

# Microsoft Data and AI News

MAY 2020

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## General Announcements

- Microsoft announces new supercomputer, lays out vision for future AI work
  - Microsoft has built one of the top five publicly disclosed supercomputers in the world, making new infrastructure available in Azure to train extremely large artificial intelligence models
  - Built in collaboration with and exclusively for OpenAI
  - <https://blogs.microsoft.com/ai/openai-azure-supercomputer/>
- Take advantage of 20 years of quantum research with Azure Quantum, now in preview
  - Azure Quantum is now officially in preview with select customers and partners.
  - Microsoft Learn modules <https://docs.microsoft.com/en-us/users/buildcollections2020-6557/collections/1o2iogrmn8x4r>
  - Sign Up for the Developer Workshop <https://microsftevent.eventbuilder.com/event/22621>
  - With Azure Quantum, you get: (1) An open ecosystem, enabling you to access diverse quantum software, hardware, and solutions from Microsoft and our partners (2) A trusted, scalable, and secure platform that will continue to adapt to our rapidly evolving quantum future. (3) An ability to have quantum impact today with pre-built solutions that run on classical computers (what we refer to as quantum-inspired solutions).
  - <https://cloudblogs.microsoft.com/quantum/2020/05/19/azure-quantum-preview-new-developer-training-learning-tools/>
- Azure Private Link is now available for multiple new Azure services
  - Azure Private Link is now generally available for these services: Azure Cognitive Search, Azure Event Hubs, Azure Service Bus, Azure Backup, Azure Container Registry, Azure Event Grid topics, Azure Event Grid domains

- Private Link is also available in preview for these services: Azure SignalR Service, Azure IoT Hub
- <https://azure.microsoft.com/en-us/updates/azure-private-link-is-now-available-for-multiple-new-azure-services/>
- The Developer Activity Book for #RemoteDevLife
  - We wanted to bring a little fun (and geekiness) into your homes, so we created a Developer Activity Book. In it, you'll find seven coloring pages, a crossword puzzle, a word search, and a logic puzzle.
  - <https://techcommunity.microsoft.com/t5/azure-developer-community-blog/the-developer-activity-book-for-remotedevlife/ba-p/1432196#>
  - You can download the .pdf and color it with Microsoft Edge: (1) When you open the PDF file with Microsoft Edge you will see a toolbar with Draw and Erase options just below the address bar. Select the Draw option to start writing on the PDF file.  
<https://techcommunity.microsoft.com/t5/articles/pdf-inking-on-microsoft-edge/mp/1016006>
- Microsoft Build Book of News
  - <https://news.microsoft.com/build-2020-book-of-news/>

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## Data Platform

- Cumulative Update #13 for SQL Server 2016 SP2
  - <https://techcommunity.microsoft.com/t5/sql-server/cumulative-update-13-for-sql-server-2016-sp2/ba-p/1428008>
- Lesson Learned #129: Using Data Source External from Azure SQL Database to Azure SQL Managed Instance
  - <https://techcommunity.microsoft.com/t5/azure-database-support-blog/lesson-learned-129-using-data-source-external-from-azure-sql/ba-p/1443210>
- Azure SQL Edge now in preview
  - Azure SQL Edge is a small-footprint container (less than 500 mb) running in ARM- and x64-based devices in connected, disconnected, or semi-connected environments where speed, agility, and analytics are important.
  - <https://azure.microsoft.com/en-us/updates/azure-sql-edge-now-in-preview/>
- Build apps of any size or scale with Azure Cosmos DB
  - Autoscale provisioned throughput (called “autopilot mode” in preview) will maintain SLAs while scaling up to a customer-specified maximum to meet the needs of unpredictable, high-throughput workloads.
  - The serverless pricing model, in preview soon, will handle traffic bursts on demand. This makes it easy to run spiky workloads that don’t have sustained traffic
  - Encryption-at-rest with customer-managed keys available now
  - Azure Active Directory (Azure AD) integration and point-in-time backup and restore, [are] both coming soon.
  - With Azure Synapse Link (preview), the data in Azure Cosmos DB is automatically and continuously made available for analytics with no Extract-Transform-Load (ETL) through an analytical store built on top of the transactional store, and continual data updates happening with no performance impact on transactions.

- <https://azure.microsoft.com/blog/build-apps-of-any-size-or-scale-with-azure-cosmos-db/>
- <https://docs.microsoft.com/en-us/azure/cosmos-db/synapse-link>
- <https://azure.microsoft.com/en-us/updates/azure-synapse-link-for-azure-cosmos-db-is-now-in-preview/>
- <https://azure.microsoft.com/en-us/updates/encryption-at-rest-with-customermanaged-keys-on-azure-cosmos-db-now-generally-available/>
- Azure Private Link for Azure Cosmos DB now in general availability
  - Use Private Link to connect to an Azure Cosmos DB account from your virtual network via a private endpoint (a set of private IP addresses in a subnet within the virtual network), then limit access to your Azure Cosmos DB account over these private IP addresses.
  - When Private Link is combined with restricted network security group (NSG) policies, it helps reduce the risk of data exfiltration.
  - <https://azure.microsoft.com/en-us/updates/azure-private-link-for-azure-cosmos-db-now-in-general-availability/>
- Azure Active Directory support in Azure Database for MySQL, PostgreSQL now available
  - <https://azure.microsoft.com/en-us/updates/azure-active-directory-support-in-azure-database-for-mysql-now-available/>
  - <https://azure.microsoft.com/en-us/updates/azure-active-directory-support-in-azure-database-for-postgresql-single-server-now-available/>
- New features for Azure Cosmos DB built-in Jupyter Notebook support
  - Author and run C# notebooks from Data Explorer. The environment includes a built-in instance of the Azure Cosmos DB .NET SDK for easy access to the data, and you can import your own NuGet packages as needed.
  - Connect your notebook workspace to a GitHub repository. After connecting, your GitHub notebooks will be available to view, run, and edit in your workspace. Conveniently save the changes directly to GitHub from within Azure Data Explorer.
  - <https://azure.microsoft.com/en-us/updates/new-features-for-azure-cosmos-db-built-in-jupyter-notebook-support/>
- Machine Learning on Azure SQL Managed Instance limited preview available
  - Machine Learning services with support for R and Python languages now include limited preview support on Azure SQL Managed Instance.
  - <https://azure.microsoft.com/en-us/updates/machine-learning-on-azure-sql-managed-instance-limited-preview-available/>
- Azure SQL Database Hyperscale—Transparent data encryption with customer-managed keys now in preview
  - For the Hyperscale service tier in Azure SQL Database, TDE with bring your own key (BYOK) support is now available in preview. TDE with BYOK gives customers full and granular control over usage and management of the database encryption key (also known as TDE protector) and enables central management of keys in Azure Key Vault.
  - <https://azure.microsoft.com/en-us/updates/sqlhyperscale-tde-byok/>
- Minimal TLS version setting is now available for Azure SQL Database, Azure Synapse Analytics, Azure SQL Database for MariaDB, PostgreSQL, MySQL

- Enforce a minimal TLS version at the server level that applies to Azure SQL Databases and Azure Synapse Analytics workspaces hosted on the server using the new TLS version setting.
- We recommend setting the minimal TLS version to 1.2, after testing to confirm your applications support it, because it includes fixes for vulnerabilities found in previous versions. It's also the highest TLS version supported in Azure SQL Database.
- <https://azure.microsoft.com/en-us/updates/sqlldb-minimal-tls-version/>
- <https://azure.microsoft.com/en-us/updates/azure-database-for-mariadb-minimal-tls-version/>
- <https://azure.microsoft.com/en-us/updates/azure-database-for-postgresql-minimal-tls-version/>
- <https://azure.microsoft.com/en-us/updates/azure-database-for-mysql-minimal-tls-version/>
- New regions for Azure Database for PostgreSQL—Hyperscale (Citius)
  - Hyperscale (Citius) is now generally available in the Americas, Asia Pacific, Europe, and Middle East and Africa regions.
  - <https://azure.microsoft.com/en-us/updates/new-regions-for-azure-database-for-postgresql-hyperscale-citius/>
- One-year and three-year reserved capacity for Azure Database for PostgreSQL—Hyperscale (Citius)
  - Azure Database for PostgreSQL—Hyperscale (Citius) reserved capacity is now available to reserve compute power for your existing and future Hyperscale (Citius) server groups
  - <https://azure.microsoft.com/en-us/updates/oneyear-and-threeyear-reserved-capacity-for-azure-database-for-postgresql-hyperscale-citius/>
- Backup your SAP HANA databases running on RHEL using Azure Backup now in Preview
  - Azure Backup support for Red Hat Enterprise Linux (RHEL), one of the widely used Linux operating systems running SAP HANA, is now available in preview.
  - <https://azure.microsoft.com/en-us/updates/backup-your-sap-hana-databases-running-on-rhel-using-azure-backup/>
- Azure SQL Auditing to storage account behind Virtual Network and firewall now generally available
  - Writing database events via Azure SQL Auditing to an Azure storage account destination behind an Azure Virtual Network or firewall is now in general availability
  - <https://azure.microsoft.com/en-us/updates/azure-sql-auditing-to-storage-account-behind-virtual-network-and-firewall-now-generally-available/>
- Backup storage consumption on Managed Instance explained
  - SQL Managed Instance supports self-service for point-in-time restore (PITR) by automatically creating full backup, differential backups, and transaction log backups. Full database backups are created weekly, differential database backups are generally created every 12 hours, and transaction log backups are generally created every 5-10 minutes, with the frequency based on the compute size and amount of database activity.
  - The article discusses some things which can influence going into excess backup storage utilization
  - Backup storage consumption today can be monitored using Azure Cost Management.
  - <https://techcommunity.microsoft.com/t5/azure-sql-database/backup-storage-consumption-on-managed-instance-explained/ba-p/1390923>
  - <https://techcommunity.microsoft.com/t5/azure-sql-database/fine-tuning-backup-storage-costs-on-managed-instance/ba-p/1390935>

- Monitoring options available for Azure SQL Managed Instance
  - <https://techcommunity.microsoft.com/t5/azure-sql-database/monitoring-options-available-for-azure-sql-managed-instance/ba-p/1065416>

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## Data Integration

- Authenticate Azure Stream Analytics to Azure SQL Database using managed identities (preview)
  - Azure Stream Analytics now supports managed identity authentication with Azure SQL Database.
  - Managed identities eliminate the limitations of user-based authentication methods, like needing to reauthenticate due to password changes or user token expirations that occur every 90 days. Additionally, managed identities help with the automation of Stream Analytics job deployments that output to Azure SQL Database.
  - <https://azure.microsoft.com/en-us/updates/authenticate-stream-analytics-to-azure-sql-db-using-managed-identities-preview/>
- High throughput output from Stream Analytics to Azure Synapse Analytics (preview)
  - Azure Stream Analytics jobs now have the ability to output to an existing SQL pool table in Azure Synapse Analytics, and to process throughput rates up to 200 MB/s.
  - <https://azure.microsoft.com/en-us/updates/high-throughput-output-to-azure-synapse-analytics-from-stream-analytics-preview/>

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## Analytics and Reporting

- Azure Synapse Analytics features availability now in public preview
  - Data integration, data warehousing, and big data analytics can all be done from a single-pane-of-glass, businesses can break down organizational silos that stagnate time to insight.
  - Manage, secure, and analyze all types of data. A single service can query structured or semi-structured data with data warehousing resources, and quickly execute a serverless query over unstructured data from your data lake.
  - Azure Synapse Link—a cloud-native hybrid transactional analytical processing (HTAP) implementation now available in public preview...[enables] customers to get insights from their live transactional data stored in their operational databases with a single click, without managing data movement or placing a burden on their operational systems.
  - With the deeply integrated Apache Spark and SQL engines in Azure Synapse, data professionals who prefer familiar SQL can seamlessly collaborate with those who prefer Spark—and vice versa
  - Those familiar or who prefer SQL can query Spark tables using the T-SQL language
  - Advanced security and privacy are built into the fabric of Azure Synapse, such as always-on data encryption. And for fine-grained access control, businesses can help ensure data stays safe and private using column-level security and native row-level security, as well as dynamic data masking to automatically protect sensitive data in real-time.
  - You can create new reports or consume your existing Power BI datasets and reports, all within Synapse by simply linking your Power BI and Synapse workspaces.

- Automatic creation of materialized views in Synapse. With this new feature, Power BI and Azure Synapse Analytics will determine and create the most optimal set of materialized views based on learning Power BI user queries and usage patterns.
- <https://azure.microsoft.com/blog/azure-synapse-analytics-insights-for-all/>
- <https://powerbi.microsoft.com/en-us/blog/announcing-azure-synapse-analytics-public-preview/>
- <https://azure.microsoft.com/en-us/updates/azure-synapse-analytics-features-availability-now-in-preview/>
- Introducing Power BI deployment pipelines (Preview)
  - A new and improved way for BI teams to manage content lifecycle within Power BI Premium.
  - Deployment pipelines help enterprise BI teams build an efficient and reusable process by maintaining development, test, and production environments. BI creators can incrementally transition new or updated content between environments, reconfiguring them with the appropriate data connections and permissions.
  - <https://powerbi.microsoft.com/en-us/blog/introducing-power-bi-deployment-pipelines-preview/>
- Announcing support for service principals using the XMLA endpoint in Power BI Premium
  - In Power BI, you can now use service principals to automate common tasks such as deploying models, performing a data refresh, and applying model changes. Permissions are assigned to service principals through workspace membership, much like regular user accounts.
  - <https://powerbi.microsoft.com/en-us/blog/announcing-support-for-service-principals-using-the-xmla-endpoint-in-power-bi-premium/>
- Introducing Power BI Premium Capacity Metrics App as a template app
  - This app will continue to support you in monitoring the health of premium capacities and making sound decisions about the best use of them and when to scale them so that your users get the best possible experience. As a template app, you will have the ability to connect to the underlying dataset, as well as customize of the report as per your needs. You can then distribute it as an app to colleagues in your organization.
  - <https://powerbi.microsoft.com/en-us/blog/introducing-power-bi-premium-capacity-metrics-app-as-a-template-app/>
- Power BI Desktop, Power BI Report Server May 2020 Feature Summary
  - <https://powerbi.microsoft.com/en-us/blog/power-bi-desktop-may-2020-feature-summary/>
  - <https://powerbi.microsoft.com/en-us/blog/power-bi-report-server-may-2020-feature-summary/>
- Announcing General Availability (GA) of shared and certified datasets in Power BI
  - With shared and certified datasets, Power BI users can easily discover and reuse enterprise-wide semantic models. They can be shared across workspaces, fostering reuse and maintaining the single source of truth.
  - They can also be promoted and certified as trusted and authoritative datasets.
  - <https://powerbi.microsoft.com/en-us/blog/announcing-general-availability-ga-of-shared-and-certified-datasets-in-power-bi/>

## AI and IoT

- New Responsible ML innovation in Azure Machine Learning
  - The new responsible ML capabilities in Azure Machine Learning and our open source toolkits, empower data scientists and developers to understand machine learning models, protect people and their data, and control the end-to-end machine learning process.
  - <https://azure.microsoft.com/en-us/updates/new-responsible-ml-innovation-in-azure-machine-learning/>
  - <https://azure.microsoft.com/en-us/services/machine-learning/responsibleml/#features>
- Build updates for Azure Cognitive Search
  - ML Ranking for Search Capabilities (preview announced at Build). ML ranking uses reinforcement learning and can continually tune the results to amplify relevance as users continue to interact with the search results.
  - AML skill integration (preview announced at Build), allowing you to integrate a custom Azure Machine Learning skill
  - <https://azure.microsoft.com/en-us/updates/build-updates-for-azure-cognitive-search/>
- Live Video Analytics on IoT Edge is available in Public Preview
  - Live Video Analytics is a platform for building AI-based video solutions and applications. You can generate real-time business insights from video streams, processing data near the source and applying the AI of your choice.
  - Video: <https://azure.microsoft.com/en-us/resources/videos/live-video-analytics-demo/>
  - Documentation: <https://docs.microsoft.com/en-us/azure/media-services/live-video-analytics-edge/overview>
- Azure Text Analytics—Opinion mining is now available in preview
  - Opinion mining is a feature of Sentiment Analysis, starting in version 3.1—preview 1. Also known as aspect-based sentiment analysis in natural language processing (NLP), this feature provides more granular information about the opinions related to aspects (such as the attributes of products or services) in text.
  - For example, if a customer leaves feedback about a hotel such as "the room was great, but the staff was unfriendly", opinion mining will locate aspects in the text, and their associated opinions and sentiments such as room->great, staff->unfriendly
  - <https://azure.microsoft.com/en-us/updates/opinion-mining-is-now-available-in-text-analytics-in-public-preview/>
- Azure Text Analytics v3 is now generally available
  - Azure Text Analytics v3 with sentiment analysis, key phrase extraction, language detection, and named entity recognition capabilities, as well as model version controls, is now generally available.
  - <https://azure.microsoft.com/en-us/updates/text-analytics-v3-is-now-generally-available/>
- Announcing Project Bonsai and Project Moab
  - Announcing Project Bonsai, Microsoft's machine teaching service to create intelligent industrial control systems, along with Project Moab, a new open-source balancing robot to help engineers and developers learn how to build these real-world autonomous systems.



- Machine teaching enables the ability to incorporate knowledge from experts rather than extracting knowledge from data alone.
- <https://azure.microsoft.com/en-us/updates/announcing-project-bonsai-and-project-moab/>

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## Infrastructure and Management

- Azure Blob versioning public preview now available
  - Applications and users create, update, and delete data in Azure Blob storage continuously. A common requirement is the ability to manage and access both current and historical versions of the data. For example, an application which accepts contracts from customers has a requirement to keep all versions of the contract while keeping the same object name.
  - As the next step to enhance data management and protection, we are excited to announce the Blob storage versioning preview.
  - <https://azure.microsoft.com/en-us/updates/azure-blob-versioning-public-preview-now-available/>
- Object replication public preview for Azure Blob storage
  - Object replication is a new capability for block blobs that lets you replicate your data from your blob container in one storage account to another anywhere in Azure.
  - <https://azure.microsoft.com/en-us/updates/azure-storage-object-replication-public-preview/>
- Azure Private Link for Azure Monitor is now available
  - At this time, **you must request access to use this capability.**
  - Azure Private Link allows you to securely link Azure PaaS services to your virtual network using private endpoints. For many services, you just set up an endpoint per resource. However, Azure Monitor is a constellation of different interconnected services that work together to monitor your workloads. As a result, we have built a resource called an Azure Monitor Private Link Scope (AMPLS) that allows you to define the boundaries of your monitoring network and connect to your virtual network.
  - <https://azure.microsoft.com/en-us/updates/private-link-azure-monitor-is-now-available/>
  - <https://docs.microsoft.com/en-us/azure/azure-monitor/platform/private-link-security>
- Log Analytics New Query Experience - Example Queries
  - Introducing the new Example Query experience in Log Analytics. Example queries are now "front and center" complete with a new look and over 250 example queries for our top Azure resources
  - <https://azure.microsoft.com/en-us/updates/log-analytics-new-query-experience-example-queries/>
- Azure Firewall May 2020 updates
  - Two new key features are now available in Azure Firewall—forced tunneling and SQL FQDN filtering. Additionally, we're increasing the limit for multiple public IP addresses from 100 to 250 for both DNAT and SNAT.
  - With SQL FQDNs, you can filter traffic from your VNets to an Azure SQL Database or an Azure SQL Data Warehouse. For example: Only allow access to sql-server1.database.windows.net.



- SQL FQDN filtering is supported in proxy-mode only (port 1433). If you use SQL in the default redirect mode, you can filter access using the SQL service tag as part of network rules.
  - <https://azure.microsoft.com/en-us/updates/azure-firewall-may-2020-updates/>
- Azure Service Health—Emerging issues now available
  - You previously had to refer to both Service Health for personalized service health information and the Status page for emerging issues. Now you can solely rely on Service Health and take advantage of personalization and other Service Health features.
  - <https://aka.ms/azureservicehealth>
  - <https://azure.microsoft.com/en-us/updates/azure-service-health-emerging-issues-now-available/>
- Key Vault bring your own key (BYOK) is now generally available
  - A new bring your own key (BYOK) method to import keys securely from on-premises HSMs into Azure Key Vault is now generally available. This BYOK method can be used to import keys from any supported on-premises HSM.
  - <https://azure.microsoft.com/en-us/updates/akv-byok-ga/>
- Azure Shared Image Gallery—New features are now available in preview
  - Capture VM. Use this feature to create a Shared Image Gallery image version directly from a VM. Previously, creating Shared Image Gallery image versions was supported from only managed images or snapshots.
  - And more
  - <https://azure.microsoft.com/en-us/updates/shared-image-gallery-new-features/>
- Azure Backup now provides protection against accidental deletion of Azure file shares
  - To provide protection against cyberattacks or accidental deletion, Azure Backup now has protection against the accidental or malicious deletion of backed-up file shares
  - When you configure protection for a file share, Azure Backup enables the soft delete feature on a storage account level with a retention period of 14 days. You can also reset the retention period setting as per your requirement.
  - <https://azure.microsoft.com/en-us/updates/azure-backup-now-provides-protection-against-accidental-deletion-of-azure-file-shares/>
- Azure Automation TLS 1.2 enforcement begins September 1, 2020
  - Beginning September 1, 2020, Azure Automation will enforce transport layer security (TLS) 1.2 or later versions for all external HTTPS endpoints. We recommend you ensure all your clients are ready to handle TLS 1.2 or later versions.
  - <https://azure.microsoft.com/en-us/updates/azure-automation-tls12-enforcement/>
- Virtual machine (VM)-level disk bursting
  - Virtual machine (VM)-level disk bursting is a new feature that enables your workloads to handle unforeseen disk traffic spikes smoothly without the need to overprovision your virtual machine. The feature is now enabled on all of Azure Lsv2-series virtual machines.
  - <https://azure.microsoft.com/en-us/updates/babanisamicrosoftcom/>
- Azure Lighthouse: A unified control plane for managing Azure at scale | Azure Friday
  - Azure Lighthouse can manage hundreds of customers, thousands of subscriptions, and millions of resources from a unified control plane.
  - [https://www.youtube.com/watch?v=x-Db\\_AFKCzM](https://www.youtube.com/watch?v=x-Db_AFKCzM)

## Training and Technical Guides

- ‘Learn TV’ daily online program to provide developers with education and skills
  - “Learn TV” will be a single aggregation point of technical video content and will bring together structured content created across Microsoft properties such as Channel 9 and first-party events and hackathons, with casual developer conversations and instructor-led sessions from advocates and engineers
  - <https://docs.microsoft.com/en-us/learn/tv/>
- How to use Azure Functions and secure configuration with Azure Key Vault | Azure Tips and Tricks
  - In this edition of Azure Tips and Tricks, you'll learn how to use secure configuration for Azure Functions with Azure Key Vaults
  - <https://www.youtube.com/watch?v=6HKj5hOuD00>
- Microsoft identity platform’s permissions and consent framework
  - This video explains the permissions and consent framework used by the Microsoft identity platform.
  - <https://www.youtube.com/watch?v=toAWRNqqDL4>
  - [https://www.youtube.com/watch?v=Mtpx\\_lpfRLs](https://www.youtube.com/watch?v=Mtpx_lpfRLs)
  - <https://www.youtube.com/watch?v=zjezqZPPOfc>

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## Development and Tools

- The May 2020 release of Azure Data Studio is now available
  - <https://cloudblogs.microsoft.com/sqlserver/2020/05/20/the-may-2020-release-of-azure-data-studio-is-now-available/>
- Azure Data Lake Storage Gen2 PowerShell and CLI are now generally available
  - Use PowerShell and Azure CLI filesystem semantics for operations on Azure Data Lake Storage Gen2 filesystems, directories and files.
  - <https://azure.microsoft.com/en-us/updates/azure-data-lake-storage-gen2-powershell-and-cli-are-now-generally-available/>
- Azure Cosmos DB Python SDK 4.0 now available
  - This SDK was developed based on the Azure SDK Python guidelines and is fully open-sourced.
  - <https://azure.microsoft.com/en-us/updates/azure-cosmos-db-python-sdk-40-now-available/>
- Visual Studio Live Share now supports voice chat
  - Create shared coding sessions from Visual Studio, Visual Studio Code, or Visual Studio Codespaces to work together in real time – now with voice and text chat.
  - <https://azure.microsoft.com/en-us/updates/visual-studio-live-share-now-supports-voice-chat/>
- Announcing .NET 5 Preview 4 and our Journey to one .NET
  - Preview 4 for .NET 5 is now available, with general availability coming in November.
  - This release continues the journey to unify the .NET platform across mobile, web, desktop, artificial intelligence/machine learning, big data and IoT workloads.
  - <https://azure.microsoft.com/en-us/updates/announcing-net-5-preview-4-and-our-journey-to-one-net/>

- Azure Databases extension for Visual Studio Code
  - Azure Databases extension for Visual Studio Code, with support for Azure Cosmos DB and Azure PostgreSQL, is now available.
  - <https://azure.microsoft.com/en-us/updates/azure-databases-extension-for-visual-studio-code/>
- Tip 256 - Work with your Azure apps in Visual Studio Codespaces
  - You can now use Visual Studio Codespaces to develop your applications with. This means that you can open a browser and start coding. Or you can use VS Code or Visual Studio (available soon) on your local machine and connect that to Visual Studio Codespaces. This is a great way to develop a resource-intensive application on a simple device.
  - <https://microsoft.github.io/AzureTipsAndTricks/blog/tip265.htmls>

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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 7, 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 (ODBC): SQL 2008 to SQL 2016. Available for Windows and Linux.
  - <https://blogs.msdn.microsoft.com/sqlreleaseservices/snac-lifecycle-explained/>
  - Download the Latest ODBC Driver for SQL Server: <https://docs.microsoft.com/en-us/sql/connect/odbc/download-odbc-driver-for-sql-server>
- 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](https://support.microsoft.com/en-us/gp/framework_faq)

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## SQL Server 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

- Microsoft Tech Community. Collaborate, share and learn from experts <https://techcommunity.microsoft.com/>
- Provide Feedback to the Product Group: <https://feedback.azure.com/forums/908035-sql-server>
- 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 Self-Paced Labs: Acquire the cloud skills you need, at your own pace. Enjoy hands-on learning on your schedule with our free, self-paced labs, and keep your cloud knowledge fresh. <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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## Newsletter Archives

- Azure Talking Points: Microsoft Data and AI News <https://aka.ms/AzureTalkingPoints>
- SQL Server Updates and Lessons Learned <https://docs.microsoft.com/en-us/archive/blogs/sqlupdates/>

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