

Guide for System Center Management Pack for Microsoft Exchange Server 2013

Microsoft Corporation

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# Guide for System Center Management Pack for Microsoft Exchange Server 2013

This guide was written based on version 15.0.666.20 of the Management Pack for Microsoft Exchange Server 2013.

## Guide History

| Release Date | Changes |
| --- | --- |
| June 15th, 2016 | Updated supported configuration to include Exchange Server 2016. References to Microsoft Exchange Server 2013 functionality in this guide apply equally to Microsoft Exchange Server 2016.  Note: The management pack will not group or monitor servers running Exchange Server 2016 separate from Exchange Server 2013 in console UI elements, or reporting. |
| April 28th, 2016 | Fixed a bug preventing Exchange 2013 Mailbox Properties collection when the contents of Email Addresses field exceed the total length of more than 1024 characters.  Exception:  **'InvalidOperationException': The given value of type String from the data source cannot be converted to type nvarchar of the specified target column.**  **One or more workflows were affected by this.**  **Workflow name: Microsoft.Exchange.15.MailboxStatsSubscription.Rule**  Fixed a bug: alerts generated by the previous version of the Management Pack for Exchange Server 2013 have unreadable name. After upgrading of the Management Pack to version 15.0.620.19, alerts generated before the upgrade had the following name: {2} |
| June 21st, 2015 | Fixed a bug that was unable to run Exchange 2013 performance reports when the console is running on a locale different from EN-US.  Exception:  System.ArgumentNullException: Value cannot be null. Parameter name: GroupList  Fixed a bug that was causing the collection of Synthetic mailbox performance count data to fail when there are more than 2 management servers. Event 102 is logged on the management servers with the below exception.  Exception:  System.Runtime.Serialization.SerializationException: Type 'System.Object[]' with data contract name 'ArrayOfanyType:http://schemas.microsoft.com/2003/10/Serialization/Arrays' is not expected. |
| March 3rd, 2015 | Fixed a bug that was preventing discovery of Exchange 2013 on Edge servers in DMZ  Fixed a bug that caused MicrosoftExchangeCollectMBXStats.ps1 to throw “System.Management.Automation. MethodInvocationException: Exception calling "Add" with "2" argument(s):” exception when Mailboxes are soft-deleted |
| December 5th, 2014 | Added support for 2012 SP1  Fixed a bug on visualization error when localized Operations Console is used  Added details to the ‘Stored Procedure Not Found’ exception for additional context |
| October 28th, 2014 | Original release of this guide |

## Getting started

In this section:

Supported Configurations

Management Pack Scope

Prerequisites

Mandatory Configuration

### Supported Configurations

This Management Pack is designed for the following versions of System Center Operations Manager:

* System Center Operations Manager 2012 SP1
* System Center Operations Manager 2012 R2

A dedicated Operations Manager management group is not required for this Management Pack.

The following table details the supported configurations for the Management Pack for Microsoft Exchange Server 2013:

|  |  |
| --- | --- |
| Configuration | Support |
| Microsoft Exchange Server 2016 | 64-bit Microsoft Exchange Server 2016 on 64-bit OS |
| Microsoft Exchange Server 2013 | 64-bit Microsoft Exchange Server 2013 on 64-bit OS |
| Clustered servers | Windows Failover Clustering used for Microsoft Exchange Server 2013 Database Availability Groups is supported. |
| Agentless monitoring | Not supported |
| Virtual environment | Yes |

### Management Pack Scope

Management Pack for Microsoft Exchange Server 2013 enables the monitoring of following features:

Microsoft Exchange 2013 Servers:

Client Access Servers

Mailbox Servers

Edge Transport Servers

Microsoft Exchange 2016 Servers:

Mailbox Servers

Edge Transport Servers

Note

Please refer to “Monitoring Scenarios” section for a full list of monitoring scenarios supported by this Management Pack.

Note

For more information and detailed instructions on setup and configuration see “Configuring the Management Pack for Microsoft Exchange Server 2013” section of this guide.

### Prerequisites

As a best practice, you should import the Windows Server Management Pack for the operating system you are using. The Windows Server Management Packs monitor aspects of the operating system that influence the performance of computers running Microsoft Exchange Server 2013 and 2016, such as disk capacity, disk performance, memory utilization, network adapter utilization, and processor performance.

### Files in this Management Pack

The Management Pack for Microsoft Exchange Server 2013 includes the following files:

| File | Description |
| --- | --- |
| Microsoft.Exchange.15.mp | This management pack will discover components of Microsoft Exchange Server 2013 and will provide monitoring and performance data collection capabilities. |
| Microsoft.Exchange.15.Reports.mpb | This management pack enables SCOM reporting capabilities for Exchange 2013 monitoring data. This management pack does not implement any monitoring logics. |
| Microsoft.Exchange.15.Visualization.Components.mpb | This management pack implement visualization components (widgets and dashboards) for Exchange Server 2013. |

### Mandatory Configuration

To configure Management Pack for Microsoft Exchange Server 2013 complete following steps:

Review the “Configuring the Management Pack for Microsoft Exchange Server 2013” section of this guide.

Grant required permissions as described in “Security Configuration” section of this guide.

Enable the Agent Proxy setting on all agents that are installed on servers which host Microsoft Exchange Server 2013 roles. For more information about enabling Agent Proxy setting see “How to enable Agent Proxy setting” section of this guide.

Import the Management Pack.

Associate Run As profiles with accounts that have appropriate permissions. For more information about configuring Run As profiles see “How to configure Run As profile” section of this guide.

## Management Pack Purpose

In this section:

* [Monitoring Scenarios](#z5a9ff008734b4183946f840ae0464ab0)
* [How Health Rolls Up](#zb8b3e32eb8154a8da8b18b606568e65d)

Note

For details on the discoveries, rules, monitors, views, and reports contained in this Management Pack, see following sections of this guide:

Appendix: Management Pack Objects and Workflows

Appendix: Management Pack Views and Dashboards

Appendix: Management Pack Reports

### Monitoring Scenarios

#### Discovery of Microsoft Exchange Server 2013 Components

The Management Pack for Microsoft Exchange Server 2013 automatically discovers related components:

* Exchange 2013 Server
* Distributed applications:
  + Exchange 2013 Organization
  + Exchange 2013 Active Directory Site
  + Exchange 2013 Database Availability Group
* Exchange 2013 Managed Availability objects:
  + Exchange 2013 Health Set
    - Exchange 2013 Customer Touch Points
    - Exchange 2013 Key Dependencies
    - Exchange 2013 Server Resources
    - Exchange 2013 Service Components
* Exchange 2013 server components:
  + Exchange 2013 IIS Application Pool
  + Exchange 2013 Windows Service
  + Exchange 2013 Mailbox Database Copy

The discovery workflow runs on the windows server which hosts Microsoft Exchange Server 2013 and has System Center Operations Manager Agent installed and running.

Note

Appropriate permissions are required to access all necessary data sources. Please review “Security Configuration” section of this guide for details.

#### Monitoring the health of Microsoft Exchange Server 2013 components

This Management Pack introduces following monitors which enable the monitoring Microsoft Exchange Server 2013. Monitors verify the availability of these components from following perspectives:

* Exchange 2013 Health Set
  + Overall health of the given health set
* Exchange 2013 Windows Service
  + Windows Service State

Note

Please review “Appendix: Management Pack Objects and Workflows” section of this guide for more details about monitoring workflows implemented in this Management Pack.

#### Collecting performance data for Microsoft Exchange Server 2013 components

This Management Pack collects following performance metrics:

* Exchange 2013 Server
  + Exchange 2013 Database: I/O Database Reads Average Latency (ms)
  + Exchange 2013 Database: I/O Database Writes Average Latency (ms)
  + Exchange 2013 Database: I/O Log Reads Average Latency (ms)
  + Exchange 2013 Database: I/O Log Writes Average Latency (ms)
  + Exchange 2013 Database: Page Fault Stalls/sec
  + Exchange 2013 Server: Average Disk sec/Read
  + Exchange 2013 Server: Average Disk sec/Write
  + Exchange 2013 Server: Disk Free Space (MB)
  + Exchange 2013 Server: Disk Reads/sec
  + Exchange 2013 Server: Disk Size (MB)
  + Exchange 2013 Server: Disk Writes/sec
  + Exchange 2013 Server: Transport Queue Database Size (MB)
  + Exchange 2013 Server: Client Connections Count
  + Exchange 2013 Server: ActiveSync Pending
  + Exchange 2013 Server: Avg. Authentication Latency (ms)
  + Exchange 2013 Server: E2E Deliver <=90sec
  + Exchange 2013 Server: E2E Latency Percentile 95
  + Exchange 2013 Server: E2E Latency Send to External <=90sec
  + Exchange 2013 Server: EWS Response Time (ms)
  + Exchange 2013 Server: LDAP Search Time (ms)
  + Exchange 2013 Server: Messages Received/sec
  + Exchange 2013 Server: Messages Sent/sec
  + Exchange 2013 Server: Outstanding Proxy Requests
  + Exchange 2013 Server: HTTP Proxy Failure Rate (%)
  + Exchange 2013 Server: HTTP Proxy Requests/sec
  + Exchange 2013 Server: Queues by Type Count
  + Exchange 2013 Server: Queue Length
  + Exchange 2013 Server: Requests/sec
  + Exchange 2013 Server: Avg RPC Latency (ms)
  + Exchange 2013 Server: SMTP Bytes Received/Sec
  + Exchange 2013 Server: SMTP Bytes Sent/Sec
  + Exchange 2013 Server: SMTP Connections (Current)
  + Exchange 2013 Server: Store Messages Submitted/sec
  + Exchange 2013 Server: System Total Memory (MB)
  + Exchange 2013 Server: CPU Utilization (%)
  + Exchange 2013 Server: Private Memory Size (MB)
  + Exchange 2013 Server: Private Memory Size (%)
* Exchange 2013 Windows Service
  + Exchange 2013 Windows Service: CPU Utilization (%)
  + Exchange 2013 Windows Service: Pool Non Paged Memory Size (MB)
  + Exchange 2013 Windows Service: Pool Paged Memory Size (MB)
  + Exchange 2013 Windows Service: Private Memory Size (MB)
  + Exchange 2013 Windows Service: Private Memory Size (%)
* Exchange 2013 IIS Application Pool
  + Exchange 2013 IIS App Pool: Active Requests
  + Exchange 2013 IIS App Pool: Private Memory Size (%)
  + Exchange 2013 IIS App Pool: CPU Utilization (%)
  + Exchange 2013 IIS App Pool: Pool Non Paged Memory Size (MB)
  + Exchange 2013 IIS App Pool: Pool Paged Memory Size (MB)
  + Exchange 2013 IIS App Pool: Private Memory Size (MB)
* Exchange 2013 Mailbox Database Copy
  + Exchange 2013 Mailbox Database: Available Space (MB)
  + Exchange 2013 Mailbox Database: Index Size (MB)
  + Exchange 2013 Mailbox Database: I/O Database Reads Average Latency (ms)
  + Exchange 2013 Mailbox Database: I/O Database Writes Average Latency (ms)
  + Exchange 2013 Mailbox Database: I/O Log Reads Average Latency (ms)
  + Exchange 2013 Mailbox Database: I/O Log Writes Average Latency (ms)
  + Exchange 2013 Mailbox Database: Transaction Log Available Space (MB)
  + Exchange 2013 Mailbox Database: Transaction Log Size (MB)
  + Exchange 2013 Mailbox Database: Database Page Fault Stalls/sec
  + Exchange 2013 Mailbox Database: Database Size (MB)

Note

Please review “Appendix: Management Pack Objects and Workflows” section of this guide for more details about monitoring workflows implemented in this Management Pack.

#### Collecting performance data for Microsoft Exchange Server 2013 Organization

This Management Pack defines several “synthetic” performance metrics which shows overall Exchange Organization performance. These metrics are calculated as an aggregation of performance values collected at Exchange Servers.

* Exchange 2013 Organization
  + Exchange 2013 Organization Synthetic: Mailbox Count
  + Exchange 2013 Organization Synthetic: Client Connections Count
  + Exchange 2013 Organization Synthetic: E2E Deliver <=90sec
  + Exchange 2013 Organization Synthetic: E2E Latency Send to External <=90sec
  + Exchange 2013 Organization Synthetic: Mailbox Database Size (MB)
  + Exchange 2013 Organization Synthetic: Messages Received/sec
  + Exchange 2013 Organization Synthetic: Messages Sent/sec
  + Exchange 2013 Organization Synthetic: Store Messages Submitted/sec

Note

Please review “Appendix: Management Pack Objects and Workflows” section of this guide for more details about how synthetic metrics are calculated.

#### Collecting mailbox statistics for Microsoft Exchange Server 2013

This Management Pack implements statistics collection for mailboxes hosted by Exchange 2013 Mailbox databases. Mailbox statistics is being collected only at those servers which host the active copy of mailbox database. When collected, the data is passed to the System Center Operations Manager Management Server and written to the SCOM Data Warehouse. All related tables are members of Exchange2013 database schema.

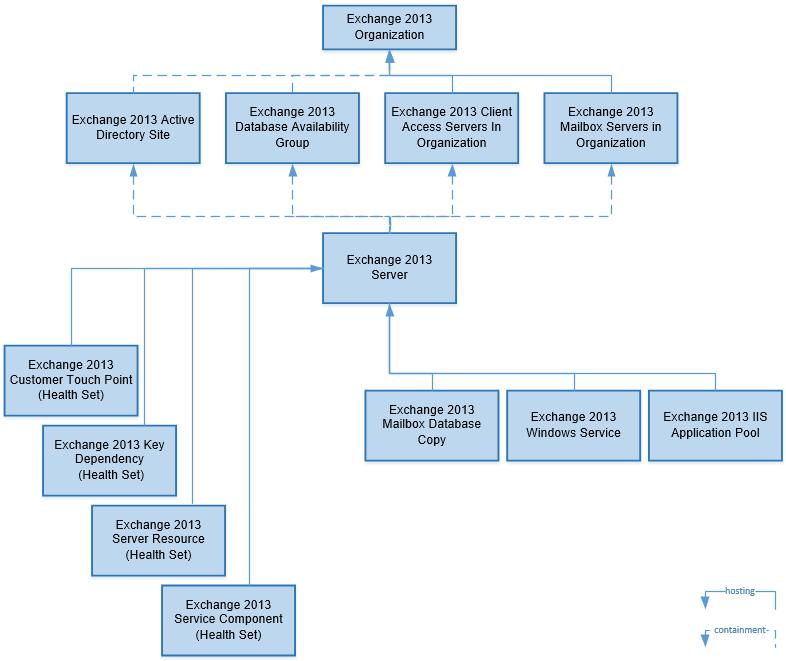
Mailbox statistics data is used for following purposes:

* Calculate the current number of mailboxes for dashboards;
* Calculate the value of “Exchange 2013 Organization Synthetic: Mailbox Count” performance metric;
* Generate the “Exchange 2013 - Top biggest mailboxes” report.

By default, data collection interval is set to 12 hours (43200 seconds).

### How Health Rolls Up

The following diagram shows how the health states of objects roll up in this Management Pack.



## Configuring the Management Pack for Microsoft Exchange Server 2013

This section provides guidance on configuring and tuning this Management Pack.

In this section:

* [Best Practice: Create a Management Pack for Customizations](#z2)
* How to import a Management Pack
* How to enable Agent Proxy setting
* How to configure Run As profile
* [Security Configuration](#z3)
  + Run As Profiles
  + [Required permissions](#_Required_permissions)

### Best Practice: Create a Management Pack for Customizations

The Management Pack for Microsoft Exchange Server 2013 is sealed so that you cannot change any of the original settings in the management pack file. However, you can create customizations, such as overrides or new monitoring objects, and save them to a different management pack. By default, Operations Manager saves all customizations to the default management pack. As a best practice, you should instead create a separate management pack for each sealed management pack you want to customize.

Creating a new management pack for storing overrides has the following advantages:

 When you create a management pack for the purpose of storing customized settings for a sealed management pack, it is helpful to base the name of the new management pack on the name of the management pack that it is customizing, such as “Microsoft Exchange 2013 Overrides”.

Creating a new management pack for storing customizations of each sealed management pack makes it easier to export the customizations from a test environment to a production environment. It also makes it easier to delete a management pack, because you must delete any dependencies before you can delete a management pack. If customizations for all management packs are saved in the Default Management Pack and you need to delete a single management pack, you must first delete the Default Management Pack, which also deletes customizations to other management packs.

For more information about sealed and unsealed management packs, see [Management Pack Formats](http://go.microsoft.com/fwlink/?LinkId=108355). For more information about management pack customizations and the default management pack, see [About Management Packs](http://go.microsoft.com/fwlink/?LinkId=108356).

How to Create a New Management Pack for Customizations

|  |
| --- |
| 1. Open the Operations console, and then click the Administration button.  2. Right-click Management Packs, and then click Create New Management Pack.  3. Enter a name (for example, Exchange 2013 MP Customizations), and then click Next.  4. Click Create. |

### How to import a Management Pack

For more information about importing a management pack, see [How to Import an Operations Manager Management Pack](http://technet.microsoft.com/library/hh212691.aspx).

### How to enable Agent Proxy setting

To enable **Agent Proxy** setting complete following steps:

1. Open the Operations Console and click the **Administration** button.

2. In the Administrator pane, click Agent Managed.

3. Double-click an agent in the list.

4. On the Security tab, select Allow this agent to act as a proxy and discover managed objects on other computers.

### How to configure Run As profile

To configure **Run As profile** complete following steps:

1. Identify the names of the target computers where the default action account has insufficient rights to run workflows defined by the Management Pack for Microsoft Exchange Server 2013.
2. For each system, create or use an existing set of credentials that have at least the set of privileges discussed in the “Security Configuration” section of this management pack guide.
3. For each set of credentials identified in step 2, make sure a corresponding **Run As Account** exists in the management group. Create the **Run As Account** if necessary.
4. Setup the mappings between the targets and the **Run As Accounts** on the Run As Accounts tab of each of the **Run As Profiles**.

Note

Please refer to “Run As Profiles” section for the detailed explanation of what Run As profiles are defined in Management Pack for Microsoft Exchange Server 2013.

### Security Configuration

This section provides guidance on configuring the security for this Management Pack.

In this section:

Run As Profiles

* [Required permissions](#_Required_permissions)

#### Run As Profiles

When the Management Pack for Microsoft Exchange Server 2013 is imported for the first time, it creates new Run As profile “Microsoft Exchange 2013 SDK Monitoring Run As Profile”, which is used for collecting data required for the calculation of Organization Synthetic Metrics.

All discoveries, monitors and rules defined in the Microsoft Exchange Server 2013 management pack use accounts defined in the “Default Action Account” Run As profile.

Important

Due to the security model under which Exchange 2013 has been tested, running the SCOM agent on your Exchange servers under any account other than **LocalSystem** isn’t supported. If you run the agent under any account other than **LocalSystem**, the synthetic transactions fail to run. You may also experience other issues.

Note

For more information about configuring Run As profiles see “How to configure Run As profile” section of this guide.

#### Required permissions

This section describes how to configure required permissions for the Management Pack for Microsoft Exchange Server 2013.To enable some monitoring workflows, appropriate permissions should be granted to Run As accounts and these accounts should be bound to respective Run As Profiles. Subsections below describe how to grant permissions at Operating System and System Center Operations Manager level.

##### To configure permissions in Active Directory

1. In Active Directory, create a domain user that will be used for accessing the System Center Operations Manager SDK:

a. **Exchange2013SDKUser**

##### To configure permissions on the System Center Operations Manager Management Server

1. Grant Local Administrator permissions to **Exchange2013SDKUser** account.

##### To configure permissions on the System Center Operations Manager

1. Open SCOM Console and navigate to “Administration” pane.
2. Select “User Roles” view (located under “Security” folder).
3. Right click on “Operations Manager Operators” role and click “Properties” in the context menu.
4. In the “General Properties” tab click “Add” button.
5. Find **Exchange2013SDKUser** user and click “OK”.
6. Click “OK” button to apply changes and close “User Role Properties” dialog.

##### To configure System Center Operations Manager

1. Import the Management Pack for Microsoft Exchange Server 2013 if it has not been imported.
2. Create **Exchange2013SDKUser** Run As accounts with “Windows” account type. For more information about how to create a Run As account, see [How to Create a Run As Account in Operations Manager 2007](http://go.microsoft.com/fwlink/?LinkId=193877) or [How to Create Run As Account in Operations Manager 2012](http://technet.microsoft.com/en-us/library/hh321655.aspx). For more information about various Run As Account types, see [Run As Accounts and Run As Profiles in Operations Manager 2007](http://go.microsoft.com/fwlink/?LinkId=193879) or [Managing Run As Accounts and Profiles in Operations Manager 2012](http://technet.microsoft.com/en-us/library/hh212714.aspx).
3. On the System Center Operations Manager console, configure the Run As profiles as follows:
   1. Set the “**Microsoft Exchange 2013 SDK Monitoring Run As Profile**” Run As profile to use the **Exchange2013SDKUser** Run As account.

## Viewing Information in the Operations Manager Console

### Microsoft Exchange Server 2013 views

The Management Pack for Microsoft Exchange Server 2013 introduces the comprehensive set of state, performance, alert and diagram views which can be found in the dedicated folder:

Monitoring

Microsoft Exchange Server 2013

Note

Please refer to “Appendix: Management Pack Views and Dashboards” section of this guide for the full list of views.

Note

Some views may contain very long list of objects or metrics. To find a specific object or group of objects, you can use the Scope, Search, and Find buttons on the Operations Manager toolbar. For more information, see the “[Finding Data and Objects in the Operations Manager Consoles](http://technet.microsoft.com/library/hh212890.aspx)” article in Operations Manager Help.

### Microsoft Exchange Server 2013 dashboards

This Management Pack includes a set of rich dashboards which provide detailed information about Microsoft Exchange 2013 Organizations and Servers.

Note

Both Organization Summary and Server Summary dashboards have two personalization settings:

* + **Time Range** – sets the period of time for which performance data should be retrieved and displayed. This parameter also sets “Lookup Interval” for mailbox statistics, however if the value of the time range is less than 24 hours, dashboard widgets will consider mailbox statistics collected during last 24 hours.
  + **Auto Refresh** – sets the data refresh interval.

Note

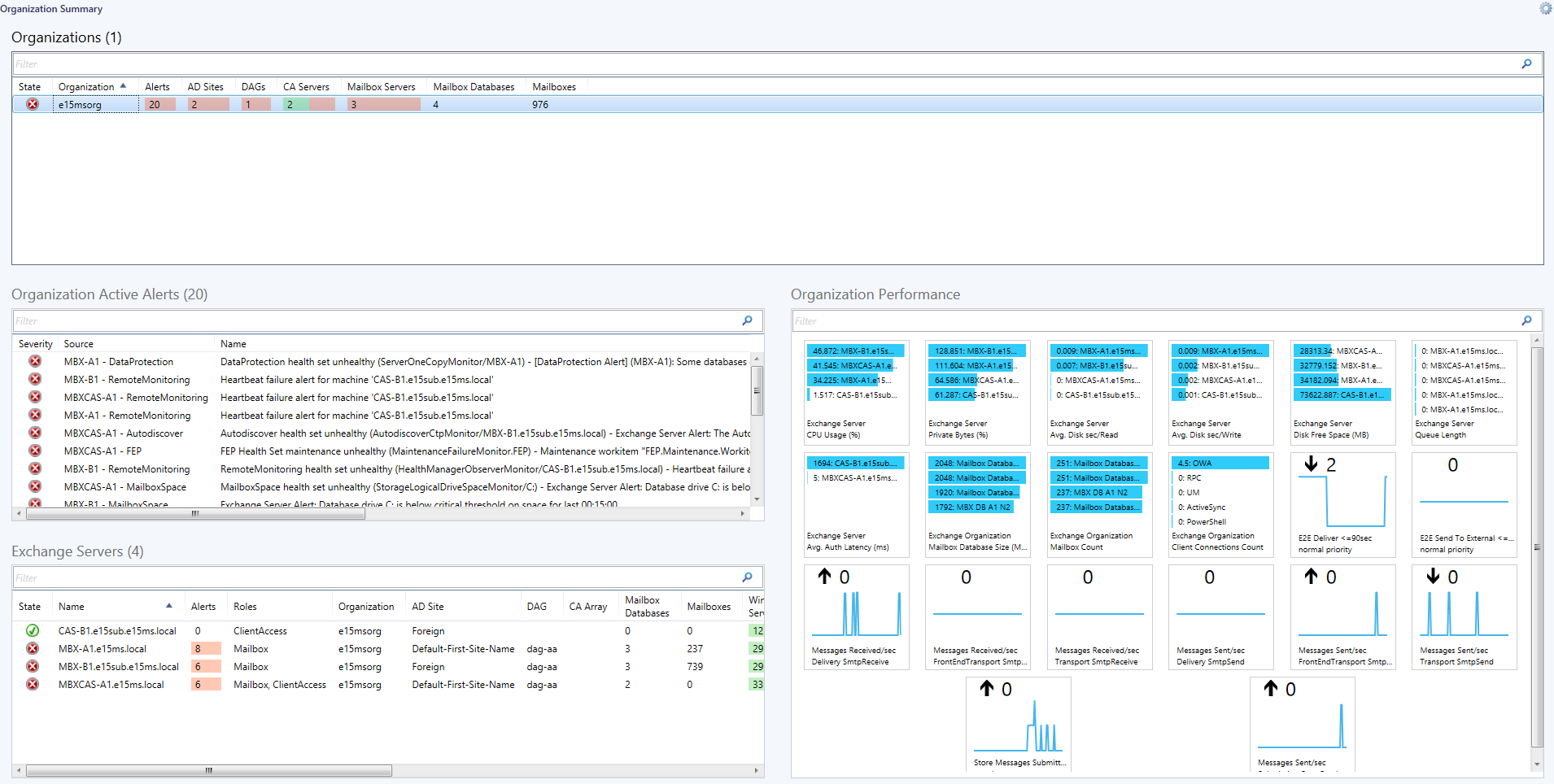
If the Time Range setting exceeds the length of data collection interval for more than 100 times, tiles will switch from showing real time values to showing reduced or aggregated values. Most of the performance rules are defaulted to be collected every 15 minutes, so it is recommended to keep the Time Range setting below 25 hours if you need the real time (non-aggregated) data to be displayed.

Note

In this Management Pack, all widgets which show the list of objects and their overall state support filtering by state. Following keywords may be used to find all healthy or unhealthy objects:

| State | Keywords |
| --- | --- |
| Healthy | good, healthy |
| Warning | warning, unhealthy |
| Critical (Error) | error, critical, unhealthy |
| Unmonitored (white or gray) | unmonitored, unknown |

#### Organization Summary dashboard



Organization Summary dashboard has four widgets:

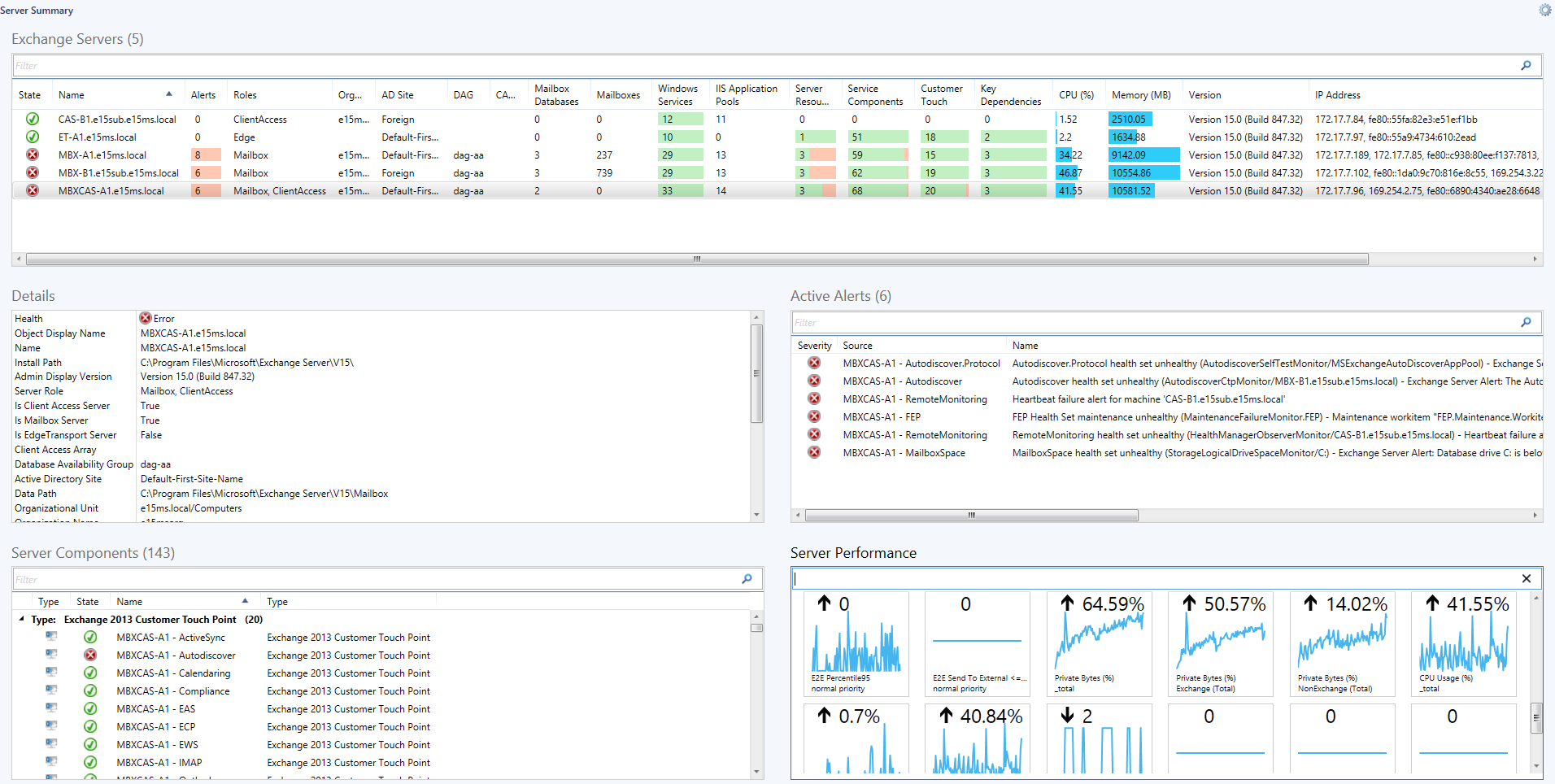
1. **Organizations** – shows the list of discovered Exchange 2013 Organizations with their overall states, names, total number of alerts, number of Active Directory Sites, number of Database Availability Groups, number of Client Access and Mailbox servers, number of Mailbox Databases and Mailboxes. Some of these columns use background color to indicate how many respective objects are in healthy or unhealthy state (hover the mouse over red or green area to see the tooltip containing the exact number of objects in respective state).
2. **Organization Active Alerts** – shows the list of active alerts triggered for the selected Organization or related (contained) objects.
3. **Exchange Servers** – shows the list of Exchange 2013 Servers contained in the selected Exchange 2013 Organization. The list contains many columns which help to review server’s health: overall state, server name, total number of alerts, server roles, name of the Active Directory site, name of the Database Availability Group, name of the Client Access Array, number of Mailbox Databases, number of Mailboxes, number of Exchange 2013 Windows Services, number of Exchange 2013 IIS Application Pools, number of discovered Health Sets, current CPU and Memory usage, Exchange Server version, server’s IP addresses.

**Note**: you may double click the name of the Server in the “Exchange Servers” widget to drill down to “Server Summary” dashboard (the dashboard will not contain the navigational list in the upper part of the dashboard in this case).

1. **Organization Performance** – shows performance information for the selected Exchange 2013 Organization. This widget uses three types of tiles to show the performance information:
   * **Performance Chart tile** – shows the value of a performance counter over time (time range can be configured in Personalization Settings).
   * **Performance Top tile** – shows 5 instances of performance counter which have highest latest values. For example, “Exchange Server CPU Usage (%)” tile shows 5 Exchange 2013 Servers with highest total CPU utilization.
   * **Performance Bottom Tile** – shows 5 instances of performance counter which have lowest latest values. For example, “Exchange Server Disk Free Space (MP)” tile shows 5 disks used by Exchange 2013 Servers with lowest free space, in megabytes.

**Note:** you may use “Filter” field in the upper part of the widget to search for particular tile. Filter feature will use all text values you can see at the tile to perform the search.

#### Server Summary dashboard



Server Summary dashboard contains five widgets:

1. **Exchange Servers** – shows the list of discovered Exchange 2013 Servers. The list contains many columns which help to review server’s health: overall state, server name, total number of alerts, server roles, name of the Active Directory site, name of the Database Availability Group, name of the Client Access Array, number of Mailbox Databases, number of Mailboxes, number of Exchange 2013 Windows Services, number of Exchange 2013 IIS Application Pools, number of discovered Health Sets, current CPU and Memory usage, Exchange Server version, server’s IP addresses.
2. **Details** – shows properties for the selected Exchange 2013 Server.
3. **Server Components** – shows the list and the overall health of Exchange 2013 Server Components hosted by the server. Components may include: Server Resources Health Sets, Service Components Health Sets, Customer Touch Points Health Sets, Key Dependencies Health Sets, Exchange IIS Application Pools, Exchange Windows Services and Exchange Mailbox Database Copies.
4. **Active Alerts** – shows the list of active alerts triggered for the selected Exchange 2013 Server or related (contained) objects.
5. **Server Performance** – shows performance information for the selected Exchange 2013 Server. This widget uses three types of tiles to show the performance information:
   * **Performance Chart tile** – shows the value of a performance counter over time (time range can be configured in Personalization Settings).
   * **Performance Top tile** – shows 5 instances of performance counter which have highest latest values. For example, “Exchange Windows Service Private Bytes (%)” tile shows 5 Exchange 2013 Windows Services (hosted on the selected Exchange 2013 Server) with highest memory consumption.
   * **Performance Bottom Tile** – shows 5 instances of performance counter which have lowest latest values. For example, “Exchange Server Disk Free Space (MP)” tile shows 5 disks used by the selected Exchange 2013 Server with lowest free space, in megabytes.

**Note:** you may use “Filter” field in the upper part of the widget to search for particular tile. Filter feature will use all text values you can see at the tile to perform the search.

## Links

The following links connect you to information about common tasks that are associated with System Center Management Packs:

1. [Management Pack Life Cycle](http://technet.microsoft.com/library/hh212732.aspx)
2. [How to Import an Operations Manager Management Pack](http://technet.microsoft.com/library/hh212691.aspx)
3. [Creating a Management Pack for Overrides](http://technet.microsoft.com/library/hh212841.aspx)
4. [Managing Run As Accounts and Profiles](http://technet.microsoft.com/library/hh212714.aspx)
5. [How to Export an Operations Manager Management Pack](http://technet.microsoft.com/library/hh320149.aspx)
6. [How to Remove an Operations Manager Management Pack](http://technet.microsoft.com/library/hh230746.aspx)

If you already have some familiarity with the basic functionality of Management Packs and would like to expand your Service Pack knowledge, you may check out a free [System Center 2012 R2 Operations Manager Management Pack](http://www.microsoftvirtualacademy.com/training-courses/system-center-2012-r2-operations-manager-management-pack) course at Microsoft Virtual Academy (MVA).

For questions about Operations Manager and Management Packs, see the [System Center Operations Manager community forum](http://go.microsoft.com/fwlink/?LinkID=179635) (http://go.microsoft.com/fwlink/?LinkID=179635).

Important

All information and content on non-Microsoft sites is provided by the owner or the users of the website. Microsoft makes no warranties, express, implied, or statutory, as to the information at this website.

## Appendix: Management Pack Views and Dashboards

 Microsoft Exchange Server2013

Active Alerts



AD Site

Database Availability Group



Health Set



Organization

Organization Diagram

Organization Summary



Server

Server Summary

Performance

All

Connections and Requests

CPU

E2E

Memory

Queues

SMTP

Storage

Server Components

Exchange IIS Application Pool

Exchange IIS Application Pool Performance

Exchange Windows Service

Exchange Windows Service Performance

Mailbox Database Copy

 Mailbox Database Copy Performance

Servers by Role

Client Access Server

Edge Transport Server

Mailbox Server

## Appendix: Management Pack Objects and Workflows

The Management Pack for Microsoft Exchange Server 2013 discovers the object types described in the following sections.

### Exchange 2013 Active Directory Site

Active Directory Site, which contains one or more exchange servers.

#### Exchange 2013 Active Directory Site - Aggregate monitors

##### Exchange 2013 AD Site Health Sets

This monitor is the aggregate monitor for all Exchange 2013 Health Set monitoring for all Exchange Servers within this Active Directory Site. If the state is unknown, either monitoring has not begun for this object or there are no Health Sets discovered.

#### Exchange 2013 Active Directory Site - Dependency (rollup) monitors

##### Exchange 2013 Server Availability (rollup)

Rolls up the health of availability monitors from Exchange Servers to the Active Directory Site.

##### Exchange 2013 Server Configuration (rollup)

Rolls up the health of configuration monitors from Exchange Servers to the Active Directory Site.

##### Exchange 2013 Server Health Sets (rollup)

Rolls up the health of Exchange Health Set monitors from Exchange Servers to the Active Directory Site.

##### Exchange 2013 Server Performance (rollup)

Rolls up the health of performance monitors from Exchange Servers to the Active Directory Site.

##### Exchange 2013 Server Security (rollup)

Rolls up the health of security monitors from Exchange Servers to the Active Directory Site.

### Exchange 2013 Client Access Array

Client Access Array, which contains one or more Client Access Servers.

#### Exchange 2013 Client Access Array - Aggregate monitors

##### Exchange 2013 Client Access Array Health Sets

This monitor is the aggregate monitor for all Exchange 2013 Health Set monitoring for all Exchange Servers within this Client Access Array. If the state is unknown, either monitoring has not begun for this object or there are no Health Sets discovered.

#### Exchange 2013 Client Access Array - Dependency (rollup) monitors

##### Exchange 2013 Server Availability (rollup)

Rolls up the health of availability monitors from Exchange Servers to the Client Access Array.

##### Exchange 2013 Server Configuration (rollup)

Rolls up the health of configuration monitors from Exchange Servers to the Client Access Array.

##### Exchange 2013 Server Health Sets (rollup)

Rolls up the health of Exchange Health Set monitors from Exchange Servers to the Client Access Array.

##### Exchange 2013 Server Performance (rollup)

Rolls up the health of performance monitors from Exchange Servers to the Client Access Array.

##### Exchange 2013 Server Security (rollup)

Rolls up the health of security monitors from Exchange Servers to the Client Access Array.

### Exchange 2013 Client Access Servers in Organization

The object of this class is a “container” object, which is used to group all Client Access Servers that are a part of a given Exchange Organization.

#### Exchange 2013 Client Access Servers in Organization - Discoveries

##### Exchange 2013: Discover Microsoft Exchange Organization and Server objects

This discovery rule discovers Exchange 2013 Organizations, Servers, AD Sites, Database Availability Groups, Health Sets, Windows Services, IIS Application Pools, Mailbox Database Copies, and all other related objects. It discovers all relevant relationships as well.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | No | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 14400 | | Start delay (seconds) | The discovery script will sleep for the specified time interval. | 0 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 900 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to true. | false | |  |
|  |  |  |

#### Exchange 2013 Client Access Servers in Organization - Aggregate monitors

##### Exchange 2013 Client Access Server Health Sets

This monitor is the aggregate monitor for all Exchange 2013 Health Set monitoring for Client Access Servers within this Exchange Organization. If the state is unknown, either monitoring has not begun for this object or there are no Health Sets discovered.

#### Exchange 2013 Client Access Servers in Organization - Dependency (rollup) monitors

##### Exchange 2013 Server Availability (rollup)

Rolls up the health of availability monitors from Exchange Servers to the Organization’s Client Access Servers Container.

##### Exchange 2013 Server Configuration (rollup)

Rolls up the health of configuration monitors from Exchange Servers to the Organization’s Client Access Servers Container.

##### Exchange 2013 Server Health Sets (rollup)

Rolls up the health of Exchange Health Set monitors from Exchange Servers to the Organization’s Client Access Servers Container.

##### Exchange 2013 Server Performance (rollup)

Rolls up the health of performance monitors from Exchange Servers to the Organization’s Client Access Servers Container.

##### Exchange 2013 Server Security (rollup)

Rolls up the health of security monitors from Exchange Servers to the Organization’s Client Access Servers Container.

### Exchange 2013 Database Availability Group

This class represents Exchange 2013 Database Availability Group and contains all Mailbox Servers, which are a part of the given Database Availability Group.

#### Exchange 2013 Database Availability Group - Discoveries

##### Exchange 2013: Discover Microsoft Exchange Organization and Server objects

This discovery rule discovers Exchange 2013 Organizations, Servers, AD Sites, Database Availability Groups, Health Sets, Windows Services, IIS Application Pools, Mailbox Database Copies, and all other related objects. It discovers all relevant relationships as well.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | No | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 14400 | | Start delay (seconds) | The discovery script will sleep for the specified time interval. | 0 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 900 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to true. | false | |  |
|  |  |  |

#### Exchange 2013 Database Availability Group - Aggregate monitors

##### Exchange 2013 DAG Health Sets

This monitor is the aggregate monitor for all Exchange 2013 Health Set monitoring for all Exchange Servers within this Database Availability Group. If the state is unknown, either monitoring has not begun for this object or there are no Health Sets discovered.

#### Exchange 2013 Database Availability Group - Dependency (rollup) monitors

##### Exchange 2013 Server Availability (rollup)

Rolls up the health of availability monitors from Exchange Servers to the Exchange Database Availability Group.

##### Exchange 2013 Server Configuration (rollup)

Rolls up the health of configuration monitors from Exchange Servers to the Exchange Database Availability Group.

##### Exchange 2013 Server Health Sets (rollup)

Rolls up the health of Exchange Health Set monitors from Exchange Servers to the Exchange Database Availability Group.

##### Exchange 2013 Server Performance (rollup)

Rolls up the health of performance monitors from Exchange Servers to the Exchange Database Availability Group.

##### Exchange 2013 Server Security (rollup)

Rolls up the health of security monitors from Exchange Servers to the Exchange Database Availability Group.

### Exchange 2013 Edge Transport Servers in Organization

The object of this class is a “container” object, which is used to group all Edge Transport Servers that are a part of a given Exchange Organization.

#### Exchange 2013 Edge Transport Servers in Organization - Discoveries

##### Exchange 2013: Discover Microsoft Exchange Organization and Server objects

This discovery rule discovers Exchange 2013 Organizations, Servers, AD Sites, Database Availability Groups, Health Sets, Windows Services, IIS Application Pools, Mailbox Database Copies, and all other related objects. It discovers all relevant relationships as well.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | No | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 14400 | | Start delay (seconds) | The discovery script will sleep for the specified time interval. | 0 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 900 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to true. | false | |  |
|  |  |  |

#### Exchange 2013 Edge Transport Servers in Organization - Aggregate monitors

##### Exchange 2013 Edge Transport Server Health Sets

This monitor is the aggregate monitor for all Exchange 2013 Health Set monitoring for Edge Transport Servers within this Exchange Organization. If the state is unknown, either monitoring has not begun for this object or there are no Health Sets discovered.

#### Exchange 2013 Edge Transport Servers in Organization - Dependency (rollup) monitors

##### Exchange 2013 Server Availability (rollup)

Rolls up the health of availability monitors from Exchange Servers to the Organization’s Edge Transport Servers Container.

##### Exchange 2013 Server Configuration (rollup)

Rolls up the health of configuration monitors from Exchange Servers to the Organization’s Edge Transport Servers Container.

##### Exchange 2013 Server Health Sets (rollup)

Rolls up the health of Exchange Health Set monitors from Exchange Servers to the Organization’s Edge Transport Servers Container.

##### Exchange 2013 Server Performance (rollup)

Rolls up the health of performance monitors from Exchange Servers to the Organization’s Edge Transport Servers Container.

##### Exchange 2013 Server Security (rollup)

Rolls up the health of security monitors from Exchange Servers to the Organization’s Edge Transport Servers Container.

### Exchange 2013 Health Set

The object of this class represents Exchange 2013 Health Set, a group of probes, monitors and responders, defined by Microsoft Exchange 2013 managed availability engine.

#### Exchange 2013 Health Set - Discoveries

##### Exchange 2013: Discover Microsoft Exchange Organization and Server objects

This discovery rule discovers Exchange 2013 Organizations, Servers, AD Sites, Database Availability Groups, Health Sets, Windows Services, IIS Application Pools, Mailbox Database Copies, and all other related objects. It discovers all relevant relationships as well.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | No | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 14400 | | Start delay (seconds) | The discovery script will sleep for the specified time interval. | 0 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 900 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to true. | false | |  |
|  |  |  |

#### Exchange 2013 Health Set - Unit monitors

##### >

Represents the health of a Health Set.

#### Exchange 2013 Health Set - Rules (alerting)

##### Exchange 2013: Health Set Alert Rule

Generates alerts for a Health Set.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | No | | Generate Alerts |  | Yes | | Priority |  | 1 | | Severity |  | 2 | |  |
|  |  |  |

### Exchange 2013 IIS Application Pool

The object of this class represents IIS Application Pool created by Microsoft Exchange. This management pack does not define any unit monitors for IIS Application Pools. IIS Application Pools are discovered for performance data collection purposes only.

#### Exchange 2013 IIS Application Pool - Discoveries

##### Exchange 2013: Discover Microsoft Exchange Organization and Server objects

This discovery rule discovers Exchange 2013 Organizations, Servers, AD Sites, Database Availability Groups, Health Sets, Windows Services, IIS Application Pools, Mailbox Database Copies, and all other related objects. It discovers all relevant relationships as well.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | No | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 14400 | | Start delay (seconds) | The discovery script will sleep for the specified time interval. | 0 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 900 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to true. | false | |  |
|  |  |  |

#### Exchange 2013 IIS Application Pool - Rules (non-alerting)

##### Exchange 2013 IIS App Pool: Active Requests

Displays the number of Active Requests being processed by worker processes of the given Exchange IIS Application Pool. This performance collection rule collects multiple instances – one instance per IIS Application Pool.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 IIS App Pool: CPU Utilization (%)

Displays the amount (percentage) of CPU resources used by the given Exchange IIS Application Pool (all related worker processes). This performance collection rule collects multiple instances – one instance per IIS Application Pool.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 IIS App Pool: Pool Non Paged Memory Size (MB)

Displays the amount of memory (Non-Paged Bytes) used by the given Exchange IIS Application Pool. The value is expressed in megabytes. This performance collection rule collects multiple instances – one instance per IIS Application Pool.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 IIS App Pool: Pool Paged Memory Size (MB)

Displays the amount of memory (Paged Bytes) used by the given Exchange IIS Application Pool. The value is expressed in megabytes. This performance collection rule collects multiple instances – one instance per IIS Application Pool.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 IIS App Pool: Private Memory Size (%)

Displays the amount of memory (Private Bytes) used by the given Exchange IIS Application Pool. The value is expressed as a percentage of server’s physical memory. This performance collection rule collects multiple instances – one instance per IIS Application Pool.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 IIS App Pool: Private Memory Size (MB)

Displays the amount of memory (Private Bytes) used by the given Exchange IIS Application Pool. The value is expressed in megabytes. This performance collection rule collects multiple instances – one instance per IIS Application Pool.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

### Exchange 2013 Mailbox Database Copy

The object of this class represents the physical copy of Exchange Mailbox Database. The physical mailbox database copy is always hosted on a given Mailbox Server.

#### Exchange 2013 Mailbox Database Copy - Discoveries

##### Exchange 2013: Discover Microsoft Exchange Organization and Server objects

This discovery rule discovers Exchange 2013 Organizations, Servers, AD Sites, Database Availability Groups, Health Sets, Windows Services, IIS Application Pools, Mailbox Database Copies, and all other related objects. It discovers all relevant relationships as well.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | No | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 14400 | | Start delay (seconds) | The discovery script will sleep for the specified time interval. | 0 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 900 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to true. | false | |  |
|  |  |  |

#### Exchange 2013 Mailbox Database Copy - Rules (non-alerting)

##### Exchange 2013 Mailbox Database: Available Space (MB)

Displays the amount of free space (in megabytes) left on disk and available for the given mailbox database. This performance collection rule collects multiple instances – one instance per mailbox database copy.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Mailbox Database: Database Page Fault Stalls/sec

Database Page Fault Stalls/sec is the rate of page faults that cannot be serviced because there are no pages available for allocation from the database cache. If this counter is nonzero most of the time, the clean threshold may be too low. This performance collection rule collects multiple instances – one instance per mailbox database copy.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Mailbox Database: Database Size (MB)

Displays the amount of space used by mailbox database, in megabytes. This performance collection rule collects multiple instances – one instance per mailbox database copy.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Mailbox Database: I/O Database Reads Average Latency (ms)

I/O Database Reads Average Latency is the average length of time (in milliseconds), per mailbox database read operation. This performance collection rule collects multiple instances – one instance per mailbox database copy.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Mailbox Database: I/O Database Writes Average Latency (ms)

I/O Database Writes Average Latency is the average length of time (in milliseconds), per mailbox database write operation. This performance collection rule collects multiple instances – one instance per mailbox database copy.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Mailbox Database: I/O Log Reads Average Latency (ms)

Displays the average length of time (in milliseconds), per logfile read operation. This performance collection rule collects multiple instances – one instance per mailbox database copy.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Mailbox Database: I/O Log Writes Average Latency (ms)

Displays the average length of time (in milliseconds), per logfile write operation. This performance collection rule collects multiple instances – one instance per mailbox database copy.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Mailbox Database: Index Size (MB)

Displays the amount of space used by index information, in megabytes. This performance collection rule collects multiple instances – one instance per mailbox database copy.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
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##### Exchange 2013 Mailbox Database: Transaction Log Available Space (MB)

Displays the amount of free space (in megabytes) left on disk and available for the mailbox database’s log. This performance collection rule collects multiple instances – one instance per mailbox database copy.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
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##### Exchange 2013 Mailbox Database: Transaction Log Size (MB)

Displays the amount of space used by mailbox database’s transaction log, in megabytes. This performance collection rule collects multiple instances – one instance per mailbox database copy.

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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

### Exchange 2013 Mailbox Servers in Organization

The object of this class is a “container” object, which is used to group all Mailbox Servers that are a part of a given Exchange Organization.

#### Exchange 2013 Mailbox Servers in Organization - Discoveries

##### Exchange 2013: Discover Microsoft Exchange Organization and Server objects

This discovery rule discovers Exchange 2013 Organizations, Servers, AD Sites, Database Availability Groups, Health Sets, Windows Services, IIS Application Pools, Mailbox Database Copies, and all other related objects. It discovers all relevant relationships as well.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | No | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 14400 | | Start delay (seconds) | The discovery script will sleep for the specified time interval. | 0 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 900 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to true. | false | |  |
|  |  |  |

#### Exchange 2013 Mailbox Servers in Organization - Aggregate monitors

##### Exchange 2013 Mailbox Server Health Sets

This monitor is the aggregate monitor for all Exchange 2013 Health Set monitoring for Mailbox Servers within this Exchange Organization. If the state is unknown, either monitoring has not begun for this object or there are no Health Sets discovered.

#### Exchange 2013 Mailbox Servers in Organization - Dependency (rollup) monitors

##### Exchange 2013 Server Availability (rollup)

Rolls up the health of availability monitors from Exchange Servers to the Organization’s Mailbox Servers Container.

##### Exchange 2013 Server Configuration (rollup)

Rolls up the health of configuration monitors from Exchange Servers to the Organization’s Mailbox Servers Container.

##### Exchange 2013 Server Health Sets (rollup)

Rolls up the health of Exchange Health Set monitors from Exchange Servers to the Organization’s Mailbox Servers Container.

##### Exchange 2013 Server Performance (rollup)

Rolls up the health of performance monitors from Exchange Servers to the Organization’s Mailbox Servers Container.

##### Exchange 2013 Server Security (rollup)

Rolls up the health of security monitors from Exchange Servers to the Organization’s Mailbox Servers Container.

### Exchange 2013 Organization

The object of this class represents Exchange 2013 Organization in its’ entirety and contains all related objects. Exchange 2013 Organization serves as a target for “synthetic” performance metrics collection. Objects of this class are not hosted by SCOM Agents and are managed by SCOM Management Server.

#### Exchange 2013 Organization - Aggregate monitors

##### Exchange 2013 Organization Health Sets

This monitor is the aggregate monitor for all Exchange 2013 Health Set monitoring for this Exchange Organization. If the state is unknown, either monitoring has not begun for this object or there are no Health Sets discovered.

#### Exchange 2013 Organization - Dependency (rollup) monitors

##### Exchange 2013 AD Site Availability (rollup)

Rolls up the health of availability monitors from Active Directory Sites to the Exchange Organization.

##### Exchange 2013 AD Site Configuration (rollup)

Rolls up the health of configuration monitors from Active Directory Sites to the Exchange Organization.

##### Exchange 2013 AD Site Health Sets (rollup)

Rolls up the health of Exchange Health Set monitors from Active Directory Sites to the Exchange Organization.

##### Exchange 2013 AD Site Performance (rollup)

Rolls up the health of performance monitors from Active Directory Sites to the Exchange Organization.

##### Exchange 2013 AD Site Security (rollup)

Rolls up the health of security monitors from Active Directory Sites to the Exchange Organization.

##### Exchange 2013 Client Access Servers Availability (rollup)

Rolls up the health of availability monitors from the Organization’s Client Access Servers Container to the Exchange Organization.

##### Exchange 2013 Client Access Servers Configuration (rollup)

Rolls up the health of configuration monitors from the Organization’s Client Access Servers Container to the Exchange Organization.

##### Exchange 2013 Client Access Servers Health Sets (rollup)

Rolls up the health of Exchange Health Set monitors from the Organization’s Client Access Servers Container to the Exchange Organization.

##### Exchange 2013 Client Access Servers Performance (rollup)

Rolls up the health of performance monitors from the Organization’s Client Access Servers Container to the Exchange Organization.

##### Exchange 2013 Client Access Servers Security (rollup)

Rolls up the health of security monitors from the Organization’s Client Access Servers Container to the Exchange Organization.

##### Exchange 2013 DAG Availability (rollup)

Rolls up the health of availability monitors from Organization’s Database Availability Groups to the Exchange Organization.

##### Exchange 2013 DAG Configuration (rollup)

Rolls up the health of configuration monitors from Organization’s Database Availability Groups to the Exchange Organization.

##### Exchange 2013 DAG Health Sets (rollup)

Rolls up the health of Exchange Health Set monitors from Organization’s Database Availability Groups to the Exchange Organization.

##### Exchange 2013 DAG Performance (rollup)

Rolls up the health of performance monitors from Organization’s Database Availability Groups to the Exchange Organization.

##### Exchange 2013 DAG Security (rollup)

Rolls up the health of security monitors from Organization’s Database Availability Groups to the Exchange Organization.

##### Exchange 2013 Edge Transport Servers Availability (rollup)

Rolls up the health of availability monitors from the Organization’s Edge Transport Servers Container to the Exchange Organization.

##### Exchange 2013 Edge Transport Servers Configuration (rollup)

Rolls up the health of configuration monitors from the Organization’s Edge Transport Servers Container to the Exchange Organization.

##### Exchange 2013 Edge Transport Servers Health Sets (rollup)

Rolls up the health of Exchange Health Set monitors from the Organization’s Edge Transport Servers Container to the Exchange Organization.

##### Exchange 2013 Edge Transport Servers Performance (rollup)

Rolls up the health of performance monitors from the Organization’s Edge Transport Servers Container to the Exchange Organization.

##### Exchange 2013 Edge Transport Servers Security (rollup)

Rolls up the health of security monitors from the Organization’s Edge Transport Servers Container to the Exchange Organization.

##### Exchange 2013 Mailbox Servers Availability (rollup)

Rolls up the health of availability monitors from the Organization’s Mailbox Servers Container to the Exchange Organization.

##### Exchange 2013 Mailbox Servers Configuration (rollup)

Rolls up the health of configuration monitors from the Organization’s Mailbox Servers Container to the Exchange Organization.

##### Exchange 2013 Mailbox Servers Health Sets (rollup)

Rolls up the health of Exchange Health Set monitors from the Organization’s Mailbox Servers Container to the Exchange Organization.

##### Exchange 2013 Mailbox Servers Performance (rollup)

Rolls up the health of performance monitors from the Organization’s Mailbox Servers Container to the Exchange Organization.

##### Exchange 2013 Mailbox Servers Security (rollup)

Rolls up the health of security monitors from the Organization’s Mailbox Servers Container to the Exchange Organization.

#### Exchange 2013 Organization - Rules (non-alerting)

##### Exchange 2013 Organization Synthetic: Client Connections Count

Displays the number of client connections for different types of connections. Calculated as sum of average values for each server in the organization. This performance collection rule collects multiple instances: ActiveSync, OWA, PowerShell, RPC, UM.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Lookup interval (seconds) | Workflow will aggregate performance data collected during the interval specified by this parameter. Default value is 30 minutes (1800 seconds). | 1800 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Organization Synthetic: E2E Deliver <=90sec

Displays the number of recipients on normal priority messages whose end-to-end latency after delivery to mailbox falls within <=90sec bucket. Calculated as worst of (maximum) value for all servers in the organization.

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|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Lookup interval (seconds) | Workflow will aggregate performance data collected during the interval specified by this parameter. Default value is 30 minutes (1800 seconds). | 1800 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Organization Synthetic: E2E Latency Send to External <=90sec

Number of recipients on normal priority messages whose end-to-end latency after delivery to an external destination falls within <=90sec latency bucket. Calculated as worst of (maximum) value for all servers in the organization.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Lookup interval (seconds) | Workflow will aggregate performance data collected during the interval specified by this parameter. Default value is 30 minutes (1800 seconds). | 1800 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Organization Synthetic: Mailbox Count

Displays the number of mailboxes in the mailbox database. This rule is based on information collected by other rules and stored in SCOM data warehouse. This performance collection rule collects multiple instances – one per mailbox database in a given organization.

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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Lookup interval (seconds) | Workflow will look for mailbox statistics data collected during the interval specified by this parameter. If the mailbox was not observed during this time range, it will be considered as deleted. Default value is 24 hours (86400 seconds). | 86400 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
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##### Exchange 2013 Organization Synthetic: Mailbox Database Size (MB)

Displays the amount of space used by mailbox database, in megabytes. This performance collection rule collects multiple instances – one instance per mailbox database. Calculated as average value for each active database copy in organization. If no active database exists, then first found is used.

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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Lookup interval (seconds) | Workflow will aggregate performance data collected during the interval specified by this parameter. Default value is 30 minutes (1800 seconds). | 1800 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
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##### Exchange 2013 Organization Synthetic: Messages Received/sec

Displays the number of received messages per second for the given Organization, all connectors are taken into account. Calculated as a sum of average values for each server in the organization.

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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Lookup interval (seconds) | Workflow will aggregate performance data collected during the interval specified by this parameter. Default value is 30 minutes (1800 seconds). | 1800 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
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##### Exchange 2013 Organization Synthetic: Messages Sent/sec

Displays the average number of sent messages per second for the given Organization, all connectors are taken into account. Calculated as a sum of average values for each server in the organization

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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Lookup interval (seconds) | Workflow will aggregate performance data collected during the interval specified by this parameter. Default value is 30 minutes (1800 seconds). | 1800 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Organization Synthetic: Store Messages Submitted/sec

Displays the number of messages submitted to mailbox databases, per second. Calculated as a sum of average values for each server in the organization.

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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Lookup interval (seconds) | Workflow will aggregate performance data collected during the interval specified by this parameter. Default value is 30 minutes (1800 seconds). | 1800 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
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### Exchange 2013 Server

The object of this class represents Exchange 2013 Server, which plays at least one or more roles (Mailbox, Client Access, Edge Transport) in Exchange Organization. The object of this class is hosted by Windows Server.

#### Exchange 2013 Server - Discoveries

##### Exchange 2013: Discover Microsoft Exchange Organization and Server objects

This discovery rule discovers Exchange 2013 Organizations, Servers, AD Sites, Database Availability Groups, Health Sets, Windows Services, IIS Application Pools, Mailbox Database Copies, and all other related objects. It discovers all relevant relationships as well.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | No | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 14400 | | Start delay (seconds) | The discovery script will sleep for the specified time interval. | 0 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 900 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to true. | false | |  |
|  |  |  |

#### Exchange 2013 Server - Aggregate monitors

##### Exchange 2013 Server Health Sets

This monitor is the aggregate monitor for all Exchange 2013 Health Set monitoring for the given Exchange Server. If the state is unknown, either monitoring has not begun for this object or there are no Health Sets discovered.

#### Exchange 2013 Server - Dependency (rollup) monitors

##### Customer Touch Points

Rolls up the health of Exchange Health Set monitors from Customer Touch Points Health Sets to the Exchange Server.

##### Exchange 2013 IIS Application Pool Availability (rollup)

Rolls up the health of availability monitors from Exchange IIS Application Pools to the Exchange Server.

##### Exchange 2013 IIS Application Pool Configuration (rollup)

Rolls up the health of configuration monitors from Exchange IIS Application Pools to the Exchange Server.

##### Exchange 2013 IIS Application Pool Performance (rollup)

Rolls up the health of performance monitors from Exchange IIS Application Pools to the Exchange Server.

##### Exchange 2013 IIS Application Pool Security (rollup)

Rolls up the health of security monitors from Exchange IIS Application Pools to the Exchange Server.

##### Exchange 2013 Mailbox Database Copy Availability (rollup)

Rolls up the health of availability monitors from Exchange Mailbox Database Copies to the Exchange Server.

##### Exchange 2013 Mailbox Database Copy Configuration (rollup)

Rolls up the health of configuration monitors from Exchange Mailbox Database Copies to the Exchange Server.

##### Exchange 2013 Mailbox Database Copy Performance (rollup)

Rolls up the health of performance monitors from Exchange Mailbox Database Copies to the Exchange Server.

##### Exchange 2013 Mailbox Database Copy Security (rollup)

Rolls up the health of security monitors from Exchange Mailbox Database Copies to the Exchange Server.

##### Exchange 2013 Windows Service Availability (rollup)

Rolls up the health of availability monitors from Exchange Mailbox Windows Services to the Exchange Server.

##### Exchange 2013 Windows Service Configuration (rollup)

Rolls up the health of configuration monitors from Exchange Mailbox Windows Services to the Exchange Server.

##### Exchange 2013 Windows Service Performance (rollup)

Rolls up the health of performance monitors from Exchange Mailbox Windows Services to the Exchange Server.

##### Exchange 2013 Windows Service Security (rollup)

Rolls up the health of security monitors from Exchange Mailbox Windows Services to the Exchange Server.

##### Key Dependencies

Rolls up the health of Exchange Health Set monitors from Key Dependencies Health Sets to the Exchange Server.

##### Server Resources

Rolls up the health of Exchange Health Set monitors from Server Resources Health Sets to the Exchange Server.

##### Service Components

Rolls up the health of Exchange Health Set monitors from Service Components Health Sets to the Exchange Server.

#### Exchange 2013 Server - Rules (non-alerting)

##### Exchange 2013: Mailbox Database information collection rule

This rule collects backup information about mailbox databases. Collected information will be saved to the SCOM data warehouse, “Exchange2013” schema.

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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 43200 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 900 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to True. | false | |  |
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##### Exchange 2013: Mailbox statistics collection

This rule collects information about mailboxes. Only mailboxes that are hosted by the given server will be processed. Mailboxes that have no statistics information (size, number of items, etc.) will be skipped.

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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 43200 | | Number of mailboxes per property bag | This parameter sets how many mailbox statistics records should be placed into a single property bag. Try to increase this number if you experience the growth of SCOM send queue. | 1000 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 900 | |  |
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##### Exchange 2013 Database: I/O Database Reads Average Latency (ms)

I/O Database Reads Average Latency is the average length of time (in milliseconds), per database read operation.

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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Database: I/O Database Writes Average Latency (ms)

I/O Database Writes Average Latency is the average length of time (in milliseconds), per database write operation.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
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##### Exchange 2013 Database: I/O Log Reads Average Latency (ms)

I/O Log Reads Average Latency is the average length of time (in milliseconds), per log read operation.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Database: I/O Log Writes Average Latency (ms)

I/O Log Writes Average Latency is the average length of time (in milliseconds), per Log write operation.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Database: Page Fault Stalls/sec

Database Page Fault Stalls/sec is the rate of page faults that cannot be serviced because there are no pages available for allocation from the database cache. If this counter is nonzero most of the time, the clean threshold may be too low.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
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##### Exchange 2013 Server: ActiveSync Pending

Displays the number of Sync commands that are currently pending on the server.

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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
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##### Exchange 2013 Server: Average Disk sec/Read

Displays the average number of time the disk transfer took to complete, in seconds. This performance collection rule collects information only for disks that are used by Exchange 2013 to store logs, databases, etc.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Average Disk sec/Write

Displays the average number of time the disk transfer took to complete, in seconds. This performance collection rule collects information only for disks that are used by Exchange 2013 to store logs, databases, etc.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Avg RPC Latency (ms)

RPC Averaged Latency is the latency, in milliseconds, averaged for the past 1024 packets.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Avg. Authentication Latency (ms)

Displays the average time (in milliseconds) spent authenticating CAS requests over the last 200 samples.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Client Connections Count

Displays the number of client connections for different types of connections. This performance collection rule collects multiple instances: ActiveSync, OWA, PowerShell, RPC, UM.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: CPU Utilization (%)

Displays the amount (percentage) of CPU resources used at the server. This performance collection rule collects multiple instances: total, exchange (CPU resources used by all processes related to Exchange 2013), nonexchange (CPU resources used by processes, which are not related to Exchange 2013).

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Disk Free Space (MB)

Displays the amount of free space left on disk, in megabytes. This performance collection rule collects information only for disks that are used by Exchange 2013 to store logs, databases, etc.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Disk Reads/sec

Displays the total number of individual disk IO requests completed per second. This performance collection rule collects information only for disks that are used by Exchange 2013 to store logs, databases, etc.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Disk Size (MB)

Displays the total size of disk, in megabytes. This performance collection rule collects information only for disks that are used by Exchange 2013 to store logs, databases, etc.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Disk Writes/sec

Displays the total number of individual disk IO requests completed per second. This performance collection rule collects information only for disks that are used by Exchange 2013 to store logs, databases, etc.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: E2E Deliver <=90sec

Displays the number of recipients on normal priority messages whose end-to-end latency after delivery to mailbox falls within <=90sec bucket.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: E2E Latency Percentile 95

Displays the 95th percentile of message latency – the worst latency for 95% of messages delivered during the sampling interval.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: E2E Latency Send to External <=90sec

Number of recipients on normal priority messages whose end-to-end latency after delivery to an external destination falls within <=90sec latency bucket.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: EWS Response Time (ms)

Exchange Web Service Response Time is the average time (in milliseconds) that has elapsed between the beginning and end of requests.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: HTTP Proxy Failure Rate (%)

Displays the percentage of connectivity related failures between this Client Access Server and MBX servers over the last 200 samples.

|  |  |  |
| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: HTTP Proxy Requests/sec

Displays the number of proxy requests processed each second.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: LDAP Search Time (ms)

LDAP Search Time is the time (in milliseconds) taken to send an LDAP search request and receive a response.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Messages Received/sec

Displays the average number of received messages per second for the given Organization, all connectors are taken into account.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Messages Sent/sec

Displays the average number of sent messages per second for the given Organization, all connectors are taken into account.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Outstanding Proxy Requests

Displays the number of concurrent outstanding proxy requests.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Private Memory Size (%)

Displays the current size of Private Memory that exchange server has allocated. The value is expressed as a percentage of server’s physical memory. Private Memory cannot be shared with other processes. This performance collection rule collects multiple instances: Total, Exchange (private memory allocated by all processes related to Exchange 2013), Nonexchange (private memory allocated by processes, which are not related to Exchange 2013).

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Private Memory Size (MB)

Displays the current size of Private Memory, in megabytes, that exchange server has allocated. Private Memory cannot be shared with other processes. This performance collection rule collects multiple instances: Total, Exchange (private memory allocated by all processes related to Exchange 2013), Nonexchange (private memory allocated by processes, which are not related to Exchange 2013).

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Queue Length

Displays the queue length for the given Exchange Server. This performance collection rule collects multiple instances – one per queue type (Submission, Delivery, Poison, etc.).

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Queues by Type Count

Displays the number of queues for the given Exchange Server. This performance collection rule collects multiple instances – one per queue type (Submission, Delivery, Poison, etc.).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Requests/sec

Displays the number of requests processed each second which may not involve proxying to a Mailbox server.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
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##### Exchange 2013 Server: SMTP Bytes Received/Sec

Displays the number of bytes Received per second by transport service. This performance collection rule collects multiple instances – one per transport service.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: SMTP Bytes Sent/Sec

Displays the number of bytes sent per second by transport service. This performance collection rule collects multiple instances – one per transport service.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: SMTP Connections (Current)

Displays the number of connections for the transport service. This performance collection rule collects multiple instances – one per transport service.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Store Messages Submitted/sec

Displays the number of messages submitted to mailbox databases, per second.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: System Total Memory (MB)

Displays the total server memory, in megabytes.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Server: Transport Queue Database Size (MB)

Displays the total size of Exchange 2013 transport queue database, in megabytes.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

### Exchange 2013 Service Perspective

This is an abstract class, which serves as a base for different service-level objects like Organization, Active Directory Site or Database Availability Group.

#### Exchange 2013 Service Perspective - Discoveries

##### Exchange 2013: Discover Microsoft Exchange Organization and Server objects

This discovery rule discovers Exchange 2013 Organizations, Servers, AD Sites, Database Availability Groups, Health Sets, Windows Services, IIS Application Pools, Mailbox Database Copies, and all other related objects. It discovers all relevant relationships as well.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | No | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 14400 | | Start delay (seconds) | The discovery script will sleep for the specified time interval. | 0 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 900 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to true. | false | |  |
|  |  |  |

### Exchange 2013 Windows Service

The object of this class represents a Windows Service, which is either a part of Exchange 2013 installation or is required by Exchange 2013 (for example: IIS Admin Service).

#### Exchange 2013 Windows Service - Discoveries

##### Exchange 2013: Discover Microsoft Exchange Organization and Server objects

This discovery rule discovers Exchange 2013 Organizations, Servers, AD Sites, Database Availability Groups, Health Sets, Windows Services, IIS Application Pools, Mailbox Database Copies, and all other related objects. It discovers all relevant relationships as well.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | No | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 14400 | | Start delay (seconds) | The discovery script will sleep for the specified time interval. | 0 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 900 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to true. | false | |  |
|  |  |  |

#### Exchange 2013 Windows Service - Unit monitors

##### Exchange 2013 Windows Service State

The monitor checks the state of the Exchange Windows Service to ensure that it is in a "running" state (only services with start type set to “Automatic” are considered). If that is not the case over multiple checks, then an alert is raised.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | Yes | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Number of Checks | Indicates how many checks should fail before an alert is raised. | 3 | |  |
|  |  |  |

#### Exchange 2013 Windows Service - Rules (non-alerting)

##### Exchange 2013 Windows Service: CPU Utilization (%)

Displays the amount (percentage) of CPU resources used by the given Exchange Windows Service. This performance collection rule collects multiple instances – one instance per Exchange Windows Service.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Windows Service: Pool Non Paged Memory Size (MB)

Displays the amount of memory (Non-Paged Bytes) used by the given Exchange Windows Service. The value is expressed in megabytes. This performance collection rule collects multiple instances – one instance per Exchange Windows Service.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Windows Service: Pool Paged Memory Size (MB)

Displays the amount of memory (Paged Bytes) used by the given Exchange Windows Service. The value is expressed in megabytes. This performance collection rule collects multiple instances – one instance per Exchange Windows Service.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Windows Service: Private Memory Size (%)

Displays the amount of memory (Private Bytes) used by the given Exchange Windows Service. The value is expressed as a percentage of server’s physical memory. This performance collection rule collects multiple instances – one instance per Exchange Windows Service.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

##### Exchange 2013 Windows Service: Private Memory Size (MB)

Displays the amount of memory (Private Bytes) used by the given Exchange Windows Service. The value is expressed in megabytes. This performance collection rule collects multiple instances – one instance per Exchange Windows Service.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | Name | Description | Default value | | Enabled |  | Yes | | Generate Alerts |  | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 600 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | | Verbose Logging | Workflow will write verbose diagnostic events to the Operations Manager event log if this parameter is set to 1. | 0 | |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |

## Appendix: Management Pack Reports

Note

This Management Pack uses the customized version of Microsoft Generic Performance Report. Please consider following special notes related to the behavior of performance report in this Management Pack:

* Containment is enforced for object picker control in this report. I.e., it does not matter if you use “Add Group…” or “Add Object…” button – report will output the same content in both cases.
* Report will generate multiple charts for the same target object and rule if the rule collects multiple instances of performance data. For example: if you select some server and “Exchange 2013: Private Memory Size (MB)” rule, you will get three (3) charts – one per instance - \_Total, Exchange (Total), NonExchange(Total).
* Report takes into account both selected objects and rules, so by selecting rule you also define which classes are used. For example, if you select Exchange Organization as the scope (Objects parameter) and “Exchange 2013 IIS App Pool: CPU Utilization (%)”, you will get multiple charts – one per IIS Application Pool hosted on an Exchange Server contained in the selected Exchange Organization.

### Exchange 2013 - All Performance

##### How does this report work?

This report shows selected objects and performance counter values graphically over time.

The report offers selection one or multiple objects and one or multiple performance rules, defined in Exchange 2013 Management Pack. This report sources from hourly or daily aggregated data. For the selected time range, the report allows to report on performance data with charts and a data tables.

##### What Parameters are offered?

|  |  |
| --- | --- |
| Data Aggregation | Report can be run using the hourly or daily aggregations of data. |
| Date/Time Selection | Allows defining a time interval for the report with relative or fixed dates. |
| Business hours | Allows defining one business hours time range and the weekdays it applies to. If business hours are defined this report only reports within this range. Business hours only works if hourly aggregation is selected. |
| Histogram | Allows selecting the values used for the x-axis of the report. |
| Objects | Allows to define the report’s scope. |
| Rule | Allows to select which rules should be included into the output of the report. |

### Exchange 2013 - IIS Application Pool Performance

##### How does this report work?

This report shows selected objects and performance counter values graphically over time.

The report offers selection one or multiple objects and one or multiple performance rules, defined in Exchange 2013 Management Pack and related to Exchange 2013 IIS Application Pools. This report sources from hourly or daily aggregated data. For the selected time range, the report allows to report on performance data with charts and a data tables.

##### What Parameters are offered?

|  |  |
| --- | --- |
| Data Aggregation | Report can be run using the hourly or daily aggregations of data. |
| Date/Time Selection | Allows defining a time interval for the report with relative or fixed dates. |
| Business hours | Allows defining one business hours time range and the weekdays it applies to. If business hours are defined this report only reports within this range. Business hours only works if hourly aggregation is selected. |
| Histogram | Allows selecting the values used for the x-axis of the report. |
| Objects | Allows to define the report’s scope. |
| Rule | Allows to select which rules should be included into the output of the report. |

### Exchange 2013 - Mailbox Database Copy Performance

##### How does this report work?

This report shows selected objects and performance counter values graphically over time.

The report offers selection one or multiple objects and one or multiple performance rules, defined in Exchange 2013 Management Pack and related to Exchange 2013 Mailbox Database Copies. This report sources from hourly or daily aggregated data. For the selected time range, the report allows to report on performance data with charts and a data tables.

##### What Parameters are offered?

|  |  |
| --- | --- |
| Data Aggregation | Report can be run using the hourly or daily aggregations of data. |
| Date/Time Selection | Allows defining a time interval for the report with relative or fixed dates. |
| Business hours | Allows defining one business hours time range and the weekdays it applies to. If business hours are defined this report only reports within this range. Business hours only works if hourly aggregation is selected. |
| Histogram | Allows selecting the values used for the x-axis of the report. |
| Objects | Allows to define the report’s scope. |
| Rule | Allows to select which rules should be included into the output of the report. |

### Exchange 2013 - Organization Health

##### How does this report work?

This report shows for selected Exchange Organization the time in state during the selected report duration. Time in state is summarized by Exchange Organization’s Entity Health aggregate monitor.

For every managed object within System Center Operations Manager, monitors determine an objects time in state and then roll-up to an objects overall health. This report shows an objects time in state as per the monitors that roll-up within the monitoring hierarchy.

##### What Parameters are offered?

|  |  |
| --- | --- |
| Data Aggregation | Report can be run using the hourly or daily aggregations of data. |
| Date/Time Selection | Allows defining a time interval for the report with relative or fixed dates. |
| Business hours | Allows defining one business hours time range and the weekdays it applies to. If business hours are defined this report only reports within this range. Business hours only works if hourly aggregation is selected. |
| Objects | Allows selection of Groups or Objects to show Alerts for.  When using the object picker selecting **Add Group** will return the Group and all objects it contains. **Add Object** returns only the selected object.  This parameter has the predefined filter applied, so only Exchange Organization objects will appear in the search when you use “Add Object…” button. |
| Downtime | When calculating downtime for an object in the report a user can specify whether certain states count as up or downtime. By checking the box next to the state this determines that state to be downtime. |

### Exchange 2013 - Organization Performance

##### How does this report work?

This report shows selected objects and performance counter values graphically over time.

The report offers selection one or multiple objects and one or multiple performance rules, defined in Exchange 2013 Management Pack and related to Exchange 2013 Organization in its entirety. This report sources from hourly or daily aggregated data. For the selected time range, the report allows to report on performance data with charts and a data tables.

##### What Parameters are offered?

|  |  |
| --- | --- |
| Data Aggregation | Report can be run using the hourly or daily aggregations of data. |
| Date/Time Selection | Allows defining a time interval for the report with relative or fixed dates. |
| Business hours | Allows defining one business hours time range and the weekdays it applies to. If business hours are defined this report only reports within this range. Business hours only works if hourly aggregation is selected. |
| Histogram | Allows selecting the values used for the x-axis of the report. |
| Objects | Allows to define the report’s scope. |
| Rule | Allows to select which rules should be included into the output of the report. |

### Exchange 2013 - Performance Top N

##### How does this report work?

This report shows for selected objects and a specific performance collection rule the top or bottom “N” objects and instances.

This report shows a chart and a table. All found objects and instances are displayed in the table and are ranked by the average value of the selected performance metric. Some objects and instances may have the same rank if the corresponding value is the same. The chart shows columns for every rank. The chart also indicates with an error bar the fluctuation in value of this object for the selected reporting time range. If the error bar is very small this object was for the reporting time range always close to value displayed by the column. If it is very wide the object fluctuates and the top or bottom value should be not taken as the value which is to be expected.

The details table contains following columns:

|  |  |
| --- | --- |
| Rank | Object and instance rank. Some object-instance pairs may share the same rank if they have the same Average Value for the selected time range. |
| Object | Object name. |
| Instance | Performance counter instance name. |
| Sample Count | Number of performance counter samples that fall into selected time interval. |
| Min Value | Minimal observed value of performance counter within the selected time interval. |
| Max Value | Maximal observed value of performance counter within the selected time interval. |
| Average Value | Average value of performance counter within the selected time interval. |
| Standard Deviation | Standard deviation of performance counter’s value within the selected time interval. Describes the amount of variation from the average value of the performance metric. |

##### What Parameters are offered?

|  |  |
| --- | --- |
| Date/Time Selection | Allows defining a time period for the report with relative or fixed dates. |
| Algorithm | Allows choosing if Top or Bottom is the algorithm to use. |
| N | Allows entering the value using in conjunction with the algorithm (e.g. Top 5). |
| Objects | Allows to define the report’s scope. |
| Rule | Allows to select which rule should be used to rank objects and instances. |
| Instance filter | Allows to filter the output by the name of performance counter instance. Substring logics is used for this parameter (instance name should contain the specified string). Leave empty if you do not need any filtering. |

##### Special notes

* Containment is enforced for object picker control in this report. I.e., it does not matter if you use “Add Group…” or “Add Object…” button – report will output the same content in both cases.
* You may click on the object name in the details table to drill down to Performance Detail Report.

### Exchange 2013 - Server CPU and Memory Performance

##### How does this report work?

This report shows selected objects and performance counter values graphically over time.

The report offers selection one or multiple objects and one or multiple performance rules, defined in Exchange 2013 Management Pack and related to Exchange 2013 Server (from CPU and Memory perspectives). This report sources from hourly or daily aggregated data. For the selected time range, the report allows to report on performance data with charts and a data tables.

##### What Parameters are offered?

|  |  |
| --- | --- |
| Data Aggregation | Report can be run using the hourly or daily aggregations of data. |
| Date/Time Selection | Allows defining a time interval for the report with relative or fixed dates. |
| Business hours | Allows defining one business hours time range and the weekdays it applies to. If business hours are defined this report only reports within this range. Business hours only works if hourly aggregation is selected. |
| Histogram | Allows selecting the values used for the x-axis of the report. |
| Objects | Allows to define the report’s scope. |
| Rule | Allows to select which rules should be included into the output of the report. |

### Exchange 2013 - Server Health

##### How does this report work?

This report shows for selected Exchange Server the time in state during the selected report duration. Time in state is summarized by Exchange Server’s Entity Health aggregate monitor.

For every managed object within System Center Operations Manager, monitors determine an objects time in state and then roll-up to an objects overall health. This report shows an objects time in state as per the monitors that roll-up within the monitoring hierarchy.

##### What Parameters are offered?

|  |  |
| --- | --- |
| Data Aggregation | Report can be run using the hourly or daily aggregations of data. |
| Date/Time Selection | Allows defining a time interval for the report with relative or fixed dates. |
| Business hours | Allows defining one business hours time range and the weekdays it applies to. If business hours are defined this report only reports within this range. Business hours only works if hourly aggregation is selected. |
| Objects | Allows selection of Groups or Objects to show Alerts for.  When using the object picker selecting **Add Group** will return the Group and all objects it contains. **Add Object** returns only the selected object.  This parameter has the predefined filter applied, so only Exchange Organization objects will appear in the search when you use “Add Object…” button. |
| Downtime | When calculating downtime for an object in the report a user can specify whether certain states count as up or downtime. By checking the box next to the state this determines that state to be downtime. |

### Exchange 2013 - Server Mail Process Performance

##### How does this report work?

This report shows selected objects and performance counter values graphically over time.

The report offers selection one or multiple objects and one or multiple performance rules, defined in Exchange 2013 Management Pack and related to Exchange 2013 Server (mail delivery process). This report sources from hourly or daily aggregated data. For the selected time range, the report allows to report on performance data with charts and a data tables.

##### What Parameters are offered?

|  |  |
| --- | --- |
| Data Aggregation | Report can be run using the hourly or daily aggregations of data. |
| Date/Time Selection | Allows defining a time interval for the report with relative or fixed dates. |
| Business hours | Allows defining one business hours time range and the weekdays it applies to. If business hours are defined this report only reports within this range. Business hours only works if hourly aggregation is selected. |
| Histogram | Allows selecting the values used for the x-axis of the report. |
| Objects | Allows to define the report’s scope. |
| Rule | Allows to select which rules should be included into the output of the report. |

### Exchange 2013 - Server Mail Process SMTP Performance

##### How does this report work?

This report shows selected objects and performance counter values graphically over time.

The report offers selection one or multiple objects and one or multiple performance rules, defined in Exchange 2013 Management Pack and related to Exchange 2013 Server (metrics related to SMTP performance). This report sources from hourly or daily aggregated data. For the selected time range, the report allows to report on performance data with charts and a data tables.

##### What Parameters are offered?

|  |  |
| --- | --- |
| Data Aggregation | Report can be run using the hourly or daily aggregations of data. |
| Date/Time Selection | Allows defining a time interval for the report with relative or fixed dates. |
| Business hours | Allows defining one business hours time range and the weekdays it applies to. If business hours are defined this report only reports within this range. Business hours only works if hourly aggregation is selected. |
| Histogram | Allows selecting the values used for the x-axis of the report. |
| Objects | Allows to define the report’s scope. |
| Rule | Allows to select which rules should be included into the output of the report. |

### Exchange 2013 - Server Storage Performance

##### How does this report work?

This report shows selected objects and performance counter values graphically over time.

The report offers selection one or multiple objects and one or multiple performance rules, defined in Exchange 2013 Management Pack and related to Exchange 2013 Server storage performance. This report sources from hourly or daily aggregated data. For the selected time range, the report allows to report on performance data with charts and a data tables.

##### What Parameters are offered?

|  |  |
| --- | --- |
| Data Aggregation | Report can be run using the hourly or daily aggregations of data. |
| Date/Time Selection | Allows defining a time interval for the report with relative or fixed dates. |
| Business hours | Allows defining one business hours time range and the weekdays it applies to. If business hours are defined this report only reports within this range. Business hours only works if hourly aggregation is selected. |
| Histogram | Allows selecting the values used for the x-axis of the report. |
| Objects | Allows to define the report’s scope. |
| Rule | Allows to select which rules should be included into the output of the report. |

### Exchange 2013 - Top biggest mailboxes

##### How does this report work?

This report shows N mailboxes with highest or lowest rank, within the selected scope. Mailboxes can be ranked by either by size or by number of stored items. Also, report offers several charts:

* Databases with biggest mailboxes
* Organizational units with biggest mailboxes
* Average mailbox size by rank
* Average mailbox item count by rank

The details table contains following columns:

|  |  |
| --- | --- |
| Row No | Row number. |
| Rank | Mailbox rank. Several mailboxes may share the same rank if they have the same size or contain the same number of items. |
| Mailbox | Mailbox name, User Principal Name (UPN) and Organizational Unit (OU). |
| Location | Mailbox database name, Server name (the name of the server that was used to retrieve the information will be displayed). |
| Size (MB) | Mailbox size in megabytes (the value of the last measurement that falls into specified time interval). |
| Size growth (MB) | Mailbox growth in megabytes. This value is calculated as difference between last and first measurements that fall into specified time interval. |
| Item count | The number of items contained in the mailbox. (The value of the last measurement that falls into specified time interval.) |
| Item count growth | Mailbox growth in terms of contained items. This value is calculated as difference between last and first measurements that fall into specified time interval. |

##### What Parameters are offered?

|  |  |
| --- | --- |
| Date/Time Selection | Allows defining a time interval for the report with relative or fixed dates. |
| Mode | Suggest several ways of ranking:   * Biggest mailboxes (used space); * Mailboxes with most intensive growth (used space). * Biggest mailboxes (number of items). * Mailboxes with most intensive growth (number of items). |
| Algorithm | Allows choosing if Top or Bottom is the algorithm to use. |
| N | Allows entering the value using in conjunction with the algorithm (e.g. Top 5). |
| Objects | Allows to define the report’s scope. Note that objects of “Exchange 2013: Mailbox Database Copy” class are used to determine which Mailbox Databases should be included into report’s scope, so you should select either objects of this class or objects that contain/host them. |
| Organizational unit filter | Allows to filter mailboxes by user’s Organizational Unit (OU). Substring logics is used for this parameter (OU should contain the specified string). Leave empty if you do not need any filtering. |

##### Special notes

* Containment is enforced for object picker control in this report. I.e., it does not matter if you use “Add Group…” or “Add Object…” button – report will output the same content in both cases.

### Exchange 2013 - Top mailbox databases by mailbox count

##### How does this report work?

Top/Bottom report for mailboxes databases. Mailbox databases are ranked by number of mailboxes.

This report shows a chart and a table. All found mailbox databases are displayed in the table and are ranked by the average number of mailboxes. Some mailbox databases may have the same rank if they host the same number of mailboxes. The chart shows columns for every rank. The chart also indicates with an error bar the fluctuation in value of this object for the selected reporting time range.

The details table contains following columns:

|  |  |
| --- | --- |
| Rank | Object and instance rank. Some object-instance pairs may share the same rank if they have the same Average Value for the selected time range. |
| Object | Organization name. |
| Instance | Mailbox database name. |
| Sample Count | Number of performance counter samples that fall into selected time interval. |
| Min Value | Minimal observed number of mailboxes within the selected time interval. |
| Max Value | Maximal observed number of mailboxes within the selected time interval. |
| Average Value | Average number of mailboxes within the selected time interval. |
| Standard Deviation | Standard deviation of performance counter’s value within the selected time interval. Describes the amount of variation from the average value of the performance metric. |

##### What Parameters are offered?

|  |  |
| --- | --- |
| Date/Time Selection | Allows defining a time period for the report with relative or fixed dates. |
| Algorithm | Allows choosing if Top or Bottom is the algorithm to use. |
| N | Allows entering the value using in conjunction with the algorithm (e.g. Top 5). |
| Objects | Allows to define the report’s scope. |
| Mailbox database filter | Allows to filter the output by the name of mailbox database. Substring logics is used for this parameter (mailbox database name should contain the specified string). Leave empty if you do not need any filtering. |

##### Special notes

* Containment is enforced for object picker control in this report. I.e., it does not matter if you use “Add Group…” or “Add Object…” button – report will output the same content in both cases.
* Object Picker has the predefined filter set to display Exchange Organizations only.
* You may click on the Exchange Organization name in the details table to drill down to Performance Detail Report.

### Exchange 2013 - Windows Service Performance

##### How does this report work?

This report shows selected objects and performance counter values graphically over time.

The report offers selection one or multiple objects and one or multiple performance rules, defined in Exchange 2013 Management Pack and related to Exchange 2013 Windows Service. This report sources from hourly or daily aggregated data. For the selected time range, the report allows to report on performance data with charts and a data tables.

##### What Parameters are offered?

|  |  |
| --- | --- |
| Data Aggregation | Report can be run using the hourly or daily aggregations of data. |
| Date/Time Selection | Allows defining a time interval for the report with relative or fixed dates. |
| Business hours | Allows defining one business hours time range and the weekdays it applies to. If business hours are defined this report only reports within this range. Business hours only works if hourly aggregation is selected. |
| Histogram | Allows selecting the values used for the x-axis of the report. |
| Objects | Allows to define the report’s scope. |
| Rule | Allows to select which rules should be included into the output of the report. |

## Appendix: Exchange health sets

The Exchange Server 2013 Management Pack relies on the Managed Availability feature in Exchange 2013. In Managed Availability, each component in Exchange 2013 monitors itself using probes, monitors and responders. Each Exchange 2013 component that implements Managed Availability is referred to as a health set. The following tables list all the health sets available in Exchange 2013.

Note

Only the health sets that apply to your Exchange deployment are seen in the SCOM console. Therefore, depending on your configuration, some of these health sets may not be present in your deployment.

### Customer Touch Points Health Sets

| Health set | Server Role | Description |
| --- | --- | --- |
| ActiveSync | CAS, Mailbox | Monitors the overall health of the Exchange ActiveSync service for mobile clients. |
| Autodiscover | CAS | Monitors the overall health of the Autodiscover service for clients. |
| Compliance | CAS | Monitors the health of compliance features. |
| ECP | CAS, Mailbox | Monitors the overall health of the Exchange Administration Center (EAC), as well as the overall health of the Outlook Web App end user setting service. |
| EWS | CAS | Monitors the overall health of Exchange Web Services. |
| IMAP | CAS | Monitors the overall health and availability of the IMAP4 service and IMAP4 client connectivity. |
| Outlook | CAS | Monitors the health of Outlook client connectivity. |
| OWA | CAS | Monitors the overall health of the Outlook Web App service. |
| POP | CAS | Monitors the overall health and availability of the POP3 service and POP3 client connectivity. |
| PublicFolders | Mailbox | Monitors the overall health of public folder availability and replication in your organization. |
| RPS | CAS, Mailbox | Monitors the overall health of the Remote PowerShell service. |
| SiteMailbox | Mailbox | Monitors the overall health and accessibility of site mailboxes in your organization. |
| UM | CAS | Monitors the overall health of the Unified Messaging service in your organization. |

### Service Components Health Sets

| Health set | Server Role | Description |
| --- | --- | --- |
| ActiveSync.Protocol | Mailbox | Monitors the Exchange ActiveSync communications protocol on the Mailbox server. |
| ActiveSync.Proxy | CAS | Monitors the Exchange ActiveSync infrastructure on the Client Access server. |
| Antimalware | Mailbox | Monitors the health of the basic anti-malware protection feature. |
| Antispam | Mailbox | Monitors the health of the basic anti-spam protection feature. |
| Autodiscover.Protocol | Mailbox | Monitors the Autodiscover communications protocol on the Mailbox server. |
| Autodiscover.Proxy | CAS | Monitors the availability of the Autodiscover proxy infrastructure on the Client Access server. |
| Classification | Mailbox | Monitors the health of the Data Loss Prevention (DLP) feature. |
| ClientAccess.Proxy | CAS | Monitors the availability of the proxy infrastructure on the Client Access server. |
| DataProtection | CAS, Mailbox | Monitors the redundancy of databases in a database availability group (DAG). |
| ECP.Proxy | CAS | Monitors the availability of the EAC proxy infrastructure on the Client Access server. |
| Ediscovery.Procotol | Mailbox | Monitors the eDiscovery protocol on the Mailbox server. |
| EDS | CAS, Mailbox | Extracts performance counters and generates notifications when a threshold is exceeded. |
| EventAssistants | Mailbox | Monitors the health of event-based mailbox assistants. |
| EWS.Protocol | Mailbox | Monitors the Exchange Web Services communications protocol on the Mailbox server. |
| EWS.Proxy | CAS | Monitors the availability of the Exchange Web Services proxy infrastructure on the Client Access server. |
| FfoQuarantine | Mailbox | Monitors the health of the Forefront message quarantine feature. |
| FfoTransport | Mailbox | Monitors the Transport components in Forefront such as server and agent latency, DSNs generated, transport databases, SMTP, mailbox transport, and shadow redundancy. |
| FfoUMC | CAS | Monitors the overall health of the Forefront administration website. |
| FfoWebService | CAS | Monitors the health of the Forefront web service. |
| FIPS | CAS, Mailbox | Monitors the health of a Transport rules component that analyzes messages. |
| FreeBusy | Mailbox | Monitors the overall health of the free/busy information in your organization. |
| FrontendTransport | CAS, Mailbox | Monitors the overall health of the Frontend Transport service that runs on Client Access servers. |
| HubTransport | CAS, Mailbox | Monitors the overall health of the Hub Transport service that runs on Mailbox servers. |
| IMAP.Protocol | Mailbox | Monitors the IMAP4 protocol on the Mailbox server. |
| IMAP.Proxy | CAS | Monitors the availability of the IMAP4 proxy infrastructure on the Client Access server. |
| MailboxMigration | Mailbox | Monitors the overall health of the Migration Service. |
| MailboxTransport | Mailbox | Monitors the overall health of the Transport component that delivers messages to and picks messages up from user mailboxes. |
| MailFlow | CAS | Monitors the health of the mail flow paths within your organization. |
| MessageTracing | Mailbox | Monitors the overall health and availability of message tracking and delivery reports. |
| Monitoring | CAS, Mailbox | Monitors the health of the monitoring service itself. |
| MRS | Mailbox | Monitors the overall health of the Mailbox Replication service. |
| MSExchangeCertificateDeployment | Mailbox | Monitors the state of certificates in your Exchange organization. |
| OAB | Mailbox | Monitors the overall health of offline address book (OAB) generation and distribution. |
| OAB.Proxy | CAS | Monitors the availability of the OAB proxy infrastructure on the Client Access server. |
| Outlook.Protocol | Mailbox | Monitors the MAPI protocol on the Mailbox server. |
| Outlook.Proxy | CAS | Monitors the availability of the Outlook Anywhere proxy infrastructure on the Client Access server. |
| OWA.Protocol | Mailbox | Monitors the Outlook Web App protocol on the Mailbox server. |
| OWA.Proxy | CAS | Monitors the availability of the Outlook Web App proxy infrastructure on the Client Access server. |
| POP.Protocol | Mailbox | Monitors the POP3 protocol on the Mailbox server. |
| POP.Proxy | CAS | Monitors the availability of the POP3 proxy infrastructure on the Client Access server. |
| PowershellDataProvider | CAS, Mailbox | Monitors the overall health of the Exchange Management Shell. |
| PushNotifications.Protocol | Mailbox | Monitors the push notifications protocol on the Mailbox server. |
| RemoteMonitoring | CAS, Mailbox | Monitors the health of the monitoring service on other servers. |
| RPS.Protocol | Mailbox | Monitors the Remote PowerShell protocol on the Mailbox server. |
| RPS.Proxy | CAS, Mailbox | Monitors the availability of the Remote PowerShell service proxy infrastructure on the Client Access server. |
| Search | CAS, Mailbox | Monitors the overall health of the Exchange Search service. |
| SMTP | CAS, Mailbox | Monitors the overall health of SMTP on Exchange servers. |
| Store | Mailbox | Monitors the overall health of the Exchange store on the Exchange servers. |
| Transport | CAS | Monitors Transport components such as server and agent latency, DSNs generated, transport databases, SMTP, mailbox transport, and shadow redundancy. |
| UM.CallRouter | CAS, Mailbox | Monitors the overall health of the Unified Messaging Call Router service. |
| UM.Protocol | Mailbox | Monitors the Unified Messaging protocol on the Mailbox server. |
| UserThrottling | CAS, Mailbox | Monitors the overall health of throttling policies in your organization. |

### Server Resources Health Sets

|  |  |  |
| --- | --- | --- |
| Health set | Server Role | Description |
| Clustering | Mailbox | Monitors the health of the Windows cluster service on a Mailbox server that is a DAG member. |
| DiskSpace | CAS, Mailbox | Monitors the disk space utilization on Exchange servers. |
| MailboxSpace | Mailbox | Monitors the overall health of mailbox databases. |
| Memory | CAS, Mailbox | Monitors the memory utilization on Exchange servers. |

### Key Dependencies Health Sets

|  |  |  |
| --- | --- | --- |
| Health set | Server Role | Description |
| AD | CAS, Mailbox | Monitors the availability of Active Directory. |
| Network | CAS, Mailbox | Checks to verify that the server is registered in DNS. |
| OWA.Protocol.Dep | Mailbox | Monitors the health of the OWA protocol dependency. |

## Appendix: Known Issues and Release Notes

##### Some objects discovered by Management Pack for Exchange Server 2013 change their name after upgrade from previous version.

Content of the key property "Name" of class "Microsoft.Exchange.15.Service" was changed in this version of the Management Pack. Database Availability Group, Active Directory Site and Client Access Array now have Exchange Organization name as prefix (**i.e.** 'Organization - DAG') of their own Name property. Thus, when upgrade is completed, new objects will be discovered for mentioned classes. Previously existed objects will be undiscovered.

##### Management Pack cannot discover several different Exchange Organizations which have the same name.

Several distinct Exchange Organizations with the same name are not supported and will be processed as a single organization.

##### Some rules are not being collected for localized editions of Exchange Server 2013.

Following rules are not being collected for non-English versions of Exchange Server 2013, even though performance collection rules are enabled:

* Exchange 2013 Database: I/O Database Reads Average Latency (ms)
* Exchange 2013 Database: I/O Database Writes Average Latency (ms)
* Exchange 2013 Database: I/O Log Reads Average Latency (ms)
* Exchange 2013 Database: I/O Log Writes Average Latency (ms)
* Exchange 2013 Database: Page Fault Stalls/sec
* Exchange 2013 Mailbox Database: Database Page Fault Stalls/sec
* Exchange 2013 Mailbox Database: I/O Database Reads Average Latency (ms)
* Exchange 2013 Mailbox Database: I/O Database Writes Average Latency (ms)
* Exchange 2013 Mailbox Database: I/O Log Reads Average Latency (ms)
* Exchange 2013 Mailbox Database: I/O Log Writes Average Latency (ms)
* Exchange 2013 Server: LDAP Search Time (ms)

There is no known workaround at a moment.

##### An error message may be shown for “Organizations” widget or “Exchange Servers” widget when the user opens dashboards after Management Pack has been deployed.

The following error may appear when you open dashboards shortly after the management pack has been imported:

Microsoft.EnterpriseManagement.Common.UnknownDatabaseException: Could not find stored procedure 'sdk.Microsoft\_Exchange\_15\_Visualization\_Components\_GetOrganizationGridData'

This error occurs because some Management Pack components have not yet been deployed to the System Center Operations Manager data warehouse database. Wait until the deployment process is completed and restart Operations Manager console to get the dashboard working.

##### Alerts generated by the previous version of the Management Pack for Exchange Server 2013 have unreadable name.

After upgrading of the Management Pack to version 15.0.620.19, alerts generated before the upgrade had the following name:

{2}

Now, the upgrade name is changed to “Exchange Health Set”.

##### The number of mailboxes could be displayed incorrectly at the “Exchange Servers” widget if the Active Database Copy has been moved to another member of Database Availability Group.

The number of mailboxes could be displayed incorrectly at the “Exchange Servers” widget if the Active Database Copy has been moved to another member of Database Availability Group. This happens because mailbox statistics collection is configured to run every 12 hours by default. In order to renew values please consider following options:

1. Wait until the next iteration of mailbox statistics collection process is completed.
2. Override “Exchange 2013: Mailbox statistics collection” rule to run more frequently. Please note that mailbox statistics collection may consume significant amount of resources at both monitored server and Operations Manager data warehouse database, thus it is not recommended to set the interval parameter to a value less than 3600 seconds (1 hour).

##### Some e-mail addresses may not be collected due to Email Addresses field length limitation.

When the contents of Email Addresses field exceed the total length of more than 1024 characters, some e-mail addresses may be omitted during Exchange 2013 mailbox properties collection process.