



Microsoft

Monthly Technical Update

December 2021



Abbas Kudrati
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<https://aka.ms/abbas>



- [Zero-Carbon : Path to Net-Zero](#)
- [Microsoft Envision 2022](#)
- [Microsoft Ignite Book of News](#)
- [New Microsoft Feedback Portal](#)
- [Microsoft Official Blog](#)



Announcements and Tips



New trends with Microsoft Technology

- [Azure Updates](#)
- [Industry Blogs](#)
- [Industry Cloud Announcements](#)
- [Microsoft Research Blog](#)
- [Microsoft Quantum Computing](#)

- [Microsoft Security Blog](#)
- [Microsoft Global Threat Monitor](#)
- [Microsoft Security Response Center](#)
- [Zero Trust through Data lifecycle](#)



Security and Compliance

- [Microsoft IT Showcase](#)
- [Technical Professional Training](#)
- [User Training and technology introductions](#)



Showcase of the month

- [Teams Updates](#)
- [Office Updates](#)
- [Power Platform and Dynamics](#)
- [Power Platform Templates](#)
- [GitHub Updates](#)
- [Developer Blogs and Showcase](#)
- [Office Developer Blog](#)



Microsoft 365 update information



Product Lifecycles

Acquisitions and Announcements

- [Products Reaching End of Support in 2021 and 2022](#)
- [Companies and Technologies Acquired Since 2018](#)

SUPPORTING OUR CUSTOMERS ON THE PATH TO NET ZERO

Datacenters are the compute engine of the cloud

7.8 gigawatt
renewable energy
procured globally to date

renewable energy
around the globe



reduce
CO₂

remove
CO₂
100/100/0
commitment



We are building
strategies, solutions, and
partnerships that put the
power of our technology
to work on the planet



RECORD
REPORT
REDUCE
carbon emissions



carbon
negative



revitalize
Circular Centers



Innovate how we build and operate
datacenters

incredibly
Herculean task

Become
water
positive

zero
waste
achieve and renew Zero
Waste certifications

We will reduce water use in
our evaporative cooled
datacenters globally by 95%
by 2024

Will help us extend the
lifecycle of our servers.
83% reuse and 17% recycle of critical
parts while reducing carbon emissions
by 145,000 metric tons CO₂ equivalent

Provide more renewable,
reliable energy to the grid
grid-interactive uninterruptible
power supply



two-phase liquid
immersion cooling
Advance waterless
cooling technologies



Reduce reliance on
diesel backup power



hydrogen fuel cell
backup power

Reduce embodied carbon
in construction
explore carbon-storing materials
such as algae and mycelium
(mushroom)



Microsoft Envision



Microsoft Envision is a digital series where you'll join thought leaders from business, technology, entertainment, sports, and other segments to explore today's critical business and technology topics. Get ready to share ideas and gain fresh insights from a diverse worldwide audience.

The learnings of leadership in times of disruption: a conversation with Indra Nooyi

Disruption is exciting, uncertain, and everywhere. Explore how disruption impacts the business model, the people we hire, where we locate, and how we plan for risks. Learn why flexibility and agility are critical qualities in uncertain times, and why technology has to be human-focused.

[Register for free >](#)

The Great Reshuffle: helping organizations and employees thrive amid change

A significant portion of the workforce is changing positions, companies, and careers. Flexibility is a primary driver in the Great Reshuffle, and we discuss what this means for different groups. Learn how your organization can increase recruitment and retention with flexibility. Explore how LinkedIn Learning and other tools can also help you acquire skills for future opportunities.

[Register for free >](#)

Miss the live show? Watch it on demand.

RSVP now for Episode 2 on December 14 to watch Episode 1 and Season 1 highlights.

[Register for free](#)

[Sign in](#)

Ignite Book of News : November 2021



1. Azure

- ❖ [Azure AI](#)
- ❖ [Azure Data](#)
- ❖ [Azure Dev & Ecosystem](#)
- ❖ [Azure Hybrid](#)
- ❖ [Azure Infra](#)
- ❖ [Azure IoT](#)
- ❖ [Azure Migration](#)
- ❖ [Azure Mixed Reality](#)
- ❖ [Azure Networking](#)
- ❖ [Azure Resilience](#)

4. Microsoft 365 & Windows

- ❖ [Microsoft Office](#)
- ❖ [Microsoft Teams](#)
- ❖ [Microsoft Viva](#)
- ❖ [Next Gen Apps](#)
- ❖ [Windows 11](#)
- ❖ [Windows 365](#)

7. Security, Compliance, Identity, & Management

- ❖ [Security](#)
- ❖ [Compliance](#)
- ❖ [Identity](#)
- ❖ [Management](#)
- ❖ [Microsoft Teams](#)

Microsoft Ignite

2. Business Applications

- ❖ [Dynamics 365](#)

5. Microsoft Edge

- ❖ [Microsoft Edge – Linux and IE mode](#)

3. Industry Cloud

- ❖ [Industry Clouds](#)
 - ❖ Finance, Manufacturing, Healthcare, non-profit, & Sustainability

6. Power Platform

- ❖ [Power Platform – Deeper Integration, Enhancements, & Solutions](#)



New Microsoft Feedback Portal

moving away from 3rd party UserVoice

feedbackportal.microsoft.com

Microsoft will be moving away from UserVoice feedback sites on a product-by-product basis throughout the 2021 calendar year.

We will leverage our 1st party solutions for customer feedback.

More info: [UserVoice Pages \(microsoft.com\)](#)

How can I submit feedback to Microsoft?

We have a variety of channels that allow customers to communicate with us. Including:

- [The Feedback web portal](#)
- In-product experiences
- Windows Feedback Hub
- [Microsoft Tech Community](#)
- Microsoft Store

The screenshot shows the Microsoft Feedback (Preview) portal. At the top, there's a navigation bar with the Microsoft logo, a search bar, and a sign-in link. Below the header, a main title says "Welcome to Feedback (Preview)" with a sub-instruction "Share your feedback and help us make improvements and build new products." On the left, there are links for "Home" and "32 Forums". On the right, there are buttons for "My feedback" and "Send feedback", and a dropdown menu set to "Newest". Below these, there are two cards: one for "Yammer" showing 212 Feedback and another for "Visio" showing 280 Feedback.

Manage Microsoft feedback for your organization

you can control how different departments in your organization can send feedback to Microsoft:

[Manage Microsoft feedback for your organization - Microsoft 365 admin | Microsoft Docs](#)

Updates of Security and Compliance





December 8, 2021

New research shows IoT and OT innovation is critical to business but comes with significant risks

This year the need for much improved IoT and OT cybersecurity has become even more clear with the recent and now famous attacks. To better understand the challenges customers are facing, Microsoft partnered with the Ponemon Institute to produce empirical data to help us better understand the state of IoT and OT security from a customer's perspective.

December 9, 2021

Best practices for AI security risk management

Today, we are releasing an AI security risk assessment framework as a step to empower organizations to reliably audit, track, and improve the security of the AI systems. In addition, we are providing new updates to Counterfit, our open-source tool to simplify assessing the security posture of AI systems.



November 22, 2021

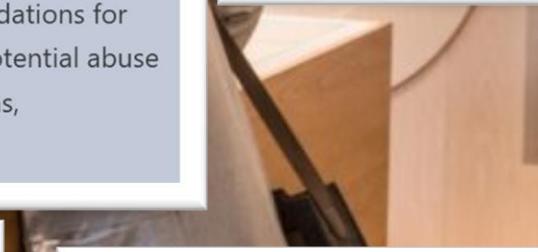
How to investigate service provider trust chains in the cloud

This blog outlines DART's recommendations for incident responders to investigate potential abuse of these delegated admin permissions, independent of the threat actor.

November 17, 2021

Adopting a Zero Trust approach throughout the lifecycle of data

Encrypting data—at rest, in transit, and in use—is critical in preparation for a potential breach of your data center.



December 9, 2021

A closer look at Qakbot's latest building blocks (and how to knock them down)

Multiple Qakbot campaigns that are active at any given time prove that the decade-old malware continues to be many attackers' tool of choice, a customizable chameleon that adapts to suit the needs of the multiple threat actor groups that utilize it. Since emerging in 2007 as a banking Trojan, Qakbot has evolved into a multi-purpose...

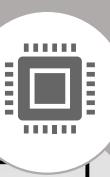
November 16, 2021

Protect against phishing with Attack Simulation Training in Microsoft Defender for Office 365

Sophisticated cyberattacks are on the rise, with email phishing as the most common attack vector. Microsoft has been working hard to understand these types of attacks and create solutions that help prevent, detect, and remediate vulnerability at the most basic point of attack, the user.

Monitoring Global Threats: Microsoft

Microsoft Security Response Center



Japan

Global threat activity

Countries or regions with the most malware encounters in the last 30 days

Most affected industries

Reported enterprise malware encounters in the last 30 days

Education

Show all industries >
Devices with encounters:
7,633,565 (62.17%)

Most affected industries
Reported enterprise malware encounters in the last 30 days

Education

Business and professional services

Retail and consumer goods

Financial services and insurance

Healthcare and pharmaceuticals

Aerospace, automobiles, and heavy industries

Mining, chemicals, oil, and gas

High tech and information technology

NICKEL targeting government organizations across Latin America and Europe

China-based threat actor NICKEL has been targeting governments, diplomatic entities, and non-governmental organizations (NGOs) across Central and South America, the Caribbean, and Europe. Today, Microsoft announced the successful seizure of a set of NICKEL-operated websites and disruption of ongoing attacks.

December 6, 2021

December 11, 2021

Guidance for preventing, detecting, and hunting for CVE-2021-44228 Log4j 2 exploitation

Get technical information about attacks that Microsoft has observed taking advantage of CVE-2021-44228, a remote code execution (RCE) vulnerability in Apache Log4j 2 referred to as "Log4Shell", and guidance for detecting and investigating attacks.

Education ▾

Top threats:

Adware:Win32/DealPly!MSR
Backdoor:PHP/Webshell.S
Backdoor:Win32/Xtrat
Exploit:PHP/AdminPassShell
HackTool:PowerShell/Denigrate.A

Japan
2,458,265 devices

Japan

2,458,265 devices with encounters

Top threats:

Behavior:Win32/PowEmotet.SB
BrowserModifier:Win32/Adrozek
Exploit:JS/Blacole.GB
Exploit:Java/ByteVerify
Exploit:O97M/CVE-2012-11882.PD!MTB

[Show worldwide data >](#)

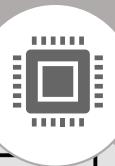
December 2, 2021

Behind the unprecedented effort to protect customers against the NOBELIUM nation-state attack

In the third of a four-part series on the NOBELIUM nation-state attack, we share how Microsoft product teams built new detections into products to better protect customers.

Monitoring Global Threats: Microsoft

Microsoft Security Response Center



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Most affected industries

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Education

Show all industries >
Devices with encounters:
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Most affected industries

Reported enterprise malware encounters in the last 30 days

Education

Business and professional services

Retail and consumer goods

Financial services and insurance

Healthcare and pharmaceuticals

Aerospace, automotive

November 18, 2021

Iranian targeting of IT sector on the rise

Microsoft has observed multiple Iranian threat actors targeting the IT services sector in attacks that aim to steal sign-in credentials belonging to downstream customer networks to enable further attacks.

Top threats:

Adware:Win32/DealPly!MSR
Backdoor:PHP/Webshell.S
Backdoor:Win32/Xtrat
Exploit:PHP/AdminPassShell
HackTool:PowerShell/Denigrate.A

Education

Japan
2,458,265 devices

November 11, 2021

HTML smuggling surges: Highly evasive loader technique increasingly used in banking malware, targeted attacks

HTML smuggling, a highly evasive malware delivery technique that leverages legitimate HTML5 and JavaScript features, is increasingly used in email campaigns that deploy banking malware, remote access Trojans (RATs), and other payloads related to targeted attacks.

Japan

2,458,265 devices with encounters

Top threats:

Behavior:Win32/PowEmotet.SB
BrowserModifier:Win32/Adrozek
Exploit:JS/Blacole.GB
Exploit:Java/ByteVerify
Exploit:O97M/CVE-2012-11882.PD!MTB

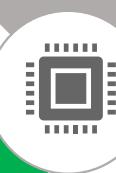
[Show worldwide data >](#)

November 16, 2021

Evolving trends in Iranian threat actor activity – MSTIC presentation at CyberWarCon 2021

Over the past year, the Microsoft Threat Intelligence Center (MSTIC) has observed a gradual evolution of the tools, techniques, and procedures employed by malicious network operators based in Iran.

Adopting a Zero Trust approach throughout the lifecycle of data



At Rest

Encryption at rest is designed to prevent the attacker from accessing the unencrypted data by ensuring the data is encrypted when on disk.

1. [Azure Storage encryption](#)
2. SQL Server [Transparent Data Encryption \(TDE\)](#)
3. [Microsoft Azure Key Vault](#)
 - Secrets Management
 - Key management
 - Certificate management
4. Hardware security modules (HSM): Store and protect your secrets and keys either by software or FIPS 140-2 Level 2, which validates HSMs.

In Transit

A “data in transit” condition exists when data is transferred within the data center between different network elements or data centers.

Data in transit should cover two independent encryption mechanisms:

1. **Application layer**—the HTTPS and TLS encryption that takes place between the client and server node.
2. **Data link layer**—encryption that takes place on the frames transferred over the Ethernet protocol, just above the physical connections

1. [Microsoft Azure Firewall Premium](#)
2. [Microsoft Azure Front Door](#)
3. [Microsoft Azure Application Gateway](#)

In Use

To protect data in use for services across your SaaS, PaaS, and IaaS cloud models, we offer two important capabilities:

1. [Azure confidential computing](#)
2. [Centralized storage of application secrets](#)

1. [Azure confidential computing](#)
2. [Application Enclaves](#)
3. [Confidential Virtual Machines](#)
4. [Trusted Launch](#)
5. [Confidential Containers](#)
6. Confidential Services
 - [Azure confidential ledger \(preview\)](#)
 - [Azure SQL Always Encrypted](#)
 - [Azure Key Vault](#)
 - [Managed hardware security modules \(HSM\)](#)
 - [Microsoft Azure Attestation](#),

Certificate change: Azure IoT and Device Provisioning Service (DPS)

Install DigiCert Global G2 certificate to avoid disruption of connectivity



Change in Certificate chain for Azure IoT and DPS

When: by October 2022

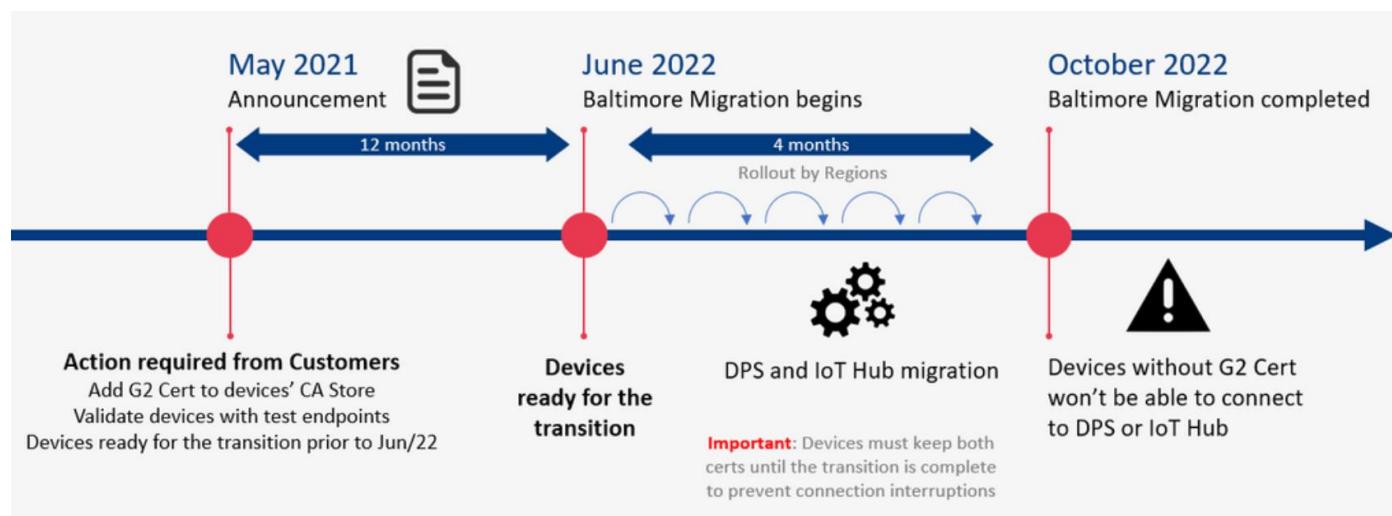
Impact: disruption of connectivity to Azure IoT and DPS if not on DigiCert Global G2 certificate

Why: Certificate Root Chain will be migrated from Baltimore CyberTrust to DigiCert Global G2

Reason: Most Azure services are already updated to use the DigiCert Global G2 root.
Azure IoT Hub and Device Provisioning Service (DPS) remained on TLS certificates issued by the Baltimore CyberTrust Root but now need to be migrated, too.

Action: Add the DigiCert Global root G2 to your trusted root store.

Do not delete the Baltimore root till after transition (~Nov 2022) to prevent interruption.



How do I know I'm impacted?

If

- your devices use a connection stack other than the ones provided in an Azure IoT SDK
- your client applications, devices, or networking infrastructure (e.g. firewalls) perform any sub root validation in code



More information and Support options



Microsoft 365 update information

Microsoft Teams Blog:

What's New in Microsoft Teams | November 2021

What's New in Microsoft Teams | November 2021

[Microsoft_Teams_team](#) on Nov 30 2021 03:00 AM

We are excited to share with you the November edition of "What's new in Microsoft Teams". This month we announce new br...

New for This Month

- [Integrated Communication Access Realtime Translation](#) ART captioning in meetings
- [Content from Camera – Share from physical whiteboards and more](#)
- [Word-Cloud for polls in Teams](#)

Calling:

- [Custom Music on Hold](#)
- [Route calls to Unassigned Numbers](#)
- [Custom Call Park](#)
- [Enable Teams Calling Functionality on legacy SIP phones with SIP Gateway](#)

Devices:

- [Remote Sign-Out from Teams Admin Center](#)
- [Branch Office Survivability on Teams phones](#)
- [AudioCodes C455HD IP Phone](#)
- [Yealink uVC86 4K Dual-Eye Tracking for Medium to Large Rooms](#)
- [Yealink MVC660 Teams Room System](#)

Operator Connect Conferencing

Microsoft Teams Audio Conf. Bridge

Microsoft Teams Meetings

Operator

BT, T-Mobile, Intrado, NTT, orange Business Services, telenor

Bring your own operator for audio conferencing in...

[Microsoft_Teams_team](#) on Dec 02 2021 10:00 AM

With organizations around the world transitioning to the new normal of hybrid work, Microsoft Teams meetings are critica...

Chat and Collaboration:

- [Microsoft Loop components in Teams chat](#)
- 'Top Hits' provides a new search result section
- [Updated Search Results page in Teams](#)

Management

- Surface Hub device type support
- [Enriching Device Management filtering capabilities](#)
- [Configure Anonymous user-join policy](#)
- [New Tag Management settings for Frontline workers](#)

Development & Power Platform

- [Tab actions are moving - into tab dropdown](#)
- [Share specific parts of the App to meeting stage - Leverage new APIs within the Teams Client SDK](#)
- [Microsoft Teams Connect support for third-party and custom tab app configurations](#)

December 1, 2021

New Microsoft Teams Essentials is built for small businesses >

Perhaps no one has been hit harder over the past 20 months than small businesses. To adapt and thrive in this new normal, small businesses need comprehensive solutions that are designed specifically for them and their unique needs.

Government Cloud Updates : GCC-High and DoD Clouds

- [Integrated CART Captioning in Meetings](#)
- [Presenter mode in desktop or window-sharing](#)
- [Anonymous User Join Policy](#)
- [New assignment experience in separate windows for breakout rooms](#)
- [Download attendance report](#)
- [Isolated audio feed capabilities – create high-quality, clean audio mix](#)
- [Up to 25,000 members per team in GCCH](#)

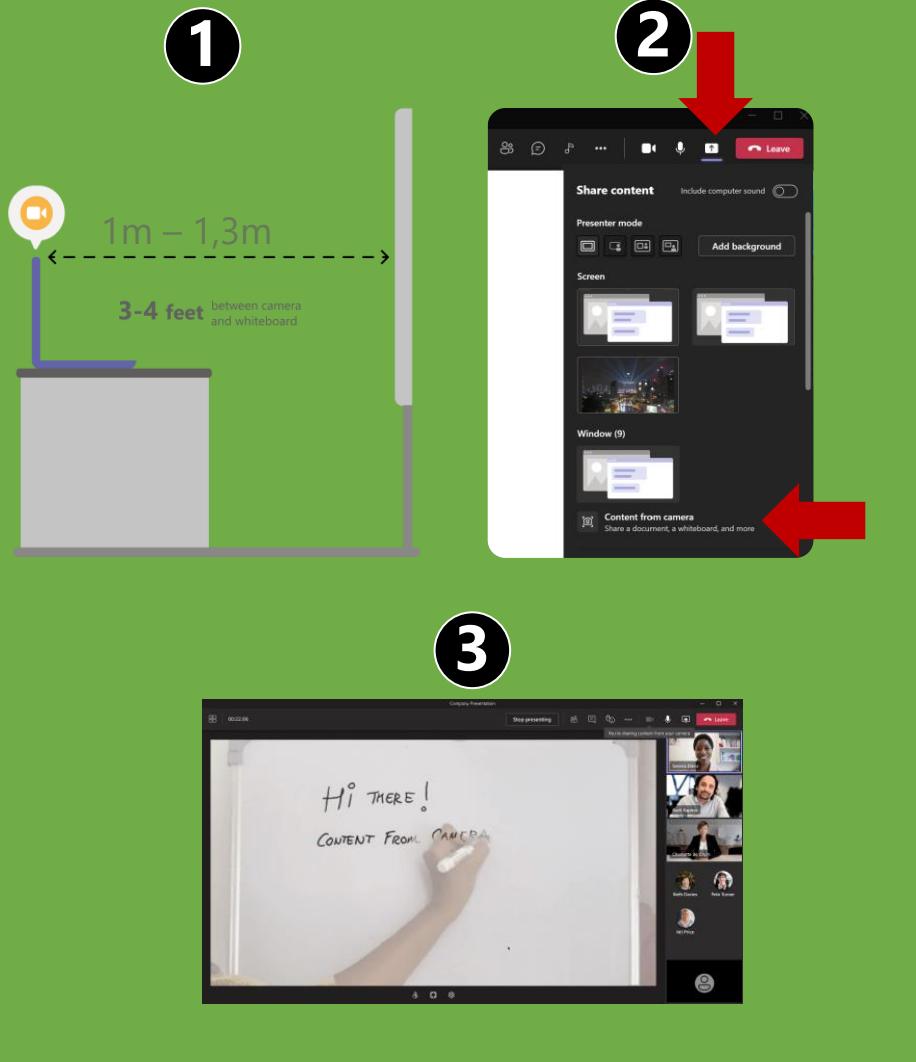




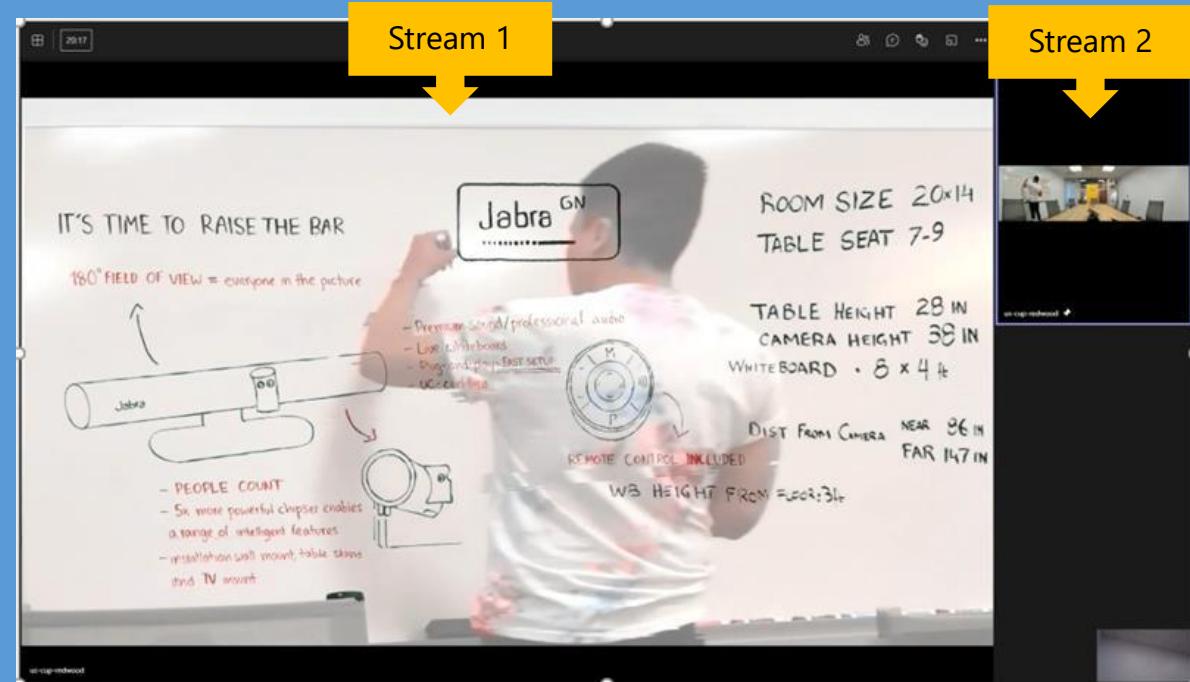
Share whiteboards and documents using your camera in Teams meetings

help meeting attendees who aren't in the room feel more included

Teams Built-in: quick & easy



Advanced: separate device with 3 cameras providing dual video stream



3 cameras



PANACAST 50



Microsoft Teams Innovations at Ignite: (Coming in 2022)



What's Coming to Teams (2022)

- New Immersive Meetings with Mesh for Teams
- New User Experiences
 - Assign roles from the Scheduling Form
 - Mute Notifications
 - Pin or Hide your own video
 - Mobile Device app revamp – New overflow menu and in-meeting system messages
- Shared Channels and Chat with Teams
 - Shared Channels across multiple organizations (Q1-2022)
 - Teams Chat outside your organization
- New Chat, People, and Presence features
 - Chat Density – customize the number of chat messages you see
 - New 3D emojis (800 new)
 - Delay delivery of messages – send at a specific time
 - Time-Zone checking from user's contact card
- Dynamics 365 + Teams Integration
- Azure Communications Services Teams Integration
- Teams + Power Platform = Collaborative Apps
- Security and Compliance enhancements and Graph API

The slide features the Microsoft Teams logo at the top. Below it, the text reads: "Microsoft Ignite Fall 2021: Innovations coming to Microsoft Teams". A blue callout box contains the text: "Microsoft Ignite Fall 2021: Innovations coming to...". It also includes the date "Microsoft_Teams_team on Nov 02 2021 08:00 AM" and a snippet of text: "Today, we are excited to unveil the latest innovations coming to Microsoft Teams that enable you to connect, collaborate...".

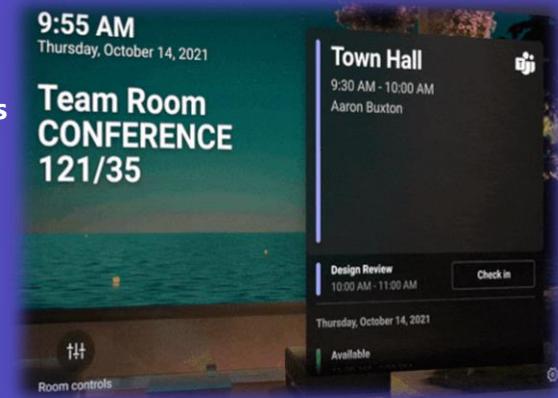


Webinar and Broadcasting Capabilities

- Microsoft Teams Connect
- Virtual Green Room allowing Organizers and Presenters to socialize
- Manage Attendee settings and share content before the meeting from the Virtual Green Room
- Manage what attendees see – content, video, chat
- Designate Co-Organizer feature – up to 10 Co-Organizers
- New Q&A Experience
- Broadcasters can create audio mix with New Isolated Audio Feed capabilities
- Cvent is now integrated with Teams (early 2022)

Teams Rooms and Devices : Device Link

- BlueJeans and GoToMeeting will be supported in Direct Guest Join
- HP Presence Meeting Space Solution Kit work with Microsoft Teams Rooms
- Sennheiser will release an AI enabled speaker optimized for Teams Rooms
- Improved “check in” to a room from a Teams panel
- Updated system for Room Occupancy sensors
 - If no-one enters a reserved room within a specified time, the room is released back to room inventory
- Improved Home devices
- Updated peripheral devices
- Native Bluetooth Support in Teams
- SIP Gateway : Dec. 2021



Partner Collaborative Apps

- Atlassian’s Jira Cloud : Available in Teams
- SAP Sales & Service Core : Available now
- Redesigned Teams App Store



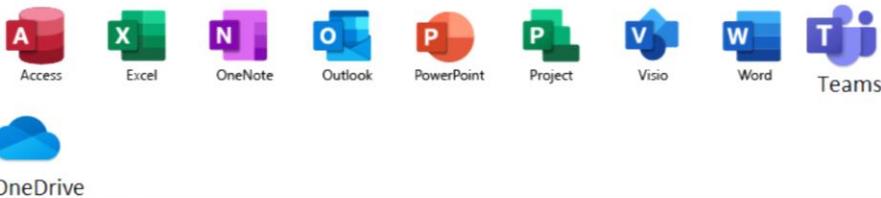
What's New in Microsoft 365

[M365 Blogs](#) and [Administrative Blogs](#) covering Office 365, Enterprise Mobility and Security and Windows ::

Microsoft 365 Updates:

- [Loop Components in Teams Chats](#) : Generally Available
- [Hub Creation with Office.Com](#)
- [Microsoft Loop](#) : Powerful Canvas App for team collaboration
- [New Feedback features](#) in Microsoft 365
- [Servicing Profiles for Microsoft 365 Apps](#) : Generally Available
- [Microsoft Bookings and Scheduler](#) : Generally Available
- [New Mobile Innovations for Office](#)
- [OneDrive sync for native ARM devices](#) : Public Preview
- [Co-Authoring files with Sensitivity Labels](#)
- [Viva Connections and SharePoint Framework community calls](#)
- [Visual Update in Office for Windows](#) : Generally Available

What's new in your favorite Office app



What's new in Microsoft 365 admin management – Ignite 2021

Yana Terukhova on Oct 29 2021 12:20 PM

Learn about new admin capabilities to simplify Microsoft 365 management for your organization!

[Immersive Reader adds 16 new languages for Read Aloud](#)

Mike Tholfsen in Education Blog Dec 08 2021 07:19 AM

We are thrilled to announce that the Immersive Reader is adding read aloud support for 16 ...

[Direct Query from Excel to Azure Data Explorer \(aka Kus...](#)

DanyHoter in Azure Data Explorer Blog Dec 08 2021 01:27 AM

The blog post shows how to import filtered and aggregated data from Azure Data Explorer(AD...

hen you turn this on, we'll also enable sensitivity labels for files in OneDrive and SharePoint if it's not already enabled. Learn more

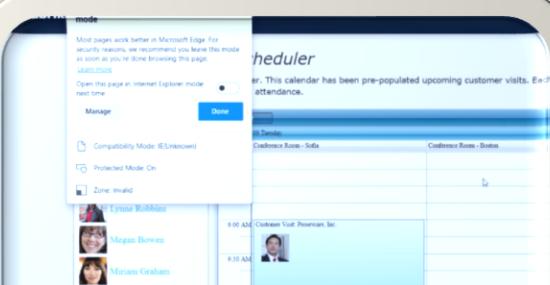
To turn this switch back off, you'll need to contact Microsoft Support. Before turning on, make sure you've read the prerequisites to understand how this setting will impact labeled content in your organization.

Apply Cancel

Co-Authoring files with sensitivity labels

Martin_Sieber in Security, Compliance, and Identity Blog Dec 03 2021 09:40 AM

Did you know the Azure Information Protection (AIP) client can now be used for co-authorin...



[How to Keep Internet Explorer Sites Working](#)

Zachary_Cavanell in Microsoft Mechanics Blog Dec 07 2021 03:16 PM

Continue using your Internet Explorer dependent sites and web apps, as an individual user ...

Power Platform and Dynamics

Roadmaps and Release plans:



The most important customer experience metrics (that you're not tracking yet) >

November 22, 2021

By [Shruti Shukla](#), Group Product Marketing Manager, Business Apps and Global Industries

Marketing professionals go to great lengths to understand customers. Detailed personas are written to identify the motivations, interests, and buying patterns of prospects and customers. But all too often, these personas—and their resulting customer journeys—are informed by data points important to the organization, not the customer. You cannot claim to be customer-centric, customer-first, or customer-obsessed...[Read more](#)



Why AI and real-time visibility are a game-changer for order lifecycle management >

December 7, 2021

By [Lili Lau](#), Senior Product Marketing Manager, Dynamics 365 Intelligent Order Management

In recent years, retailers, consumer packaged goods (CPG) companies, and manufacturers have incorporated direct-to-consumer (D2C) business models into their go-to-market strategies to give end customers the options to order from anywhere and ship to everywhere. As the use of these online sales channels continues to expand, so too does the number of third-party fulfillment partners...[Read more](#)

Power BI Blog

- [New capabilities - Power BI Streaming Dataflows](#)
- [Create Connected PivotTables in Excel for the web](#)
- [Capacity settings for datasets – Power BI Premium Gen 2](#)
- [Power BI integration with Databricks Partner Connect](#)
- [Export to Excel improvements for Table and Matrix Visuals :: Preview](#)
- [New Format Pane :: Preview](#)
- [Snowflake and Azure Databricks Connectivity via vNet data gateways](#)

[PowerApps Blog](#): [Power Automate Blog](#): [Power Virtual Agents Blog](#)

- [Power Apps Ignite Announcement round-up](#)
- [Case Study : 14-year-old transforms child daycare facility through Power Apps](#)
- [Power Apps portals as mobile apps :: Preview](#)
- [Custom Page runtime :: Generally Available](#)
- [Optimize how you work – RPA and process mining in Power Automate](#)
- [Mine your business with Process and Task Mining](#)
- [Updates to Power Platform request limits](#)
- [Case Study : Total Economic Impact of Microsoft Power Virtual Agents](#)
- [Ignite Announcements : Power Virtual Agents](#)



Run sentiment analysis on tweets and push results to a Power BI dataset
By Microsoft

Automated



Email me with a list of upcoming Calendar events
By Microsoft

Scheduled



Send a customized email when a new file is added
By Microsoft

Automated

447856

16809

447856

Developer and GitHub



GitHub ChangeLog

- [New Container signing capability in GitHub Actions](#)
- [Secure deployments with OpenID Connect & GitHub Actions :: Generally Available](#)
- [Enterprise Managed Users :: Generally Available – GitHub Enterprise](#)
- [Blue-teaming for Exiv2: Adding custom CodeQL queries to code scanning](#)
- [GitHub Enterprise Server 3.3 : Generally Available](#)
- [Reusable workflows in GitHub Actions : Generally Available](#)
- [Advanced Security Enforcer GitHub Action](#)
- [5 DevOps Tips to speed up developer workflow](#)
- [GitHub Externships: enabling India's next generation of developers](#)
- [State of the Octoverse – 2021 : Analysis of developers, repos, work-habits, and trends](#)

December 7, 2021 — Open Source

Enrolling all npm publishers in enhanced login verification and next steps for two-factor authentication enforcement

December 3, 2021 — Community

Release Radar · November 2021 Edition

Microsoft Developer Blogs:

- [New Razor editor for Visual Studio 2022](#)
- [.NET Framework November 2021 Cumulative Update](#)
- [Announcing dot.net in Japanese and Simplified Chinese](#)
- [Embedded Software Development in Visual Studio](#)
- [What's new for C++ cross-platform developers in Visual Studio 2022](#)
- [What's New in Xamarin and Visual Studio 2022](#)
- [Welcome to C# 10](#)
- [TypeScript 4.5 :: Generally Available](#)
- [Android foldable support on Uno Platform](#)
- [Deprecating weak cryptographic standards \(TLS 1.0 and TLS 1.1\) in Azure DevOps](#)
- [DevOps for Quantum Computing](#)
- [Embedding Q# in your favorite languages and platforms](#)

December 6, 2021 — Community

Write more secure code with the OWASP Top 10 Proactive Controls

December 8, 2021 — Engineering

Improving GitHub code search

Office Developer Blogs and Microsoft 365 Dev Center



Develop for the Microsoft 365 platform

Build rich solutions that integrate apps and business processes to enhance productivity in the modern workplace.

Global Developer Updates and Bootcamps :: M365 Developer Blog :: Office Developer

- [Understanding Azure AD Single Sign-on for Microsoft Teams Apps](#)
- [Developing enterprise-ready Microsoft Teams apps with Teams ToolKit v3.0](#)
- [Microsoft Teams development: All you need to know](#)
- [Developing real-time collaborative apps with Azure, Microsoft 365, Power Platform, and GitHub](#)
- [Breaking changes to attendance report in Microsoft Graph online Meeting API :: Beta](#)
- [Microsoft Graph @ Ignite 2021](#)
- [Microsoft 365 Developer Program launches new instant sandbox with Teams sample data pack](#)
- [Guidance for implementing partner offerings for Viva Connections with ACEs and custom APIs](#)



Understanding Azure AD Single Sign-on for...

There is no single definition for SSO, which is part of the confusion. Learn about the SSO approaches used in the Microsoft Commercial...

[View blog >](#)



Let's decode: Single Sign-on in Microsoft Teams...

Microsoft 365 Code | Decode is a series that focuses on breaking down topics for developers to understand concepts better. In thi...

[View blog >](#)



Developing real-time collaborative apps with Azure,...

Collaborative apps – apps built for a collaboration platform like Microsoft Teams, Slack, Google Workspace, etc. – are...

[View blog >](#)



Understanding Azure AD Single Sign-on for...

There is no single definition for SSO, which is part of the confusion. Learn about the SSO approaches used in the Microsoft Commercial...

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Office Scripts

Easily automate your day-to-day tasks with **Office Scripts in Excel on the web**. Get started automating today!

[Learn more >](#)

[Try sample scripts >](#)



Go developers can now access Microsoft Graph...

Go developers can now integrate their application with Microsoft Graph via the new Microsoft Graph Go SDK.

[View blog >](#)



Microsoft Teams development: All you need to know

Microsoft Teams is the ultimate messaging app for your organization—a workspace for real time collaboration, communicatio...

[View blog >](#)



Microsoft Graph @ Ignite 2021

Today, at Ignite 2021, we are excited to share new capabilities added to Microsoft Graph that give developers and IT administrators...

[View blog >](#)



Azure



Azure Updates



Azure Announcements : Azure Blog

- [New satellite connectivity and geospatial capabilities with Azure Space](#)
- [New Azure Maps Features: Historical Weather, Air Quality, Tropical Storms](#) :: Generally Available
- [Immutable Storage with versioning for Blob Storage](#) :: Generally Available
- [Azure Communications Services interoperability with Microsoft Teams](#) :: Generally Available
- [Introducing Azure Load Testing: Optimize app performance at scale](#)
- [Azure NetApp Files application volume group for SAP HANA](#) :: Public Preview
- [Forging a path from telco to cloud with Microsoft Azure](#)

Data, AI, Security, & Availability

- [New resources and tools to enable product leaders to implement AI responsibly](#)
- [Create AKS Clusters without local user accounts](#) :: Generally Available
- [AKS auto-certificate rotation](#) :: Generally Available
- [Scaling for the future of ophthalmology with artificial intelligence powered by Azure Healthcare APIs](#)
- [Simplify connectivity, routing, and security with Azure Virtual WAN](#)
- [Bringing commercial innovations in chip design to national security](#)
- [Microsoft expands its AI-supercomputer lineup with general availability of the latest 80GB NVIDIA A100 GPUs in Azure, claims 4 spots on TOP500 supercomputers list](#)

Operations & Benefits

- [India Central Availability Zones](#) :: Generally Available
- [Virtual Machine Restore Points – multi-disk consistent point-in-time of all disks](#) :: Public Preview
- [AKS node image auto-upgrade](#) :: Generally Available
- [Expand hybrid management tools with Red Hat Ansible Automation Platform on Azure](#)
- [Azure Cost Management and Billing updates – November 2021](#)

Microsoft Ignite

Azure

- ❖ [Azure AI](#)
- ❖ [Azure Data](#)
- ❖ [Azure Dev & Ecosystem](#)
- ❖ [Azure Hybrid](#)
- ❖ [Azure Infra](#)
- ❖ [Azure IoT](#)
- ❖ [Azure Migration](#)
- ❖ [Azure Mixed Reality](#)
- ❖ [Azure Networking](#)
- ❖ [Azure Resilience](#)

Ignite Book of News : November 2021



Microsoft Azure Space

Azure Space: Powering innovation on Earth and beyond

Announced 20-October-2020

- Make space connectivity and compute increasingly attainable
- Expand across industries including agriculture, energy, telecommunications, and government.

New satellite connectivity and geospatial capabilities with Azure Space

Announced 9-Dec-2021



- [Azure Orbital \(preview\)](#)
- Azure "seeing" through the clouds with [SpaceEye](#) and Azure Cognitive Services ["Custom Vision"](#)
- Enhancing imagery with [Project Turing](#).
- [Partnership with Airbus](#) brings high-resolution satellite imagery and elevation data into Azure
- [Partnership with iDirect](#), one of the largest satellite modem providers, is creating modern and flexible solutions for customers.
- New geospatial and data analytics partnerships with Esri, Blackshark.ai, and Orbital Insight on Azure are enabling new insights for our customers.

Introducing the Microsoft Azure Modular Datacenter (MDC)

Announced 20-October-2020

- New cloud computing capabilities in hybrid or challenging environments, including remote areas
- Key learnings from our underwater DC's
- Exciting Scenarios:
 - mobile command centers
 - humanitarian assistance
 - military mission needs
 - mineral exploration



Underwater DC from spring 2018 to fall 2020

New trends with Microsoft Technology



Updates from Microsoft Industry Blogs



Microsoft to present smart-city solutions at Smart City Expo >

November 11, 2021

By [José A. Ondiviela](#), Western Europe Public Sector Government Industry Executive, Microsoft

Here at Microsoft, we've made a big commitment to help cities and governments become "smart." What does that mean? It means we believe there is a huge opportunity for technology to help cities become more responsive to their residents, reduce the environmental impact of transportation and utilities, improve public safety, enhance communication and citizen engagement,...[Read more](#)



Autonomous drivers —Start your engines! >

December 2, 2021

By [Aaron Lee](#), Product Marketing Lead – Automotive, Mobility, & Transportation, Global Industry Product Marketing Group

At the famed Indianapolis Motor Speedway, it's certainly not unusual to see the sleek, aerodynamic shape of an Indy racecar exploring the limits of the track piloted by one of the world's best and fastest drivers. But to see the same, without a driver? As an automotive enthusiast and racing fan myself, this one caught...[Read more](#)



Top 5 retailer e-commerce readiness actions for holiday >

November 15, 2021

By [Keith Mercier](#), General Manager, Retail and Consumer Goods, Microsoft

Holiday is the most exciting and important time in retail. It's where all the preseason inventory planning, the ramp up in hiring of seasonal employees for stores and warehouses, the marketing events, and all the promotions come together to deliver up to 60 percent of the total year's business for the industry. Over the last...[Read more](#)



Microsoft Cloud for Healthcare: Partnering for the next generation of patient care >

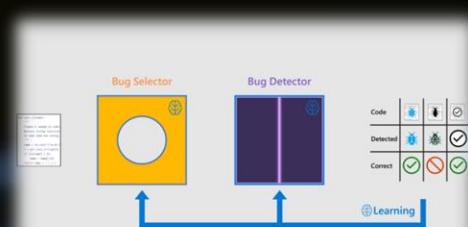
November 18, 2021

By [Dana Straw](#), Senior Director

In a data-first world, healthcare organizations depend on their ability to gain and access insights from data. Helping our customers to digitally transform means breaking down the silos for data flow across the continuum of care. Microsoft Cloud for Healthcare partners are helping these organizations and frontline healthcare workers to create a connected care experience...[Read more](#)



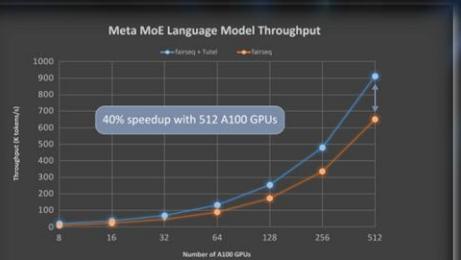
Microsoft Research Blog



Finding and fixing bugs with deep learning >

Finding and fixing bugs in code is a time-consuming, and often frustrating, part of everyday work for software developers. Can deep learning address this problem and help developers deliver better software, faster? In a new paper, Self-Supervised Bug Detection and Repair, presented at the 2021...

December 8, 2021 by [Miltos Allamanis](#) and [Marc Brockschmidt](#)



Tutel: An efficient mixture-of-experts implementation for large DNN model training >

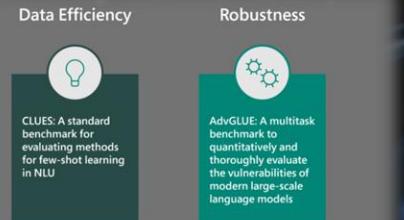
Mixture of experts (MoE) is a deep learning model architecture in which computational cost is sublinear to the number of parameters, making scaling easier. Nowadays, MoE is the only approach demonstrated to scale deep learning models to trillion-plus parameters, paving the way for models capable...

November 22, 2021 by [Wei Cui](#), [Yifan Xiong](#), [Peng Cheng](#), and [Rafael Salas](#)

Efficiently and effectively scaling up language model pretraining for best language representation model on GLUE and SuperGLUE >

As part of Microsoft AI at Scale, the Turing family of NLP models are being used at scale across Microsoft to enable the next generation of AI experiences. Today, we are happy to announce that the latest Microsoft Turing model (T-NLVR5) is the state of...

December 2, 2021 by [Jianfeng Gao](#) and [Saurabh Tiwary](#)



You get what you measure: New NLU benchmarks for few-shot learning and robustness evaluation >

Recent progress in natural language understanding (NLU) has been driven in part by the availability of large-scale benchmarks that provide an environment for researchers to test and measure the performance of AI models. Most of these benchmarks are designed for academic settings--typically datasets that feature...

December 6, 2021 by [Jianfeng Gao](#) and [Ahmed H. Awadallah](#)

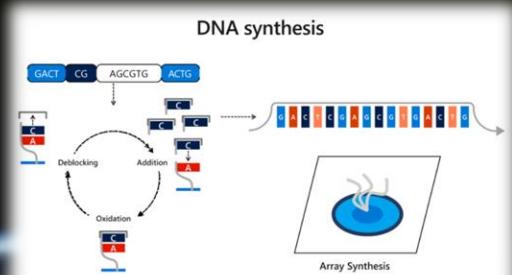
Manifold Matching via Metric Learning



Unlocking new dimensions in image-generation research with Manifold Matching via Metric Learning >

Generative image models offer a unique value by creating new images. Such images can be sharp super-resolution versions of existing images or even realistic-looking synthetic photographs. Generative Adversarial Networks (GANs) and their variants have demonstrated pioneering success with the framework of training two networks against...

November 29, 2021 by [Mengyu Dai](#) and [Junwon Park](#)



Toward nanoscale DNA writers: Unlocking scalable DNA data writing technology >

Editor's note: The researchers would like to acknowledge co-authors Christopher Takahashi, Gagan Gupta, Jake Smith, Richard Rouse, Paul Berndt, Sergey Yekhanin, David Ward, Siena Ang, Patrick Garvan, Hsing-Yeh Parker, Rob Carlson, Douglas Carmean, and Luis Ceze for their contributions to this work. Current estimates by...

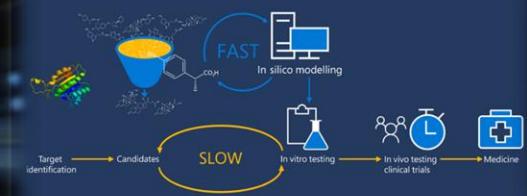
December 1, 2021 by [Karin Strauss](#) and [Bichlien Nguyen](#)



SynapseML: A simple, multilingual, and massively parallel machine learning library >

Today, we're excited to announce the release of SynapseML (previously MMLSpark), an open-source library that simplifies the creation of massively scalable machine learning (ML) pipelines. Building production-ready distributed ML pipelines can be difficult, even for the most seasoned developer. Composing tools from different ecosystems often...

November 17, 2021 by [Mark Hamilton](#)



FS-Mol: Bringing Deep Learning to Early-Stage Drug Discovery >

The drug development process is an iterative one that consists of discovery, design, and testing. Historically, drugs were derived from plants and discovered through trial-and-error experiments. Fortunately, this drug discovery process now occurs in a lab, with each iteration of custom-designed compounds producing a more...

December 10, 2021 by [Marc Brockschmidt](#) and [Megan Stanley](#)



Microsoft Quantum

Get to know the world's first full-stack, open cloud quantum

[Overview](#) / [What is quantum computing?](#)

What is quantum computing?

It's the use of quantum mechanics to run calculations on specialized hardware.



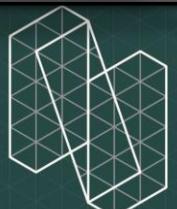
Myth vs. reality: A practical perspective on quantum computing

Read the article discussing the practicality of quantum computers.

Grow your quantum skills

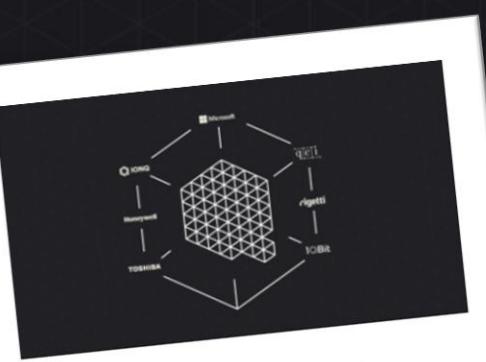
Join the growing global community of experts, enthusiasts, and quantum computing companies by learning the fundamentals of quantum computing concepts, operations, and Q# programming. Get started with a wide variety of learning resources for developers, researchers, and students, including free, self-paced Microsoft Learn courses and open-source GitHub katas.

[Start learning](#)



Microsoft Quantum Network

The Microsoft Quantum Network is a community of pioneering individuals and organizations working together to develop practical solutions, grow talent through education, and build a worldwide quantum partner ecosystem.



Azure Quantum: Open, flexible, and future-proofed >

December 6, 2021

By [Fabrice Frachon](#), Principal PM Manager, Azure Quantum

Quantum computing is evolving quickly. There are many different qubit technologies and development tools vying for your consideration. It can be challenging to know where to get started and how to optimally invest your resources. Some companies offer only one solution—their own, while others offer open ecosystems but leave it to you to change your...[Read more](#)



Unlocking dramatic improvements to capacity management with Azure Quantum >

November 15, 2021

By [Julie Love](#), Senior Director, Microsoft Quantum

Organizations globally struggle with maximizing resource utilization. From optimizing supply chain to managing available compute, capacity management can be staggeringly complex. In addressing these challenges, not only have Microsoft customers benefitted from significant speed, accuracy, and other improvements accessible through Azure Quantum quantum-inspired optimization (QIO)—we have as well. This embed requires accepting cookies from the...[Read more](#)



Microsoft and KPMG collaborate to build industry optimization solutions using Azure Quantum >

December 2, 2021

By [Krysta Svore](#), General Manager, Microsoft Quantum

Microsoft and KPMG are working together to explore and solve common business problems utilizing quantum-inspired optimization techniques available through Azure Quantum. Optimization problems are found in many industries and are often difficult to solve using traditional methods which can accelerate optimization. Emulating these quantum effects on classical computers has led to the development of quantum-inspired...[Read more](#)

Showcase of the Month



Microsoft Showcase Series



Inside Track

Discover the inside story of how Microsoft Digital is powering, protecting and transforming Microsoft, helping you learn from our experiences and accelerate your own transformation.

Dec 9, 2021 | Aleenah Ansari

Transforming Microsoft buildings with IoT technology and indoor mapping

Sphoorti Patil is using Microsoft Azure indoor mapping and IoT technology that helps Microsoft employees find their way around the company's campuses—and she hasn't been in a Microsoft building yet. She's not alone in this...

- Check out **how Microsoft Azure Maps, Microsoft Azure Digital Twins and IoT technology sensors combine to provide real-time occupancy data** and visualizations that are powerful planning tools for companies navigating the new hybrid workplace.
- Use **Microsoft Azure Maps to create web and mobile applications** that are powered by real-time location intelligence.
- Use **research about your customers or end users** to identify the IoT technology solutions you want to develop.
- Envisioning your end-to-end scenario can help companies create an architecture that provides a continuous supply **of data that can be ingested by Microsoft Azure Digital Twins**, which can be leveraged to power real-time indoor mapping experiences.

Enabling a modern support experience at Microsoft

December 01, 2021

PRINT AS PDF

The four pillars of Microsoft's modern support experience

Seamless support

Highly available, in-context support experiences for employees



Employee

Unified agent experience



Unified tooling and analytics for agents



High-quality, intuitive knowledge support

Relevant, easily accessible support content for all employees



Infrastructure and site-services excellence

Comprehensive deployment, management and monitoring of resources

- **Take a vision-led and phased approach** when modernizing your support experience.
- **Place greater emphasis on the employee experience** when measuring your service level support metrics.
- Provide the best support experience by **detecting and remediating issues proactively before your employees report them**.
- **Invest in seamless, in-context support and simple, intuitive knowledge systems** to improve employee experience and efficiency.
- **Establish a listening system across the organization** that can engage with your local stakeholders and employees and be accountable for support services and experience.

Microsoft Events and Training: Updates



Microsoft Virtual Training Days

Events Catalog

Further your goals with Microsoft events

Whether you're a developer, IT professional, partner, educator, or business professional, we have plenty of Microsoft events specifically created with your growth in mind. Explore special events and learning opportunities created to help you expand your expertise, learn new skills, and build community.

Dashboard in a Day - Lucient - United States



App in a Day - Marquam - United States



Robotic Process Automation in a Day - PragmaticWorks - United



Power Virtual Agents in a Day - Hitachi Solutions (Americas) - United



01/12/2022 | 10:00 - 18:00 (CST)

01/13/2022 | 08:00 - 16:00 (CST)

01/13/2022 | 08:00 - 16:00 (CST)

01/18/2022 | 08:00 - 16:00 (CST)

Digital

Training

Digital

Training

Digital

Training

Digital

Training

Registration and details



Registration and details



Registration and details



Registration and details



Learning and Training : New Sessions



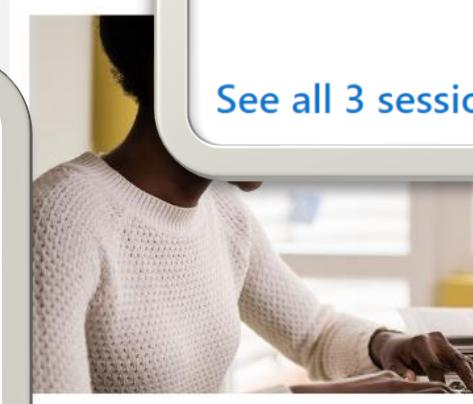
Virtual workshops and training

Our interactive virtual workshops and training sessions are taught live by Microsoft Store associates for an in-person experience—wherever you are.

Learn to be cyber smart with Microsoft security foundations



[See 2 sessions >](#)



Get Started with Power BI service



[See all 5 sessions >](#)

Microsoft Virtual Training Days

Microsoft Enterprise Skills Initiative (ESI)

self-paced learning, virtual training, instructor-led training, certifications



Enterprise Skills Initiative (ESI) continues*

- We have increased capacity and number of offerings.
- ESI covers training and certification for Azure technology.
- New: now also covers Security technology for eligible customers.
- ESI has options for different learning styles and stages:
 - Training is available as self-paced, instructor-led, Event.
 - Other training formats (e.g. Open Hack, GitHub, Cloud Skills Challenge) planned. ETA to be announced later.
 - Free exam vouchers available for eligible customers.
 - Free practice tests available for eligible customers.

*Eligibility required; trainings and free offers are limited in numbers/availability.

Try it: <https://esi.microsoft.com>

1. Microsoft enables your organization for the Customer Experience Portal (CxP)
2. Login with your work account
 - *Authentication is federated, meaning you may see Multi-Factor Authentication from your organization if this has been configured by your administrator.*
3. Create your learning profile
4. Start your skilling

Discover & Explore

Uncover the latest technologies and imagine new ways to create solutions



Learn skills

Choose the way you want to learn and grow your expertise



Prove skills

Demonstrate your knowledge and abilities



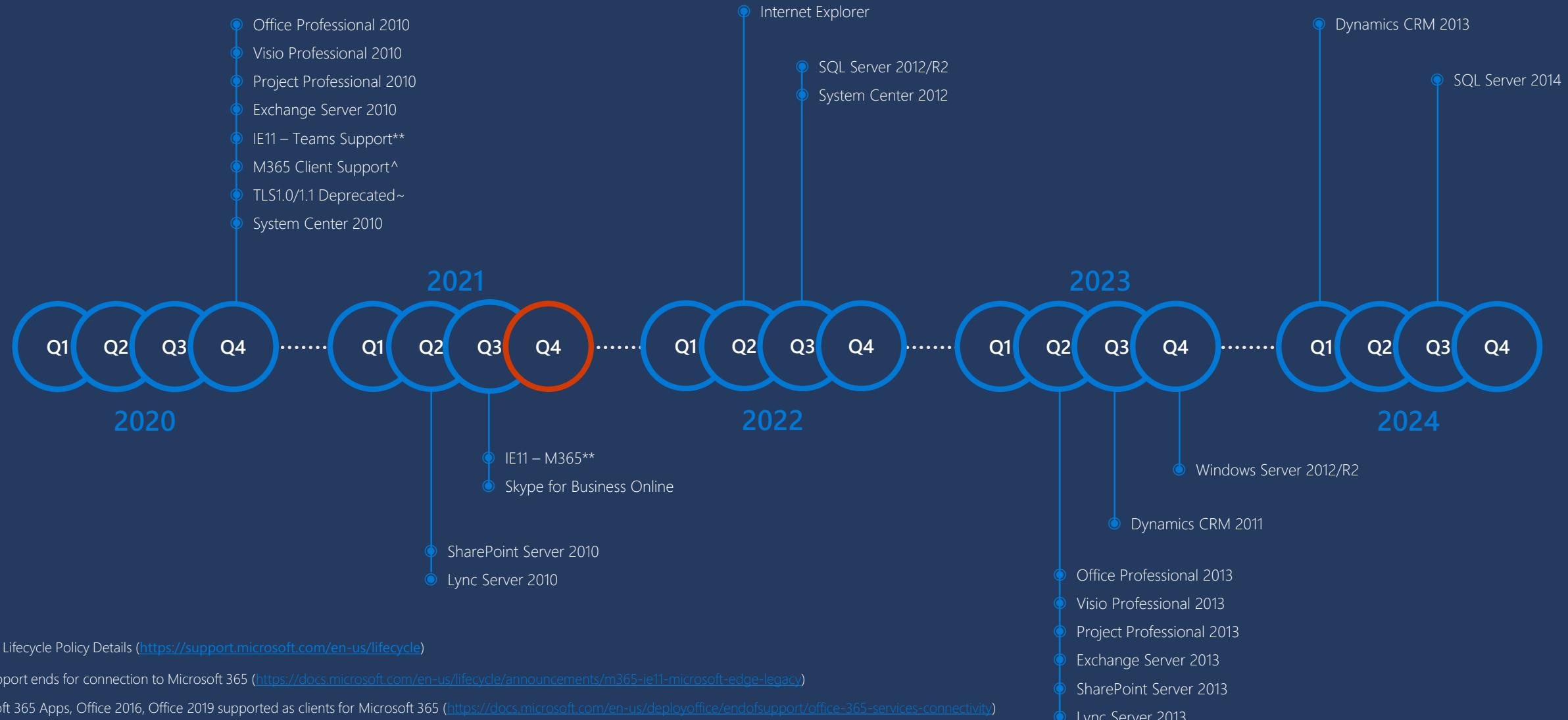
Login not working? Your organization may need to be onboarded to ESI. Please talk to your Microsoft Account Team.

Product Lifecycles





End of Service Roadmap to 2024



Microsoft Product Lifecycle: Modern Policy Products that will Retire



Products under Modern Policy that will Retire in 2022

Products that will Retire in 2022 (Modern Policy)	End of Support Date
Dynamics 365 for Talent	February 2, 2022
Microsoft Machine Learning Server (Microsoft R Server)	July 1, 2022
Windows Server 20H2	August 11, 2022
PowerShell 7.x	December 3, 2022

Products under Modern Policy that will Retire in 2023

Products that will Retire in 2023 (Modern Policy)	End of Support Date
Microsoft Azure Virtual Machine (classic)	March 1, 2023
Windows 11 Home and Pro (Version 21H2)	October 10, 2023

Announcements

- ✖ Office 2013 and Skype for Business 2015 end of support on April 11, 2023
- ✖ UPDATE: Skype for Business Online retirement on July 31, 2021
- ✖ UPDATED: Support extended for Visio Services in SharePoint Online (aka Visio Web Access)
- ✖ Windows 10, version 2004 end of servicing (all editions)
- ✖ Windows Server, version 2004 end of servicing (Datacenter, Standard)
- ✖ Microsoft Store for Business and Education retiring in early 2023

- ✖ New options for SQL Server 2012 and Windows Server 2012 End of Support
- ✖ Microsoft Machine Learning Server (R Server) retirement on July 1, 2022
- ✖ Internet Explorer 11 desktop application ending support for certain operating systems
- ✖ UPDATE: Transport Layer Security 1.0 and 1.1 disablement
- ✖ UPDATE: Adobe Flash Player end of support on December 31, 2020

[See more >](#)

Microsoft Product Lifecycle: Modern Policy Reaching End of Servicing



Products Reaching End of Servicing for 2022

Products Moving to End of Servicing (Modern Policy)	End of Servicing Date
Microsoft Endpoint Configuration Manager, Version 2006	February 11, 2022
Dynamics 365 Business Central on-premises (Modern Policy), 2020 release wave 2, version 17.x	April 12, 2022
.NET 5.0	May 8, 2022
Windows 10 Enterprise and Education, Version 1909 Windows 10 Home and Pro, Version 20H2 Windows 10 IoT Enterprise, Version 1909	May 10, 2022
Microsoft Endpoint Configuration Manager, Version 2010	May 30, 2022
Azure Active Directory (AD) Connect, Version 1.x	August 31, 2022
Microsoft Endpoint Configuration Manager, Version 2103	October 5, 2022
Dynamics 365 Business Central on-premises (Modern Policy), 2021 release wave 1, version 18.x	October 11, 2022
.NET Core 3.1 (LTS)	December 3, 2022
Windows 10 Enterprise and Education, Version 21H1 Windows 10 Home and Pro, Version 21H1 Windows 10 IoT Enterprise, Version 21H1	December 13, 2022

Products Reaching End of Servicing for 2023

Products Moving to End of Servicing (Modern Policy)	End of Servicing Date
Microsoft Endpoint Configuration Manager, Version 2107	February 2, 2023
Dynamics 365 Business Central on-premises (Modern Policy), 2021 release wave 2, version 19.x	April 12, 2023
Windows 10 Enterprise and Education, Version 20H2 Windows 10 IoT Enterprise, Version 20H2	May 9, 2023
Windows 10 Home and Pro, Version 21H2	June 13, 2023
Azure Dev Spaces	October 31, 2023

Microsoft Product Lifecycle: Fixed Policy Reaching End of Support 2022



Products Reaching End of Support for 2022

Products Moving to End of Support (Modern Policy)	End of Servicing Date	Products Moving to End of Support (Modern Policy)	End of Servicing Date
Visual Studio LightSwitch 2011 Windows 7, Extended Security Update Year 2* Windows Server 2008, Extended Security Update Year 2 Windows Server 2008 R2, Extended Security Update Year 2	January 11, 2022	Windows Embedded POSReady 7, Extended Security Update Year 1*	October 8, 2022
AppFabric 1.1 for Windows Server Dynamics AX 2009 Dynamics AX 2012 Dynamics AX 2012 R2 Visual Studio 2019, Version 16.7	April 12, 2022	Microsoft Forefront Identity Manager 2010 Microsoft Forefront Identity Manager 2010 R2 SQL Server 2016, Service Pack 2 Visual Studio 2019, Version 16.9 Windows Embedded Standard 7, Extended Security Update Year 2*	October 11, 2022
Microsoft .NET Framework, .NET Framework 4.5.2 Microsoft .NET Framework, .NET Framework 4.6 Microsoft .NET Framework, .NET Framework 4.6.1	April 26, 2022	Azure StorSimple 1200 Series Azure StorSimple 8000 Series StorSimple Data Manager	December 31, 2022
Cloud Platform System Microsoft Report Viewer 2012 Runtime Microsoft Report Viewer Redistributable 2012 Microsoft SQL Server 2008, Extended Security Update Year 3 Microsoft SQL Server 2008 R2, Extended Security Update Year 3 Microsoft SQL Server 2012 Microsoft System Center 2012 App Controller Microsoft System Center 2012 Configuration Manager Microsoft System Center 2012 Data Protection Manager Microsoft System Center 2012 Endpoint Protection Microsoft System Center 2012 Operations Manager Microsoft System Center 2012 Orchestrator Microsoft System Center 2012 R2 App Controller Microsoft System Center 2012 R2 Configuration Manager Microsoft System Center 2012 R2 Data Protection Manager Microsoft System Center 2012 R2 Endpoint Protection Microsoft System Center 2012 R2 Operations Manager Microsoft System Center 2012 R2 Orchestrator Microsoft System Center 2012 R2 Service Manager Microsoft System Center 2012 R2 Virtual Machine Manager Microsoft System Center 2012 Service Manager Microsoft System Center 2012 Virtual Machine Manager Windows Azure Pack (on Windows Server 2012 R2)	July 12, 2022		

Microsoft Product Lifecycle: Fixed Policy Reaching End of Support 2023



Products Reaching End of Support for 2023

Products Moving to End of Support (Modern Policy)	End of Servicing Date	Products Moving to End of Support (Modern Policy)	End of Servicing Date
Dynamics AX 2012 R3 Dynamics NAV 2013 Dynamics NAV 2013 R2 Hyper-V Server 2012 Hyper-V Server 2012 R2 Internet Information Services (IIS), IIS 8.5 on Windows 8.1 Microsoft Diagnostics and Recovery Toolset 8.0 Service Bus for Windows Server User Experience Virtualization (UE-V) 1.0 Visual Studio 2012 Visual Studio Team Foundation Server 2012 Windows 7, Extended Security Update Year 3* Windows 8.1 Windows Defender For Windows 8 and 8.1 Windows Embedded 8.1 Pro Windows RT Windows Server 2008, Extended Security Update Year 3 Windows Server 2008 R2, Extended Security Update Year 3 Workflow Manager 1.0	January 10, 2023	BizTalk Server 2013 BizTalk Server 2013 R2 Dynamics 365 for Customer Engagement Apps, version 9 (on-premises update), Original Release (ver 9.0) Microsoft BitLocker Administration and Monitoring 2.0 Microsoft SQL Server 2008, Extended Security Update Year 4 (Azure only) Microsoft SQL Server 2008 R2, Extended Security Update Year 4 (Azure only) Microsoft SQL Server 2012, Extended Security Update Year 1 Visual Studio 2022 , Version 17.0 (LTSC channel) Windows Embedded 8 Standard Windows Embedded 8.1 Industry	July 11, 2023
Access 2013 Dynamics GP 2013 Dynamics GP 2013 R2 Excel 2013 Exchange Server 2013 HPC Pack 2012 HPC Pack 2012 R2 Lync 2013 Microsoft Lync Phone Edition Microsoft Lync Server 2013 Microsoft Office 2013 Microsoft OneNote 2013 Outlook 2013 PowerPoint 2013 Project 2013 Project Server 2013 Publisher 2013 SharePoint Foundation 2013 SharePoint Server 2013 Skype for Business 2015 Visio 2013 Word 2013	April 11, 2023	Excel 2019 for Mac Internet Explorer 7 Internet Information Services (IIS), IIS 8 on Windows Server 2012 Internet Information Services (IIS), IIS 8.5 on Windows Server 2012 R2 Microsoft Office 2019 for Mac Microsoft Office Audit and Control Management Server 2013 Outlook 2019 for Mac PowerPoint 2019 for Mac Windows Embedded Compact 2013 Windows Embedded POSReady 7, Extended Security Update Year 2* Windows Embedded Standard 7, Extended Security Update Year 3* Windows MultiPoint Server 2012 Windows Server 2012 Windows Server 2012 R2 Windows Server Update Services for Windows Server 2012 Windows Server Update Services for Windows Server 2012 R2 Windows Storage Server 2012 Windows Storage Server 2012 R2 Word 2019 for Mac	October 10, 2023

Microsoft Product Lifecycle: Products moving to Extended Support



Products Moving to Extended Support for 2022

Products Moving to Extended Support (Fixed Policy)	End of Support Date
BizTalk Server 2016	January 11, 2022
Dynamics NAV 2017	
HPC Pack 2016	
Hyper-V Server 2016	
Microsoft Host Integration Server 2016	
System Center 2016 Data Protection	
System Center 2016 Operations Manager	
System Center 2016 Orchestrator	
System Center 2016 Service Manager	
System Center 2016 Virtual Machine Manager	
Visual Studio Team Foundation Server 2017	
Windows Azure Pack (on Windows Server 2016)	
Windows Server 2016	
Windows Storage Server 2016	
Visual Studio 2017	April 12, 2022
SQL Server 2017	October 11, 2022

Products Moving to Extended Support for 2023

Products Moving to Extended Support (Fixed Policy)	End of Support Date
Dynamics GP 2018	January 10, 2023
Dynamics GP 2018 R2	
Dynamics NAV 2018	
Visual Studio Team Foundation Server 2018	
Dynamics SL 2018	July 11, 2023
Access 2019	October 10, 2023
Dynamics 365 Business Central on-premises (Fixed Policy)	
Excel 2019	
Microsoft Office 2019	
OneNote 2016	
Outlook 2019	
PowerPoint 2019	
Project 2019	
Publisher 2019	
Visio 2019	
Word 2019	



Acquisitions and Announcements

Microsoft Acquisitions - 2021



Company	Date	Description
Two Hat	10-29-2021	Two Hat , a leading content moderation solution provider offering protection measures for online communities. Two Hat's technology has helped to make global communities in Xbox, Minecraft and MSN safer for users.
Clear Software	10-22-2021	Clear Software provides iPaaS and business process solutions with strong connectivity into SAP and Oracle . Clear Software's API access and system knowledge will strengthen Microsoft Power Platform's integration with outside systems and accelerate how customers leverage data and processes that reside beyond Microsoft first-party services.
Ally.IO	10-07-2021	Ally.io , a leading OKR (objectives and key results) company, will join the Microsoft Viva family as part of our employee experience platform (EXP) designed to help companies embrace the new digital work life. Ally.io will power a new Microsoft Viva module . Viva is an employee experience platform that brings together communications, knowledge, learning, resources and insights – from anywhere you work. Powered by Microsoft 365 and Microsoft Teams , Viva helps organizations foster a culture of human connection, growth, well-being and success.
TakeLessons	09-08-2021	We're so excited to announce that TakeLessons has been acquired by Microsoft . We believe this will further support TakeLessons' mission: to empower people to learn, connect, grow, and live more meaningful lives through education .
Clipchamp	09-07-2021	Clipchamp is a natural fit to extend the cloud-powered productivity experiences in Microsoft 365 for individuals, families, schools, and businesses. It's also a great fit for Microsoft Windows, which is a platform for boundless creativity. Clipchamp's template-driven, task-focused user experience gives everyone the confidence that they can create. Its rich library of filters, styles, transitions, and stock media combined with the power of a multi-track audio and video compositing editor gives everyone the fine control they need, and artistic help if they need it, to create exactly what they want, quickly and with confidence .
Peer5	08-10-2021	Peer5 expands Microsoft's ability for delivering secure, high-quality, large-scale live video streaming with optimized network performance in Teams . Peer5 offers a WebRTC-based eCDN solution that runs in-browser to optimize bandwidth usage helping mitigate impacts to network and line of business (LOB) applications. Its mesh networks are self-balancing and automatically scale as the number of viewers increase.

Microsoft Acquisitions - 2021



Company	Date	Description
Suplari	07-28-2021	Suplari , a leading provider of supplier spend insights . Suplari enables companies to proactively manage supplier spend by transforming data from multiple sources , such as contracts, purchase orders, invoices, expenses, and supplier risk, into valuable insight. By bringing Suplari's spend intelligence insights together with the existing Microsoft Dynamics 365 capabilities, Microsoft is further helping organizations become insight-driven and enabling business leaders to take strategic action.
CloudKnox	07-21-2021	Enhanced Zero-Trust controls. The acquisition of CloudKnox further enables Microsoft Azure Active Directory customers with granular visibility, continuous monitoring and automated remediation for hybrid and multi-cloud permissions . Microsoft is committed to providing our customers with unified privileged access management, identity governance and entitlement management. With this Cloudknox, Microsoft is uniquely positioned to empower and defend the future of hybrid work and multi-cloud environments, providing essential visibility, control and monitoring Zero Trust demands .
RiskIQ	07-12-2021	A leader in global threat intelligence and attack surface management , to help our shared customers build a more comprehensive view of the global threats to their businesses, better understand vulnerable internet-facing assets, and build world-class threat intelligence. RiskIQ offers global threat intelligence collected from across the internet, crowd-sourced through its PassiveTotal community of security researchers and analyzed using machine learning . The combination of RiskIQ's attack surface management and threat intelligence empowers security teams to assemble, graph, and identify connections between their digital attack surface and attacker infrastructure and activities, to help provide increased protection and faster response .
ReFirm Labs	06-02-2021	ReFirm Labs is joining Microsoft to enrich our firmware analysis and security capabilities across devices that form the intelligent edge, from servers to IoT . This acquisition marks the next step in our journey and ability to help secure customers from the chip to the cloud , backed by more than 3,500 defenders at Microsoft and the >8 trillion security signals we process every day. ReFirm are the authors of the well-respected Binwalk open-source software , which has been used to analyze thousands of device types for firmware security issues , uncovering unpatched common vulnerabilities and exposures (CVEs), insecure secrets, and a multitude of other security problems in plugin IoT devices and embedded firmware. Microsoft acquires ReFirm Labs to enhance IoT security - Microsoft Security
Kinvolk	04-29-2021	Kinvolk has a rich, innovative history in open source cloud-native distributed computing, including Kubernetes, eBPF, community building, and container-optimized Linux . Kinvolk will be key contributors to the engineering development of Azure Kubernetes Service (AKS) , Azure Arc , and future projects that will expand Azure's hybrid container platform capabilities and increase Microsoft's upstream open source contributions in the Kubernetes and container space.
Nuance	04-12-2021	Nuance is a cloud software pioneer and a leading provider of conversational AI and ambient clinical intelligence. Nuance provides AI expertise and intelligent customer engagement across Interactive Voice Response (IVR), virtual assistants, and digital and biometric solutions to some of the largest organizations in the world. Nuance's global customer and partner base spans nearly every industry, and together we are well-positioned to advance our AI capabilities with high-value solutions and a platform to support our customers' and partners' future innovation .
The Marsden Group	03-16-2021	The Marsden Group is a leader in industrial technology innovation and rapid prototyping. The Marsden Group has earned a unique reputation as a powerful and trusted partner among industry leaders who seek to quickly identify business needs, ideate technology solutions and build high-quality prototypes tailored to individual customer needs . The Marsden Group has helped its enterprise customers rapidly envision, prototype and implement solutions that drive meaningful value to their businesses, employees and customers .



Microsoft Acquisitions - 2020

Company	Date	Description
ZeniMax Media	09-21-2020	ZeniMax Media, the parent company of Bethesda Softworks , one of the largest privately held game developers and publishers in the world . Creators of critically acclaimed and best-selling gaming franchises including The Elder Scrolls, Fallout and many others , Bethesda brings an impressive portfolio of games, technology and talent — as well as a track record of blockbuster commercial success — to Xbox.
Orions Systems	07-07-2020	Orions Systems, a pioneer in the development of large-scale, hybrid, smart vision systems focused on “human-in-the-loop” machine teaching combined with services that can adapt to running on a single device or scale to address large scale edge-to-cloud network topologies . The Power Platform and Orions Systems is enabling intelligent retail spaces by leveraging observational data to unlock the full potential of customers, employees, and assets.
CyberX	06-22-2020	CyberX will complement the existing Azure IoT security capabilities and extends to existing devices including those used in industrial IoT, Operational Technology and infrastructure scenarios . With CyberX, customers can discover their existing IoT assets, and both manage and improve the security posture of those devices . CyberX, customers can see a digital map of thousands of devices across a factory floor or within a building and gather information about their asset profile and vulnerabilities,
ADRM Software	06-18-2020	ADRM Software is a leading provider of large-scale industry data models , which are used by large companies worldwide as information blueprints. ADRM's robust industry data models have been built and refined over decades for business-critical analytics. Together with Microsoft Azure, these capabilities will be delivered at scale , enabling our customers to accelerate digital progress, and reduce risk in a variety of major initiatives.
Softomotive	05-19-2020	Softomotive currently helps more than 9,000 global customers seamlessly automate business processes across legacy and modern desktop applications . Together with Power Automate, WinAutomation will provide customers additional options for RPA desktop authoring so anyone can build a bot and automate Windows-based tasks.
Metaswitch Networks	05-14-2020	Metaswitch Networks , a leading provider of virtualized network software and voice, data and communications solutions for 5G operators .
Corp.Com	04-07-2020	"To help in keeping systems protected we encourage customers to practice safe security habits when planning for internal domain and network names. We released a security advisory in June of 2009 and a security update that helps keep customers safe. In our ongoing commitment to customer security, we also acquired the Corp.com domain."
Affirmed Networks	03-26-2020	Affirmed Networks with its leadership in virtualized 5G mobile networks . Affirmed Networks and Microsoft will play an important role in helping advance 5G and deliver new network solutions that offer step-change advancements in speed, cost and security. This combination of technology leaders will enable a host of new opportunities for businesses and society, including autonomous vehicles, smart cities, virtual reality and a range of other smart industry use cases and services .

Microsoft Acquisitions - 2019



Company	Date	Description
Movere	10-21-2019	Movere accelerates cloud migrations. It increases business intelligence by accurately presenting entire IT environments within a single day , providing enterprises with the confidence they need to have visibility and control of their environments regardless of platform, application or geography as organizations grow, change and digitally optimize .
Semmle	09-18-2019	Semmle's revolutionary semantic code analysis engine allows developers to write queries that identify code patterns in large codebases and search for vulnerabilities and their variants . Semmle is trusted by security teams at Uber, NASA, Microsoft, Google , and has helped find thousands of vulnerabilities in some of the largest codebases in the world , as well as over 100 CVEs in open source projects to date.
JClarity	08-19-2019	The leading contributor to the AdoptOpenJDK project , to support their continued contributions to open source while driving increased performance for Java workloads on Azure . The team, formed by Java champions and data scientists with proven expertise in data driven Java Virtual Machine (JVM) optimizations , will help teams at Microsoft to leverage advancements in the Java platform.
PromotelQ	08-05-2019	The leading provider of vendor marketing technology to online retailers and brands . PromotelQ has pioneered the private marketplace approach to digital vendor marketing. PromotelQ's technology strategically complements Microsoft's current retail advertising offerings, and can enable retailers with a portfolio of technology solutions to modernize their e-commerce platforms and maximize their monetization opportunity. Retailers such as Kroger, Kohl's and Overstock.com — will continue to benefit from the PromotelQ platform and team.
BlueTalon	07-29-2019	A leading provider of Unified Data Access Control solutions for modern data platforms . BlueTalon works with leading Fortune 100 companies to eliminate data security blind spots and gain visibility and control of data. BlueTalon provides a customer-proven, data-centric solution for data access management and auditing across the diverse systems resident in modern data estates.
PullPanda^	06-17-2019	PullPanda^ helps teams create more efficient and effective code review workflows on GitHub . Better code reviews mean better code for software teams of all sizes, whether you work in open source or on a Fortune 500 team. PullPanda^ gives teams a better way to manage reviews, reduce turnaround times, and ship code faster .
Double Fine Productions	06-09-2019	Double Fine is a beacon of creativity and spirit in game development for almost 20 years with classic games like Pyschonauts, Brütal Legend and Broken Age . At the root of every game is an emphasis on creating crazy worlds with originality, story and fun. That commitment to creating a unique, player-centric experience is what drew us to the studio, and I'm looking forward to seeing what we create together.
Drawbridge Solutions	05-28-2019	LinkedIn will integrate Drawbridge's technology into our marketing solutions portfolio to help our customers better reach and understand their professional audiences and measure the ROI of their campaigns.
Dependabot	05-23-2019	Dependabot is integrated directly into GitHub and will monitor your dependencies for known security vulnerabilities and automatically open pull requests to update them to the minimum required version. We are rolling out automated pull requests to all accounts with security alerts enabled along with other enhancements in the coming months.



Microsoft Acquisitions – 2019 & late 2018

Company	Date	Description
Express Logic	04-18-2019	a leader in real time operating systems (RTOS) for IoT and edge devices powered by microcontroller units (MCUs) . Express Logic's ThreadX RTOS has over 6.2 billion deployments, making it one of the most deployed RTOS in the world per VDC Research . This widespread popularity is driven by demand for technology to support resource constrained environments, especially those that require safety and security.
DataSense	02-04-2019	The integration of DataSense into Microsoft's suite of products, we will help educational institutions – and school and district IT leaders in particular – better collect, manage and explicitly control access to their data within Azure to help drive the best possible learning outcomes for their students. Read more at https://educationblog.microsoft.com/en-us/2019/02/introducing-datasense-to-microsoft-educations-family-of-products/#E6CKQEBUjS35TOH4.99
Citus Data	01-24-2019	a leader in the PostgreSQL community. Citus is an innovative open source extension to PostgreSQL that transforms PostgreSQL into a distributed database, dramatically increasing performance and scale for application developers . Because Citus is an extension to open source PostgreSQL, it gives enterprises the performance advantages of a horizontally scalable database while staying current with all the latest innovations in PostgreSQL . Citus is available as a fully-managed database as a service, as enterprise software, and as a free open source download.
FSLogix	11-19-2018	FSLogix is a next-generation app-provisioning platform that reduces the resources, time and labor required to support virtualization . From small businesses to very large global enterprises across numerous industries, FSLogix solutions enhance customer experience and productivity, while reducing support requirements for IT departments.
XOXCO	11-14-2018	A software product design and development studio known for its conversational AI and bot development capabilities . The company has been paving the way in conversational AI since 2013 and was responsible for the creation of Howdy , the first commercially available bot for Slack that helps schedule meetings, and Botkit, which provides the development tools used by hundreds of thousands of developers on GitHub . Over the years, we have partnered with XOXCO and have been inspired by this work.
Obsidian	11-10-2018	The studio quickly made a name for itself with the Xbox exclusive Star Wars: Knights of the Old Republic II: The Sith Lords . Over the last fifteen years, they have delivered genre-defining RPGs to players on both console and PC through titles including <i>Fallout: New Vegas</i> , <i>South Park: The Stick of Truth</i> , and <i>Pillars of Eternity</i> . Read more at https://news.xbox.com/en-us/2018/11/10/obsidian-inxile-join-microsoft-studios/#P4ARqRq505qOpmfU.99
InXile	11-10-2018	Like Obsidian, InXile excels at creating vast worlds for players to explore with titles such as Wasteland 2, Torment: Tides of Numenera, Bard's Tale IV and the upcoming Wasteland 3 . Read more at https://news.xbox.com/en-us/2018/11/10/obsidian-inxile-join-microsoft-studios/#P4ARqRq505qOpmfU.99
Lobe	09-13-2018	Lobe makes deep learning simple, understandable and accessible to everyone. Lobe's simple visual interface empowers anyone to develop and apply deep learning and AI models quickly, without writing code .



Microsoft

Thank YOU!