

Guide to Microsoft System Center Management Pack for SQL Server 2016

Microsoft Corporation

Published: June, 2017

The Operations Manager team encourages you to provide any feedbacks on the management pack by sending them to [sqlmpsfeedback@microsoft.com](mailto:sqlmpsfeedback@microsoft.com).

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# Guide to Microsoft System Center Management Pack for SQL Server 2016

This guide is based on version 6.7.31.0 of the Management Pack for Microsoft SQL Server 2016.

## Changes History

| **Release Date** | **Changes** |
| --- | --- |
| June, 2017 (version 6.7.31.0 RTM) | * Improved performance of DB Space monitoring workflows * Added new "Login failed" alerting rule for SQL Server event #18456 * Updated the visualization library |
| May, 2017 (version 6.7.30.0 CTP) | * Added new "Availability Database Backup Status" monitor in Availability Group to check the existence and age of the availability database backups (this monitor is disabled by default) * "Database Backup Status" monitor has been changed to return only "Healthy" state for the databases that are Always On replicas, since availability database backups are now watched by the dedicated monitor * Fixed issue: "Active Alerts" view does not show all alerts * Fixed issue: DB space monitoring scripts fail with "Cannot connect to database" error. * Fixed issue: PowerShell scripts fail with "Cannot process argument because the value of argument 'obj' is null" error * Fixed issue: Alert description of "Disk Ready Latency" and "Disk Write Latency" monitors displays the sample count instead of the performance value that was measured * Fixed issue: Different file location info from "sys.master\_files" and "sysfiles" causes error when Availability Group secondary database files are in different path * Fixed issue: "DB Transaction Log Free Space Total" rules return wrong data * Introduced minor updates to the display strings * Deprecated "Garbage Collection" monitor and the appropriate performance rule * Resource Pool Discovery is disabled by default for pools not containing databases with Memory-Optimized Tables * "XTP Configuration" monitor now supports different file path types (not only those starting with C:, D:, etc.) * Fixed issue: "Resource Pool State" view shows incorrect set of objects * Fixed issue: Invalid group discovery in SQL Server 2016 Always On |
| March, 2017 (version 6.7.20.0 RTM) | * Fixed issue: GetSQL20XXSPNState.vbs fails when domain controller is Read-Only * Fixed issue: SQL ADODB "IsServiceRunning" function always uses localhost instead of server name |
| February, 2017 (version 6.7.16.0 CTP) | * Implemented some enhancements to data source scripts * Fixed issue: DatabaseReplicaAlwaysOnDiscovery.ps1 connects to a cluster instance using node name instead of client access name and crashes * Fixed issue: CPUUsagePercentDataSource.ps1 crashes with “Cannot process argument because the value of argument "obj" is null” error * Fixed issue: Description field of custom user policy cannot be discovered * Fixed issue: SPN Status monitor throws errors for servers not joined to the domain * Fixed issue: SQL Server policy discovery does not ignore policies targeted to system databases in some cases * Fixed issue: Garbage Collection monitor gets generic PropertyBag instead of performance PropertyBag * Increased the length restriction for some policy properties in order to make them match the policy fields * Actualized Service Pack Compliance monitor according to the latest published Service Packs for SQL Server |
| December, 2016 (version 6.7.15.0 RTM) | * No extra permissions on remote WMI are now required for Local System account when Always On hosts have names that are no longer than 15 symbols * Fixed: Always On discovery and monitoring scripts cannot read cashed values in Windows registry * Fixed: Wrong MP version number in some Always On scripts * Fixed: CPUUsage and DBDiskLatency scripts fail with the reason: "Index operation failed" * Added retry policy in some Always On workflows to make PS-scripts work more stable * Updated the visualization library * Fixed: Always On objects get undiscovered when any Always On discovery crashes |
| October, 2016 (version 6.7.7.0 RTM) | * Fixed issue: “Set DB offline” task does not work when the database is in Availability Group * Fixed issue: Always On console task does not work * Updated the visualization library |
| September, 2016 (version 6.7.5.0 CTP2) | * Added support for configurations where computer host names are longer than 15 symbols * Added “Event ID” to descriptions of all the alerts generated by the alerting rules * Deprecated “Run As Account does not exist on the target system, or does not have enough permissions” rule * Added 2 rules for alerts generating when there are problems with execution of the monitoring workflows scripts on the following agents: “MSSQL: Monitoring failed” and “MSSQL: Monitoring warning” * Added “MSSQL 2016: Discovery warning” rules to generate alerts when there are non-critical problems with execution of the discovery scripts (warning events in the Operations Manager log) * Changed “MSSQL 2016: Discovery failed” rules to generate alerts for only critical errors during executing discovery scripts * Improved error logging in the MP scripts * Fixed some issues in the scripts, which could lead to unstable work with WMI * Fixed the issue when not all available performance counters were presented at “All Performance Data” view in Memory-Optimized Data sub-folder * Added a new overridable parameter to monitor “Stale Checkpoint File Pairs Ratio” in order to ignore databases having the number of checkpoint file pairs less than the threshold (300 by default) * Made “Resources Pool Memory Consumption (rollup)” enabled by default * Updated the visualization library |
| August, 2016 (version 6.7.3.0 CTP1) | * Disabled Memory-Optimized Data Garbage Collection Fill Factor monitor and rule by default * Disabled Memory-Optimized Data workflows for all SQL Server editions that do not support Memory-Optimized Data feature * Fixed issue: CPU Usage monitor & rule did not work for SQL Server cluster instance * Fixed issue: connection to an SQL Server instance was not closing when the destination was wrong * Fixed issue: in some cases, Set Database Online/Offline tasks did not work for databases of SQL Server cluster instance * Made detection condition stricter for DB User Policy event-based discovery: added management group name * Made detection condition stricter for Script Failed alerting rule: added management group name |
| June, 2016 (version 6.7.2.0 RTM) | * Changed EventID for MP events generated by the scripts (became 4202 for the Always On scripts and 4211 for the others) * Disabled Memory-Optimized Data workflows for SQL Server 2016 Express * Added new performance rules for Always On Log Apply Pending/Ready Queue counters * Added rules for alerting when an Availability Replica changed its role and/or a Database Replica changed its role * Added MP version line into MP events generated by the scripts * Fixed the display strings and Knowledge Base articles * Fixed issue: some scripts was not returning data when one of the few installed instances was stopped * Fixed issue: SPN configuration monitor used stale data * Run As profiles are now presented in GPMP library and ready to become generic profiles for all SQL Server MPs starting with 2016 * Fixed issue: mirroring monitoring scripts were failing when the instance was stopped |
| June, 2016 (version 6.7.1.0 RC3) | * Updated the visualization library |
| May, 2016 (version 6.7.0.0 RC3) | * Fixed Smart Admin policies monitoring * Fixed Always On Database replica discovery incorrect behavior; fixed Always On policies discovery and monitoring * Fixed Database policies discovery and monitoring * Fixed and optimized CPU Usage monitoring scripts (the issue appeared when only one core was assigned) * Added support for more than 32 processors count in CPU Usage monitoring. * SQLPS module is now used for the tasks instead of deprecated SQLPS.EXE * Implemented FILESTREAM filegroup monitoring * FILESTREAM is now supported on the summary dashboard * Multiple Ports are now supported in SQL Server TCP/IP parameters * Fixed error occurring when no port is specified in SQL Server TCP/IP parameters * Fix filegroup read-only state discovery * Fixed Run As profiles mapping for some workflows * Added support for new SQL Server 2016 Memory-Optimized Data implementation * Implemented support for TLS 1.2 in connection logic * Implemented support for different client drivers in connection logic * Updated connection logic error logging * Updated Availability Group Automatic Failover monitor * Added rules to collect new Always On performance counters * Updated SMO usage in Always On workflows to support the new connection logic * Upgraded the used PowerShell version to 3+, since SQL Server 2016 uses .Net 4 Runtime * Fixed issue: CPU usage monitor ignored SQL server limitations on CPU core count * Fixed display strings and Knowledge Base articles * Fixed error reporting in the scripts * Fixed threshold percentage comparison of deactivated subscriptions workflow in Distributor |
| March, 2016 | Original release of this management pack |

## Get Started

In this section:

* [What’s New?](#_What’s_new?_1)

* [Supported Configurations](#_Supported_configurations)
* [Management Pack Scope](#_Management_Pack_scope)
* [Prerequisites](#_Prerequisites)
* [Files in this Management Pack](#_Files_in_this)
* [Mandatory Configuration](#_Mandatory_configuration)

### What’s New?

Compared to Management Pack for Microsoft SQL Server 2014, the following improvements were implemented:

* Support for the recent Microsoft SQL Server 2016 Memory-Optimized Data implementation
* Up-to-date Availability Group Automatic Failover monitor
* Advanced rules to collect the recent Always On performance counters
* PowerShell 3+ and .Net Framework 4 Runtime support
* Run As Profiles are now presented in GPMP library and ready to be generic profiles for all SQL Server MPs starting with 2016

### Supported Configurations

This management pack is designed for the following versions of System Center Operations Manager:

* System Center Operations Manager 2007 R2 (Except Dashboards)
* System Center Operations Manager 2012 SP1
* System Center Operations Manager 2012 R2
* System Center Operations Manager 2016

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

.NET Framework 4.6 and Windows PowerShell 3+ are required.

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

|  |  |
| --- | --- |
| **Configuration** | **Support** |
| SQL Server 2016 | Windows Server 2008  Windows Server 2008 R2  Windows Server 2012  Windows Server 2012 R2  Windows Server 2014  Windows Server 2016   * 64-bit SQL Server on 64-bit OS * 32-bit SQL Server on 32-bit OS   **Note**: 32-bit SQL Server instances are not supported on 64-bit OS |
| Clustered servers | Yes |
| Agentless monitoring | Not supported |
| Virtual environment | Yes |

Note that neither SQL Server Express edition (SQL Server Express, SQL Server Express with Tools, SQL Server Express with Advanced Services) support SQL Server Agent, Log Shipping, Always On, OLAP Services and Data Mining, Analysis Services and Integration Services.

In addition, SQL Server Express and SQL Server Express with Tools do not support Reporting Services and Full text search. However, SQL Server Express with Advanced Services support Full text search and Reporting Services with limitations.   
All SQL Server Express editions support Database mirroring as Witness, and Replication as Subscriber only.

The installation of SQL Server 2016 is only supported on x64 processors; it is not supported on x86 processors. For more information, see [Hardware and Software Requirements for Installing SQL Server](http://go.microsoft.com/fwlink/?LinkId=717844) article.

SMB fileshares are supported as a storage option. For more information, see [Description of Support for Network Database Files in SQL Server](https://support.microsoft.com/en-us/kb/304261) article.

### Management Pack Scope

Management Pack for Microsoft SQL Server 2016 enables the monitoring of the following features:

* SQL Server 2016 Database Engines (supported editions: Enterprise, Business Intelligence, Standard, Express))
* SQL Server 2016 Databases (including filegroups, data files and transaction log files)
* SQL Server 2016 Agent
* SQL Server 2016 Always On Availability Groups
* SQL Server 2016 Failover Clusters
* SQL Server 2016 Mirroring
* SQL Server 2016 Memory-Optimized Data
* SQL Server 2016 Managed Backup to Windows Azure
* SQL Server 2016 Integration Services

Important

We recommend that you monitor no more than 50 databases and 150 database files per System Center Operations Manager agent to avoid spikes in CPU usage that may affect the performance of monitored servers.

Important

Agentless monitoring is not supported by Management Pack for Microsoft SQL Server 2016.

Note

Please refer to “[Monitoring Scenarios](#_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 SQL Server 2016](#_Configuring_the_Management) 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 SQL Server, such as disk capacity, disk performance, memory utilization, network adapter utilization, and processor performance.

### Files in this Management Pack

The Management Pack for Microsoft SQL Server 2016 includes the following files:

| **File** | **Description** |
| --- | --- |
| Microsoft.SQLServer.2016.Discovery.mp | This Management Pack discovers Microsoft SQL Server 2016 and related objects. The management pack only contains the discovery logic and requires the separate monitoring management pack to be imported to monitor the discovered objects. |
| Microsoft.SQLServer.2016.Monitoring.mp | This Management Pack enables the monitoring of Microsoft SQL Server 2016. It depends on the Microsoft SQL 2016 (Discovery) Management Pack. |
| Microsoft.SQLServer.2016.Presentation.mp | This Management Pack adds SQL Server 2016 Dashboards. |
| Microsoft.SQLServer.2016.Views.mp | This Management Pack contains views and folder structure for Microsoft SQL Server 2016 management packs. |
| Microsoft.SQLServer.2016.Always On.Discovery.mp | This Management Pack discovers objects required for monitoring of Microsoft SQL Server 2016 Always On functionality. It contains only discovery logic and requires the separate monitoring management pack to be imported to enable monitoring. |
| Microsoft.SQLServer.2016.Always On.Monitoring.mp | This Management Pack enables the monitoring of Microsoft SQL Server 2016 Always On functionality. It depends on the Microsoft SQL 2016 Always On (Discovery) Management Pack. |
| Microsoft.SQLServer.2016.Always On.Views.mp | This Management Pack contains views and folder structure for Microsoft SQL Server 2016 Always On management packs. |
| Microsoft.SQLServer.2016.IntegrationServices.Discovery.mp | This Management Pack discovers Microsoft SQL Server 2016 Integration Services. It contains discovery logic and requires the separate monitoring management pack to be imported to monitor the discovered objects. |
| Microsoft.SQLServer.2016.IntegrationServices.Monitoring.mp | This Management Pack enables monitoring of Microsoft SQL Server 2016 Integration Services. |
| Microsoft.SQLServer.2016.IntegrationServices.Views.mp | This Management Pack contains views and folder structure for Microsoft SQL Server 2016 Integration Services management packs. |
| Microsoft.SQLServer.Generic.Presentation.mp | This Management Pack defines common folder structure and views. |
| Microsoft.SQLServer.Generic.Dashboards.mp | This Management Pack contains generic SQL Server dashboards. |
| Microsoft.SQLServer.Visualization.Library.mpb | This Management Pack contains base visual components required for SQL Server dashboards. |
| Microsoft.SQLServer.2016.Mirroring.Discovery.mp | This Management Pack discovers objects required for monitoring of Microsoft SQL Server 2016 Mirroring functionality. It contains only discovery logic and requires the separate monitoring management pack to be imported to enable monitoring. |
| Microsoft.SQLServer.2016.Mirroring.Monitoring.mp | This Management Pack enables the monitoring of Microsoft SQL Server 2016 Mirroring functionality. It depends on the Microsoft SQL 2016 Mirroring (Discovery) Management Pack. |
| Microsoft.SQLServer.2016.Mirroring.Views.mp | This Management Pack contains views and folder structure for Microsoft SQL Server 2016 Mirroring management packs. |

### Mandatory Configuration

To configure Management Pack for Microsoft SQL Server 2016 complete following steps:

* Review the “[Configuring the Management Pack for Microsoft SQL Server 2016](#_Configuring_the_Management)” section of this guide.
* Grant required permissions as described in “[Security Configuration](#_Security_configuration)” section of this guide.
* Enable the Agent Proxy option on all agents that are installed on servers that are members of the cluster. It is not necessary to enable this option for standalone servers. For more information about enabling Agent Proxy option see “[How to Enable Agent Proxy Option](#_How_to_enable)” section of this guide.
* Import the Management Pack.
* Associate SQL Server 2016 Run As profiles with accounts that have appropriate permissions. For more information about configuring Run As profiles see “[How to Configure Run As Profiles](#_How_to_configure_1)” section of this guide.

## Management Pack Purpose

In this section:

* [Monitoring Scenarios](#_Monitoring_scenarios)
* [How Health Rolls Up](#_How_health_rolls)

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)
* [Appendix: Management Pack Views and Dashboards](#_Appendix:_Management_Pack_1)
* [Appendix: Management Pack Reports](#_Appendix:_Management_Pack_2)

### Monitoring Scenarios

#### Discovery of SQL Server Database Engine Instances

The Management Pack for Microsoft SQL Server 2016 automatically discovers stand-alone and clustered instances of SQL Server 2016 across all managed systems that run System Center Operations Manager agent service. Certain instances may be excluded from discovery by applying an override for “**Exclude List**” parameter of “[MSSQL 2016: Discover SQL Server 2016 Database Engines](#DBEngine)" discovery. This parameter accepts a coma-separated list of values.

#### Database Discovery and State Monitoring

For each managed database engine, the databases on it are discovered and monitored using a number of rules and monitors. Please refer to “[Appendix: Management Pack Objects and Workflows](#_Appendix:_Management_Pack)” section for the full list of rules and monitors targeted to databases.

You can apply overrides to the discovery to specify an “Exclude List” (in comma-delimited format) of database names that the discovery should not consider.

#### Always On Availability Groups

This management pack enables the monitoring of Microsoft SQL Server 2016 Always On Availability Groups. The following objects are automatically discovered:

* **Availability Group** – which represents Availability Group SMO object and contains all properties required for identification and monitoring.
* **Availability Replica** – which represents Availability Replica SMO object and contains all properties required for identification and monitoring.
* **Database Replica** – which represents an Always On database level object and contains properties from Availability Database SMO object and Database Replica State SMO object.
* **Availability Group Health** – a hidden object, which is used to roll up the health from agents to availability group level.

This management pack has two event rules for alerting when the following events appear in the Windows Application log:

* Event ID 1480: Database Replica role is changing
* Event ID 19406: Availability Replica role changed

Note that these events are disabled in SQL Server by default. To enable them, execute the next TSQL scripts:

* sp\_altermessage 1480, 'with\_log', 'true'
* sp\_altermessage 19406, 'with\_log', 'true'

The management pack collects the health for all available Always On objects on the target instance of SQL Server by reading the state of PBM (Policy-Based Management) policies state for each of the objects. Beside system policies, this management pack provides ability to monitor Custom User Policies defined for these facets:

* Availability Group
* Availability Replica
* Database Replica

For each facet, management pack introduces two monitors for Custom User Policy:

* Two-state monitor with 'Warning' state. This monitor is used for reflecting the state of Custom User Policy, which has one of the predefined warning categories as Policy Category.
* Two-state monitor with 'Error' state. This monitor is used for reflecting the state of Custom User Policy, which has one of the predefined error categories as Policy Category.

#### SQL Server Mirroring

This management pack enables the monitoring of Microsoft SQL Server Database Mirroring functionality. The following objects are automatically discovered:

* **SQL Server 2016 Mirroring Database** – represents a database, which is a part of a Database Mirroring configuration.
* **SQL Server 2016 Mirroring Witness** – represents a witness server, which is a part of a Database Mirroring configuration.
* **SQL Server 2016 Witness Role** – an object, which is discovered on every SQL Server instance, serving as a witness for a Database Mirroring configuration.
* **SQL Server 2016 Mirroring Group** – an object, which contains principal and mirror databases as well as their witness server.
* **SQL Server 2016 Mirroring Service** – a group, which contains all discovered Database Mirroring objects, does not have health.

The following health aspects are covered by monitoring:

**Database Mirror and Witness Status** – This monitoring scenario runs a query against the master database of the SQL Server instance and returns the state of the database.

**Database Mirroring Partners Status** – This monitoring scenario runs a query against the master database of the SQL Server instance and returns the state of the database mirroring session.

#### Memory-Optimized Data

This management pack enables the monitoring of Microsoft SQL Server 2016 Memory-Optimized Data. The following objects are automatically discovered:

* **Memory-Optimized Data Filegroup** – represents Memory-Optimized Data Filegroup object and contains all properties required for identification and monitoring.
* **Memory-Optimized Data Filegroup Container** – represents Memory-Optimized Data Container object and contains all properties required for identification and monitoring.
* **Default Resource Pool** – represents Default Resource Pool object and contains all properties required for identification and monitoring.
* **User Defined Resource Pool** – represents User Defined Resource Pool object and contains all properties required for identification and monitoring.

The following health aspects are covered by monitoring:

* **Memory-Optimized Data Filegroup Container Available Space** – reports a problem when the available disk space for the Memory-Optimized Data Filegroup Container is insufficient.
* **DB Memory-Optimized Data Filegroup Space** – reports about problem if all Containers in a filegroup experience a lack of disk space.
* **Memory-Optimized Data Active File Pairs** – When there 8,000 CFPs are allocated, no new DML transactions can be executed on durable memory-optimized tables. Only checkpoint and merge operations are allowed to consume the remaining entries. This monitor reports about problem if Active File Pairs count is close to limit.
* **Garbage Collection** – reports a Critical State and raises an alert if the amount of space used by active rows in Memory-Optimized Data files drops below the Threshold setting, expressed as a percentage of the size of data files. This monitor indicates a situation when merge process is not keeping up.
* **Memory Consumption** – reports a critical state and raises an alert when the amount of memory used by the resource pool is greater than the Threshold setting, expressed as a percentage of memory available for Memory-Optimized Data tables for the given resource pool. This scenario predicts Out Of memory situation.

The management pack also collects various performance metrics:

* A number of XTP performance metrics collected for SQL Server Instance.
* Space Monitoring Metrics for Memory-Optimized Data Container and Filegroup.
* Pool Memory Consumption metrics.
* Active CFPs files count.

#### Data File and Transaction Log File Space Monitoring

The management pack collects a set of metrics to enable the space monitoring at File, Filegroup and Database levels. You may use reports to review this information for multiple databases and for long time intervals.

This feature supports following types of media:

* Local storage (both drive letters and mount points)
* Cluster Shared Volumes
* SMB Shares
* Azure BLOBs

By default, space monitoring is enabled for all levels. Alerting is enabled for “**DB File Space (rollup)**” monitor, thus an alert will be registered only when all files in the filegroup are unhealthy. If your environment is sensitive for any extra load, you may consider disabling monitoring on Filegroup and File level.

#### Many Databases on the Same Drive

Space monitoring introduced by this management pack may be noisy in environments where many databases share the same media and have **autogrow** setting enabled. In such cases, an alert for each database is generated when the amount of free space on the hard drive reaches the threshold. To reduce the noise, turn off the space monitors for data and transaction log files, and use Operating System Management Pack to monitor space on the hard drive.

#### DB Storage Latency Monitoring

This management pack collects “DB Disk Read Latency (ms)” and “DB Disk Write Latency (ms)” performance metrics for each database. In addition, the management pack defines two associated monitors, which register alerts in case of significant performance degradation. These monitors are disabled by default. Enable these monitors only for specific DBs when necessary.

#### Long-Running SQL Server Agent Jobs

The management pack provides a “Long-running Jobs” monitor targeted to SQL Server Agent object. The monitor oversees all jobs running by SQL Server agent and changes the state when the duration of any job execution exceeds the threshold. An alert is also registered in this case.

Per-job monitoring is also available; however, the discovery for SQL Server Agent Jobs is disabled by default. In order to enable per-job monitoring, please override “Enabled” parameter for “**MSSQL 2016: Discover SQL Server 2016 Agent Jobs**” discovery.

You may also consider the “[Job Failure](#_Job_failure)” scenario for per-job failure monitoring.

#### Job Failure

To get alerts for failed jobs, enable the rule “**MSSQL 2016: A SQL job failed to complete successfully**” and make sure that the option "Write to the Windows Application Event Log” is set to “when the job fails” for all jobs you want to monitor.

For more information, see [Job Properties / New Job (Notifications Page) in the MSDN Library](http://msdn.microsoft.com/library/ms189685.aspx)

#### Monitoring of Custom User Policies

The management pack enables the monitoring of Custom User Policies (CUPs) by defining two monitors. These monitors are designed to check the state of CUPs defined for a “Database” facet:

* Two-state monitor with 'Warning' state. This monitor is used for reflecting the state of Custom User Policy, which has one of the predefined warning categories as Policy Category.
* Two-state monitor with 'Error' state. This monitor is used for reflecting the state of Custom User Policy, which has one of the predefined error categories as Policy Category.

Note

If the database is in RESTORING state, the Custom User Policy targeted to that database cannot be monitored.

#### Blocked Sessions

The management pack defines the “**Blocking Sessions**” monitor, which is designed to query each database for session, which are blocked during a significant period. If blocking is detected and it exceeds the given threshold, then the state is changed and an alert is raised.

You can apply an override to change the **WaitMinutes** parameter, which is used to determine if the blocked session should be considered as long running or not. The default value for this parameter is **one minute**.

#### Restart of Database Engine

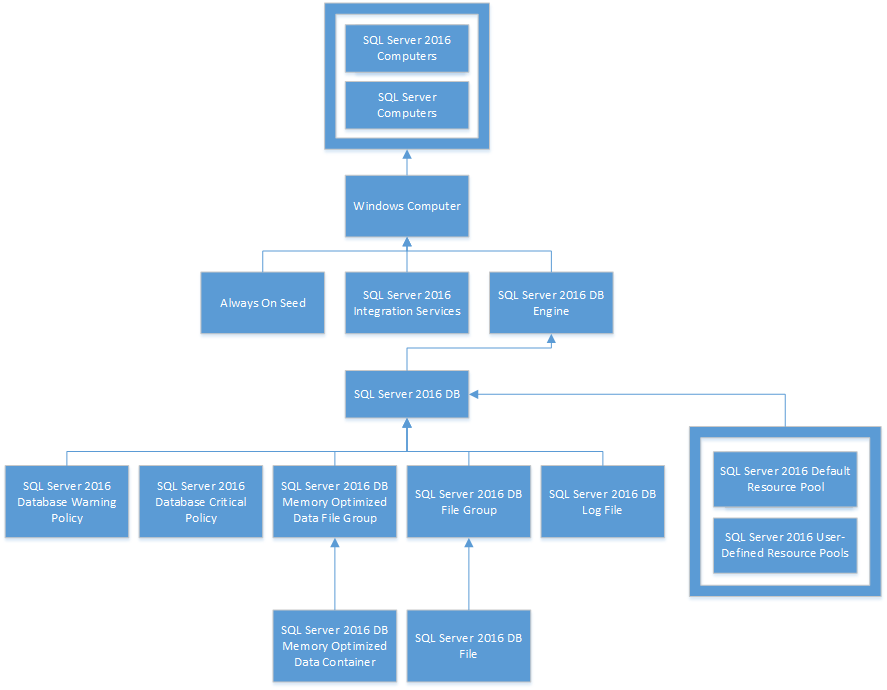
The availability of Database Engine is monitored by “**SQL Server Windows Service**” monitor (targeted to the “**SQL Server 2016 DB Engine**” object). This monitor recognizes the service as Stopped only if it appears to be stopped during several consecutive checks.

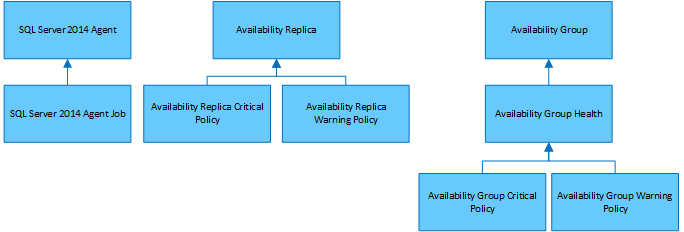
To be notified about all restart events of Database Engine, you can enable the rule “**MSSQL 2016: SQL Server 2016 DB Engine is restarted**”.

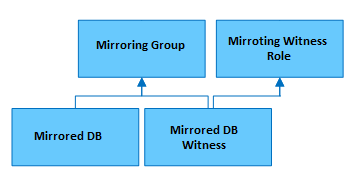
#### CPU Monitoring for SQL Server Database Engine

The CPU utilization is monitored by the “**CPU Utilization (%)**” monitor, which checks how many processors are actually working on SQL Server’s process threads and what is the current CPU utilization. The monitor raises an alert if all allocated CPUs are busy with processing SQL Server tasks. This monitoring scenario takes into account current affinity mask of SQL Server Database Engine.

### How Health Rolls Up

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





## Configure the Management Pack for Microsoft SQL Server 2016

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

In this section:

* [Best Practice: Create a Management Pack for Customizations](#_Best_practice:_create)
* [How to Import a Management Pack](#_How_to_import)
* [How to Enable Agent Proxy Option](#_How_to_enable)
* [How to Configure Run As Profile](#_Configuring_Run_As)
* [Security Configuration](#_Security_configuration)
  + [Run As Profiles](#_Run_As_profiles)
  + [Low-Privilege Environments](#_Low-privilege_environments)

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

The Management Pack for Microsoft SQL Server 2016 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, the 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 2016 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, 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 a Management Pack](http://go.microsoft.com/fwlink/?LinkId=142351).

### How to Enable Agent Proxy Option

To enable **Agent Proxy option** 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.

### Security Configuration

This section provides guidance on configuring the security for this management pack.

In this section:

* [Run As Profiles](#_Run_As_profiles)
* [Low-Privilege Environments](#_Low-privilege_environments)
* [TLS 1.2 Protection](#_TLS_1.2_protection)

#### Run As Profiles

When the Management Pack for Microsoft SQL Server 2016 is imported for the first time, it creates three new Run As profiles:

* Microsoft SQL Server 2016 Discovery Run As Profile – this profile is associated with all discoveries.
* Microsoft SQL Server 2016 Monitoring Run As Profile – this profile is associated with all monitors and rules.
* Microsoft SQL Server 2016 Task Run As Profile – this profile is associated with all tasks.

By default, all discoveries, monitors, and tasks defined in the SQL Server management packs use accounts defined in the “Default Action Account” Run As profile. If the default action account for a given system does not have the necessary permissions to discover or monitor the instance of SQL Server, then those systems can be bound to more specific credentials in the “Microsoft SQL Server 2016 …” Run As profiles, which do have access.

Note

Please refer to “[Appendix: Run As Profiles](#_Appendix:_Run_As)” section to identify discoveries, monitors, and rules associated with each **Run As Profile**.

##### How to Configure Run As Profiles

To configure Run As profiles, follow one of the scenarios described below:

1. SCOM Default Action Account is mapped to either Local System account, or any Domain User account, which is placed in the Local Administrators group on the operating system of the monitored machines. Note that the used account must be granted with SA rights in the monitored SQL Server instances (Domain User account can be granted with SA rights by granting SA to BUILTIN\Administrators local group in the SQL Server security access list). In this case, monitoring of SQL Server instances will work out of the box, except for some configurations described below. Please follow these steps to ensure that all requirements are met:
2. To monitor SQL Server Always On Availability Groups under Local System account, each node's Local System account must also have sufficient permissions on other server nodes of the Availability Group. In case it is approved by your company security policy, you can grant such permissions by adding each computer account to the local Administrators group of each participating node. While configuring SQL Server Always On Availability Groups for monitoring, despite granting Local Administrator rights to each computer account, make sure those accounts have permissions described in [Configure Permissions for Always On](#_How_to_configure_2) discovery and monitoring section. In case your company security policy does not allow adding computer accounts to Local Administrators group of other computers, you should create a domain account for monitoring, and either add it to the local Administrators group on each node (see configuration scenario #2 below) or grant it with the minimal required permission set as described in [Low-Privilege Environments](#_Low-privilege_environments) section.
3. If you store SQL Server databases on an SMB file share, make sure that Default Action Account has the rights described in the corresponding [Low-Privilege Configuration](#_To_configure_a) section.
4. SCOM Default Action Account is mapped to either Local System account or Domain User account as in the scenario described above, but SA rights cannot be granted to it, as long as the security policy prohibits granting SA rights to SCOM Default Action account. If the security policy permits to grant SA rights to a separate Domain User account, which will be used for launching SQL Server MP workflows only, perform the following steps:
5. Create a new Domain User account and add this account to Local Administrators group on each monitored server.
6. Grant SA rights to this account in SQL Server.
7. Create a new Action account in SCOM and map it to the Domain User account created above.
8. Map the new Action account to all SQL Server MP Run As Profiles.
9. While configuring SQL Server Always On Availability Groups for monitoring, despite granting Local Administrator rights to the new Action account, make sure this account has permissions described in [How to Configure Permissions for Always On Discovery and Monitoring](#_How_to_configure_2) section.
10. If you store SQL Server databases on an SMB file share, make sure that your Domain User account has the rights described in the corresponding [Low-Privilege Configuration](#LowPrivSMB) section.
11. In case you need to grant the minimal required rights to SQL MP workflows, follow the instructions in [Low-Privilege Environments](#_Low-privilege_environments) section.

Note

Monitoring clusters under Local System account is not a preferable option. It is recommended to use Domain User account granted with necessary set of rights for monitoring cluster configurations.

##### How to Configure Permissions for Always On Discovery and Monitoring

Please note that regardless of the used account (Local System or Domain User account) and the method of rights granting, you have to make sure that the account has the permissions listed below. The process of obtaining permissions is described below as a case when Local System account is used for monitoring.

**Example**: You have 3 replicas in your Availability Group, which are hosted on the following computers: comp1, comp2 and comp3. At that, comp1 hosts the primary replica. In this case, you should configure security settings for comp1 on comp2 and comp3 computers.

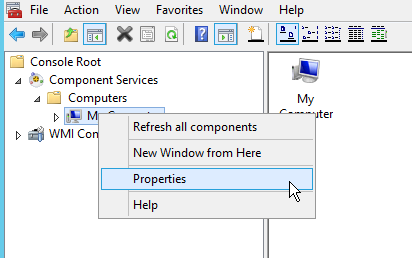
**Note**: If comp2 would host primary replica (after failover), other computers should also have configured WMI security for this computer. In general, you have to make sure that Local System account of each node, which can act as Primary one, have WMI permissions for the other nodes of the current Availability Group. The same is true for the Domain Action Account used for monitoring.

Therefore, below are the steps to configure security for configurations with Local System account (please note that in the provided instruction it is considered that SQLAON-020 computer hosts the primary replica).

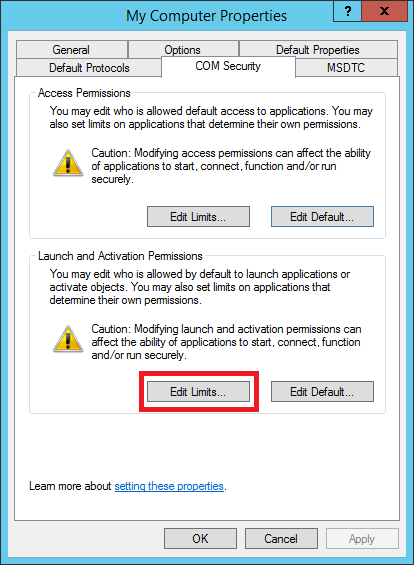
1. Launch mmc.exe and add two Snap-Ins:

* **Component Services**
* **WMI Control** (for local computer)

1. Expand **Component Services**, right-click **My Computer** and click **Properties**; the corresponding dialog menu will be displayed.

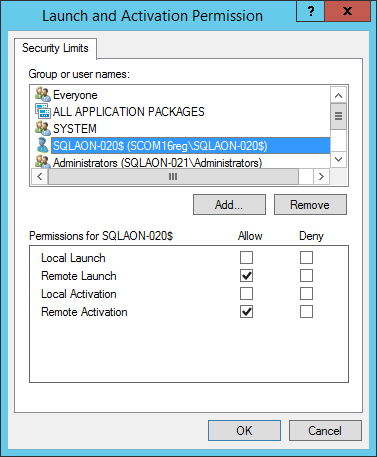


1. In this dialog menu, go to **Security** tab.
2. Click **Edit Limits** button in **Launch and Activation Permissions** section; the corresponding dialog menu will be displayed.



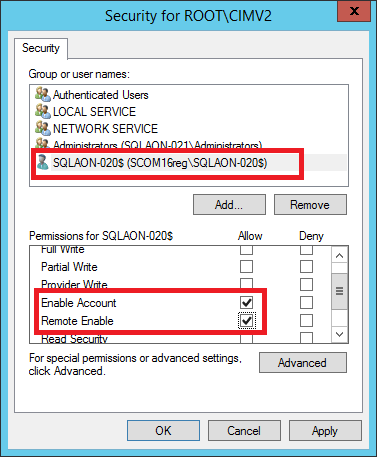
1. In this dialog menu, set the following permissions for the remote machine’s account:

* **Remote Launch**
* **Remote Activation**



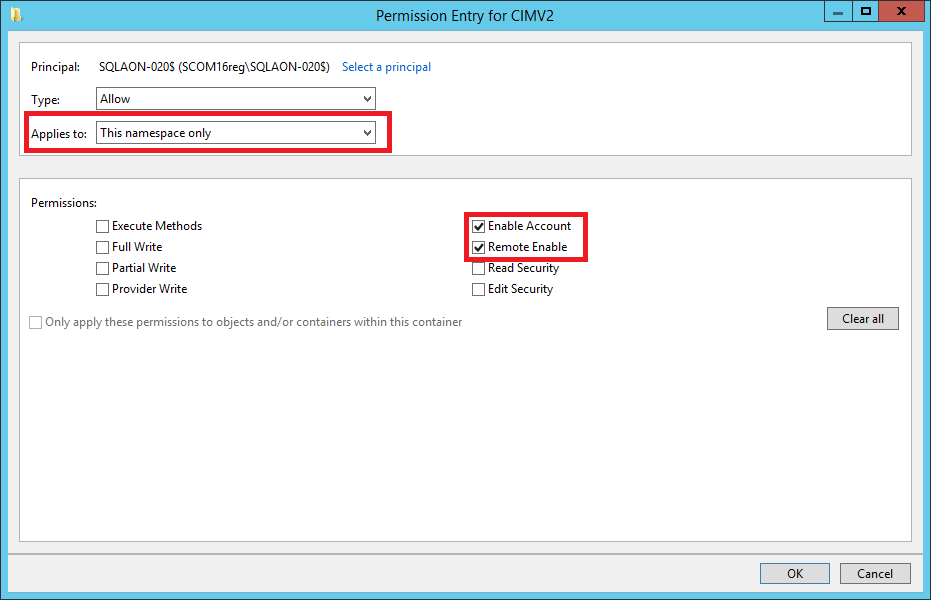
1. Go to **WMI Control** snap-In and call its properties; the corresponding dialog menu will be displayed.
2. In this dialog menu, go to **Security** tab, select **Root\CIMV2** namespace and click **Security** button.
3. Add the following permissions for the target computer:

* **Enable Account**
* **Remote Enable**



1. Click **Advanced** button; the corresponding dialog menu will be displayed.
2. In this dialog menu, select the target account and click **Edit** button.
3. In the following dialog menu, make sure that **Applies to** parameter is set to **This namespace only** value, and the following permissions are set:

* **Enable Account**
* **Remote Enable**



Steps 1-11 should be performed on each replica participating in the target Availability Group.

#### Low-Privilege Environments

This section describes how to configure the Management Pack for Microsoft SQL Server 2016 for low-privilege access. All workflows (discoveries, rules, monitors and actions) in this management pack are bound to Run As profiles described in “[Run As Profiles](#_Run_As_profiles)” section. To enable low-privilege monitoring, appropriate permissions should be granted to Run As accounts and these accounts should bound to respective Run As profiles. Subsections below describe how to grant permissions at both Operating System and SQL Server level.

Note

Please refer to “[Run As Profiles](#_Run_As_profiles)” section for the detailed explanation of what Run As profiles are defined in Management Pack for Microsoft SQL Server 2016.

Important

Low-privilege configuration is supported for non-clustered SQL Server 2016 environments and clustered instances of SQL Server 2016. Custom User Policy based monitoring is not supported in low-privilege mode.

##### Configure a Low-Privilege Environment in Active Directory

1. In Active Directory, create three domain users that will be commonly used for low-privilege access to all target SQL Server instances:

a. SQLTaskAction

b. SQLDiscovery

c. SQLMonitor

1. Create a domain group named SQLMPLowPriv and add the following domain users:

a. SQLDiscovery

b. SQLMonitor

1. Grant special permission: Read-only Domain Controllers – “Read Permission” to the **SQLMPLowPriv**

##### Configure a Low-Privilege Environment on the Agent Machine

* On the agent machine, add the SQLTaskAction and SQLMonitor domain users to the “Performance Monitor Users” local group.
* Add the SQLTaskAction and SQLMonitor domain users to “EventLogReaders” local group.
* Add the SQLTaskAction domain user and SQLMPLowPriv domain group as members to the local **Users** group.
* Configure the “Allow log on locally” local security policy setting to allow the SQLTaskAction domain user and SQLMPLowPriv domain group users to log on locally.
* Grant Read permission on “**HKLM:\Software\Microsoft\Microsoft SQL Server”** registry path for SQLTaskAction and **SQLMPLowPriv**.
* Grant “Execute Methods”, “Enable Account”, “Remote Enable”, “Read Security” permissions to SQLTaskAction and **SQLMPLowPriv** for these WMI namespaces:
  + **root**
  + **root\cimv2**
  + **root\default**
  + **root\Microsoft\SqlServer\ComputerManagement13**
* Grant Read permission on “**HKLM:\Software\Microsoft\Microsoft SQL Server\*[InstanceID]*\MSSQLServer\Parameters”** registry path for **SQLMPLowPriv** for each monitored instance.

Note

The monitoring account user must have the following permissions to 'C:\Windows\Temp' folder:

* + Modify
  + Read & Execute
  + List Folder contents
  + Read
  + Write

##### Configure a Low-Privilege Environment on the Agent Machine in Cluster

1. For each node in a cluster, execute steps outlined in section [Configure a Low-Privilege Environment on the Agent Machine](#AgentMachine).
2. Grant “Remote Launch” and “Remote Activation” DCOM permissions to the **SQLMPLowPriv,** SQLTaskAction using DCOMCNFG. Please note that both defaults and limits should be adjusted.
3. Allow Windows Remote Management through the Windows Firewall.
4. Grant “Read” access for the cluster to the **SQLMPLowPriv** using Failover Cluster Manager.
5. Grant “Execute Methods”, “Enable Account”, “Remote Enable”, “Read Security” permissions to **SQLTaskAction** and **SQLMPLowPriv** for this WMI namespace: **root\MSCluster**.

##### Configure a Low-Privilege Environment on the Instance Of SQLServer 2016 Database Engine

1. Open SQL Server Management Studio and connect to the instance of SQL Server 2016 Database Engine.
2. In SQL Server Management Studio, for each instance of SQL Server 2016 Database Engine running on a monitored server, create a login for “SQLMPLowPriv” and grant the following permissions:
   1. VIEW ANY DEFINITION
   2. VIEW SERVER STATE
   3. VIEW ANY DATABASE
3. Create a SQLMPLowPriv user in each user database, master, msdb, and model. Link SQLMPLowPriv users to SQLMPLowPriv login. By adding user into the model database, you will automatically create a SQLMPLowPriv user in each future user-created database. You will need to manually provision the user for any database that will be attached or restored in future.
4. For msdb database: add the SQLMPLowPriv user to the **SQLAgentReaderRole** database role.
5. For msdb database: add the **SQLMPLowPriv** user to the **PolicyAdministratorRole** database role.

##### Configure a Low-Privilege Environment on the Server, Which Hosts an SMB Share Used by SQL Server 2016 Database Engine

1. Grant share permissions by opening share properties dialog for the share, which hosts SQL Server data files or SQL Server transaction log files.
2. Grant Read permissions to SQLMPLowPriv.
3. Grant NTFS permissions by opening the properties dialog for the shared folder and navigate to the “Security” tab.
4. Grant Read permissions to SQLMPLowPriv.

##### Configure Instances Low-Privilege Task Action Account on the Instance of SQL Server 2016 Database Engine

1. Open SQL Server Management Studio and connect to the instance of SQL Server 2016 Database Engine.
2. In SQL Server Management Studio, for each instance of SQL Server 2016 Database Engine running on a monitored server, create a login for SQLTaskAction and grant the following permissions:
   1. VIEW ANY DEFINITION
   2. VIEW SERVER STATE
   3. VIEW ANY DATABASE
3. Create a SQLTaskAction user in each user database, master, msdb, and model. Link SQLTaskAction users to SQLTaskAction login. By adding user into the model database, you will automatically create a SQLTaskAction user in each future user-created database. You will need to manually provision the user for any database that will be attached or restored in future.
4. For msdb database: add a SQLTaskAction user to the **SQLAgentReaderRole** database role.
5. For msdb database: add the SQLTaskAction user to the **PolicyAdministratorRole** database role.
6. For configuring Mirroring under low-privilege, need to execute next code for each instance in Mirroring:

grant select on sys.database\_mirroring\_witnesses to [yourdomain\SQLMPLowPriv]

go

##### Enable Execution of System Center Operations Manager Tasks for a Database Object

Some optional System Center Operations Manager tasks require a higher privilege on an agent machine and/or a database to allow the task execution.

You should execute the following provisioning steps on the agent machine or the database only if you want to allow the System Center Operations Manager console operator to take remedial actions on that target.

1. If the task is related to starting or stopping an NT service (such as DB Engine Service, SQL Server Agent service, SQL Full Text Search Service, Integration Services): on the agent machine, grant the SQLTaskAction user permission to start or stop an NT service This involves setting a service’s security descriptor. For more information, see [Sc sdset](http://go.microsoft.com/fwlink/?LinkId=193876).

Read the existing privileges for a given service (using **sc sdshow**) and then grant additional privileges to the SQLTaskAction user for that server.

For example, suppose the results of the **SC sdshow** command for SQL Server service are as follows:

D:(A;;CCLCSWRPWPDTLOCRRC;;;SY)(A;;CCDCLCSWRPWPDTLOCRSDRCWDWO;;;BA)(A;;CCLCSWLOCRRC;;;IU)(A;;CCLCSWLOCRRC;;;SU)S:(AU;FA;CCDCLCSWRPWPDTLOCRSDRCWDWO;;;WD)

In this case, the following command line grants sufficient access to SQLTaskAction for starting and stopping the SQL Server service (please replace colored strings with appropriate values and keep everything on a single line of text):

sc sdset SQLServerServiceName D:(A;;GRRPWP;;;SID for SQLTaskAction)(A;;CCLCSWRPWPDTLOCRRC;;;SY)(A;;CCDCLCSWRPWPDTLOCRSDRCWDWO;;;BA)(A;;CCLCSWLOCRRC;;;IU)(A;;CCLCSWLOCRRC;;;SU)S:(AU;FA;CCDCLCSWRPWPDTLOCRSDRCWDWO;;;WD)

2. In SQL Server Management Studio, add SQLTaskAction to db\_owner database role for each database if the task is related to performing database checks:

a. “Check Catalog (DBCC)”

b. “Check Database (DBCC)”

c. “Check Disk (DBCC)” (invokes DBCC CHECKALLOC)

3. Grant the ALTER privilege to SQLTaskAction for each database if the task is related to changing the database state:

a. “Set Database Offline”

b. “Set Database Emergency State”

4. Grant the ALTER ANY DATABASE privilege to SQLTaskAction login to run the task if the task is “Set Database Online”.

##### Configure System Center Operations Manager

1. Import the SQL Server Management Pack if it has not been imported.
2. Create a SQLTaskAction, SQLDiscovery and SQLMonitor 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://go.microsoft.com/fwlink/?LinkId=717832). 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://go.microsoft.com/fwlink/?LinkId=717833).
3. On the System Center Operations Manager console, configure the Run As profiles for the SQL Server Management Pack as following:
   1. Set the “Microsoft SQL Server 2016 Task Action Run As Profile” Run As profile to use the SQLTaskAction Run As account.
   2. Set the “Microsoft SQL Server 2016 Discovery Run As Profile” Run As profile to use the SQLDiscovery Run As account.
   3. Set the “Microsoft SQL Server 2016 Monitoring Run As Profile” Run As profile to use the SQLMonitor Run As account.

##### Sample Code

Provision the SQLMPLowPriv login on an instance of SQL Server 2016:

use master

go

create login [yourdomain\SQLMPLowPriv] from windows

go

grant view server state to [yourdomain\SQLMPLowPriv]

grant view any definition to [yourdomain\SQLMPLowPriv]

grant view any database to [yourdomain\SQLMPLowPriv]

grant select on sys.database\_mirroring\_witnesses to [yourdomain\SQLMPLowPriv]

go

The following code shows how to generate a Transact-SQL provisioning script. The generated script provisions the SQLMPLowPriv user in all existing user databases and in the model database (thus automating the provisioning in future databases).

Important

Note: You need to output the results of this query in text format.

SELECT 'use ' + name + ' ;'

+ char(13) + char(10)

+ 'create user [yourdomain\SQLMPLowPriv] FROM login [yourdomain\SQLMPLowPriv];'

+ char(13) + char(10) + 'go' + char(13) + char(10)

FROM sys.databases WHERE database\_id = 1 OR database\_id >= 3

UNION

SELECT 'use msdb; exec sp\_addrolemember @rolename=''SQLAgentReaderRole'', @membername=''yourdomain\SQLMPLowPriv'''

+ char(13) + char(10) + 'go' + char(13) + char(10)

UNION

SELECT 'use msdb; exec sp\_addrolemember @rolename=''PolicyAdministratorRole'', @membername=''yourdomain\SQLMPLowPriv'''

+ char(13) + char(10) + 'go' + char(13) + char(10)

##### TLS 1.2 Protection

Operating protection of connections in SQL Server is provided by means of TLS protocol. In order to have the ability to use TLS 1.2 protocol, your environment should meet the following prerequisites:

1. SQL Server should be updated to version that supports TLS 1.2.
2. The following SQL Server drivers should be updated to version that supports TLS 1.2:

* SQL Server Native Client <version>
* ODBC Driver 11 for Microsoft SQL Server

1. Make sure that your environment meets the prerequisites provided in the table below:

|  |  |  |  |
| --- | --- | --- | --- |
| **OS Version** | **SCOM Version** | **.NET Version** | **PowerShell version** |
| Windows 2012 and above | Not less than minimal supported version\*\* | From 2.0 to 4.0 with TLS 1.2 update\* and from 4.0 to 4.6 with TLS 1.2 update\* | 3.0+ |
| Windows 2012 and above | Not less than minimal supported version\*\* | From 2.0 to 4.0 with TLS 1.2 update\* and 4.6+ | 3.0+ |
| Windows 2008 R2 and below | SCOM 2012 SP1 UR10 +  SCOM2012 R2 UR7 + | From 2.0 to 4.0 with TLS 1.2 update\* and 4.6+ | 2.0+ |
| Windows 2008 R2 and below | SCOM 2012 SP1 UR10 +  SCOM 2012 R2 UR7 + | From 2.0 to 4.0 with TLS 1.2 update\* and from 4.0 to 4.6 with TLS 1.2 update\* | 2.0+ |
| Windows 2008 R2 and below | From minimal supported version\*\* to SCOM 2012 SP1 UR9 or to SCOM 2012 R2 UR6 | From 2.0 to 4.0 with TLS1.2 update\* | 2.0 |

\* .NET Framework TLS 1.2 updates can be downloaded from [TLS 1.2 Support for Microsoft SQL Server](https://support.microsoft.com/kb/3135244) page (**Client component downloads** section).

\*\* Minimal supported SCOM versions are stated in Supported Configurations section.

## View Information in the Operations Manager Console

### Version-Independent (Generic) Views and Dashboards

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

 Microsoft SQL Server

Active Alerts

SQL Server Roles

Summary

Computers

Task Status



“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:



### SQL Server 2016 Views

The Management Pack for Microsoft SQL Server 2016 introduces the comprehensive set of state, performance and alert view, which can be found in the dedicated folder:

Monitoring

Microsoft SQL Server

SQL Server Database Engines

**SQL Server 2016**

Note

Please refer to “[Appendix: Management Pack Views and Dashboards](#_Appendix:_Management_Pack_1)” 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 “[Finding Data and Objects in the Operations Manager consoles](http://go.microsoft.com/fwlink/?LinkId=717834)” article in the Operations Manager Help.

### Dashboards

This management pack includes a set of rich dashboards, which provide detailed information about SQL Server 2016 Database Engines (Instances) and Databases.

Note



For detailed information, see SQL Server Dashboards guide.

## Appendix: Management Pack Views and Dashboards

 Microsoft SQL Server

Active Alerts

SQL Server Roles



Summary

Computers

Task Status

SQL Server Database Engines

Microsoft SQL Server 2016

Active Alerts

All Performance Data

Computers

Summary

Task Status

Always On High Availability

Active Alerts

Availability Groups

Availability Replicas

Database Replicas

Performance

Availability Replica Performance

Database Replica Performance

Database Engines

Active Alerts

All Performance Data

Integration Services

Database Engines

Databases

Active Alerts

All Performance Data

Databases

Filegroups

Memory-Optimized Data

Active Alerts

All Performance Data

Memory-Optimized Data Filegroups

Memory-Optimized Data Filegroup Containers

Resource Pools

Mirroring

Active Alerts

Mirroring Diagram

Mirroring Groups

SQL Agent

Active Alerts

SQL Agent Jobs

SQL Agents

SQL Server Integration Services



SSIS 2016

Active Alerts

All Performance Data

Integration Services

## Appendix: Management Pack Objects and Workflows

The Management Pack for Microsoft SQL Server 2016 discovers the object types described in the following sections. Not all of the objects are automatically discovered. Use overrides to discover those objects that are not discovered automatically.

**MSSQL 2016: Alerts Scope Group L3**

This object is used to collect alerts.

**MSSQL 2016: Alerts Scope Group L3 - Discoveries**

**MSSQL 2016: Alerts Scope Group L3 Discovery**

This object discovery populates the Alerts Scope group to contain all SQL Server Roles.

**MSSQL 2016: Alerts Scope Group L3 Discovery**

This object discovery populates the Alerts Scope group L3 to contain all SQL Availability Groups.

**MSSQL 2016: Always On Seed**

This object indicates that the particular server computer contains Microsoft SQL Server 2016 installation with some Always On components enabled.

**MSSQL 2016: Always On Seed - Discoveries**

**MSSQL 2016: Always On Seed Discovery**

This discovery is used to define which machines have Always On enabled.

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

**MSSQL 2016: Always On Seed - Rules (alerting)**

**MSSQL 2016: Always On monitoring script failed rule**

This rule detects event Id 4212 and creates an alert

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Availability Database**

This object represents Availability Database object.

**MSSQL 2016: Availability Database - Discoveries**

**MSSQL 2016: Database Replicas Always On Discovery**

Discovery of database replica Always On objects

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: Availability Database - Dependency (rollup) monitors**

**Availability Database Backup Status (rollup)**

This monitor is a dependency (rollup) monitor. The monitor checks availability of a full database backup and its age as reported by Microsoft SQL Server; it does not apply any logic regarding the replicas preferred for the backup.

**MSSQL 2016: Availability Database Health**

A hidden object, which is used to roll up the health from agents to availability database level.

**MSSQL 2016: Availability Database Health - Discoveries**

**MSSQL 2016: Database Replicas Always On Discovery**

Discovery of database replica Always On objects

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: Availability Database Health - Unit monitors**

**Availability Database Backup Status**

The monitor checks availability of a full database backup and its age as reported by Microsoft SQL Server; it does not apply any logic regarding the replicas preferred for the backup.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Backup Period (days) | The target backup frequency in days. Should be set according to your Recovery Point Objective (RPO). | 7 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 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 | |  |
|  |  |  |

**MSSQL 2016: Availability Group**

This object represents Availability Group SMO object and contains all properties required for identification and monitoring.

**MSSQL 2016: Availability Group - Discoveries**

**MSSQL 2016: General Always On Discovery**

Discovery of Always On objects

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**MSSQL 2016: Availability Group - Dependency (rollup) monitors**

**Synchronous Replicas Data Synchronization (rollup)**

This monitor rolls up the data synchronization state of all availability replicas and checks whether any availability replica is not in the expected synchronization state. The monitor is unhealthy when any asynchronous replica is not in SYNCHRONIZING state and any synchronous replica is not in SYNCHRONIZED state. The monitor state is healthy otherwise. This monitor is a dependency (rollup) monitor.

**Availability Group Automatic Failover (rollup)**

This monitor checks if the availability group has at least one secondary replica which is failover ready. The monitor becomes unhealthy and alert is registered when the failover mode of primary replica is automatic but none of secondary replica in the availability group is automatic failover ready. The monitor is healthy when at least one secondary replica is automatic failover ready. This monitor is a dependency (rollup) monitor.

**Availability Group Extended Health State (rollup)**

This is the rollup monitor for all extended health monitors. Extended health monitors are automatically generated by discovering the existing health policies in SQL server instances.

**Availability Group Online (rollup)**

This monitor checks the online or offline state of availability group. The monitor is in unhealthy state and alert is raised when the availability group’s cluster resource is offline or the availability group does not have a primary replica. The monitor state is healthy when the cluster resource of availability group is online and the availability group has a primary replica. This monitor is a dependency (rollup) monitor.

**WSFC Cluster (rollup)**

This monitor checks the state of Windows Server Failover Cluster (WSFC) service. This monitor is a dependency (rollup) monitor.

**Availability Replicas Connection (rollup)**

This monitor rolls up the connection state of all availability replicas and check whether any availability replica is DISCONNECTED. The monitor is unhealthy when any availability replica is DISCONNECTED. The monitor is healthy otherwise. This monitor is a dependency (rollup) monitor.

**Availability Databases Performance**

Rolls up all Availability Databases performance monitors to the Availability Group.

**Availability Databases Configuration**

Rolls up all Availability Databases configuration monitors to the Availability Group.

**Availability Databases Security**

Rolls up all Availability Databases security monitors to the Availability Group.

**Availability Replicas Role (rollup)**

This monitor rolls up the state of role of all availability replicas and checks whether any availability replica is not in a healthy role. The monitor is unhealthy when any availability replica is neither primary nor secondary. The monitor is healthy state otherwise. This monitor is a dependency (rollup) monitor.

**Availability Replicas Data Synchronization (rollup)**

This monitor rolls up the data synchronization state of all availability replicas in the availability group and check whether any availability replica’s synchronization is not operational. The monitor is unhealthy if any of availability replica’s data synchronization state is NOT SYNCHRONIZING. The monitor is healthy when none of availability replica’s data synchronization state is NOT SYNCHRONIZING. This monitor is a dependency (rollup) monitor.

**Availability Databases Availability**

Rolls up all Availability Databases availability monitors to the Availability Group.

**MSSQL 2016: Availability Group - Console Tasks**

**SQL Server PowerShell**

Open SQLPS console and connect to Primary Replicas of target Availability Group.

**SQL Server Management Studio**

Open SQL Server Management Studio and connect to Primary Replica of target Availability Group.

**MSSQL 2016: Availability Group Critical Policy**

Custom User Policy which has Availability Group as Facet and one of the error categories as Policy Category.

**MSSQL 2016: Availability Group Critical Policy - Discoveries**

**MSSQL 2016: General Custom User Policy Discovery**

Discovery of Custom User Policies for Always On objects. Note: This discovery is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 14400 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: Availability Group Critical Policy - Unit monitors**

**Availability Group Health Policy**

Two state monitor with 'Error' critical state used particularly for reflecting state of Custom User Policies which have Availability Group as Facet and one of the predefined error categories as Policy Category.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**MSSQL 2016: Availability Group Health**

A hidden object, which is used to roll up the health from agents to availability group level.

**MSSQL 2016: Availability Group Health - Unit monitors**

**Availability Group Online monitor**

Availability Group Online

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Availability Replicas Data Synchronization monitor**

Availability Replicas Data Synchronization

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Availability Replicas Role monitor**

Availability Replicas Role

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Availability Group Automatic Failover monitor**

Availability Group Automatic Failover

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Availability Replicas Connection monitor**

Availability Replicas Connection

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**WSFC Cluster monitor**

This monitor checks the state of Windows Server Failover Cluster (WSFC) service. The monitor is unhealthy and alert is raised when the cluster is offline or in the forced quorum state. (All availability groups hosted within this cluster are offline or the disaster recovery action is required). Monitor state is healthy when the cluster state is in the normal quorum.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Synchronous Replicas Data Synchronization monitor**

Synchronous Replicas Data Synchronization

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: Availability Group Health - Aggregate monitors**

**Availability Group Extended Health State**

Availability Group Extended Health Aggregate State monitor

**MSSQL 2016: Availability Group Health - Dependency (rollup) monitors**

**Availability Group Warning Policies (rollup)**

This monitor is the rollup monitor for all Custom User Policies which have Availability Group as Facet and one of the predefined warning categories as Policy Category.

**Availability Group Critical Policies (rollup)**

This monitor is the rollup monitor for all Custom User Policies which have Availability Group as Facet and one of the predefined error categories as Policy Category.

**MSSQL 2016: Availability Group Warning Policy**

Custom User Policy which has Availability Group as Facet and one of the warning categories as Policy Category.

**MSSQL 2016: Availability Group Warning Policy - Unit monitors**

**Availability Group Health Policy**

Two state monitor with 'Warning' critical state used particularly for reflecting state of Custom User Policies which have Availability Group as Facet and one of the predefined warning categories as Policy Category.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**MSSQL 2016: Availability Replica**

This object represents Availability Replica SMO object and contains all properties required for identification and monitoring.

**MSSQL 2016: Availability Replica - Unit monitors**

**Availability Replica Connection**

This monitor checks the connection state between availability replicas. The monitor is unhealthy when the availability replica’s connection state is DISCONNECTED. The monitor is healthy otherwise.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Availability Replica Data Synchronization**

This monitor rolls up the data synchronization state of all database replica in the availability replica. The monitor is unhealthy when any database replica is not in the expected data synchronization state. The monitor is healthy otherwise.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Availability Replica Join State**

This monitor checks the join state of availability replica. The monitor is unhealthy when the availability replica is added to the availability group but not joined properly. The monitor is healthy otherwise.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Availability Replica Role**

This monitor checks the state of role of availability replica. The monitor is unhealthy when the availability replica’s role is not primary or secondary. The monitor is healthy otherwise.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: Availability Replica - Aggregate monitors**

**Availability Replica Extended Health State**

Availability Replica Extended Health Aggregate State monitor

**MSSQL 2016: Availability Replica - Dependency (rollup) monitors**

**Availability Replica Critical Policies (rollup)**

This monitor is the rollup monitor for all Custom User Policies which have Availability Replica as Facet and one of the predefined error categories as Policy Category.

**Availability Replica Warning Policies (rollup)**

This monitor is the rollup monitor for all Custom User Policies which have Availability Replica as Facet and one of the predefined warning categories as Policy Category.

**MSSQL 2016: Availability Replica - Rules (alerting)**

**MSSQL 2016: Availability Replica Role Changed**

This error occurs when Availability replica changes its role.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Availability Replica - Rules (non-alerting)**

**MSSQL 2016: Resent Messages / sec**

The rate per second to get acknowledgements for messages sent to the replica

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Bytes Sent to Transport / sec**

The total number of bytes send over the network to the replica

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Bytes Received from Replica / sec**

Total number of bytes received from this replica over the network for the AG

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**MSSQL 2016: Sends to Transport / sec**

Number of messages sent over the network to this replica. This account for all the messages sent from this replica including control messages.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Bytes Sent to Replica / sec**

The number of database message bytes enqueued to be send over the network to this replica. The bytes include messages for all databases in the AG.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Receives from Replica / sec**

Total number of messages received from this replica for the AG

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Flow Control Time (ms/sec)**

The number of milliseconds flow control was enabled to this replica within the last second

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| --- | --- | --- |
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**MSSQL 2016: Flow Control / sec**

Number of flow controls enabled for this replica per second

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Sends to Replica / sec**

Number of messages enqueued to be send over the network to this replica

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Availability Replica - Console Tasks**

**SQL Server Management Studio**

Open SQL Server Management Studio and connect to target Availability Replica.

**SQL Server PowerShell**

Open SQLPS console and connect to target Availability Replica.

**Forced Failover**

Open SQLPS console and fail over to target Availability Replica that will make this replica to the new primary of availability group. In this task -AllowDataLoss parameter is used.

**Manual Failover**

Open SQLPS console and fail over to target Availability Replica that will make this replica to the new primary of availability group.

**MSSQL 2016: Availability Replica Critical Policy**

Custom User Policy which has Availability Replica as Facet and one of the error categories as Policy Category.

**MSSQL 2016: Availability Replica Critical Policy - Unit monitors**

**Availability Replica Health Policy**

Two state monitor with 'Error' critical state used particularly for reflecting state of Custom User Policies which have Availability Replica as Facet and one of the predefined error categories as Policy Category.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**MSSQL 2016: Availability Replica Warning Policy**

Custom User Policy which has Availability Replica as Facet and one of the warning categories as Policy Category.

**MSSQL 2016: Availability Replica Warning Policy - Unit monitors**

**Availability Replica Health Policy**

Two state monitor with 'Warning' critical state used particularly for reflecting state of Custom User Policies which have Availability Replica as Facet and one of the predefined warning categories as Policy Category.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: Database Replica**

This is representation of Database Replica State SMO object

**MSSQL 2016: Database Replica - Discoveries**

**MSSQL 2016: Database Replicas Always On Discovery**

Discovery of database replica Always On objects

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|  | |  |  |  | | --- | --- | --- | | **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 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**MSSQL 2016: Database Replica - Unit monitors**

**Availability Database Join State**

This monitor checks the join state of database replica. The monitor is unhealthy when the database replica is not joined. The monitor is in healthy state otherwise.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Availability Database Suspension State**

This monitor checks the state of data movement of the database replica. The monitor is unhealthy when the data movement is suspended. The monitor is healthy otherwise.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Availability Database Data Synchronization**

This monitor checks the data synchronization state of database replica. The monitor is unhealthy when the data synchronization state is NOT SYNCHRONIZING or the state is not SYNCHRONIZED for synchronous commit database replica.

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|  |  |  |

**MSSQL 2016: Database Replica - Aggregate monitors**

**Database Replica Extended Health State**

Database Replica Extended Health Aggregate State monitor

**MSSQL 2016: Database Replica - Dependency (rollup) monitors**

**Database Replica Warning Policies (rollup)**

This monitor is the rollup monitor for all Custom User Policies which have Database Replica State as Facet and one of the predefined warning categories as Policy Category.

**Database Replica Critical Policies (rollup)**

This monitor is the rollup monitor for all Custom User Policies which have Database Replica State as Facet and one of the predefined error categories as Policy Category.

**MSSQL 2016: Database Replica - Rules (alerting)**

**MSSQL 2016: Database Replica Role Changed**

This error occurs when Database replica changes its role.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Database Replica - Rules (non-alerting)**

**MSSQL 2016: Log Bytes Received / sec**

The number of log bytes received by this replica. This is valid only on the secondary

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Mirrored Write Transactions / sec**

The number of transactions processed through synchronization commits. Dividing transaction delay by mirrored transactions to get delay per transaction.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Redo blocked/sec**

Number of times the REDO thread was blocked in this database since this database was brought ONLINE.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Transaction Delay**

The total time for all transactions waited on the secondary acknowledgement.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Log Send Queue**

The size of the log send queue on this replica.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: File Bytes Received / sec**

The number of filestream bytes received by from this replica. This is valid only on the secondary

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Redo Bytes Remaining**

The amount of log bytes remaining to be redone to finish the reverting phase.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Log Remaining for undo**

The amount of log that need to be undone in KB.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Recovery Queue**

Amount of log records in the log files of the secondary replica that has not yet been redone.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Log Apply Ready Queue**

Number of log blocks pending and ready to be applied to the database replica.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Log Apply Pending Queue**

Number of log blocks pending to be applied to the database replica.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Redone Bytes / sec**

The rate at which log records are redone on the secondary.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Total Log requiring undo**

Total kilobytes of log that must be undone.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Database Replica - Console Tasks**

**SQL Server Management Studio**

Open SQL Server Management Studio and connect to Availability Replica of target Database Replica.

**Suspend Data Movement**

Open SQLPS console and suspend data movement for target Database Replica

**Resume Data Movement**

Open SQLPS console and resume data movement for target Database Replica

**SQL Server PowerShell**

Open SQLPS console and connect to Availability Replica of target Database Replica.

**MSSQL 2016: Database Replica Critical Policy**

Custom User Policy which has Database Replica State as Facet and one of the error categories as Policy Category.

**MSSQL 2016: Database Replica Critical Policy - Unit monitors**

**Database Replica Health Policy**

Two state monitor with 'Error' critical state used particularly for reflecting state of Custom User Policies which have Database Replica State as Facet and one of the predefined error categories as Policy Category.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: Database Replica Warning Policy**

Custom User Policy which has Database Replica State as Facet and one of the warning categories as Policy Category.

**MSSQL 2016: Database Replica Warning Policy - Unit monitors**

**Database Replica Health Policy**

Two state monitor with 'Warning' critical state used particularly for reflecting state of Custom User Policies which have Database Replica State as Facet and one of the predefined warning categories as Policy Category.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: Group of Availability Groups**

A group containing all Availability Groups of Microsoft SQL Server 2016

**MSSQL 2016: Group of Availability Groups - Discoveries**

**MSSQL 2016: Populate SQL Availability Group**

This discovery rule populates the Availability Group.

**MSSQL 2016: Group of Availability Groups - Dependency (rollup) monitors**

**Availability Group Security Rollup**

Availability Group Security Rollup

**Availability Group Configuration Rollup**

Availability Group Configuration Rollup

**Availability Group Availability Rollup**

Availability Group Availability Rollup

**Availability Group Rollup**

Availability Group Performance Rollup

**MSSQL 2016: Group of Availability Replicas**

A group containing all Availability Replicas of Microsoft SQL Server 2016

**MSSQL 2016: Group of Availability Replicas - Discoveries**

**MSSQL 2016: Populate SQL Availability Replica Group**

This discovery rule populates the Availability Replica Group.

**MSSQL 2016: Group of Availability Replicas - Dependency (rollup) monitors**

**Availability Replica Availability Rollup**

Availability Replica Availability Rollup

**Availability Replica Rollup**

Availability Replica Performance Rollup

**Availability Replica Configuration Rollup**

Availability Replica Configuration Rollup

**Availability Replica Security Rollup**

Availability Replica Security Rollup

**MSSQL 2016: Group of Database Replicas**

A group containing all Database Replicas of Microsoft SQL Server 2016

**MSSQL 2016: Group of Database Replicas - Discoveries**

**MSSQL 2016: Populate SQL Database Replica Group**

This discovery rule populates the Database Replica Group.

**MSSQL 2016: Group of Database Replicas - Dependency (rollup) monitors**

**Database Replica Availability Rollup**

Database Replica Availability Rollup

**Database Replica Rollup**

Database Replica Performance Rollup

**Database Replica Security Rollup**

Database Replica Security Rollup

**Database Replica Configuration Rollup**

Database Replica Configuration Rollup

**Server Roles Group**

Server Roles Group contains all SQL Server root objects such as Database Engine, Analysis Services instance or Reporting Service instance.

**Server Roles Group - Discoveries**

**MSSQL 2016: Server Roles Group Discovery**

This object discovery populates the Server Roles group to contain all SQL Server Roles.

**MSSQL 2016: Server Roles Group Discovery**

This object discovery populates the Server Roles group to contain all SQL Server Roles.

**SQL 2016 Mirrored DB**

Microsoft SQL Server 2016 Mirrored Database

**SQL 2016 Mirrored DB - Discoveries**

**Discover Mirrored Databases for a Database Engine**

This object discovery discovers all mirrored databases running for a given instance of SQL Server 2016 DB Engine. By default all mirrored databases are discovered and monitored. You can override the discovery to exclude one or more databases from being discovered using the Exclude List. This list takes a comma-separated list of database names or the \* character to exclude all databases.

|  |  |  |
| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Exclude List | A comma-separated list of database names that should be excluded from discovery. You can use the wildcard \* to exclude all databases. |  | | 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 | |  |
|  |  |  |

**SQL 2016 Mirrored DB - Unit monitors**

**Database Mirror Status**

This monitor checks if database mirror is synchronized.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | |  |
|  |  |  |

**Database Mirror Witness Status**

This monitor checks if database mirror witness is accessible.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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 | |  |
|  |  |  |

**SQL 2016 Mirrored DB Witness**

Microsoft SQL Server 2016 Mirrored Database Witness

**SQL 2016 Mirrored DB Witness - Discoveries**

**Discover Mirrored Databases Witnesses**

This object discovery discovers all mirrored databases witnesses running for a given instance of SQL Server 2016 DB Engine. By default witnesses for all mirrored databases are discovered and monitored. You can override the discovery to exclude one or more databases from being discovered using the Exclude List. This list takes a comma-separated list of database names or the \* character to exclude all databases.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Exclude List | A comma-separated list of database names that should be excluded from discovery. You can use the wildcard \* to exclude all databases. |  | | 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 | |  |
|  |  |  |

**SQL 2016 Mirrored DB Witness - Unit monitors**

**Database Mirroring Partners Status**

This monitor checks if database mirror is synchronized.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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 | |  |
|  |  |  |

**SQL 2016 Mirroring Group**

Microsoft SQL Server 2016 Mirroring Group

**SQL 2016 Mirroring Group - Discoveries**

**Discover Mirrored Databases Witnesses**

This object discovery discovers all mirrored databases witnesses running for a given instance of SQL Server 2016 DB Engine. By default witnesses for all mirrored databases are discovered and monitored. You can override the discovery to exclude one or more databases from being discovered using the Exclude List. This list takes a comma-separated list of database names or the \* character to exclude all databases.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Exclude List | A comma-separated list of database names that should be excluded from discovery. You can use the wildcard \* to exclude all databases. |  | | 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 | |  |
|  |  |  |

**Discover Mirrored Databases for a Database Engine**

This object discovery discovers all mirrored databases running for a given instance of SQL Server 2016 DB Engine. By default all mirrored databases are discovered and monitored. You can override the discovery to exclude one or more databases from being discovered using the Exclude List. This list takes a comma-separated list of database names or the \* character to exclude all databases.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Exclude List | A comma-separated list of database names that should be excluded from discovery. You can use the wildcard \* to exclude all databases. |  | | 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 | |  |
|  |  |  |

**SQL 2016 Mirroring Group - Dependency (rollup) monitors**

**Mirroring Witness Availability Rollup**

This monitor rolls up the Mirroring Witness availability health to the Mirroring Group.

**Mirrored Database Configuration Rollup**

This monitor rolls up the Mirrored Database configuration health to the Mirroring Group.

**Mirrored Database Performance Rollup**

This monitor rolls up the Mirrored Database performance health to the Mirroring Group.

**Mirrored Database Availability Rollup**

This monitor rolls up the Mirrored Database availability health to the Mirroring Group.

**SQL 2016 Mirroring Witness Role**

Microsoft SQL Server 2016 Database Mirroring Witness Role.

**SQL 2016 Mirroring Witness Role - Dependency (rollup) monitors**

**Mirroring Witness Availability Rollup**

This monitor rolls up the Mirroring Witness availability health to the Mirroring Witness Role.

**SQL Server 2016 Agent**

The SQL Server 2016 Agent component that runs as part of a Microsoft SQL Server 2016 Database Engine

**SQL Server 2016 Agent - Discoveries**

**MSSQL 2016: Discover SQL Server Agent for a DB Engine**

This discovery rule discovers the SQL Server Agent for an instance of SQL Server 2016 DB Engine. There could be only one SQL Server Agent instance for each DB Engine instance.

**SQL Server 2016 Agent - Unit monitors**

**SQL Server Agent Windows Service**

This monitor checks the status of the SQL Agent service for this instance of SQL Server.  
Note that SQL Server Agent Windows Service is not supported by any edition of SQL Server Express.

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|  | |  |  |  | | --- | --- | --- | | **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 | |  |
|  |  |  |

**Long Running Jobs**

This monitor checks for long running SQL Agent jobs.   
Note that SQL Server Agent Windows Service is not supported by any edition of SQL Server Express; there is no appropriate discovered object. This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Critical Threshold (minutes) | The monitor will change its state to Critical if the value exceeds this threshold. Being between this threshold and the warning threshold (inclusive) will result in the monitor being in a warning state. | 120 | | 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 | | Warning Threshold (minutes) | Warning threshold. Exceeding this threshold will result in the monitor changing to at least a warning state. | 60 | |  |
|  |  |  |

**SQL Server 2016 Agent - Dependency (rollup) monitors**

**Agent job performance (rollup)**

This monitor rolls up the performance state from SQL Agent Jobs to SQL Agent.  
Note that SQL Server Agent Windows Service is not supported by any edition of SQL Server Express; there is no appropriate discovered object.

**Agent job availability (rollup)**

This monitor rolls up the availability state from SQL Agent Jobs to SQL Agent.  
Note that SQL Server Agent Windows Service is not supported by any edition of SQL Server Express; there is no appropriate discovered object.

**SQL Server 2016 Agent - Rules (alerting)**

**MSSQL 2016: : SQL Server Agent is unable to connect to SQL Server**

The SQL Server Agent Service could not connect to the instance of SQL Server. This error may occur when the SQL Server Agent service account does not have a valid login on SQL Server

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Alert engine stopped due to unrecoverable local eventlog errors**

SQL Server Agent was unable to open the local event log.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Job step cannot be run because the subsystem failed to load**

A SQL Server job failed to run because the SQL Server Agent subsystem failed to load.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Unable to re-open the local eventlog**

SQL Server Agent was unable to open the local event log.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: SQL Server Agent initiating self-termination**

SQL Server Agent has shut down the SQL Server Agent service.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: SQL Server Agent could not be started**

A process or a person attempted to start the SQL Server Agent service, but the service did not start.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: A SQL job failed to complete successfully**

A SQL Server Agent Job Failed. The SQL Server Agent is responsible for running SQL Server tasks scheduled to occur at specific times or intervals as well as detecting specific conditions for which administrators have defined an action, such as alerting someone through pages or e-mail, or a task that will address the conditions. The SQL Server Agent is also used for running replication tasks defined by administrators. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: The agent is suspect. No response within last minutes**

This behavior occurs because the replication agent is too busy to respond when SQL Server Enterprise Manager polls the replication agent; therefore, SQL Server Enterprise Manager does not know the status of the replication agent and it cannot report whether the replication agent is functioning or not.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Step of a job caused an exception in the subsystem**

A specific job step caused SQL Server Agent to write an error to the Windows Application log. The log will show the specific job and job step.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**SQL Server 2016 Agent - Tasks**

**Start SQL Agent Service**

Start SQL Agent Service  
Note that SQL Server Agent Windows Service is not supported by any edition of SQL Server Express.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**Stop SQL Agent Service**

Stop SQL Agent Service  
Note that SQL Server Agent Windows Service is not supported by any edition of SQL Server Express.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**SQL Server 2016 Agent Group**

A group containing all agents of Microsoft SQL Server 2016 database engines

**SQL Server 2016 Agent Group - Discoveries**

**MSSQL 2016: Populate SQL Server 2016 Agent Group**

This discovery rule populates the Agent group with all SQL Server 2016 Agents.

**SQL Server 2016 Agent Job**

All Microsoft SQL Server 2016 agent jobs.

**SQL Server 2016 Agent Job - Discoveries**

**MSSQL 2016: Discover SQL Server 2016 Agent Jobs**

This discovery rule discovers all SQL Server 2016 Agent jobs.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | 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 | |  |
|  |  |  |

**SQL Server 2016 Agent Job - Unit monitors**

**Job Duration**

Monitors Agent Job Duration.  
Note that SQL Server Agent Windows Service is not supported by any edition of SQL Server Express; there is no appropriate discovered object.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Critical Threshold (minutes) | The monitor will change its state to Critical if the value exceeds this threshold. Being between this threshold and the warning threshold (inclusive) will result in the monitor being in a warning state. | 120 | | 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 | | Warning Threshold (minutes) | Warning threshold. Exceeding this threshold will result in the monitor changing to at least a warning state. | 60 | |  |
|  |  |  |

**Last Run Status**

SQL 2016 Agent Job Last Run State Monitor. Monitors the last run state of an SQL Agent Job.  
Note that SQL Server Agent Windows Service is not supported by any edition of SQL Server Express; there is no appropriate discovered object.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | 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 | |  |
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**SQL Server 2016 Agent Job - Tasks**

**Start SQL Agent Service**

Start SQL Agent Service  
Note that SQL Server Agent Windows Service is not supported by any edition of SQL Server Express.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
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**Stop SQL Agent Service**

Stop SQL Agent Service  
Note that SQL Server Agent Windows Service is not supported by any edition of SQL Server Express.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**SQL Server 2016 Agents Group**

A group containing all SQL Server 2016 agents

**SQL Server 2016 Agents Group - Discoveries**

**MSSQL 2016: Populate SQL Server 2016 Agents Group**

This discovery rule populates the SQL Server 2016 Agents group with all SQL Server 2016 agents.

**SQL Server 2016 Components**

A group containing all components related to Microsoft SQL Server

**SQL Server 2016 Components - Discoveries**

**MSSQL 2016: Populate SQL Server 2016 Components Group**

This discovery rule populates the Components group with all SQL Server 2016 related components

**SQL Server 2016 Computers**

A group containing all Windows computers that are running a component of Microsoft SQL Server 2016.

**SQL Server 2016 Computers - Discoveries**

**MSSQL 2016: Populate SQL Server 2016 Computer Group**

This discovery rule populates the SQL Server 2016 Computer Group with all computers running SQL Server 2016.

**MSSQL 2016: Populate Microsoft SQL Server 2016 Computer Group**

This discovery rule populates the SQL Server 2016 Computer Group with all computers that are running one or more components of SQL Server 2016.

**SQL Server 2016 Custom User Policy**

Custom User Policy object

**SQL Server 2016 Custom User Policy - Discoveries**

**MSSQL 2016: Database Custom User Policy Discovery**

This discovery rule discovers Custom User Policies for SQL Server 2016 Database. Note: This discovery is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**SQL Server 2016 Database Critical Policy**

Custom User Policy, which has a Database as the Facet and one of the error categories as Policy Category.

**SQL Server 2016 Database Critical Policy - Unit monitors**

**Database Health Policy**

Two state monitor with 'Error' critical state used particularly for reflecting state of Custom User Policies which have Database as Facet and one of the predefined error categories as Policy Category.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Server 2016 Database Group**

A group containing all databases of Microsoft SQL Server 2016 database engines

**SQL Server 2016 Database Group - Discoveries**

**MSSQL 2016: Populate SQL Server 2016 Database Group**

This discovery rule populates the Database group with all SQL Server 2016 Databases.

**SQL Server 2016 Database Warning Policy**

Custom User Policy, which has a Database as the Facet and one of the warning categories as Policy Category.

**SQL Server 2016 Database Warning Policy - Unit monitors**

**Database Health Policy**

Two state monitor with 'Warning' critical state used particularly for reflecting state of Custom User Policies which have Database as Facet and one of the predefined warning categories as Policy Category.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Server 2016 Databases Group**

A group containing all SQL Server 2016 databases

**SQL Server 2016 Databases Group - Discoveries**

**MSSQL 2016: Populate SQL Server 2016 Databases Group**

This discovery rule populates the SQL Server 2016 Databases group with all SQL Server 2016 databases.

**SQL Server 2016 DB**

Microsoft SQL Server 2016 Database

**SQL Server 2016 DB - Discoveries**

**MSSQL 2016: Discover Databases for a Database Engine**

This discovery rule discovers all databases running for a given instance of SQL Server 2016 DB Engine. By default all databases are discovered and monitored. You can override the discovery to exclude one or more databases from being discovered using the Exclude List. This list takes a comma-separated list of database names or the \* character to exclude all databases.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Exclude List | A comma-separated list of database names that should be excluded from discovery. You can use the wildcard \* to exclude all databases. |  | | 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 | |  |
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**SQL Server 2016 DB - Unit monitors**

**Page Verify Configuration**

Monitors the Page Verify setting for the database. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Disable Check for SQL Express | This may only be set to 'true' or 'false'. The workflow will not consider SQL Server Express edition if set to 'true'. | false | | Expected Value | Expected value of database configuration setting. To view the set of applicable values please refer to "Configuration" section of the knowledge base article of this monitor. | CHECKSUM | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 43200 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**Destination Log Shipping**

This monitor detects when a log shipping destination has not had a log restored to it within the threshold defined as a part of the log shipping configuration.  
Note that all Log Shipping is not supported by any edition of SQL Server Express.

**Source Log Shipping**

This monitor detects when a log shipping source has not had its logs backed up within the threshold defined as a part of the log shipping configuration.  
Note that all Log Shipping is not supported by any edition of SQL Server Express.

**Database Backup Status**

This monitor checks the status of the database backup as reported by Microsoft SQL Server. Note that the monitor ignores Always On databases. Therefore, it is always "green" for those databases. For backups of Always On databases, use the dedicated monitors at the Availability Group. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Backup Period (days) | The target backup frequency in days. Should be set according to your Recovery Point Objective (RPO). | 7 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 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 | |  |
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**Database Status**

This monitor checks the status of the database as reported by Microsoft SQL Server.

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|  | |  |  |  | | --- | --- | --- | | **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. | 3600 | | 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 | |  |
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**SQL Server Windows Service**

This monitor checks the status of the SQL Database Engine service.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | False | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 60 | |  |
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**DB Chaining Configuration**

Monitors the Cross-database Ownership Chaining Enabled setting for the database. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Disable Check for SQL Express | This may only be set to 'true' or 'false'. The workflow will not consider SQL Server Express edition if set to 'true'. | false | | Expected Value | Expected value of database configuration setting. To view the set of applicable values please refer to "Configuration" section of the knowledge base article of this monitor. | OFF | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 43200 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Disk Write Latency**

Disk Write Latency monitor for 2016 DBs. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | 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. | 300 | | Number of samples | Indicates how many times a measured value should breach a threshold before the state is changed. | 6 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:19 | | Threshold | The collected value will be compared against this parameter. | 25 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 200 | |  |
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**Auto Close Configuration**

Monitors the Auto Close setting for the database. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Disable Check for SQL Express | This may only be set to 'true' or 'false'. The workflow will not consider SQL Server Express edition if set to 'true'. | true | | Expected Value | Expected value of database configuration setting. To view the set of applicable values please refer to "Configuration" section of the knowledge base article of this monitor. | OFF | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 43200 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Transaction Log Free Space (%)**

Transaction Log Free Space (%) monitor for 2016 DBs. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 300 | | Number of samples | Indicates how many times a measured value should breach a threshold before the state is changed. | 6 | | Threshold | The collected value will be compared against this parameter. | 10 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 180 | |  |
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**Auto Update Statistics Async Configuration**

Monitors the Auto Update Atatistics Asynchronously setting for the database. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Disable Check for SQL Express | This may only be set to 'true' or 'false'. The workflow will not consider SQL Server Express edition if set to 'true'. | false | | Expected Value | Expected value of database configuration setting. To view the set of applicable values please refer to "Configuration" section of the knowledge base article of this monitor. | OFF | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 43200 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Auto Update Statistics Configuration**

Monitors the Auto Update Statistics setting for the database. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Disable Check for SQL Express | This may only be set to 'true' or 'false'. The workflow will not consider SQL Server Express edition if set to 'true'. | false | | Expected Value | Expected value of database configuration setting. To view the set of applicable values please refer to "Configuration" section of the knowledge base article of this monitor. | ON | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 43200 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**DB Free Space Left**

Monitors the space available in the database and on the media hosting the database in percentage terms. Note: This monitor is disabled by default. Please use overrides to enable it when necessary. This monitor does not count free space for FILESTREAM and Memory-Optimized Data file groups.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Critical Threshold | The monitor will change its state to Critical if the value drops below this threshold. Being between this threshold and the warning threshold (inclusive) will result in the monitor being in a warning state. | 10 | | 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 its state to Warning if the value drops below this threshold. | 20 | |  |
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**Auto Create Statistics Configuration**

Monitors the Auto Create Statistic setting for the database. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Disable Check for SQL Express | This may only be set to 'true' or 'false'. The workflow will not consider SQL Server Express edition if set to 'true'. | false | | Expected Value | Expected value of database configuration setting. To view the set of applicable values please refer to "Configuration" section of the knowledge base article of this monitor. | ON | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 43200 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**DB Space Percentage Change**

Monitors for a significant change of database free space over a number of sample periods. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Critical Threshold | The monitor will change its state to Critical if the value exceeds this threshold. Being between this threshold and the warning threshold (inclusive) will result in the monitor being in a warning state. | 45 | | 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. | 5 | | 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 | Warning threshold. Exceeding this threshold will result in the monitor changing to at least a warning state. | 25 | |  |
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**Disk Read Latency**

Disk Read Latency monitor for 2016 DBs. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | 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. | 300 | | Number of samples | Indicates how many times a measured value should breach a threshold before the state is changed. | 6 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:19 | | Threshold | The collected value will be compared against this parameter. | 40 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 200 | |  |
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**Recovery Model Configuration**

Monitors the Recovery model setting for the database. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Disable Check for SQL Express | This may only be set to 'true' or 'false'. The workflow will not consider SQL Server Express edition if set to 'true'. | false | | Expected Value | Expected value of database configuration setting. To view the set of applicable values please refer to "Configuration" section of the knowledge base article of this monitor. | FULL | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 43200 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Auto Shrink Configuration**

Monitors the Auto Shrink setting for the database. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Disable Check for SQL Express | This may only be set to 'true' or 'false'. The workflow will not consider SQL Server Express edition if set to 'true'. | false | | Expected Value | Expected value of database configuration setting. To view the set of applicable values please refer to "Configuration" section of the knowledge base article of this monitor. | OFF | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 43200 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
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**Trustworthy Configuration**

Monitors the Trustworthy setting for the database. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Disable Check for SQL Express | This may only be set to 'true' or 'false'. The workflow will not consider SQL Server Express edition if set to 'true'. | false | | Expected Value | Expected value of database configuration setting. To view the set of applicable values please refer to "Configuration" section of the knowledge base article of this monitor. | OFF | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 43200 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Server 2016 DB - Aggregate monitors**

**Recovery Configuration**

Monitors the aggregate recovery configuration health for the database.

**DB Log File Space**

Monitors the aggregate space health for the log file.

**Database Extended Health State**

Database Extended Health Aggregate State monitor

**Automatic Configuration**

This monitor aggregates the health of automatic configuration monitors.

**DB Space**

Monitors the aggregate space health for the database.

**External Access Configuration**

Monitors the aggregate external access configuration health for the database.

**SQL Server 2016 DB - Dependency (rollup) monitors**

**DB Memory-Optimized Data Filegroup Space (rollup)**

This dependency monitor rolls up the overall health from Memory-Optimized Data Filegroup to Database.

**DB Filegroup Space (rollup)**

This dependency monitor rolls up the overall space health from Database Filegroups to the Database.

**Memory-Optimized Data Stale Checkpoint File Pairs Ratio (rollup)**

The monitor reports a warning state and raises an alert when the ratio of stale checkpoint file pairs in Memory-Optimized Data Filegroup is higher than the specified thresholds. This monitor is a dependency (rollup) monitor.  
Please note that the alerts are raised only if the corresponding database is reasonably big (300 or more checkpoint files total).

**Average length of the row chains in the hash buckets (rollup)**

This monitor checks Hash Index Empty Buckets Count and Average Length of the Row Chains in the SQL Database. This monitor is a dependency (rollup) monitor.

**DB Log File Space (rollup)**

The monitor oversees the space available in all transaction log files in the database and on related media. The space available on the media hosting transaction log files is only included as part of the free space if auto grow is enabled for at least one transaction log file. This monitor is a dependency (rollup) monitor.

**XTP Configuration (rollup)**

This monitor checks the status of the SQL Database XTP Configuration. This monitor is a dependency (rollup) monitor.

**Database Warning Policies (rollup)**

This is the rollup monitor for all extended health monitors. Extended health monitors are automatically generated by discovering existing health policies in SQL server instances. This monitor is for warning custom user policies.

**Database Critical Policies (rollup)**

This is the rollup monitor for all extended health monitors. Extended health monitors are automatically generated by discovering existing health policies in SQL server instances. This monitor is for critical custom user policies.

**[Deprecated] Garbage Collection State (rollup)**

The monitor reports a Critical State and raises an alert if the amount of space used by active rows in all Memory-Optimized Data files drops below the Threshold setting, expressed as a percentage of the size of data files. This monitor is a dependency (rollup) monitor.   
This monitor is considered to be obsolete in this Management Pack.

**Empty Bucket percent in the hash index (rollup)**

This monitor checks Hash Index Empty Buckets Count in the SQL Database. This monitor is a dependency (rollup) monitor.

**DB FILESTREAM Filegroup Space (rollup)**

This dependency monitor rolls up the overall space health from Database FILESTREAM Filegroups to the Database.

**Resources Pool Memory Consumption (rollup)**

The monitor reports a critical state and raises an alert when the amount of memory used by the resource pool is greater than the Threshold setting, expressed as a percentage of memory available for Memory-Optimized Data tables for the given resource pool. This monitor is a dependency (rollup) monitor.

**SQL Server 2016 DB - Rules (non-alerting)**

**MSSQL 2016: DB Transactions Per Second Count**

SQL 2016 DBs Transactions per second performance collection rule

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: DB Allocated Space (MB)**

Collect database allocated size

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | 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 | |  |
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**MSSQL 2016: DB Active Sessions Count**

SQL 2016 DBs Active Sessions performance collection rule

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|  | |  |  |  | | --- | --- | --- | | **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. | 00:15 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: DB Disk Write Latency (ms)**

SQL 2016 DB Disk Write Latency (ms) performance collection rule. Gets maximum Write disk latency from all logical disk which host database files.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 00:19 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: DB Allocated Free Space (MB)**

SQL 2016 DB Allocated Free Space (MB) performance collection rule

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: DB Allocated Space Used (MB)**

SQL 2016 DBs Allocated Space Used (MB) performance collection rule

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: DB Free Space Total (%)**

The amount of space left in database for all files in all Filegroups for this database in percentage terms. Also includes space left on media hosting a file with auto grow enabled.   
Please note that this rule collects metrics for ROWS data only. Metrics for FILESTREAM and for In-Memory OLTP data are ignored.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | 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 2016: DB Active Transactions Count**

SQL 2016 DBs Active Transactions performance collection rule

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: DB Disk Read Latency (ms)**

SQL 2016 DB Disk Read Latency (ms) performance collection rule. Gets maximum read disk latency from all logical disk which host database files

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 00:19 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: DB Active Requests Count**

SQL 2016 DBs Active Requests performance collection rule

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 00:13 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: DB Free Space Total (MB)**

The amount of space left in database for all files in all Filegroups for this database in megabytes. Also includes space left on media hosting a file with auto grow enabled.   
Please note that this rule collects metrics for ROWS data only. Metrics for FILESTREAM and for In-Memory OLTP data are ignored.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | 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 2016: DB Active Connections Count**

SQL 2016 DBs Active Connections performance collection rule

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 00:11 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: DB Transaction Log Free Space Total (%)**

Collect unused transaction log space reported by SQL Server as a percentage of total transaction log space

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | 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 2016: DB Free Outer Space (MB)**

SQL 2016 DBs Free Outer Space (MB) performance collection rule

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Server 2016 DB - Tasks**

**Set Database Online**

Set Database Online

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**Set Database Offline**

Set Database Offline

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**Check Disk (DBCC)**

Checks the consistency of disk space allocation structures for a specified database.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**Check Database (DBCC)**

Checks the allocation, structural, and logical integrity of all the objects in the specified database.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**Set Database to Emergency State**

Set Database to Emergency State

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**Check Catalog (DBCC)**

Checks for catalog consistency within the specified database. The database must be online.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**SQL Server 2016 DB - Console Tasks**

**SQL Profiler**

**SQL Management Studio**

**SQL Server 2016 DB Engine**

An installation of a Microsoft SQL Server 2016 Database Engine. The database engine hosts databases and other SQL Server components.

**SQL Server 2016 DB Engine - Discoveries**

**MSSQL 2016: Discover SQL Server 2016 Database Engines**

This discovery rule discovers all instances of SQL Server 2016 DB Engine running on Windows Servers. By default all instances are discovered and monitored. You can override the discovery to exclude one or more instances from being discovered using the Exclude List. This list takes a comma-separated list of instances or the \* character to exclude all instances.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Exclude List | A comma-separated list of instances that should be excluded from discovery. You can use the wildcard \* to exclude all instances. |  | | 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 | |  |
|  |  |  |

**SQL Server 2016 DB Engine - Unit monitors**

**CPU Utilization (%)**

CPU Utilization (%) for 2016 DB Engine

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Cache Expiration Time | Specifies the maximum age of information from cache the workflow can use. May be omitted. | 43200 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 300 | | Number of samples | Indicates how many times a measured value should breach a threshold before the state is changed. | 6 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:18 | | Threshold | The collected value will be compared against this parameter. | 95 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 200 | |  |
|  |  |  |

**Average Wait Time**

Average Wait Time monitor for 2016 DBs

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 300 | | Number of samples | Indicates how many times a measured value should breach a threshold before the state is changed. | 6 | | Threshold | The collected value will be compared against this parameter. | 250 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Re-Compilation**

SQL Re-Compilation for 2016 DB Engine. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | 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. | 300 | | Number of samples | Indicates how many times a measured value should breach a threshold before the state is changed. | 6 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:21 | | Threshold | If the ratio between SQL Re-Compilation and SQL Compilation is greater than this threshold alert will be generated | 25 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 200 | |  |
|  |  |  |

**Page Life Expectancy**

Page Life Expectancy (s) for 2016 DB Engine

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 300 | | Number of samples | Indicates how many times a measured value should breach a threshold before the state is changed. | 6 | | Threshold | The collected value will be compared against this parameter. | 300 | |  |
|  |  |  |

**Service Pack Compliance**

Monitors the service pack level of the database engine against the compliant setting

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 43200 | | Minimal Service Pack level for SQL Server 2016 | The minimal Service Pack level as per company policy. | 1 | |  |
|  |  |  |

**Stolen Server Memory**

Stolen Server Memory for 2016 DB Engine

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 300 | | Number of samples | Indicates how many times a measured value should breach a threshold before the state is changed. | 6 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:24 | | Threshold | Alert will be generated if the Stolen Server Memory/SQL Server max memory ratio is greater than this threshold. | 70 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 200 | |  |
|  |  |  |

**Blocking Sessions**

Monitors blocked sessions for a SQL instance. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | 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. | 300 | | Number of blocked sessions | The maximum allowed number of blocked sessions. | 1 | | 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 Time (minutes) | The minimum process execution duration before considering it for Blocked SPIDs analysis. | 1 | |  |
|  |  |  |

**Managed Backup User Action Health Policy**

The Managed Backup User Action Health Policy evaluates warnings such as corrupted backups, etc.   
These warnings may not require any action but just a warning of an event.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**Buffer Cache Hit Ratio**

Buffer Cache Hit Ratio for 2016 DB Engine

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 300 | | Number of samples | Indicates how many times a measured value should breach a threshold before the state is changed. | 6 | | Threshold | The collected value will be compared against this parameter. | 0 | |  |
|  |  |  |

**SQL Server Windows Service**

This monitor checks the status of the SQL Server Database Engine service.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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'. The workflow will not consider the current startup type setting of the service if this parameter is set to 'false'. Default is 'true'. | true | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 60 | | Unavailable Time (seconds) | The minimum duration of service unavailability before considering it unhealthy. | 900 | |  |
|  |  |  |

**Thread Count**

Thread Count for 2016 DB Engine

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Cache Expiration Time | Specifies the maximum age of information from cache the workflow can use. May be omitted. | 43200 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 300 | | Minimum Free Threads Threshold | The workflow determines the maximum number of threads and the number of active threads for each DB Engine process. An alert will be generated if the number of free threads is less or equal than this parameter. | 10 | | Number of samples | Indicates how many times a measured value should breach a threshold before the state is changed. | 6 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:18 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 200 | |  |
|  |  |  |

**Service Principal Name Configuration Status**

This monitor checks the status of the Microsoft SQL Server instance Service Principal Name configuration.   
Note that the monitor is always in "Healthy" state for non-domain joined machines.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Scope of search | Use LDAP search when the scope of a search is the domain or an organizational unit. When the scope of a search is the forest, the query can be resolved within any partition by using a Global Catalog (GC) search. List of values: LDAP GC | LDAP | | 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 | |  |
|  |  |  |

**SQL Full-text Filter Daemon Launcher Service**

This monitor checks the status of the SQL Full-text Filter Daemon Launcher service. Note that SQL Full-text Search feature is not available in any edition of SQL Server Express, except SQL Server Express with Advanced Services. This monitor is disabled by default. Please use overrides to enable it when necessary.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | 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 | |  |
|  |  |  |

**Managed Backup System Health Policy**

The Managed Backup System Health Policy evaluates critical errors like lack of or invalid SQL Credentials, connectivity errors and reports the health of the system.

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|  | |  |  |  | | --- | --- | --- | | **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 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Server 2016 DB Engine - Dependency (rollup) monitors**

**Database Performance (rollup)**

This monitor rolls up the performance state from Database to DB Engine.

**SQL Server 2016 DB Engine - Rules (alerting)**

**MSSQL 2016: Full Text Search: Full-text catalog is in an unusable state. Drop and re-create this full-text catalog**

The full-text catalog is offline. The full-text directory has been deleted, is corrupt, or the path points to a location that is not valid.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Cannot open backup device.**

One or more of the files specified in a BACKUP or RESTORE command could not be opened. The potential reasons for this include:

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: The MSSQLServer service terminated unexpectedly**

The error is reported by the SQL Server Agent service when it auto restarts SQL Server. SQL Server Agent will only auto restart SQL Server if SQL Server stopped for some reason other than an explicit stop command from a user or application, and if the Auto restart SQL Server if it stops unexpectedly option is selected in SQL Server Agent Advanced properties. During the restart of SQL Server, SQL Server Agent will write this message to the application event log on the computer hosting SQL Server.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: Test failed. Slot overlaps with the prior row**

Slot S\_ID's offset in the slot offset array is not greater than or equal to the end of the previous slot, so they overlap. TEST is 'sorted [i].offset >= max', where the lhs of the expression is the ADDRESS, and 'max' is the end of the previous slot.

|  |  |  |
| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: A SQL Server Service Broker procedure output results**

A stored procedure, which was internally activated by SQL Server Service Broker, output results. Internal procedures should not output results. The event in the Windows application log contains the procedure name, the queue name, and the output results. The event is logged as MSSQLSERVER event ID 9724. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 0 | | Severity | Defines Alert Severity. | 0 | |  |
|  |  |  |

**MSSQL 2016: .NET Framework runtime was shut down by user code**

The rule triggers an alert when a user defined type, user defined-function, or user-defined property in an assembly contains faulty code.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Failure occurred during database recovery**

This error occurs when SQL Server fails to recover a database successfully when it is brought online.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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 | |  |
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**MSSQL 2016: Could not open tempdb. Cannot continue**

The tempdb database could not be opened. The possible reasons for this could include:

|  |  |  |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Could not connect to server because it is not defined as a remote login at the server**

Setting up security for executing remote procedure calls (RPC) against a remote server involves setting up login mappings in the remote server and possibly in the local server running an instance of Microsoft SQL Server. The mapping is specific to a given server\instance name, usually the NetBIOS name for a default instance and the NetBIOS name plus the instance name for a named instance. If the login mapping does not exist or if the name of the server specified in the connection string does not match the exact name in the sysremotelogins table, and the guest account does not have a mapping in sysremotelogins , you will receive this error. You will also see this error if the remote user is found to have a null or empty login name.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: SQL Server Service Broker Manager has shutdown**

The rule triggers an alert when the SQL Server Service Broker Manager has shutdown. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 0 | |  |
|  |  |  |

**MSSQL 2016: A SNI call failed during a Service Broker/Database Mirroring transport operation**

The rule triggers an alert when a SNI call failes during a Service Broker/Database Mirroring transport operation. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Login failed: Password fails password filter DLL requirements**

A user tried to access SQL Server with a password that did not meet the requirements of the password filter DLL. Windows security log will identify the user name under MSSQLSERVER event ID 18467.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Could not do cleanup for the killed process**

This error message occurs when another error caused a user connection to terminate abnormally.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: The SQL Server Service Broker or Database Mirroring transport is disabled or not configured**

The rule triggers an alert when the SQL Server Service Broker or Database Mirroring transport is disabled or not configured. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 2 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Failed to initialize the Common Language Runtime (CLR) with HRESULT**

The rule triggers an alert when an assembly or application fails to start and logs an HRESULT error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: The server is too busy to perform the backup or restore operation**

Failed to start a sub-process (a parallel query or parallel I/O) because no threads are available or too many sub-processes executing.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: Cross object linkage**

The page P\_ID1 points, in a parent-child manner, to a page (P\_ID2) in a different object.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Distributed transaction was aborted by MSDTC**

The rule triggers an alert when Distributed transaction was aborted by MSDTC.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Login failed: Password cannot be used at this time**

A user attempted to change the password, but the proposed password could not be used at this time. The Windows security log will identify the user name under MSSQLSERVER event ID 18463.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Login failed**

When a connection attempt is rejected because of an authentication failure that involves a bad password or user name, a message similar to the following is returned to the client: "Login failed for user 'user\_name'. (Microsoft SQL Server, Error: 18456)".

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Login failed: Password too long**

A user attempted to create a password, but the proposed password was too long. The Windows security log will identify the user name under MSSQLSERVER event ID 18465.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Table error: Allocation page has invalid page header values.**

The page specified has an invalid page header.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: SQL Server Assertion**

SQL Server has raised an error. Under normal circumstances, SQL Server has posted a dump file in the log directory to help identify the actions that preceded the error. The error may have been caused by data corruption, an error in the client application, an error in SQL Server, network instability, or hardware failure.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: The I/O operation was successful after retry**

A read operation on a database page or transaction log block was successful but only after retrying the operation. While you may not need to take immediate action, you should research the cause of the error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: CREATE DATABASE failed. Could not allocate enough disk space for a new database on the named disks**

This error occurs when there is not enough space on the device to create the model database.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: Extent object is beyond the range of this database**

P\_ID is a PageID of the form (filenum:pageinfile). The pageinfile of this extent is greater than the physical size of the file filenum of the database. The extent is marked allocated in an IAM page for the object/index ID indicated.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Full Text Search: Full-text catalog lacks sufficient disk space to complete this operation**

There is not enough disk space to hold the full-text catalog.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: Page was not seen in the scan although its parent and previous refer to it. Check any previous errors**

A page (P\_ID1) in a B-tree was not seen, even though an index page (P\_ID2) points to it as a child page and its previous page (P\_ID3) in the page chain points to it as the next page in the chain. This can happen at any level of the B-tree. Both error states mean the same thing; they differ only in where the error was discovered.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Could not use Address Windowing Extensions because 'lock pages in memory' privilege was not granted**

The rule triggers an alert when SQL Server cannot use Address Windowing Extensions because 'lock pages in memory' because privilege was not granted.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: An error occurred in a SQL Server Service Broker/Database Mirroring transport connection endpoint**

SQL Server uses Service Broker and Database Mirroring endpoints for communication outside of the SQL Server instance.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: An error occurred in the Service Broker manager**

The rule triggers an alert when an error occurred in the SQL Server Service Broker manager.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Could not allocate new page for database. There are no more pages available in Filegroup.**

Space can be created by dropping objects, adding additional files, or allowing file growth.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: Page in its header is allocated by another object**

A page has the object/index ID specified but is not allocated by any of that index's IAM pages. The page has an incorrect object/index ID in its header, so there will be a matching 2533 (page not seen although allocated) error for the page. The 2533 error corresponds to the index the page is really allocated to.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Could not mark database as suspect. Getnext NC scan on sysdatabases.dbid failed**

The SQL Server recovery process tried to turn on the suspect flag for the specified database, but it could not find the appropriate row in sysdatabases or could not update the database information in memory. The reason the database needs to be marked suspect should be indicated by other messages in the SQL Server error log or the Event Viewer.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Database consistency errors found**

This message indicates a database consistency check has encountered errors and none or not all of the errors were repaired.

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|  | |  |  |  | | --- | --- | --- | | **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 2016: The query has been canceled because the estimated cost of this query exceeds the configured threshold. Contact the system administrator**

The configuration setting for the query governor cost limit option is lower than the cost the SQL Server optimizer estimated for the specified query. By default, the query governor cost limit option is set to 0, which allows all queries to run. However, on this instance of SQL Server an upper limit was specified by setting the option to a number greater than 0. Query plans with an anticipated cost larger than this value are not started.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Cannot start service broker manager**

The rule triggers an alert when SQL Server cannot start service broker manager.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Transaction was deadlocked on resources with another process and has been chosen as the deadlock victim. Rerun the transaction**

This error occurs when Microsoft SQL Server encounters a deadlock. A deadlock occurs when two (or more) processes attempt to access a resource that the other process holds a lock on. Because each process has a request for another resource, neither process can be completed. When a deadlock is detected, SQL Server rolls back the command that has the least processing time and returns error message 1205 to the client application. This error is not fatal and may not cause the batch to be terminated.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Conflict table does not exist**

This error occurs when you try to add or drop a column to a merge article, but the conflict table specified in sysmergearticles for the modified article does not actually exist in the database.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: The Service Broker/Database Mirroring transport cannot listen on port because it is in use**

When you create a Service Broker or Database Mirroring endpoint, SQL Server should be able to accept TCP/IP connections on the port that is specified in the endpoint configuration. The transport security requires authorization for connections to the port. If the server has a firewall enabled, the firewall configuration must allow both incoming and outgoing connections for the port that is used by the endpoint.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Table error: The text, ntext, or image node at page is not referenced**

The text node was not referenced in any complex column in any heap or clustered index. It is effectively orphaned.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: SQL Server Service Broker cryptographic operation failed**

The rule triggers an alert when SQL Server Service Broker cryptographic operation failes.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Enlist of MSDTC transaction failed**

The rule triggers an alert when SQL Server fails to enlist a new or existing distributed transaction.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Commit of internal MSDTC transaction failed**

The rule triggers an error when COMMIT of internal MSDTC transaction failed

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Table error: cross-object chain linkage**

The first phase of a DBCC CHECKDB is to do primitive checks on the data pages of critical system tables. If any errors are found, they cannot be repaired and so the DBCC CHECKDB terminates immediately.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Cannot open user default database. Login failed**

When a client connects to a SQL Server instance without specifying a database context, the default database defined for its login is used. If that database is unavailable for any reason, the above message appears.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Login failed: Error during validation**

A user attempted to log in to SQL Server. An unexpected error occurred during validation. The Windows security log will identify the user name and error ID under MSSQLSERVER event ID 18468.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: SQL Server shutdown due to Ctrl-C or Ctrl-Break signal**

The SQL Server instance was started from a command prompt using sqlservr.exe, and now a Ctrl-C or Ctrl-Break command was issued from that prompt to stop the sqlservr.exe application. No checkpoints were performed during the shutdown. This message is written to the SQL Server error log and the application event log.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Optimized concurrent query limit has been exceeded**

You are using an edition of SQL Server that is licensed for a limited number of concurrent queries. This includes the Personal and Desktop editions. Those editions have a concurrent workload governor that limits them to a specific number of concurrent user queries plus a smaller number of concurrent system tasks.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Table error: Unexpected page type**

Page P\_ID had a page type that was unexpected by the code trying to interpret it. The page is marked allocated, however, which is why the DBCC code is trying to interpret it.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: A security (SSPI) error occurred when connecting to another Service Broker or Database Mirroring host**

When Service Broker transport security uses SSPI, the service account for the remote database must have CONNECT permission in master database. Remote SQL Server instance should allow Windows Authentication for the account being used by remote host. There are no requirements for the login to have other permissions or to own objects in any database.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: CHECKTABLE terminated. A failure was detected while collecting facts.**

Possibly tempdb out of space or a system table is inconsistent. Check previous errors.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Cannot start service broker activation manager**

The rule triggers an alert when service broker fails to start activation manager.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: An error occurred in the timer event cache**

An error occurred in the SQL Server Service Broker transport layer timer event cache. The Windows application log or SQL Server error log may identify the specific error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Database consistency check performed with no errors**

This message indicates a database consistency check has been run but no errors were encountered.

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|  | |  |  |  | | --- | --- | --- | | **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. | 0 | | Severity | Defines Alert Severity. | 0 | |  |
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**MSSQL 2016: SQL Server Service Broker could not query the FIPS compliance mode flag from the registry**

The rule triggers an alert when SQL Server Service Broker could not query the FIPS compliance mode flag from the registry.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Could not open error log file**

When installing Microsoft SQL Server on an NTFS partition, make sure that the NTFS file permissions allow read/write access. Otherwise, this error message may appear in the Microsoft Windows NT application log (for each installation attempt).

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: XTP Background Thread Error Log**

The rule listens to event 41355 and raises a warning alert if the event is added to the log.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Could not read and latch page**

The page read failed for some reason (see any accompanying errors), or a latch could not be taken (there may be latch timeout messages on the error log).

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: XTP Insufficient Disk Space**

The rule listens to event 41822 and raises a critical alert if the event is added to the log.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: Table missing or invalid key in index for the row:**

Every data row in a table (heap or clustered index) must have exactly one matching index row in every non-clustered index over that table. This error means that a non-clustered index is missing an index row.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Table error: Cross object linkage. Page PGID->next is not in the same index**

Page P\_ID is linked to page P\_ID2 but the two pages are allocated to different indexes and/or objects.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: SQL Server Service Broker or Database Mirroring Transport stopped**

The rule triggers an alert when at least one of the endpoints in a SQL Server Service Broker conversation has stopped listening for connections. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 0 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: An error occurred in the SQL Server Service Broker message transmitter**

SQL Server Service Broker message transmitter detected an error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Database consistency errors found and repaired**

This message indicates a database consistency check has encountered errors and all of the errors were repaired.

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|  | |  |  |  | | --- | --- | --- | | **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 | |  |
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**MSSQL 2016: The LSN passed to log scan in database is invalid**

If you see this message during startup when the SQL Server process tries to recover the database or as a result of an ATTACH statement, the log file for the database is corrupted. If you see the message during a restore process, the backup file is corrupted. If you see this message during a replication process, the replication metadata may be incorrect.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Failed to initialize the Common Language Runtime (CLR) with HRESULT**

The rule triggers an alert when an assembly or an application fails to start and logs an HRESULT error. The Windows application log may contain an information about specific HRESULT.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Failed to add column to table**

sp\_repladdcolumn failed to add the specified column to the table in the publication database. If another error is reported along with this one, the other error should indicate the reason the column could not be added. If no other error is reported, the problem could be that the owner-qualified table does not exist, or the data type is not one that can be added to a replicated table. The data type of the new column must either be an identity, computed, or timestamp column; allow nulls; or have a default. For more information about sp\_repladdcolumn , see "Schema Changes on Publication Databases" in Books Online.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Failed to restore master database. Shutting down SQL Server**

The backup of the master database that you are restoring is not usable. The file itself may have been corrupted, or the original master database from which the backup was taken may have data integrity problems.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Table error: Page is missing a reference from previous page. Possible chain linkage problem**

A page (P\_ID2) in a B-tree was not seen, even though its neighbor (P\_ID1) in the page chain points to it in its previous page link. This can happen in any level of the B-tree. Both error states mean the same thing; they differ only in where the error is discovered.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Could not resolve the referenced column name in table**

This error occurs when you try to modify data in a table with a foreign key that references a column that no longer exists in the referenced table. Merely renaming a column will not cause this error. Under normal circumstances, a column referenced by a foreign key cannot be dropped, so this error may indicate that unsupported direct system table updates have occurred.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Internal Query Processor Error: The query processor ran out of stack space during query optimization**

The Query Processor is using a large but limited memory stack when optimizing queries. In some extreme situations the stack size may become a limit for a given very large query--for example, a query containing an inlist with 100,000 constants.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: SQL Server Service Broker or Database Mirror cryptographic call failed**

SQL Server Service Broker or Database Mirror attempted to call an operating system cryptographic function. The cryptographic function returned an error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Internal Query Processor Error: The query processor encountered an unexpected error during execution**

This is an internal query processor error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Database cannot be opened due to inaccessible files or insufficient memory or disk space**

Error 945 is returned when the database is marked IsShutdown . This occurs when a database cannot be recovered due to missing files, or some other resource error that usually can be corrected easily.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Starting without recovery**

SQL Server is starting without recovery.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: SQL Server Service Broker cannot use RC4 encryption algorithm when running in FIPS compliance mode**

SQL Server Service Broker has a conversation where at least one endpoint has been configured to use RC4 encryption and the server is set for Federal Information Processing Standard (FIPS) compliance mode. RC4 encryption is not supported when running in FIPS compliance mode.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: The provider reported an unexpected catastrophic failure**

The provider reported an unexpected catastrophic failure.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Table error: Slot, row extends into free space**

The end of the slot S\_ID is past the persisted free space offset, ADDRESS. TEST is 'max <= m\_freeData', where the persisted free space offset if 'm\_freeData' and the end of slot S\_ID is 'max'.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Failed to allocate memory for Common Language Runtime (CLR)**

The rule triggers an alert when SQL Server is unable to allocate memory for CLR.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Logical page in database is already hashed**

This error occurs when SQL Server attempts to hash the logical page %S\_PGID of database ID%d and the page is already in the SQL Server hash table.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: OS Error occurred while performing I/O on page**

An operating system error occurred when reading or writing a database page. The error message contains the specific operating system error encountered.

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|  | |  |  |  | | --- | --- | --- | | **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 2016: Table error: B-tree page has two parent nodes**

The B-tree structure is corrupt because page P\_ID1 is referenced as a child page by slots in two pages higher in the B-tree, P\_ID2 and P\_ID3. A page can only be referenced by a single parent.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: XTP Compiler Failure**

The rule listens to event 41313 and raises a warning alert if the event is added to the log.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Could not obtain exclusive lock on database**

You may receive this error stating a lock could not be obtained for the model database if the model database is in use when you issue any CREATE DATABASE statement. Since a new database is copied from the model database, the model database has to be in a state with no activity.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: SQL Server Assertion**

SQL Server has raised an error. Under normal circumstances, SQL Server has posted a dump file in the log directory to help identify the actions that preceded the error. The error may have been caused by data corruption, an error in the client application, an error in SQL Server, network instability, or hardware failure.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Table error: Column is not a valid complex column**

A column is marked as being a complex column in the record's variable length column section, but it is not a valid text pointer or in-row text root.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Table error: IAM chain linkage error**

There is a break in the IAM chain for the index specified. A page P\_ID2 is pointed to by the next page pointer of page P\_ID1, but page P\_ID2's previous page pointer points to a different page, P\_ID3. Both error states mean the same, and only differ in where the corruption was discovered.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Operating system error on a device**

The backup device cannot be opened.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Table error: B-tree level mismatch, page does not match level from parent**

There are two pages linked as parent (P\_ID2) and child (P\_ID1) in a B-tree. The level (LEVEL1) in the child page (P\_ID1) does not comply with the level rules for B-trees, given the level (LEVEL2) in the parent page (P\_ID2).

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Failed to open database or transaction log file**

An operating system error occurred when opening a transaction log file or a secondary database file of a database. The error message contains the specific operating system error encountered.

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|  | |  |  |  | | --- | --- | --- | | **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 2016: The Service Broker or Database Mirroring Transport has started**

SQL Server Service Broker or Database Mirroring transport has started. The Windows application log specifies whether the error was recorded by Service Broker or Database Mirroring the application name. This message is logged in the Windows application log as MSSQLSERVER event ID 9690. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 0 | | Severity | Defines Alert Severity. | 0 | |  |
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**MSSQL 2016: SQL Server Service Broker attempted to use an unsupported encryption algorithm**

The rule triggers an alert when SQL Server Service Broker tries to use an unsupported encryption algorithm.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Table error: Object, index, page Test failed. Slot - Offset is invalid**

The slot specified has an invalid offset (ADDRESS) in the page, according to the slot array.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: The query processor could not start the necessary thread resources for parallel query execution**

Thread resources are scarce in the server.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: A SQL Server Service Broker conversation has been closed due to an error**

The rule triggers an alert when a SQL Server Service Broker conversation has been closed due to an error.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Invalid reference to File ID**

This error occurs when SQL Server uses an invalid file ID while performing some operation. This error can occur for several different scenarios.

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|  | |  |  |  | | --- | --- | --- | | **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 2016: Table error: Page is missing references from parent (unknown) and previous nodes. Possible bad root entry in sysindexes**

Page P\_ID1 was seen, but is not linked into the B-tree it thinks it belongs to.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: CHECKTABLE processing of object encountered page twice. Possible internal error or allocation fault**

Page P\_ID was encountered twice during the course of the scan.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: The user is not allowed to truncate the system table**

The TRUNCATE TABLE statement cannot be issued for a system table, even if the allow updates configuration option is enabled.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Table error: Parent node for page was not encountered**

Page P\_ID was seen in a B-tree, and is linked into the B-tree level it is at. However, no index page was seen that had a reference to the page as a child page. This can happen at any level of the B-tree.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: XML : Size of data chunk requested from the stream exceeds allowed limit**

SQL Server received an XML document that exceeds the allowed limit.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: XTP Background Thread Error**

The rule listens to event 41354 and raises a warning alert if the event is added to the log.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: AppDomain failed to unload with error code**

The rule triggers an application domain fails to unload because of some error. The Windows Application log may contain an information about the original error code and other diagnostic details

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: SQL Server Assertion**

SQL Server has raised an error. Under normal circumstances, SQL Server has posted a dump file in the log directory to help identify the actions that preceded the error. The error may have been caused by data corruption, an error in the client application, an error in SQL Server, network instability, or hardware failure.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Could not write a CHECKPOINT record in database because the log is out of space**

The transaction log for the specified database has reached its capacity. The limit could be due to a configuration setting or to the amount of physical space available for one or more of the files configured for this database.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Unique table computation failed**

Unique tables are used by the database client drivers, like Microsoft Access driver for SQL Server, to build updateable queries. For a given SELECT statement, the unique table identifies the table whose row values appear at most once in the result set. When reselecting a row from a result set, the values from the key columns of the unique table are enough to identify the row. This error is raised when the server is unable to compute the unique table.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: XML : FOR XML EXPLICIT stack overflow occurred. Circular parent tag relationships are not allowed**

The XML is not well-formed because the element tag nesting level has exceeded the number of columns in the table, one or more tags is self-referencing, or both. For more information about FOR XML EXPLICIT, see "Using EXPLICIT Mode" in Books Online.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: The Service Broker/Database Mirroring Transport could not listen for connections due to an error**

The rule triggers an alert when Service Broker cannot listen on the specified port.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Cannot start service broker manager due to operating system error**

The rule triggers an alert when SQL Server cannot start service broker manager due to operating system error.

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|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Maximum limit for connections has been reached**

By default, SQL Server dynamically manages the memory needed for user connections. However, the maximum number of connections can be set to a fixed value by setting the user connections configuration option to a value other than 0. Setting the user connections option to a non-zero value is not recommended. If this option is set to a non-zero value and the specified number of connections is exceeded, any additional login attempts will fail with the above message. If the value is set to 1, the SQL Server instance may not start.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Internal Query Processor Error: The query processor encountered an unexpected error during the processing of a remote query phase**

This is an internal query processor error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: SQL Server could not allocate enough memory to start Service Broker task manager**

SQL Server Service Broker cannot start Service Broker task manager.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: Page allocated to object was not seen. Page may be invalid or have incorrect object ID information in its header**

A page is allocated as specified, but was not seen with that object/index ID in its header. The page has a different index ID in its header, so there will be a matching 2534 (page allocated by another object) error for the page. The 2534 error corresponds to the object/index ID that is in the page's header.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Full Text Search: An unknown full-text failure occurred**

This error can occur in various circumstances. Often it is related to permissions or missing files.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: XTP Unable Call Compiler**

The rule listens to event 41312 and raises a warning alert if the event is added to the log.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Login failed: Password expired**

A user attempted to log into SQL Server with an expired password. The Windows security log will identify the user name under event ID 18487.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Internal Query Processor Error: The query processor could not obtain access to a required interface**

This is an internal query processor error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Table: Creating statistics for the following columns**

sp\_createstats has generated statistics for each eligible column in the current database. Computed columns and columns of the ntext, text, or image data types cannot be specified as statistics columns. Columns already having statistics are not touched (for example, the first column of an index or a column with explicitly created statistics). Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Service Broker was not able to allocate memory for cryptographic operations**

The rule triggers an alert when SQL Server Service Broker is not able to allocate memory for cryptographic operations.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: IAM page is linked in the IAM chain for object**

All IAM pages for an index must have the same index ID on them. In this case, one of the IAM pages linked into the IAM chain for index I\_ID2 has index ID I\_ID1 on it. There are three possible states of this error; they all mean the same thing, but differ in where the discovery is made.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: SQL Server terminating because of system shutdown**

SQL Server is shutting down because the server is shutting down. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Unable to open the physical file**

SQL Server has failed to open the physical file..

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Could not recover database due to unresolved transaction outcomes**

The recovery process found pending transactions for the specified database. These transactions were either distributed transactions that used Microsoft Distributed Transaction Coordinator (MS DTC), or the transactions were single instance cross-database transactions. There is not enough information available for the recovery process to either commit or roll back one or more of those transactions.

|  |  |  |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: The high key value on page is not less than the low key value in the parent, slot of the next page**

A B-tree tree-level page contains a record for each child page, along with a key value for that child page. If the child page is a leaf-level page, all records on the page must have key values greater than or equal to the key value in the parent page. If the child page is a tree-level page, all records must have key values greater than the key value in the parent, except the first record, which must have a key value that exactly matches that in the parent.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: RESTORE could not start database**

Internal structures could not be created during the database RESTORE. This is usually the side effect of another error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Logical consistency error after performing I/O on page**

A consistency check failed when reading or writing a database page or transaction log block. The error message contains the specific type of consistency check that failed.

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|  | |  |  |  | | --- | --- | --- | | **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 2016: Unexpected end of file while reading beginning of backup set**

The RESTORE operation failed because it could not read some portion of the backup file specified in the FROM clause. This error generally indicates that the file specified is a pre-SQL Server 7.0 backup or that the file is damaged.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Table error: The text, ntext, or image node has wrong type**

The text node is on the wrong text page type. If the parent (owner) of the node can be found, there will be an accompanying 8929 message providing details about the owner.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: An error occurred while processing SQL Server Service Broker mirroring routes**

The rule triggers an alert when an error occurres while processing SQL Server Service Broker mirroring routes

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: XTP Unable Load Compiled Dll**

The rule listens to event 41309 and raises a warning alert if the event is added to the log.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Could not find CHECK constraint, although the table is flagged as having one**

This error can occur when the creation of a constraint failed but for some reason the creation was not completely rolled back. It can also be caused by data consistency issue with the system tables in the database where the table listed in the message resides.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Table: No columns without statistics found**

There are no eligible columns in the current database on which to create statistics using sp\_createstats . Computed columns and columns of the ntext, text, or image data types cannot be specified as statistics columns. Columns already having statistics are not touched (for example, the first column of an index or a column with explicitly created statistics).

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Login failed: Password must be changed**

A user attempted to log into SQL Server with a password that was set to the MUST\_CHANGE option. The user will be identified in the Windows security log under MSSQLSERVER event ID 18488.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Failed to drop column from table**

sp\_repldropcolumn failed to drop the specified column on the publication database. The error could result from a failed system table update or from a failure of the underlying ALTER TABLE statement.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Error recovering database. Could not connect to MSDTC to check the completion status of transaction**

When you are using MS DTC to manage a distributed transaction across multiple servers and a loss of connectivity occurs, the distributed transaction is left in an unknown or "in doubt" state. Common sources of interruptions are

|  |  |  |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: XML : XML parsing error**

This message passes through XML parsing errors. The text after "XML parsing error:" will vary. The cause will depend on the exact XML parsing error passed through.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: An error occurred in the Service Broker queue rollback handler**

SQL Server Service Broker raises MSSQLSERVER event ID 8405 when an error prevents Service Broker from disabling a queue during a rollback.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: IO Completion Listener Worker appears to be non-yielding on Node**

I/O completion ports are the mechanism by which Microsoft SQL Server uses a pool of threads that was created when the service was started to process asynchronous I/O requests. The message will specify what node the completion port is not yielding on. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Could not find Filegroup ID in sys.Filegroups for database**

The metadata for a table contains a column ID that is greater than the largest column ID ever used in the table. This is a fatal error if the table is a system table, because the checks cannot continue when metadata is corrupt.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: SQL Server Out Of Memory**

SQL Server has failed to allocate the sufficient amount of memory to run the query.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Could not create an instance of OLE DB provider**

The rule triggers an alert when SQL Server could not create an instance of an OLE DB provider to connect to a linked server.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Descriptor for object in database not found in the hash table during attempt to unhash it**

A temporary table could not be found. The specific object ID will be available in the Windows Application log as event ID 617.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Permission denied on object**

This error occurs when a Microsoft SQL Server user attempts an action, such as executing a stored procedure, or reading or modifying a table, for which the user does not have the appropriate privileges.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Could not find FOREIGN KEY constraints for table, although the table is flagged as having them**

This error can occur when the creation of a constraint failed but for some reason the creation was not completely rolled back. It can also be caused by data consistency issue with the system tables in the database where the table listed in the message resides.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Could not obtain information about Windows NT group/user**

A process executed within SQL Server or from the SQL Server Agent, such as the xp\_logininfo stored procedure, a scheduled job, or a replication agent, needs to verify the credentials of a Windows-authenticated login. The attempt to retrieve those credentials on the domain failed for an unspecified reason.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: XML : XML error**

This message passes through XML errors generated outside of SQL Server. The text after "XML error:" will vary. The cause will depend on the exact XML error passed through.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Failed to create AppDomain**

The rule triggers an alert when an application tried to create an application domain, but failed. This may be caused when there is not enough memory to start the application domain.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: The next pointer of refers to page. Neither its parent were encountered. Possible bad chain linkage**

A page (P\_ID1) references its next page in the page chain (P\_ID2), but page P\_ID2 was not seen and was not referenced by any parent page in the B-tree.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: MSDTC on server is unavailable**

The rule triggers an alert when MSDTC on the server is unavailable.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Failed to open primary database file**

An operating system error occurred when opening the primary file of a database. The error message contains the specific operating system error encountered.

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|  | |  |  |  | | --- | --- | --- | | **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 2016: SQL Server Service Broker or Database Mirroring is running in FIPS compliance mode**

The rule triggers an alert when SQL Server Service Broker or Database Mirroring is running in FIPS compliance mode. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 0 | | Severity | Defines Alert Severity. | 0 | |  |
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**MSSQL 2016: Login failed: Password too short**

A user attempted to change the password, but the proposed password was too short. The Windows security log will identify the user name under MSSQLSERVER event ID 18464.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Cannot start service broker security manager**

Service Broker security manger could not start.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: No slots are free to keep buffers for table**

This is raised when SQL Server 2016 has an internal error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Could not create AppDomain manager**

The rule triggers an alert when SQL Server failes to create an application domain manager

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: SQL Server Service Broker transmitter shut down due to an exception or a lack of memory**

The rule triggers an alert when SQL Server Service Broker transmitter stopped due to an error or a lack of memory. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Could not create a statement object using OLE DB provider**

The rule triggers an alert when SQL Server fails to create a statement object with the OLE DB provider connected to a linked server.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: An SQL Server Service Broker dialog detected an error**

The rule triggers an alert when a SQL Server Service Broker dialog detects an error

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: Cross object linkage: Parent page in object next refer to page not in the same object**

The next page pointer of page P\_ID2 and a child page pointer of page P\_ID1 in a B-tree of the specified object points to a page (P\_ID3) in a different object. Furthermore, pages P\_ID1 and P\_ID2 may themselves be in different objects.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: SQL Server cannot start the Service Broker event handler**

SQL Server Service Broker cannot start the Service Broker event handler.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Cannot start SQL Server Service Broker on a database**

The rule triggers an alert when SQL Server cannot start Service Broker on a database.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: An error occurred in the SQL Server Service Broker or Database Mirroring transport manager**

An error occurred in the SQL Server Service Broker or Database Mirroring transport manager. The Windows application log or SQL Server error log may identify the specific error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Error while undoing logged operation in database**

The recovery process could not undo (roll back) one or more transactions in the specified database. This error will be accompanied by a more specific error in the SQL Server error log and/or the event log.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Cannot recover the master database. Exiting.**

The master database is not in a recoverable state.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: XML : XML document could not be created because server memory is low. Use sp\_xml\_removedocument to release XML documents**

When you execute sp\_xml\_preparedocument , a parsed XML document is stored in the internal cache of SQL Server 2000. The MSXML parser uses up to one-eighth the total memory available for SQL Server. There is not enough memory in the portion of cache allocated to MSXML to open the document specified in the sp\_xml\_preparedocument statement. This may be because the specified document is very large or because documents already in that memory space do not leave enough space for the new document.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Database Backup Failed To Complete**

BACKUP failed to complete the command.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Table error: page is out of the range of this database**

The page specified is marked as allocated, but is beyond the in-use portion of the file in which it resides (except in certain states, as described below).

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Cannot determine the service account for SQL Server instance**

This error occurs when a Transact-SQL statement contains mismatched single or double quotes. The SET QUOTED\_IDENTIFIER setting will determine which combinations of single and double quotations marks are valid. For more information about SET QUOTED\_IDENTIFIER, see "SET QUOTED\_IDENTIFIER" in Books Online.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Log Backup Failed to Complete**

This error indicates that SQL Server could not complete the BACKUP of the specified database due to a previous error. The BACKUP command that failed is given at the end of the error message. This message also appears in the Windows Application log.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: An error occurred while reading the log for database**

This error indicates a failure while processing the transaction log during rollback, recovery, or replication.

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|  | |  |  |  | | --- | --- | --- | | **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 2016: A default full-text catalog does not exist in the database or user does not have permission to perform this action**

The full-text catalog does not exist, or the user does not have the appropriate permission to create a full-text index in the catalog.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Failed to initialize the Common Language Runtime (CLR) due to memory pressure**

Windows could not allocate memory for the Microsoft Common Language Runtime (CLR) to initialize.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Full Text Search: Full-Text Search is not enabled for the current database. Use sp\_fulltext\_database to enable Full-Text Search**

You have attempted to perform a full-text indexing in a database that is not enabled for full-text indexing. The database may have never been enabled for full-text, or it may have been restored or attached, which will automatically disable full-text indexing.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: XML : Failed to load Msxml2.dll**

The Msxml2.dll file is missing from the computer where SQL Server is installed, or it could not be loaded from the system directory while processing an XML feature such as sp\_xml\_preparedocument . If the file exists, it may not be registered properly, or one of its dependencies may not exist.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: The low key value on page is not the key value in the parent**

A B-tree tree level page contains a record for each child page, along with a key value for that child page. If the child page is a leaf-level page (that is, level 0), all records on the page must have key values greater than or equal to the key value in the parent page. If the child page is a tree-level page (that is, level > 0), all records must have key values greater than the key value in the parent, except the first record, which must have a key value that exactly matches that in the parent.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Table error: The text, ntext, or image node at page is referenced by page not seen in the scan**

The text node was not referenced in any complex column in any heap or clustered index. It is effectively orphaned.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Could not allocate space for object in database because the Filegroup is full**

The specified Filegroup has run out of free space.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Recovery of database detected possible identity value inconsistency in table**

The database recovery process could not determine the current identity value for the specified table.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Database log file is full. Back up the transaction log for the database to free up some log space**

The specified transaction log file has run out of free space.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Process Worker appears to be non-yielding on Scheduler**

This error indicates that there is a possible problem with a thread not yielding on a scheduler. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Operating System error encountered**

This message indicates that an error of some sort was returned from the operating system to a process within SQL Server. The process listed at the beginning of the message indicates which function within SQL Server received the error from the operating system. The exact operating system error number and text at the end of the message will vary depending on what problem the operating system encountered. This error is almost always seen in conjunction with other errors.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Backup device failed - Operating system error**

This message indicates that the operating system was unable to open or close a backup device (disk, tape, or pipe) specified as part of a BACKUP or RESTORE command. For more information on backup devices, refer to the Books Online topics, "Backup Devices" and "BACKUP."

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Full Text Search: Could not find full-text index for database**

The specified full-text index is unavailable.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: XML : Failed to instantiate class. Make sure Msxml2.dll exists in the SQL Server installation**

The Msxml2.dll file is missing from the computer where SQL Server is installed, or it could not be loaded from the system directory while processing an XML feature such as sp\_xml\_preparedocument . If the file exists, it may not be registered properly, or one of its dependencies may not exist.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: CREATE FILE encountered operating system error**

CREATE FILE encountered operating system error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Could not open referenced table**

You are trying to add, drop, or modify a constraint on a table that has a schema stability lock (LCK\_M\_SCH\_S or Sch-S) held on it. The schema stability lock is not compatible with DDL. The lock may be held by a query involving this table that is taking a long time to compile.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Cannot create file**

SQL Server cannot create file because the file already exists.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Failed to finish full-text operation. The Filegroup is empty, read-only, or not online**

The full-text operation did not finish because the Filegroup is empty, read-only, or not online.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Table error: Extra or invalid key**

Every data row in a table (heap or clustered index) must have exactly one matching index row in every non-clustered index over that table. This error means that a non-clustered index has an index row that does not match any data row.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Internal Query Processor Error: The query processor encountered an internal limit overflow**

This is an internal query processor error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Login failed: Account locked out**

A user attempted to log into the network with an account that has been locked out. The Windows security log will identify the user name under MSSQLSERVER event ID 18486.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: One or more indexes are damaged and must be repaired or dropped**

This error provides more details about the problem described in error 8952. See that error for an explanation.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Table error: Wrong PageId in the page header**

DBCC asked for page P\_ID1. When the page was read from disk, the page ID in its header was found to be P\_ID2.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Full Text Search: Search on full-text catalog failed with unknown result**

The full-text query failed for an unspecified reason.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: The log for database is not available**

An I/O error related to data integrity has occurred for the specified database. Either the log or data portion of the database could be damaged. SQL Server has made the log for that database unavailable to prevent further data integrity problems. The I/O error that led to the 9001 message should be reported in the SQL Server error log and/or the Windows event logs.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Table error: The previous link on page does not match the previous page that the parent, slot expects for this page**

A B-tree is structured so that pages at a single level point to each other, in a doubly-linked list. Also, the pages' parent in the B-tree has a record for each of its children, with their keys and page IDs.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Common Language Runtime (CLR) not installed properly**

This installation of the Common Language Runtime (CLR) is corrupted. The CLR is installed with the Microsoft .NET Framework.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Attempt to fetch logical page that belongs to different object**

This error occurs when SQL Server detects that the allocation unit as stored on a database page does match the allocation unit associated with a specific operation, such as running a SELECT statement against a table.

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|  | |  |  |  | | --- | --- | --- | | **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 | |  |
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**MSSQL 2016: Table error: Address is not aligned**

The structure at address ADDRESS is not 4-byte aligned.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: An error occurred in the SQL Server Service Broker message dispatcher**

An error occurred in the SQL Server Service Broker message dispatcher. The Windows application log or SQL Server error log may identify the specific error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Indexed view does not contain all rows that the view definition produces.**

Refer to Books Online for more information on this error. This does not necessarily represent an integrity issue with the data in this database.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Table error: B-tree chain linkage mismatch.**

There is a break in the logical page chain at some level in the B-tree specified (this can happen at any level, including the leaf level). A page P\_ID2 is pointed to by the next page pointer of page P\_ID1, but page P\_ID2's previous page pointer points to a different page, P\_ID3.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: A fatal error occurred in .NET Framework runtime**

The rule triggers an alert when the .NET Framework shuts down due to an error.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
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**MSSQL 2016: Potential deadlocks exist on all schedulers on Node**

This message is raised when the server fails to respond to new queries within a certain time limit.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Login failed: Password too simple**

A user attempted to create a password, but the proposed password did not meet the Windows password complexity requirements policy. These are defined in the Password must meet complexity requirements policy setting. The Windows security log will identify the user name under MSSQLSERVER event ID 18466.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Invalid reference to LOB page**

This error occurs when SQL Server uses an invalid reference to a LOB page in an operation. This error may occur due to several different reasons.

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|  | |  |  |  | | --- | --- | --- | | **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 2016: Table error: Index node page refers to child page and previous child, but they were not encountered**

An index page (P\_ID1) in a B-tree has child references to two neighboring lower-level pages (P\_ID2 and P\_ID3), but neither was seen.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
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**MSSQL 2016: Checksum failure while page in cache**

It is detected that a database page has been unexpectedly modified while in cache (by verifying the page checksum).

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|  | |  |  |  | | --- | --- | --- | | **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 | |  |
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**MSSQL 2016: Login failed. The workstation licensing limit for SQL Server access has already been reached**

SQL Server will not provide connections to workstations after the licensing limit has been reached.

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|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**SQL Server 2016 DB Engine - Rules (alerting)**

**[Deprecated] MSSQL 2016: Workflow failed to connect to the target system**

A monitoring or discovery script doesn’t have permissions to connect to the database or database is not accessible. This rule is considered to be obsolete in this Management Pack.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**SQL Server 2016 DB Engine - Rules (alerting)**

**MSSQL 2016: SQL Server 2016 DB Engine is restarted**

Detects SQL Server 2016 DB Engine restart. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 1 | | Unavailable Time (seconds) | The workflow will try to catch a service start event during this time frame, after event service stops. | 900 | |  |
|  |  |  |

**SQL Server 2016 DB Engine - Rules (non-alerting)**

**MSSQL 2016: Broker Statistics: SQL SENDs Per Second**

This counter displays the number of SQL Server messages sent per second. This counter is polled every fifteen minutes.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Rows processed/sec (marked for unlink)**

Collects the Windows "Rows processed/sec (marked for unlink)" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Number of Lockrequests Per Second**

Collects the Windows "Number of Lockrequests Per Second" performance counter for each instance of SQL 2016 DB Engine.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Cascading aborts/sec**

Collects the Windows "Cascading aborts/sec" performance counter for XTP engine transactions in SQL Server.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Broker Transport: Send I/Os Per Second**

This counter reports the number of transport send I/O operations per second that have completed. This counter is polled every fifteen minutes.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Cursor deletes/sec**

Collects the Windows "Cursor deletes/sec" performance counter for internal XTP engine cursors.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Broker Transport: Open Connection Count**

This counter displays the number of open SQL Server Broker connections. This counter is polled every fifteen minutes.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Total Rate Objects Published**

Collects the Windows "Total Rate Objects Published" performance counter for the XTP IO Rate Governor.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Sweep expiring rows touched/sec**

Collects the Windows "Sweep expiring rows touched/sec" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Cursor inserts/sec**

Collects the Windows "Cursor inserts/sec" performance counter for internal XTP engine cursors.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Total Files Merged**

Collects the Windows "Total Files Merged" performance counter for the XTP engine's storage subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Broker Transport: Message Fragment Sends Per Second**

This counter displays the number of message fragment sent per second. This counter is polled every fifteen minutes.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Log records written/sec**

Collects the Windows "Log records written/sec" performance counter for XTP transaction logging in SQL Server.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Num Merges/sec**

Collects the Windows "Num Merges/sec" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Write Bytes/Sec**

Collects the Windows "HTTP Storage:Write Bytes/Sec" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Merges Installed**

Collects the Windows "Merges Installed" performance counter for the XTP engine's storage subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Transaction validation failures/sec**

Collects the Windows "Transaction validation failures/sec" performance counter for XTP engine transactions in SQL Server.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Cursor write conflicts/sec**

Collects the Windows "Cursor write conflicts/sec" performance counter for internal XTP engine cursors.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Broker Activation: Task Limit Reached Per Second**

This counter reports the number of times per second that a queue monitor would have started a new task, but did not because the maximum number of tasks for the queue is already running. This counter is polled every fifteen minutes.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Insufficient Credits Waits/sec**

Collects the Windows "Insufficient Credits Waits/sec" performance counter for the XTP IO Rate Governor.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Save points created/sec**

Collects the Windows "Save points created/sec" performance counter for XTP engine transactions in SQL Server.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Avg Transaction Segment Large Data Size**

Collects the Windows "Avg Transaction Segment Large Data Size" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Log Blocks/sec**

Collects the Windows "Log Blocks/sec" performance counter for the XTP IO Rate Governor.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Read Bytes/Sec**

Collects the Windows "HTTP Storage:Read Bytes/Sec" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Logins per Second**

Total number of logins started per second. This does not include pooled connections.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Broker Statistics: Enqueued Transport Messages Per Second**

The number of messages per second that have been placed onto the queues in the instance, counting only messages that arrived through the network. This counter is polled every fifteen minutes.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: MtLog 256K Page Fill %/Page Flushed**

Collects the Windows "MtLog 256K Page Fill %/Page Flushed" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Parallel GC work item/sec**

Collects the Windows "Parallel GC work item/sec" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Save point refreshes/sec**

Collects the Windows "Save point refreshes/sec" performance counter for XTP engine transactions in SQL Server.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: MtLog 256K Write Bytes/sec**

Collects the Windows "MtLog 256K Write Bytes/sec" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Cursor scans started/sec**

Collects the Windows "Cursor scans started/sec" performance counter for internal XTP engine cursors.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Broker Statistics: SQL RECEIVEs Per Second**

The number of SQL Server messages received per second. This counter is polled every fifteen minutes.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: SQL Compilations Per Second**

Collects the Windows "SQL Compilations Per Second" performance counter for each instance of SQL 2016 DB Engine.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Avg. microsec/Read**

Collects the Windows "HTTP Storage:Avg. microsec/Read" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: MtLog 64K Expand Count**

Collects the Windows "MtLog 64K Expand Count" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Save point rollbacks/sec**

Collects the Windows "Save point rollbacks/sec" performance counter for XTP engine transactions in SQL Server.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: DB Engine Average Wait Time (ms)**

SQL 2016 DB Engine Average Wait Time performance collection rule

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Outstanding HTTP Storage IO**

Collects the Windows "HTTP Storage:Outstanding HTTP Storage IO" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Broker Transport: Receive I/Os Per Second**

This counter displays the number of I/Os received per second. This counter is polled every fifteen minutes.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Num Serializations**

Collects the Windows "Num Serializations" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: IoPagePool4K Free List Count**

Collects the Windows "IoPagePool4K Free List Count" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: MtLog 256K IOs Outstanding**

Collects the Windows "MtLog 256K IOs Outstanding" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Io Issued/sec**

Collects the Windows "Io Issued/sec" performance counter for the XTP IO Rate Governor.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Expired rows removed/sec**

Collects the Windows "Expired rows removed/sec" performance counter for internal XTP engine cursors.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Cursor unique violations/sec**

Collects the Windows "Cursor unique violations/sec" performance counter for internal XTP engine cursors.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: IoPagePool256K Total Allocated**

Collects the Windows "IoPagePool256K Total Allocated" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Transactions aborted by user/sec**

Collects the Windows "Transactions aborted by user/sec" performance counter for XTP engine transactions in SQL Server.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  |  |  |

**MSSQL 2016: Broker Transport: Message Fragment Receives Per Second**

This counter displays the number of message fragments received per second. This counter is polled every fifteen minutes.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: MtLog 4K Page Fill %/Page Flushed**

Collects the Windows "MtLog 4K Page Fill %/Page Flushed" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Rows returned/sec**

Collects the Windows "Rows returned/sec" performance counter for internal XTP engine cursors.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: Total Transactions Per Second**

Collects the Windows "Transaction Per Second" performance counter for the \_Total instance of the databases performance object for each instance of SQL 2016 DB Engine.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Avg. microsec/Transfer**

Collects the Windows "HTTP Storage:Avg. microsec/Transfer" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Sweep expired rows removed/sec**

Collects the Windows "Sweep expired rows removed/sec" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Phantom scans started/sec**

Collects the Windows "Phantom scans started/sec" performance counter for the XTP engine's phantom processing subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Sweep scans started/sec**

Collects the Windows "Sweep scans started/sec" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: MtLog 64K Page Fill %/Page Flushed**

Collects the Windows "MtLog 64K Page Fill %/Page Flushed" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Checkpoints Completed**

Collects the Windows "Checkpoints Completed" performance counter for the XTP engine's storage subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Rows processed/sec**

Collects the Windows "Rows processed/sec" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Rows touched/sec**

Collects the Windows "Rows touched/sec" performance counter for internal XTP engine cursors.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: IoPagePool64K Total Allocated**

Collects the Windows "IoPagePool64K Total Allocated" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Stale Rate Object Waits/sec**

Collects the Windows "Stale Rate Object Waits/sec" performance counter for the XTP IO Rate Governor.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: MtLog 4K Write Bytes/sec**

Collects the Windows "MtLog 4K Write Bytes/sec" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Cursor updates/sec**

Collects the Windows "Cursor updates/sec" performance counter for internal XTP engine cursors.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Num Merges**

Collects the Windows "Num Merges" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Transfers/sec**

Collects the Windows "HTTP Storage:Transfers/sec" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Commit dependencies taken/sec**

Collects the Windows "Commit dependencies taken/sec" performance counter for XTP engine transactions in SQL Server.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Broker Activation: Task Limit Reached**

This counter reports the total number of times that a queue monitor would have started a new task, but did not because the maximum number of tasks for the queue is already running. This counter is polled every fifteen minutes.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Tail Cache Page Count**

Collects the Windows "Tail Cache Page Count" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: MtLog 4K IOs Outstanding**

Collects the Windows "MtLog 4K IOs Outstanding" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: IoPagePool256K Free List Count**

Collects the Windows "IoPagePool256K Free List Count" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Tentatively-deleted rows touched/sec**

Collects the Windows "Tentatively-deleted rows touched/sec" performance counter for internal XTP engine cursors.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Flush Thread Frozen IOs/sec (256K)**

Collects the Windows "Flush Thread Frozen IOs/sec (256K)" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Broker Activation: Stored Procedures Invoked Per Second**

This counter reports the total number of activation stored procedures invoked by all queue monitors in the instance per second. This counter is polled every fifteen minutes.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Dusty corner scan retries/sec (Phantom-issued)**

Collects the Windows "Dusty corner scan retries/sec (Phantom-issued)" performance counter for the XTP engine's phantom processing subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: IoPagePool4K Total Allocated**

Collects the Windows "IoPagePool4K Total Allocated" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Reads/sec**

Collects the Windows "HTTP Storage:Reads/sec" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Total Bytes/sec**

Collects the Windows "HTTP Storage:Total Bytes/sec" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Merge Policy Evaluations**

Collects the Windows "Merge Policy Evaluations" performance counter for the XTP engine's storage subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Avg. Bytes/Write**

Collects the Windows "HTTP Storage:Avg. Bytes/Write" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Phantom expired rows removed/sec**

Collects the Windows "Phantom expired rows removed/sec" performance counter for the XTP engine's phantom processing subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Read-only transactions prepared/sec**

Collects the Windows "Read-only transactions prepared/sec" performance counter for XTP engine transactions in SQL Server.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: SQL User Connections**

Counts the number of users currently connected to SQL Server.

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|  |  |  |

**MSSQL 2016: Number of Lockwaits Per Second**

Collects the Windows "Number of Lockwaits Per Second" performance counter for each instance of SQL 2016 DB Engine.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Transactions aborted/sec**

Collects the Windows "Transactions aborted/sec" performance counter for XTP engine transactions in SQL Server.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: MtLog 64K Write Bytes/sec**

Collects the Windows "MtLog 64K Write Bytes/sec" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
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**MSSQL 2016: DB Engine CPU Utilization (%)**

SQL 2016 DB Engine CPU Utilization (%) performance collection rule.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Cache Expiration Time | Specifies the maximum age of information from cache the workflow can use. May be omitted. | 43200 | | 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. | 00:18 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: Main GC work items/sec**

Collects the Windows "Main GC work items/sec" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Flush Thread Frozen IOs/sec (4K)**

Collects the Windows "Flush Thread Frozen IOs/sec (4K)" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Flush Thread 256K Queue Depth**

Collects the Windows "Flush Thread 256K Queue Depth" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Core Merges Completed**

Collects the Windows "Core Merges Completed" performance counter for the XTP engine's storage subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Avg. microsec/Write**

Collects the Windows "HTTP Storage:Avg. microsec/Write" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: MtLog 256K Expand Count**

Collects the Windows "MtLog 256K Expand Count" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: MtLog 64K IOs Outstanding**

Collects the Windows "MtLog 64K IOs Outstanding" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Lock Timeouts Per Second**

Collects the Windows "Lock Timeouts Per Second" performance counter for each instance of SQL 2016 DB Engine.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: HTTP Storage IO Retry/sec**

Collects the Windows "HTTP Storage:HTTP Storage IO Retry/sec" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Writes/sec**

Collects the Windows "HTTP Storage:Writes/sec" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: IoPagePool64K Free List Count**

Collects the Windows "IoPagePool64K Free List Count" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Avg. Bytes/Read**

Collects the Windows "HTTP Storage:Avg. Bytes/Read" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: DB Engine Stolen Server Memory (MB)**

SQL 2016 DB Engine Stolen Server Memory (MB) performance collection rule

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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. | 00:24 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: DB Engine Thread Count**

SQL 2016 DB Engine Thread Count performance collection rule

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Cache Expiration Time | Specifies the maximum age of information from cache the workflow can use. May be omitted. | 43200 | | 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. | 00:18 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: Flush Thread Frozen IOs/sec (64K)**

Collects the Windows "Flush Thread Frozen IOs/sec (64K)" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Dusty corner scan retries/sec (user-issued)**

Collects the Windows "Dusty corner scan retries/sec (user-issued)" performance counter for internal XTP engine cursors.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Buffer Cache Hit Ratio**

Collects the Windows "Buffer Cache Hit Ratio" performance counter for each instance of SQL 2016 DB Engine.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Log bytes written/sec**

Collects the Windows "Log bytes written/sec" performance counter for XTP transaction logging in SQL Server.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Broker Activation: Tasks Aborted Per Second**

This counter reports the total number of activation stored procedure tasks that end with an error, or are aborted by a queue monitor for failing to receive messages. This counter is polled every fifteen minutes.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Sweep expired rows touched/sec**

Collects the Windows "Sweep expired rows touched/sec" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Tail Cache Page Count Peak**

Collects the Windows "Tail Cache Page Count Peak" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Sweep rows touched/sec**

Collects the Windows "Sweep rows touched/sec" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Rows processed/sec (no sweep needed)**

Collects the Windows "Rows processed/sec (no sweep needed)" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Phantom expired rows touched/sec**

Collects the Windows "Phantom expired rows touched/sec" performance counter for the XTP engine's phantom processing subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Number of Deadlocks Per Second**

Collects the Windows "Number of Deadlocks Per Second" performance counter for each instance of SQL 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Merge Requests Outstanding**

Collects the Windows "Merge Requests Outstanding" performance counter for the XTP engine's storage subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Merges Abandoned**

Collects the Windows "Merges Abandoned" performance counter for the XTP engine's storage subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Broker Statistics: Enqueued Messages Per Second**

The number of messages per second that have been placed onto the queues in the instance. This counter is polled every fifteen minutes.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Phantom expiring rows touched/sec**

Collects the Windows "Phantom expiring rows touched/sec" performance counter for the XTP engine's phantom processing subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: DB Engine Page Life Expectancy (s)**

SQL 2016 DB Engine Page Life Expectancy (s) performance collection rule

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **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 | |  |
|  |  |  |

**MSSQL 2016: Broker Activation: Tasks Started Per Second**

This counter reports the total number of activation stored procedures started per second by all queue monitors in the instance. This counter is polled every fifteen minutes.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Expired rows touched/sec**

Collects the Windows "Expired rows touched/sec" performance counter for internal XTP engine cursors.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Rows processed/sec (first in bucket and removed)**

Collects the Windows "Rows processed/sec (first in bucket and removed)" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Transactions created/sec**

Collects the Windows "Transactions created/sec" performance counter for XTP engine transactions in SQL Server.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: HTTP Storage: Avg. Transfers/sec**

Collects the Windows "HTTP Storage:Transfers/sec" performance counter for SQL DB Engine that monitor Windows Azure Storage account.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: MtLog 4K Expand Count**

Collects the Windows "MtLog 4K Expand Count" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Rows processed/sec (first in bucket)**

Collects the Windows "Rows processed/sec (first in bucket)" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Broker Statistics: Broker Transaction Rollbacks**

The number of rolled back transactions that contained DML-related to Service Broker. This counter is polled every fifteen minutes.

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: SQL Re-Compilations Per Second**

Collects the Windows "SQL Recompiles Per Second" performance counter for each instance of SQL 2016 DB Engine.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Num Serializations/sec**

Collects the Windows "Num Serializations/sec" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Flush Thread 64K Queue Depth**

Collects the Windows "Flush Thread 64K Queue Depth" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Dusty corner scan retries/sec (GC-issued)**

Collects the Windows "Dusty corner scan retries/sec (GC-issued)" performance counter for the XTP engine's garbage collector.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Missed Credit Slots**

Collects the Windows "Missed Credit Slots" performance counter for the XTP IO Rate Governor.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Avg Transaction Segment Size**

Collects the Windows "Avg Transaction Segment Size" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Checkpoints Closed**

Collects the Windows "Checkpoints Closed" performance counter for the XTP engine's storage subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Flush Thread 4K Queue Depth**

Collects the Windows "Flush Thread 4K Queue Depth" performance counter for SQL 2016 DB Engine.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Phantom rows touched/sec**

Collects the Windows "Phantom rows touched/sec" performance counter for the XTP engine's phantom processing subsystem.  
Note that this rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**SQL Server 2016 DB Engine - Tasks**

**Stop SQL Agent Service from DB Engine**

Stop SQL Agent Service from DB Engine  
Note that SQL Server Agent Windows Service is not supported by any edition of SQL Server Express.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**Stop SQL Server Service**

Stop SQL Server Service

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**Start SQL Server Service**

Start SQL Server Service

|  |  |  |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**Start SQL Agent Service from DB Engine**

Start SQL Agent Service from DB Engine  
Note that SQL Server Agent Windows Service is not supported by any edition of SQL Server Express.

|  |  |  |
| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**Start SQL Full-text Filter Daemon Launcher Service**

Start SQL Full-text Filter Daemon Launcher Service. Note that SQL Full-text Search feature is not available in any edition of SQL Server Express, except SQL Server Express with Advanced Services.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**Stop SQL Full-text Filter Daemon Launcher Service**

Stop SQL Full-text Filter Daemon Launcher Service. Note that SQL Full-text Search feature is not available in any edition of SQL Server Express, except SQL Server Express with Advanced Services.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**Global Configuration Settings**

Global Configuration Settings

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**SQL Server 2016 DB Engine - Console Tasks**

**SQL Profiler**

**SQL Management Studio**

**SQL Configuration Manager**

**SQL Server 2016 DB Engine Group**

A group containing all instances of Microsoft SQL Server 2016 database engines

**SQL Server 2016 DB Engine Group - Discoveries**

**MSSQL 2016: Populate SQL Server 2016 Instance Group**

This discovery rule populates the Instance group with all SQL Server 2016 DBEngines.

**MSSQL 2016: Populate Microsoft SQL Server 2016 Instance Group**

This discovery rule populates the SQL Server 2016 Instance Group with all instances of SQL Server 2016 DB Engine.

**SQL Server 2016 DB File**

Microsoft SQL Server 2016 database file

**SQL Server 2016 DB File - Discoveries**

**MSSQL 2016: Discover Data Files**

This discovery rule discovers the file information for each SQL Server 2016 Database.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Server 2016 DB File - Unit monitors**

**DB File Free Space Left**

The monitor reports a warning when the free space (including both already allocated space and free space on the media) drops below the Warning Threshold setting, expressed as percentage of the sum of data size plus disk free space. The monitor reports a critical alert when the free space drops below the Critical Threshold.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Critical Threshold | The monitor will change its state to Critical if the value drops below this threshold. Being between this threshold and the warning threshold (inclusive) will result in the monitor being in a warning state. | 10 | | 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 its state to Warning if the value drops below this threshold. | 20 | |  |
|  |  |  |

**SQL Server 2016 DB File - Rules (non-alerting)**

**MSSQL 2016: DB File Free Space Total (MB)**

The amount of space left in a file in megabytes. Also includes space left on media hosting a file with auto grow enabled.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | 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 2016: DB File Allocated Free Space (MB)**

The amount of space left in a file in megabytes. Does not include space left on media hosting a file with auto grow enabled.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | 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 2016: DB File Allocated Free Space (%)**

The amount of space left in a file in percentage terms. Does not include space left on media hosting a file with auto grow enabled

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | 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 2016: DB File Free Space Total (%)**

The amount of space left in a file in percentage terms. Also includes space left on media hosting a file with auto grow enabled.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | 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 | |  |
|  |  |  |

**SQL Server 2016 DB Filegroup**

Microsoft SQL Server 2016 database Filegroup

**SQL Server 2016 DB Filegroup - Discoveries**

**MSSQL 2016: Discover Filegroups**

This discovery rule discovers the Filegroup information for each SQL Server 2016 Database.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Server 2016 DB Filegroup - Aggregate monitors**

**DB Filegroup Space**

Monitors the aggregate space health for the Filegroup.

**SQL Server 2016 DB Filegroup - Dependency (rollup) monitors**

**DB File Space (rollup)**

The monitor oversees the space available in all Filegroups in the database and on related media. The space available on the media hosting files is only included as part of the free space if auto grow is enabled for at least one file. This monitor is a dependency (rollup) monitor.

**SQL Server 2016 DB Filegroup - Rules (non-alerting)**

**MSSQL 2016: DB Filegroup Free Space Total (%)**

Collects free database Filegroup space in percentage terms.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 2016: DB Filegroup Allocated Free Space (MB)**

The amount of space left in all files for this Filegroup in megabytes. Does not include space left on media hosting a file with auto grow enabled.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 2016: DB Filegroup Allocated Free Space (%)**

The amount of space left in all files for this Filegroup in percentage terms. Does not include space left on media hosting a file with auto grow enabled.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 2016: DB Filegroup Free Space Total (MB)**

The amount of space left in all files for this Filegroup in megabytes. Also includes space left on media hosting a file with auto grow enabled.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 | |  |
|  |  |  |

**SQL Server 2016 DB FILESTREAM Filegroup**

Microsoft SQL Server 2016 FILESTREAM Filegroup

**SQL Server 2016 DB FILESTREAM Filegroup - Unit monitors**

**DB FILESTREAM Filegroup Free Space**

The monitor reports a warning when the free space drops below the Warning Threshold setting, expressed as percentage of the sum of data size. The monitor reports a critical alert when the free space drops below the Critical Threshold.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Azure Maximum File Size (MB) | Azure Maximum File Size (MB) | 1048576 | | Critical Threshold | The monitor will change its state to Critical if the value drops below this threshold. Being between this threshold and the warning threshold (inclusive) will result in the monitor being in a warning state. | 10 | | 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 its state to Warning if the value drops below this threshold. | 20 | |  |
|  |  |  |

**SQL Server 2016 DB FILESTREAM Filegroup - Rules (non-alerting)**

**MSSQL 2016: DB FILESTREAM Filegroup Free Space Total (MB)**

Collects free FILESTREAM Filegroup data container space in megabytes.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 2016: DB FILESTREAM Filegroup Free Space Total (%)**

Collects free FILESTREAM Filegroup data container space in percentage terms.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 | |  |
|  |  |  |

**SQL Server 2016 DB Log File**

Microsoft SQL Server 2016 database transaction log file

**SQL Server 2016 DB Log File - Discoveries**

**MSSQL 2016: Discover Transaction Log File**

This discovery rule discovers transaction log files for each SQL Server 2016 Database.

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Server 2016 DB Log File - Unit monitors**

**DB Log File Free Space Left**

The monitor reports a warning when the free space (including both already allocated space and free space on the media) drops below the Warning Threshold setting, expressed as percentage of the sum of data size plus disk free space. The monitor reports a critical alert when the free space drops below the Critical Threshold.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Critical Threshold | The monitor will change its state to Critical if the value drops below this threshold. Being between this threshold and the warning threshold (inclusive) will result in the monitor being in a warning state. | 10 | | 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 its state to Warning if the value drops below this threshold. | 20 | |  |
|  |  |  |

**SQL Server 2016 DB Log File - Rules (non-alerting)**

**MSSQL 2016: DB Log File Allocated Free Space (MB)**

The amount of space left in all log files for this database in megabytes. Does not include space left on media hosting a file with auto grow enabled.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | 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 2016: DB Log File Free Space Total (MB)**

The amount of space left in all log files for this database in megabytes. Also includes space left on media hosting a file with auto grow enabled.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | 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 2016: DB Log File Allocated Free Space (%)**

The amount of space left in all log files for this database in percentage terms. Does not include space left on media hosting a file with auto grow enabled.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | 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 2016: DB Log File Free Space Total (%)**

The amount of space left in all log files for this database in percentage terms. Also includes space left on media hosting a file with auto grow enabled.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | 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 | |  |
|  |  |  |

**SQL Server 2016 DB Memory-Optimized Data Container**

Microsoft SQL Server 2016 Database Memory-Optimized Data Filegroup container

**SQL Server 2016 DB Memory-Optimized Data Container - Discoveries**

**MSSQL 2016: Discover Memory-Optimized Data Filegroup Containers**

This discovery rule discovers Memory-Optimized Data containers for each SQL Server 2016 Database. Note that this discovery rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Server 2016 DB Memory-Optimized Data Container - Unit monitors**

**Memory-Optimized Data Filegroup Container Free Space**

The monitor reports a warning when the available disk space for the Memory-Optimized Data Filegroup Container drops below the Warning Threshold setting, expressed as percentage of the sum of the Memory-Optimized Data Filegroup Container size plus disk free space. The monitor reports a critical alert when the free space drops below the 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. | 10 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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. | 20 | |  |
|  |  |  |

**SQL Server 2016 DB Memory-Optimized Data Container - Rules (non-alerting)**

**MSSQL 2016: Memory-Optimized Data Filegroup container free space (MB)**

Collects the amount of free space available for the Memory-Optimized Data Filegroup container (in Megabytes).

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 2016: Memory-Optimized Data Filegroup container free space (%)**

Collects the amount of free space available in the Memory-Optimized Data Filegroup container, expressed as percentage of the sum of disk free space and the size of data stored in the Memory-Optimized Data Filegroup container.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 | |  |
|  |  |  |

**SQL Server 2016 DB Memory-Optimized Data Filegroup**

Microsoft SQL Server 2016 Database Memory-Optimized Data Filegroup

**SQL Server 2016 DB Memory-Optimized Data Filegroup - Discoveries**

**MSSQL 2016: Discover Memory-Optimized Data Filegroup**

This discovery rule discovers the Memory-Optimized Data Filegroup information for each SQL Server 2016 Database. Note that this discovery rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

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| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Server 2016 DB Memory-Optimized Data Filegroup - Unit monitors**

**Average length of the row chains in the hash buckets**

This monitor checks Hash Index Empty Buckets Count and Average Length of the Row Chains in the SQL Database.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Average Chain Length Threshold | Threshold for Average Chain Length that indicates the average length of the row chains in the hash buckets. | 100 | | Display index count | The display count of not configured indexes according to the best practice. | 5 | | Empty Bucket Percent Threshold | Threshold for Empty Bucket Percent that indicates the number of empty buckets in the hash index. | 10 | | 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. | 300 | |  |
|  |  |  |

**[Deprecated] Garbage Collection**

The monitor reports a Critical State and raises an alert if the amount of space used by active rows in Memory-Optimized Data files drops below the Threshold setting, expressed as a percentage of the size of data files. Note: This monitor is disabled by default. Please use overrides to enable it when necessary.

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| --- | --- | --- |
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|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | 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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:05 | | Threshold | The collected value will be compared against this parameter. | 50 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**Empty Bucket percent in the hash index**

This monitor checks Hash Index Empty Buckets Count in the SQL Database.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Display index count | The display count of not configured indexes according to the best practice. | 5 | | Empty Bucket Percent Threshold | Threshold for Empty Bucket Percent that indicates the number of empty buckets in the hash index. | 10 | | 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. | 300 | |  |
|  |  |  |

**XTP Configuration**

This monitor checks the status of the SQL Database XTP Configuration.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 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. | 300 | |  |
|  |  |  |

**Memory-Optimized Data Stale Checkpoint File Pairs Ratio**

The monitor reports a warning state and raises an alert when the ratio of stale checkpoint file pairs in Memory-Optimized Data Filegroup is higher than the specified thresholds.  
Please note that the alerts are raised only if the corresponding database is reasonably big (300 or more checkpoint files total).

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | True | | Checkpoint File Pairs Threshold | An alert would be generated if Checkpoint File Pairs total count greater than or equal to the Checkpoint File Pairs Threshold. | 300 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 300 | | Number of samples | Indicates how many times a measured value should breach the thresholds before the state is changed. | 6 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. |  | | Threshold | The collected ratio will be compared against this parameter. | 60 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 180 | |  |
|  |  |  |

**SQL Server 2016 DB Memory-Optimized Data Filegroup - Aggregate monitors**

**DB Memory-Optimized Data Filegroup Space**

This monitor aggregates space health for the Memory-Optimized Data Filegroup.

**SQL Server 2016 DB Memory-Optimized Data Filegroup - Dependency (rollup) monitors**

**DB Memory-Optimized Data Filegroup Container Space (rollup)**

The monitor reports a warning when the available disk space for all Memory-Optimized Data Filegroup Containers drops below the Warning Threshold setting, expressed as percentage of the sum of the Memory-Optimized Data Filegroup Container size plus disk free space. The monitor reports a critical state when the free space drops below the Critical Threshold. This monitor is a dependency (rollup) monitor.

**SQL Server 2016 DB Memory-Optimized Data Filegroup - Rules (non-alerting)**

**MSSQL 2016: XTP Memory Used (KB)**

Collects the Windows "XTP Memory Used (KB)" performance counter for SQL 2016 Database with Memory-Optimized tables.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Memory Used By Indexes (MB)**

Collects the amount of memory allocated for indexes defined for memory-optimized tables in the given SQL Server 2016 Database.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:09 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**[Deprecated] MSSQL 2016: Memory-Optimized Data Garbage Collection Fill Factor (%)**

Collects Garbage Collection Fill Factor (an amount of space used by active rows in Memory-Optimized Data files, expressed as a percentage of the size of data files) for Memory-Optimized Data Filegroup. Note: This rule is disabled by default. Please use overrides to enable it when necessary.   
This rule is considered to be obsolete in this Management Pack.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | 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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:05 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: XTP Controller DLC Peak Latency**

Collects the Windows "XTP Controller DLC Peak Latency" performance counter for SQL 2016 Database with Memory-Optimized tables.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Precreated Checkpoint Files**

Collects the number of Precreated Checkpoint Files in Memory-Optimized Data Filegroup.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 2016: Checkpoint File Pairs Under Construction**

Collects the number of checkpoint file pairs under construction in Memory-Optimized Data Filegroup.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 2016: Merge Target Checkpoint File Pairs**

Collects the number of merge target checkpoint file pairs in Memory-Optimized Data Filegroup.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 2016: XTP Controller Log Processed/sec**

Collects the Windows "XTP Controller Log Processed/sec" performance counter for SQL 2016 Database with Memory-Optimized tables.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Active Checkpoint File Pairs**

Collects the number of active checkpoint file pairs in Memory-Optimized Data Filegroup.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 2016: DB Memory-Optimized Data Filegroup Free Space Total (MB)**

Collects the amount of free space available across all containers in the Memory-Optimized Data Filegroup (in Megabytes).

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 2016: DB Memory-Optimized Data Filegroup Free Space Total (%)**

Collects the amount of free space available across all containers in the Memory-Optimized Data Filegroup, expressed as percentage of the sum of disk free space and the size of data stored in the Memory-Optimized Data Filegroup.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Azure Maximum File Size (MB) | The maximum size of data file stored in Azure BLOB Storage. The workflow will consider this value as a maximum storage capacity for each file. | 1048576 | | Interval (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 2016: Checkpoint File Pairs Waiting For Log Truncation**

Collects the number of Checkpoint Files Waiting For Log Truncation in Memory-Optimized Data Filegroup.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | 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 2016: XTP Controller DLC Latency/Fetch**

Collects the Windows "XTP Controller DLC Latency/Fetch" performance counter for SQL 2016 Database with Memory-Optimized tables.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Memory Used By Tables (MB)**

Collects the amount of memory allocated for memory-optimized tables in the given SQL Server 2016 Database.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:09 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Server 2016 Default Resource Pool**

SQL Server 2016 Default Resource Pool

**SQL Server 2016 Default Resource Pool - Discoveries**

**MSSQL 2016: Discover Database Engine Resource Pools**

This discovery rule discovers resource pools for a given instance of SQL Server 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Discover only Memory-Optimized Data pools | Must be 'true' or 'false'. When this property is set to true then discovery will disover only pools with bound databases. A database can be bound to a pool by using function sys.sp\_xtp\_bind\_db\_resource\_pool. | true | | 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 | |  |
|  |  |  |

**SQL Server 2016 Event Log Collection Target**

This object is used to collect errors from event log of computers that have SQL Server 2016 components.

**SQL Server 2016 Event Log Collection Target - Discoveries**

**SQL Server 2016 Event Log Collection Target Discovery**

This discovery rule discovers an event log collection target for a Microsoft SQL Server 2016. This object is used to collect module errors from event log of computers that have SQL Server 2016 components.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | |  |
|  |  |  |

**SQL Server 2016 Event Log Collection Target - Rules (alerting)**

**MSSQL 2016: Monitoring failed**

The rule traces failed monitoring workflows and generates error alerts.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Discovery warning**

The rule traces problematic discovery workflows and generates warning alerts.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**MSSQL 2016: Discovery failed**

The rule traces failed discovery workflows and generates error alerts.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Monitoring warning**

The rule traces problematic monitoring workflows and generates warning alerts.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 1 | |  |
|  |  |  |

**SQL Server 2016 Installation Seed**

It is a seed for Microsoft SQL Server 2016 installation. This object indicates that the particular server computer contains Microsoft SQL Server 2016 installation.

**SQL Server 2016 Installation Seed - Discoveries**

**MSSQL 2016: Discover SQL Server 2016 DB Installation Source (seed)**

This discovery rule discovers a seed for Microsoft SQL Server 2016 installation. This object indicates that the particular server computer contains Microsoft SQL Server 2016 installation.

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

**SQL Server 2016 Instance Group**

A group containing all SQL Server 2016 DB Engine Instances

**SQL Server 2016 Instance Group - Discoveries**

**MSSQL 2016: Populate SQL Server 2016 Instance Group**

This discovery rule populates the SQL Server 2016 Instance group with all SQL Server 2016 DBEngines.

**SQL Server 2016 Integration Services**

An installation of Microsoft SQL Server 2016 Integration Services

**SQL Server 2016 Integration Services - Discoveries**

**MSSQL 2016: Discover SQL Server 2016 Integration Services (Windows Server)**

This object discovery discovers if SQL Server 2016 Integrate Services is installed.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | |  |
|  |  |  |

**SQL Server 2016 Integration Services - Unit monitors**

**SQL Server Integration Services Windows Service**

This monitor checks the status of the SQL Integration Services service.  
Note that all SQL Express editions support only SQL Server Import and Export Wizard along with Built-in data source connectors. There is no appropriate discovered object (service).

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | |  |
|  |  |  |

**SQL Server 2016 Integration Services - Rules (alerting)**

**MSSQL 2016: IS Package Failed**

A package failed during execution.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: IS Service failed to load user defined Configuration file**

The configuration file for the Integration Services service could not be loaded, when the services was started. By default, this file is named MSDtsSrvr.ini.xml. However, Integration Services can be configured by a registry setting to use any file name and file location.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: Package execution failed because the checkpoint file cannot be loaded**

A package that is configured to use checkpoints and to always use the checkpoint file failed to restart.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: IS Service has attempted to stop a running package**

The Integration Services service was used to send a request to the Integration Services runtime to stop a running package. Note: This rule is disabled by default. Please use overrides to enable it when necessary.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | No | | Generate Alerts | Defines whether the workflow generates an Alert. | Yes | | Priority | Defines Alert Priority. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**MSSQL 2016: The package restarted from checkpoint file. Package was configured to restart from checkpoint and it did**

A package configured to use checkpoints failed and then restarted from the point of failure using the checkpoint file.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 1 | | Severity | Defines Alert Severity. | 2 | |  |
|  |  |  |

**SQL Server 2016 Integration Services - Rules (non-alerting)**

**MSSQL 2016: SSIS 2016 Pipeline: Buffers Spooled**

The number of buffers currently written to the disk. If the data flow engine runs low on physical memory, buffers not currently used are written to disk and then reloaded when needed. This counter is polled every fifteen minutes.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: SSIS 2016 Pipeline: Rows Read**

This counter indicates the number of rows that a source produces. The number does not include rows read from reference tables by the Lookup transformation. This counter is polled every fifteen minutes.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: SSIS 2016 Pipeline: Rows Written**

This counter displays the number of rows offered to a destination. The number does not reflect rows written to the destination data store. This counter is polled every fifteen minutes.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**SQL Server 2016 Integration Services - Tasks**

**Start SQL Integration Services Service**

Start SQL Integration Services Service  
Note that all SQL Express editions support only SQL Server Import and Export Wizard along with Built-in data source connectors.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**Stop SQL Integration Services Service**

Stop SQL Integration Services Service  
Note that all SQL Express editions support only SQL Server Import and Export Wizard along with Built-in data source connectors.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Timeout Seconds |  | 300 | |  |
|  |  |  |

**SQL Server 2016 Integration Services Installation Seed**

It is a seed for Microsoft SQL Server 2016 Integration Services installation. This object indicates that the particular server computer contains Microsoft SQL Server 2016 Integration Services installation.

**SQL Server 2016 Integration Services Installation Seed - Discoveries**

**MSSQL 2016: Discover SQL Server 2016 DB Installation Source (seed)**

This discovery rule discovers a seed for Microsoft SQL Server 2016 installation. This object indicates that the particular server computer contains Microsoft SQL Server 2016 installation.

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

**SQL Server 2016 Internal Resource Pool**

SQL Server 2016 Internal Resource Pool

**SQL Server 2016 Internal Resource Pool - Discoveries**

**MSSQL 2016: Discover Database Engine Resource Pools**

This discovery rule discovers resource pools for a given instance of SQL Server 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Discover only Memory-Optimized Data pools | Must be 'true' or 'false'. When this property is set to true then discovery will disover only pools with bound databases. A database can be bound to a pool by using function sys.sp\_xtp\_bind\_db\_resource\_pool. | true | | 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 | |  |
|  |  |  |

**SQL Server 2016 Memory-Optimized Data Instances Group**

A group containing all instances of Microsoft SQL Server 2016 database engines supported Memory-Optimized Data feature.

**SQL Server 2016 Memory-Optimized Data Instances Group - Discoveries**

**MSSQL 2016: Populate SQL Server 2016 Memory-Optimized Data Instances Group**

This discovery rule populates the SQL Server 2016 Memory-Optimized Data Instances Group with all SQL Server 2016 DBEngines supported Memory-Optimized Data feature.

**SQL Server 2016 Memory-Optimized Data Resource Pool Group**

The group contains all SQL Server 2016 resource pools supported Memory-Optimized Data feature.

**SQL Server 2016 Memory-Optimized Data Resource Pool Group - Discoveries**

**MSSQL 2016: Populate SQL Server 2016 Memory-Optimized Data Resource Pool Group**

This discovery rule populates the SQL Server 2016 Memory-Optimized Data Resource Pool Group with all SQL Server 2016 Resource Pools supported Memory-Optimized Data feature.

**SQL Server 2016 Memory-Optimized Data Scope Group**

SQL Server 2016 Memory-Optimized Data Scope Group contains all SQL Server Memory-Optimized Data objects such as Memory-Optimized Data Filegroups, Containers and Resource Pools.

**SQL Server 2016 Memory-Optimized Data Scope Group - Discoveries**

**MSSQL 2016: Memory-Optimized Data Scope Group Discovery**

This discovery rule populates the Alerts and Performance Data Scope group to contain all SQL Server Memory-Optimized Data objects. Note that this discovery rule is enabled only for SQL editions supporting Memory-Optimized Data (64-bit Enterprise, Developer, or Evaluation edition).

**SQL Server 2016 Mirroring Groups Group**

A group containing all SQL Server 2016 Mirroring groups

**SQL Server 2016 Mirroring Groups Group - Discoveries**

**MSSQL 2016: Populate SQL Server 2016 Mirroring Groups Group**

This discovery rule populates the SQL Server 2016 Mirroring Groups Group group with all SQL Server 2016 Mirroring Groups.

**SQL Server 2016 Resource Pool**

SQL Server 2016 Resource Pool Abstract Class

**SQL Server 2016 Resource Pool - Rules (non-alerting)**

**MSSQL 2016: Number of queries waiting for memory grants in the resource pool.**

Collects the Windows "Pending memory grants count" performance counter for each resource pool of SQL 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Target amount of memory the resource pool is trying to attain based on the settings and server state (KB)**

Collects the Windows "Target memory (KB)" performance counter for each resource pool of SQL 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Current memory target for query execution memory grant (KB)**

Collects the Windows "Query exec memory target (KB)" performance counter for each resource pool of SQL 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Number of query memory grants in the resource pool**

Collects the Windows "Active Memory grant amount (KB)" performance counter for each resource pool of SQL 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Used amount of memory in the resource pool (KB)**

Collects the Windows "Used memory (KB)" performance counter for each resource pool of SQL 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Maximum amount of memory the resource pool can have based on the settings and server state (KB)**

Collects the Windows "Max memory (KB)" performance counter for each resource pool of SQL 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Total amount of granted memory in the resource pool (KB)**

Collects the Windows "Active memory grants count" performance counter for each resource pool of SQL 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Current memory target for query compile (KB)**

Collects the Windows "Compile Memory Target (KB)" performance counter for each resource pool of SQL 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Number of query memory grant timeouts per second occurring in the resource pool**

Collects the Windows "Memory grant timeouts/sec" performance counter for each resource pool of SQL 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Current memory target for cache memory (KB)**

Collects the Windows "Cache memory target (KB)" performance counter for each resource pool of SQL 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**MSSQL 2016: Number of query memory grants per second occurring in the resource pool**

Collects the Windows "Memory grants/sec" performance counter for each resource pool of SQL 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Generate Alerts | Defines whether the workflow generates an Alert. | No | | Frequency (seconds) | The recurring interval of time in seconds in which to run the workflow. | 900 | |  |
|  |  |  |

**SQL Server 2016 Resource Pool Group**

The group contains all SQL Server 2016 resource pools

**SQL Server 2016 Resource Pool Group - Discoveries**

**MSSQL 2016: Discover SQL Server 2016 Database Engines**

This discovery rule discovers all instances of SQL Server 2016 DB Engine running on Windows Servers. By default all instances are discovered and monitored. You can override the discovery to exclude one or more instances from being discovered using the Exclude List. This list takes a comma-separated list of instances or the \* character to exclude all instances.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Exclude List | A comma-separated list of instances that should be excluded from discovery. You can use the wildcard \* to exclude all instances. |  | | 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 | |  |
|  |  |  |

**SQL Server 2016 User Resource Pool**

SQL Server 2016 User Resource Pool Abstract Class

**SQL Server 2016 User Resource Pool - Unit monitors**

**Resource Pool Memory Consumption**

The monitor reports a critical state and raises an alert when the amount of memory used by the resource pool is greater than the Threshold setting, expressed as a percentage of memory available for Memory-Optimized Data tables for the given resource pool.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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. | 300 | | Number of samples | Indicates how many times a measured value should breach a threshold before the state is changed. | 6 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:07 | | Threshold | The collected value will be compared against this parameter. | 90 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 180 | |  |
|  |  |  |

**SQL Server 2016 User Resource Pool - Rules (non-alerting)**

**MSSQL 2016: User Resource Pool Memory Consumption (MB)**

Collects amount of memory used by the resource pool (in Megabytes).

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:07 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**MSSQL 2016: User Resource Pool Memory Consumption (%)**

Collects amount of memory used by the resource pool, expressed as a percentage of memory available for Memory-Optimized Data tables for the given Resource Pool.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **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 | | Script Delay (milliseconds) | This parameter sets the delay between consecutive T-SQL queries executed by the workflow. This may help to reduce the footprint generated by the workflow in case of large number of target objects. Please advise with Microsoft Support before changing this parameter. | 0 | | Synchronization Time | The synchronization time specified by using a 24-hour format. May be omitted. | 00:07 | | Timeout (seconds) | Specifies the time the workflow is allowed to run before being closed and marked as failed. | 300 | |  |
|  |  |  |

**SQL Server 2016 User-Defined Resource Pools**

SQL Server 2016 User-Defined Resource Pool

**SQL Server 2016 User-Defined Resource Pools - Discoveries**

**MSSQL 2016: Discover Database Engine Resource Pools**

This discovery rule discovers resource pools for a given instance of SQL Server 2016 DB Engine.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Default value** | | Enabled | Enables or disables the workflow. | Yes | | Discover only Memory-Optimized Data pools | Must be 'true' or 'false'. When this property is set to true then discovery will disover only pools with bound databases. A database can be bound to a pool by using function sys.sp\_xtp\_bind\_db\_resource\_pool. | true | | 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 | |  |
|  |  |  |

**SQL Server Alerts Scope Group**

SQL Server Alerts Scope Group contains SQL Server objects which can throw alerts.

**SQL Server Alerts Scope Group - Discoveries**

**MSSQL 2016: Alerts Scope Group Discovery**

This object discovery populates the Alerts Scope group to contain all SQL Server Roles.

**MSSQL 2016: Alerts Scope Group Discovery**

This object discovery populates the Alerts Scope group to contain all SQL Server Roles.

**SQL Server Always On Availability Group**

This group contains Microsoft SQL Server Always On Availability components

**SQL Server Always On Availability Group - Dependency (rollup) monitors**

**Availability Group Availability Rollup**

Availability Group Availability Rollup

**Availability Group Rollup**

Availability Group Performance Rollup

**Availability Group Configuration Rollup**

Availability Group Configuration Rollup

**Availability Group Security Rollup**

Availability Group Security Rollup

**SQL Server Always On Availability Replicas Group**

This group contains Microsoft SQL Server Always On Availability Replica components

**SQL Server Always On Availability Replicas Group - Dependency (rollup) monitors**

**Availability Replica Availability Rollup**

Availability Replica Availability Rollup

**Availability Replica Configuration Rollup**

Availability Replica Configuration Rollup

**Availability Replica Rollup**

Availability Replica Performance Rollup

**Availability Replica Security Rollup**

Availability Replica Security Rollup

**SQL Server Always On Database Replicas Group**

This group contains Microsoft SQL Server Always On Database Replicas components

**SQL Server Always On Database Replicas Group - Dependency (rollup) monitors**

**Database Replica Rollup**

Database Replica Performance Rollup

**Database Replica Security Rollup**

Database Replica Security Rollup

**Database Replica Configuration Rollup**

Database Replica Configuration Rollup

**Database Replica Availability Rollup**

Database Replica Availability Rollup

**SQL Server Computers**

This group contains all Windows computers that are running a component of Microsoft SQL Server

**SQL Server Computers - Discoveries**

**MSSQL 2016: Discover SQL Server Computer Group membership**

Populates the computer group to contains all computers running SQL Server.

**MSSQL 2016: Discover SQL Server Computer Group membership**

Populates the computer group to contains all computers running SQL Server.

**SQL Server DB Engine Group**

This group containing all instances of Microsoft SQL Server database engines

**SQL Server DB Engine Group - Discoveries**

**MSSQL: Populate SQL Server Instance Group**

This discovery rule populates the Instance group with all SQL Server DBEngines.

**SQL Server Express 2016 DB Engine Group**

A group containing all instances of Microsoft SQL Server Express 2016 database engines

**SQL Server Express 2016 DB Engine Group - Discoveries**

**MSSQL 2016: Populate SQL Server Express 2016 Instance Group**

This discovery rule populates the Express Instance group with all SQL Server Express 2016 DBEngines.

**SQL Server Integration Services Group**

This group containing all instances of Microsoft SQL Server Integration Services

**SQL Server Integration Services Group - Discoveries**

**MSSQL 2016: Integration Services Group Discovery**

This object discovery populates the Integration Services Group to contain all SQL Integration Services.

## Appendix: Run As Profiles

| **Run As Profile** | **Workflow Type** | **Workflow** |
| --- | --- | --- |
| Microsoft SQL Server 2016 Discovery Run As Profile | Discovery | Discover Mirrored Databases for a Database Engine |
| Discovery | Discover Mirrored Databases Witnesses |
| Discovery | MSSQL 2016: Database Custom User Policy Discovery |
| Discovery | MSSQL 2016: Database Replicas Always On Discovery |
| Discovery | MSSQL 2016: Discover Data Files |
| Discovery | MSSQL 2016: Discover Database Engine Resource Pools |
| Discovery | MSSQL 2016: Discover Databases for a Database Engine |
| Discovery | MSSQL 2016: Discover Filegroups |
| Discovery | MSSQL 2016: Discover Memory-Optimized Data Filegroup |
| Discovery | MSSQL 2016: Discover Memory-Optimized Data Filegroup Containers |
| Discovery | MSSQL 2016: Discover SQL Server 2016 Agent Jobs |
| Discovery | MSSQL 2016: Discover SQL Server 2016 Database Engines |
| Discovery | MSSQL 2016: Discover SQL Server 2016 Integration Services (Windows Server) |
| Discovery | MSSQL 2016: Discover SQL Server Agent for a DB Engine |
| Discovery | MSSQL 2016: Discover Transaction Log File |
| Discovery | MSSQL 2016: General Always On Discovery |
| Discovery | MSSQL 2016: General Custom User Policy Discovery |
| Microsoft SQL Server 2016 Monitoring Run As Profile | Monitor | Auto Close Configuration |
| Monitor | Auto Create Statistics Configuration |
| Monitor | Auto Shrink Configuration |
| Monitor | Auto Update Statistics Async Configuration |
| Monitor | Auto Update Statistics Configuration |
| Monitor | Availability Database Data Synchronization |
| Monitor | Availability Database Join State |
| Monitor | Availability Database Suspension State |
| Monitor | Availability Group Automatic Failover monitor |
| Monitor | Availability Group Health Policy |
| Monitor | Availability Group Health Policy |
| Monitor | Availability Group Online monitor |
| Monitor | Availability Replica Connection |
| Monitor | Availability Replica Data Synchronization |
| Monitor | Availability Replica Health Policy |
| Monitor | Availability Replica Health Policy |
| Monitor | Availability Replica Join State |
| Monitor | Availability Replica Role |
| Monitor | Availability Replicas Connection monitor |
| Monitor | Availability Replicas Data Synchronization monitor |
| Monitor | Availability Replicas Role monitor |
| Monitor | Average length of the row chains in the hash buckets |
| Monitor | Average Wait Time |
| Monitor | Blocking Sessions |
| Monitor | Buffer Cache Hit Ratio |
| Monitor | CPU Utilization (%) |
| Monitor | Database Backup Status |
| Monitor | Database Health Policy |
| Monitor | Database Health Policy |
| Monitor | Database Mirror Status |
| Monitor | Database Mirror Witness Status |
| Monitor | Database Mirroring Partners Status |
| Monitor | Database Replica Health Policy |
| Monitor | Database Replica Health Policy |
| Monitor | Database Status |
| Monitor | DB Chaining Configuration |
| Monitor | DB File Free Space Left |
| Monitor | DB FILESTREAM Filegroup Free Space |
| Monitor | DB Free Space Left |
| Monitor | DB Log File Free Space Left |
| Monitor | DB Space Percentage Change |
| Monitor | Disk Read Latency |
| Monitor | Disk Write Latency |
| Monitor | Empty Bucket percent in the hash index |
| Monitor | Garbage Collection |
| Monitor | Job Duration |
| Monitor | Last Run Status |
| Monitor | Long Running Jobs |
| Monitor | Managed Backup System Health Policy |
| Monitor | Managed Backup User Action Health Policy |
| Monitor | Memory-Optimized Data Filegroup Container Free Space |
| Monitor | Memory-Optimized Data Stale Checkpoint File Pairs Ratio |
| Monitor | Page Life Expectancy |
| Monitor | Page Verify Configuration |
| Monitor | Recovery Model Configuration |
| Monitor | Resource Pool Memory Consumption |
| Monitor | Service Pack Compliance |
| Monitor | Service Principal Name Configuration Status |
| Monitor | SQL Re-Compilation |
| Monitor | SQL Server Windows Service |
| Monitor | SQL Server Windows Service |
| Monitor | Stolen Server Memory |
| Monitor | Synchronous Replicas Data Synchronization monitor |
| Monitor | Thread Count |
| Monitor | Transaction Log Free Space (%) |
| Monitor | Trustworthy Configuration |
| Monitor | WSFC Cluster monitor |
| Monitor | XTP Configuration |
| Rule | MSSQL 2016: Active Checkpoint File Pairs |
| Rule | MSSQL 2016: Checkpoint File Pairs Under Construction |
| Rule | MSSQL 2016: Checkpoint File Pairs Waiting For Log Truncation |
| Rule | MSSQL 2016: DB Active Connections Count |
| Rule | MSSQL 2016: DB Active Requests Count |
| Rule | MSSQL 2016: DB Active Sessions Count |
| Rule | MSSQL 2016: DB Active Transactions Count |
| Rule | MSSQL 2016: DB Allocated Space (MB) |
| Rule | MSSQL 2016: DB Allocated Space Unused (MB) |
| Rule | MSSQL 2016: DB Allocated Space Used (MB) |
| Rule | MSSQL 2016: DB Disk Read Latency (ms) |
| Rule | MSSQL 2016: DB Disk Write Latency (ms) |
| Rule | MSSQL 2016: DB Engine Average Wait Time (ms) |
| Rule | MSSQL 2016: DB Engine CPU Utilization (%) |
| Rule | MSSQL 2016: DB Engine Page Life Expectancy (s) |
| Rule | MSSQL 2016: DB Engine Stolen Server Memory (MB) |
| Rule | MSSQL 2016: DB Engine Thread Count |
| Rule | MSSQL 2016: DB File Allocated Space Unused (%) |
| Rule | MSSQL 2016: DB File Allocated Space Unused (MB) |
| Rule | MSSQL 2016: DB File Free Space Total (%) |
| Rule | MSSQL 2016: DB File Free Space Total (MB) |
| Rule | MSSQL 2016: DB Filegroup Allocated Space Unused (%) |
| Rule | MSSQL 2016: DB Filegroup Allocated Space Unused (MB) |
| Rule | MSSQL 2016: DB Filegroup Free Space Total (%) |
| Rule | MSSQL 2016: DB Filegroup Free Space Total (MB) |
| Rule | MSSQL 2016: DB FILESTREAM Filegroup Free Space Total (%) |
| Rule | MSSQL 2016: DB FILESTREAM Filegroup Free Space Total (MB) |
| Rule | MSSQL 2016: DB Free Outer Space (MB) |
| Rule | MSSQL 2016: DB Free Space Total (%) |
| Rule | MSSQL 2016: DB Free Space Total (MB) |
| Rule | MSSQL 2016: DB Log File Allocated Space Unused (%) |
| Rule | MSSQL 2016: DB Log File Allocated Space Unused (MB) |
| Rule | MSSQL 2016: DB Log File Free Space Total (%) |
| Rule | MSSQL 2016: DB Log File Free Space Total (MB) |
| Rule | MSSQL 2016: DB Memory-Optimized Data Filegroup Free Space Total (%) |
| Rule | MSSQL 2016: DB Memory-Optimized Data Filegroup Free Space Total (MB) |
| Rule | MSSQL 2016: DB Transaction Log Free Space Total (%) |
| Rule | MSSQL 2016: DB Transactions Per Second Count |
| Rule | MSSQL 2016: Memory Used By Indexes (MB) |
| Rule | MSSQL 2016: Memory Used By Tables (MB) |
| Rule | MSSQL 2016: Memory-Optimized Data Filegroup container free space (%) |
| Rule | MSSQL 2016: Memory-Optimized Data Filegroup container free space (MB) |
| Rule | MSSQL 2016: Memory-Optimized Data Garbage Collection Fill Factor (%) |
| Rule | MSSQL 2016: Merge Target Checkpoint File Pairs |
| Rule | MSSQL 2016: Precreated Checkpoint Files |
| Rule | MSSQL 2016: SQL Server 2016 DB Engine is restarted |
| Rule | MSSQL 2016: SSIS 2016 Pipeline: Buffers Spooled |
| Rule | MSSQL 2016: SSIS 2016 Pipeline: Rows Read |
| Rule | MSSQL 2016: SSIS 2016 Pipeline: Rows Written |
| Rule | MSSQL 2016: User Resource Pool Memory Consumption (%) |
| Rule | MSSQL 2016: User Resource Pool Memory Consumption (MB) |
| Microsoft SQL Server 2016 Task Run As Profile | Task | Check Catalog (DBCC) |
| Task | Check Database (DBCC) |
| Task | Check Disk (DBCC) |
| Task | Global Configuration Settings |
| Task | Set Database Offline |
| Task | Set Database Online |
| Task | Set Database to Emergency State |
| Task | Start SQL Agent Service |
| Task | Start SQL Agent Service |
| Task | Start SQL Agent Service from DB Engine |
| Task | Start SQL Full-text Filter Daemon Launcher Service |
| Task | Start SQL Server Service |
| Task | Stop SQL Agent Service |
| Task | Stop SQL Agent Service |
| Task | Stop SQL Agent Service from DB Engine |
| Task | Stop SQL Full-text Filter Daemon Launcher Service |
| Task | Stop SQL Server Service |
| Operational Database Account | Discovery | Discover SQL Server 2016 Mirroring Service |
| Discovery | MSSQL 2016: Alerts Scope Group Discovery |
| Discovery | MSSQL 2016: Alerts Scope Group Discovery |
| Discovery | MSSQL 2016: Discover SQL Server Computer Group membership |
| Discovery | MSSQL 2016: Discover SQL Server Computer Group membership |
| Discovery | MSSQL 2016: Integration Services Group Discovery |
| Discovery | MSSQL 2016: Memory-Optimized Data Scope Group Discovery |
| Discovery | MSSQL 2016: Mirroring Common Group Discovery |
| Discovery | MSSQL 2016: Mirroring Group Discovery |
| Discovery | MSSQL 2016: Populate Microsoft SQL Server 2016 Computer Group |
| Discovery | MSSQL 2016: Populate Microsoft SQL Server 2016 Instance Group |
| Discovery | MSSQL 2016: Populate SQL Availability Group |
| Discovery | MSSQL 2016: Populate SQL Availability Replica Group |
| Discovery | MSSQL 2016: Populate SQL Database Replica Group |
| Discovery | MSSQL 2016: Populate SQL Server 2016 Agent Group |
| Discovery | MSSQL 2016: Populate SQL Server 2016 Agents Group |
| Discovery | MSSQL 2016: Populate SQL Server 2016 Components Group |
| Discovery | MSSQL 2016: Populate SQL Server 2016 Computer Group |
| Discovery | MSSQL 2016: Populate SQL Server 2016 Database Group |
| Discovery | MSSQL 2016: Populate SQL Server 2016 Databases Group |
| Discovery | MSSQL 2016: Populate SQL Server 2016 Instance Group |
| Discovery | MSSQL 2016: Populate SQL Server 2016 Instance Group |
| Discovery | MSSQL 2016: Populate SQL Server 2016 Mirroring Groups Group |
| Discovery | MSSQL 2016: Populate SQL Server Express 2016 Instance Group |
| Discovery | MSSQL 2016: Server Roles Group Discovery |
| Discovery | MSSQL 2016: Server Roles Group Discovery |
| Discovery | MSSQL 2016: SQL Server Always On Database Replicas Discovery |
| Discovery | MSSQL 2016: SQL Server Always On Groups Discovery |
| Discovery | MSSQL 2016: SQL Server Always On High Availability Group Discovery |
| Discovery | MSSQL 2016: SQL Server Always On Replicas Discovery |
| Discovery | MSSQL: Populate SQL Server Instance Group |

## Appendix: Management Pack Reports

| **Report** | **Description** |
| --- | --- |
| SQL Broker Performance | Displays a chart with following performance metrics:  **** Activation stored procedures invoked per second statistics  **** Activation task limit reached  **** Activation task limit reached per second statistics  **** Activation tasks aborted  **** Messages per second placed in the queue  **** Transport messages per second placed in the queue  **** SQL RECEIVEs per second  **** SQL SENDs per second  **** Tasks started per second  **** Total transaction rollbacks  **** Transport message fragment RECEIVEs per second  **** Transport message fragments  **** Transport open connection count statistics  **** Transport receive I/Os per second  **** Transport Send I/Os per second |
| SQL Server Database Engine Counters | Displays a chart with following performance metrics:  **** Buffer cache hit ratio  **** Lock timeouts per second  **** Number of deadlocks per second  **** SQL Re-compilations per second  **** SQL Compilations per second  **** Transactions per second |
| SQL Server Configuration | When the objects supplied are of the type SQL Server 2016 DB Engine, displays the following discovered properties.  **** Audit level  **** Authentication mode  **** Cluster  **** Enable error reporting  **** Error log location  **** Language  **** Master database location  **** Master database log location  **** Service pack version  **** Version |
| SQL Server Lock Analysis | When the objects supplied are of the type SQL Server 2016 DB Engine, displays a chart with the performance metric:   * Number of deadlocks per second. |
| SQL Server Service pack | When the objects supplied are of type SQL Server 2016 DB Engine, displays the following discovered properties:  **** Service Pack Version  **** Version |
| SQL User Activity | For each selected object, displays a chart with the performance metric:   * Logins per second. |
| Top 5 Deadlocked Databases | Displays a chart with the top five deadlocked databases and a table containing the list of databases and their counter values. |
| User Connections by Day | When the objects supplied are of type SQL Server 2016 DB Engine, displays a chart for each selected object with the performance metric:   * SQL user connections. |
| User Connections by Peak Hours | When the objects supplied are of the type SQL Server 2016 DB Engine, displays a chart for each selected object with following performance metrics:   * SQL user connections. |
| SQL Database Space | When the objects supplied are of the type SQL Server 2016 DB, displays a chart for each selected object with the following performance metrics:   * DB Available Space Total (%) * DB Available Space Total (MB) * DB Allocated Space (MB) |

## Appendix: Known Issues and Troubleshooting

##### Error “missing performance counters” in OpsMgr event.

**Issue:** If required performance counters are not registered in the performance monitor, monitoring scenarios from the management pack cannot get required information and exit with the error.

**Resolution:** Register the counters. More information can be found [here](http://blogs.technet.com/b/pfelatam/archive/2011/08/08/sql-performance-counters-are-missing.aspx).

##### Mirroring Diagrams are version-specific.

**Issue:** There are 4 Mirroring diagrams: SQL Mirroring 2008, 2012, 2014 and 2016. Each diagram displays object of the specified version and does not show related objects, which are hosted on other versions of SQL Server.

**Resolution:** If configured SQL Server Mirroring uses different versions of SQL Server, user should monitor all views related to the chosen versions.

##### Database Backup Status Monitor generates false positive alerts on Always On Group secondary replicas.

**Issue:** Database Backup Status monitor has no logic to track whether the database is a secondary replica or not. Since AOG has an advanced backup logic, which requires a backup for at least one of the databases involved, the monitor generates false positive alerts.

**Resolution:** The monitor is disabled by default and if user wants to enable the monitoring scenario for his environment, it is recommended to keep the monitor disabled for all servers, which are not used for storing the database backup. A specific scenario for AON MP could be implemented in the future.

##### State view may show only limited set of properties when opened via “State view” context action.

**Issue:** When you launch a State view via task pane or context menu In “SQL Server Roles” dashboard, the state view may display only limited set of properties and columns.

**Resolution:** Use details widget placed in lower half of the dashboard. Alternatively, you may use state views provided with the management pack.

##### Performance collection rules do not use data collection optimization.

**Issue:** Not all performance collection rules in this management pack use data collection optimization. This results in increased amount of data being stored in the Operations Manager databases.

**Resolution:** Performance data collection optimization has been eliminated from this management pack to guarantee an accuracy of hourly and daily aggregated performance data stored in SCOM Data Warehouse. If you need to reduce the amount of performance data been collected by this management pack, please consider reducing collection intervals.

##### SQL Server 2016 Databases Summary Dashboard displays all active alerts if nothing is selected

Issue: Currently the dashboard displays all active alerts if nothing is selected. It is a standard querying mechanism of the default Alerts widget.

Resolution: Make sure that at least one DB suites the filtering options.

##### Widgets cannot display performance data if DB name has special symbols

Issue: Default performance widgets and SQL Server 2016 Databases Summary Dashboard will not display performance data for Databases that have name with bracers. This is a known SCOM issue. Moreover, if a database name is **\_Total**, then cumulative performance metrics are collected for all databases, as long as **\_Total** is a special object in a performance monitor.

Resolution: This is a known SCOM issue. There is no known workaround now.

##### Performance collection may fail on operating systems with localized (non-English) names of performance counters.

**Issue:** Monitoring workflows may fail to collect performance data when operating system is exposing localized (non-English) names of performance counters and Run As profile is configured to use low-privilege account. An error with Event Id 4001 and reason “Cannot add type. There were compilation errors.” appears in the Operations Manager event log in such case.

**Resolution:** Administrative permissions are required to obtain the name of performance counters. Please grant local administrative permissions for account used to run SQL Server monitoring workflows.

##### Error “Rule/Monitor "<Rule/Monitor ID> cannot be initialized and will not be loaded” in OpsMgr event log.

**Issue:** Since the 6.6.7.6 version of Microsoft System Center Management Pack for SQL Server has been installed, the "Microsoft.SQLServer.2016.AlwaysOn.TransactionDelay" rule failed. The issue occurs because of the “Tolerance” and “Maximum Sample Separation” were deprecated and removed. Similar issue for other monitors/rules where the Optimization used before updating Microsoft System Center Management Pack for SQL Server

|  |  |
| --- | --- |
| Log Name: | Operations Manager |
| Source: | HealthService |
| Date: | 1/8/2015 10:44:20 AM |
| Event ID: | 1102 |
| Task Category: | Health Service |
| Level: | Error |
| Keywords: | Classic |
| User: | N/A |
| Computer: |  |
| Description: | Rule/Monitor "Microsoft.SQLServer.2016.AlwaysOn.TransactionDelay" running for instance "xxxx" with id:"{284FC6CA-2A7F-3720-8D87-4DA0CAC6E288}" cannot be initialized and will not be loaded. Management group "SCOM 2012 Production" |

**Resolution:** Re-create overrides for this Rule and then restart the Health Service.

##### Mirrored Databases Witnesses Discovery errors.

Issue: After installation of 6.6.7.6 or higher version of the MP, the following error messages may be received:

*Management Group: Script: DiscoverSQL2016MirroringWitness.vbs. Instance: xxxxx : Mirroring witness discovery script 'DiscoverSQL2016MirroringWitness.vbs' for instance 'xxxxx' failed.*

Resolution: By default, local system account has no permission on sys.database\_mirroring\_witnesses. Accordingly, it is necessary to grant the corresponding permission for the local system account (see [Low-privilege environments](#_Low-privilege_environments) section for details). If you do not want to change the security configuration (or you do not use mirroring at all) and want to stop getting such messages, you may disable this discovery. If you do not have mirroring and do not plan to use it, simply uninstall this discovery and the corresponding monitoring files.

##### SQL Configuration Manager may start snap-in of wrong version.

Issue: SQL Configuration Manager may start snap-in of wrong version. E.g., SQL Server 2016 task starts sqlservermanager11.msc snap-in, which stands for SQL Server 2012.

Resolution: Console tasks require installation of management tools corresponding to the target SQL Server Instance on the server where they are launched.

##### SQL DB Engine Service Monitor may fail if "Alert only if service startup type is automatic" override parameter is set to "FALSE".

Issue: SQL DB Engine Service Monitor may fail if "Alert only if service startup type is automatic" override parameter is manually set to "FALSE", and the string is put in uppercase.

Resolution: When overriding the abovementioned parameter, put the string to lowercase.

##### Some event log rules may not generate alerts for SQL deadlocks.

Issue: Some event log rules may not generate alerts in the Operations Manager for certain SQL deadlocks because such events are not logged by SQL server by default in order to prevent possible surcharge on the event log and the agent.

Resolution: To switch on the logging of the events mentioned above, run the following command in SQL Server Management Studio:

Exec sp\_altermessage [event ID], 'WITH\_LOG', 'true'

Select \* from sys.messages where message\_id=[event ID]

Please remember that this action may lead to overrun of the event log and the agent. Therefore, do not forget to switch off the logging of such events when you do not need it.

You can find the list of the corresponding event IDs in Appendix: Deadlocks Event Log Rules.

##### Some monitors may fail if a database name contains quotes.

Issue: The following monitors may fail if a database name contains two consecutive single quotation marks:

* Database Backup Status
* Auto Update Statistics Configuration
* Auto Update Statistics Async Configuration
* DB Chaining Configuration
* Recovery Model Configuration
* Page Verify Configuration
* Trustworthy Configuration
* Auto Close Configuration
* Auto Create Statistics Configuration
* Auto Shrink Configuration
* Database Status
* Database Health Policy
* Database Health Policy
* Availability Replicas Connection monitor
* Availability Group Automatic Failover monitor
* Availability Replica Connection
* Availability Replica Join State
* Synchronous Replicas Data Synchronization monitor
* WSFC Cluster monitor
* Availability Database Suspension State
* Availability Replica Role
* Availability Group Online monitor
* Availability Replica Data Synchronization
* Availability Replicas Role monitor
* Availability Replicas Data Synchronization monitor
* Availability Database Data Synchronization
* Availability Database Join State
* Availability Replica Health Policy
* Availability Replica Health Policy
* Database Replica Health Policy
* Database Replica Health Policy
* Availability Group Health Policy
* Availability Group Health Policy

Resolution: No resolution.

##### Alerts of event-based rules are not displayed in the appropriate views.

Issue: Alerts of event-based rules are displayed in the root SQL view instead of appropriate child views.

Resolution: No resolution.

##### Upon restart of an agent, workflows may throw WMI-related errors to the event log.

Issue: Upon agent restart, workflows start working simultaneously. At that, cached value can be outdated or non-existent and part of the workflows will get errors from WMI.

Resolution: No resolution.

##### SQL Policy discovery may work incorrectly.

Issue: SQL Policy discovery may produce the following isues:

1. Query that gets the list of databases has the following filter: *AND name not in ('master', 'model', 'msdb', 'tempdb', 'distribution')*, while replication distribution databases can have different names.
2. The discovery assumes that the policy is targeted on all databasess, while actually any target can be specified separately (for example, a database with particular name, with ID greater than a certain value etc.).

Resolution: No resolution is available for the first issue. Resolution for the second issue is as follows: exclude policies that are not targeted on all databases.

##### Enabling of “Auto Close” database parameter blocks collection of the performance metrics.

Issue: If “Auto Close” parameter for the database is set to “True", all performance rules return empty values.

Resolution: Set “Auto Close” database parameter back to “False”.

##### Double quotes in a database name may cause database console tasks failures.

Issue: Database console tasks take database names enclosed in double quotes as one of their arguments. A database name may contain any symbol including double quotes. If it does, the console tasks for this database will not work.

Resolution: No resolution.

##### “Database Status” monitor is constantly changing its status.

Issue: If “Auto Close” parameter for the database is set to “True", “Database Status” monitor is constantly changing its status form “Healthy” to “Recovering/Restoring” and vice versa according to the timeout set in the override parameters.

Resolution: In view ofthe monitoring operation specifics, no resolution is required.

## Appendix: Deadlocks Event Log Rules

### Integration Services Monitoring

* Microsoft.SQLServer.2016.IS\_Service\_has\_attempted\_to\_stop\_a\_running\_package\_5\_Rule eventID: 336
* Microsoft.SQLServer.2016.IS\_Service\_failed\_to\_load\_user\_defined\_Configuration\_file\_5\_Rule eventID: 272

### Monitoring

* Microsoft.SQLServer.2016.EventCollectionRule.DBEngine.CreateFileEncounteredOperatingSystemError eventID: 5123
* Microsoft.SQLServer.2016.EventCollectionRule.DBEngine.UnableToOpenThePhysicalFile eventID: 5120
* Microsoft.SQLServer.2016.Rule.XTP.CompilerFailure eventID: 41313
* Microsoft.SQLServer.2016.Rule.XTP.InsufficientDiskSpace eventID: 41822
* Microsoft.SQLServer.2016.Rule.XTP.UnableCallCompiler eventID: 41312
* Microsoft.SQLServer.2016.Rule.XTP.UnableLoadCompiledDll eventID: 41309
* Microsoft.SQLServer.2016.MSDTC\_on\_server\_\_is\_unavailable\_1\_5\_Rule eventID: 8501
* Microsoft.SQLServer.2016.Could\_not\_create\_a\_statement\_object\_using\_OLE\_DB\_provider\_1\_5\_Rule eventID: 7305
* Microsoft.SQLServer.2016.Could\_not\_create\_an\_instance\_of\_OLE\_DB\_provider\_1\_5\_Rule eventID: 7302
* Microsoft.SQLServer.2016.SQL\_Server\_Service\_Broker\_or\_Database\_Mirroring\_Transport\_stopped\_5\_Rule eventID: 9691
* Microsoft.SQLServer.2016.SQL\_Server\_SQL\_Server\_Service\_Broker\_attempted\_to\_use\_an\_unsupported\_encryption\_algorithm\_5\_Rule eventID: 28060
* Microsoft.SQLServer.2016.SQL\_Server\_Service\_Broker\_transmitter\_shut\_down\_due\_to\_an\_exception\_or\_a\_lack\_of\_memory\_5\_Rule eventID: 28073
* Microsoft.SQLServer.2016.An\_error\_occurred\_in\_the\_Service\_Broker\_manager\_5\_Rule eventID: 9645
* Microsoft.SQLServer.2016.The\_Service\_Broker\_Database\_Mirroring\_Transport\_could\_not\_listen\_for\_connections\_due\_to\_an\_error\_5\_Rule eventID: 9693
* Microsoft.SQLServer.2016.SQL\_Server\_Service\_Broker\_or\_Database\_Mirroring\_is\_running\_in\_FIPS\_compliance\_mode\_5\_Rule eventID: 28077
* Microsoft.SQLServer.2016.An\_error\_occurred\_while\_processing\_SQL\_Server\_Service\_Broker\_mirroring\_routes\_5\_Rule eventID: 9789
* Microsoft.SQLServer.2016.An\_SQL\_Server\_Service\_Broker\_dialog\_caught\_an\_error\_5\_Rule eventID: 9736
* Microsoft.SQLServer.2016.A\_SQL\_Server\_Service\_Broker\_cryptographic\_operation\_failed\_5\_Rule eventID: 9641
* Microsoft.SQLServer.2016.Cannot\_start\_service\_broker\_activation\_manager\_5\_Rule eventID: 9701
* Microsoft.SQLServer.2016.SQL\_Server\_Service\_Broker\_could\_not\_query\_the\_FIPS\_compliance\_mode\_flag\_from\_the\_registry\_5\_Rule eventID: 28076
* Microsoft.SQLServer.2016.Cannot\_start\_SQL\_Server\_Service\_Broker\_on\_Database\_5\_Rule eventID: 9697
* Microsoft.SQLServer.2016.The\_SQL\_Server\_Service\_Broker\_or\_Database\_Mirroring\_transport\_is\_disabled\_or\_not\_configured\_5\_Rule eventID: 9666
* Microsoft.SQLServer.2016.Cannot\_start\_service\_broker\_manager\_5\_Rule eventID: 9694
* Microsoft.SQLServer.2016.SQL\_Server\_Service\_Broker\_Manager\_has\_shutdown\_5\_Rule eventID: 9689
* Microsoft.SQLServer.2016.Service\_Broker\_was\_not\_able\_to\_allocate\_memory\_for\_cryptographic\_operations\_5\_Rule eventID: 9634
* Microsoft.SQLServer.2016.An\_SNI\_call\_failed\_during\_a\_Service\_Broker\_Database\_Mirroring\_transport\_operation\_1\_5\_Rule eventID: 8471
* Microsoft.SQLServer.2016.Cannot\_start\_service\_broker\_manager\_due\_to\_operating\_system\_error\_5\_Rule eventID: 28002
* Microsoft.SQLServer.2016.A\_SQL\_Server\_Service\_Broker\_procedure\_output\_results\_5\_Rule eventID: 9724
* Microsoft.SQLServer.2016.An\_error\_occurred\_in\_the\_SQL\_Server\_Service\_Broker\_message\_transmitter\_5\_Rule eventID: 28072
* Microsoft.SQLServer.2016.SQL\_Server\_Service\_Broker\_cannot\_use\_RC4\_encryption\_algorithm\_when\_running\_in\_FIPS\_compliance\_mode\_5\_Rule eventID: 28078
* Microsoft.SQLServer.2016.An\_error\_occurred\_in\_the\_Service\_Broker\_queue\_rollback\_handler\_5\_Rule eventID: 8405
* Microsoft.SQLServer.2016.SQL\_Server\_cannot\_start\_the\_Service\_Broker\_event\_handler\_5\_Rule eventID: 9696
* Microsoft.SQLServer.2016.An\_error\_occurred\_in\_the\_SQL\_Server\_Service\_Broker\_or\_Database\_Mirroring\_transport\_manager\_5\_Rule eventID: 9643
* Microsoft.SQLServer.2016.An\_error\_occurred\_in\_a\_SQL\_Server\_Service\_Broker\_Database\_Mirroring\_transport\_connection\_endpoint\_1\_5\_Rule eventID: 9642
* Microsoft.SQLServer.2016.The\_Service\_Broker\_Database\_Mirroring\_transport\_cannot\_listen\_on\_port\_because\_it\_is\_in\_use\_5\_Rule eventID: 9692
* Microsoft.SQLServer.2016.Cannot\_start\_service\_broker\_security\_manager\_5\_Rule eventID: 9698
* Microsoft.SQLServer.2016.An\_error\_occurred\_in\_the\_timer\_event\_cache\_5\_Rule eventID: 9646
* Microsoft.SQLServer.2016.SQL\_Server\_could\_not\_allocate\_enough\_memory\_to\_start\_Service\_Broker\_task\_manager\_5\_Rule eventID: 9695
* Microsoft.SQLServer.2016.SQL\_Server\_Service\_Broker\_or\_Database\_Mirror\_cryptographic\_call\_failed\_5\_Rule eventID: 9650
* Microsoft.SQLServer.2016.An\_error\_occurred\_in\_the\_SQL\_Server\_Service\_Broker\_message\_dispatcher\_5\_Rule eventID: 9644
* Microsoft.SQLServer.2016.SQLServerAgent\_could\_not\_be\_started\_1\_5\_Rule eventID: 103
* Microsoft.SQLServer.2016.Unable\_to\_re\_open\_the\_local\_eventlog\_1\_5\_Rule eventID: 313
* Microsoft.SQLServer.2016.Alert\_engine\_stopped\_due\_to\_unrecoverable\_local\_eventlog\_errors\_1\_5\_Rule eventID: 317
* Microsoft.SQLServer.2016.Step\_of\_a\_job\_caused\_an\_exception\_in\_the\_subsystem\_1\_5\_Rule eventID: 209
* Microsoft.SQLServer.2016.A\_SQL\_job\_failed\_to\_complete\_successfully\_1\_5\_Rule eventID: 208
* Microsoft.SQLServer.2016.The\_agent\_is\_suspect.\_No\_response\_within\_last\_minutes\_1\_5\_Rule eventID: 20554
* Microsoft.SQLServer.2016.Job\_step\_cannot\_be\_run\_because\_the\_subsystem\_failed\_to\_load\_1\_5\_Rule eventID: 212
* Microsoft.SQLServer.2016.Unable\_to\_connect\_to\_SQL\_Server\_1\_5\_Rule eventID: 207
* Microsoft.SQLServer.2016.RESTORE\_could\_not\_start\_database\_1\_5\_Rule eventID: 3167
* Microsoft.SQLServer.2016.Unexpected\_end\_of\_file\_while\_reading\_beginning\_of\_backup\_set\_1\_5\_Rule eventID: 3208
* Microsoft.SQLServer.2016.Cannot\_open\_backup\_device.\_\_1\_5\_Rule eventID: 3201
* Microsoft.SQLServer.2016.Database\_cannot\_be\_opened\_due\_to\_inaccessible\_files\_or\_insufficient\_memory\_or\_disk\_space.\_See\_the\_SQL\_Server\_errorlog\_for\_details\_1\_5\_Rule eventID: 945
* Microsoft.SQLServer.2016.CREATE\_DATABASE\_failed.\_Could\_not\_allocate\_enough\_disk\_space\_for\_a\_new\_database\_on\_the\_named\_disks\_1\_5\_Rule eventID: 1803
* Microsoft.SQLServer.2016.Could\_not\_obtain\_exclusive\_lock\_on\_database\_5\_Rule eventID: 1807
* Microsoft.SQLServer.2016.Full\_Text\_Search\_\_\_Search\_on\_full\_text\_catalog\_failed\_with\_unknown\_result\_1\_5\_Rule eventID: 7607
* Microsoft.SQLServer.2016.Full\_Text\_Search\_\_\_Full\_Text\_Search\_is\_not\_enabled\_for\_the\_current\_database.\_Use\_sp\_fulltext\_database\_to\_enable\_Full\_Text\_Search\_1\_5\_Rule eventID: 15601
* Microsoft.SQLServer.2016.Failed\_to\_finish\_full\_text\_operation.\_The\_filegroup\_is\_empty\_read\_only\_or\_not\_online\_5\_Rule eventID: 9964
* Microsoft.SQLServer.2016.Full\_Text\_Search\_\_\_An\_unknown\_full\_text\_failure\_occurred\_1\_5\_Rule eventID: 7608
* Microsoft.SQLServer.2016.Full\_Text\_Search\_\_\_Full\_text\_catalog\_lacks\_sufficient\_disk\_space\_to\_complete\_this\_operation\_1\_5\_Rule eventID: 7622
* Microsoft.SQLServer.2016.Full\_Text\_Search\_\_\_Full\_text\_catalog\_is\_in\_a\_unusable\_state.\_Drop\_and\_re\_create\_this\_full\_text\_catalog\_1\_5\_Rule eventID: 7624
* Microsoft.SQLServer.2016.A\_default\_full\_text\_catalog\_does\_not\_exist\_in\_the\_database\_or\_user\_does\_not\_have\_permission\_to\_perform\_this\_action\_5\_Rule eventID: 9967
* Microsoft.SQLServer.2016.Full\_Text\_Search\_\_\_Could\_not\_find\_full\_text\_index\_for\_database\_1\_5\_Rule eventID: 7606
* Microsoft.SQLServer.2016.Transaction\_was\_deadlocked\_on\_resources\_with\_another\_process\_and\_has\_been\_chosen\_as\_the\_deadlock\_victim.\_Rerun\_the\_transaction\_1\_5\_Rule eventID: 1205
* Microsoft.SQLServer.2016.The\_provider\_reported\_an\_unexpected\_catastrophic\_failure\_1\_5\_Rule eventID: 10001
* Microsoft.SQLServer.2016.The\_query\_processor\_could\_not\_start\_the\_necessary\_thread\_resources\_for\_parallel\_query\_execution\_1\_5\_Rule eventID: 8642
* Microsoft.SQLServer.2016.Internal\_Query\_Processor\_Error\_\_The\_query\_processor\_ran\_out\_of\_stack\_space\_during\_query\_optimization\_1\_5\_Rule eventID: 8621
* Microsoft.SQLServer.2016.Internal\_Query\_Processor\_Error\_\_The\_query\_processor\_could\_not\_obtain\_access\_to\_a\_required\_interface\_1\_5\_Rule eventID: 8601
* Microsoft.SQLServer.2016.Internal\_Query\_Processor\_Error\_\_The\_query\_processor\_encountered\_an\_unexpected\_error\_during\_execution\_1\_5\_Rule eventID: 8630
* Microsoft.SQLServer.2016.Internal\_Query\_Processor\_Error\_\_The\_query\_processor\_encountered\_an\_unexpected\_error\_during\_the\_processing\_of\_a\_remote\_query\_phase\_1\_5\_Rule eventID: 8680
* Microsoft.SQLServer.2016.The\_query\_has\_been\_canceled\_because\_the\_estimated\_cost\_of\_this\_query\_exceeds\_the\_configured\_threshold.\_Contact\_the\_system\_administrator\_1\_5\_Rule eventID: 8649
* Microsoft.SQLServer.2016.Login\_failed\_\_Password\_too\_simple\_5\_Rule eventID: 18466
* Microsoft.SQLServer.2016.Login\_failed\_\_Password\_too\_short\_5\_Rule eventID: 18464
* Microsoft.SQLServer.2016.Login\_failed\_\_Error\_during\_validation\_5\_Rule eventID: 18468
* Microsoft.SQLServer.2016.Could\_not\_obtain\_information\_about\_Windows\_NT\_group\_user\_1\_5\_Rule eventID: 15404
* Microsoft.SQLServer.2016.Cannot\_open\_user\_default\_database.\_Login\_failed\_1\_5\_Rule eventID: 4064
* Microsoft.SQLServer.2016.Login\_failed\_\_Password\_fails\_password\_filter\_DLL\_requirements\_5\_Rule eventID: 18467
* Microsoft.SQLServer.2016.Cannot\_determine\_the\_service\_account\_for\_SQL\_Server\_instance\_1\_5\_Rule eventID: 14353
* Microsoft.SQLServer.2016.Permission\_denied\_on\_object\_1\_5\_Rule eventID: 229
* Microsoft.SQLServer.2016.Login\_failed\_\_Password\_cannot\_be\_used\_at\_this\_time\_5\_Rule eventID: 18463
* Microsoft.SQLServer.2016.Login\_failed\_\_Password\_too\_long\_5\_Rule eventID: 18465
* Microsoft.SQLServer.2016.Table\_error\_\_Page\_allocated\_to\_object\_was\_not\_seen.\_\_Page\_may\_be\_invalid\_or\_have\_incorrect\_object\_ID\_information\_in\_its\_header\_1\_5\_Rule eventID: 2533
* Microsoft.SQLServer.2016.Table\_error\_\_B\_tree\_level\_mismatch\_page\_does\_not\_match\_level\_from\_parent\_\_1\_5\_Rule eventID: 8931
* Microsoft.SQLServer.2016.CHECKTABLE\_processing\_of\_object\_encountered\_page\_twice.\_Possible\_internal\_error\_or\_allocation\_fault\_1\_5\_Rule eventID: 8973
* Microsoft.SQLServer.2016.Table\_error\_\_\_Unexpected\_page\_type\_\_1\_5\_Rule eventID: 8938
* Microsoft.SQLServer.2016.Table\_error\_\_Extra\_or\_invalid\_key\_1\_5\_Rule eventID: 8952
* Microsoft.SQLServer.2016.Table\_error\_\_cross\_object\_chain\_linkage\_1\_5\_Rule eventID: 8930
* Microsoft.SQLServer.2016.Table\_error\_\_Wrong\_PageId\_in\_the\_page\_header\_1\_5\_Rule eventID: 8909
* Microsoft.SQLServer.2016.Table\_error\_\_page\_is\_out\_of\_the\_range\_of\_this\_database\_1\_5\_Rule eventID: 8968
* Microsoft.SQLServer.2016.Conflict\_table\_\_does\_not\_exist\_1\_5\_Rule eventID: 21286
* Microsoft.SQLServer.2016.Table\_error\_\_Cross\_object\_linkage\_1\_5\_Rule eventID: 8925
* Microsoft.SQLServer.2016.CHECKTABLE\_terminated.\_A\_failure\_was\_detected\_while\_collecting\_facts.\_Possibly\_tempdb\_out\_of\_space\_or\_a\_system\_table\_is\_inconsistent.\_Check\_previous\_errors\_1\_5\_Rule eventID: 8921
* Microsoft.SQLServer.2016.Table\_error\_\_Column\_is\_not\_a\_valid\_complex\_column\_1\_5\_Rule eventID: 8960
* Microsoft.SQLServer.2016.Table\_error\_\_Page\_is\_missing\_a\_reference\_from\_previous\_page.\_Possible\_chain\_linkage\_problem\_1\_5\_Rule eventID: 8978
* Microsoft.SQLServer.2016.Table\_error\_\_Page\_was\_not\_seen\_in\_the\_scan\_although\_its\_parent\_and\_previous\_refer\_to\_it.\_Check\_any\_previous\_errors\_1\_5\_Rule eventID: 8976
* Microsoft.SQLServer.2016.Table\_error\_\_Cross\_object\_linkage\_\_Parent\_page\_in\_object\_next\_refer\_to\_page\_not\_in\_the\_same\_object\_1\_5\_Rule eventID: 8926
* Microsoft.SQLServer.2016.Table\_error\_\_B\_tree\_page\_has\_two\_parent\_nodes\_\_1\_5\_Rule eventID: 8937
* Microsoft.SQLServer.2016.Table\_error\_\_Slot\_row\_extends\_into\_free\_space\_\_1\_5\_Rule eventID: 8943
* Microsoft.SQLServer.2016.Table\_error\_\_Object\_index\_page\_Test\_failed.\_Slot\_\_\_Offset\_is\_\_invalid\_1\_5\_Rule eventID: 8941
* Microsoft.SQLServer.2016.Could\_not\_find\_filegroup\_ID\_in\_sys.filegroups\_for\_database\_5\_Rule eventID: 8932
* Microsoft.SQLServer.2016.The\_user\_is\_not\_allowed\_to\_truncate\_the\_system\_table\_1\_5\_Rule eventID: 4709
* Microsoft.SQLServer.2016.Failed\_to\_drop\_column\_\_from\_table\_\_1\_5\_Rule eventID: 21284
* Microsoft.SQLServer.2016.Table\_error\_\_Page\_is\_missing\_references\_from\_parent\_\_unknown\_\_and\_previous\_nodes.\_Possible\_bad\_root\_entry\_in\_sysindexes\_1\_5\_Rule eventID: 8979
* Microsoft.SQLServer.2016.Table\_error\_\_Page\_in\_its\_header\_is\_allocated\_by\_another\_object\_1\_5\_Rule eventID: 2534
* Microsoft.SQLServer.2016.Table\_error\_\_The\_text\_ntext\_or\_image\_node\_at\_page\_\_is\_referenced\_by\_page\_not\_seen\_in\_the\_scan\_1\_5\_Rule eventID: 8965
* Microsoft.SQLServer.2016.Table\_error\_\_\_Test\_failed.\_Slot\_overlaps\_with\_the\_prior\_row\_1\_5\_Rule eventID: 8942
* Microsoft.SQLServer.2016.Table\_error\_\_IAM\_page\_is\_linked\_in\_the\_IAM\_chain\_for\_object\_1\_5\_Rule eventID: 8959
* Microsoft.SQLServer.2016.Table\_error\_\_Extent\_object\_is\_beyond\_the\_range\_of\_this\_database\_1\_5\_Rule eventID: 2579
* Microsoft.SQLServer.2016.Table\_\_\_No\_columns\_without\_statistics\_found\_1\_5\_Rule eventID: 15013
* Microsoft.SQLServer.2016.Table\_error\_\_The\_high\_key\_value\_on\_page\_is\_not\_less\_than\_the\_low\_key\_value\_in\_the\_parent\_slot\_of\_the\_next\_page\_1\_5\_Rule eventID: 8934
* Microsoft.SQLServer.2016.Table\_error\_\_Allocation\_page\_has\_invalid\_\_page\_header\_values.\_\_1\_5\_Rule eventID: 8946
* Microsoft.SQLServer.2016.Table\_error\_\_IAM\_chain\_linkage\_error\_1\_5\_Rule eventID: 8969
* Microsoft.SQLServer.2016.Table\_error\_\_\_The\_next\_pointer\_of\_refers\_to\_page.\_Neither\_its\_parent\_were\_encountered.\_Possible\_bad\_chain\_linkage\_1\_5\_Rule eventID: 8981
* Microsoft.SQLServer.2016.Table\_error\_\_The\_text\_ntext\_or\_image\_node\_has\_wrong\_type\_1\_5\_Rule eventID: 8963
* Microsoft.SQLServer.2016.Table\_error\_\_The\_text\_ntext\_or\_image\_node\_at\_page\_is\_not\_referenced\_1\_5\_Rule eventID: 8964
* Microsoft.SQLServer.2016.Table\_error\_\_\_Address\_is\_not\_aligned\_1\_5\_Rule eventID: 8940
* Microsoft.SQLServer.2016.One\_or\_more\_indexes\_are\_damaged\_and\_must\_be\_repaired\_or\_dropped\_1\_5\_Rule eventID: 8956
* Microsoft.SQLServer.2016.Table\_error\_\_Cross\_object\_linkage.\_Page\_PGID\_next\_is\_not\_in\_the\_same\_index\_1\_5\_Rule eventID: 8982
* Microsoft.SQLServer.2016.Table\_error\_\_Parent\_node\_for\_page\_was\_not\_encountered\_1\_5\_Rule eventID: 8977
* Microsoft.SQLServer.2016.Indexed\_view\_does\_not\_contain\_all\_rows\_that\_the\_view\_definition\_produces.\_\_Refer\_to\_Books\_Online\_for\_more\_information\_on\_this\_error.\_\_This\_does\_not\_necessarily\_represent\_an\_integrity\_issue\_with\_th\_5\_Rule eventID: 8908
* Microsoft.SQLServer.2016.Table\_error\_\_Table\_missing\_or\_invalid\_key\_in\_index\_for\_the\_row\_\_1\_5\_Rule eventID: 8951
* Microsoft.SQLServer.2016.Unique\_table\_computation\_failed\_1\_5\_Rule eventID: 16959
* Microsoft.SQLServer.2016.Table\_\_Creating\_statistics\_for\_the\_following\_columns\_1\_5\_Rule eventID: 15018
* Microsoft.SQLServer.2016.Table\_error\_\_B\_tree\_chain\_linkage\_mismatch.\_\_1\_5\_Rule eventID: 8936
* Microsoft.SQLServer.2016.Failed\_to\_add\_column\_\_to\_table\_\_1\_5\_Rule eventID: 21285
* Microsoft.SQLServer.2016.Table\_error\_\_Index\_node\_page\_refers\_to\_child\_page\_and\_previous\_child\_but\_they\_were\_not\_encountered\_1\_5\_Rule eventID: 8980
* Microsoft.SQLServer.2016.Table\_error\_\_The\_low\_key\_value\_on\_page\_\_is\_not\_the\_key\_value\_in\_the\_parent\_1\_5\_Rule eventID: 8933
* Microsoft.SQLServer.2016.Table\_error\_\_The\_previous\_link\_on\_page\_does\_not\_match\_the\_previous\_page\_that\_the\_parent\_slot\_expects\_for\_this\_page\_1\_5\_Rule eventID: 8935
* Microsoft.SQLServer.2016.XML\_\_\_XML\_parsing\_error\_1\_5\_Rule eventID: 6603
* Microsoft.SQLServer.2016.XML\_\_\_XML\_document\_could\_not\_be\_created\_because\_server\_memory\_is\_low.\_Use\_sp\_xml\_removedocument\_to\_release\_XML\_documents\_1\_5\_Rule eventID: 6624
* Microsoft.SQLServer.2016.XML\_\_\_Size\_of\_data\_chunk\_requested\_from\_the\_stream\_exceeds\_allowed\_limit\_5\_Rule eventID: 6627
* Microsoft.SQLServer.2016.XML\_\_\_Failed\_to\_load\_Msxml2.dll\_1\_5\_Rule eventID: 6610
* Microsoft.SQLServer.2016.XML\_\_\_Failed\_to\_instantiate\_class.\_Make\_sure\_Msxml2.dll\_exists\_in\_the\_SQL\_Server\_installation\_1\_5\_Rule eventID: 6608
* Microsoft.SQLServer.2016.XML\_\_\_FOR\_XML\_EXPLICIT\_stack\_overflow\_occurred.\_Circular\_parent\_tag\_relationships\_are\_not\_allowed\_1\_5\_Rule eventID: 6805
* Microsoft.SQLServer.2016.XML\_\_\_XML\_error\_1\_5\_Rule eventID: 6600