delivery Queues view
- Top 3 Mailbox Server Access Failures view
- Top 3 Memory Consumers view
- Top 3 Messages Received/sec view
- Top 3 Network Consumers view
- Top 3 Remote Delivery Queues view
- Top 3 RPC Requests view
- Top 3 Storage Consumers view
- Top 3 Submission Queues view
- Total LDAP Read Time On All DCs view
- Total Long-Running LDAP Operations On All DCs view
- Transport Dumpster view
- Transport Edge Sync view
- Transport Extensibility Agent view
- Transport Load Store Drivers view
- Transport Queues view
- UM Availability view
- UM Call Answer General view
- UM Call Answer view
- UM Fax view
- UM General Current view
- UM General view
- UM Subscriber Access Calendar view
- UM Subscriber Access Directory view
- UM Subscriber Access General view
- UM Subscriber Access Message view
- Unified Messaging Features view
- Windows Cluster view
- Windows Services view

Active CCR Storage Group view

This view appears when you click on the name of the active storage group at the top of the Cluster Storage Group Details view on the Exchange Explorer dashboard or at the top of the Cluster Summary view on the Exchange Environment dashboard.

ⓘ | NOTE: This view is only available when an Exchange Server 2007 cluster is selected.

Description	This view displays resource information, database metrics and replication metrics for the selected CCR storage group
Data displayed	**Resource Information**. In the upper left-hand corner of this view you will find the following summary and resource information about the selected storage group: • Name • Copy Status • Failed Message • Last Inspected Log Time
	Log Threads Waiting. This graph charts the number of threads waiting for their data to be written to the log to complete a database update. It provides a comparison against the computed average for the specified time interval.
	I/O Log Writes Average Latency. This graph charts the average time it takes to write a log buffer to the active log file. It provides a comparison against the computed average for the selected time interval.
	Log Records Stalls/sec. This graph charts the number of log records that cannot be added to the log buffers each second because the log buffers are full. It provides a comparison against the computed average for the selected time interval.
	I/O Database Reads Average Latency. This graph charts the average time it takes to read from the database file. It provides a comparison against the computed average for the selected time interval.
	I/O Database Writes Average Latency. This graph charts the average time it takes to write to the database file. It provides a comparison against the computed average for the selected time interval.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics pop up that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Active DAG Database view

This view appears when you click on the name of the active database copy at the top of the Cluster Database Details view on the Exchange Explorer dashboard or the Cluster Summary view on the Exchange Environment dashboard.

ⓘ | NOTE: This view is only available when an Exchange Server 2010 cluster is selected.

Description	This view displays resource information, database metrics and replication metrics for the selected DAG database.
Data displayed	**Resource Information**. In the upper left-hand corner of this view you will find the following summary and resource information about the selected database: • Name • Status • Content Index State • Content Index Error Message • Error Message • Database File Path

Table 18. Active DAG Database view

Log Threads Waiting. This graph charts the number of threads waiting for their data to be written to the log to complete a database update. It provides a comparison against the computed average for the selected time interval.

Log Record Stalls/sec. This graph charts the number of log records that cannot be added to the log buffer per second because the log buffers are full. It provides a comparison against the computed average for the selected time interval.

I/O Log Writes Average Latency. This graph charts the average time it takes to write a log buffer to the active log file. It provides a comparison against the computed average for the selected time interval.

Database Attached Average Latency. This graph charts the following metrics over the specified time interval:

- **I/O Database Reads (Attached) Average Latency.** Shows the average time it takes to read from the database file.
- **I/O Database Writes (Attached) Average Latency.** Shows the average time it takes to write to the database file.

Database Recovery Average Latency. This graph charts the following metrics over the specified time interval:

- **I/O Database Reads (Recovery) Average Latency.** Shows the average time it takes to read from the database file.
- **I/O Database Writes (Recovery) Average Latency.** Shows the average time it takes to write to the database file.

Copy Queue Length. This graph charts the number of transaction log files waiting to be copied to the passive copy log file folder. It provides a comparison against the computed average for the selected time interval.

Replay Queue Length. This graph charts the number of transaction log files waiting to be replayed into the passive copy log file. It provides a comparison against the computed average for the selected time interval.

Average Log Copy Latency ms. This graph charts the average time it takes to copy data from a log file. It provides a comparison against the computed average for the selected time interval.

Log Copy KB/sec. This graph charts the rate at which log copying is proceeding. It provides a comparison against the computed average for the selected time interval.

Log Replay Rate Generations/sec. This graph charts the rate of replay (in log generations per second) for the current replay batch. It provides a comparison against the computed average for the selected time interval.

Log Copying is not Keeping Up. This graph shows when log copying and inspection by the passive copies of databases on the specified DAG member are not able to keep up with log generation activity on the active copy. It provides a comparison against the computed average for the selected time interval.

Log Replay is not Keeping Up. This graph shows when replay activities for the passive copies of databases on the specified DAG member are not able to keep up with log copying and inspection activity. It provides a comparison against the computed average for the selected time interval.

Seeding Finished Percent. This graph shows the finished percentage of seeding. This data can be used to determine if seeding is occurring for a particular database, which is possible affecting overall server performance or current network bandwidth.

Failed. This graph indicates that continuous replication is in a Failed state for the selected instance (storage group).

Table 18. Active DAG Database view

	Initializing. This graph indicates that continuous replication is in an Initializing state for the selected instance (storage group). While in this state, the system is verifying that the database and log stream are in a consistent state.
	Suspended. This graph indicates that continuous replication activity is suspended and log files are not being copied or replayed into the passive copy. This state may be a result of an administrator manually suspending the database copy.
	Activation Suspended. This graph indicates whether activation on the mailbox database copy is suspended.
	Failed Suspended. This graph indicates whether the Failed and Suspended states have been set simultaneously by the system because a failure was detected, and because resolution of the failure explicitly requires administrator intervention.
	Disconnected. This graph indicates whether a mailbox copy is in a state of Disconnected on the specified DAG member.
Where to go next	N/A

Active SCC Storage Group view

This view appears when you click on the name of the active storage group at the top of the Cluster Storage Group Details view on the Exchange Explorer dashboard or at the top of the Cluster Summary view on the Exchange Environment dashboard.

ⓘ | NOTE: This view is only available when an Exchange Server 2007 cluster is selected.

Table 19. Active SCC Storage Group view

Description	This view displays resource information, database metrics and replication metrics for the selected SCC storage group
Data displayed	**Name.** In the upper left corner the name of the selected SCC storage group is displayed with a state indicator showing the storage group's current state.
	Log Threads Waiting. This graph charts the number of threads waiting for their data to be written to the log to complete a database update. It provides a comparison against the computed average for the specified time interval.
	I/O Log Writes Average Latency. This graph charts the average time it takes to write a log buffer to the active log file. It provides a comparison against the computed average for the selected time interval.
	Log Records Stalls/sec. This graph charts the number of log records that cannot be added to the log buffers each second because the log buffers are full. It provides a comparison against the computed average for the selected time interval.
	I/O Database Reads Average Latency. This graph charts the average time it takes to read from the database file. It provides a comparison against the computed average for the selected time interval.
	I/O Database Writes Average Latency. This graph charts the average time it takes to write to the database file. It provides a comparison against the computed average for the selected time interval.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics pop up that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

AD Dependencies view

This embedded view is part of the Exchange Server Environment Summary view, which appears when an individual Exchange server is selected in the Object Tree view on the Exchange Environment dashboard.

ⓘ | NOTE: If Foglight for Active Directory® is not installed, the data in this view will not be displayed.

Table 20. AD Dependencies view

Description	This view displays the Active Directory processes which the selected Exchange server uses and indicates the current health of each of these Active Directory processes. NOTE: Active Directory processes that are not being used by this Exchange server are disabled.
Data displayed	**LDAP.** Indicates the health of LDAP performance.
	Replication. Indicates the health of replication performance.
	Database. Indicates the health of database performance.
Where to go next	N/A

Agent State view

This embedded view is part of the Exchange Server Environment Summary view, which appears when an individual Exchange server is selected in the Object Tree view on the Exchange Environment dashboard.

Table 21. Agent State view

Description	This view displays the current state of the agent hosting the selected Exchange server.
Where to go next	Drill down on:
	• **State icon**. Displays a popup listing the current alarms. • **Agent Link (arrow)**. Displays the Agents on All Hosts dashboard which lists the agents that are available for each host. This dashboard also displays health history and the outstanding alarms for all monitored hosts and agents. For more information about this dashboard, see *Investigating Problems with Agents* in the *Foglight User Help*.

Auto Attendant Calls view

To display this view, enable the **UM Auto Att Calls Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 22. Auto Attendant Calls view

Description	This view displays call metrics for the Unified Messaging auto attendant on the selected Exchange server, which are gathered when the UM Auto Att Calls collection group is enabled.
Data displayed	**Total Calls.** This counter displays the number of calls that have been processed by the auto attendant.
	Business Hour Calls. This counter displays the number of calls processed by the auto attendant during business hours.
	Out of Hours Calls. This counter displays the number of calls processed by this auto attendant outside of business hours.

Table 22. Auto Attendant Calls view

	Disconnected Without Input. This counter displays the number of calls that were dropped without input being offered in response to the auto attendant prompts.
	Disconnected on Irrecoverable External Error. This counter displays the total number of calls that were disconnected after an irrecoverable external error occurred.
	Calls With DTMF. This counter displays the number of calls to the auto attendant during which a caller has been passed to the DTMF fallback auto attendant.
	Calls With Sent Message. This counter displays the number of calls to the auto attendant in which a caller has sent a voice message.
	Calls With Speech Input. This counter displays the number of calls during which the caller is determined to have spoken at least once.
	Calls With Spoken Name. This counter displays the number of calls to auto attendant during which a caller has spoken a name at least once.
Where to go next	N/A

Auto Attendant Directory Access view

To display this view, enable the **UM Auto Att Directory Access Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 23. Auto Attendant Directory Access view

Description	This view displays directory access metrics for the Unified Messaging auto attendant on the selected Exchange server, which are gathered when the UM Auto Att Directory Access collection group is enabled.
Data displayed	**Directory Accessed**. This counter shows the number of directory access operations performed by the auto attendant.
	Directory Accessed by Dial by Name. This counter shows the number of directory access operations in which the subscriber used the Dial by Name feature.
	Directory Accessed by Extension. This counter shows the number of directory access operations in which the user supplied the extension number.
	Directory Accessed by Spoken Name. This counter shows the number of directory access operations in which the subscriber spoke a recipient name.
	Directory Accessed Successfully by Dial by Name. This counter shows the number of successful directory access operations in which the subscriber used the Dial by Name feature
	Directory Accessed Successfully by Spoken Name. This counter shows the number of successful directory access operations in which the caller spoke a recipient names.
Where to go next	N/A

Auto Attendant General view

To display this view, enable the **UM Auto Att General Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Description	This view displays general metrics for the Unified Messaging auto attendant on the selected Exchange server, which are gathered when the UM Auto Att General collection group is enabled.
Data displayed	**Percent Successful Calls.** This counter shows the percentage of successful auto attendant calls.
	Average Call Time. This counter shows the average length of time that callers interacted with the auto attendant.
	Average Recent Call Time. This counter shows the average length of time of the last 50 auto attendant calls.
Where to go next	N/A

Auto Attendant Transfers view

To display this view, enable the **UM Auto Att Transfers Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Description	This view displays transfer metrics for the Unified Messaging auto attendant on the selected Exchange server, which are gathered when the UM Auto Att Transfers collection group is enabled.
Data displayed	**Ambiguous Name Transfers.** This counter shows the number of times callers were transferred to the operator because the name that they specified or spoke was too common in the search results.
	Disallowed Transfers. This counter shows the number of times a caller was transferred to the operator because the user they identified was configured to accept calls only from users who are logged on.
	Operator Transfers. This counter shows the number of calls that have been transferred to the operator.
	Operator Transfers Requested by User. This counter shows the number of times that a caller to the auto attendant has asked to be transferred to an operator.
	Operator Transfers Requested by User from Opening Menu. This counter shows the number of times that a caller to the auto attendant has asked to be transferred to an operator while at the opening menu.
	Transferred Count. This counter shows the number of calls that were transferred by the auto attendant.
Where to go next	N/A

Cached LDAP Searches/sec view

This embedded view is part of the Exchange Server AD Health view, which appears when an individual Exchange Server is selected in the Exchange Infrastructure on the Exchange Explorer. Select the **AD Health** navigation tab.

Description	This view displays the following metrics for the selected Exchange server.
Data displayed	**Cached LDAP Searches/Sec.** This graph charts the number of LDAP search requests issued per second. It provides a comparison against the fatal, critical and warning threshold levels.

Table 26. Cached LDAP Searches/sec view

Where to go next	Drill down on:
	• Clicking the graph in this view displays a metrics popup that describes the counter, provides more detailed data points, and lists current alarms for the selected metric.

CAS AB Load view

To display this view, enable the **CAS AB Load Group** in the Client Access Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Client Access views on the Roles navigation tab in the Exchange Explorer dashboard.

ⓘ | NOTE: This view is only available when an Exchange 2010 server is selected in the Exchange Infrastructure view.

Table 27. CAS AB Load view

Description	This view displays CAS Address Book load metrics for the selected Exchange server, which are gathered when the CAS AB Load collection group is enabled.
Data displayed	**NSPI Connections Current**. This graph charts the number of NSPI clients currently connected to the server. It provides a comparison against the computed average for the specified time interval.
	Connections and Requests/sec. This graph charts the following metrics over the specified time interval: • **NSPI Connections/sec**. Shows the number of NSPI client connections established to the server each second. • **NSPI RPC Requests/sec**. Shows the rate at which NSPI requests occur each second. • **Referral RPC Requests/sec**. Shows the rate at which referral requests occur each second.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

CAS AB Service view

To display this view, enable the **CAS AB Service Group** in the Client Access Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Client Access views on the Roles navigation tab in the Exchange Explorer dashboard.

ⓘ | NOTE: This view is only available when an Exchange 2010 server is selected in the Exchange Infrastructure view.

Table 28. CAS AB Service view

Description	This view displays average latency metrics for the CAS AB service on the selected Exchange server, which are gathered when the CAS AB Service collection group is enabled.
Data displayed	**Average Latency.** This graph charts the following metrics over the specified time interval: • **NSPI RPC Browse Requests Average Latency.** Shows the average time that Name Service Provider Interface (NSPI) browse requests took to complete during the sampling period. • **NSPI RPC Requests Average Latency.** Shows the average time that NSPI requests took to complete during the sampling period. • **Referral RPC Requests Average Latency.** Shows the average time that referral requests took to complete during the sampling period.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

CAS ActiveSync view

To display this view, enable the **CAS ActiveSync Group** in the Client Access Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Client Access views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 29. CAS ActiveSync view

Description	This view displays metrics related to the CAS ActiveSync service on the selected Exchange server, which are gathered when the CAS ActiveSync collection group is enabled.
Data displayed	**Average Request Time.** This graph charts the average time that elapsed while waiting for a request to complete. It provides a comparison against the computed average for the specified time interval.
	Requests Queued. This graph charts the number of HTTP requests that were received from the client via ASP.Net® per second. It provides a comparison against the computed average for the specified time interval.
	Pending Ping and Sync Commands. This graph charts the following metrics over the specified time interval: • **Ping Commands Pending.** Shows the number of ping commands that are currently pending in the queue. • **Sync Commands Pending.** Shows the number of sync commands that are currently pending in the queue.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

CAS Control Panel Load view

To display this view, enable the **CAS Control Panel Load Group** in the Client Access Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Client Access views on the Roles navigation tab in the Exchange Explorer dashboard.

ⓘ | **NOTE:** This view is only available when an Exchange 2010 server is selected in the Exchange Infrastructure view.

Table 30. CAS Control Panel Load view

Description	This view displays load metrics for the CAS Control Panel on the selected Exchange server, which are gathered when the CAS Control Panel Load collection group is enabled.
Data displayed	**ASP.NET Requests Failures/sec.** This counter shows the number of failures detected per second by ASP.Net® in the Exchange Control Panel.
	RBAC Sessions/sec. This counter shows the number of RBAC sessions that are loaded per second in the Exchange Control Panel.
	Requests Activations/sec. This counter shows the number of requests that are activated per second in the Exchange Control Panel.
	Requests Average Response Time. This counter shows the average time that the Exchange Control Panel took to respond to a request during the sampling period.
	Outbound Proxy Requests Average Response Time. This graph charts the average time that requests sent to a secondary Client Access server took to complete during the sampling period.
	Proxy Requests/sec. This graph charts the following metrics over the specified time interval: • **Inbound Proxy Requests/sec.** Shows the number of HTTP requests received from a primary Client Access server per second. • **Outbound Proxy Requests/sec.** Shows the number of HTTP requests sent to a secondary Client Access server per second.
	Proxy Sessions/sec. This graph charts the following metrics over the specified time interval: • **Inbound Proxy Sessions/sec.** Shows the number of inbound proxy sessions loaded per second in the Exchange Control Panel. • **Outbound Proxy Sessions/sec.** Shows the number of outbound proxy sessions loaded per second in the Exchange Control Panel.
	Explicit Sign On Requests/sec. This graph charts the following metrics over the specified time interval: • **Explicit Sign-On Inbound Proxy Requests/sec.** Shows the number of Explicit Sign-On requests received from a primary Client Access server per second. • **Explicit Sign-On Outbound Proxy Requests/sec.** Shows the number of Explicit Sign-On requests sent to a secondary Client Access server per second. • **Explicit Sign-On Standard RBAC Requests/sec.** Shows the number of requests received per second by an Explicit Sign-On Standard RBAC session.

Table 30. CAS Control Panel Load view

	Explicit Sign On Sessions/sec. This graph charts the following metrics over the specified time interval: • **Explicit Sign-On Inbound Proxy Sessions/sec.** Shows the number of Explicit Sign-On Inbound Proxy sessions that are loaded per second in the Exchange Control Panel. • **Explicit Sign-On Outbound Proxy Sessions/sec.** Shows the number of Explicit Sign-On Outbound Proxy sessions that are loaded per second in the Exchange Control Panel. • **Explicit Sign-On Standard RBAC Sessions/sec.** Shows the number of Explicit Sign-On Standard RBAC sessions that are loaded per second in the Exchange Control Panel.
	PowerShell Runspaces Average Active Time. This graph charts the average time that a Windows® PowerShell runspace stays active while executing cmdlets in the Exchange Control Panel during the sampling period. It provides a comparison against the computed average for the specified time interval.
	PowerShell Runspaces/sec. This graph charts the following metrics over the specified time interval: • **PowerShell Runspaces Activations/sec.** Shows the number of Windows PowerShell runspaces that are activated per second in the Exchange Control Panel. • **PowerShell Runspaces/sec.** Shows the number of Windows PowerShell runspaces that are created per second in the Exchange Control Panel.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

CAS Load view

To display this view, enable the **CAS Load Group** in the Client Access Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Client Access views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 31. CAS Load view

Description	This view displays load metrics for the Client Access Server (CAS) on the selected Exchange server, which are gathered when the CAS Load collection group is enabled.
Data displayed	**Ping Commands Pending.** This graph charts the number of Ping commands that are currently pending on the server. It provides a comparison against the computed average for the specified time interval.
	Requests and Sync Commands/sec. This graph charts the following metrics over the specified time interval: • **HTTP Requests/sec.** Shows the number of HTTP requests that are received from the client via ASP.Net® per second. • **Sync Commands/sec.** Shows the number of Sync commands that are processed per second.
	Autodiscover Requests/sec. This graph charts the number of Autodiscover service requests processed each second. It provides a comparison against the computed average for the specified time interval.

Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

CAS OAB Download view

To display this view, enable the **CAS OAB Download Group** in the Client Access Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Client Access views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 32. CAS OAB Download view

Description	This view displays download metrics for the CAS offline address book (OAB) on the selected Exchange server, which are gathered when the CAS OAB Download collection group is enabled.
Data displayed	**Download Tasks Queued.** This graph charts the number of OAB download tasks queued since the file distribution service started.
	Download Tasks Completed. This graph charts the number of OAB download tasks completed since the file distribution service started.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

CAS RPC Client Access view

To display this view, enable the **CAS RPC Client Access Group** in the Client Access Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Client Access views on the Roles navigation tab in the Exchange Explorer dashboard.

ⓘ | NOTE: This view is only available when an Exchange 2010 server is selected in the Exchange Infrastructure view.

Table 33. CAS RPC Client Access view

Description	This view displays download metrics for the on the selected Exchange server, which are gathered when the CAS RPC Client Access collection group is enabled.
Data displayed	**RPC Averaged Latency.** This graph charts the latency averaged for the past 1,024 packets.
	RPC Requests. This graph charts the number of client requests currently being processed by the RPC Client Access service.
	RPC Operations/sec. This graph charts the rate at which RPC operations occur.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

CAS RPC Client Access Load view

To display this view, enable the **CAS RPC Client Access Load Group** in the Client Access Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Client Access views on the Roles navigation tab in the Exchange Explorer dashboard.

ⓘ | **NOTE:** This view is only available when an Exchange 2010 server is selected in the Exchange Infrastructure view.

Table 34. CAS RPC Client Access Load view

Description	This view displays load metrics for the CAS Client Access server on the selected Exchange server, which are gathered when the CAS RPC Client Access Load collection group is enabled.
Data displayed	**Active User Count.** This graph charts the number of unique users that have shown activity in the last two minutes.
	Connection Count. This graph charts the total number of client connections being maintained.
	RPC Operations/sec. This graph charts the rate at which RPC operations occur.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

CAS RPC HTTP view

To display this view, enable the **CAS RPC HTTP Group** in the Client Access Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Client Access views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 35. CAS RPC HTTP view

Description	This view displays metrics associated with the RPC/HTTP proxy for the selected Exchange server, which are gathered when the CAS RPC HTTP collection group is enabled.
Data displayed	**Current Number of Unique Users.** This graph charts the number of unique users currently connected to a back-end server via RPC/HTTP.
	Current Number of Incoming RPC Over HTTP Connections. This graph charts the number of current front-end HTTP connections.
	Number of Failed Back End Connection Attempts/sec. This graph charts the rate at which RPC proxy attempts are occurring but failing to establish a connection to a back-end server.
	RPC HTTP Requests/sec. This graph charts the rate at which RPC/HTTP requests are being sent to the back-end server.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Client Access Features view

To display the Client Access Features view select **Client Access** under the Roles object container in the Exchange Infrastructure view on the Exchange Explorer dashboard. The metrics displayed depend on the feature selected in the Client Access tile and the server selected in the server list below the tile.

Table 36. Client Access Features view - IMAP4

Description	When **IMAP4** is selected in the Client Access tile, this view displays the following metrics for the server selected in the server list.
Data displayed	**Connections**. This graph charts the following metrics over the specified time interval: • **Current Connections**. Shows the number of connections that are currently open on the IMAP service. • **SSL Connections**. Shows the total number of SSL or TLS connections that have been opened since the IMAP service was started. • **Total Connections**. Shows the total number of connections that have been opened since the IMAP service was started.
	Authenticate Failure & Connections Rejected. This graph charts the following metrics over the specified time interval: • **Authentication Failures**. Shows the number of AUTHENTICATE commands that have failed since the IMAP service was started. • **Connections Rejected**. Shows the number of connections that have been rejected since the IMAP service was started.
	STORE Rate. This graph charts the number of STORE commands processed each second over the specified time interval.
	FETCH Rate. This graph charts the number of FETCH commands processed each second over the specified time interval.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 37. Client Access Features view - OWA

Description	When **OWA** is selected in the Client Access tile, this view displays the following metrics for the server selected in the server list.
Data displayed	**OWA Average Search Time**. This button shows the calculated OWA average search time over the specified time interval.
	OWA Average Response Time. This button shows the calculated OWA average response time over the specified time interval.
	OWA Average Search & Response Times. This graph charts the following metrics over the specified time interval: • **Average Response Time**. Shows the average response time. • **Average Search Time**. Shows the average search time.
	Peak Number of OWA Users. This metrics indicator shows the largest number of users that were simultaneously connected to Outlook Web Access since the process was last restarted.
	Number of OWA Users. This graph charts the following metrics over the specified time interval: • **Current OWA Users**. Shows the number of users who are currently logged on to Outlook Web Access. • **Current Unique OWA Users**. Shows the number of unique users who are currently logged on to Outlook Web Access.
	OWA Logons/sec. This graph charts the number of Outlook Web Access user sessions that are created each second during the specified time interval. It provides a comparison against the computed average for the specified time interval.

Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 38. Client Access Features view - POP3

Description	When **POP3** is selected in the Client Access tile, this view displays the following metrics for the server selected in the server list.
Data displayed	**Current Connections**. The counter displays the number of connections that are currently open on the POP service. The graph charts the number of connections opened on the POP service during the specified time interval.
	POP3 DELE Rate. This graph charts the number of DELE (delete selected message) commands processed each second over the specified time interval.
	POP3 RETR Rate. This graph charts the number of RETR (retrieve selected message) commands processed each second over the specified time interval.
	POP3 UIDL Rate. This graph charts the number of UIDL (unique ID listing) commands processed each second over the specified time interval.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Cluster Database Details view

This embedded view is part of the Exchange Cluster Explorer Summary view which appears when an Exchange 2010 DAG cluster object is selected in the Exchange Infrastructure view. The details displayed in this view change depending on the mailbox database copy selected in the left-hand pane of the Cluster Database Details view.

Table 39. Cluster Database Details view

Description	This view appears when a DAG cluster is selected under the **Clusters** container object in the Exchange Infrastructure view on the Exchange Explorer dashboard. It displays the following information and metrics about the databases on the selected DAG cluster.
Data displayed	**Name**. The list in the left pane of this view displays the names of the mailbox database copies that make up the selected DAG cluster. Selecting a database copy from this list populates the right panes with the corresponding the information and metrics for that database copy.
	Active. The following details are displayed for the active database in the selected DAG cluster: • Status. • Content Index State. • Content Index Error Message. • Error Message. • Database File Path.
	In addition, the following metrics are displayed for the active database in the selected DAG cluster:
	I/O Log Writes Average Latency. This graph charts the average time, in milliseconds, that it takes to write a log buffer to the active log file. It provides a comparison against the computed average for the selected time interval.

Table 39. Cluster Database Details view

	Log Record Stalls/sec. This graph charts the number of log records that cannot be added to the log buffer because the log buffers are full. It provides a comparison against the computed average for the selected time interval.
	Log Threads Waiting. This graph charts the number of threads waiting to write their data to the log to complete a database update. It provides a comparison against the computed average for the selected time interval.
	Seeding Finished Percent. This graph shows the finished percentage of seeding. This information can be used to determine if seeding is occurring for a particular database which may possible affect overall server performance or current network bandwidth.
	Database Attached Average Latency. This graph charts the average time, in milliseconds, that it takes to read from and write to the database file.
	Database Recovery Average Latency. This graph charts the average time, in milliseconds, that it takes to read from and write to the database file.
	Queue Lengths. This graph charts the number of transaction log files waiting to be replayed into the passive copy and the number waiting to be copied to the passive copy log file.
	Log Copy KB/sec. This graph charts the rate at which log copying is proceeding. It provides a comparison against the computed average for the selected time interval.
	Log Replay Rate Generations/sec. This graph charts the rate of replay (in log generations per second) in current replay batch. It provides a comparison against the computed average for the selected time interval.
	Passive. The following details are displayed for the selected passive database copy: • Status • Content Index State • Content Index Error Message • Error Message • Database File Path
	In addition, the following metrics are displayed for the selected passive database copy:
	Copy Queue Length. This graph charts the number of transaction log files waiting to be copied to the passive copy log file folder. It provides a comparison against the computed average for the selected time interval.
	Replay Queue Length. This graph charts the number of transaction log files waiting to be replayed into the passive copy log file. It provides a comparison against the computed average for the selected time interval.
	Log Copy KB/sec. This graph charts the rate at which log copying is proceeding. It provides a comparison against the computed average for the selected time interval.
	Log Replay Rate Generations/sec. This graph charts the rate of replay (in log generations per second) for the current replay batch. It provides a comparison against the computed average for the selected time interval.
Where to go next	Drill down on:
	• Active Database Name - Active DAG Database view • Passive Database Name - Passive DAG Database view • Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Cluster IP view

This embedded view is part of the Exchange Cluster Environment Summary view which is displayed when an individual cluster is selected in the Object Tree view in the Exchange Environment dashboard.

Table 40. Cluster IP view

Description	This view displays the IP address of the Exchange cluster selected in the Object Tree view.
Where to go next	N/A

Cluster Storage Group Details view

This embedded view is part of the Exchange Cluster Explorer Summary view which appears when an Exchange 2007 cluster object is selected in the Exchange Infrastructure view. The details displayed in this view change depending on the storage group selected in the left-hand pane of the Cluster Storage Group Details view. This view can be used to monitor the replication health of the selected node in a cluster.

Table 41. Cluster Storage Group Details view - CCR

Description	This view appears when a CCR cluster node is selected under the **Clusters** container object in the Exchange Infrastructure view on the Exchange Explorer dashboard. It displays the following information and metrics about the storage groups in the selected CCR cluster.
Data displayed	**Name.** The list in the left pane of this view displays the names of the storage group(s) that make up the selected CCR cluster. Selecting a storage group from this list populates the right panes with the corresponding the information and metrics for that storage group.
	Active. The following details are displayed for the active database in the selected DAG cluster: • Copy Status • Failed Message • Last Inspected Log Time
	In addition, the following metrics are displayed for the active storage group in the selected cluster:
	Log Threads Waiting. This graph charts the number of threads waiting to write their data to the log to complete a database update. It provides a comparison against the computed average for the selected time interval.
	I/O Log Writes Average Latency. This graph charts the average time, in milliseconds, that it takes to write a log buffer to the active log file. It provides a comparison against the computed average for the selected time interval.
	Log Record Stalls/sec. This graph charts the number of log records that cannot be added to the log buffer because the log buffers are full. It provides a comparison against the computed average for the selected time interval.
	I/O Database Reads Average Latency. This graph charts the average time it takes to read from the database file. It provides a comparison against the computed average for the selected time interval.
	I/O Database Writes Average Latency. This graph charts the average time it takes to write to the database file. It provides a comparison against the computed average for the selected time interval.

Table 41. Cluster Storage Group Details view - CCR

	Passive. The following details are displayed for the selected passive database copy: • Copy Status • Failed Message • Last Inspected Log Time
	In addition, the following metrics are displayed for the selected passive storage group:
	Copy Queue Length. This graph charts the number of transaction log files waiting to be copied to the passive copy log file folder. It provides a comparison against the computed average for the selected time interval.
	Replay Queue Length. This graph charts the number of transaction log files waiting to be replayed into the passive copy log file. It provides a comparison against the computed average for the selected time interval.
Where to go next	Drill down on:
	• Active Storage Group Name - Active CCR Storage Group view • Passive Storage Group Name - Passive CCR Storage Group view • Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 42. Cluster Storage Group Details view - SCC

Description	This view appears when a SCC cluster node is selected under the **Clusters** container object in the Exchange Infrastructure view on the Exchange Explorer dashboard. It displays the following information and metrics about the storage groups in the selected SCC cluster.
Data displayed	**Name**. The list in the left pane of this view displays the names of the storage group(s) that make up the selected SCC cluster. Selecting a storage group from this list populates the right panes with the corresponding the information and metrics for that storage group.
	In addition, the following metrics are displayed for the active storage group in the selected cluster:
	Log Threads Waiting. This graph charts the number of threads waiting to write their data to the log to complete a database update. It provides a comparison against the computed average for the selected time interval.
	I/O Log Writes Average Latency. This graph charts the average time, in milliseconds, that it takes to write a log buffer to the active log file. It provides a comparison against the computed average for the selected time interval.
	Log Record Stalls/sec. This graph charts the number of log records that cannot be added to the log buffer because the log buffers are full. It provides a comparison against the computed average for the selected time interval.
	I/O Database Reads Average Latency. This graph charts the average time it takes to read from the database file. It provides a comparison against the computed average for the selected time interval.
	I/O Database Writes Average Latency. This graph charts the average time it takes to write to the database file. It provides a comparison against the computed average for the selected time interval.
Where to go next	Drill down on:
	• Active Storage Group Name - Active SCC Storage Group view • Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Cluster Summary and Resource Information view

This embedded view is part of the Exchange Cluster Explorer Summary view which is displayed when an individual cluster is selected in the Exchange Infrastructure view in the Exchange Explorer dashboard.

Table 43. Cluster Summary and Resource Information view

Description	This view displays the following information for cluster selected in the Object Tree view.
	Windows Cluster. Displays the name of the selected Windows® cluster.
	IP Address. Displays the IP address of the selected Windows cluster.
	File Share Witness. Displays the path and name of the file share hosting the file share witness. (Applies to DAG and CCR clusters only.)
Where to go next	N/A

Cluster Summary view

This view appears to the right of the Quick View on the Exchange Cluster Environment Summary view when an individual cluster is selected in the Object Tree view. This view either displays information and metrics for the database copies or the storage groups that make up the selected cluster.

Table 44. Cluster Summary view - Databases

Description	This view appears when an Exchange 2010 DAG cluster is selected in the Object Tree view on the Exchange Environment dashboard. It displays the following information and metrics about the mailbox database copies in the selected DAG cluster.
Data displayed	**Name.** The list in the left pane of this view displays the names of the mailbox database copies that make up the selected DAG cluster. Selecting a database from this list populates the right panes with the corresponding database information and metrics.
	Active. The following details are displayed for the active database copy: • Status • Error Message
	In addition, the following metrics are displayed for the active database copy:
	Copy and Replay Queue Lengths. This graph charts the number of transaction log files in the copy queue and replay queue. It provides a comparison of the following counters: • **Copy Queue Length.** Shows the number of transaction log files waiting to be copied tot he passive copy log file folder. • **Replay Queue Length.** Shows the number of transaction log files waiting to be replayed into the passive copy.
	Database Attached Average Latency. This graph charts the average time, in milliseconds, that it takes to read from and write to the database file. It provides a comparison of the following counters: • **I/O Database Reads (Attached) Average Latency.** Shows the average time it takes to read from the database file. • **I/O Database Writes (Attached) Average Latency.** Shows the average time it takes to write to the database file.
	Passive. The following details are displayed for the passive database copy: • Status • Error Message

Table 44. Cluster Summary view - Databases

	In addition, the following metrics are displayed for the selected passive database copy:
	Copy and Replay Queue Lengths. This graph charts the number of transaction log files in the copy queue and replay queue. It provides a comparison of the following counters: • **Copy Queue Length.** Shows the number of transaction log files waiting to be copied tot he passive copy log file folder. • **Replay Queue Length.** Shows the number of transaction log files waiting to be replayed into the passive copy.
Where to go next	Drill down on:
	• Active Database Name - Active DAG Database view • Passive Database Name - Passive DAG Database view • Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 45. Cluster Summary view - Storage Groups - CCR

Description	This view appears when an Exchange 2007 CCR cluster is selected in the Object Tree view on the Exchange Environment dashboard. It displays the following information and metrics about the active and passive storage group in the selected cluster.
Data displayed	**Active Storage Group.** The following details are displayed for the active storage group in the selected cluster: • Copy Status • Failed Message • Last Inspected Log Time
	In addition, the following metrics are displayed for the active storage group:
	I/O Log Writes Average Latency. This graph charts the average time it takes to write a log buffer to the active log file.
	I/O Database Average Latency. This graph charts the average time, in milliseconds, that it takes to read from and write to the database file. It provides a comparison of the following counters: • **I/O Database Reads Average Latency.** Shows the average time to read from the database file. • **I/O Database Writes Average Latency.** Shows the average time to write to the database file.
	Passive Storage Group. The following details are displayed for the passive storage group in the selected cluster: • Copy Status • Failed Message • Last Inspected Log Time
	In addition, the following metrics are displayed for the passive storage group:
	Copy Queue Length. This graph charts the number of transaction log files waiting to be copied to the passive copy log file folder.
	Replay Queue Length. This graph charts the number of transaction log files waiting to be replayed into the passive copy.

Where to go next	Drill down on:
	• Active Storage Group Name - Active CCR Storage Group view
	• Passive Storage Group Name - Passive CCR Storage Group view
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 46. Cluster Summary view - Storage Groups - SCC

Description	This view appears when an Exchange 2007 SCC cluster is selected in the Object Tree view on the Exchange Environment dashboard. It displays the following information and metrics about the active and passive storage group in the selected cluster.
Data displayed	**I/O Log Writes Average Latency.** This graph charts the average time it takes to write a log buffer to the active log file.
	I/O Database Average Latency. This graph charts the average time, in milliseconds, that it takes to read from and write to the database file. It provides a comparison of the following counters: • **I/O Database Reads Average Latency.** Shows the average time to read from the database file. • **I/O Database Writes Average Latency.** Shows the average time to write to the database file.
	Log Threads Waiting. This graph charts the number of threads waiting to write their data to the log to complete a database update. It provides a comparison against the computed average for the selected time interval.
	Log Record Stalls/sec. This graph charts the number of log records that cannot be added to the log buffer because the log buffers are full. It provides a comparison against the computed average for the selected time interval.
Where to go next	Drill down on:
	• Active Storage Group Name - Active SCC Storage Group view
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

CPU view

This embedded view is part of the Resource Utilization Details view, which appears when you select the **Resource Utilization Details** title or **Details** link in the upper right corner of the Resource Utilization view for an individual Exchange Server on the Exchange Explorer dashboard.

Table 47. CPU view

Description	This view displays CPU utilization metrics for the selected Exchange server. The counters and indicators in this view change color based on overall consumption or deviation from normal levels.
Data displayed	**System\Processor Queue Length.** This button displays the number of threads each processor is currently servicing. This number should not be greater than five per processor. Processor Queue Length can be used to identify when processor contention or high CPU utilization is caused by the processor capacity being insufficient to handle the assigned workload.

Table 47. CPU view

	Percent Processor Time. This graph charts the following metrics over the specified time interval: • **% User Time.** Shows the percentage of time that is spent in user mode. User mode is a restricted processing mode designed for applications, environment subsystems, and integral subsystems. • **% Privileged Time.** Shows the percentage of time that is spent in privileged mode. Privilege mode is a processing mode designed for operating system components and hardware-manipulating drivers. It allows direct access to hardware and memory. • **% Processor Time.** Shows the percentage of time that the processor is executing application or operation system processes.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Disk view

This embedded view is part of the Resource Utilization Details view, which appears when you select the **Resource Utilization Details** title or **Details** link in the upper right corner of the Resource Utilization view for an individual Exchange Server on the Exchange Explorer dashboard.

Table 48. Disk view

Description	This view displays disk utilization metrics for the selected Exchange server.
Data displayed	**Avg. Disk Read.** This counter shows the average time it takes to read data from the logical disk.
	Avg. Disk Write. This counter shows the average time it takes to write data to the logical disk.
	Logical Disk Read and Write Time. This graph charts the following metrics over the specified time interval: • **Avg. Read Time.** Shows the average time, in seconds, it takes to read data from the disk. • **Avg. Write Time.** Shows the average time, in seconds, it takes to write data to the disk.
	Avg. Disk Read. This counter shows the average time it takes to read data from the physical disk.
	Avg. Disk Write. This counter shows the average time it takes to write data from the physical disk.
	Physical Disk Read and Write Time. This graph charts the following metrics over the specified time interval: • **Avg. Read Time.** Shows the average time, in seconds, it takes to read data from the disk. • **Avg. Write Time.** Shows the average time, in seconds, it takes to write data to the disk.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Domain Controllers view

This embedded view is part of the Exchange Server AD Health view, which appears when an individual Exchange Server is selected in the Exchange Infrastructure on the Exchange Explorer. Select the **AD Health** navigation tab.

ⓘ | NOTE: This view displays all the DCs found in your Active Directory® environment; however, the details listed are only provided for DCs that are being monitored by Foglight for Active Directory.

Table 49. Domain Controllers view

Description	This view displays a list of all the DCs in your Active Directory environment. If DCs are being managed by Foglight for Active Directory, this view also displays additional metrics and information for these DCs.
Data displayed	**Domain Controllers.** Displays the following information for each DC that is being monitored by Foglight for Active Directory: • Name. • GC. • In Site • LDAP Read Time. • LDAP Search Time. • LDAP Read Calls/sec. • LDAP Search Calls/sec. • LDAP Searches Timed Out/min. • Long Running LDAP Operations/min.
	Replication Queue Length. This graph charts the number of entries in the selected DC's replication queue.
	Replication Failures. This chart displays the following information about any replication failures that were encountered during the specified time interval: • Time • Partition • Reason Code • Reason
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Edge Agent view

To display this view, enable the **Edge Agent Group** in the Transport Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Edge Transport views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 50. Edge Agent view

Description	This view displays metrics for the Edge Agent on the selected Exchange server, which are gathered when the Edge Agent collection group is enabled.
Data displayed	**Messages That Bypassed Scanning Content.** This graph charts the total number of messages that bypass scanning.
	Avg. Processing Time. For each extensibility agent, this counter shows the average time it takes to process events.

Table 50. Edge Agent view

	Messages Filtered by Attachment/sec. This counter displays the number of messages that the Attachment Filtering agent blocked, stripped of attachments, or silently deleted per second.
	Messages Filtered by Sender/sec. This counter displays the number of messages filtered by the Sender Filter agent per second.
	Recipients Rejected by Block List/sec. This counter displays the number of recipients rejected by the block list per second.
	Recipients Rejected by Recipient Validation/sec. This counter displays the number of recipients rejected by recipient validation per second.
	Attachment Filtered Messages. This graph charts the number of messages that were blocked, stripped of attachments, or silently deleted by the attachment filtering agent.
	Messages Scanned/sec. This graph charts the number of messages scanned per second.
	Deleted, Quarantined and Rejected Messages. This graph charts the following metrics over the specified time interval: • **Messages Deleted by Content Filter Agent**. Shows the number of messages that were deleted by the Content Filter agent. • **Messages Quarantined by Content Filter Agent**. Shows the number of messages that were quarantined by the Content Filter agent. • **Messages Rejected by Content Filter Agent**. Shows the number of messages that were rejected by the Content Filter agent.
Where to go next	Drill down on:
	• Clicking a graph or counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Edge Transport Features view

To display the Edge Transport Features view, select **Edge Transport** under the Roles object container in the Exchange Infrastructure view on the Exchange Explorer dashboard. The metrics displayed depend on the feature selected in the Edge Transport tile and the server selected in the server list below the tile.

Table 51. Edge Transport Features view - Address Rewrites

Description	When **Address Rewrites** is selected in the Edge Transport tile, this view displays the following information for the server selected in the server list.
Data displayed	• **Transport Agent**. Displays the name of the transport agent.
	• **Total Agent Invocations**. Displays the total number of invocations since that last restart.
	• **Avg. Agent Processing Time/sec**. Displays the average agent processing time in seconds per event.
Where to go next	N/A

Table 52. Edge Transport Features view - Attachment Filter

Description	When **Attachment Filter** is selected in the Edge Transport tile, this view displays the following metrics for the server selected in the server list.
Data displayed	• **Transport Agent**. Displays the name of the transport agent.
	• **Total Agent Invocations**. Displays the total number of invocations since that last restart.

Table 52. Edge Transport Features view - Attachment Filter

	• **Avg. Agent Processing Time/sec.** Displays the average agent processing time in seconds per event.
Where to go next	N/A

Table 53. Edge Transport Features view - Connection Filter

Description	When **Connection Filter** is selected in the Edge Transport tile, this view displays the following information for the server selected in the server list.
Data displayed	• **Transport Agent.** Displays the name of the transport agent.
	• **Total Agent Invocations.** Displays the total number of invocations since that last restart.
	• **Avg. Agent Processing Time/sec.** Displays the average agent processing time in seconds per event.
Where to go next	N/A

Table 54. Edge Transport Features view - Content Filter

Description	When **Content Filter** is selected in the Edge Transport tile, this view displays the following information for the server selected in the server list.
Data displayed	• **Transport Agent.** Displays the name of the transport agent.
	• **Total Agent Invocations.** Displays the total number of invocations since that last restart.
	• **Avg. Agent Processing Time/sec.** Displays the average agent processing time in seconds per event.
Where to go next	N/A

Table 55. Edge Transport Features view - Internet Mail

Description	When **Internet Mail** is selected in the Edge Transport tile, this view displays the following metrics for the server selected in the server list.
Data displayed	**Submission Queue.** This graph charts the number of messages in the submission queue waiting to be processed for delivery.
	Remote Delivery Queue. This graph charts the following metrics over the specified time interval: • **Active Delivery Queue.** Shows the number of messages waiting to be delivered to a remote server. • **Retry Delivery Queue.** Shows the number of messages waiting to be retried for delivery to a remote server.
	Largest Delivery Queue. This counter displays the number of items in the largest delivery queue.
	All Delivery Queues. This graph charts the number of items queued for delivery to all queues.
	Unreachable Queue. This graph charts the number of messages in the unreachable queue. Messages in this queue are never automatically resubmitted or removed.
	Poison Queue. This graph charts the number of messages in the poison queue. Messages in this queue are never automatically resubmitted or removed.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 56. Edge Transport Features view - Recipient Filter

Description	When **Recipient Filter** is selected in the Edge Transport tile, this view displays the following information for the server selected in the server list.
Data displayed	• **Transport Agent**. Displays the name of the transport agent.
	• **Total Agent Invocations**. Displays the total number of invocations since that last restart.
	• **Avg. Agent Processing Time/sec**. Displays the average agent processing time in seconds per event.
Where to go next	N/A

Table 57. Edge Transport Features view - Sender Filter

Description	When **Sender Filter** is selected in the Edge Transport tile, this view displays the following information for the server selected in the server list.
Data displayed	• **Transport Agent**. Displays the name of the transport agent.
	• **Total Agent Invocations**. Displays the total number of invocations since that last restart.
	• **Avg. Agent Processing Time/sec**. Displays the average agent processing time in seconds per event.
Where to go next	N/A

Table 58. Edge Transport Features view - Sender ID/Reputation

Description	When **Sender ID/Reputation** is selected in the Edge Transport tile, this view displays the following information for the server selected in the server list.
Data displayed	• **Transport Agent**. Displays the name of the transport agent.
	• **Total Agent Invocations**. Displays the total number of invocations since that last restart.
	• **Avg. Agent Processing Time/sec**. Displays the average agent processing time in seconds per event.
Where to go next	N/A

Exchange Roles Server Summary view

The Exchange Roles Server Summary view is part of the Exchange Server Environment Summary view, which appears when an individual server is selected on the Exchange Environment dashboard. The contents of this view depends on the Exchange role selected at the top of the view.

ⓘ | NOTE: Roles that are not being performed by the selected Exchange server will be disabled.

Table 59. Exchange Roles Server Summary - Client Access

Description	This view appears when **Client Access** is selected on the Exchange Roles Server Summary view and displays the following metrics for the selected Exchange server. NOTE: This view only displays "ASP.NET Request" data.
Data displayed	**OWA Average Search Time**. This button displays the calculated OWA average search time over the specified time interval.
	OWA Average Response Time. This button displays the calculated OWA average response time over the specified time interval.

Table 59. Exchange Roles Server Summary - Client Access

	OWA Average Search & Response Time. This graph charts the following metrics over the specified time interval: • **Average Response Time.** Shows the average time (in ms) that elapsed between the beginning and end of an OEH or ASPX request. • **Average Search Time.** Shows the average time that elapsed while waiting for a search to complete.
	Peak Number of OWA Users. This metric indicator shows the largest number of users that were simultaneously connect to Outlook Web Access since the process was last restarted.
	Number of OWA Users. This graph charts the following metrics over the specified time interval: • **Current OWA Users.** Shows the number of users who are currently logged on to Outlook Web Access. • **Current Unique OWA Users.** Shows the number of unique users who are currently logged on to Outlook Web Access.
Where to go next	Drill down on:
	• Clicking a entry in this list displays a metrics popup that describes the counter, provides more detailed data points, and lists current alarms for the selected metric.

Table 60. Exchange Roles Server Summary - Edge Transport

Description	This view appears when **Edge Transport** is selected on the Exchange Roles Server Summary view and displays the following metrics for the selected server.
Data displayed	**Submission Queue.** This graph charts the number of messages waiting to be processed for delivery.
	Remote Delivery Queues. This graph charts the following metrics over the specified time interval: • **Active Delivery Queue Length.** Shows the number of messages waiting to be delivered to a remote server. • **Retry Delivery Queue Length.** Shows the number of messages waiting to be retried for delivery to a remote server.
	Messages Received/sec. This graph charts the number of messages received by the SMTP server per second.
	Bytes Received/sec. This graph charts the number of bytes received in messages per second.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 61. Exchange Roles Server Summary - Hub Transport

Description	This view appears when **Hub Transport** is selected on the Exchange Roles Server Summary view and displays the following metrics for the selected server.
Data displayed	**Mailbox Delivery Queues.** This graph charts the number of messages waiting to be retried for delivery to a Mailbox server.

Table 61. Exchange Roles Server Summary - Hub Transport

	Remote Delivery Queues. This graph charts the following metrics over the specified time interval: • **Active Delivery Queue Length.** Shows the number of messages waiting to be delivered to a remote server. • **Retry Delivery Queue Length.** Shows the number of messages waiting to be retried for delivery to a remote server.
	Messages Received/sec. This graph charts the number of messages received by the SMTP server per second.
	Bytes Received/sec. This graph charts the number of bytes received in messages per second.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 62. Exchange Roles Server Summary - Mailbox

Description	This view appears when **Mailbox** is selected on the Exchange Roles Server Summary view and displays the following metrics for the selected server.
Data displayed	**RPC Requests.** This graph charts the number of client requests that are currently being processed by the information store.
	Public Folder Queues. This graph charts the following metrics over the specified time interval: • **Send Queue.** Shows the number of messages in the send queue. • **Receive Queue.** Shows the number of messages in the receive queue.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 63. Exchange Roles Server Summary - Unified Messaging

Description	This view appears when **Unified Messaging** is selected on the Exchange Roles Server Summary view and displays the following metrics for the selected server.
Data displayed	**Directory Access Failures.** This graph charts the number of times attempts to access Active Directory® failed.
	Hub Transport Access Failures. This graph charts the number of times that attempts to access a Hub Transport server failed. This number is only incremented if all Hub Transport servers were unavailable. NOTE: Applies to Exchange 2007 only.
	Mailbox Server Access Failures. This graph charts the number of times the system did not access a Mailbox server. NOTE: Applies to Exchange 2007 only.
	Unhandled Exceptions/sec. This graph charts the number of calls that were disconnected after an internal system error occurred in the last second. NOTE: Applies to Exchange 2007 only.
	Percent of Messages Successfully Processed. This graph charts the percentage of messages that were successfully processed by the Microsoft® Exchange Unified Messaging server in the last hour. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange 2010 only.

Table 63. Exchange Roles Server Summary - Unified Messaging

Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Exchange Roles Top 3 view

The Exchange Roles Top 3 view is part of the Exchange Site Environment Summary view, which appears when an individual site is selected on the Exchange Environment dashboard. The contents of this view depends on the Exchange role selected at the top of the view.

ⓘ | NOTE: Roles that are not being performed by Exchange servers in the selected site will be disabled.

Table 64. Exchange Roles Top 3 view - Client Access

Description	This view appears when **Client Access** is selected on the Exchange Roles Top 3 view and displays the following metrics for the Exchange servers in the selected site.
Data displayed	**Top 3 OWA Average Response Time**. The graph displays the top three Exchange servers in the selected site that reported the highest OWA response times over the specified time interval. The chart displays the names of the top three Exchange servers and their average response times.
	Top 3 OWA Average Search Time. The graph displays the top three Exchange servers in the selected site that reported the highest OWA search times over the specified time interval. The chart displays the names of the top three Exchange servers and their average search times.
Where to go next	N/A

Table 65. Exchange Roles Top 3 view - Edge Transport

Description	This view appears when **Edge Transport** is selected on the Exchange Roles Top 3 view and displays the following metrics for the Exchange servers in the selected site.
Data displayed	**Top 3 Submission Queues**. The graph displays the top three Exchange servers in the selected site that reported the highest number of messages in the submission queue over the specified time interval. The chart displays the names of the top three Exchange servers and their queue lengths.
	Top 3 Remote Delivery Queues. The graph displays the top three Exchange servers in the selected site that reported the highest number of messages in the remote delivery queue over the specified time interval. The chart displays the names of the top three Exchange servers and their queue lengths.
Where to go next	N/A

Table 66. Exchange Roles Top 3 view - Hub Transport

Description	This view appears when **Hub Transport** is selected on the Exchange Roles Top 3 view and displays the following metrics for the Exchange servers in the selected site.
Data displayed	**Top 3 Messages Received/sec**. The graph displays the top three Exchange servers in the selected site that reported the highest number of messages received per second over the specified time interval. The chart displays the names of the top three Exchange servers and the number of messages received per second.

	Top 3 Mailbox Delivery Queues. The graph displays the top three Exchange servers in the selected site that reported the highest number of messages in the mailbox delivery queue over the specified time interval. The chart displays the names of the top three Exchange servers and their queue lengths.
Where to go next	N/A

Table 67. Exchange Roles Top 3 view - Mailbox

Description	This view appears when **Mailbox** is selected on the Exchange Roles Top 3 view and displays the following metrics for the Exchange servers in the selected site.
Data displayed	**Top 3 RPC Requests**. The graph displays the top three Exchange servers in the selected site that reported the highest number RPC requests over the specified time interval. The chart displays the names of the top three Exchange servers and the number of RPC requests.
	Top 3 User Connections. The graph displays the top three Exchange servers in the selected site that reported the highest number of user connections over the specified time interval. The chart displays the names of the top three Exchange servers and the number of user connections.
Where to go next	N/A

Table 68. Exchange Roles Top 3 view - Unified Messaging

Description	This view appears when **Unified Messaging** is selected on the Exchange Roles Top 3 view and displays the following metrics for the Exchange servers in the selected site.
Data displayed	**Top 3 Hub Transport Access Failures**. The graph displays the top three Exchange servers in the selected site that reported the highest number of hub transport access failures over the specified time interval. The chart displays the names of the top three Exchange servers and the number of failures.
	Top 3 Mailbox Server Access Failures. The graph displays the top three Exchange servers in the selected site that reported the highest number of mailbox server access failures over the specified time interval. The chart displays the names of the top three Exchange servers and the number of failures.
Where to go next	N/A

Exchange Server Roles view

The Exchange Server Roles view can be accessed by selecting an individual server from under the Servers object container in the Exchange Infrastructure view on the Exchange Explorer dashboard. Select the **Roles** navigation tab to display the Exchange Server Roles view for the selected server. The contents of this view depends on the Exchange role selected at the top of the view.

ⓘ | NOTE: Roles that are not being performed on the selected Exchange server will be disabled.

Table 69. Exchange Server Roles view - Client Access - IIS Health view

Description	This view appears when **Client Access** is selected on the Exchange Server Roles view and displays a list of the metrics related to IIS health that are being collected on the selected Exchange server.
Data displayed	**Metrics Trend.** This list displays the metrics being collected. It also displays the current state, a trend line graph and the current value for each metric. The metrics being collected include: • **HTTP Connections.** Shows the current number of connections established with the web service. • **Connection Attempts/sec.** Shows the rate at which connections to the web service are being attempted. • **ISAPI Extension Requests/sec.** Show the rate at which Internet Sever API (ISAPI) extension requests are received by the web service. • **Other Request Methods/sec.** Shows the rate at which HTTP requests are being made.
Where to go next	Drill down on: • Clicking a entry in this list displays a metrics popup that describes the counter, provides more detailed data points, and lists current alarms for the selected metric.

Table 70. Exchange Server Roles view - Client Access - Outlook Web Access view

Description	This view appears when **Client Access** is selected on the Exchange Server Roles view and displays the following metrics for the selected Exchange server. The counters and metrics indicators in this view change colors based on overall consumption and deviation from normal levels.
Data displayed	**OWA Average Search Time.** This button displays the calculated OWA average search time over the specified time interval.
	OWA Average Response Time. This button displays the calculated OWA average response time over the specified time interval.
	OWA Average Search & Response Times. This graph charts the following metrics over the specified time interval: • **Average Response Time.** Shows the average response time. • **Average Search Time.** Shows the average search time.
	Peak Number of OWA Users. This metrics indicator shows the largest number of users that were simultaneously connected to Outlook Web Access since the process was last restarted.
	Number of OWA Users. This graph charts the following metrics over the specified time interval: • **Current OWA Users.** Shows the number of users who are currently logged on to Outlook Web Access. • **Current Unique OWA Users.** Shows the number of unique users who are currently logged on to Outlook Web Access.
	ASP.NET Requests. This graph charts the following metrics over the specified time interval: • **Current Requests.** Shows the current number of ASP.Net® requests on the selected server. • **Requests in Application Queue.** Shows the number of ASP.NET application requests in the Application Queue on the selected server.
	OWA Logons/sec. This graph charts the number of Outlook Web Access user sessions that are created each second over the specified time interval.

Table 70. Exchange Server Roles view - Client Access - Outlook Web Access view

	OWA Requests/sec. This graph charts the following metrics over the specified time interval: • **Requests/sec.** Shows the number of OWA requests made per second. • **Failed Requests/sec.** Shows the number of OWA requests that failed per second.
	Web Services Request/sec. This graph charts the number of web service requests processed per second. It provides a comparison against the computed average over the specified time interval.
	Availability Requests/sec. This graph charts the number of availability requests serviced per second. It provides a comparison against the computed average over the specified time interval.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counter, provides more detailed data points, and lists current alarms for the selected metric.

Table 71. Exchange Server Roles view - Edge Transport - Agents view

Description	This view appears when **Edge Transport** is selected on the Exchange Server Roles view and displays the following metrics for the selected Exchange server:
Data displayed	**Average Agent Processing Time.** This graph charts the average agent processing time per event.
	Sender ID Agent DNS Queries/sec. This graph charts the number of DNS queries performed by the Sender ID agent per second.
	Average Agent Processing Time/sec. For each extensibility agent, this counter displays the average agent processing time per second.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 72. Exchange Server Roles view - Edge Transport - SMTP Receive view

Description	This view appears when **Edge Transport** is selected on the Exchange Server Roles view and displays the following metrics about the SMTP server:
Data displayed	**Messages Received/sec.** This graph charts the number of messages received by the SMTP server each second.
	Average Bytes Per Message. This graph charts the average number of bytes for each inbound message.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 73. Exchange Server Roles view - Edge Transport - Transport DC Connectivity view

Description	This view appears when **Edge Transport** is selected on the Exchange Server Roles view and displays the following metrics about the SMTP server:
Data displayed	The Domain Controller Instance table displays the following metrics for each DC instance: • LDAP Read Time. • LDAP Search Time. • LDAP Search Time Out/min. • Long Running LDAP Operations/min.
	The Process Instance table displays the following metrics for each process: • LDAP Read Time. • LDAP Search Time.
	The Cache Instance table displays the following metric for each cache instance: • LDAP Search/sec.
Where to go next	N/A

Table 74. Exchange Server Roles view - Edge Transport - Transport Load view

Description	This view appears when **Edge Transport** is selected on the Exchange Server Roles view and displays the following metrics about the transport load:
Data displayed	**SMTP Messages Sent/sec.** This graph charts the number of messages sent by the SMTP send connector each second. It provides a comparison against the computed average for the specified time interval.
	Items Completed Delivery/sec. This graph charts the rate at which messages completed delivery per second since the server was started. It provides a comparison against the computed average for the specified time interval.
	Submission Queue Length. This graph charts the number of messages in the submission queue. It provides a comparison against the computed average for the specified time interval.
	Messages Completed Delivery/sec. This counter displays the number of messages that are delivered per second.
	Messages Queued for Delivery/sec. This counter displays the number of messages that have been queued for delivery per second.
	Messages Submitted/sec. This counter displays the number of messages that have been queued in the Submission queues per second.
Where to go next	Drill down on: • Clicking a graph or counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 75. Exchange Server Roles view - Edge Transport - Transport Mail Database view

Description	This view appears when **Edge Transport** is selected on the Exchange Server Roles view and displays the following metrics about the transport mail database for the selected server.
Data displayed	**Log Generation Checkpoint Depth.** This graph charts the number of transaction log files that have not yet been saved to the database.
	Log Threads Waiting. This graph charts the number of threads waiting for their data to be written to the log in order to complete the database update.

Table 75. Exchange Server Roles view - Edge Transport - Transport Mail Database view

	Log Record Stalls/sec. This graph charts the number of log records that cannot be added to the log buffers each second because the log buffers are full.
	I/O Database Reads/sec. This counter displays the rate at which bytes are read from the database.
	I/O Database Writes/sec. This counter displays the rate at which bytes are written to the database.
	I/O Log Reads/sec. This counter displays the rate at which bytes are read from the log.
	I/O Log Writes/sec. This counter displays the rate at which bytes are written to the log.
	Version Buckets Allocated. This counter displays the total number of version buckets allocated.
	Total Database Cache Size MB. This counter displays the amount of system memory used by the database cache manager to hold commonly used information from the database files to prevent file operations.
	The Database Instance table at the bottom of this view displays the following metrics for each database instance: • DB Reads/sec. • DB Writes/sec. • Log Reads/sec. • Log Writes/sec. • Log Generation Checkpoint Depth. • Log Record Stalls/sec. • Log Threads Waiting. • Version Buckets Allocated.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 76. Exchange Server Roles view - Edge Transport - Transport Queues view

Description	This view appears when **Edge Transport** is selected on the Exchange Server Roles view and displays the following transport queue metrics for the selected server.
Data displayed	**Mailbox Delivery Queues.** This graph charts the number of messages waiting to be retried for delivery to a Mailbox server.
	Remote Delivery Queues. This graph charts the following metrics over the specified time interval: • **Active Delivery Queue Length.** Shows the number of messages waiting to be delivered to a remote server. • **Retry Delivery Queue Length.** Shows the number of messages waiting to be retried for delivery to a remote server.
	Submission Queues. This graph charts the number of messages in the submission queue waiting to be processed for delivery.
	Unreachable Queue. This graph charts the number of messages in the unreachable queue. NOTE: The messages in this queue are not automatically resubmitted or removed.

Table 76. Exchange Server Roles view - Edge Transport - Transport Queues view

	Poison Queue. This graph charts the number of messages in the poison queue. NOTE: The messages in this queue are not automatically resubmitted or removed.
	Aggregate Delivery Queue Length (All Queues). This counter displays the number of items queued for delivery in all queues.
	Largest Delivery Queue Length. This counters displays the number of items currently in the largest delivery queue.
Where to go next	Drill down on:
	• Clicking a graph or counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 77. Exchange Server Roles view - Edge Transport - Transport Rules view

Description	This view appears when **Edge Transport** is selected on the Exchange Server Roles view and displays the following metrics about the SMTP server:
Data displayed	**Messages Evaluated/sec.** This counter displays the number of messages the rule has evaluated per second.
	Messages Processed/sec. This counter displays the number of messages the rule has processed per second.
Where to go next	Drill down on:
	• Clicking a counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 78. Exchange Server Roles view - Hub Transport - SMTP Receive view

Description	This view appears when **Hub Transport** is selected on the Exchange Server Roles view and displays the following metrics about the SMTP server:
Data displayed	**Messages Received/sec.** This graph charts the number of messages received by the SMTP server each second.
	Average Bytes Per Message. This graph charts the average number of bytes for each inbound message.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 79. Exchange Server Roles view - Hub Transport - Transport Load view

Description	This view appears when **Hub Transport** is selected on the Exchange Server Roles view and displays the following metrics about transport load:
Data displayed	**SMTP Messages Sent/sec.** This graph charts the number of messages sent by the SMTP send connector each second.
	Items Completed Delivery/sec. This graph charts the number of messaged successfully delivered each second.
	Submission Queue Length. This graph charts the number of messages in the submission queue.
	Message Completed Delivery/sec. This counter shows the number of messages that are delivered each second.

Table 79. Exchange Server Roles view - Hub Transport - Transport Load view

	Messages Queued for Delivery/sec. This counter shows the number of messages that have been queued for delivery per second.
	Messages Submitted/sec. This counter shows the number of messages that have been queued in the submission queue per second.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 80. Exchange Server Roles view - Hub Transport - Transport Mail Database view

Description	This view appears when **Hub Transport** is selected on the Exchange Server Roles view and displays the following metrics about the transport mail database for the selected server.
Data displayed	**Log Generation Checkpoint Depth.** This graph charts the number of transaction log files that have not yet been saved to the database.
	Log Record Stalls Per Second. This graph charts the number of log records that cannot be added to the log buffers each second because the log buffers are full.
	Log Threads Waiting. This graph charts the number of threads waiting for their data to be written to the log in order to complete the database update.
	I/O Database Reads/sec. This counter shows the rate at which bytes are read from the database.
	I/O Database Writes/sec. This counter shows the rate at which bytes are written to the database.
	I/O Log Reads/sec. This counter shows the rate at which bytes are read from the log.
	I/O Log Writes/sec. This counter shows the rate at which bytes are written to the log.
	Version Buckets Allocated. This counter show the total number of version buckets allocated.
	Total Database Cache Size in MB. This counter shows the amount of system memory used by the database cache manager to hold commonly used information from the database files to prevent file operations.
	Database Instance Details. This list displays the following details about each database instance:
	• **Database Instance Name.** Displays the name of the database instance.
	• **DB Reads/sec.** Displays the current value for the I/O Database Reads/sec metric.
	• **DB Writes/sec.** Displays the current value for the I/O Database Writes/sec metric.
	• **Log Reads/sec.** Displays the current value for the I/O Log Reads/sec metric.
	• **Log Writes/sec.** Displays the current value for the I/O Log Writes/sec metric.
	• **Log Generation Checkpoint Depth.** Displays the current value for the Log Generation Checkpoint Depth metric.
	• **Log Records Stalls/sec.** Displays the current value for the Log Record Stalls/sec metric.
	• **Log Threads Waiting.** Displays the current value for the Log Threads Waiting metric.

Table 80. Exchange Server Roles view - Hub Transport - Transport Mail Database view

	• **Version Buckets Allocated**. Displays the current value for the Version Buckets Allocated metric.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 81. Exchange Server Roles view - Hub Transport - Transport Queues view

Description	This view appears when **Hub Transport** is selected on the Exchange Server Roles view and displays the following transport queue metrics for the selected server.
Data displayed	**Mailbox Delivery Queues**. This graph charts the number of messages waiting to be retried for delivery to a Mailbox server.
	Remote Delivery Queues. This graph charts the following metrics over the specified time interval: • **Active Delivery Queue Length**. Shows the number of messages waiting to be delivered to a remote server. • **Retry Delivery Queue Length**. Shows the number of messages waiting to be retried for delivery to a remote server.
	Submission Queue. This graph charts the number of messages waiting to be processed for delivery.
	Unreachable Queue. This graph charts the number of messages in the unreachable queue. These messages are not automatically resubmitted or removed.
	Poison Queue. This graph charts the number of messages in the poison queue. These messages are not automatically resubmitted or removed.
	Aggregate Delivery Queue Length All Queues. This counter shows the number of messages queued for delivery in all queues.
	Largest Delivery Queue Length. This counter shows the number of messages in the largest delivery queues.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 82. Exchange Server Roles view - Mailbox - All Mailbox Stores view

Description	This view appears when **Mailbox** is selected on the Exchange Server Roles view and displays the following metrics about the Mailbox stores on the selected server.
Data displayed	**Active Client Logons**. This graph charts the number of clients that have performed an action within the last 10 minutes.
	Send & Receive Queues. This graph charts the following metrics over the specified time interval: • **Send Queue Length**. Shows the messages in the send queue. • **Receive Queue Length**. Shows the messages in the receive queue.

Table 82. Exchange Server Roles view - Mailbox - All Mailbox Stores view

	Messages Sent/Delivered. These pulse gauges display the rate at which messages are being sent and delivered. • **Messages Sent/sec**. Shows the rate at which messages are sent to the transport. • **Messages Delivered/sec**. Shows the rate at which messages are delivered to all recipients.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 83. Exchange Server Roles view - Mailbox - All Public Folder Stores view

Description	This view appears when **Mailbox** is selected on the Exchange Server Roles view and displays the following metrics for the Public Folders stores on the selected server.
Data displayed	**Active Client Logons**. This graph charts the number of clients that have performed an action within the last 10 minutes.
	Send & Receive Queues. This graph charts the following metrics over the specified time interval: • **Send Queue Length**. Shows the messages in the send queue. • **Receive Queue Length**. Shows the messages in the receive queue.
	Messages Sent/Delivered. These pulse gauges display the rate at which messages are being sent and delivered. • **Messages Sent/sec**. Shows the rate at which messages are sent to the transport. • **Messages Delivered/sec**. Shows the rate at which messages are delivered to all recipients.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 84. Exchange Server Roles view - Mailbox - Cluster Replication view

Description	This view appears when **Mailbox** is selected on the Exchange Server Roles view and displays the following metrics regarding the Cluster Replication on the selected Exchange server.
Data displayed	**I/O Log Writes Average Latency**. This graph charts the rate at which write operations are performed against the log.
	Log Record Stalls/sec. This graph charts the rate at which log records cannot be added to the log buffers per second because the log buffers are full.
	Log Threads Waiting. This graph charts the number of threads waiting for their data to be written to the log to complete the database update.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 85. Exchange Server Roles view - Mailbox - Information Store view

Description	This view appears when **Mailbox** is selected on the Exchange Server Roles view and displays the following metrics regarding the Information Store on the selected Exchange server.
Data displayed	**RPC Operations/sec.** This graph charts the rate at which RPC operations are occurring over the specified time interval. It provides a comparison against the computed average for the selected time interval.
	RPC Requests. This graph charts the number of client requests that are currently being processed by the information store over the specified time interval. It provides a comparison against the fatal, critical and warning threshold levels
	RPC Averaged Latency. This graph charts the server's RPC latency averaged for the past 1,024 packets for a particular client protocol. It provides a comparison against the computed average for the selected time interval.
	IS Database Cache Size MB. This counter displays the amount of system memory being used by the database cache manager to hold commonly used information from the database file to prevent file operations.
	Database Cache Percent Hit. This counter displays the percentage of database file page requests that were fulfilled by the database cache without causing a file operation.
	Database Page Fault Stalls/sec. This counter displays the rate at which the database file page requests require the database cache manager to allocate a new page from the database cache.
	Log Record Stalls/sec. This counter displays the number of log records that cannot be added to the log buffers per second because the log buffers are full.
	Log Threads Waiting. This counter displays the number of threads waiting for their data to be written to the log to complete an update of the database.
	Version Buckets Allocated. This counter displays the total number of version buckets allocated.
	Store Client Instance Details. This list displays the following details for each store client instance in the store database:
	• **Store Client Instance Name.** Displays the name of the client instance.
	• **RPC Average Latency.** Shows a server RPC latency averaged for the past 1,024 packets for a particular client protocol.
	• **RPC Operations/sec.** Indicates the overall RPC operations that are occurring per second.
	• **LDAP Searches/sec.** Shows the current rate at which LDAP searches occur while processing requests for the client.
	• **Jet Log Records/sec.** Shows the rate at which database log records are being generated while processing requests for the client.
	• **Jet Pages Read/sec.** Shows the rate at which database pages are read from disk while processing requests for the client.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 86. Exchange Server Role view - Mailbox - Storage Groups and Stores view

Description	This view appears when **Mailbox** is selected on the Exchange Server Roles view and displays the following metrics about the mailbox stores on the selected server.
Data displayed	**Storage Groups and Databases.** The list in the left pane of this view displays the storage groups, mailbox databases, and public folder databases for the selected server. The following details are displayed for each: • **Name.** The name assigned to the storage group or database. • **Size.** The current size of the storage group or database. • **Mailboxes.** The number of mailboxes in the storage group or database. • **Archive Mailboxes.** The number of archive mailboxes in the storage group or database. Selecting a storage group or database from this list populates the metrics in the right pane.
	Storage Group Metrics. When a storage group is selected in the left pane, the following metrics appear in the right pane:
	• **Storage Group Size.** This graph charts the storage group's size and remaining free space.
	• **Transaction Logs Size.** This graph charts the size and remaining free space of the storage group's transaction logs.
	• **Mailbox Store Queues.** This graph charts the lengths of the mailbox store's send and receive queues.
	• **Public Folder Store Queues.** This graph charts the lengths of the public folder store's send and receive queues.
	• **I/O Database Read Average Latency.** This counter displays the average length of time per database read operation.
	• **I/O Database Write Average Latency.** This counter displays the average length of time per database write operation.
	• **Storage Group Log Generation Checkpoint Depth.** This counter displays the amount of work in the log file count that will need to be redone to the database files if the process fails.
	Database Metrics. When a mailbox or public folder database is selected in the left pane, the following metrics appear in the right pane:
	• **Store Size.** This graph charts the store's size and remaining free space.
	• **Messages Out.** These pulse gauges display the rate at which and outbound messages are being processed through the store.
	• **Messages Queued for Submission.** This table shows the current number of submitted messages that are not yet processed by the transport layer.
	• **Average Delivery Time.** This counter displays the average time between the submission of a message to the mailbox store and the delivery to all local recipients for the last 10 messages.
	• **Logon Operations/sec.** This counter shows the rate at which logon requests are made against the mailbox store.
	• **Messages Delivered/sec.** This counter shows the rate at which messages are delivered to all recipients.
	• **Messages Sent/sec.** This counter shows the rate at which messages are sent to the transport.
	• **Messages Submitted/sec.** This counter shows the rate at which messages are submitted by clients.

Table 86. Exchange Server Role view - Mailbox - Storage Groups and Stores view

Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 87. Exchange Server Roles view - Unified Messaging - Availability view

Description	This view appears when **Unified Messaging** is selected on the Exchange Server Roles view and displays the following availability metrics for the selected Exchange server.
Data displayed	**Access Failures**. This graph charts the following metrics over the specified time interval: • **Hub Transport Access Failures**. Shows the number of times the attempts to access a Hub Transport server failed. • **Mailbox Server Access Failures**. Shows the number of time the system did not access a Mailbox server. NOTE: Applies to Exchange Server 2007 only.
	Percent Successful Caller ID Resolutions. This graph charts the number of successful attempts to resolve caller IDs that contain no "@" or "+" sign and were of the same length as the dial plan's extension. NOTE: Applies to Exchange Server 2010 only.
	Average MWI Latency. This graph charts the average time it take from the moment a voice mail event occurs and Unified Messaging receives confirmation from the IP gateway used to deliver the message. NOTE: Applies to Exchange Server 2010 only.
	Inbound Calls Rejected. This graph charts the following metrics over the specified time interval: • **Percent of Inbound Calls Rejected by the UM Service Over the Last Hour**. Shows the percentage of incoming calls that were rejected by the Microsoft® Exchange Unified Messaging service in the last hour. • **Percent of Inbound Calls Rejected by the UM Worker Process Over the Last Hour**. Shows the number of calls disconnected after an irrecoverable external error occurred. NOTE: Applies to Exchange Server 2010 only.
	Directory Access Failures. This graph charts the number of times attempts to access Active Directory® failed. It provides a comparison against the computed average for the specified time interval.
	Total Inbound Calls Rejected. This graph charts the following metrics over the specified time interval: • **Total Inbound Calls Rejected by the UM Service**. Shows the total number of incoming calls that were rejected by the Microsoft® Exchange Unified Messaging service. • **Total Inbound Calls Rejected by the UM Worker Process**. Shows the total number of incoming calls that were rejected by the UM Worker process. NOTE: Apples to Exchange Server 2010 only.
	Call Answer Queued Messages. This counter displays the number of messages created and not yet submitted for delivery. NOTE: Applies to Exchange Server 2007 only.
	Unhandled Exceptions/sec. This counter displays the number of unhandled exceptiones that occurred per second. NOTE: Applies to Exchange Server 2007 only.

	Percent of Failed Mailbox Connection Attempts Over the Last Hour. This counter displays the percentage of mailbox connection attempts that failed in the last hour.
	NOTE: Apples to Exchange Server 2010 only.
	Percent of Messages Successfully Processed Over the Last Hour. This counter displays the percentage of messages that were successfully processed by the Microsoft® Exchange Unified Messaging service in the last hour.
	NOTE: Applies to Exchange Server 2010 only.
	Percent of Partner Voice Message Transcription Failures Over the Last Hour. This counter displays the percentage of partner voice message transcription failures in the last hour.
	NOTE: Applies to Exchange Server 2010 only.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Exchange Servers in This Cluster view

This embedded view is part of the Exchange Cluster Explorer Summary when an individual cluster object is selected in the Exchange Infrastructure view on the Exchange Explorer dashboard.

Table 88. Exchange Servers in This Cluster view

Description	This sortable list contains the following information for each Exchange server in the selected cluster.
Data displayed	• **State**. Indicates the highest alarm triggered for each server.
	• **Name**. Displays the name of each Exchange server.
	• **IP Address**. Displays the IP address of each server.
	• **Roles**. Displays the Exchange roles being performed by each server.
	NOTE: **Multi-Role** indicates that the server is performing multiple Exchange roles. Hover your cursor over the **Multi-Role** entry to display a list of the roles being performed by the server.
	• **CPU**. Displays the current CPU utilization on the server.
	• **Memory**. Displays the current memory utilization on the server.
	• **Exchange Version**. Displays the version of Exchange installed on each server.
	• **Operating System**. Displays the Windows® operating system running on the server.
	• **Repl Svc**. Indicates the current state of the replication service.
	• **Clus Svc**. Indicates the current state of the cluster service.
Where to go next	Drill down on:
	• **Exchange Server row**. Displays the Exchange Server Explorer Summary view for the selected server.

Exchange Servers view (Exchange Cluster Environment Summary)

This embedded view is part of the Exchange Cluster Environment Summary view which is displayed when an individual cluster is selected in the Object Tree view in the Exchange Environment dashboard.

Table 89. Cluster IP view

Description	This view displays the Exchange servers that make up the cluster selected in the Object Tree view. It also indicates the current state of the replication service and cluster service on each server listed.
Where to go next	N/A

Exchange Servers view (Exchange Explorer Summary)

This embedded view is part of the Exchange Explorer Summary when the **Roles**, **Sites**, **Servers** or **Clusters** object container is selected in the Exchange Infrastructure view on the Exchange Explorer dashboard.

Table 90. Exchange Servers view

Description	This sortable list contains the following information for each Exchange server in your environment that is being monitored.
Data displayed	• **State**. Indicates the highest alarm triggered for each server.
	• **Name**. Displays the name of each Exchange server.
	• **IP Address**. Displays the IP address of each server.
	• **Roles**. Displays the Exchange roles being performed by each server. NOTE: **Multi-Role** indicates that the server is performing multiple Exchange roles. Hover your cursor over the **Multi-Role** entry to display a list of the roles being performed by the server.
	• **CPU**. Displays the current CPU utilization on the server.
	• **Memory**. Displays the current memory utilization on the server.
	• **Exchange Version**. Displays the version of Exchange installed on each server.
	• **Operating System**. Displays the Windows® operating system running on the server.
	• **Replication Service**. Indicates the current state of the replication service. NOTE: Applies to Cluster container only.
	• **Cluster Service**. Indicates the current state of the cluster service. NOTE: Applies to Cluster container only.
	• **Cluster**. Indicates the current state of the cluster. NOTE: Applies to Cluster container only.
Where to go next	Drill down on:
	• **Exchange Server row**. Displays the Exchange Server Explorer Summary view for the selected server.

Host Monitor view

This embedded view is part of the Exchange Server Environment Summary view when an individual Exchange Server is selected on the Exchange Environment dashboard.

ⓘ | NOTE: When the host machine is a virtual machine that is being monitored by Foglight for VMware or Foglight for Hyper-V, this view is replaced with two views: one that displays the name of the virtual machine and one that displays the name of the host server.

Table 91. Host Monitor view

Description	This view displays the name of the target server from which data is being collected.
Where to go next	Drill down on:
	• **Host Monitor Name**. Displays the Host Monitor dashboard that provides a real-time overview of how a host is performing. For more information about the Host Monitor dashboard, see the *Foglight User Guide* or online help.
	NOTE: When the host is a virtual machine that is being monitored by Foglight for VMware or Foglight for Hyper-V, this link drills down to the Explorer Summary view for the selected server. There is also an additional link that drills down to the metrics for the host of the virtual machine. Both of these drill down views are part of the Foglight for VMware or Foglight for Hyper-V cartridges.

Hub Transport Features view

To display the Hub Transport Features view select **Hub Transport** under the Roles object container in the Exchange Infrastructure view on the Exchange Explorer dashboard. The metrics displayed depend on the feature selected in the Hub Transport tile and the server selected in the server list below the tile.

Table 92. Hub Transport Features view - Journaling

Description	When **Journaling** is selected in the Hub Transport tile, this view displays the following information for the server selected in the server list.
Data displayed	• **Transport Agent**. Displays the name of the transport agent.
	• **Total Agent Invocations**. Displays the total number of invocations since that last restart.
	• **Avg. Agent Processing Time/sec**. Displays the average agent processing time in seconds per event.
Where to go next	N/A

Table 93. Hub Transport Features view - Local Messages

Description	When **Local Messages** is selected in the Hub Transport tile, this view displays the following metrics for the server selected in the server list.
Data displayed	**Mailbox Delivery Queues**. This graph charts the following metrics over the specified time interval: • **Active Delivery Queue Length**. Shows the number of messages waiting to be delivered to a mailbox server. • **Retry Delivery Queue Length**. Shows the number of messages waiting to be retried for delivery to a mailbox server.

Table 93. Hub Transport Features view - Local Messages

Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 94. Hub Transport Features view - Message Submission

Description	When **Message Submission** is selected in the Hub Transport tile, this view displays the following metrics for the server selected in the server list.
Data displayed	**Submission Queue**. This graph charts the number of messages in the submission queue that are waiting to be processed for delivery.
	Message Submitted/sec. This graph charts the number of messages submitted each second during the specified time interval.
	Total Messages Submitted. This graph charts the total number of messages submitted.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 95. Hub Transport Features view - Remote Messages

Description	When **Remote Messages** is selected in the Hub Transport tile, this view displays the following metrics for the server selected in the server list.
Data displayed	**Remote Delivery Queues**. This graph charts the following metrics over the specified time interval: • **Active Delivery Queue Length**. Shows the number of messages waiting to be delivered to a remote server. • **Retry Delivery Queue Length**. Shows the number of messages waiting to be retried for delivery to a remote server.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 96. Hub Transport Features view - Transport Rules

Description	When **Transport Rules** is selected in the Hub Transport tile, this view displays the following information for the server selected in the server list.
Data displayed	• **Transport Agent**. Displays the name of the transport agent.
	• **Total Agent Invocations**. Displays the total number of invocations since that last restart.
	• **Avg. Agent Processing Time/sec**. Displays the average agent processing time in seconds per event.
Where to go next	N/A

IP Address view

This embedded view is part of the Exchange Server Environment Summary view, which appears when an individual Exchange server is selected in the Object Tree view on the Exchange Environment dashboard.

Table 97. IP Address view

Description	The view displays the IP address for the selected Exchange server.
Where to go next	N/A

Mailbox Features view

To display the Mailbox Features view select **Mailbox 2007 or Mailbox 2013** in the Exchange Infrastructure view on the Exchange Explorer dashboard. The metrics displayed depend on the feature selected in the Mailbox tile and the server selected in the server list below the tile.

Table 98. Mailbox Features view - Mailbox Databases

Description	When **Mailbox Databases** is selected in the Mailbox tile, this view displays the following metrics for the server selected in the server list.
Data displayed	NOTE: **The data in this graph is not displayed.** **Active Client Logons**. This graph charts the number of clients that have performed any action within the last ten minutes. It provides a comparison against the computed average for the specified time interval.
	Messages Sent/Delivered. The pulse gauges in this view display the following rates over the specified time interval: • **Messages Sent/sec**. Shows the rate at which messages are sent to the transport. • **Messages Delivered/sec**. Shows the rate at which messages are delivered to all recipients.
	NOTE: **The data in this graph is not displayed.** **Send & Receive Queues**. This graph charts the following metrics over the specified time interval: • **Send Queue Length**. Shows the messages in the send queue. • **Receive Queue Length**. Shows the messages in the receive queue.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 99. Mailbox Features view - Outlook MAPI

Description	When **Outlook MAPI** is selected in the Mailbox tile, this view displays the following information for each storage group and mailbox database using Outlook MAPI on the selected server.
Data displayed	**Name**. Displays the names of the storage groups and mailbox databases on the selected server.
	MAPI Connectivity. Indicates the result (failure or success) of logging into the System Mailbox of the specified database.
	Latency. Displays the delay in logging into the mailbox.
Where to go next	N/A

Table 100. Local Messages

Description	When **Local Messages** is selected in the Mailbox tile, this view displays the following information for the Mailbox Delivery Queues.
Data displayed	**Active Delivery Queue Length**. Length and size active delivery queue.

Table 100. Local Messages

	Retry Delivery Queue Length. Length and size of the retry delivery queue.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 101. Remote Messages

Description	When **Remote Messages** is selected in the Mailbox tile, this view displays the following information for each Remote Delivery Queue on the selected server.
Data displayed	**Retry Remote Deliver Queues**. Displays the external and internal retry remote lengths for the selected timeframe.
	Active Remote Delivery Queues. Displays the external and internal retry active remote delivery count for the selected timeframe.
Where to go next	Drill down on:
	Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 102. Message Submission

Description	When **Message Submission** is selected in the Mailbox tile, this view displays the following information for the Submission Queue.
Data displayed	**Submission Queue**. Displays the time of the Submission Queue plotted against the size.
	Messages Submitted/sec. Displays the messages submitted on a per second basis.
	Total Messages Submitted. Displays the time of total messages submitted against the size of that total.
Where to go next	Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 103. Journaling

Description	When **Journaling** is selected in the Mailbox tile, this view displays the following information on the transport agent, total invocations, and average time it took to process invocations.
Data displayed	**Transport Agent**. Transport Agent name.
	Total Agent Invocations. Total number of invocations made by that agent on that server.
	Avg. Agent Processing Time/sec. Average length of time it took the agent to process the invocations.
Where to go next	N/A

Table 104. Transport Rules

Description	When **Transport Rules are** selected in the Mailbox tile, this view displays details transport agent invocations and processing time.
Data displayed	**Transport Agent**. Transport agent name.

Table 104. Transport Rules

	Total Agent Innovations. Total number of invocations made by that agent on that server.
	Avg. Agent Processing Time/sec. Average length of time it took the agent to process the invocations.
Where to go next	N/A

Table 105. Call Answering

Description	When **Call Answering is** selected in the Mailbox tile, this view displays on diverted calls and disconnected calls.
Data displayed	**Diverted Calls**. Displays the calls answered and calls missed count plotted against the time they occurred.
	Disconnected Calls. Displays the disconnected call count plotted against the time they occurred.
Where to go next	Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 106. Auto Attendant

Description	When **Auto Attendant is** selected in the Mailbox tile, this view displays details on call duration, calls process by the Auto Attendant, and disconnected calls.
Data displayed	**Average Call Duration**. Average Auto Attendant call duration plotted against the time the calls occurred.
	Calls Processed By Auto Attendant. The calls process by the Auto Attendant, plotted against the time the calls occurred.
	Disconnected Calls. The calls disconnected by the Auto Attendant count, plotted against the time the calls occurred.
Where to go next	Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 107. Mailbox Features view - Public Folders

Description	NOTE: This view is deprecated in Mailbox 2013. When **Public Folders** is selected in the Mailbox tile, this view displays the following metrics for the server selected in the server list.
Data displayed	**Active Client Logons.** This graph charts the number of clients that have performed any action within the last ten minutes. It provides a comparison to the computed average for the specified time interval.
	Messages Sent/Delivered. The pulse gauges in this view display the following rates over the specified time interval: • **Messages Sent/sec.** Shows the rate at which messages are sent to the transport. • **Messages Delivered/sec.** Shows the rate at which messages are delivered to all recipients.
	Send & Receive Queues. This graph charts the following metrics over the specified time interval: • **Send Queue Length.** Shows the messages in the send queue. • **Receive Queue Length.** Shows the messages in the receive queue.

Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Mailbox Store Assistant view

To display this view, enable the **Store Mailbox Assistant Group** in the Information Store Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Mailbox views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 108. Mailbox Store Assistant view

Description	This view displays Mailbox Store Assistant metrics associated with the Information Store on the selected Exchange server, which are gathered when the Store Mailbox Assistant collection group is enabled.
Data displayed	**Average Event Processing Time**. This counter displays the average time it is taking to process the selected events.
	Events in Queue. This counter displays the number of events in the in-message queue waiting to be processed by the assistants.
	Events Polled/sec. This counter displays the number of events polled per second.
	Mailboxes Processed/sec. This counter displays the number of mailboxes processed by time-based assistants per second.
Where to go next	Drill down on:
	• Clicking a count in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Managed Availability Recovery Actions view

This embedded view appears on the Managed Availability view when you select an Exchange 2013 Server on the Exchange Explorer dashboard.

Table 109. Managed Availability Recovery Actions view

Description	This view displays a list of actions that the Managed Availability process triggered to address availability and latency issues or errors, in order to resume the service.
Data displayed	**Event Record ID**. The ID of the recovery action event.
	Logged Time. The time when the recovery action occurred.
	Message. The recovery action description.
	Probe Results. Link to detected errors that possibly triggered the recovery action.

Memory view

This embedded view is part of the Resource Utilization Details view, which appears when you select the **Resource Utilization Details** title or **Details** link in the upper right corner of the Resource Utilization view for an individual Exchange Server on the Exchange Explorer dashboard.

Table 110. Memory view

Description	This view displays memory utilization metrics for the selected Exchange server. The counters and indicators change colors based on overall consumption or deviation from normal levels.
Data displayed	**Available Bytes.** This counter displays the amount of memory available.
	Committed Bytes. This counter displays the percent of total bytes committed.
	Memory Available and Consumed. This graph charts the following metrics over the specified time interval: • **Capacity**. Shows the maximum or minimum amount of memory a computer or hardware device is capable of having. • **Consumed**. Shows the amount of memory being used.
	Page Rate/sec. This counter displays the rate at which pages are currently being read from or written to memory in order to resolve hard page faults.
	Memory Pages/sec. This graph charts the following metrics for the specified time interval: • **Page Rate In**. Shows the rate at which pages are written to resolve hard page faults. • **Page Rate Out**. Shows the rate at which pages are read from to resolve hard page faults.
	Memory Cache Bytes. This graph charts the size of the file system cache over the specified time interval. It provides a comparison of the against the computed average over the specified time interval.
	Memory Pool Paged and Non-Paged Bytes. This graph charts the following metrics over the specified time interval: • **Pool Paged Bytes**. Shows the portion of shared system memory that can be paged to the disk paging file. • **Pool Non-Paged Bytes**. Shows the portion of physical memory that can be accessed from any address space without incurring paging I/O.
	.NET CLR Exceptions Thrown/sec. This graph charts the number of exceptions thrown per second during the specified time interval. It provides a comparison against the fatal, critical and warning threshold values.
	.NET CLR Percent Time in Garbage Collection. This graph charts the percentage of time being spent performing garbage collections during the specified time interval. It provides a comparison against the fatal, critical and warning threshold values.
	.NET CLR Memory Bytes in All Heaps. This graph charts the memory usage by all managed resources during the specified time interval. It provides a comparison against the computed average for the specified time interval.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Network view

This embedded view is part of the Resource Utilization Details view, which appears when you select the **Resource Utilization Details** title or **Details** link in the upper right corner of the Resource Utilization view for an individual Exchange Server on the Exchange Explorer dashboard.

Table 111. Network view

Description	This view displays network utilization metrics for the selected Exchange server. The counters and indicators change colors based on overall consumption or deviation from normal levels.
Data displayed	**Network Interface**. Displays a list of network interfaces available on the selected DC. Selecting a network interface in this view displays the following metrics for the selected interface.
	• **Available Bandwidth**. This counter displays the current percentage of bandwidth that is available.
	• **Bandwidth**. This graph charts the network bandwidth for the selected network interface. It provides a comparison against the computed average for the specified time interval.
	• **Output Queue Length**. This graph charts the length of the output queue over the specified time interval. It provides a comparison of this counter against the computed average.
	• **Send & Receive Rates**. These pulse gauges display the rate at which data is sent and received over the selected network interface.
	• **Packet Outbound Errors**. This graph charts the number of outbound packets that could not be transmitted due to errors. It provides a comparison of this counter against the fatal, critical and warning levels.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Passive CCR Storage Group view

This view appears when you click on the name of the passive storage group at the top of the Cluster Storage Group Details view on the Exchange Explorer dashboard or at the top of the Cluster Summary view on the Exchange Environment dashboard.

Table 112. Passive CCR Storage Group view

Description	This view displays resource information, database metrics and replication metrics for the selected CCR storage group
Data displayed	**Resource Information**. In the upper left-hand corner of this view you will find the following summary and resource information about the selected storage group: • Name • Copy Status • Failed Message • Last Inspected Log Time
	Failed. This graph indicates that continuous replication is in a Failed state for the selected instance (storage group). It provides a comparison against the computed average for the specified time interval.
	Copy Queue Length. This graph charts the number of transaction log files waiting to be copied to the passive copy log file folder. It provides a comparison against the computed average for the selected time interval.
	Initializing. This graph indicates that continuous replication is in an Initializing state for the selected instance (storage group). While in this state, the system is verifying that the database and log stream are in a consistent state. It provides a comparison against the computed average for the specified time interval.

Table 112. Passive CCR Storage Group view

	Replay Queue Length. This graph charts the number of transaction log files waiting to be replayed into the passive copy. It provides a comparison against the computed average for the selected time interval.
	Suspended. This graph indicates that continuous replication activity is suspended and log files are not being copied or replayed into the passive copy. It provides a comparison against the computed average for the specified time interval.
	Seeding Finished Percent. This graph charts the finished percentage of seeding.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Passive DAG Database view

This view appears when you click on the name of the passive database at the top of the Cluster Database Details view on the Exchange Explorer dashboard or at the top of the Cluster Summary view on the Exchange Environment dashboard.

Table 113. Passive DAG Database view

Description	This view displays resource information, database metrics and replication metrics for the selected DAG database copy.
Data displayed	**Resource Information**. In the upper left-hand corner of this view you will find the following summary and resource information about the selected database: • Name • Status • Content Index State • Content Index Error Message • Error Message • Database File Path
	Copy Queue Length. This graph charts the number of transaction log files waiting to be copied to the passive copy log file folder. It provides a comparison against the computed average for the selected time interval.
	Replay Queue Length. This graph charts the number of transaction log files waiting to be replayed into the passive copy log file. It provides a comparison against the computed average for the selected time interval.
	Average Log Copy Latency ms. This graph charts the average time it takes to copy data from a log file. It provides a comparison against the computed average for the selected time interval.
	Log Copy KB/sec. This graph charts the rate at which log copying is proceeding. It provides a comparison against the computed average for the selected time interval.
	Log Replay Rate Generations/sec. This graph charts the rate of replay (in log generations per second) for the current replay batch. It provides a comparison against the computed average for the selected time interval.
	Log Copying is not Keeping Up. This graph shows when log copying and inspection by the passive copies of databases on the specified DAG member are not able to keep up with log generation activity on the active copy. It provides a comparison against the computed average for the selected time interval.

Table 113. Passive DAG Database view

	Log Replay is not Keeping Up. This graph shows when replay activities for the passive copies of databases on the specified DAG member are not able to keep up with log copying and inspection activity. It provides a comparison against the computed average for the selected time interval.
	Seeding Finished Percent. This graph shows the finished percentage of seeding. This data can be used to determine if seeding is occurring for a particular database, which is possible affecting overall server performance or current network bandwidth.
	Failed. This graph indicates that continuous replication is in a Failed state for the selected database instance. It provides a comparison against the computed average for the specified time interval.
	Initializing. This graph indicates that continuous replication is in an Initializing state for the selected database instance. It provides a comparison against the computed average for the specified time interval. NOTE: While in this state, the system is verifying that the database and log stream are in a consistent state.
	Suspended. This graph indicates that continuous replication activity is suspended and log files are not being copied or replayed into the passive copy. It provides a comparison against the computed average for the specified time interval. NOTE: This state may be a result of an administrator manually suspending the database copy.
	Activation Suspended. This graph indicates whether activation on the mailbox database copy is suspended. It provides a comparison against the computed average for the specified time interval.
	Failed Suspended. This graph indicates whether the Failed and Suspended states have been set simultaneously by the system because a failure was detected, and because resolution of the failure explicitly requires administrator intervention. It provides a comparison against the computed average for the specified time interval.
	Disconnected. This graph indicates whether a mailbox copy is in a state of Disconnected on the specified DAG member. It provides a comparison against the computed average for the specified time interval.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Processes LDAP Read Time view

This embedded view is part of the Exchange Server AD Health view, which appears when an individual Exchange Server is selected in the Exchange Infrastructure on the Exchange Explorer. Select the **AD Health** navigation tab.

Table 114. Processes LDAP Read Time view

Description	This view displays the following metrics for DCs being monitored by Foglight for Active Directory.
Data displayed	**Processes LDAP Read Time.** This graph charts the time it takes to send an LDAP read request and receive a response. It provides a comparison against the fatal, critical and warning threshold levels.

Table 114. Processes LDAP Read Time view

Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Resource Utilization view

This embedded view is part of the Exchange Server Explorer Summary view when an individual server is selected in the Exchange Infrastructure view on the Exchange Explorer dashboard. To display this view, select the **Summary** navigation tab.

Table 115. Resource Utilization view

Description	This view displays the resource utilization metrics for the selected Exchange server over the specified time interval. The counters and indicators change colors based on overall consumption or deviation from normal levels.
Data displayed	**CPU Load.** This counter indicates the total CPU load per second for the selected server.
	CPU Utilization. This graph charts CPU utilization for the selected server over the specified time interval. It provides a comparison of the CPU Utilization counter against the defined warning, critical and fatal threshold levels.
	Network I/O. This counter displays the rate at which data is coming in and going out over the network interface on the selected server.
	Network Utilization. This graph charts the following metrics over the specified time interval: • **Send Rate.** Displays how many bytes of data are being sent to the NIC each second. • **Receive Rate.** Displays how many bytes of data are coming in from the NIC each second.
	Total Memory. This button displays the maximum capacity of memory on the selected sever.
	Memory In Use. This button displays the actual amount of physical memory currently being used.
	Memory Utilization. This graph charts the memory utilization for the selected server over the specified time interval. It provides a comparison of the Consumed Memory counter against the computed average.
	Disk I/O. This counter displays the rate at which the disk I/O system on the selected server is processing disk reads and writes.
	Disk Utilization. This graph charts the following metrics over the specified time interval: • **Read Rate.** Displays the rate at which data is being read by the disk. • **Write Rate.** Displays the rate at which data is being written to the disk.
Where to go next	Drill down on:
	• **Details** link. Displays the Resource Utilization Details view for the selected server.
	• Clicking a counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists the current alarms for the selected metric.

Roles Explorer view

The Roles Explorer view is part of the Exchange Site Explorer Summary, which appears when an individual site is selected in the Exchange Infrastructure view on the Exchange Explorer dashboard. The contents of this view depends on the role selected at the top of the view.

Table 116. Roles Explorer view - Client Access 2013

Description	The Role Explorer view displays the following top three charts for the Client Access role.
Data displayed	**Top 3 OWA Average Response**. This graph displays the top three Exchange servers that reported the highest OWA average response times over the specified time interval.
	Top 3 OWA Average Search Time. This graph displays the top three Exchange servers that reported the highest OWA average search times over the specified time interval.
	Top 3 ASP.NET Current Requests. This graph displays the top three Exchange servers that reported the highest number of ASP.Net® requests during the specified time interval.
	Top 3 ASP.NET Request In Application Queue. This graph displays the top three Exchange servers that reported the highest number of application requests in the Application Queue during the specified time interval.
Where to go next	N/A

Table 117. Roles Explorer view - Edge Transport

Description	The Role Explorer view displays the following top three charts for the Edge Transport role.
Data displayed	**Top 3 Submission Queues**. This graph displays the top three Exchange servers that reported the highest number of entries in the Submission Queue during the specified time interval.
	Top 3 Remote Delivery Queues. This graph displays the top three Exchange servers that reported the highest number of entries in the Remote Delivery Queue during the specified time interval.
	Top 3 Retry Remote Delivery Queues. This graph displays the top three Exchange servers that reported the highest number of messages waiting to be retried for delivery to a remote server.
	Top 3 Unreachable Queues. This graph displays the top three Exchange servers that reported the highest number of entries in the Unreachable Queue during the specified time interval.
Where to go next	N/A

Table 118. Roles Explorer view - Hub Transport

Description	The Role Explorer view displays the following top three charts for the Hub Transport role.
Data displayed	**Top 3 Mailbox Delivery Queues**. This graph displays the top three Exchange servers that reported the highest number of entries in the Mailbox Delivery Queue during the specified time interval.
	Top 3 Remote Delivery Queues. This graph displays the top three Exchange servers that reported the highest number of entries in the Remote Delivery Queue during the specified time interval.
	Top 3 Submission Queues. This graph displays the top three Exchange servers that reported the highest number of entries in the Submission Queue during the specified time interval.

Table 118. Roles Explorer view - Hub Transport

	Top 3 Unreachable Queues. This graph displays the top three Exchange servers that reported the highest number of entries in the Unreachable Queue during the specified time interval.
Where to go next	N/A

Table 119. Roles Explorer view - Mailbox 2013

Description	The Role Explorer view displays the following top three charts for the Mailbox role.
Data displayed	**Top 3 RPC Request**. This graph displays the top three Exchange servers that reported the highest number of RPC requests during the specified time interval.
	Top 3 Mailbox.
	Top 3 Mailbox Delivery Queues.
	Top 3 Submission Queues.
	Top 3 Unreachable Queues.
	Top 3 Failed RPCs (Server Too Busy). This graph displays the top three Exchange servers that reported the highest number of failed RPCs (since the store was started) due to the Server Too Busy RPC error.
	Top 3 Mailbox Messages Queued. This graph displays the top three Exchange servers that reported the highest number of mailbox messages queued during the specified time interval.
	Top 3 Public Messages Queued. This graph displays the top three Exchange servers that reported the highest number of public messages queued during the specified time interval.
Where to go next	N/A

Table 120. Roles Explorer view - Unified Messaging

Description	The Role Explorer view displays the following top three charts for the Unified Messaging role.
Data displayed	**Top 3 Directory Access Failures**. This graph displays the top three Exchange servers that reported the highest number of directory access failures during the specified time interval.
	Top 3 Hub Transport Access Failures. This graph displays the top three Exchange servers that reported the highest number of hub transport access failures during the specified time interval.
	Top 3 Mailbox Server Access Failures. This graph displays the top three Exchange servers that reported the highest number of mailbox server access failures during the specified time interval.
	Top 3 Unhandled Exceptions/sec. This graph charts the top three Exchange servers that reported the highest number of unhandled exceptions per second during the specified time interval.
Where to go next	N/A

Role Servers view

This embedded view is located to the far right of the Quick View when an individual Exchange role is selected in the Object Tree view on the Exchange Environment dashboard. This view provides a list of the servers performing the selected role in your Exchange environment. Selecting a server in this list then displays additional details and status information regarding the selected Exchange server.

Table 121. Role Servers view

Description	The details provided in this view are based on the server selected in the server list (left pane of this view).
Data displayed	**Server list**. The left pane displays a list of the Exchange servers that are performing the selected Exchange role. Selecting a server in this list displays the following details about the selected server.
	Server Name. The top right pane displays the name of the server and a state indicator showing the current state of the most severe alarm on that server.
	Server Information. This pane displays the following information about the selected server: • Operating System version running on the selected server. • Exchange version running on the selected server. • IP address of the selected server.
	Exchange Roles. This pane displays a list of Exchange roles defined for your Exchange environment and the current state of the server hosting each of the roles.
	Health. This pane indicates the server's health based on CPU, memory, network and storage performance trends.
	AD Dependencies. This pane indicates the health of Active Directory® based on LDAP, replication and database performance trends. NOTE: The AD Dependencies data is only available when Foglight for Active Directory is installed and an Active Directory agent instance is running on the selected server.
Where to go next	Drill down on:
	view details --> link. Displays the Exchange Explorer dashboard for the selected server.

Server Health view

This embedded view is part of the Exchange Server Environment Summary view, which appears when an individual Exchange Server is selected on the Exchange Environment dashboard.

Table 122. Server Health view

Description	This view summaries the current health of the selected Exchange server. These counters change colors based on overall consumption or deviation from normal levels.
Data displayed	**CPU**. Displays the current CPU load.
	Network. These counters indicate the present state of the network utilization for the selected server.
	Memory. This counter displays what percent of memory is currently being used. It can be used to determine whether you have memory problems.
	Storage. These counters indicate the present state of disk performance.
	• **Free**. Displays the amount of storage available.
Where to go next	Drill down on:
	• Clicking a counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Server Listing view

This embedded view is part of the Exchange Site Environment Summary view, which appears when an individual site is selected in the Object Tree view on the Exchange Environment dashboard.

Table 123. Server Listing view

Description	This view contains a list of Exchange servers in the selected site providing the following information for each server:
Data displayed	• **Name**. Displays the name of the Exchange server.
	• **Role**. Displays the Exchange role being performed by each server. NOTE: **Multi-Role** indicates that the server is performing multiple Exchange roles. Hover your cursor over the **Multi-Role** entry to display a list of the roles being performed by the server.
Where to go next	Drill down on:
	• **Exchange Server**. Displays additional server metrics in the Explorer or Quick View

Server Role Feature State view

This embedded view is located below the role tile on the following views:

- An Exchange Role Environment Summary view when an individual role is selected in the Object Tree view in the Quick View of the Exchange Environment dashboard.
- An Exchange Role Explorer Summary view which appears when an individual role is selected in the Exchange Infrastructure view of the Exchange Explorer dashboard.

Selecting a server in this view populates the information displayed in these summary views.

Table 124. Server Role Feature State view

Description	This view displays a list of the Exchange servers performing the selected Exchange role and the current state of that role's features.
Data displayed	**Server**. Displays the name of each Exchange server performing the selected Exchange role.
	Feature State. Indicates whether the feature selected in the role tile is running on each of the servers listed.
Where to go next	N/A

Servers For This Role view

This embedded view is part of the Exchange Role Explorer Summary views, which appear when an individual role is selected in the Exchange Infrastructure view on the Exchange Explorer dashboard.

Table 125. Servers For This Role view

Description	This sortable list displays the following details about the Exchange servers that are performing the selected role in your Exchange environment:
Data displayed	• **State**. Indicates the highest alarm triggered for each Exchange server.
	• **Name**. Displays the name of each Exchange server.
	• **IP Address**. Displays the IP address of each Exchange server.
	• **Roles**. Displays the Exchange roles being performed by each Exchange server.
	• **CPU**. Displays the current CPU utilization for the server.

	• **Memory.** Displays the current memory utilization on the server.
	• **Exchange Version.** Displays the version of Exchange running on the server.
	• **Operating System.** Displays the Windows® operating system running on the server.
Where to go next	Drill down on:
	• **Exchange Server row.** Displays the Exchange Server Explorer Summary view for the selected server.

Servers In This Site view

This embedded view is displayed on the Exchange Site Explorer Summary, which appears when an individual site is selected in the Exchange Infrastructure view on the Exchange Explorer dashboard.

Table 126. Servers In This Site view

Description	This sortable list displays the following details about the Exchange servers in the selected site:
Data displayed	• **State.** Indicates the highest alarm triggered for each Exchange server.
	• **Name.** Displays the name of each Exchange server.
	• **IP Address.** Displays the IP address of each Exchange server.
	• **Roles.** Displays the Exchange roles being performed by each Exchange server.
	• **CPU.** Displays the current CPU utilization for the server.
	• **Memory.** Displays the current memory utilization on the server.
	• **Exchange Version.** Displays the version of Exchange running on the server.
	• **Operating System.** Displays the Windows® operating system running on the server.
Where to go next	Drill down on:
	• **Exchange Server row.** Displays the Exchange Server Explorer Summary view for the selected server.

Site By Category view

This embedded view is part of the Exchange Site Environment Summary view, which appears when an individual site is selected on the Exchange Environment dashboard.

Table 127. Site By Category view

Description	This view displays the number of Exchange servers in the site as well as the number of Exchange servers performing the different Exchange roles in the site. It also shows the number of those servers in each alarm state.
Data displayed	**All Exchange Servers.** Indicates how many Exchange servers reside in this site and the alarm state for each of these servers.
	Mailbox 2013 Roles. Indicates how many Exchange servers in this site are Mailbox servers and the alarm state for each of these servers.
	Client Access 2013 Roles. Indicates how many Exchange servers in this site are Client Access servers and the alarm state for each of these servers.

	Unified Messaging Roles. Indicates how many Exchange servers in this site are Unified Messaging servers and the alarm state for each of these servers.
	Hub Transport Roles. Indicates how many Exchange servers in this site are Hub Transport servers and the alarm state for each of these servers.
	Edge Transport Roles. Indicates how many Exchange servers in this site are Edge Transport servers and the alarm state for each of these servers.
Where to go next	Drill down on:
	• **Alarm Icon or Number**. Displays an Alarm popup that displays the current alarms for the Exchange servers in the selected alarm state.

Store Calendar Attendant view

To display this view, enable the **Store Calendar Attendant Group** in the Information Store Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Mailbox views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 128. Store Calendar Attendant view

Description	This view displays Calendar Attendant metrics associated with the Information Store on the selected Exchange server, which are gathered when the Store Calendar Attendant collection group is enabled.
Data displayed	**Average Calendar Attendant Processing Time**. This graph charts the average time it is taking to process an event in the Calendar Attendant.
	Calendar Attendant Requests Failed. This graph charts the total number of failures that occurred while the Calendar Attendant was processing events.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Store Client Search view

To display this view, enable the **Store Client Search Group** in the Information Store Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Mailbox views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 129. Store Client Search view

Description	This view displays metrics associated client searches for the selected Exchange server, which are gathered when the Store Client Search collection group is enabled.
Data displayed	**Slow QP Threads**. This graph charts the number of query processor threads currently running queries that are not optimized.
	Slow Search Threads. This graph charts the number of search threads currently running queries that are not are not optimized.

Table 129. Store Client Search view

	Mailbox Stores. The table at the bottom of this view lists the Mailbox stores found on the selected Exchange server. It provides the following metrics for each store listed: • **Search Task Rate**. Shows the number of search tasks created per second. • **Slow Findrow Rate**. Shows the rate at which the slower Findrow needs to be used in the Mailbox Store. • **Categorization Count**. Shows the number of categorizations that exist in the Mailbox Store. (Exchange 2007 only)
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Store Content Indexing view

To display this view, enable the **Store Content Indexing Group** in the Information Store Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Mailbox views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 130. Store Content Indexing view

Description	This view displays content indexing metrics associated with the Information Stores on the selected Exchange server, which are gathered when the Store Calendar Attendant collection group is enabled. This view contains a list of all the storage groups and information stores on the selected server. It also displays the following metrics for each of these storage groups and stores:
Data displayed	**Avg. Document Indexing Time**. Shows the average time it takes to index documents on the selected database.
	Full Crawl Mode Status. Indicates whether a full crawl is occurring for a database.
	Recent Average Latency of RPCs Used to Object Content. Shows the average latency of the most recent RPCs to the Microsoft® Exchange Information Store service.
	Throttling Delay Value. Shows the total time a worker threads sleeps before it retrieves a document from the Microsoft Exchange Information Store service.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Store Database view

To display this view, enable the **Store Database Group** in the Information Store Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Mailbox views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 131. Store Database view

Description	This view displays database metrics associated with the Information Store on the selected Exchange server, which are gathered when the Store Database collection group is enabled.
Data displayed	**Log Bytes Writes/sec**. This graph charts the rate at which bytes are written to the log.

Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Store Public Load view

To display this view, enable the **Store Public Load Group** in the Information Store Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Mailbox views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 132. Store Public Load view

Description	This view displays metrics associated with the Information Store on the selected Exchange server, which are gathered when the Store Public Load collection group is enabled.
Data displayed	**Replication Receive Queue Size**. This counter displays the number of replication messages waiting to be processed.
Where to go next	N/A

Store Resource Booking view

To display this view, enable the **Store Resource Booking Group** in the Information Store Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Mailbox views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 133. Store Resource Booking view

Description	This view displays resource booking attendant metrics associated with the Information Store on the selected Exchange server, which are gathered when the Store Resource Booking collection group is enabled.
Data displayed	**Average Resource Booking Processing Time**. This graph charts the average time it is taking to process an event in the Resource Booking Attendant.
	Resource Booking Requests Failed. This graph charts the total number of failures that occurred while the Resource Booking Attendant was processing events.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Store RPC Client Throttling view

To display this view, enable the **Store RPC Client Throttling Group** in the Information Store Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Mailbox views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 134. Store RPC Client Throttling view

Description	This view displays RPC client throttling metrics associated with the Information Store on the selected Exchange server, which are gathered when the Store RPC Client Throttling collection group is enabled.
Data displayed	**Client RPCs Failed (Server Too Busy)**. This graph charts the client-reported rate at which RPCs failed due to the 'Server Too Busy' ROC error.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Store Transport view

This view consists of two tables. The first table displays metrics about each store interface, while the second one shows information about individual mail submissions. By default, the view appears on the Exchange Explorer **Roles** tab, and displays only the mail submission table. To collect and display the store interface metrics, you must enable the **Store Transport Group** in the **Information Store Detail** section of the Metrics Management dashboard.

Table 135. Store Transport view

Description	This view displays transport metrics associated with the Information Store on the selected Exchange server, which are gathered and displayed when the **Store Transport Group** is enabled.
Data displayed	The first table in this view displays the following metrics for each store interface:
	• **ROP Requests Outstanding**. The total number of outstanding remote operations (ROP) requests.
	• **RPC Latency Average**. The average latency of RPC requests.
	• **RPC Requests Failed Percent**. The percentage of failed requests in the total number of RPC requests.
	• **RPC Requests Outstanding**. The total number of outstanding RPC requests.
	• **RPC Requests Sent**. The current rate at which RPC requests are sent per second.
	• **Slow Requests**. The percentage of slow RPC requests among all RPC requests.
	• **Slow Requests Latency**. The average latency of RPC requests.
	The second table in this view displays the following metrics for each mail submission:
	• **Hub Servers in Retry.** The number of Hub Transport servers in retry mode.
	• **Temporary Submission Failures**. The number of temporary submission failures per second.
Where to go next	N/A

Store User Load view

To display this view, enable the **Store User Load Group** in the Information Store Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Mailbox views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 136. Store User Load view

Description	This view displays user load metrics associated with the Information Store on the selected Exchange server, which are gathered when the Store User Load collection group is enabled.
Data displayed	**User Count**. This graph charts the average time it is taking to process an event in the Calendar Attendant.
	Replication Receive Queue Size. This counter displays the number of messages in the public store's receive queue.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Summary and Resource Information view

This embedded view is part of the Exchange Server Explorer Summary view when an individual server is selected in the Exchange Infrastructure view on the Exchange Explorer dashboard. To display this view, select the **Summary** navigation tab and scroll to the bottom of the view.

Table 137. Summary and Resource Information view

Description	This view displays the following information about the selected Exchange server:
Data displayed	**Server Name**. Displays the name of the selected Exchange server.
	IP Address. Displays the IP address of the selected Exchange server.
	Operating System. Displays the operating system running on the selected server.
	Exchange Version. Displays the Exchange version running on the selected server.
	Domain. Displays the domain to which this server belongs.
	Site. Displays the name of the site to which the selected server belongs.
	Processors. Displays the number of CPUs on the selected server.
	Memory Capacity. Displays the memory capacity of the selected server.
	Network Interfaces. Displays the number of network interfaces available on the selected server.
	Physical Disks. Displays the number of physical disk drives on the selected server.
Where to go next	N/A

Top 3 ASP.NET Current Requests views

This embedded view is part of the following views:

• Exchange Site Environment Summary when **Client Access** is selected in the Exchange Roles view.

Table 138. Top 3 ASP.NET Current Requests view

Description	The graph charts ASP.Net® utilization for the top three Exchange servers in the selected object container or site. The list at the bottom of this view displays the top three Exchange servers that are consuming the most requests during the specified time interval.
Where to go next	N/A

Top 3 ASP.NET Requests In App Queue views

This embedded view is part of the following views:

- Exchange Site Environment Summary when **Client Access** is selected in the Exchange Roles view.

Table 139. Top 3 ASP.NET Requests In App Queue views

Description	The graph charts the ASP.Net® requests in the APP Queue for the top three Exchange servers in the selected object container or site. The list at the bottom of this view displays the top three Exchange servers that are making the most requests during the specified time interval.
Where to go next	N/A

Top 3 CPU Consumers view

This view is part of an Exchange Explorer Summary view, which is displayed when the **Sites** object container, **Servers** object container, **Clusters** object container, or an individual site is selected in the Exchange Infrastructure view on the Exchange Explorer dashboard.

Table 140. Top 3 CPU Consumers view

Description	The graph charts the CPU utilization for the top three Exchange servers in the selected object container or site. The list at the bottom of this view displays the top three Exchange servers that are consuming the most CPU processor time during the specified time interval.
Where to go next	N/A

Top 3 Hub Transport Access Failures view

This embedded view is part of the following views:

- Unified Messaging Role Environment Summary view, which appears when the **Unified Messaging** tile is selected on the Exchange Roles Environment Summary on the Exchange Environment dashboard.
- Exchange Site Environment Summary when **Unified Messaging** is selected in the Exchange Roles view.
- Exchange Site Explorer Summary when **Unified Messaging** is selected in the Roles Explorer view.

Table 141. Top 3 Hub Transport Access Failures view

Description	The graph charts the hub transport access failures for the top three Exchange servers. The list at the bottom of this view displays the top three Exchange servers that reported the highest number of hub transport access failures during the specified time interval.
Where to go next	N/A

Top 3 Mailbox Delivery Queues view

This embedded view is part of the following views:

- Hub Transport Role Environment Summary view, which appears when the **Hub Transport** tile is selected on the Exchange Roles Environment Summary view on the Exchange Environment dashboard.
- Exchange Site Environment Summary when **Hub Transport** is selected in the Exchange Roles view.
- Exchange Site Explorer Summary when **Hub Transport** is selected in the Roles Explorer view.

Description	The graph charts the mailbox delivery queues for the top three Exchange servers. The list at the bottom of this view displays the top three Exchange servers that reported the highest number of entries in the mailbox delivery queue during the specified time interval.
Where to go next	N/A

Top 3 Mailbox Server Access Failures view

This embedded view is part of the following views:

- Unified Messaging Role Environment Summary view, which appears when the **Unified Messaging** tile is selected on the Exchange Roles Environment Summary on the Exchange Environment dashboard.

- Exchange Site Environment Summary when **Unified Messaging** is selected in the Exchange Roles view.

- Exchange Site Explorer Summary when **Unified Messaging** is selected in the Roles Explorer view.

Table 143. Top 3 Mailbox Server Access Failures view

Description	The graph charts the mailbox server access failures for the top three Exchange servers. The list at the bottom of this view displays the top three Exchange servers that reported the highest number of mailbox server access failures during the specified time interval.
Where to go next	N/A

Top 3 Memory Consumers view

This view is part of an Exchange Explorer Summary view, which is displayed when the **Sites** object container, **Servers** object container, **Clusters** object container, or an individual site is selected in the Exchange Infrastructure view on the Exchange Explorer dashboard.

Table 144. Top 3 Memory Consumers view

Description	The graph charts the memory utilization for the top three Exchange servers in the selected object container or site. The list at the bottom of this view displays the top three Exchange servers that are consuming the most memory during the specified time interval.
Where to go next	N/A

Top 3 Messages Received/sec view

This embedded view is part of the following views:

- Hub Transport Role Environment Summary view, which appears when the **Hub Transport** tile is selected on the Exchange Roles Environment Summary view on the Exchange Environment dashboard.

- Exchange Site Environment Summary view when **Hub Transport** is selected in the Exchange Roles view.

Table 145. Top 3 Messages Received/sec view

Description	The graph charts the messages received per second for the top three Exchange servers. The list at the bottom of this view displays the top three Exchange servers that reported the highest number of messages received per second during the specified time interval.
Where to go next	N/A

Top 3 Network Consumers view

This view is part of an Exchange Explorer Summary views, which are displayed when the **Sites** object container, **Servers** object container, **Clusters** object container, or an individual site is selected in the Exchange Infrastructure view on the Exchange Explorer dashboard.

Table 146. Top 3 Network Consumers view

Description	The graph charts the network utilization for the top three Exchange servers in the selected object container or site. The list at the bottom of this view displays the top three Exchange servers that are consuming the most network bandwidth during the specified time interval.
Where to go next	N/A

Top 3 Remote Delivery Queues view

This embedded view is part of the following views:

- Edge Transport Role Environment Summary view, which appears when the **Edge Transport** tile is selected on the Exchange Roles Environment Summary view on the Exchange Environment dashboard.

- Exchange Site Environment Summary when **Edge Transport** is selected in the Exchange Roles view.

- Exchange Site Explorer Summary when **Hub Transport** or **Edge Transport** is selected in the Roles Explorer view.

Table 147. Top 3 Remote Delivery Queues view

Description	The graph displays the top three Exchange servers in the selected site that reported the highest number of messages in the remote delivery queue over the specified time interval. The chart displays the names of the top three Exchange servers and their queue lengths.
Where to go next	N/A

Top 3 RPC Requests view

This embedded view is part of the following views:

- Mailbox Role Environment Summary view, which appears when the **Mailbox** tile is selected on the Exchange Roles Environment Summary view on the Exchange Environment dashboard.

- Exchange Site Environment Summary when **Mailbox** is selected in the Exchange Roles view.

- Exchange Site Explorer Summary when **Mailbox** is selected in the Roles Explorer view.

Table 148. Top 3 RPC Requests view

Description	The graph charts the RPC requests for the top three Exchange servers. The list at the bottom of this view displays the top three Exchange servers that reported the highest number of RPC requests during the specified time interval.
Where to go next	N/A

Top 3 Storage Consumers view

This view is part of an Exchange Explorer Summary view, which is displayed when the **Sites** object container, **Servers** object container, **Clusters** object container, or an individual site is selected in the Exchange Infrastructure view on the Exchange Explorer dashboard.

Description	The graph charts the storage utilization for the top three Exchange servers in the selected object container or site. The list at the bottom of this view displays the top three Exchange servers that are consuming the most storage space during the specified time interval.
Where to go next	N/A

Top 3 Submission Queues view

This embedded view is part of the following views:

- Edge Transport Role Environment Summary view, which appears when the **Edge Transport** tile is selected on the Exchange Roles Environment Summary view on the Exchange Environment dashboard.

- Exchange Site Environment Summary when **Edge Transport** is selected in the Exchange Roles view.

- Exchange Site Explorer Summary when **Hub Transport** or **Edge Transport** is selected in the Roles Explorer view.

Description	The graph displays the top three Exchange servers in the selected site that reported the highest number of messages in the submission queue over the specified time interval. The chart displays the names of the top three Exchange servers and their queue lengths.
Where to go next	N/A

Top 3 Mailbox Delivery Queues

This embedded view is part of the following views:

- Mailbox Role Environment Summary view, which appears when the **Mailbox** tile is selected on the Exchange Environment dashboard.

- Exchange Site Environment Summary when **Mailbox** is selected in the Exchange Roles view.

Description	The graph charts the user connections for the top three Exchange servers. The list at the bottom of this view displays the top three Exchange servers that reported the highest number of user connections during the specified time interval.
Where to go next	N/A

Total LDAP Read Time On All DCs view

This embedded view is part of the Exchange Server AD Health view, which appears when an individual Exchange Server is selected in the Exchange Infrastructure on the Exchange Explorer. Select the **AD Health** navigation tab.

Description	This view displays the following metrics for the all the DCs found in your Active Directory® environment.
Data displayed	**LDAP Read Time.** This graph charts the amount of time it takes to send an LDAP read request to the DC and receive a response. It provides a comparison against the fatal, critical and warning threshold levels.

Table 152. Total LDAP Read Time On All DCs view

Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Total Long-Running LDAP Operations On All DCs view

This embedded view is part of the Exchange Server AD Health view, which appears when an individual Exchange Server is selected in the Exchange Infrastructure on the Exchange Explorer. Select the **AD Health** navigation tab.

Table 153. Total Long-Running LDAP Operations On All DCs view

Description	This view displays the following metrics for the all the DCs found in your Active Directory® environment.
Data displayed	**Total Long-Running LDAP Operations On All DCs.** This graph charts the number of LDAP operations on all DCs that took longer than the specified threshold per minute. The default threshold is 15 minutes. It provides a comparison against the fatal, critical and warning threshold levels.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Transport Dumpster view

To display this view, enable the **Transport Dumpster Group** in the Transport Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Edge Transport or Hub Transport views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 154. Transport Dumpster view

Description	This view displays transport dumpster metrics for the selected Exchange server, which are gathered when the Transport Dumpster collection group is enabled.
Data displayed	**Deletes and Inserts/sec.** This graph charts the following metrics over the specified time interval: • **Dumpster Deletes/sec.** Shows the rate at which items are deleted from the transport dumpster on the selected server. • **Dumpster Inserts/sec.** Shows the rate at which items are inserted into the transport dumpster on the selected server.
	Dumpster Item Count. This graph charts the total number of mail items currently in the transport dumpster on the selected server.
	Dumpster Size. This graph charts the total size of mail items currently in the transport dumpster on the selected server.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Transport Edge Sync view

To display this view, enable the **Transport Edge Sync Group** in the Transport Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Hub Transport views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 155. Transport Edge Sync view

Description	This view displays EdgeSync metrics for the selected Exchange server, which are gathered when the Transport Edge Sync collection group is enabled.
Data displayed	**Objects Added, Deleted and Updated/sec.** This graph charts the following metrics over the specified time interval: • **Edge Objects Added/sec.** Shows the rate at which Edge objects are being added by the EdgeSync per second. • **Edge Objects Deleted/sec.** Shows the rate at which Edge objects are being deleted by the EdgeSync per second. • **Edge Objects Updated/sec.** Shows the rate at which Edge objects are being updated by the EdgeSync per second.
	Scan Jobs. This graph charts the following metrics over the specified time interval: • **Scan Jobs Completed Successfully Total.** Shows the total number of scan jobs completed successfully by EdgeSync. • **Scan Jobs Failed Because Could Not Extend Lock Total.** Shows the total number of EdgeSync scan jobs that failed because EdgeSync could not extend its lease of an Edge Transport server. • **Scan Jobs Failed Because of Directory Error Total.** Shows the total number of EdgeSync directory errors. • **Scan Jobs Not Started Because Could Not Lock Total.** Shows the total number of EdgeSync scan jobs that failed.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Transport Extensibility Agent view

To display this view, enable the **Transport Extensibility Agent Group** in the Transport Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Edge Transport or Hub Transport views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 156. Transport Extensibility Agent view

Description	This view displays metrics for the transport extensibility agents on the selected Exchange server, which are gathered when the Transport Extensibility Agent collection group is enabled.
Data displayed	**Total Agent Invocations.** For each agent listed, this counter displays the total number of invocations since the last restart.
	Average Agent Processing Time. For each agent listed, this counter displays the average agent processing time (in seconds) per event.
Where to go next	N/A

Transport Load Store Drivers view

To display this view, enable the **Transport Load Group** in the Transport Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Edge Transport or Hub Transport views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 157. Transport Load Store Drivers view

Description	This view displays transport load metrics for the selected Exchange server, which are gathered when the Transport Load collection group is enabled.
Data displayed	**Inbound Local Delivery Calls/sec.** This counter displays the number of local delivery calls made per second.
	Inbound Message Delivery Attempts/sec. This counter displays the number of local delivery attempts made per second.
	Inbound Recipients Delivery/sec. This counter displays the number of inbound recipients delivered per second.
	Outbound Submitted Mail Items/sec. This counter displays the number of mail items being submitted per second.
Where to go next	Drill down on:
	• Clicking a counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Transport Queues view

To display this view, enable the **Transport Queues Group** in the Transport Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Edge Transport or Hub Transport views on the Roles navigation tab in the Exchange Explorer dashboard.

ⓘ | NOTE: There is also a Transport Queues view displayed by default for both the Edge Transport and Hub Transport roles. See Exchange Server Roles view - Edge Transport - Transport Queues view and Exchange Server Roles view - Hub Transport - Transport Queues view for information on these default views.

Table 158. Transport Queues view

Description	This view displays additional metrics for the transport queues on the selected Exchange server, which are gathered when the Transport Queues collection group is enabled.
Data displayed	**Active Mailbox Delivery Queue Length.** This counter displays the number of messages in the active mailbox queues.
	Active Non-SMTP Delivery Queue Length. This counter displays the number of messages in the Drop directory that is used by a Foreign connector.
	Retry Non-SMTP Delivery Queue Length. This counter displays the number of messages in a retry state in the non-SMTP gateway delivery queues.
Where to go next	Drill down on:
	• Clicking a counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

UM Availability view

To display this view, enable the **UM Availability Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 159. UM Availability view

Description	This view displays additional metrics for the Unified Messaging availability on the selected Exchange server, which are gathered when the UM Availability collection group is enabled.
Data displayed	**Calls Disconnected.** This graph charts the following metrics over the specified time interval: • **Calls Disconnected by UM on Irrecoverable External Error.** Shows the number of calls disconnected after an irrecoverable external error occurred. • **Calls Disconnected on Irrecoverable Internal Error.** Shows the number of calls that were disconnected after an internal system error occurred.
	Calls Disconnected by UM on Irrecoverable External Error/sec. This graph charts the number of calls disconnected after an irrecoverable external error occurred in the last second.
	Incomplete Signaling Information. This counter displays the number of calls for which the signaling information was missing or incomplete.
	Maximum Calls Allowed. This counter displays the length of time that the server concurrently processed the maximum number of calls allowed.
	Name TTSed. This counter displays the number of times the system used Text-to-Speech (TTS) to create an audio version of the display name of a subscriber.
	Queued OCS User Event Notifications. This counter displays the number of notifications that have been created and not yet submitted for delivery.
	Spoken Name Accessed. This counter displays the number of times the system retrieved the recorded name of a user.
	Total Worker Process Call Count. This counter displays the number of calls handled by this UM worker process.
	Worker Process Recycled. This counter displays the number of times a new UM worker process has been started.
Where to go next	Drill down on:
	• Clicking a graph or counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

UM Call Answer General view

To display this view, enable the **UM Call Answer General Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 160. UM Call Answer General view

Description	This view displays general call answer performance metrics for the Unified Messaging role on the selected Exchange server, which are gathered when the UM Call Answer General collection group is enabled.
Data displayed	**Greetings and Voice Message Size.** This graph charts the following metrics over the specified time interval: • **Average Greeting Size.** Shows the average size of recorded greetings that have been retrieved by the Unified Messaging server. • **Average Recent Voice Message Size.** Shows the average size of the last 50 voice messages that have been left for subscribers. • **Average Voice Message Size.** Shows the average size of the voice messages left for subscribers.

Table 160. UM Call Answer General view

	Average Time for Answering Rule Evaluations. This graph charts the average time it takes to determine if one or more call answering rules apply to a call answering call. It provides a comparison against the computed average for the specified time interval.
	NOTE: This metric applies to Exchange Server 2010 only.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

UM Call Answer view

To display this view, enable the **UM Call Answer Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 161. UM Call Answer view

Description	This view displays call answer performance metrics for the Unified Messaging role on the selected Exchange server, which are gathered when the UM Call Answer collection group is enabled.
Data displayed	**Call Answering**. This graph charts the following metrics over the specified time interval:
	• **Call Answering Calls**. Shows the number of diverted calls that were answered on behalf of subscribers.
	• **Call Answering Escapes**. Shows the number of times a caller pressed the * key to connect to another user instead of leaving a message.
	• **Call Answering Missed Calls**. Shows the number of times a diverted call was dropped without a message being left.
	• **Call Answering Voice Messages**. Shows the total number of voice messages that were submitted for delivery because the calls were answered of behalf of subscribers.
	Voice Messages/sec. This graph charts the total number of voice messages that were submitted for delivery per second because the calls were answered of behalf of subscribers. It provides a comparison against the computed average for the specified time interval.
	Calls Disconnect. This graph charts the following metrics over the specified time interval:
	• **Calls Disconnected by Callers During UM Audio Hourglass**. Shows the number of calls during which the caller disconnected while Unified Messaging was playing the audio hourglass tones.
	• **Calls Disconnected by UM on Irrecoverable External Error**. Shows the number of calls that have been disconnected after an irrecoverable external error occurred.
	Failed Because Transport Unavailable. This counter shows the number of times that attempts to access a Hub Transport server failed.
	Calls Without Personal Greeting. This counter shows the number of diverted calls received for subscribers that did not have recorded greeting messages.
	Diverted Extension Not Provisioned. This counter shows the number of calls received for which the diverted extension supplied with the call is not a UM subscriber extension.

Table 161. UM Call Answer view

	Fetch Greeting Timed Out. This counter shows the number of diverted calls for which the subscriber's personal greeting could not be retrieved within the time allowed.
	Total Calls to Subscribers With Configured Rules. This graph charts the total calls to subscribers with one or more call answering rules applied. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange Server 2010 only.
	Voice Message Protection. This graph charts the following metrics over the specified time interval: • **Call Answering Protected Voice Messages**. Shows the total number of protected voice messages that were submitted because calls were answered on behalf of subscribers. • **Call Answering Voice Message Protection Failures**. Shows the total number of voice messages, submitted because calls were answered on behalf of the subscribers, for which the attempt to apply protection failed. NOTE: Applies to Exchange Server 2010 only.
	Number of Call Answering Rule Calls. This graph charts the following metrics over the specified time interval: **Total Number of Call Answering Rules Calls**. Shows the total number of calls that fulfill the conditions of at least one call answering rule. **Total Number of Timed Out Call Answering Rule Evaluations**. Shows the total number of calls for which call answering rules weren't applied because the system timed out. NOTE: Applies to Exchange Server 2010 only.
Where to go next	Drill down on:
	• Clicking a graph or counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

UM Fax view

To display this view, enable the **UM Fax Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 162. UM Fax view

Description	This view displays fax answering performance metrics for the Unified Messaging role on the selected Exchange server, which are gathered when the UM Fax collection group is enabled.
Data displayed	**Average Fax Size**. This graph charts the following metrics: • **Average Fax Message Size**. Shows the average size of fax messages received. • **Average Recent Fax Message Size**. Shows the average size of the last 20 fax messages. NOTE: Applies to Exchange Server 2007 only.
	Calls Duration Exceeded. This graph charts the number of fax calls that were disconnected because they exceeded the UM maximum call length. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange Server 2007 only.

Table 162. UM Fax view

	Calls to Non-Provisioned Mailboxes. The graph charts the number of calls to extensions that resolved to mailboxes that are not enabled for fax. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange Server 2007 only.
	Incomplete. This graph charts the number of fax calls that were dropped before completion. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange Server 2007 only.
	Fax Messages. This graph charts the total number of fax messages received. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange Server 2007 only.
	Total Calls. This graph charts the following metrics over the specified time interval: • **Total Invalid Fax Calls.** Shows the total number of fax call requests to extensions that resolved to mailboxes that are not enabled for fax. • **Total Successful Valid Fax Calls.** Shows the total number of valid fax call requests to extensions that resolved to mailboxes that are enabled for fax and were successfully transferred to a fax partner. • **Total Valid Fax Calls.** Shows the total number of valid fax call requests to extensions that resolved to mailboxes that are enabled for fax and were successfully transferred to the fax partner. NOTE: Applies to Exchange Server 2010 only.
	Percentage of Successful Valid Calls. This graph charts the percentage of valid fax call requests to extensions that resolved to mailboxes that are enabled for fax and were successfully transferred to a fax partner. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange Server 2010 only.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

UM General Current view

To display this view, enable the **UM Current General Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 163. UM General Current view

Description	This view displays current UM call performance metrics for the selected Exchange server, which are gathered when the UM General Current collection group is enabled.
Data displayed	**Current Calls.** This graph charts the following metrics over the specified time interval: **Current Auto Attendant Calls.** Shows the number of auto attendant calls that are currently connected to the UM server. **Current Calls.** Shows the number of calls that are currently connected to the UM server. **Current Fax Calls.** Shows the number of fax calls that are currently connected to the UM server.

Table 163. UM General Current view

	Other Calls. This graph charts the following metrics over the specified time interval: **Current Play on Phone Calls.** Shows the number of outbound calls initiated to play back messages. **Current Prompt Editing Calls.** Shows the number of logged on users who are editing custom prompts. **Current Subscriber Access Calls.** Shows the number of logged on subscribers who are currently connected to the UM server. **Current Unauthenticated Pilot Number Calls.** Shows the number of voice calls to the pilot number that have not yet been authenticated.
	Current CAS Connections. This graph charts the number of connections that are currently open between the Unified Messaging server and Client Access server. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange Server 2007 only.
	Current Voice Calls. This graph charts the number of voice mail calls that are currently connected to the Unified Messaging server. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange Server 2007 only.
	Current Voice Mail Calls. This graph charts the number of voice mail calls that are currently connected to the Unified Messaging server. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange Server 2010 only.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

UM General view

To display this view, enable the **UM General Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 164. UM General view

Description	This view displays general performance metrics for the Unified Messaging role on the selected Exchange server, which are gathered when the UM General collection group is enabled.
Data displayed	**Average Call Duration.** This graph charts the following metrics for the specified time interval: • **Average Call Duration.** Shows the average duration of calls since the service was started. • **Average Recent Call Duration.** Shows the average duration of the last 50 calls.
	Call Duration Exceeded. This graph charts the number of calls that were disconnected because they exceeded the UM maximum call length. It provides a comparison against the computed average for the specified time interval.
	Calls Disconnected by User Failure. This graph charts the total number of calls disconnected after too many user entry failures.

Table 164. UM General view

	Total Calls. This graph charts the following metrics for the specified time interval: • **Total Calls**. Shows the number of calls answered or placed since the service was started. Transfers are not included. • **Total Play on Phone Calls**. Shows the total number of Play on Phone calls that have been initiated since the service was started.
	Total Calls/sec. This graph charts the number of new calls that have arrived in the last second. It provides a comparison against the computed average for the specified time interval.
	Delayed Calls. This counter shows the number of calls that experienced one or more delays longer than two seconds.
	OCS User Event Notifications. This counter shows the number of OCS user event notifications that occurred since the service was started.
	User Response Latency. This counter shows the average response time for the system to respond to a user request.
	Calls Rejected. This graph charts the total number of new invitations that have been rejected. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange Server 2007 only.
	Calls Rejected/sec. This graph charts the number of new call invitations that have been rejected in the last second. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange Server 2007 only.
	Caller ID Resolutions. This graph charts the following metrics for the specified time interval: • **Caller ID Resolutions Attempted**. Shows the number of caller ID resolutions that were attempted. • **Caller ID Resolutions Succeeded**. Shows the number of caller IDs that were resolved successfully. NOTE: Applies to Exchange Server 2010 only.
	Percent Successful Extension Caller ID Resolutions. This graph charts the percentage of caller IDs that were resolved successfully. It provides a comparison against the computed average for the specified time interval. NOTE: Applies to Exchange Server 2010 only.
	Extension Caller ID Resolutions. This graph charts the following metrics over the specified time interval: • **Extension Caller ID Resolutions Attempted**. Shows the number of caller ID resolutions that were attempted. • **Extension Caller ID Resolutions Succeeded**. Shows the number of successful attempts to resolve caller IDs that contained no "@" or "+" signs and were of the same length as the dial plan's extension. NOTE: Applies to Exchange Server 2010 only.
Where to go next	Drill down on:
	• Clicking a graph or counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

UM Subscriber Access Calendar view

To display this view, enable the **UM Subscriber Access Calendar Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 165. UM Subscriber Access Calendar view

Description	This view displays calendar operation metrics for UM subscriber access on the selected Exchange server, which are gathered when the UM Subscriber Access Calendar collection group is enabled.
Data displayed	**Calendar Items.** This graph charts the following metrics over the specified time interval: **Calendar Items Details Requested.** Shows the number of times a subscriber requested additional details for a calendar item. **Calendar Items Heard.** Shows the number of calendar items that have been heard by authenticated subscribers.
	Late Attendance. This graph charts the number of messages that have been sent to inform the organizer of a meeting that the subscriber will be late. It provides a comparison against the computed average for the specified time interval.
	Calendar Accessed. This graph charts the number of times subscribers accessed their calendars using the telephone user interface. It provides a comparison against the computed average for the specified time interval.
	Called or Replied to Organizer. This graph charts the following metrics over the specified time interval: • **Called Meeting Organizer.** Shows the number of times subscribers called the meeting organizer. • **Replied to Organizer.** Shows the number of times subscribers sent reply messages to meeting organizers.
	Meetings Accepted and Declined. This graph charts the following metrics over the specified time interval: • **Memory Accepted.** Shows the number of meeting accepted messages sent by subscribers. • **Memory Declined.** Shows the number of meeting declined messages sent by subscribers.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

UM Subscriber Access Directory view

To display this view, enable the **UM Subscriber Access Directory Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 166. UM Subscriber Access Directory view

Description	This view displays directory operation metrics for UM subscriber access on the selected Exchange server, which are gathered when the UM Subscriber Access Directory collection group is enabled.
Data displayed	**Directory Accessed.** This graph charts the number of times subscribers accessed the Main Menu Directory option by using the telephone user interface.
	Contacts Accessed. This graph charts the number of times subscribers accessed the Main Menu Contacts option by using the telephone user interface.

Table 166. UM Subscriber Access Directory view

	Contact Items Heard. This graph charts the number of times authenticated subscribers listened to directory details.
	Directory Accessed by Dial by Name. This counter shows the number of directory access operations where the subscriber used the Dial by Name feature.
	Directory Accessed by Extension. This counter shows the number of directory access operations in which the user supplied the extension number.
	Directory Accessed by Spoken Name. This counter shows the number of directory access operations in which the subscriber spoke a recipient name.
	Directory Accessed Successfully by Dial by Name. This counter shows the number of Dial by Number directory access operations that completed successfully on behalf of users.
	Directory Accessed Successfully by Spoken Name. This counter shows the number of speech recognition directory access operations that completed successfully on behalf of subscribers.
Where to go next	Drill down on:
	• Clicking a graph or counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

UM Subscriber Access General view

To display this view, enable the **UM Subscriber Access General Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 167. UM Subscriber General view

Description	This view displays general metrics for UM subscriber access on the selected Exchange server, which are gathered when the UM Subscriber General collection group is enabled.
Data displayed	**Average Message Size.** This graph charts the following metrics over the specified time interval:
	• **Average Recent Sent Voice Message Size.** Shows the average size of the last 50 voice messages that were sent.
	• **Average Sent Voice Message Size.** Shows the average size of voice messages that were sent.
	Average Call Duration. This graph charts the following metrics over the specified time interval:
	• **Average Recent Subscriber Call Duration.** Shows the average length of time that subscribers spent logged on to the system for the last 50 subscriber calls.
	• **Average Subscriber Call Duration.** Shows the average duration that subscribers spent logged on to the system.
	Subscriber Logons. This graph charts the number of successful authentications by UM subscribers since the service was started. It provides a comparison against the computed average for the specified time interval.
	Calls Disconnected by Callers During UM Audio Hourglass. This counter shows the numbers of calls in which the caller disconnected while UM was playing the audio hourglass tones.
	Calls Disconnected by UM on Irrecoverable External Error. This counter shows the number of calls that have been disconnected after an irrecoverable external error occurred.

Table 167. UM Subscriber General view

	Launched Calls. This counter shows the number of subscriber calls that resulted in an outbound call being placed.	
	Subscriber Authentication Failures. This counter shows the number of authentication failures that have occurred since the service was started.	
	Subscriber Logon Failures. This counter shows the number of logon failures since the service was started.	
Where to go next	Drill down on:	
	• Clicking a graph or counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.	

UM Subscriber Access Message view

To display this view, enable the **UM Subscriber Access Message Group** in the Unified Messaging Detail section of the Metrics Management dashboard. When this collection group is enabled, this view is added to the Unified Messaging views on the Roles navigation tab in the Exchange Explorer dashboard.

Table 168. UM Subscriber Access Message view

Description	This view displays message operation metrics for UM subscriber access on the selected Exchange server, which are gathered when the UM Subscriber Access Message collection group is enabled.
Data displayed	**Email Messages Heard, Deleted and Queue Accessed**. This graph charts the following metrics over the specified time interval:
	• **Email Messages Queue Accessed**. Shows the number of times subscribers accessed their email message queue by using the telephone user interface.
	• **Email Messages Deleted**. Shows the number of email messages that were deleted by authenticated subscribers.
	• **Email Messages Heard**. Shows the number of email messages that were heard by authenticated subscribers.
	Forward and Reply Messages Sent. This graph charts the following metrics over the specified time interval:
	• **Forward Messages Sent**. Shows the number of messages that have been forwarded by authenticated subscribers.
	• **Reply Messages Sent**. Shows the number of replies sent by authenticated subscribers.
	Voice Messages Deleted, Heard and Sent. This graph charts the following metrics over the specified time interval:
	• **Voice Messages Deleted**. Shows the number of voice messages that were deleted by authenticated subscribers.
	• **Voice Messages Heard**. Shows the number of voice messages played to subscribers. This count is incremented as soon as playback starts.
	• **Voice Messages Sent**. Shows the number of voice messages that have been sent by authenticated UM subscribers.
	Protected Voice Messages Heard. This counter shows the number of protected voice messages played to subscribers. NOTE: Applies to Exchange Server 2010 only.
	Protected Voice Messages Sent. This counter shows the number of protected voice messages sent by authenticated UM subscribers. NOTE: Applies to Exchange Server 2010 only.

Table 168. UM Subscriber Access Message view

	Voice Message Decryption Errors. This counter shows the total number of times that an attempt to decrypt a protected voice message failed. NOTE: Applies to Exchange Server 2010 only.
	Voice Message Protection Failures. This counter shows the total number of interpersonal voice messages for which an attempt to apply protection failed. NOTE: Applies to Exchange Server 2010 only.
Where to go next	Drill down on:
	• Clicking a graph or counter in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Unified Messaging Features view

To display the Unified Messaging Features view select **Unified Messaging** under the Roles object container in the Exchange Infrastructure view on the Exchange Explorer dashboard. The metrics displayed depend on the feature selected in the Unified Messaging tile and the server selected in the server list below the tile.

Table 169. Unified Messaging Features view - Auto Attendant

Description	When **Auto Attendant** is selected in the Unified Messaging tile, this view displays the following metrics for the server selected in the server list.
Data displayed	**Avg. Recent Call Duration**. This counter shows the average duration of the most recent calls that interacted with the auto attendant.
	Average Call Duration. This graph charts the average length of time that callers interacted with the auto attendant.
	% Successful Calls. This counter displays the percent of successful calls processed by this auto attendant during the specified time interval.
	Calls Processed By Auto Attendant. This graph charts the following metrics over the specified time interval: • **Out Of Hours Calls**. Shows the number of calls processed by this auto attendant outside of business hours. • **Business Hour Calls**. Shows the number of calls processed by this auto attendant during business hours. • **Total Calls**. Shows the number of calls that have been processed by this auto attendant.
	Disconnected Calls. This graph charts the following metrics over the specified time interval: • **Calls Disconnected By UM On Irrecoverable Error**. Shows the total number of calls that have been disconnected after an irrecoverable external error occurred. • **Calls Disconnected Without Input**. Shows the number of calls that were dropped without input being offered in response to the auto attendant prompts.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Table 170. Unified Messaging Features view - Call Answering

Description	When **Call Answering** is selected in the Unified Messaging tile, this view displays the following metrics for the server selected in the server list.
Data displayed	**Call Answering Voice Messages/sec.** This counter shows the number of calls that are being diverted each second to the voice messaging system.
	Diverted Calls. This graph charts the following metrics over the specified time interval: • **Calls Answered.** Shows the number of diverted calls that were answered on behalf of subscribers. • **Calls Missed.** Shows the number of times a diverted call was dropped without a message being left.
	Disconnected Calls. This graph charts the following metrics over the specified time interval: • **Calls Disconnected By UM On Irrecoverable Error.** Shows the total number of calls that have been disconnected after an irrecoverable external error occurred. • **Calls Disconnected By Callers During UM Audio Hourglass.** Shows the number of calls in which the caller was disconnected while UM was playing the audio hourglass tones.
	Failed Calls Because Transport Unavailable. This graph charts the number of calls that failed because the transport service is not available to submit the message.
Where to go next	Drill down on:
	• Clicking a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Windows Cluster view

This embedded view is part of the Exchange Cluster Environment Summary view which is displayed when an individual cluster is selected in the Object Tree view in the Exchange Environment dashboard.

Table 171. Windows Cluster view

Description	This view displays the name of the Exchange cluster selected in the Object Tree view.
Where to go next	N/A

Windows Services view

This embedded view is part of the Exchange Server Explorer Summary view when an individual server is selected in the Exchange Infrastructure view on the Exchange Explorer dashboard. To display this view, select the **Summary** navigation tab.

Table 172. Windows Services view

Description	This view displays a list of core OS and Exchange services running on the selected server.
Data displayed	**Core OS Services.** This list displays the core OS services being monitored on the selected server and their present state.

Table 172. Windows Services view

Exchange Services. This list displays the Exchange services being monitored on the selected server and their present state. The following services are displayed for Exchange 2013:

- **Mailbox role**:

    - MSExchangeADTopology

    - MSExchangeEdgeSync

    - MSExchangeIMAP4BE

    - MSExchangeIS

    - MSExchangeMailboxAssistants

    - MSExchangeMailboxReplication

    - MSExchangeDelivery

    - MSExchangeSubmission

    - MSExchangePOP3BE

    - MSExchangeRepl

    - MSExchangeFastSearch

    - MSExchangeServiceHost

    - MSExchangeTransport

    - MSExchangeTransportLogSearch

    - MSExchangeUM

    - IISADMIN

    - Netlogon

    - W3SVC

- **Client Access role**:

    - MSExchangeADTopology

    - MSExchangeFrontEndTransport

    - MSExchangeIMAP4

    - MSExchangePOP3

    - MSExchangeServiceHost

    - IISADMIN

    - Netlogon

    - W3SVC

Where to go next	N/A

Foglight for Exchange rules

Foglight for Exchange includes a number of predefined rules to monitor all critical components of Exchange on a continuous basis to ensure that the Exchange organization is functioning properly. The rules included in Foglight for Exchange alert you to key conditions that may affect the health of Exchange. Foglight allows you to modify these predefined rules or create your own rules to ensure you are monitoring statistics and alerting on conditions specific to your Exchange environment.

Foglight for Exchange provides additional dashboards for managing Foglight for Exchange rules:

- Rules dashboard (**Dashboards** > **Administration** > **Rules** > **All**)
- Exchange Rule Management dashboard (**Dashboards** > **Exchange** > **Rule Management**)

> ⓘ | NOTE: All original rules in each cartridge are reset when the cartridge is upgraded; therefore if you applied custom conditions to any original rules these modifications will be lost. It is recommended that when modifying rules you make a copy of the original, disable the original and enable the copy with the new condition. Use the copy rule icon to the far right of a rule on the Manage Rules dashboard to copy a rule.

This chapter describes the Exchange Rule Management dashboard and explains the tasks that can be performed from this dashboard:

- Rules dashboard
- Exchange Rule Management dashboard
- Managing Foglight for Exchange rules
- Rules reference

Rules dashboard

The Rules dashboard lists all rules that exist in your environment and allows you to drill down to rule definitions. From this dashboard you can copy, edit, and remove Foglight rules.

> ⓘ | NOTE: Predefined rules may be modified during regular software updates. To avoid losing changes to these rules, we recommend copying a rule and making edits to the copy. Enable the copy and disable the original rule. You may want to identify your custom rules with a unique prefix to make them easy to find.

To review and edit rules:

1 In the navigation panel, under **Homes**, click **Administration**.

2 In the **Administration** dashboard, click **Rules** > **All**.

   The Rules dashboard opens.

3 From the Cartridge list, select *ExchangeMonitoring*.

   The dashboard refreshes to display only the Foglight for Exchange rules.

4 From here, you can perform the following tasks:

   - Review a short description of the rule.

- Review and edit threshold values.

  > ⓘ **TIP:** For rules that reference registry variables for threshold values, modify the threshold in the registry variable, rather than modifying the rule. For help finding and editing registry variables, search for "Registry Variable" in the online help.

- Copy rules.

- Edit rule conditions.

- Associate actions with rules.

- Create user-defined rules.
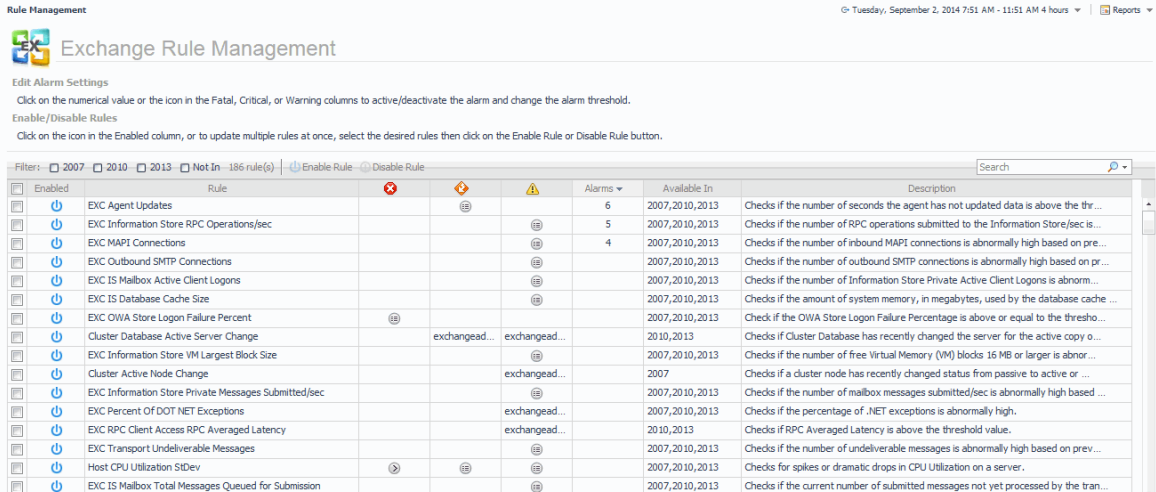
For help with these tasks, open the online help from the Rule dashboard.

Exchange Rule Management dashboard

The Exchange Rule Management dashboard contains a sortable list of all the conditional severity rules used by the Managing Microsoft Exchange. From this dashboard you can quickly see which conditional rules are enabled/disabled, the states (fatal, critical or warning) with active conditions, predefined alarm threshold values, rules with current alarms, and a brief description of each rule.

> ⓘ **NOTE:** The Rule Management dashboard does not display simple rules that do not have user-definable conditions defining when to raise an alarm. To edit the simple rules, use the Manage Rules dashboard.

Figure 44. Exchange Rule Management dashboard

The Exchange Rule Management dashboard displays the following information about the Foglight for Exchange rules.

Table 173. Exchange Rule Management dashboard information

Column	Description
☐	Use the selection check box column to select one or more rules in the list. Once selected, you can enable or disable the selected rules using the buttons at the top of the table.
	To select or clear all of the rules in the list, click on the check box in the heading row.
Enabled	Displays one of the following icons indicating whether the rule is enabled or disabled:
	⏻ - Enabled
	◐ - Disabled
	Clicking the icon in this column will either disable or enable the selected rule.
Rule	Displays the name of the conditional rule.
	Selecting the rule name launches the rule editor where you can edit the selected rule, defining conditions on when to raise an alarm.
⊗	Fatal Condition:
• A numeric value or a graph icon in this column indicates that a fatal condition is defined and active for this rule. Selecting a value displays a dialog allowing you to specify a different value. Selecting a graph icon launches the rule editor where you can view or edit the selected rule.
• A grayed out value or graph icon indicates that a fatal condition is defined but not active for this rule. Selecting a deactivated value displays a dialog allowing you to specify the value and activate the condition. Selecting a deactivated graph icon launches the rule editor where you can edit and activate the condition.
• The set rule icon ⊕ indicates that a fatal condition is not yet defined for this rule. Selecting this icon displays a dialog allowing you to specify a value for the rule or launches the rule editor allowing you to define a fatal condition for this rule.
• The icon indicates multiple registry values. Clicking this icon displays a dialog that allows you to view the fatal condition threshold for these variables.
• A string value indicates a single registry value. Clicking this string displays a dialog allowing you to define a fatal condition for this rule.
• The edit icon ⊘ indicates that you can define a fatal condition for this rule. Clicking this icon launches the rule editor allowing you to define a fatal condition for this rule.

Table 173. Exchange Rule Management dashboard information

Column	Description
	Critical Condition: • A numeric value or a graph icon in this column indicates that a critical condition is defined and active for this rule. Selecting a value displays a dialog allowing you to specify a different value. Selecting a graph icon launches the rule editor where you can view or edit the selected rule. • A grayed out value or graph icon indicates that a critical condition is defined but not active for this rule. Selecting a deactivated value displays a dialog allowing you to specify the value and activate the condition. Selecting a deactivated graph icon launches the rule editor where you can edit and activate the condition. • The set rule icon indicates that a critical condition is not yet defined for this rule. Selecting this icon displays a dialog allowing you to specify a value for the rule or launches the rule editor allowing you to define a critical condition for this rule. • The icon indicates multiple registry values. Clicking this icon displays a dialog that allows you to view the critical condition threshold for these variables. • A string value indicates a single registry value. Clicking this string displays a dialog allowing you to define a critical condition for this rule. • The edit icon indicates that you can define a critical condition for this rule. Clicking this icon launches the rule editor allowing you to define a critical condition for this rule.
	Warning Condition: • A numeric value or a graph icon in this column indicates that a warning condition is defined and active for this rule. Selecting a value displays a dialog allowing you to specify a different value. Selecting a graph icon launches the rule editor where you can view or edit the selected rule. • A grayed out value or graph icon indicates that a warning condition is defined but not active for this rule. Selecting a deactivated value displays a dialog allowing you to specify the value and activate the condition. Selecting a deactivated graph icon launches the rule editor where you can edit and activate the condition. • The set rule icon indicates that a warning condition is not yet defined for this rule. Selecting this icon displays a dialog allowing you to specify a value for the rule or launches the rule editor allowing you to define a warning condition for this rule. • The icon indicates multiple registry values. Clicking this icon displays a dialog that allows you to view the warning condition threshold for these variables. • A string value indicates a single registry value. Clicking this string displays a dialog allowing you to define a warning condition for this rule. • The edit icon indicates that you can define a warning condition for this rule. Clicking this icon launches the rule editor allowing you to define a warning condition for this rule.

Table 173. Exchange Rule Management dashboard information

Column	Description
Alarms	Indicates the number of outstanding alarms for each rule.
	Selecting the number in this column displays the alarms popup. From the alarm list on this popup:
	• Clicking the alarm message, time or severity icon for an individual alarm displays the Alarm Details dialog from which you can acknowledge or clear the alarm.
	• Selecting the Info icon ⓘ displays the Metrics and Troubleshooting dialog.
	• Selecting a server allows you to view the performance metrics in the Exchange Explorer or Quick View.
Available In	Indicates the Exchange version in which the rule is available.
Description	Provides a brief description of the rule.

Managing Foglight for Exchange rules

In addition to viewing the Foglight for Exchange rules, you can edit alarm thresholds, enable/disable rules, and filter rules Exchange version using the Exchange Rule Management dashboard.

To disable a rule:

1   Locate the rule to be disabled and click the icon in the corresponding Enabled column.

> ⓘ | NOTE: To disable multiple rules, select the corresponding check boxes to the left of the rules to be disabled and select the Disable Rule toolbar button.

2   On the confirmation dialog, select **Yes**.

To edit the condition of a rule:

1   Select the rule in the Rule column or its corresponding graph icon 📈 in the Fatal, Critical or Warning columns.

> ⓘ | NOTE: Hovering the cursor over a numeric value or graph icon will display the current condition that is defined.

> ⓘ | NOTE: To define a condition for a rule, select the set rule icon in the corresponding Fatal, Critical or Warning columns.

2   On the Edit Rule view, edit the conditions, alarms, actions, schedules, behavior or rule variables as required. After making your edits, select **Save All**.

For more detailed information on editing rules, see the *Foglight Administration and Configuration Help*.

> ⓘ | NOTE: In the browser interface, open the Help tab in the action panel. Navigate to Using Foglight > Administration and Configuration Help > Tuning Foglight for Optimal Performance > Using Foglight Rules to Report on Bottlenecks. Scroll to the bottom of that page to find a list of reference topics including procedures explaining how to perform a variety of tasks related to rules.

To edit the alarm threshold assigned to a rule:

1   Select the numeric value in the Fatal, Critical or Warning columns.

2   On the Threshold dialog, enter the new value and select **Update**.

To activate/deactivate a condition for a rule:

1   Select the deactivated value or graph icon in the corresponding Fatal, Critical or Warning columns.

- If you selected a deactivated value, on the Threshold dialog, select the **Activate** check box and if desired modify the threshold value displayed. Select **Update**.

- If you selected a deactivated graph icon, on the Edit Rule view, select the **Activate** check box on the Conditions, Alarms & Actions tab. If necessary, edit the conditions, alarms, actions, schedules, behavior or rule variables as required. After activating and/or editing the condition, select **Save All**.

2   To deactivate a condition, select the rule, active value or chart icon in the corresponding Fatal, Critical or Warning columns.

- If you selected a value, on the Threshold dialog, clear the **Activate** check box. Select **Update**.

- If you selected a rule or a graph icon, on the Edit Rule view, clear the **Activate** check box on the Conditions, Alarms & Actions tab. After deactivating the condition, select **Save All**.

To filter rules by Exchange version:

- To display the rules available only in certain Exchange version(s), select the Filter check box(es) corresponding to that (those) version(s): **2007**, **2010**, and **2013**.

- To display the rules that are not available in certain Exchange version(s), select the Filter check box(es) corresponding to that (those) version(s): **2007**, **2010**, and **2013**, and also select the **Not In** check box.

Rules reference

Foglight allows you to create flexible rules that can be applied to complex, interrelated data from multiple sources within your distributed system. You can associate several different actions with a rule, configure a rule so that it does not fire repeatedly, and associate a rule with schedules to define when it should and should not be evaluated.

Different types of data can be used in rules, including registry variables, raw metrics, derived metrics, and topology object properties.

There are two types of rules in Foglight: simple rules and multiple-severity rules. A simple rule has a single condition, and can be in one of three states: *Fire*, *Undefined*, or *Normal*. A multiple-severity rule can have up to five severity levels: *Undefined*, *Fatal*, *Critical*, *Warning*, and *Normal*.

Rule conditions are regularly evaluated against monitoring data (metrics and topology object properties collected from your monitored environment and transformed into a standard format). Therefore, the state of the rule can change if the data changes. For example, if a set of monitoring data matches a simple rule's condition, the rule enters the *Fire* state. If the next set does not match the condition, the rule exits the *Fire* state and enters the *Normal* state.

A rule condition is a type of expression that can be true or false. When it evaluates to true, the rule is said to fire, causing any actions that are associated with the rule or severity level to be performed. You can configure a rule to perform one or more actions upon entering or exiting each state. When a multiple-severity rule fires, an alarm also appears in Foglight.

Foglight for Exchange includes several Exchange monitoring rules. In addition, this cartridge uses some of the Host Monitoring rules.

ⓘ   **NOTE:** The host monitoring rules are only used if Foglight for Exchange is collecting the host metrics, as specified on the agent's properties page. If the host metrics are being collected by Foglight for VMware or Foglight for Hyper-V, the host monitoring rules defined for the selected cartridge will be used instead.

For more information, see the *Foglight Administration and Configuration Guide* or online help.

Running diagnostic tests

Foglight for Exchange provides diagnostics tests to help you detect and analyze Exchange problems. Using the Diagnostic Tests dashboard, which is available in Foglight for Exchange, you can view a list of diagnostic tests that are available as well as run a test immediately or define a schedule for when a test is to be run.

⚠ | IMPORTANT: Running diagnostic tests may impact performance. The impact on performance depends on your environment (network bandwidth, speed, etc.), the number of servers being tested, and the number of tests being run. It is recommended to run individual tests against specific servers to analyze a particular problem.

This chapter describes the components of the Diagnostic Tests dashboard and explains the tasks that can be performed from this dashboard. It also provides a description of the diagnostic tests that are available in Foglight for Exchange to detect and analyze your Exchange environment.

- Diagnostic Tests dashboard
- Diagnostic Tests reference
- Troubleshooting

Diagnostic Tests dashboard

The Diagnostic Tests dashboard allows you to run diagnostic tests against a selected server in your Active Directory® environment. It consists of the following components:

- Tasks list
- About Diagnostic Test Types pane
- Diagnostic Tests list

Tasks list

The Tasks list in the upper left-hand corner of the dashboard contains a list of tasks that can be performed from this dashboard.

Figure 45. Tasks list
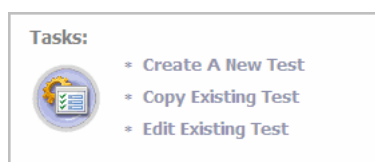
Clicking a task in this list launches a wizard or displays a dialog allowing you to further define the task to be performed:

- **Create a New Test** - select this task to specify the test parameters to be used to run a test. Selecting this task launches the Create New Diagnostic Test wizard which steps you through the process.
- **Copy Existing Test** - select this task to use an existing test as a basis for creating a new test. Selecting this task displays the Copy Diagnostic Test dialog allowing you to select an existing test to be copied.

Once you select a test to be copied, the Create New Diagnostic Test wizard is launched allowing you to modify the test parameters as required.

- **Edit Existing Test** - select this task to modify the test parameters of an existing test. Selecting this task displays the Edit Diagnostic Test dialog allowing you to select an existing test to be modified. After selecting the test to be edited, the Edit Diagnostic Test wizard is launched allowing you to modify the test as required.

Create New Diagnostic Test

The Create New Diagnostic Test wizard allows you to select the type of test to be run and to specify the test input and the servers the test is to be run against. It also allows you to specify when the test is to be run.

To create a new test:

1 Select the **Create a New Test** task in the task list at the top of the dashboard to launch the Create New Diagnostic Test wizard.

2 On the Create New Test page, enter the following information:

- Diagnostic Test Name - enter a descriptive name for the test to be run

- Test Type - select the type of test to be run

- Test Input - enter the test input as required

3 On the Test Targets page, select the **Select Targets** button. On the Select Targets dialog, select one or more servers and select **OK**.

> ⓘ NOTE: You can also select all the servers in a domain or a site, by using the View by options at the top of the dialog and selecting either a domain or site from the displayed list.

4 On the Test Execution Schedule page, select one of the following options to define how often the test is to be run:

- **Run Once** - select to run the test one time when the **Finish** button is selected.

- **Run Periodically** - select to run the test multiple times during a day. Enter how often the test is to be run (every nn minutes). To specify a start and end time, select the **Use execution window** check box and use the calendar controls to specify the start and end time.

- **Run Once Each Day** - select to run the test every day at the specified time. Use the calendar control to specify the time.

> ⓘ NOTE: A test should not be re-run within 10 minutes. If you select to re-run the test within this 10 minute interval, the Test Run Frequency Warning message will be displayed.

5 Select **Finish** to initiate the test run and close the wizard.

The new test appears in the Diagnostic Tests list on the Diagnostic Tests dashboard. To view the test's results, select the selection icon to the left of the test in this list.

For more information about the controls and information requested on the wizard, see Create New Diagnostic Test Wizard.

Copy Existing Test

To copy an existing test:

1 Select the **Copy Existing Test** task in the task list.

2 On the Copy Diagnostic Test dialog, select the test to be copied and select the **Copy** button.

3 On the Create New Diagnostic Tests dialog, modify the following information as appropriate:

- On the first page, enter a new name for the test, select the type of test to be run and enter any test inputs.

- On the second page, select the **Select Servers** button to select the servers on which the test is to be run.

- On the last page, select when the test is to be run.

4 Select **Finish** to save your selections and close the wizard.

5 The new test appears in the Diagnostic Tests list on the Diagnostic Tests dashboard.

Edit Existing Test

To edit an existing test:

1 Select the **Edit Existing Test** task in the task list.

2 Select the test to be modified from the Edit Diagnostic Test dialog and select **Edit** to launch the Edit Diagnostic Test wizard.

> ⓘ | NOTE: You can also select a test from the Diagnostic Test list and click the Edit toolbar button at the top of the test list to launch the Edit Diagnostic Test wizard.

3 Modify the settings as appropriate:

- On the first page of the wizard, you can modify the test input parameters.

- On the second page of the wizard, you can select a different set of servers.

- On the last page of the wizard, you can select a different run schedule.

4 When complete, select the **Finish** button to save your selections and close the wizard.

Create New Diagnostic Test Wizard

The Create New Diagnostic Test wizard includes several pages and requires the following information:

- Create New Test: From this page, provide a name for the new test, select the test type and enter the test input.

  - Diagnostic Test Name: Enter a descriptive name for the diagnostic test.

  - Test Type: Select the type of test to be run. When you select a test type, a description of the test appears to the right of the test type options. In addition, any required test parameters that must be defined is displayed in the Test Input section at the bottom of the page.

  - Test Input: Depending on the type of test selected, this pane displays the test parameters that must be defined.

    - **Execution Timeout (seconds)** - By default, the execution timeout is set to 15 seconds. To change this setting, enter a different value.

    - **Destination Email Address** - When the **External Mailbox** test type of selected, enter the email address of the external mailbox to be tested.

- **Test Targets:** From this page, select the target servers on which the test is be run.

  - Select Targets: Selecting this button displays the Select Targets dialog that lists all the servers containing the Mailbox role.

    Use the **View by** option at the top of the dialog to display the available servers. Depending on this setting, you can select one or more servers, all servers in a domain or all servers in a site.

    - View by Servers - allows you to select one or more individual servers or all servers.

    - View by Sites - allows you to select one or more individual servers or a site to include all servers in that site

    - View by Domains - allows you to select one or more individual servers or a domain to include all servers in that domain.

After selecting the target servers to be tested, use the **OK** button to close the dialog and return to the wizard.

Once a target is selected, the following information is displayed:

- Type - indicates whether a server, domain or site was selected on the Select Targets dialog.

- Name - displays the name of the selected server(s), domain(s), or site(s).

- **Test Execution Schedule:** From this page, specify how often the test is to be run.

- Run Once: Select to run the test one time.

- Run Periodically: Select to run the test multiple times during the day. Enter the following information to specify when the test is to be run during the day:

- **Run every nn minutes -** enter the number of minutes

- **Use execution window -** select this check box and use the calendar controls to specify the start and end time.

- Run Once Each Day: Select to run the test once each day. Click the time control to display a calendar control to select the time the test is to be run.

About Diagnostic Test Types pane

The About Diagnostic Test Types pane in the upper right corner of the dashboard displays a list of test types available.

Figure 46. About Diagnostic Test Types
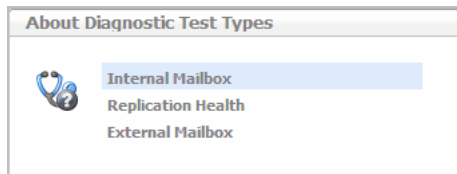
Selecting a test type from this list displays a pop-up which provides a brief description of the selected test.

Diagnostic Tests list

The remainder of this dashboard consists of the Diagnostic Tests list. As tests are created using the **Create New Diagnostic Test** wizard, the test parameters specified in the wizard will be displayed for each new test created. From this list, you can select the **Run Now** icon to run the test or select a test to view the test results.

Figure 47. Diagnostic Tests list
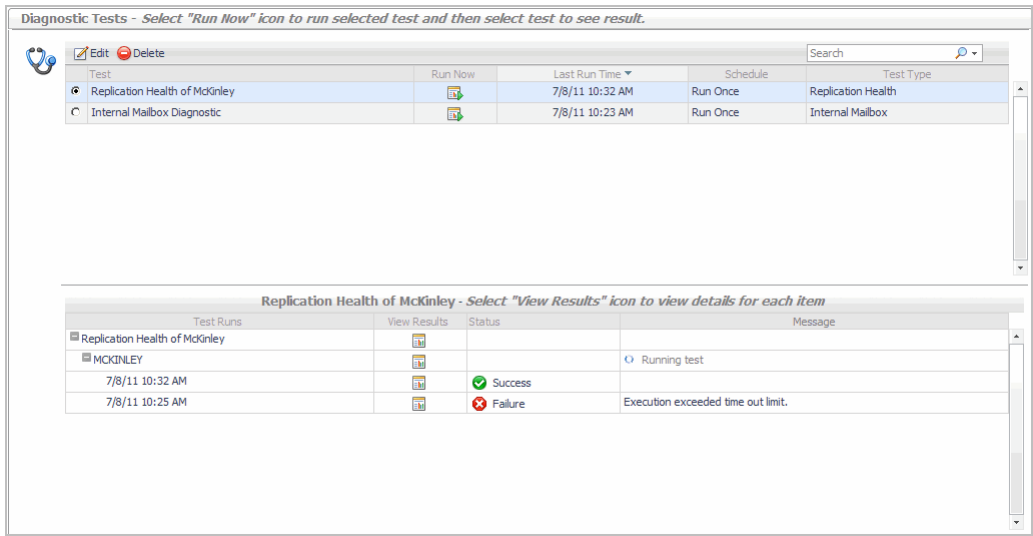
The Diagnostic Tests list contains the following information for each test that has been scheduled to run.

Table 174. Diagnostic Tests list information

Column	Description
	Select the selection icon for a test to display an additional panel at the bottom of the page to display the results of the selected test. See Test results for a description of the additional details displayed.
	Selecting a test also enables the **Edit** and **Delete** toolbar buttons allowing you to remove the test from the list or edit the test to be run.
Test	Displays the name of the test as entered on the first page of the wizard.
Run Now	Click the icon in this column to initiate a test run.
	NOTE: A test should not be re-run within 10 minutes. If you select to run the test within this 10 minute interval, the Test Run Frequency Warning message appears.
	NOTE: If agent data collection is turned off for the selected target server, the test will fail. If you start the data collection for the server and run the test within the 10 minute interval, the Test Run Frequency Warning message appears. Use the **Overrule** button to run the test now that the agent data collection is turned on.
Last Run Time	Indicates the date and time when the test last ran.
Schedule	Displays the test execution schedule as specified in the wizard.
Test Type	Displays the type of test.

Test results

The following details are displayed at the bottom of the Diagnostic Tests dashboard when a test is selected in the Diagnostic Tests list.

Table 175. Test results

Column	Description
Test Name	The name of the selected test is displayed across the top of this pane.
Test Runs	Displays the servers selected to be tested and the dates and times when the test was run. Select the expansion button to the left of a test to display a list of the test runs that have been performed against each server.
View Results	Click the [icon] icon in this column to view the detailed test results. • Test - clicking the icon for a test displays results for the entire test, including all servers and all test runs. • Server - clicking the icon for a server displays results for all runs for the selected server. • Test Run - clicking the icon for a test run displays results for the selected test run on that server.
Status	Displays the overall status of each test run. The following state indicators are used to illustrate the status: • Success (Green) - indicates the test completed successfully • Failed (Red) - indicates that the test failed
Message	Displays progress messages generated during a test run.

Diagnostic Tests reference

The following types of diagnostic tests are provided with Foglight for Exchange:

- Internal Mailbox
- Remote Forest Mailbox
- Replication Health

Internal Mailbox

The Internal Mailbox diagnostic tests whether mail can be successfully sent from and delivered to the System Mailbox on each target server.

ⓘ NOTE: When selecting the target servers to be tested, be sure to select servers that are within the same Exchange organization. If you select servers that are in different organizations, you will encounter communication errors.
In addition, it is recommended to select only a few target servers (10 or less) to run this test against. That is because when running this test against 10 servers, the test will run 10 times for each of those 10 servers.

To run this test enter the execution timeout value.

Table 176. Internal Mailbox

Test Input	Description
Execution Timeout (seconds)	By default, the execution timeout is set to 15 seconds. To change this setting, enter a different value.

Remote Forest Mailbox

The Remote Forest Mailbox diagnostic tests whether mail can be successfully sent from each target server and delivered to the specified remote forest mailbox.

To run this test enter the execution time-out value and the email address of a remote forest mailbox.

Table 177. Remote Forest Mailbox

Test Input	Description
Execution Time-out (seconds)	By default, the execution time out is set to 120 seconds. To change this setting, enter a different value.
Destination Email Address	Enter the email address of the remote forest mailbox to be tested.

Replication Health

The Replication Health diagnostic tests all aspects of replication, cluster services, and storage group replication replay status to provide a complete overview of the replication system.

To run this test enter the execution time out value.

Table 178. Replication Health

Test Input	Description
Execution Time-out (seconds)	By default, the execution time-out is set to 15 seconds. To change this setting, enter a different value.

Depending on the Exchange version, this diagnostic returns results for the following tests:

Exchange Server 2007 tests

- PassiveNodeUp. Checks if the passive node in the cluster is up.

- ClusterNetwork. Checks that cluster-managed networks are healthy on all nodes in the local cluster.

- QuorumGroup. Checks that the quorum or default cluster group for the local cluster is healthy.

- FileShareQuorum. Checks that the file share configured for the file share witness (FSW) for cluster continuous replication (CCR) can be reached.

- CmsGroup. Checks that the clustered mailbox server (CMS) possibly owned by the local cluster node is healthy.

- NodePaused. Checks if the possible owner nodes of clustered mailbox servers are in a Paused state.

- DnsRegistrationStatus. Checks if Network Name resources that require DNS registration have completed it successfully.

- ReplayService. Checks if the Microsoft® Exchange Replication service is running.

- DBMountedFailover. Checks if there are any databases on clustered mailbox servers in a cluster continuous replication environment that are dismounted because of a failover.

- SGCopySuspended. Checks if there are any storage group copies in the 'Suspended' state.

- SGCopyFailed. Checks if there are any storage group copies in the 'Failed' state.

- SGInitializing. Checks if there are any storage group copies in the 'Initializing' state.

- SGCopyQueueLength. Checks if there are any passive copies of storage groups with a copy queue length above the warning or failure thresholds.

- SGReplayQueueLength. Checks if there are any storage groups with replay queue lengths greater than the warning or failure thresholds.

Exchange Server 2010 tests

- ClusterService. Checks if the cluster service is healthy.

- ReplayService. Checks if the Microsoft® Exchange Replication service is running.

- ActiveManager. Check if the Active Manager is running and has a valid role.

- TasksRpcListener. Checks that the Tasks RPC Listener is running and is responding to remote requests.

- TcpListener. Checks that the TCP Listener is running and is responding to requests.

- DagMembersUp. Verifies that the members of a database availability group are up and running.

- ClusterNetwork. Checks that the networks are healthy.

- QuorumGroup. Checks that the quorum and witness for the database availability group is healthy.

- FileShareQuorun. Verifies that the path used for the file share witness can be reached.

- DBCopySuspended. Checks if any database copies are in the 'Suspended' state.

- DBCopyFailed. Checks if any database copies are in the 'Failed' state.

- DBInitializing. Checks if any database copies are in the 'Initializing' state.

- DBDisconnected. Checks if any database copies are in 'DisconnectedAndHealthy' state.

- DBLogCopyKeepingUp. Verifies that log copying and inspection for the database copy is keeping up with log generation on the source server.

- DBLogReplayKeepinUp. Verifies that the log replay is keeping up with log copying and inspection.

Troubleshooting

The configuration steps described in this section may be required in order to successfully run diagnostic tests.

- Configuring the agent to log on as a service

Configuring the agent to log on as a service

Monitoring agent accounts must be assigned the *Log on as a service* policy, otherwise the data collection is disabled and results in the following error:

```
The remote service is not running, so data collection that depends on this service
will not be available. Check that the agent account has the Log on as a Service
right.
```

This error may be generated if the monitoring agent uses an account that does not have permissions granted to use this policy, or if the *..\Windows\RemoteCommandService.exe* file or the Quest Remote Command Service are corrupted or missing.

Permissions to access this policy can be granted using the Group Policy Management Editor in the monitored environment.

To configure the agent to log on as a service:

1 Start the Group Policy Management Editor. In the Control Panel, click **Administrative Tools** > **Group Policy Management**.

2 In the **Group Policy Management Editor** window that appears, in the left pane, click **Default Domain Policy** > **Computer Configuration** > **Windows Settings** > **Security Settings** > **Local Policies** > **User Rights Assignment**.

3 In the right pane, locate the **Log on as a service** policy.
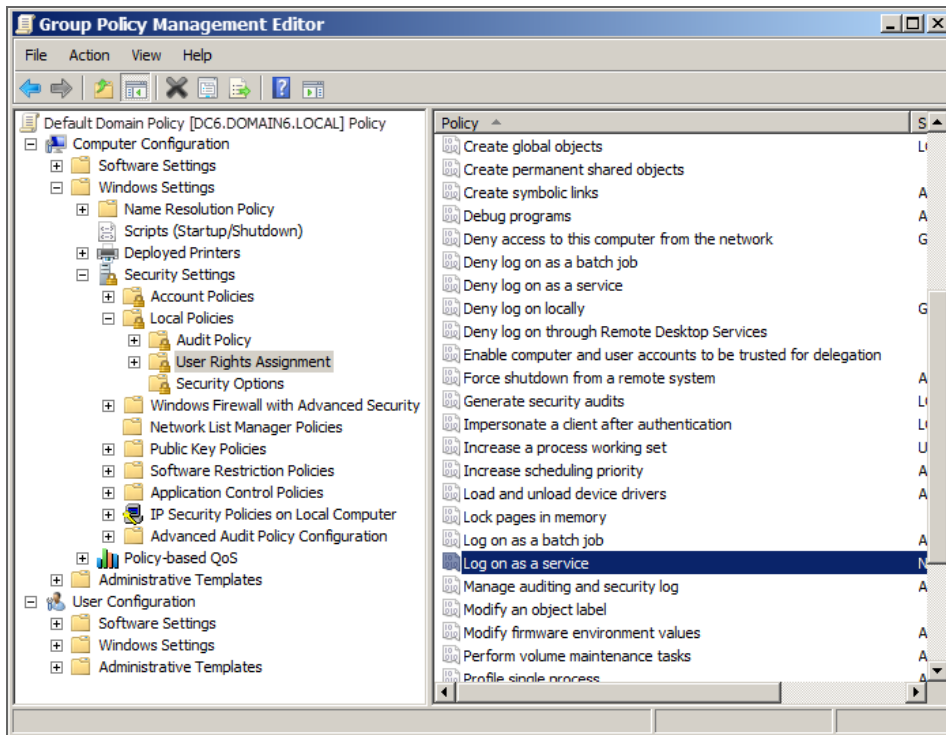
4   Double-click the **Log on as a service** policy.

    The **Log on as a service Properties** dialog box appears.

5   Click **Add User or Group**.

    The **Select Users, Computers, Service Accounts, or Groups** dialog box appears.

6   Add the account used by the agent to access the monitored environment, and click **OK**.

7   In the **Log on as a service Properties** dialog box, click **OK**.

8   On the monitored server, delete the *..\Windows\RemoteCommandService.exe* file.

9   Deactivate and activate the monitoring agent.

Managing Exchange metrics

Exchange agents collect metrics by default which are then displayed throughout the Foglight for Exchange views. In addition, Exchange agents can be configured to collect other metrics in addition to those being collected by default.

> ⚠ **IMPORTANT:** Enabling optional metric collections may impact performance. It is recommended to only enable the collection groups required to pinpoint a specific issue and then disable the metric collections for these collection groups once the issue is found/resolved.

Foglight for Exchange provides an additional dashboard that can be used to view and manage metrics that can be optionally collected by an Exchange agent. Optional Exchange metrics can only be enabled or disabled using this new dashboard. However, data collection schedules can be modified using any of the following dashboards:

- Agent Status dashboard (**Dashboards > Administration > Agents > Agent Status**)

- Agent Properties dashboard (**Dashboards > Administration > Agents > Agent Properties**)

- Exchange Metrics Management Dashboard (**Dashboards > Exchange Environment > Administration tab > Metrics Management**)

> ⓘ **NOTE:** When using the default data collection schedule (defaultSchedule), you can use the Agent Status, Agent Properties or Metric Management dashboard to modify a data collection interval. However, when using a user-defined data collection schedule, you must use the Agent Status or Agent Properties dashboard to modify a data collection interval.

This chapter describes the components on the Exchange Metrics Management dashboard. It also provides procedures for enabling and disabling metric collections and for modifying the data collection interval to be used to collect metrics. See Appendix: Exchange metrics for a list of the metrics that can be optionally collected by the Exchange agents. This appendix also provides a list of the metrics collected by default.

For details, see these topics:

- Agent Status and Agent Properties dashboards

- Exchange Metrics Management dashboard

- Managing Exchange metrics

Agent Status and Agent Properties dashboards

The Agent Status and Agent Properties dashboards allow you to edit an agent's properties. Use the Data Collection Scheduler setting on these dashboards to modify the data collection schedule to be used to collect performance metrics.

Figure 48. Data Collection Scheduler
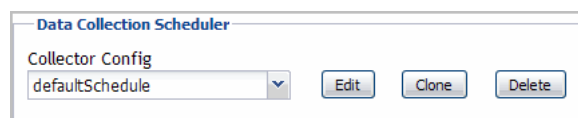
Use the controls in this panel as described in the following table.

Table 179. Data Collection Scheduler controls

Control	Description
Collector Config	Specifies the data collection schedule to be used to collect performance metrics.
Edit	Select this button to edit the data collection schedule selected in the Collector Config field.
Clone	Select this button to create a copy of the data collection schedule selected in the Collector Config field. This schedule can then be used as a basis for creating a new data collection schedule.
Delete	Select this button to delete the data collection schedule selected in the Collector Config field.

Exchange Metrics Management dashboard

The Exchange Metrics Management dashboard lists the metrics that can be optionally collected by an Exchange agent. Using this dashboard, you can enable these metrics to pinpoint specific performance issues or to modify the interval to be used to collect data.

The metrics displayed on the Exchange Metrics Management dashboard are divided into the following components

- Sections show the metric collections that are configurable for Exchange agents. Using the Metrics Management dashboard, you can modify the interval and time unit for each section which defines when data is to be collected.

- Collection Groups contain the individual metrics. Using the Metrics Management dashboard, you can enable or disable collection groups. Once enabled, you can also specify to display the collected metrics in a collection group on the Exchange views.

ⓘ NOTE: The content of the Metrics Management dashboard is attached to the default data collection schedule (defaultSchedule) property for an agent. If a user-defined data collection schedule is being used to collect metrics, you must use the Data Collection Scheduler setting on an agent's properties page to manage the data collection schedule.

NOTE: The metrics that are collected and displayed by default are NOT displayed on the Exchange Metrics Management dashboard, because they cannot be disabled.

Figure 49. Exchange Metrics Management dashboard
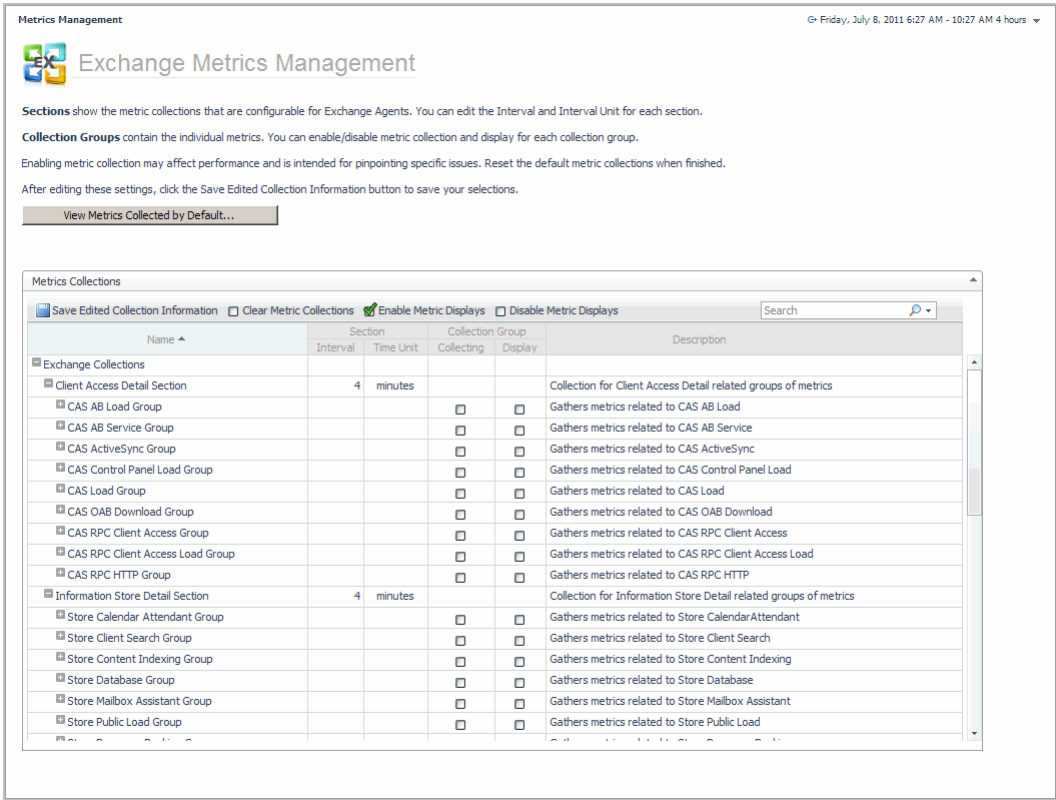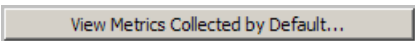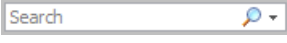
The Exchange Metrics Management dashboard contains the following information for each collection metric:

Table 180. Exchange Metrics Management dashboard

Column	Description
Name	Lists the Exchange Collections and when expanded, the sections, collection groups and individual metrics included in each collection group.
	To expand the Exchange Collections to display the sections, collection groups and individual metrics, click the expansion box to the far left of the collection, section or collection group name.
Section	Displays the interval and time unit to be used to collect data. By default, the interval and time unit displayed are the default settings defined in the defaultSchedule.
	NOTE: Changing the interval or time unit on the Metrics Management dashboard will also change the collection interval for the corresponding collector on the Agent Properties page.
Collection Group	Indicates whether the metrics in the collection group are to be collected and/or displayed.
	• Collecting - A green check mark in this column indicates that the metrics in the collection group are to be collected.
	• Display - A green check mark in this column indicates that the metrics in the collection group are to be displayed.
	NOTE: You can only enable the display after the collecting flag has been enabled for a collection group.
Description	Displays a brief description of each section, collection group, and individual metric.

Use the buttons on this dashboard as described in the following table.

Table 181. Exchange Metrics Management dashboard buttons

Button	Description
View Metrics Collected by Default...	Displays the Exchange Default Metrics dialog which contains a list of all the metrics being collected and displayed by default.
Save Edited Collection Information	Saves changes made to any setting on the Metrics Management page.
Clear Metric Collections	Resets the collection group settings (Collecting and Display) for the metrics in all manually enabled collection groups.
Enable Metric Displays	Enables the display of the metrics in all manually enabled collection groups. NOTE: You can only enable the display after the collecting flag has been enabled for a collection group.
Disable Metric Displays	Disables the display of the metrics in all manually enabled collection groups.
Search	Use the search control to filter the information displayed on the Metrics Management dashboard.

Managing Exchange metrics

You can only use the Metrics Management dashboard to enable or disable the collection and/or display of optional performance metrics. However, depending on the data collection schedule being used to collection metrics, you can use the Agent Status (agent properties page), Agent Properties or Metrics Management dashboard to modify the data collection interval.

- When using the default data collection schedule (defaultSchedule), you can use the Agent Status, Agent Properties or Metric Management dashboard to modify data collection intervals.

- When using a user-defined data collection schedule, you must use the Agent Status or Agent Properties dashboard to manage data collection schedules.

For more details, see these topics:

- Using the Metrics Management dashboard

- Using the Agent Status and Agent Properties dashboards

Using the Metrics Management dashboard

Using the Exchange Metrics Management dashboard, you can modify the interval and time unit for metric sections, enable/disable the collection of optional metrics in collection groups, or specify to display the collected metrics in a collection group.

To display this dashboard, select **Exchange Environment** > **Administration tab** > **Metrics Management** from the dashboards listed in the navigation pane.

To modify the interval or time unit of a section:

> ⓘ | NOTE: You can only modify the interval or time unit for a section, not collection groups or individual metrics.

1 From the Exchange Metrics Management page, locate the section whose interval or time unit is to be modified.

2 To change the interval, select the value displayed in the **Interval** column. Enter the new value in the dialog and select **Update**.

3   To change the time unit, select the value displayed in the **Time Unit** column. Select the new time unit (days, hours or minutes) in the dialog and select **Update**.

4   Select the **Save Edited Collection Information** toolbar button to save your selections.

> ⓘ **NOTE:** Modifying the interval or time unit using the Metrics Management page also modifies the collection interval for the corresponding collector in the defaultSchedule (Agent Properties page).

To enable the collecting or display of optional metrics:

> ⓘ **NOTE:** You can only enable a collection group, not individual metrics within a collection group.

> ⓘ **NOTE:** Enabling metrics may affect performance. It is recommended that you only enable metrics in order to pinpoint a specific issue and to then reset the default metric collections when finished.

1   From the Exchange Metrics Management page, locate the collection group to be enabled.

2   Click the check box in the corresponding **Collection Group | Collecting** cell.

3   Select the check box in the metric's collection dialog and select **Update**.

A green check mark is displayed in the **Collection Group | Collecting** column on the Metrics Management page.

Once the collecting of a collection group is enabled, you can then enable the display of these metrics.

4   Click the check box in the corresponding **Collection Group | Display** column.

5   Select the check box in the metric's display dialog and select **Update**.

A green check mark is displayed in the **Collection Group | Display** column back on the Metrics Management page.

> ⓘ **NOTE:** If you enabled the collecting of multiple collection groups and want to enable the display of all these metrics, you can use the Enable Metric Display toolbar button instead of enabling them all individually.

6   Select the **Save Edited Collection Information** toolbar button to save your selections.

7   On the Save dialog, click **Save** to confirm that you want to save your selection.

8   A Save Collections dialog appears informing you that your selection(s) have been saved. Click the close button in the upper right-hand corner to close the dialog and return to the Exchange Metrics Management dashboard.

To disable the collecting or display of optional metrics:

1   From the Exchange Metrics Management page, locate the collection group to be disabled.

2   Click the enabled check box (contains a green check mark) in the corresponding **Collection Group** column (**Collecting** or **Display**).

3   Clear the check box on the dialog and select **Update**.

The green check mark is cleared from the selected column back on the Metrics Management page.

4   Select the **Save Edited Collection Information** toolbar button to save your selections.

5   On the Save dialog, click **Save** to confirm that you want disable the selected metric collection.

6   A Save Collections dialog appears informing you that your selection(s) have been saved. Click the close button in the upper right-hand corner to close the dialog and return to the Exchange Metrics Management dashboard.

> ⓘ **NOTE:** To disable the collection and display of all previously enabled collection groups, use the Clear Metric Collections toolbar button.

To display the metrics being collected by default:

1   From the Exchange Metrics Management page, select the **View Metrics Collected by Default** button.

2   The Active Directory Default Metrics dialog appears which lists the metrics that are being collected and displayed by default.

ⓘ | NOTE: Metrics being collected and displayed by default cannot be disabled using the Metrics Management dashboard.

3   To close this dialog, select the close button in the upper right-hand corner of the dialog.

Using the Agent Status and Agent Properties dashboards

On the agent's properties page, you can use the Data Collection Scheduler setting to define the data collection schedule to be used or to modify a data collection interval.

To display an agent's properties page, use one of the following methods:

- From the navigation panel, navigate to **Dashboards** > **Administration** > **Agents** > **Agent Status**. On the Agent Status dashboard, select an agent from the list and click **Edit Properties**. The Agent Status dashboard refreshes, showing the current properties for the selected agent instance.

- From the navigation panel, navigate to **Dashboards** > **Administration** > **Agents** > **Agent Properties**. On the Agent Properties dashboard, select an agent. The Properties panel is displayed, showing the current properties for the selected agent instance.

To modify the data collection interval:

1   Open the agent's properties page.

ⓘ | NOTE: If accessing this page through the Agent Status dashboard, select Modify the properties for all ExchangeAgent agents to activate the properties on the page.

2   The defaultSchedule in the Data Collection Scheduler panel defines the default collection intervals being used to collect metrics. To change one or more collection intervals in the default data collection schedule, select the **defaultSchedule** and click **Edit**.

The Collector Config dialog appears, which lists all of the collectors and their current settings.

ⓘ | NOTE: A zero value means that the collector is turned off and is not collecting data.

- To edit a collection interval, double-click the Default Collection Interval cell of the collector to be changed, and enter a different value.

- After editing the collection interval, select **Save Changes**.

- Click the close button in the upper right corner to close the dialog.

ⓘ | NOTE: Advanced users can add custom collectors using the developers kit. See the Foglight online help for details.

3   Back on the Agent Status/Agent Properties dashboard, select **Save** to save your selections.

4   Back on the Agent Status/Agent Properties dashboard, select **Save** to save your selections.

For more information on using these dashboards to edit an agent's properties, see the *Foglight Administration and Configuration Guide* or online help.

Appendix: Exchange metrics

The tables in this appendix list all of the metrics that can be collected by the Exchange agents. The first set of tables list the metrics that are collected by default and the views where they can be found: Metrics collected by default.

The later set of tables list the metrics that can be optionally collected by enabling a collection group on the Exchange Metrics Management dashboard: Optional metrics.

Metrics collected by default

The following tables list the metrics that are collected by default by the Exchange agents. Each table lists the metrics that are being displayed on the different Exchange views. These views are available when you select an individual Exchange server from the exchangeExplorer dashboard.

- Active CCR Storage Group view
- Active DAG Database view
- Active SCC Storage Group view
- Passive CCR Storage Group view
- Passive DAG Database view
- Exchange Server Roles view - Client Access
- Exchange Server Roles view - Edge Transport
- Exchange Server Roles view - Hub Transport
- Exchange Server Roles view - Mailbox
- Exchange Server Roles view - Unified Messaging

Active CCR Storage Group view

The following metrics are collected by default and are displayed on the Active CCR Storage Group view. To display the Active CCR Storage Group view, click the name of the active storage group copy at the top of a cluster view on either the Exchange Environment or Exchange Explorer dashboard when an individual Exchange 2007 cluster object is selected.

ⓘ | NOTE: Some of these cluster metrics are also displayed on the cluster views for an individual cluster object on the Exchange Environment and Exchange Explorer dashboard.

Table 182. Active CCR Storage Group view

Default Cluster Metrics	Description
Active I/O Log Writes Average Latency	The average time it takes to write a log buffer to the active log file.
I/O Database Reads Average Latency	The average time it takes to read from the database file. This metric applies to Exchange 2007 only.

Table 182. Active CCR Storage Group view

Default Cluster Metrics	Description
I/O Database Writes Average Latency	The average time it takes to write to the database file. This metric applies to Exchange 2007 only.
I/O Log Threads Waiting	The number of threads waiting for their data to be written to the log to complete an update of the database.
Log Record Stalls/sec	The number of log records that cannot be added tot he log buffers per second because the log buffers are full.

Active DAG Database view

The following metrics are collected by default and are displayed on the Active DAG Database view. To display the Active DAG Database view, click the name of the active database copy at the top of a cluster view on either the Exchange Environment or Exchange Explorer dashboard when an individual Exchange 2010 cluster object is selected.

ⓘ NOTE: Some of these cluster metrics are also displayed on the cluster views for an individual cluster object on the Exchange Environment and Exchange Explorer dashboard.

Table 183. Active DAG Database view

Default Cluster Metrics	Description
Activation Suspended	Indicates whether activation on the mailbox database copy is suspended. NOTE: This metric applies to Exchange 2010 only.
Active I/O Log Writes Average Latency	The average time to write a log buffer to the active log file.
Average Log Copy Latency ms	The average time, in milliseconds, to copy data from a log file. NOTE: This metric applies to Exchange 2010 only.
Copy Queue Length	The number of transaction log files waiting to be copied to the passive copy log file folder.
Disconnected	Indicates whether a mailbox database copy is in a state of Disconnected on the specified DAG member. NOTE: This metric applies to Exchange 2010 only.
Failed	Indicates whether the copy is in a condition where it can successfully replicate and replay log files.
Failed Suspended	Indicates whether the failed and suspended states have been sent simultaneously by the system because a failure was detected and resolution of the failure explicitly requires administrator intervention. NOTE: This metric applies to Exchange 2010 only.
I/O Database Reads (Attached) Average Latency	The average time it takes to read from the database file. NOTE: This metric applies to Exchange 2010 only.
I/O Database Reads (Recovery) Average Latency	The average time it takes to read from the database file. NOTE: This metric applies to Exchange 2010 only.
I/O Database Writes (Attached) Average Latency	The average time it takes to write to the database file. NOTE: This metric applies to Exchange 2010 only.
I/O Database Writes (Recovery) Average Latency	The average time it takes to write to the database file. NOTE: This metric applies to Exchange 2010 only.

Table 183. Active DAG Database view

Default Cluster Metrics	Description
I/O Log Threads Waiting	The number of threads waiting for their data to be written to the log to complete an update of the database.
Initializing	Indicates that the system is verifying that the database and log stream are in a consistent state.
Log Copy KB/sec	The rate at which log copying is proceeding. NOTE: This metric applies to Exchange 2010 only.
Log Copying is Not Keeping Up	Indicates that log copying and inspection by the passive copies of databases on the specified DAG member are not able to keep up with log generation activity on the active copy NOTE: This metric applies to Exchange 2010 only.
Log Record Stalls/sec	The number of log records that cannot be added to the log buffers per second because the log buffers are full.
Log Replay is Not Keeping Up	Indicates that the replay activity for the passive copies of the databases on the specified DAG is not able to keep up with log copying and inspection activity. NOTE: This metric applies to Exchange 2010 only.
Log Replay Rate Generations/sec	The rate of replay in log generations per second in the current replay batch NOTE: This metric applies to Exchange 2010 only.
Replay Queue Length	The number of transaction log files waiting to be replayed into the passive copy.
Seeding Finished Percent	The finished percentage of seeding. Used to determine if seeding is occurring for a particular database, which is possible affecting the overall server performance or current network bandwidth.
Suspended	Indicates whether replication is suspended on the copy. May be a result of an administrator manually suspending the database copy.

Active SCC Storage Group view

The following metrics are collected by default and are displayed on the Active SCC Storage Group view. To display the Active SCC Storage Group view, click the name of the active storage group copy at the top of a cluster view on either the Exchange Environment or Exchange Explorer dashboard when an individual Exchange 2007 cluster object is selected.

ⓘ NOTE: Some of these cluster metrics are also displayed on the cluster views for an individual cluster object on the Exchange Environment and Exchange Explorer dashboard.

Table 184. Active SCC Storage Group view

Default Cluster Metrics	Description
Active I/O Log Writes Average Latency	The average time it takes to write a log buffer to the active log file.
I/O Database Reads Average Latency	The average time it takes to read from the database file. NOTE: This metric applies to Exchange 2007 only.
I/O Database Writes Average Latency	The average time it takes to write to the database file. NOTE: This metric applies to Exchange 2007 only.

Default Cluster Metrics	Description
I/O Log Threads Waiting	The number of threads waiting for their data to be written to the log to complete an update of the database.
Log Record Stalls/sec	The number of log records that cannot be added tot he log buffers per second because the log buffers are full.

Passive CCR Storage Group view

The following metrics are collected by default and are displayed on the Passive CCR Storage Group view. To display the Passive CCR Storage Group view, click the name of the passive storage group copy at the top of a cluster view on either the Exchange Environment or Exchange Explorer dashboard when an individual Exchange 2007 cluster object is selected.

ⓘ NOTE: Some of these cluster metrics are also displayed on the cluster views for an individual cluster object on the Exchange Environment and Exchange Explorer dashboard.

Default Cluster Metrics	Description
Failed	Indicates whether the copy is in a condition where it can successfully replicate and replay log files.
Copy Queue Length	The number of transaction log files waiting to be copied to the passive copy log file folder.
Initializing	Indicates that the system is verifying that the database and log stream are in a consistent state.
Replay Queue Length	The number of transaction log files waiting to be replayed into the passive copy.
Suspended	Indicates whether replication is suspended on the copy. May be a result of an administrator manually suspending the database copy.
Seeding Finished Percent	The finished percentage of seeding. Used to determine if seeding is occurring for a particular database, which is possible affecting the overall server performance or current network bandwidth.

Passive DAG Database view

The following metrics are collected by default and are displayed on the Passive DAG Database view. To display the Passive DAG Database view, click the name of the passive database copy at the top of a cluster view on either the Exchange Environment or Exchange Explorer dashboard., when an individual Exchange 2010 cluster object is selected.

ⓘ NOTE: Some of these cluster metrics are also displayed on the cluster views for an individual cluster object on the Exchange Environment and Exchange Explorer dashboard

Table 186. Passive DAG Database view

Default Cluster Metrics	Description
Activation Suspended	Indicates whether activation on the mailbox database copy is suspended. NOTE: This metric applies to Exchange 2010 only.
Average Log Copy Latency ms	The average time, in milliseconds, it takes to copy data from a log file. NOTE: This metric applies to Exchange 2010 only.
Copy Queue Length	The number of transaction log files waiting to be copied to the passive copy log file folder.
Disconnected	Indicates whether a mailbox database copy is in a state of disconnected on the specified DAG member. NOTE: This metric applies to Exchange 2010 only.
Failed	Indicates whether the copy is in a condition where it can successfully replicate and replay log files.
Failed Suspended	Indicates whether the failed and suspended states have been set simultaneously by the system because a failure was detected and resolution of the failure explicitly requires administrator intervention. NOTE: This metric applies to Exchange 2010 only.
Initializing	Indicates that the system is verifying that the database and log stream are in a consistent state.
Log Copy KB/sec	The rate at which log copying is proceeding. NOTE: This metric applies to Exchange 2010 only.
Log Copying is Not Keeping Up	Indicates that the log copying and inspection by the passive copies of databases on the specified DAG member are not able to keep up with log generation activity on the active copy. NOTE: This metric applies to Exchange 2010 only.
Log Replay is Not Keeping Up	Indicates that the replay activities for the passive copies of databases on the specified DAG member is not able to keep up with log copying and inspection activities. NOTE: This metric applies to Exchange 2010 only.
Log Replay Rate Generations/sec	The rate of replay in log generations per second in the current replay batch. NOTE: This metric applies to Exchange 2010 only.
Replay Queue Length	The number of transaction log files waiting to be replayed into the passive copy.
Seeding Finished Percent	The finished percentage of seeding. Used to determine if seeding is occurring for a particular database, which is possible affecting the overall server performance or current network bandwidth.

Exchange Server Roles view - Client Access

The following metrics are collected by default and are displayed on the Exchange Server Roles view when **Client Access** is selected at the top of the Roles navigation tab on the Exchange Explorer dashboard.

View/Client Access Metrics	Description
IIS Health View	
Connection Attempts/sec	The rate at which connections to the web service are being attempted.
HTTP Connections	The current number of connections established with the web service.
ISAPI Extension Requests/sec	The rate at which Internet Server API (ISAPI) extension requests are received by the web service.
Other Request Methods/sec	The rate at which HTTP requests are being made.
Outlook Web Access View	
ASP.NET Requests	The the number of current ASP.Net® requests.
Availability Requests/sec	The number of availability requests serviced per second.
Average Response Time	The average time that elapsed during an OWA request.
Average Search Time	The average time that elapsed while waiting for a search to complete.
Current Unique Users	The number of unique users who are currently logged on to Outlook Web Access.
Current Users	The number of users who are currently logged on to Outlook Web Access.
OWA Logons/sec	The number of Outlook Web Access user sessions that are created per second.
Outlook Web App Requests/sec	The number of Outlook Web Access requests made per second.
Peak Number of OWA Users	The largest number of users that were simultaneously connected to Outlook Web Access since the process was last restarted.
Requests in Application Queue	The number of ASP.Net® application requests in the application queue.
Web Services Requests/sec	The number of web service requests processed each second.

Exchange Server Roles view - Edge Transport

The following metrics are collected by default and are displayed on the Exchange Server Roles view when **Edge Transport** is selected at the top of the Roles navigation tab on the Exchange Explorer dashboard.

Table 188. Exchange Server Roles view - Edge Transport

View/Edge Transport Metrics	Description
Agents View	
Average Agent Processing Time	The average agent processing time per event.
Sender ID Agent DNS Queries/sec	The number of DNS queries performed by the Sender ID Agent per second.
SMTP Receive View	
Average Bytes Per Message	The average number of bytes for each inbound message.
Messages Received/sec	The number of messages received by the SMTP server per second.
Transport DC Connectivity View	

Table 188. Exchange Server Roles view - Edge Transport

View/Edge Transport Metrics	Description
Domain Controllers LDAP Read Time	The time it takes to send an LDAP read request to the specified domain controller and receive a response.
Domain Controllers LDAP Search Time	The time it takes to send an LDAP search request and receive a response.
LDAP Searches/sec	The number of LDAP search requests issued per second.
LDAP Searches Timed Out/min	The number of LDAP searches that returned LDAP_Timeout during the last minute.
Long Running LDAP Operations/min	The number of LDAP operations on the domain controller that took longer than the specified threshold.
Processes LDAP Read Time	The time it takes to send an LDAP read request to the specified domain controller and receive a response.
Processes LDAP Search Time	The time it takes to send an LDAP search request and receive a response.
Transport Load View	
Items Completed Delivery/sec	The rate at which messages completed delivery per second since the server was started.
Messages Completed Delivery/sec	The number of messages that are delivered per second.
Messages Queued for Delivery/sec	The number of messages that have been queued for delivery per second.
Messages Submitted/sec	The number of messages that have been queued in the Submission queue per second.
SMTP Messages Sent/sec	The number of messages sent by the SMTP send connector each second.
Submission Queue Length	The number of messages in the submission queue.
Transport Mail Database View	
I/O Database Reads/sec	The rate at which bytes are read from the database.
I/O Database Writes/sec	The rate at which bytes are written to the database.
I/O Log Reads/sec	The rate at which bytes are read from the log.
I/O Log Writes/sec	The rate at which bytes are written to the log.
Log Generation Checkpoint Depth	The amount of work in the log file count that needs to be redone or undone to the database files if the process fails.
Log Record Stalls/sec	The number of log records that cannot be added to the log buffers per second because the log buffers are full.
Log Threads Waiting	The number of threads waiting for their data to be written to the log to complete an update of the database.
Total Database Cache Size MB	The amount of system memory being used by the database cache manager to hold commonly used information from the database files to prevent file operations.
Version Buckets Allocated	The total number of version buckets allocated.
Transport Queues View	
Active Remote Delivery Queue Length	The number of messages waiting to be delivered to a remote server.
Aggregate Delivery Queue Length (All Queues)	The number of messages queued for delivery in all queues.
Largest Delivery Queue Length	The number of items currently in the largest delivery queue.

Table 188. Exchange Server Roles view - Edge Transport

View/Edge Transport Metrics	Description
Poison Queue Length	The number of messages in the poison queue.
Retry Mailbox Delivery Queue Length	The number of messages waiting to be retried for delivery to a Mailbox server.
Retry Remote Delivery Queue Length	The number of messages waiting to be retried for delivery to a remote server.
Submission Queue Length	The number of messages in the submission queue.
Unreachable Queue Length	The number of messages in the unreachable queue.
Transport Rules View	
Messages Evaluated/sec	The number of messages the rule has evaluated per second.
Messages Processed/sec	The number of messages the rule has processed per second.

Exchange Server Roles view - Hub Transport

The following metrics are collected by default and are displayed on the Exchange Server Roles view when **Hub Transport** is selected at the top of the Roles navigation tab on the Exchange Explorer dashboard.

Table 189. Exchange Server Roles view - Hub Transport

View/Hub Transport Metrics	Description
SMTP Receive View	
Average Bytes Per Message	The average number of message bytes per inbound message received.
Messages Received/sec	The number of messages received by the SMTP server each second.
Transport Load View	
Item Completed Delivery/sec	The rate at which messages completed delivery per second since the server was started.
Messages Completed Delivery/sec	The number of messages that are delivered per second.
Messages Queued for Delivery/sec	The number of messages that have been queued for delivery per second.
Messages Sent/sec	The number of messages sent by the SMTP server each second.
Messages Submitted/sec	The number of messages that have been queued in the Submission queue per second.
Submission Queue Length	The number of messages in the submission queue.
Transport Mail Database View	
Database Instance I/O Log Reads/sec	The rate at which bytes are read from the log.
Database Instance I/O Log Writes/sec	The rate at which bytes are written to the log.
Database Instance Log Generation Checkpoint Depth	The amount of work in the log file count that will need to be redone or undone to the database file if the process fails.
Database Instance Log Record Stalls/sec	The number of log records that cannot be added to the log buffers per second because the log buffers are full.
Database Instance Log Threads Waiting	The number of threads waiting for their data to be written to the log to complete an update of the database.
Database Instance Version Buckets Allocated	The total number of version buckets allocated.

Table 189. Exchange Server Roles view - Hub Transport

View/Hub Transport Metrics	Description
I/O Database Instance Reads/sec	The rate at which bytes are read from the database.
I/O Database Instance Writes/sec	The rate at which bytes are written to the database.
I/O Database Reads/sec	The rate at which bytes are read from the database.
I/O Database Writes/sec	The rate at which bytes are written to the database.
I/O Log Reads/sec	The rate at which bytes are read from the log.
I/O Log Writes/sec	The rate at which bytes are written to the log.
Log Generation Checkpoint Depth	The amount of work in the log file count that needs to be redone or undone to the database files if the process fails.
Log Record Stalls/sec	The number of log records that cannot be added to the log buffers per second because the log buffers are full.
Log Threads Waiting	The number of threads waiting for their data to be written to the log to complete an update of the database.
Total Database Cache Size MB	The amount of system memory used by the database cache manager to hold commonly used information form the database files to prevent file operations.
Version Buckets Allocated	The total number of version buckets allocated.
Transport Queues View	
Active Remote Delivery Queue Length	The number of messages in the active remote delivery queue.
Aggregate Delivery Queue Length (All Queues)	The number of messages queued in all queues.
Largest Delivery Queue Length	The number of messages in the largest delivery queues.
Poison Queue Length	The number of messages in the poison message queue.
Retry Mailbox Delivery Queue Length	The number of messages in a retry state attempting to deliver a message to a remote mailbox.
Retry Remote Delivery Queue Length	The number of messages in a retry state in the remote delivery queues.
Submission Queue Length	The number of messages in the submission queue.
Unreachable Queue Length	The number of messages in the unreachable queue.

Exchange Server Roles view - Mailbox

The following metrics are collected by default and are displayed on the Exchange Server Roles view when **Mailbox** is selected at the top of the Roles navigation tab on the Exchange Explorer dashboard.

Table 190. Exchange Server Roles view - Mailbox

View/Mailbox Metrics	Description
All Mailbox Store View	
Active Client Logons	The number of clients that performed any action within the last ten minutes.
Receive Queue Length	The number of messages in the receive queue.
Send Queue Length	The number of messages in the send queue.
Messages Delivered/sec	The rate at which messages are delivered to all recipients
Messages Sent/sec	The rate at which messages are sent to the transport.
All Public Folder Stores View	

Table 190. Exchange Server Roles view - Mailbox

View/Mailbox Metrics	Description
Active Client Logons	The number of clients that performed any action within the last ten minutes.
Messages Delivered/sec	The rate at which messages are delivered to all recipients.
Messages Sent/sec	The rate at which messages are sent to the transport.
Public Folder Send Queue Size	The number of messages in the send queue.
Receive Queue Size	The number of messages in the public store's receive queue. NOTE: This metric applies to Exchange 2007 only.
Cluster Replication View	
I/O Log Writes Average Latency	The average time it takes to write a log buffer to the active log file
Log Record Stalls/sec	The number of log records that cannot be added to the log buffer per second because the log buffers are full.
Log Threads Waiting	The number of threads waiting for their data to be written to the log to complete an update of the database.
Information Store View	
Client Instance RPC Average Latency	The RPC latency averaged for all operations in the last 1,024 packets.
Client Instance RPC Operations/sec	The current number of RPC operations that are occurring per second.
Database Cache Percent Hit	The percentage of database file page requests that fulfilled the database cache without causing a file operation.
Database Page Fault Stalls/sec	The rate at which the database file page requests require the database cache manager to allocate a new page from the database cache.
Directory Access LDAP Reads/sec	The current rate at which LDAP reads occur while processing requests for the client.
Directory Access LDAP Searches/sec	The current rate at which LDAP searches occur while processing requests for the client.
IS Database Cache Size MB	The amount of system memory used by the database cache manager to hold commonly used information from the database files to prevent file operations.
Jet Log Records/sec	The rate at which database log records are generated while processing requests for the client.
Jet Pages Read/sec	The rate at which database pages are read from disk while processing requests for the client.
Log Record Stalls/sec	The number of log records that cannot be added to the log buffer per second because the log buffers are full.
Log Threads Waiting	The number of threads waiting for their data to be written to the log to complete an update of the database.
RPC Averaged Latency	The RPC latency averaged for the past 1,024 packets for a particular client protocol.
RPC Client Backoff /sec	The rate at which the server notifies the client to back off.
RPC Number of Slow Packets	The number of RPC packets in the past 1,024 packets that have latencies longer than two seconds.
RPC Operations/sec	The rate at which RPC operations occur.

Table 190. Exchange Server Roles view - Mailbox

View/Mailbox Metrics	Description
RPC Requests	The number of client requests that are currently being processed by the information store.
RPCs Failed Server Too Busy/sec	The client-reported rate at which failed RPCs are encountered with the server too busy ROC error.
Version Buckets Allocated	The total number of version buckets allocated. NOTE: This metric applies to Exchange 2007 only.
Storage Groups and Stores View NOTE: Applies to Exchange Server 2007.	
I/O Database Reads Average Latency	The average length of time per database read operation.
I/O Database Writes Average Latency	The average length of time per database write operation.
Public Folder Send Queue Size	The number of messages in the send queue.
Storage Group Log Generation Checkpoint Depth	The amount of work in the log file count that will need to be redone or undone to the database files if the process fails.
Stores View NOTE: Applies to Exchange Server 2010	
Active Client Logons	The number of clients that performed any action within the last ten minutes.
Average Delivery Time Metric	The average time between the submission of a message to the mailbox store and the delivery to all local recipients for the last ten messages.
Client Logons	The number of clients (including system processes) currently logged on.
Inbound Messages	The number of Mailbox Store inbound messages.
I/O Database Reads Average Latency	The average length of time per database read operation.
I/O Database Writes Average Latency	The average length of time per database write operation.
Logon Operations/sec	The rate of logon requests in the mailbox store.
Mailbox Store Messages Queued for Submission	The number of currently submitted messages that are not yet processed by the transport layer
Mailbox Store Send Queue Size	The number of messages in the send queue.
Messages Delivered/sec	The rate at which messages are delivered to all recipients.
Messages Sent/sec	The rate at which messages are sent to the transport.
Messages Submitted/sec	The rate at which messages are submitted by clients.
Outbound Messages	The number of Mailbox store outbound messages.
Public Folder Messages Queued for Submission	The number of currently submitted messages that are not yet processed by the transport layer.
Public Folder Send Queue Size	The number of messages in the send queue.
Receive Queue Size	The number of messages in the receive queue.
Storage Group Log Generation Checkpoint Depth	The amount of work in the log file count that will need to be redone or undone to the database files if the process fails.
Store Transport	
Failed Submissions/sec	The number of failed submissions per second.
Successful Submissions/sec	The current submission rate.

Exchange Server Roles view - Unified Messaging

The following metrics are collected by default and are displayed on the Exchange Server Roles view when **Unified Messaging** is selected at the top of the Roles navigation tab on the Exchange Explorer dashboard.

Table 191. Exchange Server Roles view - Unified Messaging

View/Unified Messaging Metrics	Description
Availability View	
Average MWI Latency	The average time from the moment a voice mail event occurs and Unified Messaging receives confirmation from the IP gateway that the message was delivered. NOTE: This metric applies to Exchange 2010 only.
Call Answer Queued Messages	The number of messages created and not yet submitted for delivery. NOTE: This metric applies to Exchange 2007 only.
Directory Access Failures	The number of times that attempts to access Active Directory® failed.
Hub Transport Access Failures	The number of times the attempts to access a Hub Transport server failed. NOTE: This metric applies to Exchange 2007 only.
Mailbox Server Access Failures	The number of times the system did not access a Mailbox server. NOTE: This metric applies to Exchange 2007 only.
Percent of Failed Mailbox Connection Attempts Over the Last Hour	The percentage of mailbox connection attempts that failed in the last hour. NOTE: This metric applies to Exchange 2010 only.
Percent of Inbound Calls Rejected by the UM Service Over the Last Hour	The percentage of incoming calls that were rejected by the Microsoft® Exchange Unified Messaging service in the last hour. NOTE: This metric applies to Exchange 2010 only.
Percent of Inbound Calls Rejected by the UM Worker Process Over the Last Hour	The number of calls disconnected after an irrecoverable external error occurred. NOTE: This metric applies to Exchange 2010 only.
Percent of Messages Successfully Processed Over the Last Hour	The percentage of messages that were successfully processed by the Microsoft Exchange Unified Messaging service in the last hour. NOTE: This metric applies to Exchange 2010 only.
Percent of Partner Voice Message Transcription Failures Over the Last Hour	The percentage of partner voice message transcription failures in the last hour. NOTE: This metric applies to Exchange 2010 only.
Percent Successful Caller ID Resolutions	The number of successful attempts to resolve caller IDs that contained no "@" or "+" signs and were of the same length as the dial plan's extension. NOTE: This metric applies to Exchange 2010 only.
Total Inbound Calls Rejected by the UM Service	The total number of incoming calls that were rejected by the Microsoft Exchange Unified Messaging service.
Total Inbound Calls Rejected by the UM Worker Process	The total number of incoming calls that were rejected by the UM Worker process.
Unhandled Exceptions/sec	The number of unhandled exceptions that occurred per second. NOTE: This metric applies to Exchange 2007 only.

Optional metrics

The following tables list the metrics that can be optionally collected by the Exchange agents. Each table represents a section as they are presented on the Exchange Metrics Management dashboard. Each section table lists the collection groups and individual metrics in each collection group.

- Client Access Detail section
- Information Store Detail section
- Transport Detail section
- Unified Messaging Detail section

ⓘ NOTE: The metrics that are collected and displayed by default are NOT displayed on the main view on the Exchange Metrics Management dashboard. Use the View Metrics Collected by Default button to display a list of the metrics collected by default.

Client Access Detail section

The Client Access Detail section contains the following collection groups that contain metrics relevant to the Client Access Server (CAS) role in your Exchange environment. When an optional collection group in the Client Access Detail section is enabled, a corresponding view is added to the Client Access Exchange Server Roles view on the Roles navigation tab to display the collected metrics.

The default interval for collecting the metrics in this section is 4 minutes.

Table 192. Client Access Detail section

Collection Group/Metrics	Description
CAS AB Load Group	
NOTE: The metrics in this collection group apply to Exchange 2010 only.	
NSPI Connections/sec	The number of NSPI client connections established to the server each second.
NSPI Current Connections	The number of NSPI clients currently connected to the server.
NSPI RPC Requests/sec	The rate at which NSPI request occur each second.
Referral RPC Requests/sec	The rate at which referral requests occur each second.
CAS AB Service Group	
NOTE: The metrics in this collection group apply to Exchange 2010 only	
NSPI RPC Browse Requests Average Latency	The average time that Name Service Provider Interface (NSPI) browse requests took to complete.
NSPI RPC Requests Average Latency	The average time that NSPI requests took to complete during the sampling period.
Referral RPC Requests Average Latency	The average time that referral requests took to complete during the sampling period.
CAS ActiveSync Group	
Average Request Time	The average time that elapsed while waiting for a request to complete.
Ping Commands Pending	The number of ping commands that are currently pending in the queue.
Requests Queued	The number of HTTP requests that are received from the client via ASP.Net® per second.
Sync Commands Pending	The number of sync commands that are currently pending in the queue.

Table 192. Client Access Detail section

Collection Group/Metrics	Description
CAS Control Panel Load Group	
NOTE: The metrics in this collection group apply to Exchange 2010 only.	
ASP.NET Request Failures/sec	The number of failures per second detected by ASP.NET in the Exchange Control Panel.
Explicit Sign-On Inbound Proxy Requests/sec	The number of Explicit Sign-On requests received from a primary Client Access server per second.
Explicit Sign-On Inbound Proxy Sessions/sec	The number of Explicit Sign-On Inbound Proxy sessions that are loaded per second in the Exchange Control Panel.
Explicit Sign-On Outbound Proxy Requests/sec	The number of Explicit Sign-On requests sent to a secondary Client Access server per second.
Explicit Sign-On Outbound Proxy Sessions/sec	The number of Explicit Sign-On Outbound Proxy sessions that are loaded per second in the Exchange Control Panel.
Explicit Sign-On Standard RBAC Requests/sec	The number of requests received per second by an Explicit Sign-On Standard RBAC session.
Explicit Sign-On Standard RBAC Sessions/sec	The number of Explicit Sign-On Standard RBAC sessions that are loaded per second in the Exchange Control Panel.
Inbound Proxy Requests/sec	The number of requests received from a primary Client Access server per second.
Inbound Proxy Sessions/sec	The number of Inbound Proxy sessions that are loaded per second in the Exchange Control Panel.
Outbound Proxy Requests Average Response Time	The average time that requests sent to a secondary Client Access server took to complete during the sampling period.
Outbound Proxy Requests/sec	The number of requests sent to a secondary Client Access server per second.
Outbound Proxy Sessions/sec	The number of Outbound Proxy sessions that are loaded per second in the Exchange Control Panel.
PowerShell Runspaces/sec	The number of Windows® PowerShell runspaces that are created per second in the Exchange Control Panel.
PowerShell Runspaces Activations/sec	The number of Windows PowerShell runspaces that are activated per second in the Exchange Control Panel.
PowerShell Runspaces Average Active Time	The average time that a Windows PowerShell runspace stays active while executing cmdlets in the Exchange Control Panel during the sampling period.
RBAC Sessions/sec	The number of RBAC sessions that are loaded per second in the Exchange Control Panel.
Requests Activations/sec	The number of requests that are activated per second in the Exchange Control Panel.
Requests Average Response Time	The average time the Exchange Control Panel took to respond to a request during the sampling period.
CAS Load Group	
Autodiscover Requests/sec	The number of Autodiscover service requests processed each second.
HTTP Requests/sec	The number of HTTP requests that are received from the client via ASP.Net® per second.
Ping Commands Pending	The number of ping commands that are currently pending on the server.
Sync Commands/sec	The number of sync commands that are processed per second.

Table 192. Client Access Detail section

Collection Group/Metrics	Description
CAS OAB Download Group	
Download Tasks Completed	The number of OAB download tasks completed since the File Distribution service started.
Download Tasks Queued	The number of OAB download tasks queued since the File Distribution service started.
CAS RPC Client Access Group	
NOTE: The metrics in this collection group apply to Exchange 2010 only.	
RPC Averaged Latency	The latency averaged for the past 1,024 packets.
RPC Operations/sec	The rate at which RPC operations occurred per second.
RPC Requests	The number of client requests currently being processed by the RPC Client Access service.
CAS RPC Client Access Load Group	
NOTE: The metrics in this collection group apply to Exchange 2010 only	
Active User Count	The number of unique users that have shown some activity in the last two minutes.
Connection Count	The total number of client connections maintained.
RPC Operations/sec	The rate at which RPC operations occurred per second.
CAS RPC HTTP Group	
Current Number of Incoming RPC Over HTTP Connections	The current number of front-end HTTP connections.
Current Number of Unique Users	The number of unique users currently connected to a back-end server via RPC/HTTP.
Number of Failed Back-End Connection Attempts/sec	The rate at which the RPC proxy attempts are occurring but failing to establish a connection to a back-end server.
RPC HTTP Requests/sec	The rate at which RPC/HTTP requests are sent to the back-end servers.

Information Store Detail section

The Information Store Detail section contains the following collection groups for Information Store Detail related metrics. When an optional collection group in the Information Store Detail section is enabled, a corresponding view is added to the Mailbox Exchange Server Roles view on the Roles navigation tab to display the collected metrics.

The default interval for collecting the metrics in this section is 4 minutes.

Table 193. Information Store Detail section

Collection Group/Metrics	Description
Store Calendar Attendant Group	
Average Calendar Attendant Processing Time	The average time it takes to process an event in the Calendar Attendant.
Calendar Attendant Requests Failed	The total number of failures that occurred while the Calendar Attendant was processing events.
Store Client Search Group	
Categorization Count	The categorization count in the number of categorizations that exist in the mailbox store. NOTE: Applies to Exchange 2007 only.
Search Task Rate	The number of search tasks created per second.

Table 193. Information Store Detail section

Collection Group/Metrics	Description
Slow Findrow Rate	The rate at which the slower Findrow needs to be used in the mailbox store.
Slow QP Threads	The number of query processor threads currently running queries that are not optimized.
Slow Search Threads	The number of search threads currently running queries that are not optimized.
Store Content Indexing Group	
Average Document Indexing Time	The average of how long it takes to index documents.
Full Crawl Mode Status	Indicates if a full crawl is occurring for any specified database.
Recent Average Latency of RPCs Used to Obtain Content	The average latency of the most recent RPCs to the Microsoft® Exchange Information Store service.
Throttling Delay Value	The total time a worker thread sleeps before it retrieves a document from the Microsoft Exchange Information Store service.
Store Database Group	
Log Bytes Write/sec	The rate at which bytes are written to the log.
Store Mailbox Assistant Group	
Average Event Processing Time in Seconds	The average processing time of the selected events.
Events in Queue	The number of events in the in-memory queue waiting to be processed by the assistants.
Events Polled/sec	The number of events polled per second.
Mailboxes Processed/sec	The rate at which mailboxes are processed by time-based assistants per second.
Store Public Load Group	
Replication Receive Queue Size	The number of replication messages waiting to be processed.
Store Resource Booking Group	
Average Resource Booking Processing Time	The average time to process an event in the Resource Booking Attendant.
Resource Booking Requests Failed	The total number of failures that occurred while the Resource Booking Attendant was processing events.
Store RPC Client Throttling Group	
Client RPCs Failed Server Too Busy	The client-reported rate of failed RPCs due to Server Too Busy ROC error.
Store Transport Group	
Hub Servers in Retry	The number of Hub Transport servers in retry mode.
ROP Requests Outstanding	The total number of outstanding remote operations (ROP) requests.
RPC Latency Average ms	The average latency of RPC requests.
RPC Requests Failed Percent	The percentage of failed requests in the total number of RPC requests.
RPC Requests Outstanding	The total number of outstanding RPC requests.
RPC Requests Sent/sec	The current rate of initiated RPC requests per second.
RPC Slow Requests Latency Average ms	The average latency of slow RPC requests.
RPC Slow Requests Percent	The percentage of slow RPC requests among all RPC requests.

Table 193. Information Store Detail section

Collection Group/Metrics	Description
Temporary Submission Failures/sec	The number of temporary submission failures per second.
Store User Load Group	
Replication Receive Queue Size	The number of messages in the public store's receive queue.
User Count	The number of users connected to the information store.

Transport Detail section

The Transport Detail section contains the following collection groups that contain metrics relevant to the Hub Transport and Edge Transport server roles in your Exchange environment. When an optional collection group in the Transport Detail section is enabled, a corresponding view is added to the Hub Transport or Edge Transport Exchange Server Roles view on the Roles navigation tab to display the collected metrics.

The default interval for collecting the metrics in this section is 4 minutes.

Table 194. Transport Detail section

Collection Group/Metrics	Description
Edge Agent Group	
NOTE: Applies to Edge Transport role only.	
Average Agent Processing Time/sec	The average agent processing time in seconds per event.
Message Attachments Filtered	The number of messages that were blocked, stripped of attachments, or silently deleted by the attendant.
Messages Deleted by Content Filter Agent	The total number of messages that were deleted by the Content Filter agent.
Messages Filtered by Attachment Filter/sec	The number of messages per second that the attachment filtering agent blocked, stripped of attachments, or silently deleted.
Messages Filtered by Sender Filter/sec	The number of messages filtered by the Sender Filter agent per second.
Messages Quarantined by Content Filter Agent	The total number of messages that were quarantined by the Content Filter agent.
Messages Rejected by Content Filter Agent	The total number of messages that were rejected by the Content Filter agent.
Messages Scanned/sec by Content Filter Agent	The number of messages scanned per second.
Messages that Bypassed Scanning by Content Filter Agent	The total number of messages that bypass scanning.
Recipients Rejected by Block List/sec	The number of recipients rejected by the block list per second.
Recipients Rejected by Recipient Validation/ sec	The number of recipients rejected by recipient validation per second.
Transport Dumpster Group	
Dumpster Deletes/sec	The rate at which items are deleted from the transport dumpster on the server.
Dumpster Inserts/sec	The rate at which items are inserted into the transport dumpster on the server.
Dumpster Item Count	The total number of mail items currently in the transport dumpster on the server.

Table 194. Transport Detail section

Collection Group/Metrics	Description
Dumpster Size	The total size of mail items currently in the transport dumpster on the server.
Transport Edge Sync Group	
NOTE: Applies to Hub Transport role only.	
Edge Objects Added/sec	The rate at which Edge objects are added per second by EdgeSync.
Edge Objects Deleted/sec	The rate at which Edge objects are deleted per second by EdgeSync.
Edge Objects Updated/sec	The rate at which Edge objects are updated per second by EdgeSync.
Scan Jobs Completed Successfully Total	The total number of scan jobs completed successfully by EdgeSync.
Scan Jobs Failed Because Could Not Extend Lock Total	The total number of EdgeSync scan jobs that failed because EdgeSync could not extend its lease of an Edge Transport server.
Scan Jobs Failed Because of Directory Error Total	The total number of EdgeSync directory errors.
Scan Jobs Not Started Because Could Not Lock Total	The total number of EdgeSync scan jobs that failed.
Source Objects Scanned/sec	The rate at which Active Directory® objects are scanned per second by EdgeSync.
Target Objects Scanned/sec	The rate at which Edge objects are scanned per second by EdgeSync.
Transport Extensibility Agent Group	
Average Agent Processing Time/sec	The average agent processing time in seconds per event.
Transport Load Group	
Inbound Local Delivery Calls/sec	The number of local delivery calls per second.
Inbound Message Delivery Attempts/sec	The number of local delivery attempts per second.
Inbound Recipients Delivered/sec	The number of inbound recipients delivered per second.
Outbound Submitted Mail Items/sec	The number of mail items being submitted per second.
Transport Queues Group	
Active Mailbox Delivery Queue Length	The number of messages in the active mailbox queues.
Active Non-SMTP Delivery Queue Length	The number of messages in the Drop directory that is used by a Foreign connector.
Retry Non-SMTP Delivery Queue Length	The number of messages in a retry state in the non-SMTP gateway delivery queues.

Unified Messaging Detail section

The Unified Messaging Detail section contains the following collection groups that contain metrics relevant to unified messaging (UM). When an optional collection group in the Unified Messaging Detail section is enabled, a corresponding view is added to the Unified Messaging Exchange Server Roles view on the Roles navigation tab to display the collected metrics.

The default interval for collecting the metrics in this section is 4 minutes.

Table 195. Unified Messaging Detail section

Collection Group/Metrics	Description
UM Auto Att Calls Groups	
Business Hours Calls	The number of calls processed by an auto attendant during business hours.
Calls Disconnected by UM on Irrecoverable External Error	The total number of calls that were disconnected after an irrecoverable external error occurred.
Calls with DTMF Fallback	The number of calls to an auto attendant during which a caller has been passed to the DTMF fallback auto attendant.
Calls with Sent Message	The number of calls to an auto attendant in which a caller has sent a voice message.
Calls with Speech Input	The total number of calls during which the caller is determined to have spoken at least once.
Calls with Spoken Name	The number of calls to an auto attendant during which a caller has spoken a name at least once.
Disconnected Without Input	The number of calls that were dropped without input being offered in response to the auto attendant prompts.
Out of Hours Calls	The number of calls processed by an auto attendant outside of business hours.
Total Calls	The total number of call that have been processed by an auto attendant.
UM Auto Att Directory Access Group	
Directory Accessed	The number of directory access operations performed by an auto attendant.
Directory Accessed by Dial by Name	The number of directory access operations in which the subscriber used the Dial by Name feature.
Directory Accessed by Extension	The number of directory access operations in which the user supplied the extension number.
Directory Accessed by Spoken Name	The number of directory access operations in which the subscriber spoke a recipient name.
Directory Accessed Successfully by Dial by Name	The number of directory access operations in which the subscriber used the Dial by Name feature.
Directory Accessed Successfully by Spoken Name	The number of successful directory access operations in which the caller spoke a recipient name.
UM Auto Att General Group	
Average Call Time	The average length of time that callers interacted with the auto attendant.
Average Recent Call Time	The average length of time of the last 50 auto attendant calls.
Percent Successful Calls	The percentage of successful auto attendant calls.
UM Auto Att Transfers Group	
Ambiguous Name Transfers	The number of times that callers were transferred to the operator because the name that they spelled out or spoke was too common in the search results.
Disallowed Transfers	The number of times a caller was transferred to the operator because the user they identified was configured to accept calls only from users who are logged on.
Operator Transfers	The number of calls that have been transferred to the operator.

Table 195. Unified Messaging Detail section

Collection Group/Metrics	Description
Operator Transfers Requested by User from Opening Menu	The number of times that a caller to an auto attendant has asked to be transferred to an operator.
Operator Transfers Requested by User	The number of times that a caller to an auto attendant has asked to be transferred to an operator while at the opening menu.
Transferred Count	The number of calls that were transferred by this auto attendant.
UM Availability Group	
Calls Disconnected by UM on Irrecoverable External Error/sec	The number of calls disconnected after an irrecoverable external error occurred in the last second.
Calls Disconnected by UM on Irrecoverable External Error	The number of calls disconnected after an irrecoverable external error occurred.
Call Disconnected on Irrecoverable Internal Error	The number of calls that were disconnected after an internal system error occurred.
Failed Mailbox Connection Attempts Percent	The percentage of failed attempts to connect to the Mailbox server. NOTE: Applies to Exchange Server 2010 only.
Failed to Redirect Call	The number of times the Unified Messaging service did not redirect calls to a UM worker process. NOTE: Applies to Exchange Server 2007 only.
Hub Transport Access Completed	The number of times that the Hub Transport server was accessed successfully. NOTE: Applies to Exchange Server 2007 only.
Incomplete Signaling Information	The number of calls for which the signaling information was missing or incomplete.
Maximum Calls Allowed	The length of time that the server concurrently processed the maximum number of calls allowed.
Name TTSed	The number of times the system used Text-to-Speech to create an auto version of the display name of a subscriber.
Queued OCS User Event Notifications	The number of notifications that have been created and not yet submitted for delivery.
Spoken Name Accessed	The number of times the system retrieved the recorded name of a user.
Total Worker Process Call Count	The number of calls handled by this UM worker process.
Worker Process Recycled	The number of times a new UM worker process has been started.
UM Call Answer General Group	
Average Greeting Size	The average size of recorded greetings that have retrieved by the Unified Messaging server.
Average Recent Voice Message Size	The average size of the last 50 voice messages that have been left for subscribers.
Average Time Taken for Call Answering Rule Evaluations	The average time it takes to determine if one or more call answering rules apply to a call answering call. NOTE: Applies to Exchange Server 2010 only.
Average Voice Message Size	The average size of voice messages left for subscribers.
UM Call Answer Group	
Call Answering Calls	The number of diverted calls that were answered on behalf of subscribers

Table 195. Unified Messaging Detail section

Collection Group/Metrics	Description
Call Answering Escapes	The number of times a caller pressed the * key to connect to another user instead of leaving a message.
Call Answering Missed Calls	The number of times a diverted call was dropped without a message being left.
Call Answering Protected Voice Messages	The total number of protected voice messages that were submitted because calls were answered on behalf of subscribers. NOTE: Applies to Exchange Server 2010 only.
Call Answering Voice Message Protection Failures	The total number of voice messages that were submitted because calls were answered on behalf of the subscribers, for which the attempt to apply protection failed. NOTE: Applies to Exchange Server 2010 only.
Call Answering Voice Messages	The total number of voice messages that were submitted for delivery because the calls were answered on behalf of subscribers.
Call Answering Voice Messages/sec	The total number of voice messages that were submitted for delivery because the calls were answered on behalf of subscribers per second.
Call Failed Because Transport Unavailable	The number of times that attempts to access a Hub Transport server failed.
Calls Disconnected by Callers During UM Audio Hourglass	The number of calls during which the caller disconnected while Unified Messaging was playing the audio hourglass tones.
Calls Disconnected by UM on Irrecoverable External Error	The number of calls that have been disconnected after an irrecoverable external error occurred.
Calls Without Personal Greetings	The number of diverted calls received for subscribers that did not have recorded greeting messages.
Diverted Extension Not Provisioned	The number of calls received for which the diverted extension supplied with the call is not a UM subscriber extension.
Fetch Greeting Timed Out	The number of diverted calls for which the subscriber's personal greeting could not be retrieved within the time allowed.
Total Calls to Subscribers with One or More Call Answering Rules Configured	Reviews calls to determine whether any call answering rules should be applied. NOTE: Applies to Exchange Server 2010 only.
Total Number of Call Answering Rules Calls	The total number of calls that fulfill the conditions of at least one call answering rule. NOTE: Applies to Exchange Server 2010 only.
Total Number of Timed Out Call Answering Rule Evaluations	The total number of calls for which call answering rules weren't applied because the system timed out. NOTE: Applies to Exchange Server 2010 only.
UM Fax Group	
Average Fax Message Size	The average size of fax messages received. NOTE: Applies to Exchange Server 2007 only.
Average Recent Fax Message Size	The average size of the last 20 fax messages. NOTE: Applies to Exchange Server 2007 only.

Table 195. Unified Messaging Detail section

Collection Group/Metrics	Description
Fax Call Duration Exceeded	The number of fax calls that were disconnected because they exceeded the UM maximum call length. NOTE: Applies to Exchange Server 2007 only.
Fax Calls to Non-Provisioned Mailboxes	The number of fax calls to extensions that resolved to mailboxes that are not enabled for fax. NOTE: Applies to Exchange Server 2007 only.
Fax Incomplete	The number of fax calls that were dropped before completion. NOTE: Applies to Exchange Server 2007 only.
Fax Messages	The total number of fax messages received. NOTE: Applies to Exchange Server 2007 only.
Percentage of Successful Valid Fax Calls	The total number of valid fax call requests to extensions that resolved to mailboxes that are enabled for fax and were successfully transferred to a fax partner. NOTE: Applies to Exchange Server 2010 only.
Total Invalid Fax Calls Metric	The total number of fax call requests to extensions that resolved to mailboxes that are not enabled for fax. NOTE: Applies to Exchange Server 2010 only.
Total Successful Valid Fax Calls	The total number of valid fax call requests to extensions that resolved to mailboxes that are enabled for fax and were successfully transferred to a fax partner. NOTE: Applies to Exchange Server 2010 only.
Total Valid Fax Calls	The total number of valid fax call requests to extensions that resolved to mailboxes that are enabled for fax and were successfully transferred to the fax partner. NOTE: Applies to Exchange Server 2010 only.
UM General Current Group	
Current Auto Attendant Calls	The number of auto attendant calls that are currently connected to the UM server.
Current Calls	The number of calls that are currently connected to the UM server.
Current CAS Connections	The number of connections that are currently open between the Unified Messaging server and Client Access NOTE: Applies to Exchange Server 2007 only.
Current Fax Calls	The number of fax calls that are currently connected to the UM server.
Current Play on Phone Calls	The number of outbound calls initiated to play back messages.
Current Prompt Editing Calls	The number of logged on users who are editing custom prompts.
Current Subscriber Access Calls	The number of logged on subscribers who are currently connected to the UM server.
Current Unauthenticated Pilot Number Calls	The number of voice calls to the pilot number that have not yet been authenticated.
Current Voice Calls	The number of voice mail calls that are currently connected to the Unified Messaging server. NOTE: Applies to Exchange Server 2007 only.

Table 195. Unified Messaging Detail section

Collection Group/Metrics	Description
Current Voice Mail Calls	The number of voice mail calls that are currently connected to the Unified Messaging server. NOTE: Applies to Exchange Server 2010 only.
UM General Group	
Average Call Duration	The average duration of calls since the service was started.
Average Recent Call Duration	The average duration of the last 50 calls.
Call Duration Exceeded	The number of calls that were disconnected because they exceeded the UM maximum call length.
Caller ID Resolutions Attempted	The number of caller ID resolutions that were attempted. NOTE: Applies to Exchange Server 2010 only.
Caller ID Resolutions Succeeded	The number of caller ID that were resolved successfully. NOTE: Applies to Exchange Server 2010 only.
Calls Disconnected by User Failure	The total number of calls disconnected after too many user entry failures.
Calls Rejected/sec	The number of new call invitations that have been rejected in the last second. NOTE: Applies to Exchange Server 2007 only.
Calls Rejected	The total number of new call invitations that have been rejected. NOTE: Applies to Exchange Server 2007 only.
Delayed Calls	The number of calls that experienced one or more delays longer than two seconds.
Extension Caller ID Resolutions Attempted	The number of caller ID resolutions that were attempted. NOTE: Applies to Exchange Server 2010 only.
Extension Caller ID Resolutions Succeeded	The number of successful attempts to resolve caller IDs that contained no "@" or "+" signs and were of the same length as the dial plan's extension. NOTE: Applies to Exchange Server 2010 only.
OCS User Event Notifications	The total number of OCS user event notifications that occurred since the service was started.
Percent Successful Extension Caller ID Resolutions	The percentage of caller IDs that were resolved successfully. NOTE: Applies to Exchange Server 2010 only.
Total Calls	The number of calls answered or placed since the service was started. This count does not include transfers.
Total Calls/sec	The number of new calls that have arrived in the last second.
Total Play on Phone Calls	The total number of Play on Phone calls that have been initiated since the service was started.
User Response Latency	The average response time for the system to response to a user request.
UM Subscriber Access Calendar Group	
Calendar Accessed	The number of times subscribers accessed their calendar using the telephone user interface.
Calendar Items Details Requested	The number of times a subscriber requested additional details for a calendar item.

Table 195. Unified Messaging Detail section

Collection Group/Metrics	Description
Calendar Items Heard	The number of calendar items that have been heard by authenticated subscribers.
Calendar Late Attendance	The number of messages that have been sent to inform the organizer of a meeting that the subscriber will be late.
Called Meeting Organizer	The number of times subscribers called the meeting organizer.
Meetings Accepted	The number of Meeting Accepted messages sent by subscribers.
Meetings Declined	The number of Meeting Declined messages sent by subscribers.
Replied to Organizer	The number of times subscribers sent reply messages to meeting organizers.
UM Subscriber Access Directory Group	
Contact Items Heard	The number of times authenticated subscribers listened to directory details.
Contacts Accessed	The number of times subscribers accessed the Main Menu Contacts option by using the telephone user interface.
Directory Accessed	The number of times subscribers accessed the Main Menu Directory option by using the telephone user interface.
Directory Accessed by Dial by Name	The number of directory access operations where the subscriber used the Dial by Name feature.
Directory Accessed by Extension	The number of directory access operations in which the subscriber supplied the extension number
Directory Accessed by Spoken Name	The number of directory access operations in which the subscriber spoke a recipient name.
Directory Accessed Successfully by Dial by Name	The number of Dial by Name directory access operations that completed successfully on behalf of users.
Directory Accessed Successfully by Spoken Name	The number of speech recognition directory access operations that completed successfully on behalf of subscribers.
UM Subscriber Access General Group	
Average Recent Sent Voice Message Size	The average size of the last 50 voice messages that were sent.
Average Recent Subscriber Call Duration	The average length of time that subscribers spent logged on to the system for the last 50 subscriber calls.
Average Sent Voice Message Size	The average size of voice messages that are being sent.
Average Subscriber Call Duration	The average length of time that subscribers spent logged on to the system.
Calls Disconnected by Callers During UM Audio Hourglass	The number of calls in which the caller disconnected while UM was playing the audio hourglass tones.
Calls Disconnected by UM on Irrecoverable External Error	The number of calls that have been disconnected after an irrecoverable external error occurred.
Launched Calls	The number of subscriber calls that resulted in an outbound call being placed.
Subscriber Authentication Failures	The number of authentication failures that have occurred since the service was started.
Subscriber Logon Failures	The number of logon failures since the service was started.

Table 195. Unified Messaging Detail section

Collection Group/Metrics	Description
Subscriber Logons	The number of successful authentications by UM subscribers since the service was started.
UM Subscriber Access Message Group	
Email Message Queue Accessed	The number of times subscribers accessed their email message queue by using the telephone user interface.
Email Messages Deleted	The number of email messages that were deleted by authenticated subscribers.
Email Messages Heard	The number of email messages that were heard by authenticated subscribers.
Forward Messages Sent	The number of messages that have been forwarded by authenticated subscribers.
Protected Voice Messages Heard	The number of protected voice messages played to subscribers NOTE: Applies to Exchange Server 2010 only.
Protected Voice Messages Sent	The number of protected voice messages sent by authenticated UM subscribers. NOTE: Applies to Exchange Server 2010 only.
Reply Messages Sent	The number of replies sent by authenticated subscribers.
Voice Message Decryption Failures	The total number of times that an attempt to decrypt a protected voice message failed. NOTE: Applies to Exchange Server 2010 only.
Voice Message Protection Failures	The total number of interpersonal voice messages for which an attempt to apply protection failed. NOTE: Applies to Exchange Server 2010 only.
Voice Messages Deleted	The number of voice messages that were deleted by authenticated subscribers.
Voice Messages Heard	The number of voice messages played by subscribers. This count is incremented as soon as playback starts.
Voice Messages Sent	The number of voice messages that have been sent by authenticated UM subscribers.

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