

# ApexSQL® Refactor 2021.x

## Release Notes

These release notes provide information about the ApexSQL® Refactor 2021.x which is a minor release.

Topics:

- About ApexSQL Refactor
- New features
- Getting Started
- System requirements
- Supported platforms
- Product licensing
- Release History
- About us

## About ApexSQL Refactor

ApexSQL Refactor is a SQL Server Management Studio and Visual Studio formatting and refactoring add-in for SQL Server with nearly 200 formatting options and 15 refactors such as table partitioning, safe rename, wildcard expansion and more.

## New Features

This version of ApexSQL Refactor introduces the following new features, enhancements or deprecations:

### Enhancements:

- Performance of the Qualify object names feature has been improved up to 1260%
- Performance of the Wildcard expansion feature has been improved up to 1140%

## Fixes:

- 185799: The default keyboard shortcut for formatting SQL code (CTRL+SHIFT+ALT+F) in query editor does not work
- 148990: The checkboxes for formatted objects in the grid under the Format SQL objects window are not unchecked
- 148991: The position of the vertical and horizontal scrollbars in the Compare window is incorrect and overlaps scripts
- 155684: “Safe rename cannot be applied to the selected object” message is shown when the Safe rename command is used on an object that was previously renamed
- 156784: SQL syntax errors dialog does not display all errors when the list of incorrect syntax has more than three lines
- 146541: The Format SQL objects feature loses connection with SQL Server when the Create script button is clicked in Visual Studio for the second time
- 167403: A new query window cannot establish a connection to an Azure SQL Database when the Active Directory - Universal with MFA support authentication is used
- 156998: The Safe rename feature does not find dependency for a table that contains the Within keyword in their definition
- 181282: Encapsulate code as scalar inline function keyboard shortcut overwrites default keyboard shortcut for the Edit.ReplaceinFiles command in Visual Studio
- 159957: The ApexSQL Refactor installation folder stays in the ApexSQL folder under the Program Files after uninstallation
- 161923: The Add border above block comments and Add border below block comments options under the Comments tab of the Options window do not work when the comment line contains more than four asterisks (\*)
- 160375: The Move closing parentheses to a new line option under the Parameters tab of the Options window does not work for the Alter function statement
- 155685: The Order by keyword does not line up with the Where clause under the Statements tab of the Options window
- 162960: The space around the assignment operator cannot be added under the Compact profile of the Options window
- 180353: The Insert empty line after option under the Comments tab of the Options window does not work
- 154751: The values in the built-in formatting profiles of the Options window do not return to the default state when any options is changed
- 154774: The Add space outside parenthesis option under the Statements tab of the Options window, adds a space in the statement that contains XML if the parenthesis is immediately followed by a dot (.) making the code invalid after it has been formatted
- 188618: SQL Server Management Studio freezes and becomes unusable up to 9 minutes when the Qualify object names feature is used on a remote instance with more than 60 databases and 1,000 objects
- 196699: SQL syntax error is encountered when formatting a query that has a subquery nested inside a SELECT statement with the ORDER BY clause

# Getting Started

- For further information about installation and getting started, please check the [Quest Knowledge Base](#) or [ApexSQL Getting Started](#).

## System requirements

Before installing or upgrading Short Product Name Version, ensure that your system meets the following minimum hardware and software requirements.

<b>Hardware</b>	Dual Core 2.0 GHz CPU 4 GB memory 91 MB disk space
<b>SQL Server</b>	SQL Server 2005 and higher <sup>[1]</sup> Azure SQL Database <sup>[1]</sup> Amazon RDS for SQL Server <sup>[1]</sup>
<b>Add-in integration</b>	SQL Server Management Studio 2012 and higher <sup>[2]</sup> Visual Studio 2010 and higher <sup>[1]</sup>
<b>OS</b>	Windows 7 SP1/Windows Server 2008 R2 SP1 and higher <sup>[1]</sup>
<b>Software</b>	<a href="#">.NET Framework 4.7.2</a> or higher
<b>Permissions and additional requirements</b>	Windows user account with administrative privileges  <a href="#">See Minimum permissions required to install and use ApexSQL products</a>  <a href="#">See Minimum SQL Server permissions for ApexSQL Developer tools</a>  <a href="#">See Remote access for SQL Server instance</a>

<sup>[1]</sup> See [Supported systems](#) for exact version support

<sup>[2]</sup> You can use the latest full-featured backwards compatible SQL Server Management Studio for free. [Click here](#)

## Supported platforms

Windows version				
Windows 7 SP1 & Windows Server 2008 R2 SP1	Windows Server 2012	Windows 8.1 & Windows Server 2012 R2	Windows 10 & Windows Server 2016	Windows Server 2019
✓	✓	✓	✓	✓

SQL Server version <sup>[4]</sup>									
	2005	2008	2012	2014	2016	2017		2019 CTP 3	
						Windows	Linux <sup>[3]</sup>	Windows	Linux <sup>[3]</sup>
ApexSQL Refactor	✓	✓	✓	✓	✓	✓	✓	✓	✓

SQL Server edition <sup>[4]</sup>						
	Express	Standard	Enterprise	Azure SQL Database		Amazon RDS for SQL Server
				Single Database, Elastic Pool	Managed Instance	

ApexSQL Refactor	✓	✓	✓	✓	✓	✓
------------------	---	---	---	---	---	---

Visual Studio add-in integration						
	2010	2012	2013	2015	2017	2019
ApexSQL Refactor	✓	✓	✓	✓	✓	✓

SQL Server Management Studio add-in integration					
	2012	2014	2016	17	18
ApexSQL Refactor	✓	✓	✓	✓	✓

<sup>[3]</sup> Tested on Ubuntu 16.04

<sup>[4]</sup> Including Amazon EC2, Google Compute Engine, and Azure Virtual Machine cloud computing SQL Server instances.

## Product licensing

ApexSQL offers 2 types of licenses:

### 1. Individual license

For applications licensed per user, an individual license is for the use of a single user only. This means that only 1 user can use 1 license. If there are multiple users, multiple licenses are needed.

For applications licensed per instance, an individual license is to be used on a single SQL Server instance only. If there are multiple instances, multiple licenses are needed.

### 2. Enterprise license

An enterprise license can be activated on an unlimited number of instances and can be used by an unlimited number of users, without geographical limitations.

# Release History (release notes)

Release: 2021.02.0453

Date: December 04, 2020

## Enhancements:

- Performance of the Qualify object names feature has been improved up to 1260%
- Performance of the Wildcard expansion feature has been improved up to 1140%

## Fixes:

- 185799: The default keyboard shortcut for formatting SQL code (CTRL+SHIFT+ALT+F) in query editor does not work
- 148990: The checkboxes for formatted objects in the grid under the Format SQL objects window are not unchecked
- 148991: The position of the vertical and horizontal scrollbars in the Compare window is incorrect and overlaps scripts
- 155684: "Safe rename cannot be applied to the selected object" message is shown when the Safe rename command is used on an object that was previously renamed
- 156784: SQL syntax errors dialog does not display all errors when the list of incorrect syntax has more than three lines
- 146541: The Format SQL objects feature loses connection with SQL Server when the Create script button is clicked in Visual Studio for the second time
- 167403: A new query window cannot establish a connection to an Azure SQL Database when the Active Directory - Universal with MFA support authentication is used
- 156998: The Safe rename feature does not find dependency for a table that contains the Within keyword in their definition
- 181282: Encapsulate code as scalar inline function keyboard shortcut overwrites default keyboard shortcut for the Edit.ReplaceinFiles command in Visual Studio
- 159957: The ApexSQL Refactor installation folder stays in the ApexSQL folder under the Program Files after uninstallation
- 161923: The Add border above block comments and Add border below block comments options under the Comments tab of the Options window do not work when the comment line contains more than four asterisks (\*)
- 160375: The Move closing parentheses to a new line option under the Parameters tab of the Options window does not work for the Alter function statement
- 155685: The Order by keyword does not line up with the Where clause under the Statements tab of the Options window
- 162960: The space around the assignment operator cannot be added under the Compact profile of the Options window
- 180353: The Insert empty line after option under the Comments tab of the Options window does not work
- 154751: The values in the built-in formatting profiles of the Options window do not return to the default state when any options is changed

- 154774: The Add space outside parenthesis option under the Statements tab of the Options window, adds a space in the statement that contains XML if the parenthesis is immediately followed by a dot (.) making the code invalid after it has been formatted
- 188618: SQL Server Management Studio freezes and becomes unusable up to 9 minutes when the Qualify object names feature is used on a remote instance with more than 60 databases and 1,000 objects
- 196699: SQL syntax error is encountered when formatting a query that has a subquery nested inside a SELECT statement with the ORDER BY clause

Release: 2021.01.0445

Date: November 02, 2020

**Changes:**

- The application is now part of the ApexSQL Fundamentals Toolkit for SQL Server bundle and requires activation

Release: 2020.05.0430

Date: October 08, 2020

Fixes:

- 155007: "Switch 'pr' is not recognized" error is encountered when using the /pr switch for formatting SQL script from the CLI

Release: 2020.04.0423

Date: August 25, 2020

Fixes:

- The Qualify object names feature generates an invalid SQL script when the Case expression is present in the Select statement

Changes:

- [Error handling and send logs functionality has been modified](#)

Release: 2020.03.0414

Date: June 09, 2020

Fixes:

- "Unexpected error occurred. Object reference not set to an instance of an object" error is encountered when the Command line interface switches are used

Release: 2020.02.0413

Date: May 28, 2020

Enhancements:

- [Application telemetry now collects anonymous data on the use and performance of applications and application component](#)
- [ApexSQL Updater is added for configuring advanced updating settings of all installed ApexSQL products](#)

Fixes:

- The commented block of code cannot be uncommented when the Ctrl+K, Ctrl+U keyboard shortcut is used within SQL Server Management Studio
- The End keyword does not indent properly when the Indent Begin and End blocks option is checked under the Flow control tab of the Options window

Release: 2020.01.0406

Date: December 26, 2019

Enhancements:

- [Active Directory support for:](#)
  - [Integrated authentication](#)
  - [Universal with MFA support authentication](#) for SQL Server Management Studio 18 and Visual Studio 2019
- SQL Server 2019 new syntax for SQL code formatting support for:
  - Resumable index operations
  - Edge constraint cascade delete actions
  - Register external languages
  - Hybrid buffer pool
  - Optimize\_for\_sequential\_key

Fixes:

- "Object reference not set to an instance of an object" error is encountered when the Options command is initiated from add-in main menu in Visual Studio 2019
- The right-click context menu has a 3 seconds delay until is shown when used on a trigger in Object Explorer
- Visual Studio 2019 stops working when a new query editor is opened
- The Safe rename feature does not work when one table has several foreign key relationships

- The Availability database drop-down box cannot be highlighted when the Ctrl + U keyboard shortcut is used within SQL Server Management Studio 2016 and higher
- The default shortcut for the Edit.MakeUppercase command does not work when used within SQL Server Management Studio 2016 and higher
- "SQL syntax error" error is encountered when formatting code that has the Datetime2 data type
- "SQL syntax error" error is encountered when formatting code that has the Within group clause
- Incorrect formatting of the Case expression when either the When or Then expression have a negative value

Release: 2018.08.0364

Date: June 21, 2019

Changes:

- Software Transaction Agreement is added as a new step in the installation wizard and updated in accordance with <https://www.quest.com/legal/sta.aspx>

Release: 2018.08.0360

Date: May 21, 2019

Fixes:

- The add-in doesn't integrate with SQL Server Management Studio 18 GA version if the host application was not started at least once

Release: 2018.07.0359

Date: May 04, 2019

Fixes:

- The add-in doesn't integrate with SQL Server Management Studio 18 GA version

Release: 2018.06.0356

Date: February 12, 2019

Fixes:

- SQL scripts in the preview changes window of the Options dialog are obfuscated for all formatting tabs when the Obfuscation tab is clicked and the Save button is clicked to exit
- The application installer does not check if the .NET Framework 4.7.2 is installed on the operating system

Changes:

- ApexSQL parent menu of the add-in is now located under the Extensions main menu in Visual Studio 2019

Release: 2018.05.0350

Date: December 26, 2018

Enhancements:

- CLI switches:
  - Code obfuscation [/obf]
  - Formatting script [/frs]
  - Specify profile for formatting [/pr]
  - Input script location [/is]
  - Output script location [/os]
  - Output script name [/on]
- [Visual Studio 2019 integration support](#)

Fixes:

- The Indent BEGIN and END blocks option under the Flow control tab of the Options dialog add the extra BEGIN and END block when in stored procedure the begin atomic block exist
- The values in the Schema combo box of the Encapsulate code dialog can be entered
- The schemas in the Schema drop down box of the Encapsulate code dialog are missing when the connection is established to an Azure SQL Database
- A SQL syntax error occurs when in the SQL Odbc scalar function, the Truncate statement is present
- A SQL syntax error occurs when formatting a code that has the At time zone clause
- SQL Server Management Studio stops working when the Wrap lines longer than option under the Formatting tab of the Options dialog is used
- The Wildcard expansion feature does not work for the tables that have 'at' alias

Changes:

- The application now requires Microsoft .NET Framework 4.7.2

Release: 2018.04.0337

Date: November 05 , 2018

Enhancements:

- SQL Server 2019 CTP 2.0 support
- [SQL Server Management Studio 18 integration support](#)

Fixes:

- The "Remove unnecessary brackets" option under the Formatting tab of the Options dialog removes brackets around the SQL exit keyword
- The user defined profile name changes to ApexSQL predefined profile when click the Reset button of the Options dialog
- The "Indent BEGIN and END blocks" option under the Flow control tab of the Options dialog does not work
- The same SQL code with the same formatting profile formats differently when two times in a row is clicked on the Format SQL command
- The names of the hosts in the host integration step are cutoff on high DPI and 4K resolution
- Shortcuts key combination settings are not visible under the Shortcuts tab of the Options dialog on high DPI and 4K resolution
- SQL script becomes invalid after it has been formatted using the Obfuscate SQL command from the main add-in menu and the SQL script has 'GO' that signals the end of a batch
- A SQL syntax error occurs after formatting a code containing any of the following:
  - system\_time clause,
  - page,
  - uncommitted,
  - any
- The "Add spaces around operators" option under the Arithmetic tab of the Options dialog does not add spaces around + sign when it used as SQL string concatenation
- SQL Server Management Studio stops working after connecting to a SQL Server Analysis Services instance
- SQL Server Management Studio stops working after connecting to a SQL Server Reporting Services instance

Release:	2018.03.0331
Date:	September 21, 2018

#### Enhancements:

- [New error handling and send logs functionality](#)
- [Improved application installer with a dark theme](#)
- [New application icon](#)

#### Fixes:

- "An error occurred while showing the application updater" message is shown on SQL Server Management Studio startup when the add-in is installed alongside ApexSQL Search
- Replace one-to-many relationship dialog freezes for one second or longer when typing in the Associative table name text box
- The "Always use statement terminator" option under the Formatting tab of the Options dialog adds an extra semicolon after the SQL Return keyword
- The "System functions" option under the Capitalization tab of the Options dialog does not format the SQL Isnull function

- The Format SQL objects feature does not create a SQL script when in the object grid the stored procedure is selected and the Create script is pressed
- The SQL Json function is enclosed with square brackets when the "Enclose columns in brackets" option under the Formatting tab of the Options dialog is enabled
- The user-defined shortcuts under the Shortcuts tab of the Options dialog are set to the default values after restarting SQL Server Management Studio or Visual Studio

Release: 2018.02.0322

Date: June 29, 2018

#### Enhancements:

- Active Directory – Password authentication support
- Azure SQL Database syntax support for format SQL:
  - maxsize,
  - edition,
  - service\_objective

#### Fixes:

- The "Safe rename cannot be applied to the selected object" message is shown when Visual Studio SQL Server Object Explorer context menu Safe rename command is used to rename a column or a parameter
- The Unused variables and parameters command highlights the wrong part of the code when the cursor is placed in the middle of the SQL script
- The SQL xlock and rowlock keywords are enclosed in brackets when the "Enclose identifiers in brackets" option under the Formatting tab of the Options dialog is enabled
- The "Add spaces around operations" option under the Arithmetic tab of the Options dialog puts all code in one line when is checked
- The SQL nolock keyword is capitalized with the wrong option under the Capitalization tab of the Options dialog
- The "Keep empty lines before/after comments" option under the Formatting tab of the Options dialog remove empty line before line comment when checked
- The inline comments are always moved to the complete left in the SQL script when using any of the formatting profiles
- The "Remove empty lines" option under the Formatting tab of the Options dialog does not remove empty lines below line comments
- The "Don't format operations less than" option under the Logical tab of the Options dialog puts SQL code after inline comments
- The options under the Where in values tab do not work when in the SQL code a SQL Delete statement is used
- The "Formatting profiles with duplicate names exist" message is shown when adding a new profile or when saving changes to an existing one

Release: 2018.01.0300

Date: March 29, 2018

#### Enhancements:

- [High DPI and 4K resolution support](#)
- [Applied concepts of Visual Language Dictionary for Visual Studio for iconography, imagery, colors, menus, fonts, formatting and other GUI elements](#)
- [GUI themes:](#)
  - Light,
  - Blue,
  - Dark
- [Azure SQL Database syntax support for format SQL:](#)
  - add secondary,
  - data\_source,
  - elastic\_pool,
  - failover,
  - migration\_state

#### Fixes:

- The "Insert empty line between each statement" option under the Formatting tab of the Options dialog does not work after If/End statement
- The SQL trim function is enclosed with brackets when the "Enclose identifiers in brackets" or "Enclose columns in brackets" option under the Formatting tab of the Options dialog is enabled
- An archive larger than 5 MB is attached to a default email client when the Send logs command is clicked under the Resource sub-menu of the application main menu
- A SQL syntax error occurs after formatting a code containing any of the following:
  - abort\_after\_wait,
  - buffer pool extension,
  - columnstore\_archive,
  - cryptographic provider,
  - encrypted,
  - firstrow,
  - hadr cluster,
  - history\_retention\_period,
  - max\_iops\_per\_volume,
  - max\_outstanding\_io\_per\_volume,
  - min\_iops\_per\_volume,
  - persist\_sample\_percent,
  - rebuild partition,
  - system\_time

#### Changes:

- The application now requires Microsoft .NET Framework 4.7.1

# About us

Quest creates software solutions that make the benefits of new technology real in an increasingly complex IT landscape. From database and systems management, to Active Directory and Office 365 management, and cyber security resilience, Quest helps customers solve their next IT challenge now. Around the globe, more than 130,000 companies and 95% of the Fortune 500 count on Quest to deliver proactive management and monitoring for the next enterprise initiative, find the next solution for complex Microsoft challenges and stay ahead of the next threat. Quest Software. Where next meets now. For more information, visit [www.quest.com](http://www.quest.com).

## Contacting Quest

For sales or other inquiries, visit [www.quest.com/contact](http://www.quest.com/contact)

## Technical Support Resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at <https://support.quest.com>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to-videos
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product.

© 2020 Quest Software Inc.

## ALL RIGHTS RESERVED.

This guide contains proprietary information protected by copyright. The software described in this guide is furnished under a software license or nondisclosure agreement. This software may be used or copied only in accordance with the terms of the applicable agreement. No part of this guide may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of Quest Software Inc.

The information in this document is provided in connection with Quest Software products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Quest Software products. EXCEPT AS SET FORTH IN THE TERMS AND CONDITIONS AS SPECIFIED IN THE LICENSE AGREEMENT FOR THIS PRODUCT, QUEST SOFTWARE ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL QUEST SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF QUEST SOFTWARE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Quest Software makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Quest Software does not make any commitment to update the information contained in this document.

If you have any questions regarding your potential use of this material, contact:

Quest Software Inc.

Attn: LEGAL Dept

4 Polaris Way

Aliso Viejo, CA 92656

Refer to our Web site (<https://www.quest.com>) for regional and international office information.

## Patents

Quest Software is proud of our advanced technology. Patents and pending patents may apply to this product. For the most current information about applicable patents for this product, please visit our website at <https://www.quest.com/legal>.

## Trademarks

Quest, the Quest logo, and Join the Innovation are trademarks and registered trademarks of Quest Software Inc. For a complete list of Quest marks, visit <https://www.quest.com/legal/trademark-information.aspx>. All other trademarks and registered trademarks are property of their respective owners.

## Legend

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

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