

# Microsoft Data and AI News

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**May 2021**

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## General Announcements

- [Learn. Connect. Code. Register for Microsoft Build and join us at 8 a.m. PT on Tuesday, May 25, 2021](#)
  - Explore what's next in tech and the future of hybrid work.
  - Discover solutions, sharpen skills, and find out what you can add to your toolbox at this year's event.
  - Register [here](#)
- [Ground processing with space data 5x faster with Azure](#)
  - Over the past year, Microsoft has teamed with Ball Aerospace to develop the prototype for the Commercially Augmented Space Inter Networked Operations (CASINO) Program Office, facilitated by the Defense Innovation Unit, demonstrating agile cloud processing capabilities in support of the United States Space Force.
  - To execute the demonstrations, the team transmitted simulated overhead persistent infrared (OPIR) data through Telesat satellites to Azure in the datacenter, as well as directly to a tactical vehicle equipped with an Azure Stack Edge device.
- [A fluent new look for the Azure icon](#)
  - The new Azure icon represents the unity of Azure within the larger Microsoft family of product icons. It's part of Microsoft's Fluent Design System.
- [Designing accessible technology for all](#)
  - Read on for features designed to improve not only your experience, but everyone else's too.
  - Some key features: Immersive reader in Microsoft Edge, Focus Assist in Windows 10, Accessibility Checker and more.
- [Doubling down on accessibility: Microsoft's next steps to expand accessibility in technology, the workforce and workplace](#)

- We believe that accessible technology is a fundamental building block that can unlock opportunities in every part of society
- Our work starts by ensuring that Microsoft's own products are accessible by design
- We're [...] building a second strong pillar that will intensify our focus on building a workforce that better represents people with disabilities.
- [Microsoft mobilizing resources to help Covid response in India](#)
  - We are working to ensure we are doing everything we can to take care of our employees in India and stepping up to help address urgent needs in the broader community. This includes daily crisis management team meetings in Redmond and India with teams across the company. These calls allow us to quickly identify areas where Microsoft can help and ensure we can move quickly to respond.
  - Examples of steps we are taking: Becoming a founding member of Global Task Force on Pandemic Response, Addressing severe shortage of oxygen, Supporting nonprofits in India, Providing critical technology and technical support, and Continuing to supply medical assistance.
- [Building on a year of open data: progress and promise](#)
  - One year ago, Microsoft launched an Open Data Campaign to help close the data divide between those countries and companies that have the data they need to innovate and those that do not.
  - We helped to launch nine data collaborations toward our goal of 20 data collaborations by 2022
  - In some cases, we opened our own data to seed these collaborations, including new United States broadband usage data and Bing Maps aerial and streetside imagery data to take on challenges
  - Read on for lessons learned and more.
- [Beyond Calibri: Finding Microsoft's next default font](#)
  - Commissioned five new custom fonts as candidates for the next default font
  - Calibri has been the default font for all things Microsoft since 2007, when it stepped in to replace Times New Roman across Microsoft Office. It has served us all well, but we believe it's time to evolve.
  - Five new fonts: Meet Tenorite, Bierstadt, Skeena, Seaford, and Grandview
- [To cool datacenter servers, Microsoft turns to boiling liquid](#)
  - Azure is the first cloud provider that is running two-phase immersion cooling in a production environment
  - For decades, chip advances stemmed from the ability to pack more transistors onto the same size chip, roughly doubling the speed of computer processors every two years without increasing their electric power demand.
  - Moore's Law [...] held through the 2010s and has now begun to slow.
  - To meet the need for performance, the computing industry has turned to chip architectures that can handle more electric power.
  - The more electric power pumped through these processors, the hotter the chips get. The increased heat has ramped up cooling requirements to prevent the chips from malfunctioning.
  - Heat transfer in liquids [...] is orders of magnitude more efficient than air.
  - Microsoft's investigation into two-phase immersion cooling is part of the company's multi-pronged strategy to make datacenters more sustainable and efficient to build, operate and maintain.
- [Answering Europe's Call: Storing and Processing EU Data in the EU](#)
  - Microsoft cloud services already comply with or exceed EU guidelines

- This plan includes any personal data in diagnostic data and service-generated data, and personal data we use to provide technical support.

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## Data Platform

- [Microsoft SQL Server Linux-based container images to be available only from the Microsoft Container Registry](#)
  - Please upgrade to the Microsoft Container Registry ([mcr.microsoft.com](https://mcr.microsoft.com)) if you are still using the old source ([Microsoft/mssql-server-linux](https://mcr.microsoft.com/mssql-server-linux))
  - See [Deprecating the Distribution of Microsoft Container Images via Docker Hub](#) for more details.
- [What's new with SQL Server Big Data Clusters—CU10 release](#)
  - Big Data Clusters extends SQL Server's analytical capabilities beyond in-database processing of transactional and analytical workloads by uniting the SQL engine with Apache Spark and Apache Hadoop to create a single, secure, and unified data platform.
  - The latest cumulative update (CU), CU10, for SQL Server Big Data Clusters includes important capabilities: (1) Upgraded base images from Ubuntu 16.04 to Ubuntu 20.04 (2) High availability support for Hadoop KMS components. (3) Additional configurability of SQL Server networking and process affinity settings at the resource-scope. (4) Resource management for Spark-related containers through cluster-scoped settings.
- [SQL Server 2019 on Ubuntu 20.04, python2 dependency removed for SQL Server 2019 across distributions](#)
  - Announcing the official production support and availability of SQL Server 2019 package native to Ubuntu 20.04 distribution starting with CU 10.
  - You can pull the image using the command `docker pull mcr.microsoft.com/mssql/server:2019-CU10-ubuntu-20.04`
  - As python 2 is no longer supported and has reached end of life, SQL Server 2019 CU10 moves away from python 2 dependency to python 3
- [Custom RBAC to access QPI's query text with minimal permissions](#)
  - Query Performance Insight helps you to quickly identify what your longest running queries are, how they change over time, and what waits are affecting them.
  - You can create a custom Azure Role-Based Access Control (RBAC) to grant a user minimal permissions to view the query text
- [Active geo-replication for Azure SQL Hyperscale now in preview](#)
  - When creating a geo-replica for Hyperscale, the geo secondary is seeded with data from the primary and is a size of data operation.
  - A geo-replica does not share page servers with the primary, even if they are in the same region. This provides the necessary redundancy for geo-failovers.
- [Cumulative Update #24 for SQL Server 2017 RTM](#)
- [Azure Database for MySQL - Flexible Server now supports 8.0.21](#)
  - MySQL 8.0.21 comes with better concurrency and optimizer improvements like support for index hints and hash outer joins.
  - With Azure Database for MySQL - Flexible Server burstable compute size, you can quickly provision a low-end MySQL 8.0.21 server for development to evaluate the features and leverage stop server to save cost when the server is not in use.
- [Public preview: Azure Database for PostgreSQL – Flexible Server intelligent performance](#)

- This latest release of intelligent performance features is comprised of Query Store on Postgres 11 and 12. Query Store collects and stores query execution statistics. With this functionality, you can inspect your database to understand your workloads, identify bottlenecks, and detect changes in query performance over time.
- [Public preview: Forced failover now available with zone redundant high availability for Azure Database for MySQL - Flexible Server](#)
  - Allows you to force a manual failover from the primary to standby server to either test the high availability functionality or switch the availability zone between the primary and standby servers.

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## Data Integration

- [video] [Microsoft Azure Synapse Link for Cosmos DB integration](#)

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## Analytics and Reporting

- [Power BI M Gartner Modern Analytics and BI Platforms Bake-off 2021: Analysis of impact of COVID-19 with Power BI](#)
  - Each year, Gartner invites vendors from Magic Quadrant for Analytics and Business Intelligence platforms to present at the Gartner Data & Analytics Summit and show how their product can help solve real-world problems and find insights in real-world data.
  - This video shows the final demos we produced for the bakeoff. There are 5 three or four minute demos covering various aspects of Power BI.
- [Power BI May 2021 Feature Summary](#)
  - Small multiples: now on by default and updated roadmap - Preview
  - Support for removing the sensitivity label in Desktop
  - Smart Narratives and Anomaly detection - Generally Available
  - DirectQuery for Power BI datasets and Azure Analysis Services - Preview
  - The Azure Databricks connector has been updated with the following: (1) Better support for Unicode characters in Direct Query mode (2) The "Batch Size" option is now deprecated and removed from the Connector dialog but can still be provided in the Advanced (Query) Editor. Existing saved connections are not affected. (3) Minor improvements in query generation
  - Quickly create reports from SharePoint lists - Preview
  - And much more!
- [Announcing the new Power Automate visual for Power BI reports](#)
  - With the new Power Automate visual, end-users can run an automated flow all within a Power BI report.
  - Furthermore, the executed flow can be data contextual, meaning that the Flow inputs can be dynamic based on the filters set by the end-user.
- [Using XMLA endpoints to change data sources in a Power BI dataset](#)
  - Power BI maintains security-related data source information such as credentials and privacy settings outside the dataset, whereas Azure Analysis Services and SQL Server Analysis Services maintain these settings in the data model.
  - Power BI parses the M expression on the table partition, recognizes the data sources, and attempts to locate the data source settings outside of the dataset

- Because the data source settings are not part of the Power BI dataset, you cannot retrieve the credentials or privacy settings by downloading a dataset and examining its metadata, or by using any other means. This also means you cannot provide security-related data source settings through metadata updates via XMLA endpoints.
- You can choose to point a dataset to a different data source, either by modifying the M expression of a table partition, by using a query partition source that points to a different data source definition in the dataset, or by using a shared expression that defines the data source details or a source query...you always must make sure a matching data source definition with the required credentials and privacy settings exists in Power BI, or bind the dataset to a data gateway that has the required settings.
- [Premium Gen 2 timeline update – Capacity size enforcement and autoscale charges coming up](#)
  - Premium gen 2 capacities is expected to be announced [as] Generally Available [on] July 2021.
  - The gen2 platform will be automatically applied to all Premium capacities after general availability as a service update. Stay tuned for more details on this service update in the coming weeks.
- [Introducing Goals in Power BI - Public Preview](#)
  - Goals enables teams to easily curate business metrics that matter most and aggregate them in a unified view.
  - From there, teams can measure progress against their goals, proactively share updates with their teammates, and dive deeper into their data when something needs further analysis.
- [Query Plan Visual for Power Query Online - Public Preview](#)
  - The Query Plan visual will allow you to understand what's happening under the hood of your query with more details than the Step Folding indicator.
  - This feature is primarily useful for identifying at a deeper level what operations are getting broken off for folding, as well as what connectors are emitting.
  - We are also working towards bringing the Query Plan into Power Query Desktop, but we cannot provide a timeline at this point.
- [Announcing support for backup and restore of Power BI datasets - Public Preview](#)
  - You can now use SQL Server Management Studio (SSMS), Analysis Services cmdlets for PowerShell, and other tools to perform backup and restore operations in Power BI via XMLA endpoints in much the same way as you would for tabular models in Azure Analysis Services (Azure AS).
  - The Backup and Restore feature takes advantage of the Azure connections infrastructure in Power BI, using the same ADLS Gen2 storage account for dataset backups.
- [Using Out-Of-Line Bindings in Power BI](#)
  - Out-of-line (OOL) bindings: an advanced Analysis Services capability to temporarily change the data bindings of certain metadata objects in a dataset for the duration of a refresh command, such as data sources, partitions, and expressions.
  - You can now use OOL bindings in Power BI through XMLA endpoints with some restrictions
  - One of the primary scenarios for OOL bindings is adding data to an existing table partition.
  - OOL bindings in Power BI support changing a partition's M expression to another M expression that references the same or different data source provided the data source settings exist in Power BI.

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- [Inference of ML Models in SQL Server via External Languages](#)
  - The model formats supported by the PREDICT function [depends on the SQL platform on which you perform native scoring](#).
  - SQL Server 2019 introduced an **extensibility framework** that users can use to create their own **language extension** and invoke execution in that language through T-SQL queries.
  - SQL Server 2019 allows implementing ONNX as an **external language** for model scoring.
  - This provides faster times for scoring ONNX models over data in SQL Server compared to implementations using SQL Server's Python capabilities (which invokes python as an external process and this external process invokes the ONNX runtime).
  - It is also much easier to express in a few lines of code, as opposed to a few tens of lines for the Python case.
  - Example usage code snippets: (1) `CREATE EXTERNAL LANGUAGE ONNX...` (2) `CREATE PROCEDURE dbo.sp_onnx_scoring...AS...EXECUTE sp_execute_external_script @language = N'ONNX', ...` (3) `EXEC sp_onnx_scoring <model_num>, "SELECT <feature list> FROM dbo.patients_table"`
- [\[video\] Build an Intelligent Bot with Microsoft Azure](#)
  - Step-by-step Azure Bot app creation walkthrough
- [General availability: Custom Translator—May new features, improvements and bug fixes](#)
  - New training pipeline to improve the custom model generalization and capacity to retain more customer terminology (words and phrases).
  - Refreshed Custom Translator baselines

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## Infrastructure and Management

- [General availability: Announcing lower pricing for provisioned throughput on Azure Ultra Disks](#)
  - Announcing a price reduction on provisioned throughput for Azure Ultra Disks by 65%.
- [How to get started with Metrics Advisor](#)
  - Metrics Advisor is part of the Azure Cognitive Service family and can analyze time series data for you, without you having to create a machine learning algorithm.
  - Azure Metrics Advisor takes the data, analyzes it, surfaces incidents and anomalies and lets you create alerts for them.
- [Azure Cost Management and Billing updates – April 2021](#)
- [\[video\] Simplify moving resources between regions with Azure Resource Mover | Azure Friday](#)
  - Learn how to use **Azure Resource Mover** for moving your resources **across regions** using a seamless unified experience.
- [Azure Backup: Operational backup for Azure Blobs is now generally available](#)
  - Operational backup for Azure Blobs, now generally available, is a managed data protection solution that lets you protect your block blob data from various data loss scenarios like blob corruptions, blob deletions, and accidental storage account deletions.
- [Append blob support in Azure Data Lake Storage is now generally available](#)
  - Append blobs provide a simple and effective way of adding new content to the end of a file or blob when the existing content does not need to be modified. This makes append blobs great for applications such as logging that need to add information to existing files efficiently and continuously. Until now, only block blobs were supported in Azure Data Lake Storage accounts.
- [Prevent Shared Key authorization for an Azure Storage account](#)

- To require clients to use Azure AD to authorize requests, you can disallow requests to the storage account that are authorized with Shared Key.
- [Azure Storage — Attribute-based Access Control \(ABAC\) now available for preview](#)
  - Attribute-based access control (ABAC) is an authorization strategy that defines access levels based on attributes associated with security principals, resources, requests, and the environment.
- [Log Analytics UI - New experience for Custom Logs](#)
  - New Custom Logs Blade

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## Training and Technical Guides

- [Teaming up with Coursera on new Azure Specializations and Scholarships](#)
  - Microsoft is collaborating with Coursera to bring new opportunities for skilling in Azure via three new Specializations: Azure Fundamentals, AI Fundamentals, and Data Fundamentals
  - As part of this initiative, we are also offering over 600 eligible Women in Cloud members free access to all three Specializations and their respective certifications.
  - Women in Cloud is a community-led, economic development organization with a mission to create \$1 billion in economic access and opportunity by 2030 by helping women with the tools, knowledge, and networks they need.
- [The Azure Data Architecture Map](#)
  - Areas of focus: (1) Traditional/ETL (2) Modern/ELT (3) Big Data (4) Artificial Intelligence
- [How to develop apps with Azure Database for PostgreSQL using best practices](#)
  - Enable firewall, run in a vnet, use Azure private link, set the minimum TLS version
  - Use environment variables for connection information
  - Enable read replication to mitigate failovers and enhance performance
  - Use autovacuum
  - Monitor performance with the Query Store
- [video] [How to get started with Azure Health Bot | Azure Tips and Tricks](#)
- [Enter the world of quantum with new Microsoft Garage project, Reference Guide for Quantum Computing](#)
  - The content in the book establishes three phases. (1) Basic concepts of quantum computing like quantum states, qubits, gates, measurement, circuits, etc. (2) Quantum algorithms explained using with step by step derivations. (3) State-of-the art hardware systems and real-world applications of quantum computing.

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## Development and Tools

- [Announcing PowerShell Crescendo Preview.2](#)
  - Announcing the second preview of PowerShell Crescendo, a framework to rapidly develop PowerShell cmdlets for **native commands**, regardless of platform.
  - To install Microsoft.PowerShell.Crescendo: `Install-Module Microsoft.PowerShell.Crescendo -AllowPrerelease`
  - Goal is to make it easier to convert your native commands to PowerShell cmdlets and receive the benefits that PowerShell provides.
- [Announcing PSDesiredStateConfiguration on PowerShell Gallery](#)



- To further the goals of DSC, PSDesiredStateConfiguration module will no longer be included in the PowerShell package beginning in a future release of PowerShell 7.2 preview.
- Separating DSC into its own module enables the development of DSC independent of PowerShell and reduces the size of the PowerShell package.

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## Lifecycle Updates

- [Search Product and Services Lifecycle Information](#)
  - Microsoft Lifecycle provides consistent and predictable guidelines for support throughout the life of a product, helping customers manage their IT investments and environments while strategically planning for the future.
- [Lifecycle FAQ](#)
- [Products Reaching End of Support for 2021](#)
  - SQL Server 2016 moving to extended support on July 13, 2021. Extended Support includes security updates at no cost, and paid non-security updates and support. Additionally, Microsoft will not accept requests for design changes or new features during the Extended Support phase.
- [SQL Server Native Client \(SNAC\) is deprecated.](#)
  - OLEDB: [Microsoft OLE DB Driver for SQL Server](#) (msoledbsql - not the older, sqloledb). Note: OLEDB has been [undeprecated](#). To use the new msoledbsql driver in existing applications, you should plan to convert your connection strings from sqlncli or sqloledb, to the newer msoledbsql.
    - For example, convert **-from-** `Provider=SQLNCLI11; Server=SQL1;Database=DB1;Trusted_Connection=yes;` **-to-** `Provider=MSOLEDBSQL; Server=SQL1; Database=DB1;Trusted_Connection=yes;`
  - ODBC: [Download the latest ODBC Driver for SQL Server](#)
- [Support for .NET Framework 4, 4.5 and 4.5.1 ended on January 12, 2016](#)
  - 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.
  - Beginning with version 4.5.2 and later, .NET Framework is defined as a component of the Windows operating system (OS). Components receive the same support as their parent products, therefore, .NET Framework 4.5.2 and later follows the lifecycle policy of the underlying Windows OS on which it is installed.

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## SQL Server Builds

- Find information about the latest SQL GDRs (security updates). The [Security Update Guide](#) is the authoritative source of information on Microsoft security updates. You can filter by date and product category.
- Find the [latest SQL Server service packs and cumulative updates](#).
  - Note: SQL Server Service Packs are discontinued starting from SQL Server 2017
- Find downloads for SQL service packs, setup updates ("Smart Setup"), security updates, and update rollups in the [Microsoft Update Catalog](#)



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## Community Resources

- [Microsoft Tech Community](#). Collaborate, share and learn from experts. View recent [blog articles](#).
- [Provide Feedback to the Product Group](#)
- [Channel 9 Shows](#)
  - [Data Exposed](#)
  - [Learn with Dr. G](#)
- [Microsoft Learn](#). Up your game with a learning path designed to prepare you for industry-recognized Microsoft certifications.

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## Newsletter Archives

- [Azure Talking Points: Microsoft Data and AI News](#)
- [SQL Server Updates and Lessons Learned](#)

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