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SQL Server Management Studio (SSMS)

10/25/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

SQL Server Management Studio (SSMS) is an integrated environment for managing any SQL infrastructure. Use SSMS to access, configure, manage, administer, and develop all components of SQL Server, Azure SQL Database, and SQL Data Warehouse. SSMS provides a single comprehensive utility that combines a broad group of graphical tools with a number of rich script editors to provide access to SQL Server for developers and database administrators of all skill levels.

- **Download SQL Server Management Studio (SSMS)**
- **Download SQL Server 2016 Developer**
- **Download Visual Studio**

SQL Server Management Studio components

DESCRIPTION	COMPONENT
Use **Object Explorer** to view and manage all of the objects in one or more instances of SQL Server.	Object Explorer
How to use **Template Explorer** to build and manage files of boilerplate text that can be used to speed the development of queries and scripts.	Template Explorer
How to use the deprecated **Solution Explorer** to build projects used to manage administration items such as scripts and queries.	Solution Explorer
How to use the visual design tools included in Management Studio.	Visual Database Tools
How to use the Management Studio language editors to interactively build and debug queries and scripts.	Query and Text Editors (SQL Server Management Studio)

Support Policy for SSMS

- Starting with SSMS 17.0, the SQL Tools team has adopted the Microsoft Modern Lifecycle Policy.
- Read the original Modern Lifecycle Policy announcement.
- For additional infomrmation, see Modern Policy FAQs.

Next steps

Tutorial: SQL Server Management Studio
Tutorial: Writing Transact-SQL Statements

Contribute SQL documentation

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you'll also be credited as a contributor to the page.

- How to contribute to SQL Server Documentation

Get Help

- All the ways to get help
- UserVoice - Suggestion to improve SQL Server?
- Setup and Upgrade - MSDN Forum
- SQL Server Data Tools - MSDN forum
- Transact-SQL - MSDN forum
- SQL Server Security - MSDN Forum
- DBA Stack Exchange (tag sql-server) - ask SQL Server questions
- Stack Overflow (tag sql-server) - also has some answers about SQL development
- Reddit - general discussion about SQL Server
- Microsoft SQL Server License Terms and Information
- Support options for business users
- Contact Microsoft
- Edit SQL Docs
- SQL Docs Feedback
- SQL Docs Survey

Download SQL Server Management Studio (SSMS)

11/2/2018 • 5 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

Please help improve SQL Server docs!

SSMS is an integrated environment for managing any SQL infrastructure, from SQL Server to Azure SQL Database. SSMS provides tools to configure, monitor, and administer instances of SQL. Use SSMS to deploy, monitor, and upgrade the data-tier components used by your applications, as well as build queries and scripts.

Use SQL Server Management Studio (SSMS) to query, design, and manage your databases and data warehouses, wherever they are - on your local computer, or in the cloud.

SSMS is free!

SSMS 17.9 is the current General Availability (GA) version of SSMS

Download SQL Server Management Studio 17.9

Download SQL Server Management Studio 17.9 Upgrade Package (upgrades 17.x to 17.9)

For additional details about SSMS 17.9, please see the SSMS 17.9 changelog.

SSMS 18.0 (preview)

SSMS 18.0 Public Preview 4 is now available, and is the latest generation of *SQL Server Management Studio* that provides support for SQL Server 2019 preview!

Download SQL Server Management Studio 18.0 (preview 4)

Preview 4 is the first public preview of SSMS 18.0.

Version Information

- Release number: 18.0 (preview 4)
- Build number: 15.0.18040.0
- Release date: September 24, 2018

If you have comments or suggestions, or you want to report issues, the best way to reach out to the SSMS Team is at UserVoice.

The SSMS 18.x installation does not upgrade or replace SSMS versions 17.x or earlier. SSMS 18.x installs side by side with previous versions so both versions are available for use.

If a computer contains side by side installations of SSMS, verify you start the correct version for your specific needs. The latest version is labeled *Microsoft SQL Server Management Studio 18*:

Available Languages (SSMS 18.0 preview)

This release of SSMS can be installed in the following languages:

SQL Server Management Studio 18.0 (preview 4):
Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean |

Portuguese (Brazil) | Russian | Spanish

SQL Server Management Studio 18.0 Upgrade Package (upgrades to 18.0):
No upgrade option is available at this time.

> **NOTE**
> The SQL Server PowerShell module is a separate install through the PowerShell Gallery. For more information, see Download SQL Server PowerShell Module.

New in this Release (SSMS 18.0 preview)

SSMS 18.0 (preview) is the latest version of SQL Server Management Studio. The 18.x generation of SSMS provides support for almost all feature areas on SQL Server 2008 through SQL Server 2019 preview.

For details about what's new in this release, see the SSMS changelog.

Supported SQL offerings (SSMS 18.0 preview)

- This version of SSMS works with all supported versions of SQL Server 2008 - SQL Server 2019 preview and provides the greatest level of support for working with the latest cloud features in Azure SQL Database and Azure SQL Data Warehouse.
- Additionally, SSMS 18.x can be installed side by side with SSMS 17.x, SSMS 16.x, or SQL Server 2014 SSMS and earlier.
- SQL Server Integration Services (SSIS) - SSMS version 17.x or later does not support connecting to the legacy SQL Server Integration Services service. To connect to an earlier version of the legacy Integration Services, use the version of SSMS aligned with the version of SQL Server. For example, use SSMS 16.x to connect to the legacy SQL Server 2016 Integration Services service. SSMS 17.x and SSMS 16.x can be installed side-by-side on the same computer. Since the release of SQL Server 2012, the SSIS Catalog database, SSISDB, is the recommended way to store, manage, run, and monitor Integration Services packages. For details, see SSIS Catalog.

Supported Operating systems (SSMS 18.0 preview)

This release of SSMS supports the following 64-bit platforms when used with the latest available service pack:

- Windows 10 (64-bit) *
- Windows Server 2016 *
- Windows Server 2012 R2 (64-bit)
- Windows Server 2012 (64-bit)
- Windows Server 2008 R2 (64-bit)

* Requires version 1607 (10.0.14939) or later

> **NOTE**
> SSMS runs on Windows only. If you need a tool that runs on platforms other than Windows, take a look at Azure Data Studio. Azure Data Studio is a new cross-platform tool that runs on macOS, Linux, as well as Windows. For details, see Azure Data Studio.

SSMS installation tips and issues (SSMS 18.0 preview)

Minimize Installation Reboots

- Take the following actions to reduce the chances of SSMS setup requiring a reboot at the end of installation:
  - Make sure you are running an up-to-date version of the Visual C++ 2013 Redistributable Package. Version 12.0.40649.5 (or greater) is required. Only the x64 version is needed.
  - Verify the version of .NET Framework on the computer is 4.6.1 (or greater).
  - Close any other instances of Visual Studio that are open on the computer.
  - Make sure all the latest OS updates are installed on the computer.
  - The noted actions are typically required only once. There are few cases where a reboot is required during additional upgrades to the same major version of SSMS. For minor upgrades, all the prerequirements for SSMS are already installed on the computer.

Release Notes (SSMS 18.0 preview)

The following are known issues in the current release:

> **IMPORTANT**
> When using *Active Directory – Universal with MFA Support* authentication with the SQL query editor, users may experience their connection being closed and reopened with each query invocation. Side effects of such closure include global temporary tables being dropped unexpectedly and sometimes a new SPID being given to the connection. This closure will not occur if there is an open transaction on the connection. To work around this issue, users can set `persist security info=true` in the connection parameters.

SSMS

- Double-clicking on a .sql file launches SSMS, but does not open the actual script.
  - Workaround: drag and drop the .sql file onto the SSMS editor.

SSIS

- Package can't be deployed or executed successfully when it targets SQL Server of old version and contains Script Task/Script component at the same time.
- SSMS can't connect to remote Integration Services.

Previous releases

Previous SQL Server Management Studio Releases

Feedback

SQL Client Tools Forum

Get Help

- All the ways to get help
- UserVoice - Suggestion to improve SQL Server?
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- SQL Server Data Tools - MSDN forum
- Transact-SQL - MSDN forum
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- Reddit - general discussion about SQL Server

- Microsoft SQL Server License Terms and Information
- Support options for business users
- Contact Microsoft
- Edit SQL Docs
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- SQL Docs Survey

See Also

- Tutorial: SQL Server Management Studio
- SQL Server Management Studio documentation
- Additional updates and service packs
- Download SQL Server Data Tools (SSDT)

Contribute SQL documentation

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- How to contribute to SQL Server Documentation

If you have comments or suggestions, or you want to report issues, the best way to reach out to the SSMS Team is at UserVoice.

SQL Server Management Studio - Changelog (SSMS)

11/7/2018 • 57 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

This article provides details about updates, improvements, and bug fixes for the current and previous versions of SSMS. Download previous SSMS versions below.

SSMS 18.0 (preview 4)

Build number: 15.0.18040.0
Release date: September 24, 2018

Preview 4 is the first public preview of SSMS 18.0. For the latest General Availability (GA) version of SSMS, download and install SSMS 17.9.

What's new

General SSMS

Smaller Download Size:

- The current size of the bundle is less than half of what SSMS 17.x is (~400MB). The size will eventually grow when the Integration Services (IS) components are added back in, but it should not be as big as it used to be.

SSMS 18.x is based on the new Visual Studio 2017 Isolated Shell:

- This means a modern shell (we picked up Visual Studio 2017 15.6.4). The new shell unlocks all the accessibility fixes that went in to both SSMS and Visual Studio.

Accessibility improvements:

- A lot of work went in to address accessibility issues in all the tools (SSMS, DTA, and Profiler).

SSMS can be installed in a custom folder:

- Currently, this is only available on the command-line setup. Pass this extra argument to SSMS-Setup-ENU.exe:

  ```
  SSMSInstallRoot=C:\MySSMS18
  ```

  By default, the new install location for SSMS is:
  ```
  %ProgramFiles(x86)%\Microsoft SQL Server Management Studio 18\Common7\IDE\ssms.exe
  ```

  > **NOTE**
  > This does not mean that SSMS is multi-instance.

SSMS no longer shares components with SQL Engine:

- A lot of effort went in to avoid sharing components with SQL Engine, which often resulted in serviceability issues from SQL or SSMS installs overwriting files installed by the other.

SSMS now requires NetFx 4.7.2 or greater:

- We upgraded our minimum requirement from NetFx4.6.1 to NetFx4.7.2: this allows us to take advantage of the new functionality exposed by the new framework.

SSMS is not supported on Windows 8. Windows 10 / Windows Server 2016 requires version 1607 (10.0.14393) or later:

- Due to the new dependency on NetFx 4.7.2, SSMS 18.0 does not install on Windows 8, older versions of Windows 10, and Windows Server 2016. SSMS setup will block on those operating systems. Windows 8.1 is still supported.

SSMS is not added to the PATH environment variable:

- Path to SSMS.EXE (and tools in general) is not added to the path anymore. The users can either add it themselves or, if on a modern Windows, rely on the Start menu.

Support for SQL Server 2019 preview

- This is the first release of SSMS that is fully *aware* of SQL Server 2019 preview (compatLevel 150, etc...).
- Support "BATCH_STARTED_GROUP" and "BATCH_COMPLETED_GROUP" in SQL Server 2019 preview and SQL Database Managed Instance in SSMS.
- GraphDB: Add flag in showplan for Graph TC Sequence.
- Always Encrypted: Added support for Always Encrypted with secure enclaves.
  - Connection dialog has a new "Always Encrypted" tab when the user clicks on the "Options" button to enable and configure enclave support.

Package IDs no longer needed to develop SSMS Extensions:

- SSMS was selectively loading only well-known packages, requiring developers to register their own packages. This is no longer the case.

Better Azure SQL support:

- SLO/Edition/MaxSize database properties now accept custom names, making it easier to support future editions of Azure SQL Database.
- Added support for vCore SKUs (General Purpose and Business Critical): Gen4_24 and all the Gen5.

SMO:

- Extend SMO Support for Resumable Index Creation.
- Added new event on SMO objects ("PropertyMissing") to help application authors to detect SMO performance issues sooner.
- Exposed new *DefaultBackupChecksum* property on the Configuration object which maps to the "backup checksum default" server configuration.

SSMS:

- Exposing AUTOGROW_ALL_FILES config option for Filegroups in SSMS
- Removed risky 'lightweight pooling' and 'priority boost' options from SSMS GUI (https://blogs.msdn.microsoft.com/arvindsh/2010/01/26/priority-boost-details-and-why-its-not-recommended).
- SQL Editor honors the **CTRL+D** shortcut to duplicate lines (https://feedback.azure.com/forums/908035-sql-server/suggestions/32896594).
- New menu and key bindings to creates files: **CTRL+ALT+N**. **CTRL+N** will continue to create a new query.
- **New Firewall Rule** dialog now allows the user to specify a rule name, instead of automatically generating one (https://feedback.azure.com/forums/908035-sql-server/suggestions/32902039).

- Data Classification: updated the recommendations.
- Improved intellisense in Editor especially for v140 T-SQL.
- Support for all Tier-1 languages.
- Added support in SSMS UI for UTF-8 on collation dialog.
- Switched to "Windows Credential Manager" for connection dialog MRU passwords. This will address a long outstanding issue where persistence of passwords was not always reliable (https://feedback.azure.com/forums/908035-sql-server/suggestions/32896486).
- Support for High DPI is enabled by default.
- Improved support for multi-monitor systems by making sure that more and more dialogs and windows pop up on the expected monitor.
- Exposed the 'backup checksum default' server configuration in the new Database Settings page of the Server Properties Dialog. (https://feedback.azure.com/forums/908035-sql-server/suggestions/34634974).

SSMS / ShowPlan:

- Added actual time elapsed, actual vs estimated rows under ShowPlan operator node if they are available. This will make actual plan look consistent with Live Query Stats plan.
- Modified tooltip and added comment when clicking on Edit Query Button for a ShowPlan, to indicate to user that the ShowPlan might be truncated by the SQL engine if the query is over 4000 characters.
- Added logic to display the "Materializer Operator (External Select)".
- Add new showplan attribute BatchModeOnRowStoreUsed to easily identify queries that are using the "batch-mode scan on rowstores" feature. Anytime a query performs batch-mode scan on rowstores, a new attribute (BatchModeOnRowStoreUsed="true") gets added to StmtSimple element.

Always On:

- Rehash RTO (estimated recovery time) and RPO (estimated data loss) in SSMS Always on Dashboard. For details, see Monitor performance for Always On Availability Groups.

Audit Files:

- Changed authentication method from Storage Account Key based to Azure AD-based authentication.

Always Encrypted:

- Added an Always Encrypted tab with an *Enable Always Encrypted* checkbox (in the *Connect to Server* dialog) that now provides an easy way to enable/disable Always Encrypted for a database connection.
- Several enhancements have been made to support Always Encrypted with secure enclaves:
  - A text field for specifying enclave attestation URL in the Connect to Server dialog (the new Always Encrypted tab).
  - The new checkbox in the New Column Master Key dialog to control whether a new column master key allows enclave computations.
  - Other Always Encrypted key management dialogs now expose the information on which column master keys allow enclave computations.
  - For details, see Always Encrypted with secure enclaves.

Bug fixes

Crashes / Hangs:

- Fixed a source of common SSMS crashes related to GDI objects
- Fixed a common source of hangs and poor performance when selecting "Script as Create/Update/Drop" (removed unnecessary fetches of SMO objects)
- Fixed a hang when connecting to an Azure SQL DB using MFA while ADAL traces are enabled
- Fixed a hang (or perceived hang) in Live Query Statistics when invoked from Activity Monitor (the issue

manifested when using SQL Server authentication with no "Persist Security Info" set).
- Fixed a hang when selecting "Reports" in Object Explorer which could manifest on high latency connections or temporary non-accessibility of the resources.

Connection dialog:

- Enabled the removal of usernames from previous username list by pressing the DEL key (https://feedback.azure.com/forums/908035/suggestions/32897632).

XEvent:

- Added two columns "action_name" and "class_type_desc" that show action id and class type fields as readable strings.
- Removed the event XEvent Viewer cap of 1,000,000 events.

External Tables:

- Added support for `Rejected_Row_Location` in template, SMO, intellisense, and property grid.

SSMS Options:

- Fixed an issue where the **Tools > Options > SQL Server Object Explorer > Commands** page was not resizing properly.

SSMS Editor:

- Fixed an issue in "SQL System Table" where restoring the default colors was changing the color to lime green, rather than the default green, making it very hard to read on a white background (https://feedback.azure.com/forums/908035-sql-server/suggestions/32896906).
- Fixed issue where intellisense was not working when connected to Azure SQL DW using AAD authentication.
- Fixed intellisense in Azure when user lacks master access.
- Fixed code snippets to create "temporal tables" which were broken when the collation of the target database was case sensitive.

Object Explorer:

- Fixed an issue where SSMS was throwing an "Object cannot be cast from DBNull to other types" exception when trying to expand "Management" node in OE (misconfigured DataCollector)
- Fixed an issue where the DEL key was not working while renaming a node (https://feedback.azure.com/forums/908035/suggestions/32910247 and other duplicates).
- Fixed an issue where OE wasn't escaping quotes before invoking the "Edit Top N..." causing the designed to get confused
- Fixed an issue where the "Import Data-Tier application" wizard was failing to launch from the Azure Storage tree.
- Fixed an issue in "Database Mail Configuration" where the status of the SSL checkbox was not persisted (https://feedback.azure.com/forums/908035-sql-server/suggestions/32895541).
- Fixed an issue where SSMS greyed out option to close existing connections when trying to restore database with is_auto_update_stats_async_on
- Fixed an issue where right clicking on nodes in OE the (e.g. "Tables" and wanting to perform an action such as filtering tables by going to **Filter > Filter Settings**, the filter settings form can appear on the other screen than where SSMS is currently active) (https://feedback.azure.com/forums/908035-sql-server/suggestions/34284106).
- Fixed a long outstanding issue where the DELETE key was not working in Object Explorer while trying to rename an object (https://feedback.azure.com/forums/908035-sql-server/suggestions/33073510).
- When displaying the properties of existing database files, the size appears under a column "Size (MB)" instead

of "Initial Size (MB)" which is what is displayed when creating a new database (https://feedback.azure.com/forums/908035-sql-server/suggestions/32629024).
- Disabled the "Design" context-menu item on "Graph Tables" since there is no support for this kind of table in the current version of SSMS.

Help Viewer:

- Improved logic around honoring the online/offline modes.
- Fixed the "View Help" to honor the online/offline settings (https://feedback.azure.com/forums/908035-sql-server/suggestions/32897791).

Object Scripting:

- Overall perf improvements - Generate Scripts of WideWorldImporters takes half the time compared to SSMS 17.7.
- When scripting objects, DB Scoped configuration which has default values are omitted.
- Don't generate dynamic T-SQL when scripting (https://feedback.azure.com/forums/908035-sql-server/suggestions/32898391).
- Omit the graph syntax "as edge" and "as node" when scripting a table on SQL Server 2016 and earlier.

Table Designer:

- Fixed a crash in "Edit 200 rows".
- Fixed an issue where the designer was allowing to add a table when connected to an Azure SQL database.

SMO:

- Fixed an issue where SMO/ServerConnection did not handle SqlCredential-based connections correctly (https://feedback.azure.com/forums/908035-sql-server/suggestions/33698941).

AS:

- Fixed an issue where the "Advanced Settings" to the AS Xevent UI was clipped

Flat File Import Wizard:

- Fixed an issue where the "Import Flat File Wizard" was not handling double quotes correctly (escaping).
- Fixed an issue where related to incorrect handling of floating-point types (on locales that use a different delimiter for floating points)
- Fixed an issue related to importing of bits when values are 0 or 1 (https://feedback.azure.com/forums/908035-sql-server/suggestions/32898535).
- Fixed an issue where floats were entered as nulls.

Data Classification:

- Fixed a setup issue what was causing the recommendation part of Data Classification not to work with fresh install.

Backup/Restore/Attach/Detach DB:

- Fixed an issue where the user was unable to attach a database when physical filename of .mdf file does not match the original filename.
- Fixed an issue where SSMS might not find a valid restore plan or might find one which is sub-optimal (https://feedback.azure.com/forums/908035-sql-server/suggestions/32897752).
- Fixed a crash in SSMS when trying to restore a URL backup.

Job Activity Monitor:

- Fixed crash while using Job Activity Monitor (with filters).

Managed Instance support in SSMS:

- Improved/polished the support for Managed Instances: disabled unsupported options in UI and a fix to the View Audit Logs option to handle URL audit target.
- "Generate and Publish scripts" wizard scripts unsupported CREATE DATABASE clauses.
- Live Query Statistics was disabled for CL instances.
- Database properties->Files was incorrectly scripting ALTER DB ADD FILE.
- Fixed regression with SQL Agent scheduler where ONIDLE scheduling was chosen even when some other scheduling type was chosen.
- Adjusting MAXTRANSFERRATE, MAXBLOCKSIZE for doing backups on Azure Storage.
- The issue where tail log backup is scripted before RESTORE operation (this is not supported on CL).
- Create database wizard not scripting correctly CREATE DATABASE statement.
- Fixed an issue where an error was displayed while trying to use "Activity Monitor" when connected to Managed Instances.

Azure SQL Database:

- Fixed an issue where the database list was not populated correctly for Azure SQL Db query window when connected to a user database in Azure SQL DB instead of to master.
- Fixed an issue where it was not possible to add a "Temporal Table" to an Azure SQL database.

General Azure SQL support:

- Fixed issues in common Azure UI control that was preventing the user from displaying Azure subscriptions (if there were more than 50). Also, the sorting has been changed to be by name rather by Subscription ID. The user could run into this one when trying to restore a backup from URL, for example.
- Fixed an issue in common Azure UI control when enumerating subscriptions which could raise an "Index was out of range. Must be non-negative and less than the size of the collection." error when the user had no subscriptions in some tenants. The user could run into this one when trying to restore a backup from URL, for example.

Result Grid:

- Fixed an issue that was causing the in High Contrast mode (selected line numbers not visible).

XEvent Profiler:

- Fixed an issue where XEvent Profiler failed to launch when connected to a 96-core SQL Server.

Deprecated Features

The following features are no longer available in SSMS:

- T-SQL Debugger
- Database Diagrams
- OSQL.EXE
- Dreplay Admin UI
- Configuration Manager tools:
    - Both SQL Server Configuration Manager and Reporting Server Configuration Manager are not part of SSMS setup anymore.
- DMF Standard Policies
    - The policies are not installed with SSMS anymore. They will be moved to Git. Users will be able to contribute and download/install them, if they want to.

- SSMS command line option -P removed
  - Due to security concerns, the option to specify clear-text passwords on the command line was removed.
- Generate Scripts | Publish to Web Service removed. This (deprecated) feature was removed from the SSMS UI.
- Removed node "Maintenance | Legacy" in Object Explorer. In Generate and Publish Scripts | Publish to Web Service option is removed. The *really old* "Database Maintenance Plan" and "SQL Mail" nodes won't be accessible anymore. The modern "Database Mail" and "Maintenance Plans" nodes will continue to work as usual.

Known issues

The following are known issues in the current release:

> **IMPORTANT**
> When using *Active Directory – Universal with MFA Support* authentication with the SQL query editor, users may experience their connection being closed and reopened with each query invocation. Side effects of such closure include global temporary tables being dropped unexpectedly and sometimes a new SPID being given to the connection. This closure will not occur if there is an open transaction on the connection. To work around this issue, users can set `persist security info=true` in the connection parameters.

SSMS

- Double-clicking on a .sql file launches SSMS, but does not open the actual script.
  - Workaround: drag and drop the .sql file onto the SSMS editor.

SSIS

- Package can't be deployed or executed successfully when it targets SQL Server of old version and contains Script Task/Script component at the same time.
- SSMS can't connect to remote Integration Services.

SSMS 17.9 (latest GA release)

SSMS 17.9

Build number: 14.0.17285.0
Release date: September 04, 2018

> **NOTE**
> Non-English localized releases of SSMS 17.x require the KB 2862966 security update package if installing on: Windows 8, Windows 7, Windows Server 2012, and Windows Server 2008 R2.

Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean | Portuguese (Brazil) | Russian | Spanish

What's new

General SSMS

ShowPlan:

- Graphical Showplan now shows the new row mode memory grant feedback attributes when the feature is activated for a specific plan: IsMemoryGrantFeedbackAdjusted and LastRequestedMemory added to the

MemoryGrantInfo query plan XML element.For more on row mode memory grant feedback, see Adaptive query processing in SQL databases.

Azure SQL:

- Added support for vCore SKUs in Azure DB creation. For more information, see vCore-based purchasing model.

Bug fixes

General SSMS

Replication Monitor:

- Fixed an issue that was causing Replication Monitor (SqlMonitor.exe) not to start (User Voice item: https://feedback.azure.com/forums/908035-sql-server/suggestions/34791079)

Import Flat File Wizard:

- Fixed the link to the help page for "Flat File Wizard" dialog
- Fixed issue where the wizard did not allow changing the destination table when the table already existed: this allows users to retry without having to exit the wizard, delete the failed table, and then reenter the information into the wizard (User Voice item: https://feedback.azure.com/forums/908035-sql-server/suggestions/32896186).

Import/Export Data-Tier Application:

- Fixed an issue (in DacFx) which was causing the import of a .bacpac could fail with a message like "Error SQL72014: .Net SqlClient Data Provider: Msg 9108, Level 16, State 10, Line 1 This type of statistics is not supported to be incremental. " when dealing with tables with partitions defined and no indexes on the table.

Intellisense:

- Fixed an issue where intellisense completion was not working when using AAD with MFA.

Object Explorer:

- Fixed an issue where the "Filter Dialog" was displayed on random monitors instead of the monitor where SSMS was running (multi-monitor systems).

Azure SQL:

- Fixed an issue related to enumeration of databases in the "Available Databases" where "master" was not displayed in the dropdown when connected to a specific database.
- Fixed an issue where trying to generate a script ("Data" or "Schema and Data") was failing then connected to the SQL Azure DB using AAD with MFA.
- Fixed an issue in the View Designer (Views) where it was not possible to select "Add Tables" from the UI when connected to a SQL Azure DB.
- Fixed an issue where SSMS Query Editor was silently closing and reopening connections during MFA token renewal. This will prevent side effects unbeknownst to the user (like closing a transaction and never reopening again) from happening. The change adds the token expiration time to the properties window.
- Fixed an issue where SSMS was not enforcing password prompts for imported MSA accounts for AAD with MFA login.

Activity Monitor:

- Fixed an issue that was causing "Live Query Statistics" to hang when launched from Activity Monitor and SQL Authentication was used.

Microsoft Azure integration:

- Fixed an issue where SSMS only shows the first 50 subscriptions (Always Encrypted dialogs, Backup/Restore from URL dialogs, etc...).
- Fixed an issue where SSMS was throwing an exception ("Index out of range") while trying to sign in to an Microsoft Azure account which did not have any storage account (in Restore Backup from URL dialog).

Object Scripting:

- When scripting "Drop and Create", SSMS now avoids generating dynamic T-SQL.
- When scripting a database object, SSMS now does not generate script to set database scoped configurations, if they are set to default values.

Help:

- Fixed a long outstanding issue where "Help on Help" was not honoring the online/offline mode.
- When clicking on "Help | Community Projects and Samples" SSMS now opens the default browser that points to a Git page and shows no errors/warnings due to old browser being used.

Known issues

> **IMPORTANT**
> When using *Active Directory – Universal with MFA Support* authentication with the SQL query editor, users may experience their connection being closed and reopened with each query invocation. Side effects of such closure include global temporary tables being dropped unexpectedly and sometimes a new SPID being given to the connection. This closure will not occur if there is an open transaction on the connection. To work around this issue, users can set `persist security info=true` in the connection parameters.

Previous SSMS releases

Download previous SSMS versions by clicking the title links in the following sections.

SSMS 17.8.1

A bug was discovered in 17.8 related to provisioning SQL databases, so SSMS 17.8.1 replaces 17.8.

Build number: 14.0.17277.0
Release date: June 26, 2018

Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean | Portuguese (Brazil) | Russian | Spanish

What's new

General SSMS

Database Properties:

- This improvement exposes the **AUTOGROW_ALL_FILES** configuration option for Filegroups. This new config option is added under the Database Properties > Filegroups window in the form of a new column (Autogrow All Files) of checkboxes for each available Filegroup (except for Filestream and Memory Optimized Filegroups). The user can enable/disable AUTOGROW_ALL_FILES for a particular Filegroup by toggling the corresponding Autogrow_All_Files checkbox. Correspondingly, the **AUTOGROW_ALL_FILES** option is properly scripted when scripting the database for CREATE / generating scripts for the database (SQL2016 and above).

SQL Editor:

- Improved experience with Intellisense in Azure SQL Database when the user doesn't have master access.

Scripting:

- General performance improvements, especially over high-latency connections.

Analysis Services (AS)

- Analysis Services client libraries and data providers updated to the latest version, which added support for the new Azure Government AAD authority (login.microsoftonline.us).

Bug fixes

General SSMS

Maintenance Plans:

- Fixed an issue when editing maintenance plans with Sql Authentication where "Notify Operator Task" was failing when using SQL authentication.

Scripting:

- Fixed an issue where PostProcess actions in SMO lead to resource exhaustion and SQL login failures

SMO:

- Fixed an issue where Table.Alter() fails if adding a column with a default constraint and the table already has data. For details, see sql server smo generating inline default constraint when adding a column to a table containing data.

Always Encrypted:

- Fixed an issue (in DacFx) which was causing a lock timeout error when enabling Always Encrypted on a partitioned table

Analysis Services (AS)

- Fixed an issue that occurred when modifying an OAuth datasource in a Tabular Analysis Services 1400-level compatibility model, which caused the changes in the OAuth tokens to not get updated in the data source.
- Fixed a crash in SSMS that may have occurred when using some invalid data source credentials or editing data sources that didn't support Change Data Source migration in Power Query (for example, Oracle) in Analysis Services Tabular 1400-level compatibility models.

Known issues

- Clicking the *Script* button after modifying any filegroup property in the *Properties* window, generates two scripts – one script with a *USE* statement, and a second script with a *USE master* statement. The script with *USE master* is generated in error and should be discarded. Run the script that contains the *USE* statement.
- Some dialogs display an invalid edition error when working with new *General Purpose* or *Business Critical* Azure SQL Database editions.
- Some latency in XEvents viewer may be observed. This is a known issue in the .Net Framework. Please, consider upgrading to NetFx 4.7.2.

SSMS 17.7

Build number: 14.0.17254.0
Release date: May 09, 2018

Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean | Portuguese (Brazil) | Russian | Spanish

What's new

General SSMS

Replication Monitor:

- Replication monitor now supports registering a listener for scenarios where publisher database and/or distributor database is part of Availability Group. You can now monitor replication environments where publisher database and/or distribution database is part of Always On.

Azure SQL Data Warehouse:

- Add Rejected Row Location support for External Tables in Azure SQL Data Warehouse.

Integration Services (IS)

- Added a scheduling feature for SSIS packages deployed to Azure SQL Database. Unlike SQL Server on premises and SQL Database Managed Instance, which have SQL Server Agent as a first-class job scheduler, SQL Database does not have a built-in scheduler. This new SSMS feature provides a familiar user interface that's similar to SQL Server Agent for scheduling packages deployed to SQL Database. If you're using SQL Database to host the SSIS catalog database, SSISDB, you can use this SSMS feature to generate the Data Factory pipelines, activities, and triggers required to schedule SSIS packages. You can then edit and extend these objects in Data Factory. For more info, see Schedule SSIS package execution on Azure SQL Database with SSMS. To learn more about Azure Data Factory pipelines, activities, and triggers, see Pipelines and activities in Azure Data Factory and Pipeline execution and triggers in Azure Data Factory.
- Support for SSIS package scheduling in SQL Agent on SQL Managed instance. It is now possible to create SQL Agent jobs to execute SSIS packages on the managed instance.

Bug fixes

General SSMS

Maintenance Plan:

- Fixed an issue where trying to change the schedule of an existing Maintenance Plan was throwing an exception. For details, see SSMS 17.6 crashes when clicking on a schedule in a maintenance plan.

Always On:

- Fixed an issue where Always On Latency Dashboard was not working with SQL Server 2012.

Scripting:

- Fixed an issue where scripting stored procedure against Azure SQL Data Warehouse, is not working for non-admin user.
- Fixed an issue where scripting a database against Azure SQL Database was not scripting the *SCOPED CONFIGURATION* properties.

Telemetry:

- Fixed issue where SSMS crashes then trying to connect to a server, after opting out of sending telemetry.

Azure SQL Database:

- Fixed an issue where the user was not able to set or change compatibility level (the drop-down from empty). Note: in order to set the compatibility level to 150, the user still needs to use the *Script* button and manually edit the script.

SMO:

- Exposed Error Log Size setting in SMO. For details, see Set the Maximum Size of the SQL Server Error Logs.

- Fix linefeed scripting in SMO on Linux.
- Miscellaneous perf improvement when retrieving rarely used properties.

Intellisense:

- Perf improvement: reduced volume of intellisense queries for column data. This is especially beneficial when working on tables with huge number of columns.

SSMS User settings:

- Fixed an issue where the options page was not resizing properly.

Misc:

- Improved how text is displayed on *Statistics details* page.

Integration Services (IS)

- Better support for Azure SQL Database Managed Instance.
- Fixed an issue where the user was unable to create a catalog for SQL Server 2014 or before.
- Fixed two issues with reports:
  - Removed the machine name for Azure servers.
  - Improved handling of localized object name.

Known issues

Some dialogs display an invalid edition error when working with new *General Purpose* or *Business Critical* Azure SQL Database editions.

SSMS 17.6

Build number: 14.0.17230.0
Release date: March 20, 2018

Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean | Portuguese (Brazil) | Russian | Spanish

What's new

General SSMS

SQL Database Managed Instance:

- Added a support for Azure SQL Database Managed Instance. Azure SQL Database Managed Instance provides near 100% compatibility with SQL Server on-premises, a native virtual network (VNet) implementation that addresses common security concerns, and a business model favorable for on-premises SQL Server customers.
- Support for common management scenarios like:
  - Create and alter databases.
  - Backup and restore databases.
  - Importing, exporting, extracting and publishing Data-tier Applications.
  - Viewing and altering Server properties.
  - Full Object Explorer support.
  - Scripting database objects.
  - Support for SQL Agent jobs.
  - Support for Linked Servers.
- Learn more about Managed Instances here.

Object Explorer:

- Added settings to not force brackets around names when dragging & dropping from Object Explorer to Query Window. (User suggestions 32911933, and 32671051.)

Data Classification:

- General improvements and bug fixes.

Integration Services (IS)

- Added support to deploy packages to a SQL Database Managed Instance.

Bug fixes

General SSMS

Data Classification:

- Fixed an issue in *Data Classification* which was causing newly added classifications to be displayed with stale *information type* and *sensitivity label*.
- Fixed an issue where *Data Classification* was not working when targeting a server set to a case-sensitive collation.

Always On:

- Fixed an issue in AG Show Dashboard where clicking on *Collect Latency Data* could result in an error when the server was set to a case-sensitive collation.
- Fixed an issue where SSMS was incorrectly reporting an AG as *Distributed* when the Cluster service shuts down.
- Fixed an issue when creating AG using *Create Availability Group* dialog the *ReadOnlyRoutingUrl* is required.
- Fixed an issue when the primary is down and manually failover to secondary, a NullReferenceException will be thrown.
- Fixed an issue when creating Availability Group using backup/restore to initialize a database, on the secondary replicas, the database files will be created in the default directory. The fix includes:
  - Add the data/log directory validator.
  - Only do the file relocation when the replica is on a different OS to the primary replica.
- Fixed an issue where SSMS wizard doesn't generate *CLUSTER_TYPE* option, causing secondary join to fail.

Setup:

- Fixed issue where trying to upgrade SSMS by installing the "upgrade package" was failing when SSMS was installed in a non-default location.

SMO:

- Fixed performance issue where scripting tables on SQL Server 2016 and above could take up to 30 seconds (now, it's down to less than 1 second).

Object Explorer:

- Fixed an issue where SSMS could throw an exception like "Object cannot be cast from DBNull to other types" when trying to expand *Management* node in Object Explorer.
- Fixed an issue where *Start PowerShell* was not detecting the SQLServer module when user-defined PS profile emitted output.
- Fixed an intermittent hang that could occur when right-clicking a Table or Index node in Object Explorer.

Database Mail:

- Fixed an issue where *Database Mail Configuration Wizard* was throwing an exception when trying to

display/manage more than 16 profiles.

Analysis Services (AS)

- Fixed as issue where modifying a data source on a 1400 compatibility level model in SSMS the changes are not saved to the server.

Integration Services (IS)

- Fixed an issue where SSMS did not show SSIS catalog node and reports when connected to SQL Database Managed Instance

Known issues

> **WARNING**
> There is a known issue where SSMS 17.6 becomes unstable and crashes when using Maintenance Plans. If you use Maintenance Plans, do not install SSMS 17.6. Downgrade to SSMS 17.5 if you already installed 17.6 and this issue is affecting you.

SSMS 17.5

Generally available | Build number: 14.0.17224.0

Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean | Portuguese (Brazil) | Russian | Spanish

What's new

General SSMS

Data Discovery & Classification:

- Added a new SQL Data Discovery & Classification feature for discovering, classifying, labeling & reporting sensitive data in your databases.
- Auto-discovering and classifying your most sensitive data (business, financial, healthcare, PII, etc.) can play a pivotal role in your organizational information protection stature.
- Learn more at SQL Data Discovery & Classification.

Query Editor:

- Added support for SkipRows option to the Delimited Text External File Format for Azure SQL DW. This capability allows users to skip a specified number of rows when loading delimited text files into SQL DW. Also added the corresponding intellisense/SMO support for the FIRST_ROW keyword.

Showplan:

- Enabled display of estimated plan button for SQL Data Warehouse
- Added new showplan attribute *EstimateRowsWithoutRowGoal*; and added new showplan attributes to *QueryTimeStats*: *UdfCpuTime* and *UdfElapsedTime*. For more information, see Optimizer row goal information in query execution plan added in SQL Server 2017 CU3.

Bug fixes

General SSMS

Showplan:

- Fixed Live Query Statistics elapsed time, to show engine execution time instead of time elapsed for LQS connection.

- Fixed an issue where showplan was not able to recognize Apply logical operators like GbApply and InnerApply.
- Fixed an issue related to ExchangeSpill.

Query Editor:

- Fixed on issue related to SPIDs where SSMS could throw an error like "Input string was not in a correct format. (mscorlib)" when executing a simple query preceded by a "SET SHOWPLAN_ALL ON".

SMO:

- Fixed an issue where SMO was not able to fetch AvailabilityReplica properties in case the server collation happened to be case-sensitive (as a result, SSMS could display an error message like "The multi-part identifier "a.delimited" could not be bound."
- Fixed an issue in DatabaseScopedConfigurationCollection class, where incorrectly handling collations (as a result, an SSMS running on an ma machine with a Turkish locale could display an error like "legacy cardinality estimation is not valid scoped configuration" when right clicking on a database running on a server with a case-sensitive collation).
- Fixed an issue in JobServer class, where SMO was not able to fetch SQL Agent properties on a SQL 2005 server (as a result, SSMS was throwing an error like "Cannot assign a default value to a local variable. Must declare the scalar variable "@ServiceStartMode" and, ultimately, was not displaying the SQL Agent node in Object Explorer).

Templates:

- "Database Mail": fixed a couple of typos (https://feedback.azure.com/forums/908035/suggestions/33143512).

Object Explorer:

- Fixed an issue where Managed Compression would fail for indexes (https://feedback.azure.com/forums/908035-sql-server/suggestions/32610058-ssms-17-4-error-when-enabling-page-compression-o).

Auditing:

- Fixed an issue with the *Merge Audit Files* feature.

Known issues

Data classification:

- Removing a classification and then manually adding a new classification for the same column results in the old information type and sensitivity label being assigned to the column in the main view.
  Workaround: Assign the new information type and sensitivity label after the classification was added back to the main view and before saving.

SSMS 17.4

Generally available | Build number: 14.0.17213.0

Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean | Portuguese (Brazil) | Russian | Spanish

What's new

General SSMS

Vulnerability Assessment:

- Added a new SQL Vulnerability Assessment service to scan your databases for potential vulnerabilities and deviations from best practices, such as misconfigurations, excessive permissions, and exposed sensitive data.

- Results of the assessment include actionable steps to resolve each issue and customized remediation scripts where applicable. The assessment report can be customized for each environment and tailored to specific requirements. Learn more at SQL Vulnerability Assessment.

SMO:

- Fixed issue where *HasMemoryOptimizedObjects* was throwing exception on Azure.
- Added support for new CATALOG_COLLATION feature.

Always On Dashboard:

- Improvements for latency analysis in Availability Groups.
- Added two new reports: *AlwaysOn_Latency_Primary* and *AlwaysOn_Latency_Secondary*.

Showplan:

- Updated links to point to correct documentation.
- Allow single plan analysis directly from actual plan produced.
- New set of icons.
- Added support for recognize "Apply logical operators" like GbApply, InnerApply.

XE Profiler:

- Renamed to XEvent Profiler.
- Stop/Start menu commands now stop/start the session by default.
- Enabled keyboard shortcuts (for example, CTRL-F to search).
- Added database_name and client_hostname actions to appropriate events in XEvent Profiler sessions. For the change to take effect, you may need to delete existing QuickSessionStandard or QuickSessionTSQL session instances on the servers - Connect 3142981

Command line:

- Added a new command-line option ("-G") that can be used to automatically have SSMS connect to a server/database using Active Directory Authentication (either 'Integrated' or 'Password'). For details, see Ssms utility.

Import Flat File Wizard:

- Added a way to pick a schema name other than the default ("dbo") when creating the table.

Query Store:

- Restored the "Regressed Queries" report when expanding the Query Store available reports list.

Integration Services (IS)

- Added package validation function in Deployment Wizard, which helps the user figure out components inside SSIS packages that are not supported in Azure-SSIS IR.

Bug fixes

General SSMS

- Object Explorer: Fixed an issue where Table-Valued Function node was not showing up for database snapshots - Connect 3140161. Improved performance when expanding *Databases* node when the server has autoclose databases.
- Query Editor: Fixed an issue where IntelliSense was failing for users that don't have access to the master database. Fixed an issue that was causing SSMS to crash in some cases when the connection to a remote machine was closed - Connect 3142557.

- XEvent Viewer: Re-enabled functionality to export to XEL. Fixed issues where in some cases the user was not able to load an entire XEL file.
- XEvent Profiler: Fixed an issue that was causing SSMS to crash when the user did not have *VIEW SERVER STATE* permissions. Fixed an issue where closing the XE Profiler Live Data window did not stop the underlying session.
- Registered Servers: Fixed an issue where the "Move To..." command stopped working - Connect 3142862 and Connect 3144359.
- SMO: Fixed an issue where the TransferData method on the Transfer object was not working. Fixed an issue where Server databases throws exception for paused SQL DW databases. Fixed an issue where scripting SQL database against SQL DW generated incorrect T-SQL parameter values. Fixed an issue where scripting of a stretched DB incorrectly emitting the *DATA_COMPRESSION* option.
- Job Activity Monitor: Fixed an issue where the user was getting an "Index was out of range. Must be non-negative and less than the size of the collection. Parameter name: index (System.Windows.Forms)" error when trying to filter by Category - Connect 3138691.
- Connection Dialog: Fixed an issue where domain users without access to a Read/Write domain controller could not log in to a SQL Server using SQL Authentication - Connect 2373381.
- Replication: Fixed an issue where an error similar to "Cannot apply value 'null' to property ServerInstance" was displayed when looking at properties of a pull subscription in SQL Server.
- SSMS Setup: Fixed an issue where SSMS setup was incorrectly causing all the installed products on the machine to be reconfigured.
- User Settings:
  - With this fix, US Government sovereign cloud users will have uninterrupted access to their Azure SQL Database and Azure Resource Manager resources with SSMS via Universal authentication and Azure Active Directory login. Users of prior versions of SSMS would need to open Tools|Options|Azure Services and under Resource Management change the configuration of the "Active Directory Authority" property to https://login.microsoftonline.us.

Analysis Services (AS)

- Profiler: fixed an issue when trying to connect using Window Authentication against Azure AS.
- Fixed an issue that could cause a crash when canceling connection details on a 1400 model.
- When setting an Azure blob key in the connection properties dialog when refreshing credentials, it will now be visually masked.
- Fixed an issue in the Azure Analysis Services User selection dialog to show the Application ID guid instead of the Object ID when searching.
- Fixed an issue in the Browse Database\MDX query designer toolbar that caused the icons to be incorrectly mapped for some buttons.
- Fixed an issue that prevented connecting to SSAS using msmdpump IIS http/https addresses.
- Several strings in the Azure Analysis Services User Picker dialog have now been translated for additional languages.
- MaxConnections property is now visible for data sources in tabular models.
- Deployment Wizard will now generate correct JSON definitions for Azure AS role members.
- Fixed an issue in SQL Profiler where selecting Windows Authentication against Azure AS would still prompt for login.

SSMS 17.3

Generally available | Build number: 14.0.17199.0

Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean | Portuguese (Brazil) | Russian | Spanish

Enhancements

- New "Import Flat File" wizard added to streamline the import experience of CSV files with an intelligent framework, requiring minimal user intervention or specialized domain knowledge. For details, see Import Flat File to SQL Wizard.
- Added "XEvent Profiler" node to Object Explorer. For details, see Use the SSMS XEvent Profiler.
- Updated waits filtering and categorization in Performance Dashboard historical waits report.
- Added the syntax check of the "Predict" function.
- Added the syntax check of the External Library Management queries.
- Added SMO support for External Library Management.
- Added "Start PowerShell" support to "Registered Servers" window (requires a new SQL PowerShell module).
- Always On: added read-only routing support for availability groups.
- Added an option to send tracing details to the Output Window for "Active Directory - Universal with MFA support" logins (off by default; needs to be turned on in user settings under "Tools > Options > Azure Services > Azure Cloud > ADAL Output Window Trace Level").
- Query Store:
  - Query Store UI will be accessible even when QDS is OFF as long as QDS have recorded any data.
  - Query Store UI now exposes waits categorization in all the existing reports. This will let customers unlock the scenarios of Top Waiting Queries and many more.
- Made inclusion of the scripting parameters headers optional (off by default; can be enabled in user settings under "Tools > Options > SQL Server Object Explorer > Scripting > Include scripting parameters header") - Connect item 3139199.
- Removed "RC" branding.

Bug Fixes

General SSMS

- XEvent:
  - Fixed issue where SSMS opens only part of the events in .xel file.
  - Improved "Watch Live Data" experience when default database is not 'master' - Connect item 1222582.
- Always On: Fixed issue where "Restore log backups" may fail with error "The log in this backup set terminates at LSN x, which is too early to apply to the database".
- Job Activity Monitor: fixed inconsistent icons - Connect item 3133100.
- Query Store: Fixed Issue where user cannot choose "custom" date range for Query Store reports. Linked to below connect items.
  - Connect item 3139842
  - Connect item 3139399
- Fixed issue where connection dialog doesn't "clear" the most recently used database when saved info has named database and user selects .
- Object Scripting: Fixed an issue where "Generate database script" not working and throwing an error when the user has a paused DW database on the server, but selected another non-DW database and tried t script it. Fixed issue where the header for scripted Stored Procedures was not matching the script settings, resulting in a misleading script - Connect item 3139784. Re-enabled the "Script button" when targeting SQL Azure objects. Fixed issue where SSMS was not allowing scripting for "Alter" or "Execute" on some objects (UDF, View, SP, Trigger) when connected to an Azure SQL database - Connect item 3136386.
- Query editor:
  - Improved intellisense when targeting Azure SQL databases.
  - Fixed an issue where queries failed due to an expired authentication token (Universal Authentication).
  - Improved intellisense when working against Azure SQL databases (particularly, when connecting to Azure SQL Database, the latest T-SQL grammar (140) will be used).

    - Fixed issue where open a query window with a connection to a non-DataWarehouse database on a server would cause all subsequent query windows for that server to DataWarehouse databases to throw various errors about unsupported types/options.
- Always On:
    - Added seeding mode column to Always On dashboard and AG properties page.
    - Fixed issue where it was not possible to create a Linux AG when primary is on Windows - Connect item 3139856.
- Fixed several "Out of Memory" issues in SSMS when running queries - Connect item 2845190, Connect item 3123864.
- Profiler:
    - Fixed issue where Profiler was not working when targeting SQL 2005.
    - Fixed issue where Profiler was not honoring the "trust server certificate" connection option.
- Activity Monitor: fixed an issue where Activity Monitor does not work when pointed at SQL Server running on Linux.
- Fixed an issue with the SMO Transfer class where it wouldn't transfer External Data Source or External File Format objects, objects of those types should now correctly be included in the transfer.
- Registered Servers:
    - Enabled multiserver query for UA servers (it will try to use the same token for every UA server in the group).
- AD Universal Authentication:
    - Fixed issue where Azure AD authentication was not supported.
    - Fixed issue where table/view designer was not working.
    - Fixed issue where "Select Top 1000 rows" and "Edit Top 200 rows" were not working.
- Database restore: fixed an issue where restore omits the last folder in the path when moving files to an alternate location.
- Compress wizard:
    - Fixed an issue with manage compression wizard for indexes; fixed issue where compress data wizards was broken for SQL 2016 and lower. https://connect.microsoft.com/SQLServer/feedback/details/3139342
    - Added Compress wizard to Azure tables and indexes.
- Showplan:
    - Fixed issue where PDW operators were not recognized.
- Server Properties:
    - Fixed issue with not being able to modify server processor affinity.

Analysis Services (AS)

- Fixed a number of issues with Deployment Wizard to support tabular 1400 compat-level models and Power Query data sources.
- Deployment Wizard can now deploy to AS Azure when running from command line.
- When using Windows Auth in AS Azure the user will now see the name of the user account in Object Explorer correctly.

Known issues in this 17.3 release:

General SSMS

- The following SSMS functionality is not supported for Azure AD auth using UA with MFA:
    - Database Engine Tuning Advisor is not supported for Azure AD auth; there is a known issue where the error message presented to the user is a bit cryptic "Could not load file or assembly 'Microsoft.IdentityModel.Clients.ActiveDirectory,..." instead of the expected "Database Engine Tuning

Advisor does not support Microsoft Azure SQL Database. (DTAClient)".

- Trying to analyze a query in DTA results in an error: "Object must implement IConvertible. (mscorlib)".
- *Regressed Queries* is missing from the Query Store list of reports in Object Explorer.
  - Workaround: Right-click the **Query Store** node and select **View Regressed Queries**.

Integration Services (IS)

- The [execution_path] in [catalog].[event_messagea] is not correct for package executions in Scale Out. The [execution_path] starts with "\Package" instead of the object name of the package executable. When viewing the overview report of package executions in SSMS, the link of "Execution Path" in Execution Overview cannot work. The workaround is to click "View Messages" on overview report to check all event messages.

SSMS 17.2

Generally available | Build number: 14.0.17177.0

Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean | Portuguese (Brazil) | Russian | Spanish

Enhancements

- Multi-Factor Authentication (MFA)
  - Multiple-user Azure AD authentication for Universal authentication with Multi-factor authentication (UA with MFA)
  - A new user credential input field was added for Universal Authentication with MFA to support multi-user authentication.
- The connection dialog box now supports the following 5 authentication methods:
  - Windows Authentication
  - SQL Server Authentication
  - Active Directory - Universal with MFA support
  - Active Directory - Password
  - Active Directory - Integrated
- Database export/import for DacFx wizard using Universal Authentication with MFA.
- For API support, see IUniversalAuthProvider Interface.
- ADAL managed library used by Azure AD Universal Authentication with MFA was upgraded to 3.13.9 version.
- In addition a new CLI interface was delivered supporting Azure AD admin setting for SQL Database and SQL Data Warehouse.

  For more information on the Active Directory authentication methods, see Universal Authentication with SQL Database and SQL Data Warehouse (SSMS support for MFA) and Configure Azure SQL Database multi-factor authentication for SQL Server Management Studio.
- Output window has entries for queries run during expansion of Object Explorer nodes
- Enabled View designer Azure SQL Databases
- The default scripting options for scripting objects from Object Explorer in SSMS have changed:
  - Previously, the default on a new install was to have the generated script target the latest version of SQL Server (currently SQL Server 2017).
  - In SSMS 17.2 a new option has been added: *Match Script Settings to Source*. When set to *True*, the generated script targets the same version, engine type, and engine edition as the server the object being scripted is from.
  - The *Match Script Settings to Source* value is set to *True* by default, so new installs of SSMS will

automatically default to always scripting objects to the same target as the original server.
    - When the *Match Script Settings to Source* value is set to *False*, the normal scripting target options will be enabled and function as they did previously. Additionally, all the scripting options have been moved to their own section - *Version Options*. They are no longer under *General Scripting Options*.
- Added support for National Clouds in "Restore from URL"
- QueryStoreUI reports now supports additional metrics (RowCount, DOP, CLR Time etc.) from sys.query_store_runtime_stats.
- IntelliSense is now supported for Azure SQL Database https://connect.microsoft.com/SQLServer/feedback/details/3100677/ssms-2016-would-be-nice-to-have-intellisense-on-azure-sql-databases
- Security: connection dialog will default to not trusting server certificates and to requesting encryption for Azure SQL DB connections
- General improvements around support for SQL Server on Linux:
    - Database Mail node is back
    - Addressed misc issues related to paths
    - Activity Monitor is more stable
    - Connection Properties dialog displays correct platform
- Performance Dashboard server report now available as a default report:
    - Can connect to SQL Server 2008 and newer versions.
    - Missing indexes sub-report uses scoring to assist in identifying most useful indexes.
    - Historical wait stats sub-report now aggregates waits be category. Idle and sleep waits filtered out by default.
    - New Historical latches sub-report.
- Showplan node search allows searching in plan properties. Easily look for any operator property such as table name. To use this option when viewing a plan:
    - Right-click on plan, and in the context menu click on Find Node option
    - Use CTRL+F

Analysis Services (AS)

- New AAD role member selection for users without email addresses in AS Azure models in SSMS

Integration Services (IS)

- Added new column ("Executed Count") to the execution report for SSIS

Known issues in this release:

- Query windows using "Active Directory - Universal with MFA Support" authentication may experience an error similar to the following, when attempting to execute a query after being open for one hour:

  ```
  Msg 0, Level 11, State 0, Line 0 The connection is broken and recovery is not possible. The client driver attempted to recover the connection one or more times and all attempts failed. Increase the value of ConnectRetryCount to increase the number of recovery attempts.
  ```

  Re-running the query should get past the error and succeed.

- The following SSMS functionality is not supported for Azure AD auth using Universal Authentication with MFA:
    - The **New Table/View** designer shows the old-style login prompt, and does not work for Azure AD authentication.
    - The **Edit Top 200 Rows** feature doesn't support Azure Ad authentication.
    - The **Registered Server** component does not support Azure AD authentication.

- The **Database Engine Tuning Advisor** is not supported for Azure AD authentication. There is a known issue where the error message presented to the user is less than helpful: *Could not load file or assembly 'Microsoft.IdentityModel.Clients.ActiveDirectory,...* instead of the expected *Database Engine Tuning Advisor does not support Microsoft Azure SQL Database. (DTAClient)*.

Analysis Services (AS)

- Object Explorer in SSAS will not show the Windows Auth username in AS Azure connection properties.

Bug fixes

- Fixed an issue when trying to print the results of a query (as text). https://connect.microsoft.com/SQLServer/feedback/details/3055225/
- Fixed an issue where SSMS was incorrectly dropping tables and other objects when scripting the deletion of such objects on a SQL Azure database.
- Fixed an issue where SSMS occasionally SSMS refuses to start with an error like "Cannot find one or more components. Please reinstall the application"
- Fixed an issue where the SPID in SSMS UI could get stale and out of sync. https://connect.microsoft.com/SQLServer/feedback/details/1898875
- Fixed an issue in SSMS (silent) setup where the /passive argument was treated as /quiet.
- Fixed an issue where SSMS occasionally throws an "Object reference not set to an instance of the object" error on startup. http://connect.microsoft.com/SQLServer/feedback/details/3134698
- Fixed an issue on the "Data Compression Wizard" that was causing SSMS to crash when pressing 'Calculate' on Graph Table
- Addressed performance issue when right clicking on an index for a table (over a slow internet connect). https://connect.microsoft.com/SQLServer/feedback/details/3120783
- Fixed an issue where SSMS was not able to enumerate backup files on servers with a case-sensitive collation. http://connect.microsoft.com/SQLServer/feedback/details/3134787 and https://connect.microsoft.com/SQLServer/feedback/details/3137000
- Showplan and showplan compare assorted fixes
- Fixed an issue where the Connection Dialog was not allowing the user to specify the "Network Protocol" to use for the connection, unless SQL Server was installed on the machine running SSMS. https://connect.microsoft.com/SQLServer/feedback/details/3134997
- Improved support for multi-monitor configurations where some SSMS dialog were showing up on "random" locations. Added new option "Task Dialogs" under "SQL Server Object Explorer | Commands" user settings to allow remembering the position of a task dialog or property sheet when it closes. https://connect.microsoft.com/SQLServer/feedback/details/889169, https://connect.microsoft.com/SQLServer/feedback/details/1158271, https://connect.microsoft.com/SQLServer/feedback/details/3135260
- Fixed an issue where SSMS was not able to change DB properties for encrypted Azure SQL DB
- Improved "Discard results after execution" option. https://connect.microsoft.com/SQLServer/feedback/details/1196581
- Improved/fixed issue where users are not able to access Azure subscriptions for which they are not administrators.
- Improved "Database Restore" wizard to keep the target database selected in OE regadless of the source database selection. https://connect.microsoft.com/SQLServer/feedback/details/3118581
- Fixed an issue where Object Explorer was not sorting incorrectly newly added "Natively compiled stored procedures". http://connect.microsoft.com/SQLServer/feedback/details/3133365
- Fixed an issue where "SELECT TOP n ROWS" did not include the "TOP" clause. For Azure SQLDW. https://connect.microsoft.com/SQLServer/feedback/details/3133551 and https://connect.microsoft.com/SQLServer/feedback/details/3135874
- QueryStoreUI: fixed issue where non-custom time intervals were not working correctly for all reports.

- Always Encrypted: Improved messaging for AKV permission status in New CMK dialog Added tooltips to CEK dropdown to make it easier to distinguish CEKs with long names Fixed an issue where some CNG key store providers would not be displayed in the New Column Master Key dialog for Always Encrypted
- Fixed inconsistent "Application Name" for SSMS connections. http://connect.microsoft.com/SQLServer/feedback/details/3135115
- Fixed an issue where SSMS was not generating correct scripts for SQL Azure (tables and indexes with DATA_COMPRESSIONS option). https://connect.microsoft.com/SQLServer/feedback/details/3133148
- Fixed an issue where user was not able to use CTRL+Q shortcut for Quick Launch (note: the new key bindings to toggle the "IntelliSense Enabled" option in Query Editor is now CTRL+B, CTRL+I. https://connect.microsoft.com/SQLServer/feedback/details/3131968
- Fixed an issue in "Restore Database" where SSMS was throwing an exception when trying to select a storage account from a subscription that has accounts with custom domains defined
- Fixed an issue in "Database Diagram" where SSMS was throwing an "Index was outside the bounds of the array" error; also, the user was not able to change the "Table View" to anything but standard. https://connect.microsoft.com/SQLServer/feedback/details/3133792 and http://connect.microsoft.com/SQLServer/feedback/details/3135326
- Fixed an issue in "Backup/Restore to URL" where SSMS was not enumerating classic storage accounts.
- Fixed an issue where an exception was being thrown when trying to add schema-bound securables to DB Roles. https://connect.microsoft.com/SQLServer/feedback/details/3118143
- Fixed an issue where SSMS was intermittently showing the error "Data is Null. This method or property cannot be called on Null values." when expanding a table node http://connect.microsoft.com/SQLServer/feedback/details/3136283
- DTA: Fixed an issue where DTAEngine.exe terminates with Heap Corruption when evaluating Partition Function with Certain Boundary Values.

Analysis Services (AS)

- Fixed an issue where AS Restore Database would fail with an error if the DB had a different Name than ID
- Fixed an issue causing the DAX query window to disregard the menu option for toggling IntelliSense Enabled
- Fixed an issue that prevented connecting to SSAS through msmdpump IIS http/https addresses
- Allow connecting to AS Azure using a password that contain a semi-colon
- Scripting out AS Restore Database command with "Skip Membership" option will include the new corresponding JSON option when used with SQL Server 2017 AS server or AS Azure
- Fixed an extremely rare issue that could cause the delete database dialog to raise an error when loading
- Fixed an issue that may occur when attempting to view partitions in 1400-compat level model containing a mix of SQL query and M partition definitions

Integration Services (IS)

- Fixed issue where the execution information reports of SSISDB catalog can't be displayed
- Addressed issues in SSMS related to poor performance with large number of projects/packages

SSMS 17.1

Generally available | Build number: 14.0.17119.0

Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean | Portuguese (Brazil) | Russian | Spanish

Enhancements

- Profiler: Help > About now displays release version number (e.g 17.1)
- Analysis Service users can refresh credentials for their datasources for 1200 TM models and above from the

context menu on the datasource

- Built-in SSIS reports now show logs from SSIS scale-out execution in CTP 2.1
- SSIS scale-out management application
  - View basic information about scale-out master.
  - Easily add a Worker to the scale-out deployment.
  - View all the scale-out workers and basic information about them, and can also enable or disable them easily.

Bug fixes

- Always On:
  - Fixed an issue where the properties of an Availability Replica was always displayed as "Automatic failover" mode for WSFC AGs.
  - Fixed an issue where the read-only routing list was overwritten when updating the Availability Group
- Always Encrypted: fixed an issue where log file generated was missing the information generated by DacFx.
- ShowPlan: fixed in issue where the UI was always showing the Actual join type attribute for non Adaptive join operators.
- Setup:
  - Fixed an issue where SSMS 17.0 was breaking SSDT on Visual Studio 2013 [Connect Item 3133479]
  - Fixed an issue where clicking on "Restart" at the end of setup was not restarting the machine
- Scripting: temporarily preventing SSMS from accidentally deleting Azure database objects when trying to script the deletion by disabling that option. Proper fix will be in an upcoming release of SSMS.
- Object Explorer: fixed an issue where "Databases" node was not expanded when connected to an Azure database created using "AS COPY"

SSMS 17.0

Generally available | Build number: 14.0.17099.0

Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean | Portuguese (Brazil) | Russian | Spanish

Enhancements

- Upgrade package and Windows Software Update Services (WSUS) Future 17.X releases include a smaller cumulative update package
  - The update package will also be published to the WSUS catalog
- Icon Updates Icons have been updated to be consistent with VS Shell provided icons and support High DPI resolutions New SSMS and Profiler program icons to differentiate between 16.X and 17.X versions
- SQL PowerShell Module
  - SQL Server PowerShell module removed from SSMS and now ships via the PowerShell gallery (PowerShell 5.0 now required to support module versioning)
  - Miscellaneous improvements to the "presentation" (formatting) of some SMO objects (e.g. databases now show the size and the available space and tables show row count and space usage)
  - Added colorization when the PowerShell command prompt is invoked from the "Start PowerShell" menu in OE
  - Added -ClusterType and -RequiredCopiesToCommit parameter to AG cmdlets (New-SqlAvailabilityGroup, Join-SqlAvailabilityGroup, and Set-SqlAvailabilityGroup cmdlets)
  - Added parameters -ActiveDirectoryAuthority and -AzureKeyVaultResourceId to Add-SqlAzureAuthenticationContext cmdlet
  - Added Revoke-SqlAvailabilityGroupCreateAnyDatabase, Grant-SqlAvailabilityGroupCreateAnyDatabase and Set-SqlAvailabilityReplicaRoleToSecondary cmdlets

    - Added -SeedingMode parameter to Set-SqlAvailabilityReplica and New-SqlAvailabilityReplica cmdlets
    - Added -ConnectionString parameter to Get-SqlDatabase
- SQL Server on Linux General improvements and fixes for Log Shipping
    - Added support for native Linux paths Attach, Restore and Backup database
    - Added support for native Linux paths for audit log destination folder
- Analysis Services
    - DAX Query Window:
        - Parentheses matching in the editor
        - DEFINE MEASURE and DEFINE VAR syntax support
        - Assorted Intellisense improvements
    - Universal Authentication
        - Allows users to specify a username and no password and the Azure Login Dialog will handle the connection
    - SSMS PQ Integration:
        - Scripting of structured data sources works
        - Viewing and Editing of structured data sources in PQ UI
- New "Add Unique Constraint" template
- Showplan Show max instead of sum across the threads in properties window for elapsed time Expose new mem grant operator properties Enabled the "Edit Query" button in Live Query Statistics Support for interleaved execution
    - New option to "Analyze Actual Execution Plan"
    - General improvements to showplan compare
    - Introduced functionality in Showplan Comparison feature to find significant differences in Cardinality Estimation between matching nodes of two query plans and perform basic analysis of the possible root causes
- Removed Configuration Manager from Registered Servers explorer
- Enable reading audit logs from Azure blob storage
- Added Parameterization for Always Encrypted, please refer to this page for more details
- AAD Universal auth connection to Azure SQL DB supports custom tenant id
- Generate scripts for Azure SQL Database, now scripts full text, rules, and database
- Branding fixes in splash screens for SSMS and Profiler
- Removed Utility Control Point UI from SSMS
- SSMS can now create "PremiumRS" edition SQL Azure databases
- Always On Availability Groups
    - Add support for new cluster types: EXTERNAL and NONE Add support for SQL Server on Linux Add automatic seeding as an option for initial data synchronization Fixed the some defects, e.g. endpoint URL handling, DB refresh and UI layout Removed Azure replica related features
    - Improved IntelliSense for several Availability Group keywords
- Activity Monitor
    - Added new "Activity Monitor" pane to the SSMS Output window
    - Changed connection error/timeout message to log info to output window rather than a pop up message
    - Removed empty chart (5th chart) in Overview section
    - Added "(paused)" to Overview title if the Activity Monitor data collection is paused
    - Graph Extensions to SQL Server New icons for graph node and edge tables Graph node and edge tables will be displayed under Graph Tables folder Templates to create graph node and edge tables available
- Presentation Mode 3 new tasks available via Quick Launch (Ctr-Q) PresentOn - Turn on presentation mode PresentEdit - Edit the presentation font sizes for presentation mode. "Text Editor font" for the Query Editor.

"Environment font" for other components. RestoreDefaultFonts - Revert back to default settings. *Note: there is currently no PresentOff command at this time. Use RestoreDefaultFonts to turn off Presentation Mode*

Bug fixes

- Fixed an issue where SSMS crashed when showplan scrolled via surface book touchpad
- Fixed an issue where SSMS hangs for a long times while getting the properties of a databases which is being restored or offline
- Fixed an issue where "Help viewer" could not be opened in RC builds
- Fixed an issue where "Maintenance Plans Tasks Toolbox" items may be missing in SSMS.
- Fixed an issue in SSMS where the user was unable to shrink a database when the database name contained curly braces. Connect Item
- Fixed an issue where SSMS was trying to script the deletion of an Azure database was actually causing the deletion of the database itself. Connect Item
- Fixed an issue where default values were not scripted for user defined table types. Connect Item
- Another round of perf improvements around context menu on indexes. Connect Item
- Fixed issue which was causing excessive flickering when hovering mouse over missing index in execution plan. Connect Item
- Fixed an issue where SSMS was taking the DB offline when scripting Connect Item
- Miscellaneous UI fixes on localized (non-English) versions of SSMS.
- Fixed issue where "Always Encrypted Keys" node was missing when targeting SQL 2016 SP1 Standard Edition.
- Always Encrypted "Always Encrypted" menu was incorrectly enabled when targeting SQL 2016 RTM Standard Edition or any SQL 2014 (and below) servers Fixed an issue where IntelliSense is reporting an error when the CREATE OR ALTER syntax is used Fixed issue where encryption fails in case CMK/CEK contain characters that should be escaped, i.e. enclosed in brackets When an Out of Memory exception occurs in SSMS, the user is presented an error that suggests to use the native (64bit) PowerShell instead. Fixed issue where the AE wizard was failing in case the user was using Resource Group Manager subscriptions instead of Classic Azure subscriptions Fixed issue where AE wizard was showing an incorrect error when the user had no permissions in any subscriptions or had no Azure Key Vaults in any of them. Fixed issue in AE wizard where the Azure Key Vault sign-in page was not showing Azure subscriptions in case of multiple AAD Fixed issue in AE wizard where the Azure Key Vault sign-in page was not showing Azure subscriptions for which the user has reader permission
  - Fixed an issue where resource files may not be loaded correctly, thus resulting in inaccurate error messages
- Improved contrast of hyperlinks on SSMS Setup page
- Fixed an issue where PolyBase nodes were not displayed when connected to SQL Server Express (2016 SP1)
- Fixed an issue where SSMS is unable to change the Compatibility Level of an Azure DB to v140
- Improved performance of Object Explorer when expanding the list of Azure databases Connect Item
- Fixed an issue where "View SQL Server Log" context menu item appeared incorrectly for non-relational server types (AS\RS\IS)
- Fixed an issue where checking syntax of an Analysis Services partition query using SQL auth could result in login failed message
- Fixed an issue where renaming a preview 1400 compat-level AS tabular model would fail in SSMS
- Fixed an “operation failed on model” issue that could occur after attempting an invalid operation on the AS server in rare circumstances, revert local changes after unsuccessful save on the model
- Fixed a typo in Analysis Services Synchronize Database popup dialog
- Backup/restore container dialogs come up offscreen on multiple monitor setups.
- SecurityPolicy create fails if target object has] in its name.
- SSMS 2016 "Open recent" menu doesn't show recently saved files. Connect Item
- Removed reset of user settings when VS Shell is updated.

- Fixed an issue that was preventing the user from being able to change Compatibility Level of a database on SQL Server 2017.
- Query windows using AAD Universal authentication cannot refresh the query after an hour.
- Utility Control Point UI removed from SSMS.
- AD Universal auth connections fail to query data after the initial token expiration.
- Unable to script Rules from Azure SQL DB to Azure SQL DB.
- Fixed issue where SQL PowerShell was not able to connect legacy SQL instances (2014 and older). Connect Item
- Fixed an issue that was causing SSMS to crash when failing to import registered servers.
- Fixed an issue that was causing SSMS to crash if a user has certain permissions an a database.
- SSMS - tables disappear from design surface while reviewing views. Connect Item
- The table scrollbar does not allow the user to scroll the table content, only the up/down Arrow allow this. Its also possible to scroll the table content after trying to scroll using the scrollbar which is a bug. Connect Item
- Registered Servers not displaying icons after refreshing the root node.
- Script button for Create Database on Azure v12 servers executes script then displays message "No action to be scripted".
- SSMS Connect to Server dialog does not clear "Additional Properties" tab for each new connection.
- Generate Tasks script doesn't generate Create Database scripts for an Azure SQL DB.
- Scrollbar in View Designer appears disabled.
- Always Encrypted AVK key paths do not include version ids.
- Reduced number of engine edition queries in the query window. Connect Item
- Always Encrypted errors from refreshing modules after encryption are incorrectly handled.
- Changed default connection timeout for OLTP and OLAP from 15 to 30 seconds to fix a class of ignored connection failures.
- Fixed a crash in SSMS when custom report is launched. Connect Item
- Fixed an issue where "Generate Script..." fails for Azure SQL databases.
- Fix "Script As" and "Generate Script Wizard" to not add extra newlines when scripting objects such as stored procedures. Connect Item
- SQLAS PowerShell Provider: Add LastProcessed property to Dimension and MeasureGroup folders. Connect Item
- Live Query Statistics: fixed issue where it was only showing the first query in a batch. Connect Item
- Showplan: show max instead of sum across the threads in properties window.
- Query Store: add new report on queries with high execution variation.
- Object explorer performance issues: Connect Item Context menu for tables momentarily hangs SSMS is slow when right-clicking an index for a table (over a remote (Internet) connection). Avoid issuing table queries that sort on the server
- Removed Azure Deployment Wizard (Deploy Database to Azure VM) from SSMS
- Fixed issue where missing indexes were not shown in execution plans in SSMS Connect Item
- Fixed common crash-on-shutdown issue in SSMS
- Fixed issue in Object Explorer where an error occurred when bringing up the context menu on the PolyBase|Scale-Out Group nodes Connect Item
- Fixed an issue where SSMS may crash when trying to display the permissions on a database
- Query Store: general enhancements in context menu items for result grids of query store report
- Configuring Always Encrypted for an existing table fails with errors on unrelated objects. Connect Item
- Configuring Always Encrypted for an existing database with multiple schemas doesn't work. Connect Item
- The Always Encrypted, Encrypted Column wizard fails due to the database containing views that reference system views. Connect Item
- When encrypting using Always Encrypted, errors from refreshing modules after encryption are incorrectly

handled.

- Fixed UI truncation issue on "New Server Registration" dialog
- Fix DMF Condition UI incorrectly updating expressions that contain string constant values with quotes in them
- Fixed an issue that may cause SSMS to crash when running custom reports
- Add “Execution in Scale Out...” menu item to the folder node
- Fixed an issue with Azure SQL DB firewall whitelist IP address feature
- Fixed an issue in SSMS which caused an Object reference not set exception when editing the source of AS multi-dimensional partition
- Fixed an issue in SSMS which caused an Object reference not set exception when deleting a customer assembly from multi-dimensional AS server
- Fixed an issue where renaming an AS tabular 1400 db failed
- Fixed an issue with scripting a 1400 compat-level AS tabular datasource from connection properties dialog
- Remove assumption that tables in AS 1400 compat-level model have at least one partition
- Ctrl-R now toggles results pane in SSMS DAX query editor

SSMS 16.5.3

Generally available | Build number: 13.0.16106.4

Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean | Portuguese (Brazil) | Russian | Spanish

The following issues were fixed this release:

- Fixed an issue introduced in SSMS 16.5.2 which was causing the expansion of the 'Table' node when the table had more than one sparse column.
- Users can deploy SSIS packages containing OData Connection Manager which connect to a Microsoft Dynamics AX/CRM Online resource to SSIS catalog. For more information, see OData Connection Manager.
- Configuring Always Encrypted on an existing table fails with errors on unrelated objects. Connect ID 3103181
- Configuring Always Encrypted for an existing database with multiple schemas doesn't work. Connect ID 3109591
- The Always Encrypted, Encrypted Column wizard fails due to the database containing views that reference system views. Connect ID 3111925
- When encrypting using Always Encrypted, errors from refreshing modules after encryption are incorrectly handled.
- *Open recent* menu doesn't show recently saved files. Connect ID 3113288
- SSMS is slow when right-clicking an index for a table (over a remote (Internet) connection). Connect ID 3114074
- Fixed an issue with the SQL Designer scrollbar. Connect ID 3114856
- Context menu for tables momentarily hangs
- SSMS occasionally throws exceptions in Activity Monitor and crashes. Connect ID 697527
- SSMS 2016 crashes with error "The process was terminated due to an internal error in the .NET Runtime at IP 71AF8579 (71AE0000) with exit code 80131506"

Uninstall and reinstall SSMS 17.x

If your SSMS installation is having problems, and a standard uninstall and reinstall doesn't resolve them, you can first try repairing the Visual Studio 2015 IsoShell. If repairing the Visual Studio 2015 IsoShell doesn't resolve the problem, the following steps have been found to fix many random issues:

1. Uninstall SSMS the same way you uninstall any application (using *Apps & features*, *Programs and features*, etc. depending on your version of Windows).
2. Uninstall Visual Studio 2015 IsoShell **from an elevated cmd prompt**:

   ```
   PUSHD "C:\ProgramData\Package Cache\FE948F0DAB52EB8CB5A740A77D8934B9E1A8E301\redist"
   ```

   ```
   vs_isoshell.exe /Uninstall /Force /PromptRestart
   ```

3. Uninstall Microsoft Visual C++ 2015 Redistributable the same way you uninstall any application. Uninstall both x86 and x64 if they're on your computer.
4. Reinstall Visual Studio 2015 IsoShell **from an elevated cmd prompt**:

   ```
   PUSHD "C:\ProgramData\Package Cache\FE948F0DAB52EB8CB5A740A77D8934B9E1A8E301\redist"
   ```

   ```
   vs_isoshell.exe /PromptRestart
   ```

5. Reinstall SSMS.
6. Upgrade to the latest version of the Visual C++ 2015 Redistributable if you're not currently up to date.

Additional Downloads

For a list of all SQL Server Management Studio downloads, search the Microsoft Download Center.

For the latest release of SQL Server Management Studio, see Download SQL Server Management Studio (SSMS).

Download SQL Server Management Studio (SSMS)

11/2/2018 • 5 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

Please help improve SQL Server docs!

SSMS is an integrated environment for managing any SQL infrastructure, from SQL Server to Azure SQL Database. SSMS provides tools to configure, monitor, and administer instances of SQL. Use SSMS to deploy, monitor, and upgrade the data-tier components used by your applications, as well as build queries and scripts.

Use SQL Server Management Studio (SSMS) to query, design, and manage your databases and data warehouses, wherever they are - on your local computer, or in the cloud.

SSMS is free!

SSMS 17.9 is the current General Availability (GA) version of SSMS

Download SQL Server Management Studio 17.9

Download SQL Server Management Studio 17.9 Upgrade Package (upgrades 17.x to 17.9)

For additional details about SSMS 17.9, please see the SSMS 17.9 changelog.

SSMS 18.0 (preview)

SSMS 18.0 Public Preview 4 is now available, and is the latest generation of *SQL Server Management Studio* that provides support for SQL Server 2019 preview!

Download SQL Server Management Studio 18.0 (preview 4)

Preview 4 is the first public preview of SSMS 18.0.

Version Information

- Release number: 18.0 (preview 4)
- Build number: 15.0.18040.0
- Release date: September 24, 2018

If you have comments or suggestions, or you want to report issues, the best way to reach out to the SSMS Team is at UserVoice.

The SSMS 18.x installation does not upgrade or replace SSMS versions 17.x or earlier. SSMS 18.x installs side by side with previous versions so both versions are available for use.

If a computer contains side by side installations of SSMS, verify you start the correct version for your specific needs. The latest version is labeled *Microsoft SQL Server Management Studio 18*:

Available Languages (SSMS 18.0 preview)

This release of SSMS can be installed in the following languages:

SQL Server Management Studio 18.0 (preview 4):
Chinese (Simplified) | Chinese (Traditional) | English (United States) | French | German | Italian | Japanese | Korean

| Portuguese (Brazil) | Russian | Spanish

SQL Server Management Studio 18.0 Upgrade Package (upgrades to 18.0):
No upgrade option is available at this time.

> **NOTE**
> The SQL Server PowerShell module is a separate install through the PowerShell Gallery. For more information, see Download SQL Server PowerShell Module.

New in this Release (SSMS 18.0 preview)

SSMS 18.0 (preview) is the latest version of SQL Server Management Studio. The 18.x generation of SSMS provides support for almost all feature areas on SQL Server 2008 through SQL Server 2019 preview.

For details about what's new in this release, see the SSMS changelog.

Supported SQL offerings (SSMS 18.0 preview)

- This version of SSMS works with all supported versions of SQL Server 2008 - SQL Server 2019 preview and provides the greatest level of support for working with the latest cloud features in Azure SQL Database and Azure SQL Data Warehouse.
- Additionally, SSMS 18.x can be installed side by side with SSMS 17.x, SSMS 16.x, or SQL Server 2014 SSMS and earlier.
- SQL Server Integration Services (SSIS) - SSMS version 17.x or later does not support connecting to the legacy SQL Server Integration Services service. To connect to an earlier version of the legacy Integration Services, use the version of SSMS aligned with the version of SQL Server. For example, use SSMS 16.x to connect to the legacy SQL Server 2016 Integration Services service. SSMS 17.x and SSMS 16.x can be installed side-by-side on the same computer. Since the release of SQL Server 2012, the SSIS Catalog database, SSISDB, is the recommended way to store, manage, run, and monitor Integration Services packages. For details, see SSIS Catalog.

Supported Operating systems (SSMS 18.0 preview)

This release of SSMS supports the following 64-bit platforms when used with the latest available service pack:

- Windows 10 (64-bit) *
- Windows Server 2016 *
- Windows Server 2012 R2 (64-bit)
- Windows Server 2012 (64-bit)
- Windows Server 2008 R2 (64-bit)

* Requires version 1607 (10.0.14939) or later

> **NOTE**
> SSMS runs on Windows only. If you need a tool that runs on platforms other than Windows, take a look at Azure Data Studio. Azure Data Studio is a new cross-platform tool that runs on macOS, Linux, as well as Windows. For details, see Azure Data Studio.

SSMS installation tips and issues (SSMS 18.0 preview)

Minimize Installation Reboots

- Take the following actions to reduce the chances of SSMS setup requiring a reboot at the end of installation:
  - Make sure you are running an up-to-date version of the Visual C++ 2013 Redistributable Package. Version 12.0.40649.5 (or greater) is required. Only the x64 version is needed.
  - Verify the version of .NET Framework on the computer is 4.6.1 (or greater).
  - Close any other instances of Visual Studio that are open on the computer.
  - Make sure all the latest OS updates are installed on the computer.
  - The noted actions are typically required only once. There are few cases where a reboot is required during additional upgrades to the same major version of SSMS. For minor upgrades, all the prerequirements for SSMS are already installed on the computer.

Release Notes (SSMS 18.0 preview)

The following are known issues in the current release:

> **IMPORTANT**
> When using *Active Directory – Universal with MFA Support* authentication with the SQL query editor, users may experience their connection being closed and reopened with each query invocation. Side effects of such closure include global temporary tables being dropped unexpectedly and sometimes a new SPID being given to the connection. This closure will not occur if there is an open transaction on the connection. To work around this issue, users can set `persist security info=true` in the connection parameters.

SSMS

- Double-clicking on a .sql file launches SSMS, but does not open the actual script.
  - Workaround: drag and drop the .sql file onto the SSMS editor.

SSIS

- Package can't be deployed or executed successfully when it targets SQL Server of old version and contains Script Task/Script component at the same time.
- SSMS can't connect to remote Integration Services.

Previous releases

Previous SQL Server Management Studio Releases

Feedback

SQL Client Tools Forum

Get Help

- All the ways to get help
- UserVoice - Suggestion to improve SQL Server?
- Setup and Upgrade - MSDN Forum
- SQL Server Data Tools - MSDN forum
- Transact-SQL - MSDN forum
- SQL Server Security - MSDN Forum
- DBA Stack Exchange (tag sql-server) - ask SQL Server questions
- Stack Overflow (tag sql-server) - also has some answers about SQL development
- Reddit - general discussion about SQL Server

- Microsoft SQL Server License Terms and Information
- Support options for business users
- Contact Microsoft
- Edit SQL Docs
- SQL Docs Feedback
- SQL Docs Survey

See Also

- Tutorial: SQL Server Management Studio
- SQL Server Management Studio documentation
- Additional updates and service packs
- Download SQL Server Data Tools (SSDT)

Contribute SQL documentation

Did you know that you could edit the content yourself? If you do so, not only will our documentation improve, but you'll also be credited as a contributor to the page.

- How to contribute to SQL Server Documentation

If you have comments or suggestions, or you want to report issues, the best way to reach out to the SSMS Team is at UserVoice.

Install non-English language versions of SQL Server Management Studio (SSMS)

10/9/2018 • 2 minutes to read • Edit Online

SSMS is available in several languages, but the SSMS installer blocks installation on computers when their system locale doesn't match the SSMS language.

The following directions differ depending on your version of Windows. The following are for Windows 10.

Install non-English SSMS on a computer running an English operating system (OS)

1. Install the Windows language pack for the language you want SSMS to use:
   - **Settings** > **Time & language** > **Region & language** > **Add a language**
2. Now set the system locale to use the language pack installed in the previous step by clicking the language just installed, then select **Set as default**. (After installing SSMS, you can set the system locale back to English.)
3. Once your operating system is running in the desired language, install the SSMS version of that same language. The first time you install a new SSMS language, use the full package. You can use the upgrade package for subsequent installs.
4. Run SSMS, and it should display as the language you installed in the previous step.
5. Set your computer's system locale back to English.

Install SSMS in a language other than the language of the installed OS

1. Install the Windows language pack for the language you want SSMS to use:
   - **Settings** > **Time & language** > **Region & language** > **Add a language**
2. Now set the system locale to use the language pack installed in the previous step by clicking the language just installed, then select **Set as default**.
3. Once your operating system is running in the desired language, install the SSMS version of that same language. The first time you install a new SSMS language, use the full package. You can use the upgrade package for subsequent installs.
4. For each language you want to install that does not match the language of the first version of SSMS you installed, install the corresponding Visual Studio 2015 Shell (Isolated) Language Pack:
   - Browse to https://connect.microsoft.com/VisualStudio/ExtendVS (you may need to sign in and complete the *Connect Registration* process).
   - Download the desired Visual Studio 2015 Shell (Isolated) Language Pack and install it.

   > **IMPORTANT**
   > Use the previous steps to install the Visual Studio 2015 Isolated Shell Language Pack, do not use the **Get additional languages** link on **Tools** | **Options** | **International Settings**.

5. Run SSMS and select the language you want to use in:
   - **Tools** | **Options** | **International Settings**
6. Close and restart SSMS.

Next steps

- Tutorial: SQL Server Management Studio

Install SQL Server PowerShell module

10/8/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

This article provides directions for installing the **SqlServer** PowerShell module.

> **NOTE**
>
> There are two SQL Server PowerShell modules:
>
> - **SQLPS**: This module is included with the SQL Server installation (for backwards compatibility), but is no longer being updated. The most up-to-date PowerShell module is the **SqlServer** module.
> - **SqlServer**: This module includes new cmdlets to support the latest SQL features. The module also contains updated versions of the cmdlets in **SQLPS**.

Previous versions of the **SqlServer** module *were* included with SQL Server Management Studio (SSMS), but only with the 16.x versions of SSMS. To use PowerShell with SSMS 17.0 and later, the **SqlServer** module must be installed from the PowerShell Gallery. The current version of the **SqlServer** module is 21.0.17279. This is based on version v140 of Microsoft.SQLServer.SMO.
If you are looking for a version of the module that supports the next version of SQL Server (based on version v150 of Microsoft.SQLServer.SMO), please refer to the section at the bottom of this page on how to get pre-release versions of the module. The latest pre-release version of the module is 21.1.18040-preview.

To install the **SqlServer** module from the PowerShell Gallery, start a PowerShell session and use the following commands. If you run into problems installing, see the Install-Module documentation and Install-Module reference.

To install the **SqlServer** module:

```
Install-Module -Name SqlServer
```

If there are previous versions of the **SqlServer** module on the computer, you may be able to use `Update-Module` (later in this article), or provide the `-AllowClobber` parameter:

```
Install-Module -Name SqlServer -AllowClobber
```

If you are not able to run the PowerShell session as administrator, you can install for the current user:

```
Install-Module -Name SqlServer -Scope CurrentUser
```

When updated versions of the **SqlServer** module are available, you can update the version using `Update-Module`:

```
Update-Module -Name SqlServer
```

To view the versions of the module installed:

```
Get-Module SqlServer -ListAvailable
```

To use a specific version of the module, you can import it with a specific version number similar to the following:

```
Import-Module SqlServer -Version 21.0.17178
```

NOTE

Prerelease (or "preview") versions of the module may be available on the PowerShell Gallery. They may be discovered and installed by using the updated *Find-Module* and *Install-Module* cmdlets that are part of the PowerShellGet module) by passing the *-AllowPrerelease* switch.

To discover the prerelease/preview version of the module, you can run the following command:

```
Find-Module SqlServer -AllowPrerelease
```

To install a specific prerelease/preview version of the module, you can install it with a specific version number similar to the following:

```
Install-Module SqlServer -RequiredVersion 21.1.18040-preview -AllowPrerelease
```

The versions of the **SqlServer** module in the PowerShell Gallery support versioning and require PowerShell version 5.0 or greater.

- SqlServer module in the PowerShell Gallery
- SqlServer cmdlets
- SQLPS cmdlets

SQL Server Agent

10/1/2018 • 9 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database (Managed Instance only) Azure SQL Data Warehouse Parallel Data Warehouse

> **IMPORTANT**
> On Azure SQL Database Managed Instance, most, but not all SQL Server Agent features are currently supported. See Azure SQL Database Managed Instance T-SQL differences from SQL Server for details.

SQL Server Agent is a Microsoft Windows service that executes scheduled administrative tasks, which are called *jobs* in SQL Server 2017.

In This Topic

- Benefits of SQL Server Agent
- Components of SQL Server Agent
- Security for SQL Server Agent Administration

Benefits of SQL Server Agent

SQL Server Agent uses SQL Server to store job information. Jobs contain one or more job steps. Each step contains its own task, for example, backing up a database.

SQL Server Agent can run a job on a schedule, in response to a specific event, or on demand. For example, if you want to back up all the company servers every weekday after hours, you can automate this task. Schedule the backup to run after 22:00 Monday through Friday; if the backup encounters a problem, SQL Server Agent can record the event and notify you.

> **NOTE**
> By default, the SQL Server Agent service is disabled when SQL Server 2017 is installed unless the user explicitly chooses to autostart the service.

SQL Server Agent Components

SQL Server Agent uses the following components to define the tasks to be performed, when to perform the tasks, and how to report the success or failure of the tasks.

Jobs

A *job* is a specified series of actions that SQL Server Agent performs. Use jobs to define an administrative task that can be run one or more times and monitored for success or failure. A job can run on one local server or on multiple remote servers.

IMPORTANT

SQL Server Agent jobs that are running at the time of a failover event on a SQL Server failover cluster instance do not resume after failover to another failover cluster node. SQL Server Agent jobs that are running at the time a Hyper-V node is paused do not resume if the pause causes a failover to another node. Jobs that begin but fail to complete because of a failover event are logged as started, but do not show additional log entries for completion or failure. SQL Server Agent jobs in these scenarios appear to have never ended.

You can run jobs in several ways:

- According to one or more schedules.
- In response to one or more alerts.
- By executing the sp_start_job stored procedure.

Each action in a job is a *job step*. For example, a job step might consist of running a Transact-SQL statement, executing an SSIS package, or issuing a command to an Analysis Services server. Job steps are managed as part of a job.

Each job step runs in a specific security context. For job steps that use Transact-SQL, use the EXECUTE AS statement to set the security context for the job step. For other types of job steps, use a proxy account to set the security context for the job step.

Schedules

A *schedule* specifies when a job runs. More than one job can run on the same schedule, and more than one schedule can apply to the same job. A schedule can define the following conditions for the time when a job runs:

- Whenever SQL Server Agent starts.
- Whenever CPU utilization of the computer is at a level you have defined as idle.
- One time, at a specific date and time.
- On a recurring schedule.

For more information, see Create and Attach Schedules to Jobs.

Alerts

An *alert* is an automatic response to a specific event. For example, an event can be a job that starts or system resources that reach a specific threshold. You define the conditions under which an alert occurs.

An alert can respond to one of the following conditions:

- SQL Server events
- SQL Server performance conditions
- Microsoft Windows Management Instrumentation (WMI) events on the computer where SQL Server Agent is running

An alert can perform the following actions:

- Notify one or more operators
- Run a job

For more information, see Alerts.

Operators

An *operator* defines contact information for an individual responsible for the maintenance of one or more instances of SQL Server. In some enterprises, operator responsibilities are assigned to one individual. In enterprises with multiple servers, many individuals can share operator responsibilities. An operator does not contain security information, and does not define a security principal.

SQL Server can notify operators of alerts through one or more of the following:

- E-mail
- Pager (through e-mail)
- **net send**

> **NOTE**
> To send notifications by using **net send**, the Windows Messenger service must be started on the computer where SQL Server Agent resides.

> **IMPORTANT**
> The Pager and **net send** options will be removed from SQL Server Agent in a future version of SQL Server. Avoid using these features in new development work, and plan to modify applications that currently use these features.

To send notifications to operators by using e-mail or pagers, you must configure SQL Server Agent to use Database Mail. For more information, see Database Mail.

You can define an operator as the alias for a group of individuals. In this way, all members of that alias are notified at the same time. For more information, see Operators.

Security for SQL Server Agent Administration

SQL Server Agent uses the **SQLAgentUserRole**, **SQLAgentReaderRole**, and **SQLAgentOperatorRole** fixed database roles in the **msdb** database to control access to SQL Server Agent for users who are not members of the **sysadmin** fixed server role. In addition to these fixed database roles, subsystems and proxies help database administrators ensure that each job step runs with the minimum permissions required to perform its task.

Roles

Members of the **SQLAgentUserRole**, **SQLAgentReaderRole**, and **SQLAgentOperatorRole** fixed database roles in **msdb**, and members of the **sysadmin** fixed server role have access to SQL Server Agent. A user that does not belong to any of these roles cannot use SQL Server Agent. For more information on the roles used by SQL Server Agent, see Implement SQL Server Agent Security.

Subsystems

A subsystem is a predefined object that represents functionality that is available to a job step. Each proxy has access to one or more subsystems. Subsystems provide security because they delimit access to the functionality that is available to a proxy. Each job step runs in the context of a proxy, except for Transact-SQL job steps. Transact-SQL job steps use the EXECUTE AS command to set the security context to the owner of the Job.

SQL Server defines the subsystems listed in the following table:

SUBSYSTEM NAME	DESCRIPTION

SUBSYSTEM NAME	DESCRIPTION
Microsoft ActiveX Script	Run an ActiveX scripting job step. **Warning** The ActiveX Scripting subsystem will be removed from SQL Server Agent in a future version of Microsoft SQL Server. Avoid using this feature in new development work, and plan to modify applications that currently use this feature.
Operating System (**CmdExec**)	Run an executable program.
PowerShell	Run a PowerShell scripting job step.
Replication Distributor	Run a job step that activates the replication Distribution Agent.
Replication Merge	Run a job step that activates the replication Merge Agent.
Replication Queue Reader	Run a job step that activates the replication Queue Reader Agent.
Replication Snapshot	Run a job step that activates the replication Snapshot Agent.
Replication Transaction Log Reader	Run a job step that activates the replication Log Reader Agent.
Analysis Services Command	Run an Analysis Services command.
Analysis Services Query	Run an Analysis Services query.
SSIS package execution	Run an SSIS package.

> **NOTE**
> Because Transact-SQL job steps do not use proxies, there is no SQL Server Agent subsystem for Transact-SQL job steps.

SQL Server Agent enforces subsystem restrictions even when the security principal for the proxy would normally have permission to run the task in the job step. For example, a proxy for a user that is a member of the sysadmin fixed server role cannot run an SSIS job step unless the proxy has access to the SSIS subsystem, even though the user can run SSIS packages.

Proxies

SQL Server Agent uses proxies to manage security contexts. A proxy can be used in more than one job step. Members of the **sysadmin** fixed server role can create proxies.

Each proxy corresponds to a security credential. Each proxy can be associated with a set of subsystems and a set of logins. The proxy can be used only for job steps that use a subsystem associated with the proxy. To create a job step that uses a specific proxy, the job owner must either use a login associated with that proxy or be a member of a role with unrestricted access to proxies. Members of the **sysadmin** fixed server role have unrestricted access to proxies. Members of **SQLAgentUserRole**, **SQLAgentReaderRole**, or **SQLAgentOperatorRole** can only use proxies to which they have been granted specific access. Each user that is a member of any of these SQL Server Agent fixed database roles must be granted access to specific proxies so that the user can create job steps that use those proxies.

Related Tasks

Use the following steps to configure SQL Server Agent to automate SQL Server administration:

1. Establish which administrative tasks or server events occur regularly and whether these tasks or events can be administered programmatically. A task is a good candidate for automation if it involves a predictable sequence of steps and occurs at a specific time or in response to a specific event.
2. Define a set of jobs, schedules, alerts, and operators by using SQL Server Management Studio, Transact-SQL scripts, or SQL Server Management Objects (SMO). For more information, see Create Jobs.
3. Run the SQL Server Agent jobs you have defined.

> **NOTE**
> For the default instance of SQL Server, the SQL Server service is named SQLSERVERAGENT. For named instances, the SQL Server Agent service is named SQLAgent$*instancename*.

If you are running multiple instances of SQL Server, you can use multiserver administration to automate tasks common across all instances. For more information, see Automated Administration Across an Enterprise.

Use the following tasks to get started with SQL Server Agent:

DESCRIPTION	TOPIC
Describes how to configure SQL Server Agent.	Configure SQL Server Agent
Describes how to start, stop, and pause the SQL Server Agent service.	Start, Stop, or Pause the SQL Server Agent Service
Describes considerations for specifying an account for the SQL Server Agent service.	Select an Account for the SQL Server Agent Service
Describes how to use the SQL Server Agent error log.	SQL Server Agent Error Log
Describes how to use performance objects.	Use Performance Objects
Describes the Maintenance Plan Wizard, which is a utility that you can use to help create jobs, alerts, and operators to automate administration of an instance of SQL Server.	Use the Maintenance Plan Wizard
Describes how to automate administrative tasks using SQL Server Agent.	Automated Administration Tasks (SQL Server Agent)

See Also

Surface Area Configuration

F1 Help for Server Connections (SQL Server Management Studio)

10/1/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

This section contains the F1 Help for the **Connect to Server** dialog box pages in SQL Server Management Studio.

Browse for Servers (Local Servers)

Browse for Servers (Network Servers)

Connect to Server (Analysis Services)

Connect to Server (Connection Properties Page) Analysis Services

Connect to Server (Connection Properties Page) Database Engine

Connect to Server (Connection Properties Page) Integration Services

Connect to Server (Connection Properties Page) Reporting Services

Connect to Server (Database Engine)

Connect to Server (Integration Services)

Connect to Server (Login Page) Analysis Services

Connect to Server (Login Page) Database Engine

Connect to Server (Login Page) Integration Services

Connect to Server (Login Page) Reporting Services

Connect to Server (Reporting Services)

Password Expired

SQL Server Management Studio Menu Help

10/1/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

This section contains F1 Help for the dialog boxes and pages available from the menu bar in Microsoft SQL Server Management Studio.

About SQL Server Management Studio

Advanced Save Options

Choose Search Folders Dialog Box (Visual Studio)

Choose Toolbox Items (Maintenance Tasks Page)

Customize (Commands Page)

Customize (Toolbars Page)

External Tools

Open With (New File)

Options Dialog Boxes F1 Help

Save As

Save Changes

Windows Dialog Box (Microsoft Document Explorer Help)

Object Explorer

10/1/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

SQL Server Management Studio provides features for managing objects in instances of the Database Engine, Analysis Services, Integration Services, and Reporting Services.

Benefits of Object Explorer

Object Explorer provides a hierarchical user interface to view and manage the objects in each instance of SQL Server. The Object Explorer Details pane presents a tabular view of instance objects, and the capability to search for specific objects. The capabilities of Object Explorer vary slightly depending on the type of server, but generally include the development features for databases, and management features for all server types.

Object Explorer Tasks

DESCRIPTION	TOPIC
Describes how to open the Object Explorer and configure the options that define the behavior of the explorer.	Open and Configure Object Explorer
Describes how to connect Object Explorer to an instance of the Database Engine, Analysis Services, Reporting Services, and Integration Services.	Connect to an Instance From Object Explorer
Describes how to manage objects represented as nodes in the Object Explorer hierarchy.	Manage Objects by Using Object Explorer
Describes the Object Explorer Details Pane, a tabular view of all of the objects in the server with a user interface to manage them.	Object Explorer Details Pane
Describes ways to run custom reports in SQL Server Management Studio.	Custom Reports in Management Studio

Solution Explorer

10/1/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

The Solution Explorer pane in Microsoft SQL Server Management Studio provides containers called projects for managing items such as database scripts, queries, data connections, and files. One or more projects that are related to each other can be combined in a container called a solution.

A solution includes one or more projects, plus files and metadata that help define the solution as a whole. A project is a set of files, plus related metadata such as connection information. Solutions and projects contain items that represent the scripts, queries, connection information and files that you need to create your database solution.

> **IMPORTANT**
> This feature is in maintenance mode and may be removed in a future version of Microsoft SQL Server. Avoid using this feature in new development work, and plan to modify applications that currently use this feature.

Benefits of Using Solutions

Use these containers to:

- Implement source control on queries and scripts.
- Manage settings for your solution as a whole or for individual projects.
- Handle the details of file management while you focus on items that make up your database solution.
- Add items that are useful to multiple projects in the solution or to the solution without referencing the item in each project.
- Work on miscellaneous files that are independent from solutions or projects.

The items contained in projects depend on the project type and whether you are using SQL Server Management Studio.

Related Tasks

Use the following topics to get started with SQL Server Solutions:

Description	Topic
Describes how to collect one or more projects in a solution.	Solutions (SQL Server Management Studio)
Describes how to create a project and add items like scripts and connections.	Projects (SQL Server Management Studio)
Provides information about the files used by SQL Server Management Studio to manage solutions and files.	Files That Manage Solutions and Projects

Template Explorer

10/1/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

SQL Server provides a variety of templates. Templates are boilerplate files containing SQL scripts that help you create objects in a database. The first time the template explorer is opened, a copy of the templates are placed in the user's folder in C:\Users, under AppData\Roaming\Microsoft\SQL Server Management Studio\130\Templates.

You can browse the available templates in Template Explorer, then open a template to incorporate the code into a code editor window. You can also create custom templates.

Benefits of Templates

Templates are available for solutions, projects, and various types of code editors. Templates are available to create objects like databases, tables, views, indexes, stored procedures, triggers, statistics, and functions. In addition, there are templates that help you to manage your server by creating extended properties, linked servers, logins, roles, users, and templates for Analysis Services.

The template scripts provided with SQL Server Management Studio contain parameters to help you customize the code. When you open a template, Use the **Replace Template Parameters** dialog box to insert values into the script.

Create custom templates for tasks you perform frequently. Organize your custom scripts into the existing folders or create a new folder structure.

The Database Engine Query editor also supports code snippets, which can be inserted at specific locations in a script by right-clicking at that location.

Related Tasks

Use the following topics to get started with templates

DESCRIPTION	TOPIC
Describes how to incorporate the code from a template into a code editor window.	Open a Template
Describes how to replace template parameter values after opening a template in a code editor.	Replace Template Parameters

Visual Database Tools

10/1/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

SQL Server Management Studio includes visual designers for building Transact-SQL queries, tables, and diagramming databases.

Related Tasks

Use the following tasks to get started with Visual Database Tools:

DESCRIPTION	TOPIC
Describes the database diagram tool.	Design Database Diagrams (Visual Database Tools)
Describes the visual table design tool.	Design Tables (Visual Database Tools)
Describes the visual query designer.	Design Queries and Views How-to Topics (Visual Database Tools)

Register Servers

10/1/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

Registering a server in SQL Server Management Studio allows you to store the server connection information for future connections.There are three ways to register a server in SQL Server Management Studio.

1. Local instances of SQL Server are automatically registered during the first launch of Management Studio after its installation.
2. You can also initiate the automatic registration process at any time, to restore the registration of local server instances.
3. Lastly, you can register a server using the Registered Servers tool in SQL Server Management Studio.

Benefits of Registered Servers

With Registered Servers you can:

- Register servers to preserve the connection information.
- Determine if a registered server is running.
- Easily connect Object Explorer and Query Editor to a registered server.
- Edit or delete the registration information for a registered server.
- Create groups of servers.
- Provide user-friendly names for registered servers by providing a value in the **Registered server name** box that is different from the **Server name** list.
- Provide detailed descriptions for registered servers.
- Provide detailed descriptions of registered server groups.
- Export registered server groups.
- Import registered server groups.
- View the SQL Server log files for online or offline instances of SQL Server.

Related Tasks

Use the following topics to get started with registered servers:

DESCRIPTION	TOPIC
Register local server instances	Register a Connected Server (SQL Server Management Studio)
Register a server	Create a New Registered Server (SQL Server Management Studio)
View registered servers	View Registered Servers in SQL Server Management Studio

DESCRIPTION	TOPIC
Remove a registered server	Remove a Registered Server (SQL Server Management Studio)
Change a server's registration	Change a Server's Registration (SQL Server Management Studio)
Connect to a registered server	Connect to a Registered Server (SQL Server Management Studio)
Disconnect from a registered server	Disconnect from a Registered Server (SQL Server Management Studio)
Move a registered server or server group	Move a Registered Server or Registered Server Group (SQL Server Management Studio)
Change the name of a registered server or server group	Change the Name of a Registered Server or Registered Server Group (SQL Server Management Studio)
Create or edit a server group	Create or Edit a Server Group (SQL Server Management Studio)
Remove a server group	Remove a Server Group (SQL Server Management Studio)
Export registered server information	Export Registered Server Information (SQL Server Management Studio)
Import registered server information	Import Registered Server Information (SQL Server Management Studio)
Create a Central Management Server and Server Group	Create a Central Management Server and Server Group (SQL Server Management Studio)
Execute statements against multiple servers simultaneously	Execute Statements Against Multiple Servers Simultaneously (SQL Server Management Studio)

See Also

Remote Servers

Tutorials for SQL Server Management Studio (SSMS)

11/2/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

Please help improve SQL Server docs!

The SQL Server Management Studio (SSMS) tutorial introduces you to the integrated environment for managing your SQL Server infrastructure. SQL Server Management Studio presents a graphical interface for configuring, monitoring, and administering instances of SQL Server. It also allows you to deploy, monitor, and upgrade the data-tier components used by your applications, such as databases. SQL Server Management Studio also provides Transact-SQL, MDX, DMX, and XML language editors for editing and debugging scripts.

What You Will Learn

These tutorials will help you understand the presentation of information in SSMS and how to take advantage of its features.

The best way to get acquainted with SSMS is through hands-on practice. These tutorials will familiarize you with the various features available within SSMS. These tutorials will teach you how to manage the components of SSMS and how to find the features that you use regularly.

Here is what the tutorials cover:

- Tutorial: Connect & Query SQL Server using SSMS

  In this Tutorial, you learn how to connect to your SQL Server instance. You will also learn some basic Transact-SQL (T-SQL) commands to create and then query a new database.

- Tutorial: Scripting Objects in SSMS

  In this Tutorial, you learn how to script out various objects in SSMS, including databases and queries.

- Tutorial: Using Templates in SSMS

  In this Tutorial, you learn how to work with the pre-built Templates within SSMS. The templates are a little-known feature that store a number of Transact-SQL code snippets for various database administration tasks.

- Tutorial: SSMS Configuration

  In this Tutorial, you learn the basics of configuring your SSMS environment, such as the changing the environmental layout. This Tutorial also explains what the different SSMS components are.

- Tutorial: Additional Tips and Tricks for using SSMS

  In this Tutorial, you will learn additional tips and tricks for using SSMS. The Tutorial includes the following:

  - Commenting and uncommenting text
  - Indenting text
  - Filtering Objects in Object Explorer
  - Accessing your SQL Server error log
  - Finding the name of your instance

Requirements

This tutorial is intended for experienced database administrators and database developers who are not familiar with Visual Studio, but who are familiar with database concepts and Transact-SQL.

You must have the following installed to use this tutorial:

- Install the latest version of SQL Server Management Studio (SSMS).

The first section walks you through creating a database but other sample databases can be found here: AdventureWorks Sample Databases. Instructions for restoring databases in SSMS can be found here: Restoring a Database.

See Also

Database Engine Tutorials

Introduction to SQL Server Management Studio for Business Intelligence

10/1/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

To access, configure, manage, and administer Analysis Services, Integration Services, and Reporting Services, use SQL Server Management Studio. Although all three business intelligence technologies rely on SQL Server Management Studio, the administrative tasks associated with each of these technologies are slightly different.

> **NOTE**
> To create and modify Analysis Services, Reporting Services, and Integration Services solutions, use SQL Server Data Tools (SSDT), not SQL Server Management Studio. SQL Server Data Tools (SSDT) is a development environment that is based on Microsoft Visual Studio.

Managing Analysis Services Solutions Using SQL Server Management Studio

SQL Server Management Studio enables you to manage Analysis Services objects, such as performing back-ups and processing objects.

Management Studio provides an Analysis Services Script project in which you develop and save scripts written in Multidimensional Expressions (MDX), Data Mining Extensions (DMX), and XML for Analysis (XMLA). You use Analysis Services Scripts projects to perform management tasks or re-create objects, such as database and cubes, on Analysis Services instances. For example, you can develop an XMLA script in an Analysis Services Script project that creates new objects directly on an existing Analysis Services instance. The Analysis Services Scripts projects can be saved as part of a solution and integrated with source code control.

For more information about how to use SQL Server Management Studio, see Developing and Implementing Using SQL Server Management Studio.

Managing Integration Services Solutions Using SQL Server Management Studio

SQL Server Management Studio enables you to use the Integration Services service to manage packages and monitor running packages. You can also use Management Studio to organize packages into folders, run packages, import and export packages, migrate Data Transformation Services (DTS) packages, and upgrade Integration Services packages.

Managing Reporting Services Projects Using SQL Server Management Studio

Use SQL Server Management Studio to enable Reporting Services features, administer the server and databases, and manage roles and jobs.

You manage shared schedules by using the Shared Schedules folder, and manage report server databases (ReportServer, ReportServerTempdb). You also create a RSExecRole in the Master system database when you

move a report server database to a new or different SQL Server Database Engine (SQL Server Database Engine). For more information about these tasks, see the following topics:

- Management Studio How-to Topics
- Administering a Report Server Database
- How to: Create the RSExecRole

You also manage the server by enabling and configuring various features, setting server defaults, and managing roles and jobs. For more information about these tasks, see the following topics:

- How to: Set Report Server Properties (Management Studio)
- How to: Create, Delete, or Modify a Role (Management Studio)
- Enabling and Disabling Client-Side Printing for Reporting Services

See Also

Developing and Implementing Using SQL Server Data Tools
Reporting Services in SQL Server Data Tools

Customize Menus and Shortcut Keys

10/1/2018 • 4 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

A keyboard accelerator allows you to select a menu command or button by pressing ALT+. For example, to open the **Edit** menu, press ALT+E. You can rearrange and modify toolbar buttons, menus, and menu commands by using the **Customize** dialog box. Instructions are provided for changing the settings using the mouse and using only the keyboard.

Keyboard accelerators for stored procedures using the Ctrl key can be created from the **Keyboard** page of the **Tools**/**Options** dialog box.

> **NOTE**
> Click **Collapse All** at the top of this page to show only the headings.

Opening the Keyboard Accelerator Dialog Box Using the Mouse

To access the dialog box for assigning or changing a keyboard accelerator (using the mouse)

1. On the **Tools** menu, click **Customize**.
2. Make sure the toolbar you want to change is visible.
   a. In the **Customize** dialog box, click the **Toolbars** tab.
   b. Select the check box for the toolbar you want to display.
3. In the **Customize** dialog box, click the **Commands** tab.

Changing a Toolbar Buttons Accelerator Key Using the Mouse

To assign or change a toolbar button's keyboard accelerator (using the mouse)

1. Click the button on the toolbar.
2. In the **Customize** dialog box, on the **Commands** tab, click **Modify Selection**.
3. In the **Name** box on the shortcut menu, type a name for the toolbar button with an ampersand (&) before the letter that you want as the keyboard accelerator.
4. Press **ENTER**.
5. In the **Customize** dialog box, click **Close**.

Changing a Menu Commands Accelerator Key Using the Mouse

To assign or change a menu command's keyboard accelerator (using the mouse)

1. Click the menu name on the menu bar or toolbar.
2. Click the menu command.
3. In the **Customize** dialog box, click **Modify Selection**.
4. In the **Name** box on the shortcut menu, type a name for the menu command with an ampersand (&) before

the letter that you want as the keyboard accelerator.

5. Press **ENTER**.
6. In the **Customize** dialog box, click **Close**.

Opening the Keyboard Accelerator Dialog Box Using the Keyboard

To access the dialog box for assigning or changing a keyboard accelerator (using the keyboard)

1. Press ALT+T, then type C, to open the **Customize** dialog box.
2. Make sure the toolbar you want to change is visible.
   a. In the **Customize** dialog box, press ALT+B to show the **Toolbars** tab.
   b. Use the arrow keys to select the toolbar you want to display, then **SPACE** to select the check box.
3. In the **Customize** dialog box, press ALT+C to display the **Commands** tab.

Changing a Toolbar Buttons Accelerator Key Using the Keyboard

To assign or change a toolbar button's keyboard accelerator (using the keyboard)

1. Press ALT+R to display the **Rearrange Commands** dialog box.
2. In the **Rearrange Commands** dialog box, use the arrow keys to select **Toolbar**.
3. Tab to the **Toolbar** list, and use the arrow keys to select the toolbar that contains the button you want to change, and then press **ENTER**.
4. Tab to the **Controls** list, and use the arrow keys to select the button you want to change.
5. Press **ALT+M**, to select **Modify Selection**.
6. Tab to the **Name** box on the shortcut menu, type a name for the toolbar button with an ampersand (&) before the letter that you want as the keyboard accelerator.
7. Press **ENTER**.
8. Tab to the **Close** button, and then press **ENTER**.

Changing a Menu Commands Accelerator Key Using the Keyboard

To assign or change a menu command's keyboard accelerator (using the keyboard)

1. Press ALT+R to display the **Rearrange Commands** dialog box.
2. Tab to **Menu Bar** and then use the arrow keys to click the menu you want in the **Menu Bar** list, and then press **ENTER**.
3. Tab to the **Controls** list, and use the arrow keys to select the button you want to change.
4. Press ALT+M, to select **Modify Selection**.
5. Tab to the **Name** box on the shortcut menu, and type a name for the toolbar button with an ampersand (&) before the letter that you want as the keyboard accelerator.
6. Press **ENTER**.
7. In the **Customize** dialog box, click **Close**.

Creating a Keyboard Accelerator for a Stored Procedure

To create a keyboard accelerator for a stored procedure

1. On the **Tools** menu, click **Options**.
2. On the **Keyboard** page, select an unused keyboard combination in the **Shortcut** list.
3. In the **Stored Procedure** box, type the stored procedure name, and then click **OK**.

Adding a New Item to the Menu

To add a new item to the menu

1. On the **Tools** menu, click **Options**.
2. In the **Customize** dialog box, on the **Commands** tab, click **New Menu**.
3. On the **Commands** box, drag **New Menu** to the menu bar and drop it where you want the new menu to appear.
4. On the menu, right-click **New Menu**, and in the **Name** box, type a name for the new menu.
5. In the **Customize** dialog box, select category such as **File**, and select a command such as **Open File**. Drag the command to the new menu. As you point to the new menu, the menu will expand. Drop the command onto the expanded menu.
6. In the **Customize** dialog box, click **Close**.

> **NOTE**
>
> Some commands are available only when SQL Server Management Studio is displaying relevant content. If no commands on the menu are available, the menu item will not be available.

See Also

Features in SQL Server Management Studio

Tool Windows in SQL Server Management Studio

10/1/2018 • 2 minutes to read • Edit Online

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SQL Server Management Studio provides many powerful tool windows for all phases of development and administration. Some tools can be used on any SQL Server component, and others are for certain components only. The following table identifies the tools that can be used for all components of SQL Server.

Tool	Purpose
Object Explorer	Browse servers, create and locate objects, manage data sources, and view logs. This tool is accessed from the **View** menu.
Solution Explorer	Store and organize scripts and related connection information in projects called SQL Server Scripts. You can store several SQL Server Scripts as Solutions and use source control to manage scripts as they evolve over time. This tool is accessed from the **View** menu.
Template Explorer	Create queries based on existing templates. You can also create your custom queries or alter the existing templates to fit your scenarios. This tool is accessed from the **View** menu.
Dynamic Help	Show a list of related Help topics as you click on a component or type code.

The tools in SQL Server Management Studio work together. For example, you can:

- Register a server with Object Explorer.
- Open a SQL Editor window connected to a specific database from Object Explorer.

See Also

Use SQL Server Management Studio

Build Database Projects by Using SQL Server Management Studio

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A database script project is an organized set of scripts, connection information, and templates that are all associated with a database or one part of a database. Microsoft SQL Server provides the SQL Server Management Studio for administering and designing SQL Server databases within the context of a script project. SQL Server Management Studio includes designers, editors, guides and wizards to assist users in developing, deploying and maintaining databases.

SQL Server Management Studio

SQL Server Management Studio is a suite of administrative tools for managing the components belonging to SQL Server. This integrated environment allows users to perform a variety of tasks, such as backing up data, editing queries, and automating common functions within a single interface.

SQL Server Management Studio includes the following tools:

- Code Editor is a rich script editor for writing and editing scripts. SQL Server Management Studio provides four versions of the Code Editor; the Database Engine Query Editor for Transact-SQL scripts, the DMX Query Editor, the MDX Query Editor, and the XML/A Query Editor.
- Object Explorer for locating, modifying, scripting or running objects belonging to instances of SQL Server.
- Template Explorer for locating and scripting templates.
- Solution Explorer for organizing and storing related scripts as parts of a project.
- Properties Window for displaying the current properties of selected objects.

SQL Server Management Studio supports efficient work processes by providing:

- Disconnected access. You can write and edit scripts without connecting to an instance of SQL Server.
- Scripting from any dialog box. You can create a script from any dialog box so that you can read, modify, store and reuse the scripts after you create them.
- Nonmodal dialog boxes. When you access a UI dialog box you can browse other resources in SQL Server Management Studio without closing the dialog box.

Solutions and Script Projects

Solution Explorer is a utility to store and reopen database solutions. Solutions organize related script projects and files. Script projects store SQL Server script files, SQL templates, connection information and other miscellaneous files. When a script is saved in a script project, users are able to:

- Maintain version control on scripts.
- Store results options with a script.
- Organize related scripts in a single script project.

- Save connection information with scripts.

Solution Explorer is a tool for developers who are creating and reusing scripts that are related to the same project. If a similar task is required later, you can use group of scripts that were stored in a project. If you have created applications by using Microsoft Visual Studio, you will find Solution Explorer very familiar.

A solution consists of one or more script projects. A project consists of one or more scripts or connections. A project may also include nonscript files.

See Also

Use SQL Server Management Studio
Writing, Analyzing, and Editing Queries with SQL Server Management Studio
Solutions (SQL Server Management Studio)

Understand SQL Server Management Studio Windows Management

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The tool windows in Microsoft SQL Server Management Studio are a highly functional, flexible, and efficient system that allows you to:

- Maximize the user workspace for development and management.
- Reduce the number of unused windows displayed at one time.
- Easily customize the user environment.

Manipulating windows is central to the Management Studio environment. Users can easily access the tools and windows they use frequently. Users can control how much space they want to allocate to different information, and the environment should maximize the space available for editing queries accordingly. Windows can be moved to different locations on the screen. Many windows can be undocked and dragged out of the Management Studio frame. This is particularly useful when using more than one monitor.

To increase your editing space while maintaining functionality, all windows offer the Auto Hide feature, which displays the window as a tab within a bar along the border of the main Management Studio environment. When the pointer is placed over one of these tabs, the underlying window reveals itself. Auto Hide for a window can be toggled by clicking the **Auto Hide** button, represented by a pushpin in the upper-right corner of the window. There is also an **Auto Hide All** option on the **Window** menu.

Some components can be configured in either tabbed mode where components appear as tabs in the same docking location, or in multiple document interface (MDI) mode where each document has its own window. To configure this feature, on the **Tools** menu, click **Options**, click **Environment**, and then click **General**.

> **IMPORTANT**
>
> When a login (or a contained database user) connects and is authenticated, the connection stores identity information about the login. For a Windows Authentication login, this includes information about membership in Windows groups. The identity of the login remains authenticated as long as the connection is maintained. To force changes in the identity, such as a password reset or change in Windows group membership, the login must logoff from the authentication authority (Windows or SQL Server), and log in again. A member of the **sysadmin** fixed server role or any login with the **ALTER ANY CONNECTION** permission can use the **KILL** command to end a connection and force a login to reconnect. SQL Server Management Studio can reuse connection information when opening multiple connections to Object Explorer and Query Editor windows. Close all connections to force reconnection.

IMPORTANT

When a login (or a contained database user) connects and is authenticated, the connection caches identity information about the login. For a Windows Authentication login, this includes information about membership in Windows groups. The identity of the login remains authenticated as long as the connection is maintained. To force changes in the identity, such as a password reset or change in Windows group membership, the login must logoff from the authentication authority (Windows or SQL Server), and log in again. A member of the **sysadmin** fixed server role or any login with the **ALTER ANY CONNECTION** permission can use the **KILL** command to end a connection and force a login to reconnect. SQL Server Management Studio can reuse connection information when opening multiple connections to Object Explorer and Query Editor windows. Close all connections to force reconnection.

See Also

Use SQL Server Management Studio
The SQL Server Management Studio Environment

Administer Servers with SQL Server Management Studio

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Microsoft SQL Server Management Studio is a rich, integrated administrative client designed to meet the SQL Server and Azure SQL Database administrator's server management requirements. In Management Studio, administrative tasks are accomplished using Object Explorer, which allows you to connect to any server in the SQL Server family and graphically browse its contents. A server can be an instance of the Database Engine, Analysis Services, Reporting Services, Integration Services or Azure SQL Database.

The tool components of Management Studio include Registered Servers, Object Explorer, Solution Explorer, Template Explorer, the Object Explorer Details page, and the document window. To display a tool, on the **View** menu, click the tool name. To display the Query Editor tool, click the **New Query** button on the toolbar.

> **IMPORTANT**
>
> Network traffic between Management Studio and SQL Server is unencrypted by default. Do not work with sensitive data (including passwords) in Management Studio unless you have established an encrypted connection. For more information, see How to: Enable Encrypted Connections to the Database Engine (SQL Server Configuration Manager).

Use Management Studio to:

- Register servers.
- Connect to an instance of the Database Engine, SSAS, SSRS, SSIS or Azure SQL Database.
- Configure server properties.
- Manage database and SSAS objects such as cubes, dimensions, and assemblies.
- Create objects, such as databases, tables, cubes, database users, and logins.
- Manage files and filegroups.
- Attach or detach databases.
- Launch scripting tools.
- Manage security.
- View system logs.
- Monitor current activity.
- Configure replication.
- Manage full-text indexes.

To start and stop SQL Server or SQL Server Agent, use SQL Server Configuration Manager.

See Also

Configure WMI to Show Server Status in SQL Server Tools

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This topic describes how to configure WMI to show the server status in SQL Server tools in SQL Server 2017. When connecting to servers, both the Registered Servers and Object Explorer components of SQL Server Management Studio, as well as SQL Server Configuration Manager, use Windows Management Instrumentation (WMI) to obtain the status of the SQL Server (MSSQLSERVER) and SQL Server Agent (MSSQLSERVER) services. To display the status of the service, the user must have rights to remotely access the WMI object. The server must have WMI installed to configure this permission.

To configure WMI permission

1. On the **Start** menu on the remote server, click **Run**.
2. In the **Open** box type **wmimgmt.msc**, and then click **OK**.
3. In the **Windows Management Infrastructure** program, right-click **WMI Control (Local)**, and then click **Properties**.
4. In the **WMI Control (Local) Properties** dialog box, on the **Security** tab, expand **Root**, and then click **CIMV2**.
5. Click **Security** to open the **Security for ROOT\CIMV2** dialog box.
6. Add a group or user to the **Group or user names** box and select it.
7. In the **Permissions for** box, select the **Allow** column, for the **Remote Enable** permission, for users whom you wish to remotely detect the service status.

See Also

Start, Stop, or Pause the SQL Server Agent Service

The SQL Server Management Studio Environment

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APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

SQL Server Management Studio provides a rich environment for managing and developing queries in SQL Server.

In This Section

General User Interface Elements
Outline general features of the user interface, such as Solution Explorer, Object Explorer, the Properties window, and the integrated Web browser.

Solution Explorer
Introduces Solution Explorer, which provides you with an organized view of your projects and their files as well as ready access to commands for managing them.

Solution Explorer Source Control
Describes how SQL Server Management Studio integrates with source control products.

General User Interface Elements

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The **Editor**, the **Properties** window, and the **Toolbox** are some of the basic elements of Microsoft SQL Server Management Studio.

In This Section

About Dialog Box
Describes the dialog box that provides information about SQL Server Management Studio and about the computer that it is running on.

SQL Server Management Studio Web Browser
Describes how SQL Server Management Studio hosts a Web browser in a document window.

External Tools Dialog Box
Allows you to add tools to the **Tools** menu that are not part of SQL Server Management Studio.

Properties Window (Management Studio)
Allows you to view properties and events of selected objects that are located in editors and designers. Also allows you to edit and view the properties of files, projects, and solutions. Some properties can be edited in the Properties window.

Use the Toolbox
Explains how to manipulate and use the **Toolbox** to add controls to your project's designers. For example, you use the **Toolbox** to add steps to a Maintenance task.

Arguments Dialog Box

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The **Arguments** dialog box specifies new or existing arguments for a tool. This dialog box appears when you launch an external tool that has the **Prompt for arguments** option selected in the **External Tools** dialog box.

Options

Arguments
Lists the current variables specified for the tool in the **External Tools** dialog box. For a complete list of predefined arguments and their definitions, see Arguments for External Tools. You can also enter a custom argument.

Command line
Displays the value for the arguments specified in the **Arguments** dialog box.

See Also

Arguments for External Tools
External Tools Dialog Box
General User Interface Elements

About Dialog Box

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The **About** dialog box provides product information and allows you to access information about the machine the product is running on. For evaluation copies, the Microsoft SQL Server Management Studio entry lists the number of days remaining until the installation expires. This dialog box is available on the **Help** menu.

Options

Component Name
Lists the name of each SQL Server item installed.

Version
Lists the version of each installed component.

Copy Info
Copies the component names and versions to the Microsoft Windows clipboard.

See Also

General User Interface Elements

SQL Server Management Studio Web Browser

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SQL Server Management Studio hosts a version of Microsoft Internet Explorer. This Web browser allows you to browse URLs, and view MSDN Library help topics without leaving SQL Server Management Studio. You can access the Web browser by pointing to **Web Browser** on the **View** menu, and then clicking **Show Browser**.

See Also

General User Interface Elements

External Tools Dialog Box

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Use the **External Tools** dialog box to add external tools such as SQLCMD or Notepad to the **Tools** menu. Adding external tools allows you to easily launch other applications while working in the Microsoft SQL Server Management Studio environment. You can specify arguments and a working directory when launching the tool. In addition, the output from some tools can be displayed in the **Output** window. The **External Tools** dialog box is available on the **Tools** menu.

Options

Menu contents
Lists the titles of the items currently added to the **Tools** menu. Use the **Move Up** and **Move Down** arrows to change the order the items that appear on the menu. Use the **Delete** button to remove an item from the menu.

Move Up
Move the selected tool higher in the list of tools that appear on the **Tools** menu.

Move Down
Move the selected tool lower in the list of tools that appear on the **Tools** menu.

Add
Clear the text boxes so you can specify a new tool.

Delete
Remove the tool or command from the **Menu Contents** list as well as from the **Tools** menu.

Title
Enter the name of the tool or command that will appear on the **External Tools** submenu of the **Tools** menu. Place an ampersand (&) before a letter in the name of the tool to specify that letter as a keyboard shortcut. For example, "&SQLCMD" would display SQLCMD on the **Tools** menu.

Command
Specify the path to the file to launch.

Arguments
Specify the variables that are passed to the tool when the tool is selected on the menu. Arguments can specify values that are passed to the tool or command when it is launched. For example, a value can specify a file name or directory. Use the arrow button to select from a list of predefined arguments. You can add more than one. For a complete list of predefined arguments and their definitions, see Arguments for External Tools. You can also enter custom arguments (for example, command line switches), depending on the command or tool you use.

Use Output window
Opens the Management Studio Output window to display output of the command being run. Not all tools present output in a format that can be presented in the Output window. For more information, see Output Window.

Treat output as Unicode
Interprets the output as Unicode.

Initial directory
Specify the working directory of the tool. Use the arrow button to select directories. You can select more than one.

Prompt for arguments
Display the **Arguments** dialog box to allow you to enter or edit values for the arguments each time you launch the external tool.

Close on exit
Close the window opened by the tool when the tool is closed.

Example

Entering the following values in the **External Tools** dialog box will create a menu item labeled "DAC" that when selected, opens a command prompt and runs the **sqlcmd** utility using the dedicated administrator connection.

BOX	VALUE
Title	DAC
Command	C:\Program Files\Microsoft SQL Server*nnn*\Tools\Binn\SQLCMD.exe
Arguments	-A

See Also

Arguments for External Tools
General User Interface Elements

Property Pages in SQL Server Management Studio

10/1/2018 • 2 minutes to read • Edit Online

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Property page dialog boxes in Microsoft SQL Server Management Studio all use a common format displaying information with expanding and collapsing categories. The fields shown depend on the particular property. Properties shown in gray are read-only. Categorized and Alphabetic buttons are near the top of each property page.

The following table describes the common elements of Management Studio property page dialog boxes.

ELEMENT	DESCRIPTION
Categorized	Lists all properties and property values for the selected object, sorted by category. In category view, you can collapse a category to reduce the number of visible properties. When you expand or collapse a category, you see a plus sign (+) or minus sign (-) to the left of the category name. Categories are listed alphabetically.
Alphabetic	Lists all properties and property values for the selected object, sorted alphabetically.
Property name	The first column in the grid lists the property names.
Properties	The second column in the grid lists the property values.
Description pane	The description pane appears at the bottom of the page and shows the property type and a short description of the property. You can turn the description of the property off and on using the **Description** command on the shortcut menu.

Properties Window (Management Studio)

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APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

Use this window to view properties of selected elements. You can also use the Properties window to view file, project, and solution properties. The Properties window is available by clicking **Properties Window** on the **View** menu.

The Properties window displays different types of editing fields, depending on the needs of a particular property. Properties shown in gray are read-only.

Options

ELEMENT	DESCRIPTION
Object name	Lists the currently selected object or objects. Only objects from the active editor or designer are visible.
Categorized	Lists all properties and property values for the selected object, by category. You can collapse a category to reduce the number of visible properties. When you expand or collapse a category, you see a plus (+) or minus (-) to the left of the category name. Categories are listed alphabetically.
Alphabetic	Alphabetically sorts all design-time properties and events for selected objects.
Properties	Displays the properties for an object.
Description pane	The description pane appears at the bottom of the Properties window and shows the property type and a short description of the property. You can turn the description of the property off and on using the **Description** command on the shortcut menu.

See Also

General User Interface Elements

Output Window in SQL Server Management Studio

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The Output Window can be opened from the View menu or by using the key combination Ctrl+Alt+O. There are multiple channels of output available.

The following table gives an overview of the types of messages associated with each output channel.

CHANNEL	DESCRIPTION
Telemetry	Telemetry is the stream of anonymous feature usage data collected by Microsoft. These events could be useful for your own record keeping of SSMS usage. It can help you identify what Object Explorer nodes you expanded and what commands you ran during your SSMS session while the Output window was open.
Object Explorer	This channel outputs the query text and elapsed times of SQL queries needed to expand nodes in Object Explorer. Each query logs a Begin Query and an End Query event. Each event has a time stamp and the URN associated with the entity being queried. The URN refers to the underlying SQL Management Object and consists of an XPath-style hierarchy. For example, the URN for a table named "Table1" in database "Db" on server "MyServer" would be "Server[@Name='MyServer']/Database[@Name='Db']/Table[/@Name='Table1']". Expanding one node in Object Explorer could perform multiple such queries with different parameters. The End Query event will contain the elapsed time of the query along with the TSQL text. You may find this query data useful for server performance analysis in cases where Object Explorer seems unusually slow to expand a particular node. **Note**- not every node in Object Explorer provides this level of query detail when expanding.
Activity Monitor	This channel starts when Activity Monitor opens for a server. This stream contains events showing part of the query text and timestamp of each query, error messages, and notifications of the monitor being paused due to connectivity problems. If Activity Monitor seems to be idle or otherwise failing to update, check this output channel for more information.

SQL Server Management Studio Web Browser

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SQL Server Management Studio hosts a version of Microsoft Internet Explorer. This Web browser allows you to browse URLs, and view MSDN Library help topics without leaving SQL Server Management Studio. You can access the Web browser by pointing to **Web Browser** on the **View** menu, and then clicking **Show Browser**.

See Also

General User Interface Elements

Use the Toolbox

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You can select and drag items, text, and controls from the Toolbox onto forms, pages, and designers, and drag items from these sources back into the Toolbox for reuse later. For example, in SQL Server Management Studio you can drag a task onto a Maintenance Plan.

Items in the Toolbox are grouped into sections called tabs. Here is a reference list of common Toolbox tasks and how to do them:

TO	DO THIS
Open the Toolbox	On the **View** menu, click **Toolbox**.
Make the Toolbox close automatically	Open the Toolbox. On the **Window** menu, select **Auto Hide**.
Make the Toolbox stay open	Open the Toolbox. On the **Window** menu, clear **Auto Hide**.
Move the Toolbox to a different location	Open the Toolbox. On the **Window** menu, clear **Auto Hide**, and then select **Floating**. Drag the Toolbox to the desired location.
Hide the Toolbox	In the **Window** menu, select **Hide**. (To reopen the Toolbox, click **Toolbox** on the **View** menu.)
Expand a Toolbox tab	Click the desired tab in the Toolbox.
Expand Toolbox tabs one after another	Press CTRL+DOWN ARROW to expand the next Toolbox tab, or CTRL+UP ARROW to expand the previous tab.
Create a new Toolbox tab	Right-click anywhere in the Toolbox, and then click **Add Tab**. Type the name for the new tab, and then press Enter.
Insert a Toolbox item at the selected location on the designer	Drag an item from the Toolbox to the designer or double-click the desired item on the expanded Toolbox tab.
Change the position of a tab in the Toolbox	Drag the Toolbox tab to the new location preferred, and release the mouse.
Change the position of an item on an expanded Toolbox tab	Drag the item to the new location, and release the mouse.
Rename a Toolbox item	Right-click the Toolbox item, and click **Rename Item** on the shortcut menu.

See Also

General User Interface Elements

Arguments for External Tools

10/1/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

Arguments are variables that the Studio environment supplies values for when an external tool is launched from the **Tools** menu. External tools such as Notepad can be added to the **Tools** menu using the **External Tools** dialog box.

The following table lists arguments for external tools.

NAME	ARGUMENT	DESCRIPTION
Item Path	$(ItemPath)	The complete file name of the current source (defined as drive + path + file name); blank if a non-source window is active.
Item Directory	$(ItemDir)	The directory of the current source (defined as drive + path); blank if a non-source window is active.
Item File Name	$(ItemFilename)	The file name of the current source (defined as file name); blank if a non-source window is active.
Item extension	$(ItemExt)	The file name extension of the current source.
Current Line*	$(CurLine)	The current line position of the cursor in the editor.
Current Column*	$(CurCol)	The current column position of the cursor in the editor.
Current Text*	$(CurText)	The current text (the word under the current cursor position, or a single-line selection, if there is one).
Target Path	$(TargetPath)	The complete file name of the target (defined as drive + path + file name).
Target Directory	$(TargetDir)	The directory of the target.
Target Name	$(TargetName)	The file name of the target.
Target Extension	$(TargetExt)	The file name extension of the target.
Project Directory	$(ProjDir)	The directory of the current project (defined as drive + path).

NAME	ARGUMENT	DESCRIPTION
Project File Name	$(ProjFileName)	The file name of the current project (defined as drive + path + file name).
Solution Directory	$(SolutionDir)	The directory of the current solution (defined as drive + path).
Solution File Name	$(SolutionFileName)	The file name of the current solution (defined as drive + path + file name).

*The current line, current column, or current text is based on the position of the cursor in the text editor as shown in the status bar.

See Also

External Tools Dialog Box
General User Interface Elements

Add an External Tool to the Tools Menu (SQL Server Management Studio)

10/1/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

You can launch any Microsoft Windows or Microsoft .NET Framework application from SQL Server Management Studio. External applications can be added to, and run from, the **Tools** menu.

To add an external tool to the Tools menu

1. On the **Tools** menu, click **External Tools**.
2. In the **Title** text box, type the name you want to appear in the **Menu contents** list.
3. In the **Command** text box, type the program name. Include the path to the executable file if necessary.
4. In the **Arguments** text box, type the program arguments if necessary.
5. In the **Initial directory** text box, type the program's initial directory if necessary.
6. To add the tool to the **Menu contents** list, click **Add**; and then click **OK**.

Configure Login Auditing (SQL Server Management Studio)

10/1/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

This topic describes how to configure login auditing in SQL Server 2017 to monitor SQL Server Database Engine login activity. Login auditing can be configured to write to the error log on the following events.

- Failed logins
- Successful logins
- Both failed and successful logins

You must restart SQL Server before this option will take effect.

Using SQL Server Management Studio

To configure login auditing

1. In SQL Server Management Studio, connect to an instance of the SQL Server Database Engine with Object Explorer.
2. In Object Explorer, right-click the server name, and then click **Properties**.
3. On the **Security** page, under **Login** auditing, click the desired option and close the **Server Properties** page.
4. In Object Explorer, right-click the server name, and then click **Restart**.

Ssms Utility

10/1/2018 • 4 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

The **Ssms** utility opens SQL Server Management Studio. If specified, **Ssms** also establishes a connection to a server, and opens queries, scripts, files, projects, and solutions.

You can specify files that contain queries, projects, or solutions. Files that contain queries are automatically connected to a server if connection information is provided and the file type is associated with that type of server. For instance, .sql files will open a SQL Query Editor window in SQL Server Management Studio, and .mdx files will open an MDX Query Editor window in SQL Server Management Studio. **SQL Server Solutions and Projects** will open in SQL Server Management Studio.

> **NOTE**
> The **Ssms** utility does not run queries. To run queries from the command line, use the **sqlcmd** utility.

Syntax

```
Ssms
    [scriptfile] [projectfile] [solutionfile]
    [-S servername] [-d databasename] [-G] [-U username] [-P password]
    [-E] [-nosplash] [-log [filename]?] [-?]
```

Arguments

scriptfile
Specifies one or more script files to open. The parameter must contain the full path to the files.

projectfile
Specifies a script project to open. The parameter must contain the full path to the script project file.

solutionfile
Specifies a solution to open. The parameter must contain the full path to the solution file.

[**-S** *servername*]
Server name

[**-d** *databasename*]
Database name

[**-G**] Connect using Active Directory Authentication. The type of connection is determined whether **-P** and/or **-U** is included.

- If **-U** and **-P** are *not* included, then **Active Directory - Integrated** is used and no dialog will appear.
- If both **-U** and **-P** are included, then **Active Directory - Password** is used. Using this option is **not recommended** because you have to specify a clear text password on the command line, which is discouraged.
- If **-U** is included, but **-P** is missing, then auth dialog will pop up, but all attempts to login will fail.

Note that **Active Directory - Universal with MFA support** is not currently supported.

[**-U** *username*]
User name when connecting with 'SQL Authentication' or 'Active Directory - Password'

[**-P** *password*]
Password when connecting with 'SQL Authentication' or 'Active Directory - Password'

[**-E**]
Connect using Windows Authentication

[**-nosplash**]
Prevents SQL Server Management Studio from displaying the splash screen graphic while opening. Use this option when connecting to the computer running SQL Server Management Studio by means of Terminal Services over a connection with a limited bandwidth. This argument is not case-sensitive and may appear before or after other arguments

[**-log***[filename]?*]
Logs SQL Server Management Studio activity to the specified file for troubleshooting

[**-?**]
Displays command line help

Remarks

All of the switches are optional and separated by a space except files which are separated by commas. If you do not specify any switches, **Ssms** opens SQL Server Management Studio as specified in the **Options** settings on the **Tools** menu. For example, if the **Environment/General** page **At startup** option specifies **Open new query window**, **Ssms** will open with a blank Query Editor.

The **-log** switch must appear at the end of the command line, after all other switches. The filename argument is optional. If a filename is specified, and the file does not exist, the file is created. If the file cannot be created – for example, due to insufficient write access, the log is written to the nonlocalized APPDATA location instead (See below). If the filename argument is not specified, two files are written to the current user's nonlocalized application data folder. The nonlocalized application data folder for SQL Server can be found from the APPDATA environment variable. For example, for SQL Server 2012, the folder is <system drive>:\Users\<username>\AppData\Roaming\Microsoft\AppEnv\10.0\. The two files are, by default, named ActivityLog.xml and ActivityLog.xsl. The former contains the activity log data and the latter is an XML style sheet which provides a more convenient way to view the XML file. Use the following steps to view the log file in your default XML viewer, like Internet Explorer: Click Start, then click Run...", then type "<system drive>:\Users\<username>\AppData\Roaming\Microsoft\AppEnv\10.0\ActivityLog.xml" into the field provided, and then press Enter.

Files that contain queries will prompt to be connected to a server if connection information is provided and the file type is associated with that type of server. For instance, .sql files will open a SQL Query Editor window in SQL Server Management Studio, and .mdx files will open an MDX Query Editor window in SQL Server Management Studio. **SQL Server Solutions and Projects** will open in SQL Server Management Studio.

The following table maps server types to file extensions.

SERVER TYPE	EXTENSION
SQL Server	.sql

SERVER TYPE	EXTENSION
SQL Server Analysis Services	.mdx .xmla

Examples

The following script opens SQL Server Management Studio from a command prompt with the default settings:

```
Ssms
```

The following opens SQL Server Management Studio from a command prompt using *Active Directory - Integrated*:

```
Ssms.exe -S servername.database.windows.net -G
```

The following script opens SQL Server Management Studio from a command prompt, with Windows Authentication, with the Code Editor set to the server `ACCTG and the database AdventureWorks2012,` without showing the splash screen:

```
Ssms -E -S ACCTG -d AdventureWorks2012 -nosplash
```

The following script opens SQL Server Management Studio from a command prompt, and opens the MonthEndQuery script.

```
Ssms "C:\Documents and Settings\username\My Documents\SQL Server Management Studio
Projects\FinanceScripts\FinanceScripts\MonthEndQuery.sql"
```

The following script opens SQL Server Management Studio from a command prompt, and opens the NewReportsProject project on the computer named `developer`:

```
Ssms "\\developer\fin\ReportProj\ReportProj\NewReportProj.ssmssqlproj"
```

The following script opens SQL Server Management Studio from a command prompt, and opens the MonthlyReports solution:

```
Ssms "C:\solutionsfolder\ReportProj\MonthlyReports.ssmssln"
```

See Also

Use SQL Server Management Studio

SQL Server Management Studio Keyboard Shortcuts

10/1/2018 • 19 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

SQL Server Management Studio offers users two keyboard schemes. By default, it uses the SQL Server 2017 scheme, with keyboard shortcuts based on Microsoft Visual Studio 2010. Management Studio also offers a keyboard scheme similar to the standard scheme from SQL Server 2008 R2. To change the keyboard scheme or add additional keyboard shortcuts, on the **Tools** menu, click **Options**. Select the desired keyboard scheme on the **Environment**, **Keyboard** page.

> **NOTE**
> To show only the headings, click **Collapse All** at the top of this page.

Menu Activation Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Move to the SQL Server Management Studio menu bar	ALT	ALT
Activate the menu for a tool component	ALT+HYPHEN	ALT+HYPHEN
Display the context menu	SHIFT+F10	SHIFT+F10
Display the **New File** dialog box to create a file	CTRL+N	CTRL+N
Display the **New Project** dialog box to create a new project	CTRL+SHIFT+N	CTRL+SHIFT+N
Display the **Open File** dialog box to open an existing file	CTRL+O or CTRL+SHIFT+G	CTRL+O
Display the **Open Project** dialog box to open an existing project	CTRL+SHIFT+O	CTRL+SHIFT+O
Display the **Add New Item** dialog box to add a new file to the current project	CTRL+SHIFT+A	CTRL+SHIFT+A
Display the **Add Existing Item** dialog box to add an existing file to the current project	SHIFT+ALT+A	SHIFT+ALT+A
Display the Query Designer	CTRL+SHIFT+Q	CTRL+SHIFT+Q

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Close a menu or dialog box, canceling the action	ESC	ESC

Windows Management and Toolbar Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Close the current MDI child window	CTRL+F4	CTRL+F4
Close a menu or dialog box, cancels an operation in progress, or focuses on the current document window	ESC	ESC
Print	CTRL+P	CTRL+P
Exit	ALT+F4	ALT+F4
Toggle full screen mode	SHIFT+ALT+ENTER	SHIFT+ALT+ENTER
Close the current tool window	SHIFT+ESC	SHIFT+ESC
Cycle through the next MDI child windows	CTRL+F6	CTRL+TAB
Display the IDE navigator with the first document window selected	CTRL+TAB	No equivalent
Cycle through the previous MDI child windows	CTRL+SHIFT+TAB	CTRL+SHIFT+TAB
Moves the insertion point to the drop-down bar located at the top of the code editor when the editor is in Code view or Server Code view	CTRL+F2	No equivalent
Move to the current tool window toolbar	SHIFT+ALT	SHIFT+ALT
Display the IDE navigator with the first tool window selected	ALT+F7	No equivalent
Move to the next tool window	ALT+F6 or F6 in the Database Engine Query Editor	ALT+F6
Move to the previous tool window	SHIFT+ALT+F7	SHIFT+ALT+F7
Move to the next pane of a split pane view of a single document	F6	F6

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Move to the previously selected window	SHIFT+ALT+F6 or SHIFT+F6 in the Database Engine Query Editor	SHIFT+ALT+F6
Move to the previous pane of a split pane view of a single document	SHIFT+F6	F6
Display the dock menu	ALT+MINUS SIGN (-)	No equivalent
Display a popup listing all open windows	CTRL+ALT+DOWN ARROW	No equivalent
Opens a new query editor window	CTRL+O	CTRL+O
Display Object Explorer	F8	F8
Display Registered Servers	CTRL+ALT+G	CTRL+ALT+G
Display Template Explorer	CTRL+ALT+T	CTRL+ALT+T
Display Solution Explorer	CTRL+ALT+L	CTRL+ALT+L
Display the Summary Window	F7	F7
Display the Properties Window	F4	F4
Display the **Output** window	CTRL+ALT+O	No equivalent
Display the **Task List** window	CTRL+\, T or CTRL+\, CTRL+T	CTRL+ALT+K
Toggle between Object Explorer Details list view and Object Explorer Details property pane.	F6	F6
Control the splitter bar that separates the Object Explorer Details list view and Object Explorer Details property pane to adjust the size of the display pane.	TAB, then UP arrow or DOWN arrow	TAB, then UP arrow or DOWN arrow
Display the Toolbox	CTRL+ALT+X	CTRL+ALT+X
Display the Bookmarks Window	CTRL+K, CTRL+W	CTRL+K, CTRL+W
Display the Browser Window	CTRL+ALT+R	CTRL+ALT+R

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Display a smart tag menu of common commands for Web server controls in the HTML designer	SHIFT+ALT+F10	No equivalent
Display the Error List Window (Transact-SQL Editor only)	CRTL+\, CTRL+E or CTRL+\, E	CRTL+\, CTRL+E
Move to the next entry in the Error List window (Transact-SQL Editor only)	CTRL+SHIFT+F12	CTRL+SHIFT+F12
Display the previous page in the viewing history. Available only in the Web browser window	ALT+LEFT ARROW	No equivalent
Display the next page in the viewing history. Available only in the Web browser window	ALT+RIGHT ARROW	No equivalent

Cursor Movement Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Move the cursor left	LEFT ARROW	LEFT ARROW
Move the cursor right	RIGHT ARROW	RIGHT ARROW
Move the cursor up	UP ARROW	UP ARROW
Move the cursor down	DOWN ARROW	DOWN ARROW
Move the cursor to the beginning of the line	HOME	HOME
Move the cursor to the end of the line	END	END
Move the cursor to the beginning of the document	CTRL+HOME	CTRL+HOME
Move the cursor to the end of the document	CTRL+END	CTRL+END
Move the cursor up one screen	PAGE UP	PAGE UP
Move the cursor down one screen	PAGE DOWN	PAGE DOWN
Moves the cursor one word to the right	CTRL+ RIGHT ARROW	CTRL+ RIGHT ARROW
Moves the cursor one word to the left	CTRL+ LEFT ARROW	CTRL+ LEFT ARROW

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Returns the cursor to the last item.	SHIFT+F8	No equivalent
Moves the cursor to the top of the document	CTRL+PAGE UP	No equivalent
Moves to the previous tab in the document	CTRL+PAGE UP	
Moves the cursor to the bottom of the document	CTRL+PAGE DOWN	No equivalent
Moves to the next tab in the document	CTRL+PAGE DOWN	No equivalent

Text Selection Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Select text from the cursor to the beginning of the document	CTRL+SHIFT+ HOME	CTRL+SHIFT+ HOME
Select text from the cursor to the end of the document	CTRL+SHIFT+END	CTRL+SHIFT+END
Select text from the cursor to the start of the current line	SHIFT+HOME	SHIFT+HOME
Moves the cursor to the start of the current line and extends the column selection	SHIFT+ALT+HOME	No equivalent
Select text from the cursor to the end of the current line	SHIFT+END	SHIFT+END
Moves the cursor to the end of the line, extending the column selection.	SHIFT+ALT+END	No equivalent
Select text down line by line starting from the cursor	SHIFT+ DOWN ARROW	SHIFT+ DOWN ARROW
Moves the cursor down one line, extending the column selection	SHIFT+ Ctrl+Shift+Del	
Moves the cursor one character to the left and extends the selection	SHIFT+LEFT ARROW	No equivalent
Moves the cursor one character to the left and extends the column selection	SHIFT+ALT+LEFT ARROW	No equivalent
Moves the cursor one character to the right and extends the selection	SHIFT+RIGHT ARROW	No equivalent

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Moves the cursor one character to the righTt and extends the column selection	SHIFT+ALT+RIGHT ARROW	No equivalent
Select text up line by line starting from the cursor	SHIFT+UP ARROW	SHIFT+UP ARROW
Move the cursor up one line, extending the selection	SHIFT+ALT+ UP ARROW	SHIFT+ALT+ UP ARROW
Extend selection up one page	SHIFT+ PAGE UP	SHIFT+ PAGE UP
Extend selection down one page	SHIFT+ PAGE DOWN	SHIFT+ PAGE DOWN
Select the entire current document	CTRL+A	CTRL+A
Select the word containing the cursor, or the closest word	CTRL+W	CTRL+W
Select the current location in the editor, back to the previous location in the editor	CTRL+=	CTRL+=
Extend the selection to the top of the current window	CTRL+SHIFT+ PAGE UP	CTRL+SHIFT+ PAGE UP
Move the cursor to the last line in view, extending the selection	CTRL+SHIFT+ PAGE DOWN	CTRL+SHIFT+ PAGE DOWN
Extend the selection one word to the right	CTRL+SHIFT+ RIGHT ARROW	CTRL+SHIFT+ RIGHT ARROW
Extend the selection one word to the left	CTRL+SHIFT+ LEFT ARROW	CTRL+SHIFT+ LEFT ARROW
Move the cursor to the right one word, extending the selection	CTRL+SHIFT+ALT+ RIGHT ARROW	CTRL+SHIFT+ALT+ RIGHT ARROW
Move the cursor to the left one word, extending the selection	CTRL+SHIFT+ALT+ LEFT ARROW	CTRL+SHIFT+ALT+ LEFT ARROW
Move the cursor to the next brace, extending the selection	CTRL+SHIFT+]	No equivalent
Select the text from the current location of the cursor to the Navigate Backward (CTRL+MINUS SIGN (-)) location	CTRL+EQUAL SIGN (=)	No equivalent
Go back to the previous document or window in the navigation history	CTRL+MINUS SIGN (-)	No equivalent
Go forward to the next document or window in the navigation history	CTRL+SHIFT+MINUS SIGN (-)	No equivalent

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Swaps the anchor and end points of the current selection	CTRL+K, CTRL+A	No equivalent
Moves the cursor to the first line in view, extending the selection	CTRL+SHIFT+PAGE UP	No equivalent
Moves the cursor to the last line in view, extending the selection	CTRL+SHIFT+PAGE DOWN	No equivalent

Bookmark Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Set or remove a bookmark at the current line	CTRL+K, CTRL+K	CTRL+K, CTRL+K
Next bookmark	CTRL+K, CTRL+N	CTRL+K, CTRL+N
If the current bookmark is in a folder, moves to the next bookmark in the folder. Bookmarks outside the folder are skipped. If the bookmark is not in a folder, moves to the next bookmark at the same level. If the Bookmarks window contains folder, bookmarks in folders are skipped.	CTRL+SHIFT+K, CTRL+SHIFT+N	No equivalent
Previous bookmark	CTRL+K, CTRL+P	CTRL+K, CTRL+P
If the current bookmark is in a folder, moves to the next bookmark in the folder. Bookmarks outside the folder are skipped. If the bookmark is not in a folder, moves to the next bookmark at the same level. If the Bookmarks window contains folder, bookmarks in folders are skipped.	CTRL+SHIFT+K, CTRL+SHIFT+P	No equivalent
Clear bookmarks	CTRL+K, CTRL+L	CTRL+K, CTRL+L

Tree Control Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Collapse tree nodes	- (on the numeric keypad)	- (on the numeric keypad)
Expand all tree nodes	* (on the numeric keypad)	* (on the numeric keypad)

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Scroll the tree control up in the window	CTRL+UP ARROW	CTRL+UP ARROW
Scroll the tree control down in the window	CTRL+DOWN ARROW	CTRL+DOWN ARROW

Code Editor Keyboard Shortcuts

All shortcuts are not implemented in all types of code editors.

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Toggle the full-screen display	SHIFT+ALT+ENTER	SHIFT+ALT+ENTER
Scroll text up one line	CTRL+UP ARROW	CTRL+UP ARROW
Scroll text down one line	CTRL+DOWN ARROW	CTRL+ DOWN ARROW
Reverse the last editing action	CTRL+Z or ALT+BACKSPACE	CTRL+Z
Restore the previously undone edit	CTRL+SHIFT+Z or CTRL+Y or ALT+SHIFT+BACKSPACE	CTRL+SHIFT+Z or CTRL+Y or ALT+SHIFT+BACK SPACE
Save the selected item	CTRL+S	CTRL+S
Save all	CTRL+SHIFT+S	CTRL+SHIFT+S
Close	CTRL+F4	CTRL+F4
Print	CTRL+P	CTRL+P
Exit	ALT+F4	ALT+F4
Open the current file in a browser	CTRL+SHIFT+W	No equivalent
Delete all text in the current file	CTRL+SHIFT+DEL	CTRL+SHIFT+DEL
Display the **Go To Line** dialog box	CTRL+G	CTRL+G
Display the **Navigate To** dialog box.	CTRL+PLUS SIGN (+)	No equivalent
Increase line indent	TAB	TAB

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Decrease line indent	SHIFT+TAB	SHIFT+TAB
Make the selected text upper case	CTRL+SHIFT+U	CTRL+SHIFT+U
Make the selected text lower case	CTRL+U	CTRL+SHIFT+L
Make the selected text a comment	CTRL+K, CTRL+C	CTRL+K, CTRL+C
Uncomment the selected text	CTRL+K, CTRL + U	CTRL+K, CTRL + U
Open a new query with current connection	CTRL+N	CTRL+N
Open database in Object Explorer	ALT+F8	ALT+F8
Specify values for template parameters	CTRL+SHIFT+M	CTRL+SHIFT+M
Run the selected portion of the query editor or the entire query editor if nothing is selected	F5 or CTRL+SHIFT+E	F5 or CTRL+E or ALT+X
Parse the selected portion of the query editor or the entire query editor if nothing is selected	CTRL+F5	CTRL+F5
Display the estimated execution plan	CTRL+SHIFT+ALT+L	CTRL+L
Cancel the executing query	ALT+BREAK	ALT+BREAK
Include actual execution plan in the query output	CTRL+SHIFT+ALT+M	CTRL+M
Output results in a grid	CTRL+SHIFT+D	CTRL+D
Output results in text format	CTRL+T	CTRL+T
Output results to a file	CTRL+SHIFT+T	CTRL+SHIFT+F
Show or hide the query results pane	CTRL+R	CTRL+R
Show the query results pane	CTRL+SHIFT+ALT+R	
Toggle between query and results pane	F6	F6
Copy the result grid and headers to the clipboard	CTRL+SHIFT+C	No equivalent

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Move to the next active window in Management Studio	ALT+F6	ALT+F6
Open SQL Server Profiler	CTRL+ALT+P	CTRL+ALT+P
Display the Query Designer dialog from the query editor window	CTRL+SHIFT+Q	No equivalent
Run the **sp_help** system stored procedure	ALT+F1	ALT+F1
Run the **sp_who** system stored procedure	CTRL+1	CTRL+1
Run the **sp_lock** system stored procedure	CTRL+2	CTRL+2
Run the stored procedure configured for this shortcut in the **Tools**, **Options**, **Keyboard**, **Query Shortcuts** dialog	CTRL+3	CTRL+3
Run the stored procedure configured for this shortcut in the **Tools**, **Options**, **Keyboard**, **Query Shortcuts** dialog	CTRL+4	CTRL+4
Run the stored procedure configured for this shortcut in the **Tools**, **Options**, **Keyboard**, **Query Shortcuts** dialog	CTRL+5	CTRL+5
Run the stored procedure configured for this shortcut in the **Tools**, **Options**, **Keyboard**, **Query Shortcuts** dialog	CTRL+6	CTRL+6
Run the stored procedure configured for this shortcut in the **Tools**, **Options**, **Keyboard**, **Query Shortcuts** dialog	CTRL+7	CTRL+7
Run the stored procedure configured for this shortcut in the **Tools**, **Options**, **Keyboard**, **Query Shortcuts** dialog	CTRL+7	CTRL+7
Run the stored procedure configured for this shortcut in the **Tools**, **Options**, **Keyboard**, **Query Shortcuts** dialog	CTRL+8	CTRL+8
Run the stored procedure configured for this shortcut in the **Tools**, **Options**, **Keyboard**, **Query Shortcuts** dialog	CTRL+9	CTRL+9
Run the stored procedure configured for this shortcut in the **Tools**, **Options**, **Keyboard**, **Query Shortcuts** dialog	CTRL+0	CTRL+0

Text Manipulation in Code Editor Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Insert a new line	ENTER or SHIFT+ENTER	ENTER or SHIFT+ENTER
Swap the characters on either side of the cursor (Does not apply to the SQL Editor.)	CTRL+T	CTRL+T
Delete one character to the right of the cursor	DELETE	DELETE
Delete one character to the left of the cursor	BACKSPACE or SHIFT+ BACKSPACE	BACKSPACE or SHIFT+ BACKSPACE
Delete whitespace in the selection, or deletes whitespace adjacent to the cursor if there is no selection	CTRL+K, C	No equivalent
Insert the number of spaces configured for the editor	TAB	TAB
Insert a blank line above the cursor	CTRL+ENTER	CTRL+ENTER
Insert a blank line below the cursor	CTRL+SHIFT+ ENTER	CTRL+SHIFT+ ENTER
Change the selected text to lowercase	CTRL+SHIFT+L	CTRL+SHIFT+L
Change the selected text to uppercase	CTRL+SHIFT+U	CTRL+SHIFT+U
Toggle between insert mode and overtype mode	INSERT	INSERT
Move selected lines to the left on tab stop	SHIFT+TAB	SHIFT+TAB
Delete the word to the right of the cursor	CTRL+DELETE	CTRL+DELETE
Delete the word to the left of the cursor	CTRL+BACKSPACE	CTRL+BACKSPACE
Transpose the words on either side of the cursor (Does not apply to the SQL Editor.)	CTRL+SHIFT+T	CTRL+SHIFT+T
Moves the line containing the cursor below the next line	SHIFT+ALT+T	No equivalent

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Applies the indenting and space formatting for the language specified on the **Formatting** pane of the language in the **Text Editor** section of the **Options** dialog. Available only in the text editor.	CTRL+K, CTRL+D	No equivalent
Correctly indents the selected lines of code based on the surrounding lines of code	CTRL+K, CTRL+F	No equivalent
Set or remove a shortcut in the current line	CTRL+K, CTRL+H	No equivalent
Remove the comment syntax from the current line	CTRL+K, CTRL+U	No equivalent
Shows or hides spaces and tabs	CTRL+R, CTRL+W	No equivalent
Enables or disables word wrap in an editor	Alt+F, CTRL+W	No equivalent
Collapses all outlining regions to show just the outermost groups in the hierarchy	CTRL+M, CTRL+A	No equivalent
Collapses the currently selected outlining region	CTRL+M, CTRL+S	No equivalent
Expands all outlining regions on the page	CTRL+M, CTRL+X	No equivalent
Expands the currently selected outlining region	CTRL+M, CTRL+E	No equivalent
Collapses existing outlining regions	CTRL+M, CTRL+O	
Hides the selected text. A signal icon marks the location of the hidden text	CTRL+M, CTRL+H	No equivalent
Toggles all text sections previously marked as hidden between the hidden and display states.	CTRL+M, CTRL+L	No equivalent
Toggles the currently selected hidden text section between the hidden and display states	CTRL+M, CTRL+M	No equivalent
Removes all outlining information in the document	CTRL+M, CTRL+P	No equivalent
Removes the outlining information for the currently selected region	CTRL+M, CTRL+U	No equivalent

Transact-SQL Debugger Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Start or continue debugging	ALT+F5	ALT+F5
Stop debugging	SHIFT+F5	SHIFT+F5
Step into	F11	F11
Step over	F10	F10
Step out	SHIFT+F11	SHIFT+F11
Step into specific statement	SHIFT+ALT+F11	No equivalent
Set next statement	Ctrl+3 0	No equivalent
Show next statement	ALT+NUM	No equivalent
Implement the **Run To Cursor** command	CTRL+F10	CTRL+F10
Display the **QuickWatch** dialog box	CTRL+ALT+Q or SHIFT+F9	CTRL+ALT+Q
Toggle breakpoint	F9	F9
Enable breakpoint	CTRL+F9	No equivalent
Delete the breakpoint. Only available in the **Breakpoints** window	ALT+F9, D	No equivalent
Open the **Edit breakpoint labels** dialog. Only available in the **Breakpoints** window	ALT+F9, L	No equivalent
Delete all breakpoints	CTRL+SHIFT+F9	CTRL+SHIFT+F9
Display the **Breakpoints** window	CTRL+ALT+B	CTRL+ALT+B
Break all	CTRL+ALT+BREAK	CTRL+ALT+BREAK
Break at function	CTRL+B	No equivalent
Display the **Watch 1** window	CTRL+ALT+W, 1	No equivalent
Display the **Watch 2** window	CTRL+ALT+W, 2	CTRL+ALT+W, 1
Display the **Watch 3** window	CTRL+ALT+W, 3	CTRL+ALT+W, 3

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Display the **Watch 4** window	CTRL+ALT+W, 4	CTRL+ALT+W, 4
Display the **Autos** window	CTRL+ALT+V, A	CTRL+ALT+V, A
Display the **Locals** window	CTRL+ALT+V, L	CTRL+ALT+V, L
Display the **Immediate** window	CTRL+ALT+I	CTRL+ALT+I
Display the **Call Stack** window	CTRL+ALT+C	CTRL+ALT+C
Display the **Threads** window	CTRL+ALT+H	CTRL+ALT+H
Display the **Parallel Stacks** window.	CTRL+SHIFT+D, S	No equivalent
Display the **Parallel Tasks** window	CTRL_SHIFT+D, K	No equivalent

Microsoft IntelliSense Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
List members	CTRL+J	CTRL+SPACE or CTRL+J
Complete word	CTRL+SPACE or ALT+RIGHT ARROW	ALT+RIGHT ARROW
Display quick information	CTRL+K, CTRL+I	No equivalent
Display parameter information	CTRL+SHIFT+SPACE	CTRL+SHIFT+SPACE
Copy parameter tip	CTRL+SHIFT+ALT+C	No equivalent
Paste parameter tip	CTRL+SHIFT+ALT+P	No equivalent
Jump between syntax pairs	CTRL+]	CTRL+]
Launch code snippet picker	CTRL+K, CTRL+X	CTRL+K, CTRL+Z
Refresh local cache	CTRL+SHIFT+R	CTRL+SHIFT+R
Launch Surround With snippet picker	CTRL+K, CTRL+S	CTRL+K, CTRL+S
Display the Code Snippet Manager	CTRL+K, CTRL+B	No equivalent

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Changes the IntelliSense filter level from the **Common** tab to the **All** tab.	ALT+PLUS SIGN (+)	No equivalent
Changes the IntelliSense filter level from the **All** tab to the **Common** tab.	ALT+PERIOD (.)	No equivalent

Document Window and Browser Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Toggle full-screen mode	SHIFT+ALT+ENTER	SHIFT+ALT+ENTER
Move to the next pane of a split pane view of a document	F6	F6
Move to the previous document in the editor or designer	CTRL+SHIFT+F6 CTRL+SHIFT+TAB	CTRL+SHIFT+F6 CTRL+SHIFT+TAB
Move to the previous pane of a document in split pane view	SHIFT+F6	SHIFT+F6
Back, display the previous page in the viewing history	ALT+LEFTARROW	ALT+LEFTARROW
Forward, display the next page in the viewing history	ALT+RIGHTARROW	ALT+RIGHTARROW
Closes a menu or dialog box, cancels an operation in progress, or places focus in the current window	ESC	No equivalent

Solution Explorer Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Display Solution Explorer	CTRL+ALT+L	CTRL+ALT+L
Display the **New File** dialog box to create a new file	CTRL+N	CTRL+N
Display the **New Project** dialog box to create a new project	CTRL+SHIFT+N	CTRL+SHIFT+N
Display the **Open File** dialog box to open an existing file	CTRL+O	CTRL+O
Change the name of the selected object	F2	No equivalent

Help and Books Online Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Help	F1 or SHIFT+F1	F1
Display SQL Server Books Online	CTRL+F1	No equivalent
Open the Help Library Manager	CTRL+ALT+F1	No equivalent
Display the SQL Server Resource Center Web page	CTRL+ALT+F2	No equivalent
Display help for the current editor window	SHIFT+F1	No equivalent
Help on "How Do I"	No equivalent	CTRL+F1
Books Online Contents	No equivalent	CTRL+ALT+F1
Books Online Index	No equivalent	CTRL+ALT+F2
Help Search	No equivalent	CTRL+ALT+F3
Dynamic Help	No equivalent	CTRL+ALT+F4
Help Favorites	No equivalent	CTRL+ALT+F

Search Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Display the **Find** dialog box	CTRL+F	CTRL+F
Displays the **In Files** tab of the **Find** dialog box.		
Displays the definition for the selected symbol.	F12	No equivalent
Displays the list of references for the selected symbol.	SHIFT+F12	No equivalent
Display the **Replace** dialog box	CTRL+H	CTRL+H
Start incremental search. Type the characters to search for or press CTRL+I to search for characters from the previous search	CTRL+I	CTRL+I
Find the next occurrence of the previous search text	F3	F3

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Find the previous occurrence of the search text	SHIFT+F3	SHIFT+F3
Find the next occurrence of the currently selected text	CTRL+F3	CTRL+F3
Find the previous occurrence of the currently selected text	CTRL+SHIFT+F3	CTRL+SHIFT+F3
Display the **Replace in Files** dialog box	CTRL+SHIFT+H	CTRL+SHIFT+H
Reverse incremental search so it starts at the bottom of the file and searches to the top	CTRL+SHIFT+I	CTRL+SHIFT+I
Select or clear the **Search up** option in **Find and Replace**	ALT+F3, B	ALT+F3, B
Stop the **Find in Files** search	ALT+F3, S	ALT+F3, S
Select or clear the **Find whole word** option in **Find and Replace**	ALT+F3, W	ALT+F3, W
Selects or clears the **Wildcard** option in **Find and Replace**	ALT+F3, P	ALT+F3, P
Place the caret in the Find/Command box of the Standard toolbar	CTRL+/	No equivalent

Cut and Paste Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Cut (delete the currently selected item and place it to the Clipboard)	CTRL+X or SHIFTRLT+DELETE	CTRL+X or SHIFT+DELETE
Cuts all of the selected lines, or the current line if nothing is selected.	CTRL+L or CTRL+SHIFT+L	No equivalent
Copy to the Clipboard	CTRL+C or CTRL+INSERT	CTRL+C or CTRL+INSERT

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Paste from the Clipboard at the insertion point	CTRL+V or SHIFT+INSERT	CTRL+V or SHIFT+INSERT
Pastes an item from the Clipboard Ring at the insertion point and automatically selects the pasted item	CTRL+SHIFT+V or CTRL+enseSHIFT+INSERT	No equivalent

Log Viewer Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Refresh	No equivalent	F5
Move between the **Select logs** pane and the **Log file summary** pane	No equivalent	F6
Move to the **Log file summary** pane	No equivalent	ALT+S
Load a new log	No equivalent	CTRL+SHIFT+L
Export a log	No equivalent	CTRL+SHIFT+E
Filter a log	No equivalent	CTRL+SHIFT+F
Search in a log	No equivalent	CTRL+SHIFT+S

Activity Monitor Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Launches Activity Monitor	CTRLl+ALT+A	CTRLl+ALT+A
Closes Activity Monitor	CTRL+F4	CTRL+F4
Refresh	F5	F5
Filter the monitor display	CTRL+SHIFT+F	CTRL+SHIFT+F
Cycle through panels	F6	F6
Expand or collapse selected pane	CTRL and + or -	CTRL and + or -
Expand or collapse all panes	+ or -	+ or -
Copies entire selected row in grid	CTRL+C	CTRL+C

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Copy cell	CTRL+SHIFT+C	CTRL+SHIFT+C
Drop-down for filtering in grid	ALT+DOWN	ALT+DOWN
Scroll up or down Activity Monitor	CTRL+ALT+UP/DOWN	CTRL+ALT+UP/DOWN

Replication Monitor Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Refresh	F5	F5
Open a detail window from a grid	ENTER	ENTER

Replication Conflict Viewer Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Define filter	F6	F6
Apply filter	F7	F7
Show all columns	F8	F8

Query Designer Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Cancels or stops the currently running query	CTRL+T	CTRL+T
Displays the diagram pane of the **Query Designer**	CTRL+1	CTRL+1
Displays the criteria pane of the **Query Designer**	CTRL+2	CTRL+2
Displays the SQL pane of the **Query Designer**	CTRL+3	CTRL+3
Displays the results pane of the **Query Designer**	CTRL+4	CTRL+4
Run the query specified in the **Query Designer**	CTRL+R	CTRL+R
When in the results pane, moves focus to the tool strip docked at the bottom of the designer	CTRL+G	CTRL+G

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Enables JOIN mode in the **Query Designer**	CTRL+SHIFT+J	CTRL+SHIFT+J

Designer Keyboard Shortcuts

ACTION	SQL SERVER 2017	SQL SERVER 2008 R2
Move the selected control down in increments of 8 on the design surface	DOWN ARROW	No equivalent
Move the selected control left in increments of 8 on the design surface	LEFT ARROW	No equivalent
Move the selected control right in increments of 8 on the design surface	RIGHT ARROW	No equivalent
Move the selected control up in increments of 8 on the design surface	UP ARROW	No equivalent
Increases the height of the selected control in increments of 8	SHIFT+DOWN ARROW	No equivalent
Reduces the width of the selected control in increments of 8	SHIFT+LEFT ARROW	No equivalent
Increases the width of the selected control in increments of 8	SHIFT+RIGHT ARROW	No equivalent
Decreases the height of the selected control in increments of 8	SHIFT+UP ARROW	No equivalent
Moves to the next control on the page	TAB	No equivalent
Moves to the previous control on the page	SHIFT+TAB	No equivalent
Display the grid on the design surface	ENTER	No equivalent

See Also

Customize Menus and Shortcut Keys

SQL Server Management Studio - License Terms

10/1/2018 • 7 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

Available Languages:

Chinese (Simplified) | Chinese (Traditional) | English (United States) | French
German | Italian | Japanese | Korean | Portuguese (Brazil) | Russian | Spanish

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MICROSOFT SQL SERVER MANAGEMENT STUDIO

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User Assistance in SQL Server Management Studio

10/1/2018 • 4 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

User assistance is available in SQL Server Management Studio through the Help menu and SQL Server Books Online. The Help menu in Management Studio offers several different routes to information about SQL Server. It also provides access to SQL Server community and MSDN Online resources not previously available from within the Help environment. In addition, the Help environment is now configurable to launch either within the SQL Server Management Studio environment or in an associated external window of its own.

The Help Interface

The **Contents** and **Index** provide functionality and an interface already familiar to SQL Server users. The other options are:

- **How Do I**

  Provides a hierarchical set of linked pages containing useful topics related to common SQL Server tasks. The content is organized by component and task, for example, Replication topics, and so on.

- **Search**

  Searches for topics, with or without predefined filters. Search in SQL Server is a separate tabbed page. Users can refine their searches with one or more predefined topic type, language, or technology filters. By default, Search does not use any of the predefined filters, and only topics in the installed collections are searched.

  Users can include online resources in their search by enabling online Help. For more information, see "MSDN Online and SQL Server Communities" later in this topic.

- **Dynamic Help**

  Automatically displays links to relevant information while users work in the Management Studio environment.

- **Help Favorites**

  Stores user topic bookmarks for easy access later.

Help on Help (Microsoft Document Explorer Help) links users to the documentation about the Help Viewer, but the topics are in a collection separate from SQL Server Books Online. For information about the Help Viewer, select **Help on Help** from the Help menu of SQL Server Books Online.

MSDN Online and SQL Server Communities

Help in Management Studio also provides users ways to contact MSDN Online and SQL Server-focused communities on the Web for information. You can:

- Access SQL Server communities from the How Do I page.
- Search MSDN Online and SQL Server community sites.

To access SQL Server-focused communities from the How Do I page

1. In SQL Server Management Studio, on the **Help** menu, click **How Do I**.
2. The SQL Server **How Do I** page opens. In the Community Links sidebar, click the name of the community site you want to access.

   > **NOTE**
   > The computer running SQL Server must have a direct connection to the Web.

   Before you can search MSDN Online or the SQL Server communities, you must enable online search.

To enable online search

1. On the **Tools** menu, click **Options**. In the **Options** dialog box, expand the **Environment** and **Help** nodes if necessary, and then click **Online**.
2. In the **When loading Help content** area, select an online option.
3. In the **Search these providers** list, select the search providers you want to search, and clear those you don't.
4. If **Codezone Community** is one of your selected search providers, then in the **Codezone Community** list, select and clear items as appropriate.
5. Click **OK**.

To search MSDN Online and SQL Server-focused communities from the Search page

1. On the **Help** menu, click **Search**.
2. Enter your search terms in the **Search for** text box, and then click **Search**.

Whether or not you perform a search using the filters available (technology, language, and topic type), your search will now be run against all the search providers you selected.

Launching Help

There are two ways to display Help from SQL Server Management Studio. By default, when SQL Server Books Online is opened from within Management Studio, it opens in a document window external to the Management Studio environment. This window is still associated with the Management Studio; it can respond to some Management Studio events; and when you close Management Studio, Books Online will close as well. Opening Books Online this way is particularly useful when you are using two monitors; you can drag the Books Online window to the second monitor, out of the way of work you are doing in the first one, but still easily referenced.

You can also open Books Online as a document window inside Management Studio. This is preferable when you have limited screen space and want to take advantage of Management Studio and its ability to hide windows.

> **NOTE**
> If you want Books Online to be completely independent of Management Studio, open SQL Server Books Online from the **Start** menu, and it will not react to your actions in the Management Studio environment, nor will it close if you exit Management Studio.

To configure Help and SQL Server Books Online to launch inside the Management Studio window

1. On the **Tools** menu, click **Options**, expand **Environment**, expand **Help**, and then click **General**.
2. In the **Show Help Using** box, click **Integrated Help Viewer**.

Local Audit for SSMS Usage Feedback Collection

10/1/2018 • 2 minutes to read • Edit Online

APPLIES TO: SQL Server Azure SQL Database Azure SQL Data Warehouse Parallel Data Warehouse

SQL Server Management Studio (SSMS) contains Internet-enabled features that can collect and send anonymous feature usage data to Microsoft. SSMS may collect standard computer information and information about use and performance that may be transmitted to Microsoft and analyzed for purposes of improving the quality, security, and reliability of SSMS. We do not collect your name, address or other contact information. For details, see the SQL Server Privacy Statement.

Audit feature usage data

To see feature usage data that is collected by SSMS, do the following:

1. Launch SSMS.
2. Click **View**, then click **Output** in the main menu to show the **Output** window.
3. When the **Output** window is visible, choose **Telemetry** in the **Show output from:** menu.

While you use SSMS to interact with your databases, the **Output** window shows the data that is collected.

Enable or disable usage feedback collection in SSMS

To opt in or out of usage data collection for SSMS, see: How to configure SQL Server 2016 to send feedback to Microsoft.

See also

Local Audit for SQL Server Usage Feedback Collection