

Microsoft Teams

Clients for Microsoft Teams

Microsoft Teams has clients (user interfaces) available for desktop (Windows, Mac, and Linux), web, and mobile (Android and iOS).

These clients all require an active internet connection and do not support an offline mode.

Our primary client is web-based.

Web Client

- The web client (<https://teams.microsoft.com>) is a full, functional interface that can be used from a variety of browsers. The web client supports Calling and Meetings by using webRTC, so there is no plug-in or download required to run Teams in a web browser. The browser must be configured to allow third-party cookies.

Browser Support

Teams fully supports the following Internet browsers:

- Microsoft Edge: RS2 or later
- Microsoft Edge (Chromium-based): the latest version plus two previous versions
- Google Chrome: the latest version plus two previous versions
- *It will not* support Calling (audio, video and sharing) in Internet Explorer 11, Firefox or Safari 11.1+.

Mobile Clients

The Microsoft Teams mobile apps are available for Android and iOS. This client is geared for on-the-go users participating in chat-based conversations and peer-to-peer audio calls. For mobile apps, go to Google Play or the Apple App Store.

Please note: The Windows Phone App was retired in 2018 and may no longer work.

Hardware requirements for Teams on a Windows PC

Component	Requirement
Computer and processor	Minimum 1.6 GHz (or higher) (32-bit or 64-bit).
Memory	2.0 GB RAM
Hard disk	3.0 GB of available disk space
Display	1024 x 768 screen resolution
Graphics hardware	Minimum of 128 MB graphics memory
Operating system	Windows Server 2012 R2+, Windows 10, or Windows 8.1 in 32-bit and 64-bit. For the best experience, use the latest version of your operating system.
.NET version	Requires .NET 4.5 CLR or later
Video	USB 2.0 video camera
Devices	Standard laptop camera, microphone, and speakers
Video calls and meetings	<ul style="list-style-type: none">•For a better experience with video calls and online meetings, we recommend using a computer that has a 2.0 GHz processor and 4.0 GB RAM (or higher).•The optional Blur my background video effect requires a processor with Advanced Vector Extensions 2 (AVX2) support. See Hardware decoder and encoder driver recommendations for a list of unsupported decoders and encoders.•Joining a meeting using proximity detection in a Microsoft Teams Room requires Bluetooth LE, which requires Bluetooth to be enabled on the client device, and for Windows clients requires the 64-bit Teams client. It's not available on 32-bit Teams clients.
Teams live events	If you are producing a Teams live events, we recommend using a computer that has a Core i5 Kaby Lake processor, 4.0 GB RAM (or higher) and hardware encoder. See Hardware decoder and encoder driver recommendations for a list of unsupported decoders and encoders.

Hardware requirements for Teams on a Mac

- TABLE 2
- Component Requirement
- Processor Minimum Intel processor, Core 2 Duo or higher
- Memory 2.0 GB RAM
- Hard disk 1.5 GB of available disk space
- Display 1280 x 800 or higher resolution
- Operating system Mac OS X 10.11 El Capitan or later
- Video Compatible webcam
- Voice Compatible microphone and speakers, headset with microphone, or equivalent device
- Video calls and meetings For better experience with video calls and online meetings, we recommend using a computer that has a 2.0 GHz processor and 4.0 GB RAM (or higher).
- The optional Blur my background video effect requires a processor with Advanced Vector Extensions 2 (AVX2) support, supported on most late 2013 Mac devices and later. See Hardware decoder and encoder driver recommendations for a list of unsupported decoders and encoders.
- Joining a meeting using proximity detection in a Microsoft Teams Room is not available on Mac OS.

Hardware requirements for Teams on mobile devices

- You can use Teams on these mobile platforms:
- Android: Compatible with Android phones and tablets.
- Support is limited to the last four major versions of Android. When a new major version of Android is released, the new version and the previous three versions are officially supported.
- iOS: Compatible with iPhone, iPad, and iPod touch.
- Support is limited to the two most recent major versions of iOS. When a new major version of iOS is released, the new version of iOS and the previous version are officially supported.
- For the best experience with Teams, use the latest version of iOS and Android.

Hardware requirements for Teams on Linux

- Component Requirement
- Computer and processor Minimum 1.6 GHz (or higher) (32-bit or 64-bit).
- Memory 2.0 GB RAM
- Hard disk 3.0 GB of available disk space
- Display 1024 x 768 screen resolution
- Graphics hardware Minimum of 128 MB graphics memory
- Operating system Linux distribution capable of installing DEB or RPM.
- Video USB 2.0 video camera
- Devices Standard laptop camera, microphone, and speakers
- Voice Compatible microphone and speakers, headset with microphone, or equivalent device
- Video calls and meetings
- For better experience with video calls and online meetings, we recommend using a computer that has a 2.0 GHz processor and 4.0 GB RAM (or higher).
- The optional blur my background video effect requires a processor with Advanced Vector Extensions 2 (AVX2) support, supported on most late 2013 Mac devices and later. See [Hardware decoder and encoder driver recommendations](#) for a list of unsupported decoders and encoders.
- Joining a meeting using proximity detection in a Microsoft Teams Room is not available on Linux.
- Supported Linux distributions Ubuntu 16.04 LTS, 18.04 LTS, Fedora 30 Workstation, RHEL 8 Workstation, CentOS 8

Prepare your network for upgrading to Teams

Why should you prepare your network?

Before we look at the steps to be taken, it's important to understand what can affect the performance of Teams, and thereby user happiness and satisfaction.

Three major risk areas can affect how users perceive network quality:

- Insufficient bandwidth
- Firewall and proxy blockers
- Network impairments, such as jitter and packet loss

Bandwidth planning

- Microsoft Teams gives you the best audio, video and content sharing experience regardless of your network conditions. With variable codecs, media can be negotiated in limited bandwidth environments with minimal impact. But where bandwidth is not a concern, experiences can be optimized for quality, including up to 1080p video resolution, up to 30fps for video and 15fps for content, and high-fidelity audio.
- This table describes how Teams uses bandwidth. Teams is always conservative on bandwidth utilization and can deliver HD video quality in under 1.2Mbps. The actual bandwidth consumption in each audio/video call or meeting will vary based on several factors, such as video layout, video resolution, and video frames per second. When more bandwidth is available, quality and usage will increase to deliver the best experience.
- Bandwidth(up/down) Scenarios
- 30 kbps Peer-to-peer audio calling
- 130 kbps Peer-to-peer audio calling and screen sharing
- 500 kbps Peer-to-peer quality video calling 360p at 30fps
- 1.2 Mbps Peer-to-peer HD quality video calling with resolution of HD 720p at 30fps
- 1.5 Mbps Peer-to-peer HD quality video calling with resolution of HD 1080p at 30fps
- 500kbps/1Mbps Group Video calling
- 1Mbps/2Mbps HD Group video calling (540p videos on 1080p screen)

Local internet egress

- Many networks were designed to use a hub and spoke topology. In this topology, internet traffic typically traverses the WAN to a central datacenter before it emerges (egresses) to the internet. Often, this is done to centralize network security devices with the goal of reducing overall cost.
- Back-hauling traffic across the WAN increases latency and has a negative impact on quality and the user experience. Because Microsoft Teams runs on Microsoft's large global network, there's often a network peering location close to the user. A user will most likely get better performance by egressing out of a local internet point close to their location and on to our voice-optimized network as soon as possible. For some workloads, DNS requests are used to send traffic to the nearest front-end server. In such cases, it's important that when using a local egress point, it's paired with local DNS resolution.
- Optimizing the network path to Microsoft's global network will improve performance and ultimately provide the best experience for users. For more detail, see the blog post [Getting the best connectivity and performance in Office 365](#).
- To get an optimal experience using real-time media within Microsoft Teams, you must meet the networking requirements for Office 365. For more information, see [Media Quality and Network Connectivity Performance for Skype for Business Online](#).
- The two defining network segments (Client to Microsoft Edge and Customer Edge to Microsoft Edge) must meet the following requirements:

Local internet egress

Value

Latency (one way)

Latency (Round trip)

Burst packet loss

Packet loss

Packet inter-arrival jitter

Packet reorder

Client to Microsoft Edge

< 50 ms

< 100 ms

<10% during any 200-ms interval

<1% during any 15-sec interval

<30 ms during any 15-sec interval

<0.05% out-of-order packets

Customer Edge to Microsoft Edge

< 30 ms

< 60 ms

<1% during any 200-ms interval

<0.1% during any 15-sec interval

<15 ms during any 15-sec interval

<0.01% out-of-order packets

Wi-Fi

- Wi-Fi networks aren't necessarily designed or configured to support real-time media. Planning for, or optimizing, a Wi-Fi network to support Teams is an important consideration for a high-quality deployment.
- There are several factors that come into play for optimizing a Wi-Fi network:
- Implementing QoS or Wi-Fi Multimedia (WMM) to ensure that media traffic is getting prioritized accordingly over the Wi-Fi networks.
- Planning and optimizing the Wi-Fi bands and access point placement. The 2.4 GHz range might provide an adequate experience depending on access point placement, but access points are often affected by other consumer devices that operate in that range. The 5 GHz range is better suited to real-time media due to their dense range but requires more access points to get sufficient coverage. Endpoints also need to support that range and be configured to leverage those bands accordingly.
- If dual-band Wi-Fi networks are deployed, consider implementing band steering. Band steering is a technique implemented by Wi-Fi vendors to influence dual-band clients to use the 5 GHz range.
- When access points of the same channel are too close together they can cause signal overlap and unintentionally compete, resulting in a bad experience for the user. Ensure that access points that are next to each other are on channels that don't overlap.