Guide to System Center Management Pack for SQL Server 2017+ Analysis Services

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The Operations Manager team encourages you to provide any feedback on the management pack by sending it to sqlmpsfeedback@microsoft.com.

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This guide is based on version 7.0.10.0 RTM of the management pack for SQL Server 2017+ Analysis Services.

Changes History

Release Date	Changes
October 2018 (7.0.10.0 RTM)	• Replaced the Core Library in the delivery with the version 7.0.7.0, that version which is delivered with the most recent RTM version of the management pack for SQL Server 2017+. • Improved displaying of the SSAS instance version (now shows Patch Level version instead of Version). • Added missed dependency monitors required to roll up the instance health appropriately. • Fixed alert for “Partition Storage Free Space” monitor. • Updated Summary dashboards. • Updated display strings.
June 2018 (7.0.8.0 CTP)	The original release of this management pack.

Supported Configurations

This management pack requires the following versions of System Center Operations Manager System:

- System Center Operations Manager 2012 R2;
- System Center Operations Manager 2016;
- System Center Operations Manager 1801;
- System Center Operations Manager 1807.

A dedicated Operations Manager management group is not required.

The following table details the supported configurations for the management pack:

Configuration	Support
SQL Server 2017+ Analysis Services	64-bit SQL Server 2017+ Analysis Services on 64-bit OS • Windows Server 2012 • Windows Server 2016

Clustered installation of SSAS	Yes
Agentless monitoring	Not supported
Virtual environment	Yes

Prerequisites

This management pack has been changed so that it now requires Microsoft SQL Server 2017+ Core Library of version 7.0.7.0, which is delivered within this management pack and as well as within the management pack for Microsoft SQL Server 2017+. If you have the Core Library of version 7.0.8.0 or higher installed in your test environment, it will not be possible to completely update the management pack for SSRS 2017+ to version 7.0.10.0, because SCOM cannot import a lower version of already installed either .MP or .MPB file. We recommend you entirely delete the CTP version of the management pack for SSRS 2017+ including the Core Library and then install the current RTM version of the management pack.

Management Pack Scope

The management pack for SQL Server 2017+ Analysis Services enables monitoring of the following features:

- An instance of SQL Server 2017+ Analysis Services running in one of these modes:
  - Multidimensional Mode;
  - Tabular Mode;
  - PowerPivot Mode;
- SQL Server 2017+ Analysis Services Databases;
- SQL Server 2017+ Analysis Services Database Partitions.

Please refer to the "Monitoring Scenarios" section for a complete list of monitoring scenarios supported by this management pack.

Mandatory Configuration

- Import the management pack.
- Associate Microsoft SQL Server Run As profiles with an account that has administrator permissions for both Windows Server and SQL Server Analysis Services instance.
- Enable the Agent Proxy option on all agents installed on the servers that are members of a cluster. It is not necessary to enable this option for standalone servers. For instructions, see the procedure that follows this list.
- Note that SQL Server Browser service is mandatory for Analysis Services discovery and monitoring. SQL Server Browser must be installed and turned on.

Important
MP performance was verified with the following configuration of SSAS on the agent: three SSAS instances with overall 100 databases deployed on them.

Note that while monitoring over 50 databases per agent you may breach the default thresholds specified for Private bytes and Handle Count monitors. This will cause frequent Health Service restarting. Please refer to the "Appendix: Known Issues and Troubleshooting" section for the details.

Files in this Management Pack

This management pack includes the following files:

File	Description
Microsoft.SQLServer.AnalysisServices.Windows.Discovery.mpb	Microsoft SQL Server 2017+ Analysis Services (Discovery).This management pack discovers Microsoft SQL Server 2017+ Analysis Services Instances and related objects. The management pack contains discovery logic only and requires a separate monitoring management pack to be imported to monitor the discovered objects.
Microsoft.SQLServer.AnalysisServices.Windows.Monitoring.mpb	Microsoft SQL Server 2017+ Analysis Services (Monitoring). This management pack enables the monitoring of Microsoft SQL Server 2017+ Analysis Services. It depends on Microsoft SQL 2017+ Analysis Services (Discovery) management pack.
Microsoft.SQLServer.AnalysisServices.Core.Views.mpb	Microsoft SQL Server 2017+ Analysis Services Core Library (Views). This management pack defines views for Microsoft SQL Server 2017+ Analysis Services.
Microsoft.SQLServer.AnalysisServices.Core.Library.mpb	Microsoft SQL Server 2017+ Analysis Services Core Library. This library contains basic components required for the monitoring of Microsoft SQL Server 2017+ Analysis Services.
Microsoft.SQLServer.Visualization.Library.mpb	Microsoft SQL Server Visualization Library. This library contains basic visual components required for SQL Server dashboards.

Management Pack Purpose

This management pack provides monitoring for SQL Server 2017+ Analysis Services instances, databases, and partitions.

In this section:

- Monitoring Scenarios
- How Health Rolls Up

For details on the discoveries, rules, monitors, views, and reports contained in this management pack, see Appendix: Management Pack Contents.

Monitoring Scenarios

Monitoring scenario	Description	Associated rules and monitors
SSAS Instance monitoring	This scenario provides the monitoring of health aspects of SSAS Instances.	• **Service State**. This monitor alerts when the Windows service for SSAS instance is not in running state for a period longer than the configured threshold. • **Memory Configuration Conflict with SQL Server**. This monitor alerts if there is an SQL Server relational database engine process running on the server, and TotalMemoryLimit configuration for SSAS instance is higher than the specified threshold, in order to ensure that SQL Server process has sufficient memory. • **TotalMemoryLimit Configuration**. This monitor alerts when the configured TotalMemoryLimit for SSAS instance exceeds the configured threshold, risking allocation of physical memory required for the operating system to perform the necessary basic functions (at least 2 GB). • **Memory Usage.** This monitor reports a warning when memory allocations by SSAS instance surpass the configured Warning Threshold, expressed as a percentage of TotalMemoryLimit setting for SSAS instance. The monitor issues a critical alert when these allocations surpass the configured Critical Threshold.

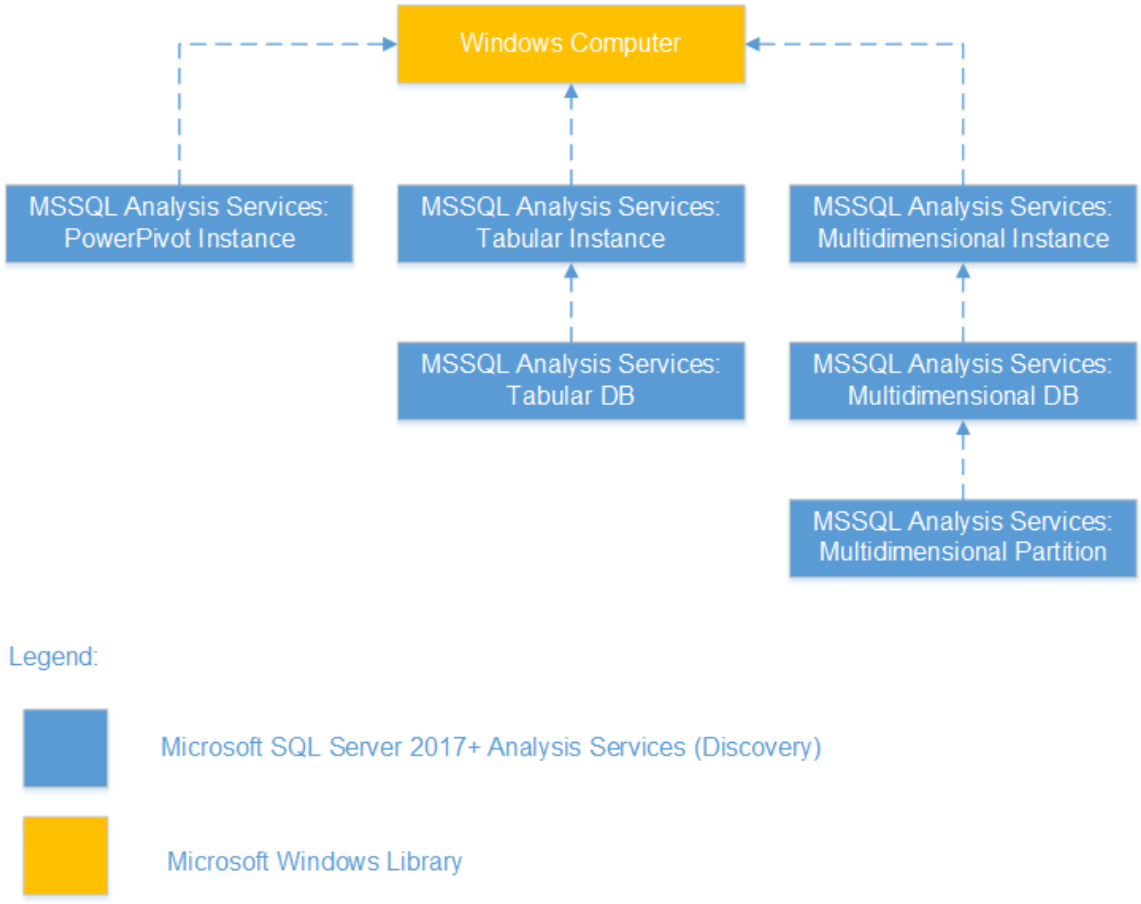
Monitoring scenario	Description	Associated rules and monitors
		• **Memory Usage on the Server.** This monitor observes the memory usage by non-SSAS processes on the server, to ensure that TotalMemoryLimit for Analysis Services is always available. • **Processing Pool I/O Job Queue length.** This monitor alerts when the length of the processing pool I/O job queue for SSAS instance is greater than the configured threshold. • **Processing Pool Job Queue length.** This monitor alerts when the length of the processing pool job queue for SSAS instance is greater than the configured threshold. • **Query Pool Queue length.** This monitor alerts when the length of the query pool queue for SSAS instance is greater than the configured threshold. • **Default Storage Free Space.** This monitor reports a warning when the available free space for the instance default storage drops below Warning Threshold setting, expressed as a percentage of the sum of estimated default storage folder (DataDir) size and disk free space. The monitor reports a critical alert when the available space drops below Critical Threshold. The monitor does not take into account the databases or partitions located in folders other than the default storage folder (DataDir). • **CPU utilization –** The monitor alerts if the CPU usage by the SSAS process is high.
SSAS Database monitoring	This scenario provides the monitoring for health aspects of SSAS Databases.	• **Database Free Space.** This monitor reports a warning when the available disk space for SSAS database storage folder drops below Warning Threshold setting, expressed as a percentage of the sum of the estimated database storage folder size and disk free space. The monitor reports a critical alert when the available space drops below Critical Threshold.

Monitoring scenario	Description	Associated rules and monitors
		• **Blocking Duration.** This monitor alerts if at least one session is blocked longer than the configured threshold. • **Blocking Session Count.** The monitor alerts when the number of sessions blocked for a longer period than the configured WaitMinutes setting exceeds the configured threshold.
SSAS Partition monitoring	This scenario provides the monitoring for health aspects of SSAS Multidimensional Database's partitions.	• **Partition Storage Free Space**. The monitor reports a warning when the available free space for the partition storage location drops below Critical Threshold setting, expressed as a percentage of the sum of the total size of the folder plus disk free space. The monitor reports a critical alert when the available space drops below Warning Threshold. The monitor does not monitor available space for the default storage location for SSAS instance.
Performance collection rules	This scenario collects various important performance metrics	SSAS: Database Disk Free Space (GB) SSAS: Database Drive Space Used By Others (GB) SSAS: Database Blocking Duration (minutes) SSAS: Database Free Space (%) SSAS: Database Free Space (GB) SSAS: Number of Database Blocked Sessions SSAS: Database Size (GB) SSAS: Database Storage Folder Size (GB) SSAS: Partition Size (GB) SSAS: Partition Free Space (GB) SSAS: Partition Used by Others (GB) SSAS: Partition Free Space (%) SSAS: Total Drive Size (GB) SSAS: Drive Used Space (GB) SSAS: Actual System Cache (GB) SSAS: Instance Free Space (%) SSAS: Instance Free Space (GB)

Monitoring scenario	Description	Associated rules and monitors
		SSAS: Cache Evictions/sec SSAS: Cache Inserts/sec SSAS: Cache KB added/sec SSAS: CPU utilization (%) SSAS: Default Storage Folder Size (GB) SSAS: Low Memory Limit (GB) SSAS: Cleaner Current Price SSAS: Memory Usage on the Server (GB) SSAS: Memory Usage on the Server (%) SSAS: Memory Usage by AS Non-shrinkable (GB) SSAS: Processing Pool I/O Job Queue Length SSAS: Processing Pool Job Queue Length SSAS: Processing Rows read/sec SSAS: Instance Memory (GB) SSAS: Instance Memory (%) SSAS: Query Pool Job Queue Length SSAS: Storage Engine Query Rows sent/sec SSAS: Total Memory Limit (GB) SSAS: Total Memory on the Server (GB) SSAS: Used Space on Drive (GB)
Alert rules	The rule notifies about occurred errors	An error occurred during execution of an SSAS 2017+ MP managed module

How Health Rolls Up

The following diagram shows how the health states of the objects roll up in this management pack.



Configure the Management Pack

This section provides guidance on configuring and tuning this management pack.

- Best Practice: Create a Management Pack for Customizations
- How to Import a Management Pack
- How to Enable Agent Proxy Option
- Security Configuration

Best Practice: Create a Management Pack for Customizations

The management pack for Microsoft SQL Server 2017+ Analysis Services 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 SQL Server 2017+ Analysis Services 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 management pack customizations and the default management pack, see the Using Management Packs article.

How to Create a New Management Pack for Customizations

To enable **Agent Proxy option**, complete the following steps:

1. Open the Operations Console and click the **Administration** button.
2. Right-click **Management Packs,** and then click **Create New Management Pack**.
3. Enter a name (for example, SQLMP 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.

How to Enable Agent Proxy Option

To enable **Agent Proxy option**, complete the 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**".

Security Configuration

Note
Monitoring under the low privilege is not supported.

Run As Profiles

When management pack for Microsoft SQL Server Analysis Services is imported for the first time, it creates two new Run As profiles:

- Microsoft SQL Server 2017+ Discovery Run As Profile – this profile is associated with all discoveries.
- Microsoft SQL Server 2017+ Monitoring Run As Profile – this profile is associated with all monitors and rules.

By default, all discoveries and monitors defined in SQL Server management pack use accounts defined in "Default Action Account" Run As profile. If the default action account for the given system does not have the necessary permissions to discover or monitor the instance of SQL Server Analysis Services, then those systems can be bound to more specific credentials in "Microsoft SQL Server 2017+" Run As profiles, which do have access.

Run As Profile Name	Associated Rules, Monitors, and Discoveries	Notes
Microsoft SQL Server 2017+ Discovery Run As Profile	MSSQL Analysis Services: Multidimensional DB Discovery MSSQL Analysis Services: Multidimensional Instance Discovery MSSQL Analysis Services: Multidimensional Partition Discovery	Account with administrator permissions for both Windows Server and

Run As Profile Name	Associated Rules, Monitors, and Discoveries	Notes
	MSSQL Analysis Services: PowerPivot Instance Discovery MSSQL Analysis Services: Tabular DB Discovery MSSQL Analysis Services: Tabular Instance Discovery	SQL Server Analysis Services instance should be used
Microsoft SQL Server 2017+ Monitoring Run As Profile	Blocking Duration Blocking Duration Blocking Session Count Blocking Session Count CPU Utilization (%) Database Free Space Database Free Space Default Storage Free Space Memory Configuration Conflict with SQL Server Memory Usage Memory Usage on the Server Partition Storage Free Space Processing Pool I/O Job Queue length Processing Pool Job Queue length Query Pool Queue length Service State Total Memory Limit Configuration SSAS: Actual System Cache (GB) SSAS: Cache added KB/sec SSAS: Cache Evictions/sec SSAS: Cache Inserts/sec SSAS: Cleaner Current Price SSAS: CPU utilization (%) SSAS: Database Blocking Duration (minutes) SSAS: Database Blocking Duration (minutes) SSAS: Database Disk Free Space (GB) SSAS: Database Disk Free Space (%) SSAS: Database Drive Space Used By Others (GB) SSAS: Database Drive Space Used By Others (GB) SSAS: Database Free Space (%) SSAS: Database Free Space (%) SSAS: Database Free Space (GB) SSAS: Database Free Space (GB) SSAS: Database Size (GB) SSAS: Database Size (GB) SSAS: Database Storage Folder Size (GB) SSAS: Database Storage Folder Size (GB) SSAS: Default Storage Folder Size (GB)	Account with administrator permissions for both Windows Server and SQL Server Analysis Services instance should be used

Run As Profile Name	Associated Rules, Monitors, and Discoveries	Notes
	SSAS: Drive Used Space (GB) SSAS: Drive Used Space (GB) SSAS: Instance Free Space (%) SSAS: Instance Free Space (GB) SSAS: Instance Memory (%) SSAS: Instance Memory (GB) SSAS: Low Memory Limit (GB) SSAS: Memory Usage by AS Non-shrinkable (GB) SSAS: Memory Usage on the Server (%) SSAS: Memory Usage on the Server (GB) SSAS: Number of Database Blocked Sessions SSAS: Number of Database Blocked Sessions SSAS: Partition Free Space (%) SSAS: Partition Free Space (GB) SSAS: Partition Size (GB) SSAS: Partition Used by Others (GB) SSAS: Processing Pool I/O Job Queue Length SSAS: Processing Pool Job Queue Length SSAS: Processing Rows read/sec SSAS: Query Pool Job Queue Length SSAS: Storage Engine Query Rows sent/sec SSAS: Total Drive Size (GB) SSAS: Total Drive Size (GB) SSAS: Total Drive Size (GB) SSAS: Total Memory Limit (GB) SSAS: Total Memory on the Server (GB) SSAS: Used Space on Drive (GB)	

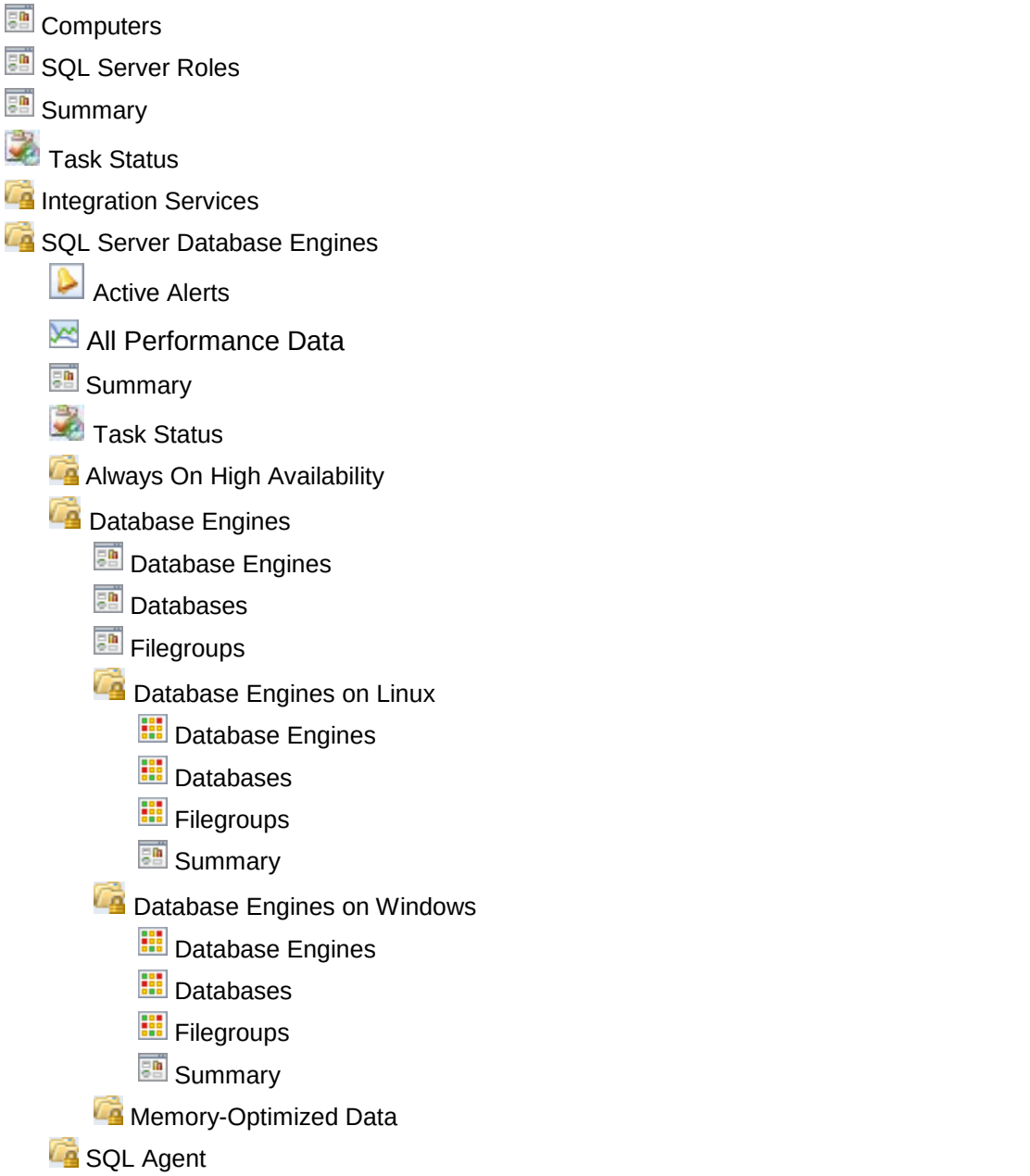
View Information in the Operations Manager Console

Version-Independent (Generic) Views and Dashboards

This management pack introduces a common folder structure, which will be used by future releases of management packs for different components of SQL Server. The following views and dashboards are version-independent and show information about all versions of SQL Server:

 Microsoft SQL Server 2017+

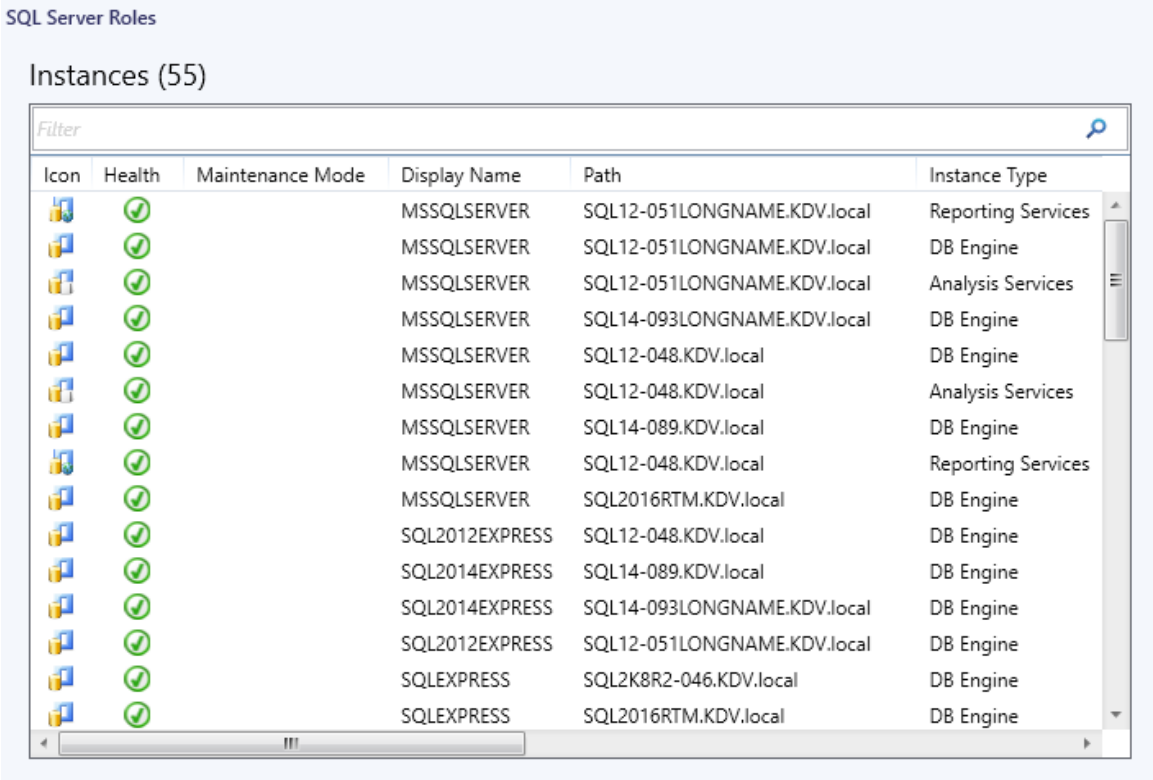
 Active Alerts



Note

The “Computers” view displays the computers on which the agents are installed and the management pack discovery is running. Note that this view does not display computers configured for agentless monitoring.

“SQL Server Roles” dashboard provides an information about all instances of SQL Server Database Engine, SQL Server Reporting Services, SQL Server Analysis Services and SQL Server Integration Services:



Analysis Services Views and Dashboards

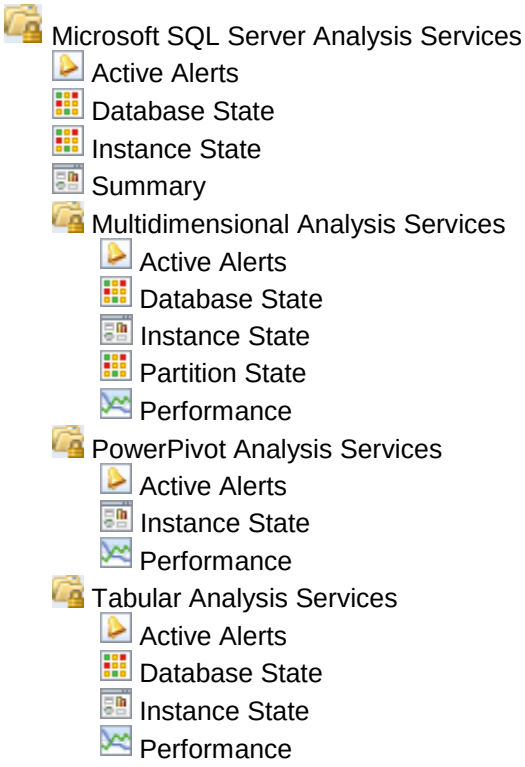
The management pack for Microsoft SQL Server 2017+ Analysis Services introduces a comprehensive set of state, performance and alert views, which can be found in the dedicated folder:

- Monitoring
  - Microsoft SQL Server 2017+
    - Microsoft SQL Server Analysis Services

Note

Some views may contain a very long list of objects or metrics. To find a specific object or group of objects, you can use **Scope**, **Search**, and **Find** buttons on the Operations Manager toolbar. For more information, see the “Finding Data and Objects in the Operations Manager Consoles” article in the Operations Manager Help.

This management pack includes a set of rich dashboards, which provide detailed information about SQL Server 2017+ Analysis Services (Instances) and Databases. The structure of the management pack views and folders is as follows:



Links

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

1. Management Pack Life Cycle
2. How to Import an Operations Manager Management Pack
3. Creating a Management Pack for Overrides
4. Managing Run As Accounts and Profiles
5. How to Export an Operations Manager Management Pack
6. How to Remove an Operations Manager Management Pack

With questions about the Operations Manager and management packs, see the System Center Operations Manager community forum (http://go.microsoft.com/fwlink/?LinkID=179635).

Important
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Appendix: Management Pack Contents

The management pack for Microsoft SQL Server 2017+ Analysis Services discovers objects of classes described in the following sections. Not all of the objects are automatically discovered. Use overrides to enable discovery of those objects that are not discovered automatically.

MSSQL Analysis Services: Event Log Collection Target

This object is used to collect errors from event logs of computers that have SSAS components.

MSSQL Analysis Services: Event Log Collection Target - Discoveries

SSAS Event Log Collection Target Discovery

This discovery rule discovers an event log collection target for a Microsoft SQL Server Analysis Services. This object is used to collect module errors from event log of computers that have SSAS components.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Frequency in seconds		14400

MSSQL Analysis Services: Event Log Collection Target - Rules (alerting)

An error occurred during execution of a SSAS MP managed module

The rule oversees the Event Log and watches for error events submitted by SSAS management pack. If one of the workflows (discovery, rule or monitor) fails, an event is logged and a critical alert is reported.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	Yes

Priority	Defines Alert Priority.	2
Severity	Defines Alert Severity.	2

MSSQL Analysis Services: Generic Instance on Windows

Microsoft SQL Server 2017+ Analysis Services generic instance on Windows.

MSSQL Analysis Services: Generic Instance on Windows - Unit monitors

Memory Usage

The monitor reports a warning, when memory allocations by SSAS instance surpass the configured Warning Threshold, expressed as a percentage of Total Memory Limit setting for SSAS instance. The monitor issues a critical alert, when these allocations surpass the configured Critical Threshold.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Critical Threshold (%)	The monitor will change the state to Critical if the value drops below this threshold.	95
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
Warning Threshold	The monitor will change the state to Warning if the value drops below this threshold.	80

Total Memory Limit Configuration

The monitor alerts, when the configured Total Memory Limit for SSAS instance exceeds the configured threshold, risking allocation of physical memory required for the operating system to perform its essential functions, at least 2 GB.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Interval Seconds	The recurring interval of time in seconds in which to run the workflow.	604800
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
Warning Threshold (GB)	The monitor alerts, when the configured Total Memory Limit for the operating system exceeds the configured threshold, risking allocation of physical memory required for the operating system to perform its essential functions, at least 2 GB.	2

Query Pool Queue length

The monitor alerts, when the size of query pool queue for SSAS instance is greater than the configured threshold.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True

Interval Seconds	The recurring interval of time in seconds in which to run the workflow.	900
Number of samples	Health State changes if the number of threshold breaches is greater than or equal to the Minimum Number of Breaches.	4
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
Warning Threshold	Health State changes if Analysis Services performance counter exceeds the threshold.	0

Processing Pool Job Queue length

The monitor alerts, when the length of the processing pool job queue for SSAS instance is greater than the configured threshold.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Interval Seconds	The recurring interval of time in seconds in which to run the workflow.	900
Number of samples	Health State changes if the number of threshold breaches is greater than or equal to the Minimum Number of Breaches.	4
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
Warning Threshold	Health State changes if Analysis Services performance counter exceeds the threshold.	0

Processing Pool I/O Job Queue length

The monitor alerts, when the length of the processing pool I/O job queue for SSAS instance is greater than the configured threshold.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Interval Seconds	The recurring interval of time in seconds in which to run the workflow.	900
Number of samples	Health State changes if the number of threshold breaches is greater than or equal to the Minimum Number of Breaches.	4
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
Warning Threshold	Health State changes if Analysis Services performance counter exceeds the threshold.	0

CPU Utilization (%)

The monitor alerts if SSAS process CPU usage exceeds the Threshold.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Critical Threshold (%)	The monitor alerts if the CPU utilization caused by SSAS process is higher than the threshold.	95
Interval Seconds	The recurring interval of time in seconds in which to run the workflow.	900
Number of samples	Indicates how many times a measured value should breach a threshold before the state is changed.	4
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

Memory Configuration Conflict with SQL Server

The monitor alerts if there is a SQL Server relational database engine process running on the server, and Total Memory Limit configuration for SSAS instance is higher than the specified threshold, in order to ensure that the SQL server process has sufficient memory.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Interval Seconds	The recurring interval of time in seconds in which to run the workflow.	604800

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
Warning Threshold (%)	Health State changes if there is an SQL Server relational database engine process running on the server, and Total Memory Limit configuration setting for SSAS instance exceeds the threshold.	40

Memory Usage on the Server

The monitor observes the memory usage by non Analysis Services processes on the server, to ensure Total Memory Limit for Analysis Services is always available.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Critical Threshold (%)	The monitor will change the state to Critical if the value drops below this threshold.	5
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

Warning Threshold	The monitor will change the state to Warning if the value drops below this threshold.	10

Service State

The monitor alerts when Windows service for SSAS instance is not in running state for a duration greater than the configured threshold.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Alert only if service startup type is automatic	This may only be set to 'True' or 'False'. If set to 'False', then alerts will be triggered, no matter what the startup type is set to. Default is 'True'.	true
Interval Seconds	The recurring interval of time in seconds in which to run the workflow.	60
Number of samples	Health State changes if the number of subsequent check failures is greater than or equal to the Minimum Number of Checks.	15
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

Default Storage Free Space

The monitor reports a warning, when the available free space for the default instance storage drops below Warning Threshold setting, expressed as percentage of the sum of estimated default storage folder (Data Directory) size and disk free space. The monitor reports a critical alert, when the available space drops below Critical Threshold. The monitor does not take into

account databases or partitions located in folders other than the default storage folder (Data Directory).

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Critical Threshold (%)	The monitor will change the state to Critical if the value drops below this threshold.	5
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
Warning Threshold	The monitor will change the state to Warning if the value drops below this threshold.	10

MSSQL Analysis Services: Generic Instance on Windows - Rules (non-alerting)

SSAS: Cache Inserts/sec

The rule collects SSAS rate of insertions into the cache.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Used Space on Drive (GB)

The rule collects the total amount of used disk space on the disk, where SSAS instance Data Directory is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Memory Usage on the Server (%)

The rule collects total memory usage in percent on the server, where SSAS instance is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No

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

SSAS: Total Memory on the Server (GB)

The rule collects the total size of memory in gigabytes on the computer, where SSAS instance is running.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Cache added KB/sec

The rule collects SSAS rate of memory added to the cache, KB/sec.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes

Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Memory Usage on the Server (GB)

The rule collects total memory usage in gigabytes on the server, where SSAS instance is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Memory Usage by AS Non-shrinkable (GB)

The rule collects non-shrinkable memory in gigabytes allocated by SSAS instance.

Name	Description	Default value

Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Total Memory Limit (GB)

The rule collects the configuration on SSAS instance for Total Memory Limit in gigabytes.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Storage Engine Query Rows sent/sec

The rule collects Rate of rows sent by server to clients.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Total Drive Size (GB)

The rule collects the total size in gigabytes of the drive, where the default storage folder (Data Directory) for SSAS instance is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Processing Pool Job Queue Length

The rule collects the length of the processing pool job queue.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Instance Memory (GB)

The rule collects the total size in gigabytes of memory allocated by SSAS instance.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Instance Memory (%)

The rule collects the total size in percent of memory allocated by SSAS instance.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Cache Evictions/sec

The rule collects SSAS rate of evictions from the cache.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Low Memory Limit (GB)

The rule collects the current configuration for the Low Memory Limit of SSAS instance in gigabytes.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Processing Rows read/sec

The rule collects Rate of rows read from all relational databases.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Processing Pool I/O Job Queue Length

The rule collects the length of SSAS processing pool I/O job queue.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Actual System Cache (GB)

The rule collects the size in gigabytes of system cache on the computer, where SSAS instance is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Cleaner Current Price

The rule collects current cost of memory as calculated by SSAS (cost per byte per unit of time) normalized and expressed on a scale from 0 to 1000.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Instance Free Space (GB)

The rule collects the amount of free space on the drive, where the default storage folder (Data Directory) for SSAS instance is located in gigabytes.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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	300

	before being closed and marked as failed.	

SSAS: Query Pool Job Queue Length

The rule collects the length of the query pool job queue.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Instance Free Space (%)

The rule collects the amount of free space on the drive, where the default storage folder (Data Directory) for SSAS instance is located, expressed as percentage of the sum of estimated default storage folder (Data Directory) size and disk free space.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Default Storage Folder Size (GB)

The rule collects the total size in gigabytes of the default storage folder (Data Directory) for SSAS instance, calculated as a sum of estimated sizes of the DBs and partitions located in the Data Directory.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: CPU utilization (%)

The rule collects rate of CPU usage by SSAS Instance.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

MSSQL Analysis Services: Multidimensional Instance

An installation of Microsoft SQL Server Analysis Services, Multidimensional Mode.

MSSQL Analysis Services: Multidimensional Instance - Discoveries

MSSQL Analysis Services: Multidimensional Instance Discovery

The object discovery discovers all instances of Microsoft SQL Server Analysis Services, Multidimensional Mode.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Interval (seconds)	The recurring interval of time in seconds in which to run the workflow.	14400
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

MSSQL Analysis Services: PowerPivot Instance

An installation of Microsoft SQL Server Analysis Services, PowerPivot Mode.

MSSQL Analysis Services: PowerPivot Instance - Discoveries

MSSQL Analysis Services: PowerPivot Instance Discovery

The object discovery discovers all instances of Microsoft SQL Server Analysis Services, PowerPivot Mode.

Name	Description	Default value

Enabled	Enables or disables the workflow.	Yes
Interval (seconds)	The recurring interval of time in seconds in which to run the workflow.	14400
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

MSSQL Analysis Services: Seed

An installation of Microsoft SQL Server 2017+ Analysis Services seed.

MSSQL Analysis Services: Seed - Discoveries

MSSQL Analysis Services: Seed Discovery

This object discovery discovers a seed for Analysis Services installation. This object indicates that the particular server computer contains Microsoft SQL Server 2017+ Analysis Services installation.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Frequency in seconds		14400

MSSQL Analysis Services: Tabular Instance

An installation of Microsoft SQL Server Analysis Services, Tabular Mode.

MSSQL Analysis Services: Tabular Instance - Discoveries

MSSQL Analysis Services: Tabular Instance Discovery

The object discovery discovers all instances of Microsoft SQL Server Analysis Services, Tabular Mode.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes

Interval (seconds)	The recurring interval of time in seconds in which to run the workflow.	14400
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

MSSQL Analysis Services: Windows Multidimensional DB

Microsoft SQL Server 2017+ Analysis Services Windows multidimensional database.

MSSQL Analysis Services: Windows Multidimensional DB - Discoveries

MSSQL Analysis Services: Multidimensional DB Discovery

The object discovery discovers all databases of an instance of Microsoft SQL Server Analysis Services, Multidimensional Mode.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Interval (seconds)	The recurring interval of time in seconds in which to run the workflow.	14400
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

MSSQL Analysis Services: Windows Multidimensional DB - Unit monitors

Blocking Duration

The monitor alerts if at least one session is blocked for a longer period than the configured threshold.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
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
Warning Threshold (min)	Health State changes if at least one session is blocked longer than the threshold.	1

Database Free Space

The monitor reports a warning, when the available disk space for SSAS multidimensional database storage folder drops below Warning Threshold setting, expressed as percentage of the sum of the estimated database storage folder size plus disk free space. The monitor reports a critical alert, when the available space drops below Critical Threshold. The monitor does not take into account partitions located in folders other than the DB storage folder.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Critical Threshold (%)	The monitor will change the state to Critical if the value drops below this threshold.	5
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
Warning Threshold	The monitor will change the state to Warning if the value drops below this threshold.	10

Blocking Session Count

The monitor alerts when the number of sessions that are blocked longer than the configured WaitMinutes setting exceeds the configured threshold.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Critical Threshold	Health State changes when the number of blocked sessions exceeds the threshold.	10
Interval Seconds	The recurring interval of time in seconds in which to run the workflow.	900
Number of samples	Health State changes if the number of threshold breaches is greater than or equal to the Minimum Number of Breaches.	4
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

Wait Minutes	Wait Minutes parameter defines the minimum waiting time for the session to be considered by the monitor.	1

MSSQL Analysis Services: Windows Multidimensional DB - Rules (non-alerting)

SSAS: Drive Used Space (GB)

The rule collects the total size in gigabytes of all files and folders on the drive, where the database storage folder is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Total Drive Size (GB)

The rule collects the total size in gigabytes of the drive, where the database storage folder is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No

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

SSAS: Database Drive Space Used By Others (GB)

The rule collects the amount of used space on the drive, where the database is located, other than space used by the database itself.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Database Blocking Duration (minutes)

The rule collects the longest blocking duration for currently blocked sessions.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes

Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Database Free Space (%)

The rule collects the amount of free space on the drive, where the storage folder of the database is located, expressed as percentage of the sum of estimated database storage folder size and disk free space. The rule does not take into account partitions located in folders other than the DB storage folder.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Database Storage Folder Size (GB)

The rule collects the estimated size of the database storage folder in gigabytes.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Number of Database Blocked Sessions

The rule collects the number of sessions that are currently blocked.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Database Size (GB)

The rule collects the total estimated database size in gigabytes including size of all partitions.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Database Free Space (GB)

The rule collects the amount of free space in gigabytes on the drive, where the storage folder of the database is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Database Disk Free Space (GB)

The rule collects the amount of free space on the drive, where the database is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

MSSQL Analysis Services: Windows Multidimensional Partition

Microsoft SQL Server 2017+ Analysis Services Windows multidimensional partition.

MSSQL Analysis Services: Windows Multidimensional Partition - Discoveries

MSSQL Analysis Services: Multidimensional Partition Discovery

The object discovery discovers all partitions for Microsoft SQL Server Analysis Services Database, Multidimensional Mode.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Interval (seconds)	The recurring interval of time in seconds in which to run the workflow.	14400
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	300

	before being closed and marked as failed.	

MSSQL Analysis Services: Windows Multidimensional Partition - Unit monitors

Partition Storage Free Space

The monitor reports a warning, when the available free space for the partition storage location drops below Critical Threshold setting expressed as percentage of the sum of the total size of the folder plus disk free space. The monitor reports a critical alert, when the available space drops below Warning Threshold. The monitor does not monitor available space for the default storage location for SSAS instance.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Critical Threshold (%)	The monitor will change the state to Critical if the value drops below this threshold.	5
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
Warning Threshold	The monitor will change the state to Warning if the value drops below this threshold.	10

MSSQL Analysis Services: Windows Multidimensional Partition - Rules (non-alerting)

SSAS: Partition Used by Others (GB)

The rule collects the total amount of space in gigabytes on the drive, where the storage folder of the partition is located, which is allocated by files and folders other than the storage folder of the partition.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Partition Free Space (%)

The rule collects the size of free space on the drive, where the partition storage is located, expressed as percentage of the sum of the partition storage folder total size plus disk free space.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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	300

	before being closed and marked as failed.	

SSAS: Partition Free Space (GB)

The rule collects the amount of free space in gigabytes on the drive, where the storage folder of the partition is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Partition Size (GB)

The rule collects the estimated size of the partition in gigabytes.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

MSSQL Analysis Services: Windows Tabular DB

Microsoft SQL Server 2017+ Analysis Services Windows tabular database.

MSSQL Analysis Services: Windows Tabular DB - Discoveries

MSSQL Analysis Services: Tabular DB Discovery

This object discovery discovers all databases running for a given instance of Microsoft SQL Server Analysis Services, Tabular Mode.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Interval (seconds)	The recurring interval of time in seconds in which to run the workflow.	14400
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

MSSQL Analysis Services: Windows Tabular DB - Unit monitors

Database Free Space

The monitor reports a warning, when the available disk space for SSAS tabular database storage folder drops below Warning Threshold setting, expressed as percentage of the sum of the estimated database storage folder size and disk free space. The monitor reports a critical alert, when the available space drops below Critical Threshold.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes

Generate Alerts	Defines whether the workflow generates an Alert.	True
Critical Threshold (%)	The monitor will change the state to Critical if the value drops below this threshold.	5
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
Warning Threshold	The monitor will change the state to Warning if the value drops below this threshold.	10

Blocking Duration

The monitor alerts if at least one session is blocked for a longer period than the configured threshold.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
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

Warning Threshold (min)	Health State changes if at least one session is blocked longer than the threshold.	1

Blocking Session Count

The monitor alerts when the number of sessions that are blocked longer than the configured WaitMinutes setting exceeds the configured threshold.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	True
Critical Threshold	Health State changes when the number of blocked sessions exceeds the threshold.	10
Interval Seconds	The recurring interval of time in seconds in which to run the workflow.	900
Number of samples	Health State changes if the number of threshold breaches is greater than or equal to the Minimum Number of Breaches.	4
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
Wait Minutes	Wait Minutes parameter defines the minimum waiting time for the session to be considered by the monitor.	1

MSSQL Analysis Services: Windows Tabular DB - Rules (non-alerting)

SSAS: Database Storage Folder Size (GB)

The rule collects the size of the database storage folder in gigabytes.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Number of Database Blocked Sessions

The rule collects the number of sessions that are currently blocked.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Database Blocking Duration (minutes)

The rule collects the longest blocking duration for currently blocked sessions.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Database Drive Space Used By Others (GB)

The rule collects the amount of used space on the drive, where the database is located, other than space used by database itself.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Drive Used Space (GB)

The rule collects the total size in gigabytes of all files and folders on the drive, where the database storage folder is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Database Free Space (%)

The rule collects the amount of free space on the drive, where the storage folder of the database is located, expressed as percentage of the sum of estimated database storage folder size and disk free space.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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	300

	before being closed and marked as failed.	

SSAS: Database Disk Free Space (GB)

The rule collects the amount of free space on the drive, where the database is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Database Free Space (GB)

The rule collects the amount of free space in gigabytes on the drive, where the storage folder of the database is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

SSAS: Total Drive Size (GB)

The rule collects the total size in gigabytes of the drive, where the database storage folder is located.

Name	Description	Default value
Enabled	Enables or disables the workflow.	Yes
Generate Alerts	Defines whether the workflow generates an Alert.	No
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

Appendix: Known Issues and Troubleshooting

Several performance rules do not work with SSAS 2017+ instances

Issue: The following performance rules do not work with SSAS 2017 instances of SQL Server with cumulative update versions lower than 14.0.3015.40.

- Processing Pool I/O Job Queue length
- Processing Pool Job Queue length
- Query Pool Queue length

The rules do not gather performance data and throw error events in the Operations Manager event log. The root cause is the wrong path to a library file in the SSAS settings stored in the Windows registry.

Resolution: Install the most recent SQL Server cumulative update.
If it does not help, correct the corresponding .DLL file name in the Windows registry:

1. Start regedit
2. Go to *HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MSSQLServerOLAPService\Performance*
3. Find a key with the following value: *C:\Program Files\Microsoft SQL Server\MSAS14.[instance name]\OLAP\bin\Counters\MSMDCTR**140**.DLL*
4. Update it as follows: *C:\Program Files\Microsoft SQL Server\MSAS14.[instance name]\OLAP\bin\Counters**MSMDCTR**.DLL*
5. Restart the Analysis Service.

SCOM issue: Configuration Service may be frozen after Management Pack re-installation.

Issue: Configuration Service may be frozen after Management Pack re-installation. This appears to be a SCOM issue.

Resolution: No resolution.

Errors may occur after installation of a cumulative update for SQL Server 2017+

Issue: When SQL Server 2017+ is upgraded by means of a new cumulative update, the following errors may occur:

- System.InvalidOperationException: Could not Read Category Index: 13688.
- System.InvalidOperationException: The Counter layout for the Category specified is invalid, a counter of the type: AverageCount64, AverageTimer32, CounterMultiTimer, CounterMultiTimerInverse, CounterMultiTimer100Ns, CounterMultiTimer100NsInverse, RawFraction, or SampleFraction has to be immediately followed by any of the base counter types: AverageBase, CounterMultiBase, RawBase or SampleBase.

Resolution: Restart the “Microsoft Monitoring agent” service (HealthService).

Health Service may frequently restart when monitoring a huge number of Databases due to exceeding default thresholds for Private bytes and Handle Count monitors

Issue: While monitoring over 50 Databases per SSAS instance, you may face exceeding the default thresholds for Private bytes and Handle Count monitors. This causes frequent Health Service restarting on the agents.

Resolution: Override the monitors for only “Agent” class in the following way: Private bytes monitor threshold should be set to 943718400 (default is 300MB), Handle Count monitor threshold should be set to 30000 (the default is 6000).

More details and improvements please see in the article.