



SQL SERVER UPDATES NEWSLETTER

January 2020

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Recent Releases and Announcements

- Microsoft will be carbon negative by 2030
 - <https://blogs.microsoft.com/blog/2020/01/16/microsoft-will-be-carbon-negative-by-2030/>
- SQL Server 2019 on Red Hat Enterprise Linux 8 now Generally Available
 - <https://techcommunity.microsoft.com/t5/sql-server/sql-server-2019-on-red-hat-enterprise-linux-8-now-generally/ba-p/1098001>
- Cumulative Update #1 for SQL Server 2019 RTM
 - <https://techcommunity.microsoft.com/t5/sql-server/cumulative-update-1-for-sql-server-2019-rtm/ba-p/1095685>
- Turning to a new chapter of Windows Server innovation
 - January 14, 2020, marks the end of support for Windows Server 2008 and Windows Server 2008 R2
 - Hybrid capabilities of Windows Server 2019 have been designed to help customers integrate Windows Server on-premises with Azure on their own terms.
 - <https://azure.microsoft.com/blog/turn-to-a-new-chapter-of-windows-server-innovation/>
- Azure SQL Database Edge - Public Preview
 - Azure SQL Database Edge is available in public preview.
 - Runs on ARM and Intel architecture
 - Built-in ONNX runtime support
 - Built-in streaming support
 - Deploy from the Azure IoT Edge as a module
 - <500MB small-footprint container

- <https://techcommunity.microsoft.com/t5/sql-server/azure-sql-database-edge-public-preview/ba-p/1109299>
- Data Factory Adds Managed Identity Support to Data Flows
 - Azure Data Factory users can now build Mapping Data Flows utilizing Managed Identity (formerly MSI) for Azure Data Lake Store Gen 2, Azure SQL Database, and Azure Synapse Analytics (formerly SQL DW).
 - <https://azure.microsoft.com/en-us/updates/data-factory-adds-managed-identity-support-to-data-flows/>
- Soft Delete for SQL server in Azure VM and SAP HANA in Azure VM workloads
 - Azure Backup now supports soft delete for SQL server in Azure VM and SAP HANA in Azure VM workloads
 - Soft delete is a security feature to help protect backup data even after deletion.
 - <https://azure.microsoft.com/en-us/updates/workloadsoftdelete/>
- Azure Active Directory support in Azure Database for MySQL
 - We're excited to announce preview support of Azure Active Directory integration for Azure Database for MySQL.
 - <https://azure.microsoft.com/en-us/updates/azure-active-directory-support-in-azure-database-for-mysql/>
- Azure SQL Database Gen 4 hardware approaching end of life in 2020
 - Azure SQL Database is beginning the decommissioning process of Gen 4 Intel E5-2673 v3 (Haswell)-based CPUs and is transitioning to Intel E5-2673 v4 (Broadwell) 2.3 GHz and Intel SP8160 (Skylake) processors for all new deployments.
 - The current pricing and performance of existing Gen 4-based databases and instances won't be impacted by this update and will remain supported through January 2023.
 - Reserved capacity pricing for Gen 4 databases and instances will be honored through the balance of their term, but new Gen 4 reserved capacity purchases are no longer available.
 - <https://azure.microsoft.com/en-us/updates/gen-4-hardware-on-azure-sql-database-approaching-end-of-life-in-2020/>
- Announcing: Improved report usage metrics in modern workspaces
 - We are excited to announce the release of a new and improved usage report for Power BI reports in modern workspaces.
 - <https://powerbi.microsoft.com/en-us/blog/announcing-improved-report-usage-metrics-in-modern-workspaces/>
- Updating hardware generation in managed instance now available in Azure portal
 - Managed instance now provides the capability to update hardware generation from Gen4 to Gen5 from the pricing tier screen in the Azure portal.
 - Use this option to take advantage of the capabilities specific to Gen5 hardware generation
 - Newer Intel E5-2673 v4 (Broadwell) technology.
 - The ability to scale up to 80 vCores and 480 GB of RAM or scale down to 4 vCores.
 - The ability to scale local storage up to 8 TB.
 - Accelerated networking for optimal app performance in case of highly transactional and "chatty" workloads.
 - The Best IO performance and minimal low latency with NVMe SSDs (especially useful for tempdb dependent workloads).
 - The ability to use instance pools and take advantage of two vCore instances.

- <https://azure.microsoft.com/en-us/updates/updating-hardware-generation-managed-instance/>
- Released: Microsoft.Data.SqlClient 2.0 Preview 1
 - The SqlClient team is moving forward with continuous updates and improvements to the Microsoft.Data.SqlClient data provider for SQL Server. Our plan is to provide GA releases twice a year with two preview releases in between. This cadence should provide time for feedback and allow us to deliver features and fixes in a timely manner. This 2.0 preview includes over a dozen fixes and changes over the previous 1.1 GA release.
 - <https://techcommunity.microsoft.com/t5/sql-server/released-microsoft-data-sqlclient-2-0-preview-1/ba-p/1122967>

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Troubleshooting and Issue Alerts

- **Critical:** Do NOT delete files from the Windows Installer folder. C:\windows\Installer is not a temporary folder and files in it should not be deleted. If you do it on machines on which you have SQL Server installed, you may have to rebuild the operating system and reinstall SQL Server.
 - <http://blogs.msdn.com/b/sqlserverfaq/archive/2013/04/30/do-not-delete-files-from-the-windows-installer-folder.aspx>
- **Critical:** Please be aware of a critical Microsoft Visual C++ 2013 runtime pre-requisite update that may be required on machines where SQL Server 2016 will be, or has been, installed.
 - <https://blogs.msdn.microsoft.com/sqlcat/2016/07/28/installing-sql-server-2016-rtm-you-must-do-this/>
 - If KB3164398 or KB3138367 are installed, then no further action is necessary. To check, run the following from a command prompt:
 - powershell get-hotfix KB3164398
 - powershell get-hotfix KB3138367
 - If the version of %SystemRoot%\system32\msvcr120.dll is 12.0.40649.5 or later, then no further action is necessary. To check, run the following from a command prompt:
 - powershell "get-item %systemroot%\system32\msvcr120.dll | select versioninfo | fl"
- **Important:** If the Update Cache folder or some patches are removed from this folder, you can no longer uninstall an update to your SQL Server instance and then revert to an earlier update build.
 - In that situation, Add/Remove Programs entries point to non-existing binaries, and therefore the uninstall process does not work. Therefore, Microsoft strongly encourages you to keep the folder and its contents intact.
 - <https://support.microsoft.com/en-us/kb/3196535>
- **Important:** Default auto statistics update threshold change for SQL Server 2016
 - <https://blogs.msdn.microsoft.com/psssql/2016/10/04/default-auto-statistics-update-threshold-change-for-sql-server-2016/>
 - SQL Server 2016: Default is new threshold if database compatibility level is 130. If database compatibility is below 130, old threshold is used (unless you use trace flag 2371)
- Why can't I change the Data Source in Power BI (disabled button)?
 - The first [Applied] step of Query [Settings] will always be the Data Source and you will always have the option button to change the Data Source activated, because Power BI will always find your first stage of Query your Data Source.
 - <https://community.powerbi.com/t5/Community-Blog/Why-can-t-I-change-the-Data-Source-in-Power-BI-disabled-button/ba-p/915365>

- Lesson Learned #121: The transaction log for database 'tempdb' is full due to 'ACTIVE_TRANSACTION'
 - This type of issue is based on a user query that is executing [...] we need to find out what is the query that is causing this.
 - <https://techcommunity.microsoft.com/t5/azure-database-support-blog/lesson-learned-121-the-transaction-log-for-database-tempdb-is/ba-p/1130871>
- Evaluating the performance of your LUIS app
 - Overview of how to quickly assess the performance of their LUIS app using the built-in LUIS Dashboard
 - <https://techcommunity.microsoft.com/t5/ai-customer-engineering-team/evaluating-the-performance-of-your-luis-app/ba-p/918886>
- Lesson Learned #118: ALTER DATABASE failed because a lock could not be placed on database 'databasename' error after creating a MI database
 - <https://techcommunity.microsoft.com/t5/azure-database-support-blog/lesson-learned-118-having-alter-database-failed-because-a-lock/ba-p/1105276>
- The session limit for the ASDB database is 640 and has been reached
 - Make sure the application creates the connection with the user database instead of the master database.
 - <https://techcommunity.microsoft.com/t5/azure-database-support-blog/the-session-limit-for-the-database-is-640-and-has-been-reached/ba-p/1139337>
- Azure HDInsight TLS 1.2 Enforcement
 - Starting on June 30, 2020, Azure HDInsight will enforce TLS 1.2 or later versions for all HTTPS connections. We recommend that you ensure that all your clients are ready to handle TLS 1.2 or later versions.
 - <https://azure.microsoft.com/en-us/updates/azure-hdinsight-tls-12-enforcement/>

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Recent Blog Posts and Articles

- Integrate Microsoft cloud services with your Azure SQL Database managed instance
 - <https://techcommunity.microsoft.com/t5/azure-sql-database/integrate-microsoft-cloud-services-with-your-azure-sql-database/ba-p/1083543>
- Polybase User Guide - Part 1 & 2
 - <https://techcommunity.microsoft.com/t5/azure-data-warehouse-support/polybase-user-guide-part-1-secured-storage-account/ba-p/740376>
 - <https://techcommunity.microsoft.com/t5/azure-data-warehouse-support/polybase-user-guide-part-2-unrestricted-storage-the-original/ba-p/795170>
- Updated process of configuring AD integrated authentication for SQL Server on Linux
 - <https://techcommunity.microsoft.com/t5/sql-server/updated-process-of-configuring-ad-integrated-authentication-for/ba-p/1092261>
- The ultimate performance for your big data with SQL Server 2019 Big Data Clusters
 - In October 2019, Microsoft and Intel conducted performance and scalability testing using workloads derived from the TPC-DS schema with very large data sets [...] of raw structured and semi-structured data running on Microsoft SQL Server 2019 Big Data Cluster.
 - Download the technical white paper that captures detailed steps, configuration, and analysis of the benchmark study for Microsoft SQL Server 2019 Big Data Cluster on Intel's Xeon Scalable platform

- <https://cloudblogs.microsoft.com/sqlserver/2020/01/29/the-ultimate-performance-for-your-big-data-with-sql-server-2019-big-data-clusters/>
- Azure IoT improves pharmaceutical sample management and medication adherence
 - The top IoT use cases cited by the healthcare executives in a recent report included: (1) Tracking patient staff and inventory, (2) Remote device monitoring and service, (3) Remote health monitoring and assistance, (4) Safety, security, and compliance, and (5) Facilities management.
 - This article sheds light on how two innovative companies are building upon this momentum and their own research to build IoT-enabled solutions with Azure IoT technologies that support medication management and adherence. These solutions address the safety, security, compliance, and inventory use cases highlighted in the report.
 - <https://azure.microsoft.com/blog/azure-iot-improves-pharmaceutical-sample-management-and-medication-adherence/>
- Azure Data Explorer and Stream Analytics for anomaly detection
 - <https://azure.microsoft.com/blog/azure-data-explorer-and-stream-analytics-for-anomaly-detection/>

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Recent Training and Technical Guides

- New Data Exposed episode: Deployment options for Azure SQL Database
 - <https://techcommunity.microsoft.com/t5/azure-sql-database/new-data-exposed-episode-deployment-options-for-azure-sql/ba-p/1099829>
- It's just SQL: Collations in Azure SQL Database Managed Instance
 - <https://channel9.msdn.com/Shows/Data-Exposed/Its-just-SQL-Collations-in-Azure-SQL-Database-Managed-Instance>
- Start Today! Learn How to Create End-to-End Solutions with Microsoft AI
 - This article aims to provide learning resources and guidance for architecting and deploying end-to-end AI solutions.
 - Microsoft Learn, AI School and Labs, Microsoft AI Platform and Microsoft Docs, Azure Data & AI certifications, Microsoft Cloud Workshop, and resources to learn build End to End AI pipeline
 - <https://techcommunity.microsoft.com/t5/ai-customer-engineering-team/start-today-learn-how-to-create-end-to-end-solutions-with/ba-p/698422>
- Power BI Report Server January 2020 Feature Summary
 - This release brings in a bunch of exciting features such as buttons conditional formatting, data profiling enhancements, and more formatting settings for KPI and table visuals
 - <https://powerbi.microsoft.com/en-us/blog/power-bi-report-server-january-2020-feature-summary/>
- New Data Exposed episode: It's just SQL: CLR in Azure SQL Database Managed Instance
 - <https://techcommunity.microsoft.com/t5/azure-sql-database/new-data-exposed-episode-it-s-just-sql-clr-in-azure-sql-database/ba-p/1125721>

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Script and Tool Tips

- Lesson Learned #119: What is the query that my stored procedure is running now?

- <https://techcommunity.microsoft.com/t5/azure-database-support-blog/lesson-learned-119-what-is-the-query-that-my-stored-procedure-is/ba-p/1111086>
- Announcing the Python Custom Skills Toolkit
 - This toolkit is a collection of useful python functions ready to be deployed as Azure Cognitive Search custom skills. The skills can be used as templates or starting points for your own custom skills, or they can be deployed and used as they are if they happen to meet your requirements.
 - <https://github.com/Rodrigossz/Python-Custom-Skills-Toolkit>

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AI

- Six things to consider when using Video Indexer at scale
 - When uploading videos, prefer URL over sending the file as a byte array
 - Increase media reserved units if needed
 - Respect throttling. Don't worry, in the HTTP response, we add a retry-after header. The header we will specify when you should attempt your next retry. Make sure you respect it before trying your next request.
 - Use callback URL. We recommend that instead of polling the status of your request constantly from the second you sent the upload request, you can just add a callback URL, and wait for us to update you.
 - Use the right indexing parameters for you. Don't set the preset to streaming if you don't plan to watch it, don't index video insights if you only need audio insights.
 - Index in optimal resolution, not highest resolution
 - <https://azure.microsoft.com/blog/six-things-to-consider-when-using-video-indexer-at-scale/>
- Accelerate your end-to-end ML lifecycles with semi-automated image annotation using Azure ML
 - The open-source web-based image annotation tool COCO-Annotator speeds up the end-to-end ML lifecycle by performing semi-automated annotation of unlabeled image data.
 - <https://techcommunity.microsoft.com/t5/ai-customer-engineering-team/accelerate-your-end-to-end-ml-lifecycles-with-semi-automated/ba-p/1054432>
- Speeding up the Development of Natural Language Processing Solutions with Azure Machine Learning
 - Finding the correct algorithm to use in different scenarios and languages remains a challenge. To help researchers and data scientists find the best fit for the problem at hand, Microsoft is open-sourcing the Microsoft NLP Recipes repository containing best practices in building and evaluating NLP systems across multiple tasks and languages.
 - <https://techcommunity.microsoft.com/t5/ai-customer-engineering-team/speeding-up-the-development-of-natural-language-processing/ba-p/1042577>
 - <https://github.com/microsoft/nlp-recipes>
- Automated Service Ticket Routing with Deep Learning on Azure
 - In this two-part blog series, we explore a robust end-to-end architecture powered by modern deep learning techniques and built on Microsoft Azure to implement an automated service ticket routing solution.
 - <https://techcommunity.microsoft.com/t5/ai-customer-engineering-team/automated-service-ticket-routing-with-deep-learning-on-azure/ba-p/871279>
- Introduction to Azure DevOps for Machine Learning

- <https://techcommunity.microsoft.com/t5/ai-customer-engineering-team/introduction-to-azure-devops-for-machine-learning/ba-p/857829>

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Lifecycle Updates

- <http://www.microsoft.com/lifecycle>
- Lifecycle FAQ: <https://support.microsoft.com/en-us/help/17140/lifecycle-faq-general-policy-questions>
- Products Reaching End of Support for 2020 <https://support.microsoft.com/en-us/help/4470235/products-reaching-end-of-support-for-2020>
- Support for Windows Server 2008 R2 and Windows Server 2008 ended on **January 14, 2020**
- Support for SQL Server 2008 and SQL Server 2008 R2 ended on July 9, 2019.
- SQL Server 2014 moved from Mainstream Support to Extended Support on July 9, 2019.
- Support for SQL Server 2016 SP1 ended on July 9, 2019. Please upgrade to the latest service pack.
- Support for SQL Server 2014 SP1 ended on October 10, 2017. Please upgrade to the latest service pack.
- Support for SQL Server 2012 SP3 ended on October 9, 2018. Please upgrade to the latest service pack.
- SNAC lifecycle explained
 - **SNAC 11: SQL 2005 to SQL 2014.** Note that SNAC 11 does not support features released with SQL Server 2014 and SQL Server 2016 that were not available as part of SQL Server 2012, such as Transparent Network IP Resolution, Always Encrypted, Azure AD Authentication, Bulk Copy and Table Value Parameters.
 - **SNAC 13: SQL 2008 to SQL 2016**
 - <https://blogs.msdn.microsoft.com/sqlreleaseservices/snac-lifecycle-explained/>
- Support for .NET Framework 4, 4.5 and 4.5.1 ended on January 12, 2016
 - Please complete the in-place update to .NET Framework 4.5.2
 - The support change **does not affect the support lifecycle policy for older versions prior to .NET Framework 4.** Support for .NET Framework 4.5.2, as well as all other .NET versions such as 3.5 SP1, will continue to be supported for the duration of the operating system support lifecycle.
 - https://support.microsoft.com/en-us/gp/framework_faq

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SQL Builds

- Where to find information about the latest SQL GDRs (security updates)
 - The Security Update Guide is the authoritative source of information on Microsoft security updates.
 - <https://portal.msrc.microsoft.com/en-us/security-guidance>
 - You can filter by date and product category.
- Where to find information about the latest SQL Service Packs and Cumulative Updates
 - <http://support.microsoft.com/kb/957826>

- Where to find downloads for SQL service packs, setup updates ("Smart Setup"), security updates, and update rollups
 - Microsoft Update Catalog <http://catalog.update.microsoft.com/>
 - Note: You may have to switch IE to Compatibility View to use the Update Catalog
- SQL version tables and build charts
 - How to determine the version and edition of SQL Server and its components
<https://support.microsoft.com/en-in/kb/321185>
 - Unofficial build chart (NOTE the following site is NOT a Microsoft affiliated website)
<http://sqlserverbuilds.blogspot.com/>

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Community Resources

- Provide Feedback to the Product Group: <https://feedback.azure.com/forums/908035-sql-server>
- The TechNet Wiki is a library of information about Microsoft technologies written by the community for the community. <http://technet.com/wiki>
- E-Book Gallery for Microsoft Technologies. <http://www.microsoftvirtualacademy.com/ebooks>
- Channel 9 - SQL Jump Start Videos. Channel 9 is a Microsoft community site which features video channels, discussions, screencasts and video interviews.
<https://channel9.msdn.com/Search?term=sql&sortBy=recent&lang=en=true>
- Microsoft Virtual Academy. Free Microsoft training delivered by experts.
<https://mva.microsoft.com/>
- SQL Whitepaper Gallery. Download whitepapers for SQL Server in DOC, PDF, and other formats. All the content is free. <http://social.technet.microsoft.com/wiki/contents/articles/13146.white-paper-gallery-for-sql-server.aspx>
- SQL Server I/O Reliability partners provide storage solutions that have been carefully reviewed to meet the SQL Server storage solution requirements.
http://download.microsoft.com/download/F/1/E/F1ECC20C-85EE-4D73-BABA-F87200E8DBC2/SQL_Server_IO_Reliability_Program_Review_Requirements.pdf
- Microsoft Virtual Labs. Enable you to quickly evaluate and test Microsoft's newest products and technologies through a series of guided, hands-on labs that you can complete in 90 minutes or less. There is no complex setup or installation required, and you can use Microsoft Virtual Labs online immediately, free. <https://www.microsoft.com/handsonlabs/SelfPacedLabs>
- Microsoft Learn. Up your game with a learning path tailored to today's developer and technology masterminds and designed to prepare you for industry-recognized Microsoft certifications.
<https://docs.microsoft.com/en-us/learn/>

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Recommended KB's to Review Regularly

- Recommended hotfixes and updates for Windows Server 2012 R2-based failover clusters
 - <https://support.microsoft.com/en-us/kb/2920151>
 - Latest: June 2018
- Recommended updates and configuration options for SQL Server 2012 and later versions with high-performance workloads
 - <https://support.microsoft.com/en-gb/kb/2964518>

- You no longer need to enable these trace flags in SQL Server 2016 because the auto-detection of the associated logic for trace flags is already incorporated into the product.
- Troubleshooting SQL Server backup and restore operations
 - <https://support.microsoft.com/en-us/kb/224071>

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Premier Services

- Premier Education as a Service (provides access to the workshop library on-demand portfolio of training courses)
 - <https://services.premier.microsoft.com/education>
- Premier Support Proactive Services (lists available workshops and other proactive services)
 - http://www.microsoft.com/en-us/microsoftservices/support_premier_proactive.aspx
- RAP as a Service (RaaS)
 - <https://services.premier.microsoft.com/assess>

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Recommended Blogs

- SQL Server Updates and Lessons Learned
 - <https://docs.microsoft.com/en-us/archive/blogs/sqlupdates/>

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Recommended RSS Feeds

- Most Recent KB's for SQL 2017
 - <https://support.microsoft.com/app/content/api/content/feeds/sap/en-us/cb54dbc0-87de-5eaa-8ca9-f35997ca84eb/rss>
- Most Recent KB's for SQL 2016
 - <https://support.microsoft.com/app/content/api/content/feeds/sap/en-us/d201c5bd-9aab-36d1-0e57-5dadf52a6dad/rss>
- Most Recent KB's for Windows Server 2016
 - <https://support.microsoft.com/app/content/api/content/feeds/sap/en-us/c3a1be8a-50db-47b7-d5eb-259debc3abcc/rss>
- RSS Feed Product Index
 - <https://support.microsoft.com/en-us/help/4089498/support-content-updates>
- To add an RSS feed in Microsoft Outlook:
 - Right click the "RSS Subscriptions" folder-> Choose "Add a New RSS Feed"
 - -or- Choose File->Account Settings->RSS Feeds tab->New...

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