

1) Troubleshoot connection issues in Skype for Business or Teams:

An Internet connection is the most likely culprit. A poor Internet connection can cause low-quality audio and video, delays, and dropped calls. During a call, the connection indicator is displayed and clicking it provides additional information.

A series of vertical bars in graduated heights that represent connection status. Depending on the severity of the problem, the icon can be Gray,



Yellow, or Red.

If you have a slow connection, the following tips might help. Improve your signal. If possible, use an Ethernet cable to plug in your computer directly into the modem or router. If you're using a Wi-Fi connection, try moving closer to the router to get a better signal.

- Close other programs. File-sharing applications, streaming audio or video or even just having a web browser open are all things that eat up bandwidth. Closing them frees up bandwidth so that Skype for Business can use it. If you're using Windows 7 or a newer release of Windows, you can use the Task Manager to see everything that's running on your PC and the percent of usage of CPU, Memory, Disk, and Network for each program.
- Check your speed. For a high-quality video call, both you and the other participant need to have enough bandwidth. Do a speed test online (just type speed test into your search engine and pick the top few) or ask your Internet service provider (ISP) to test your download and upload speed for you. Check the result against the speed your ISP is supposed to be providing. If you often have a slow Internet connection, ask your ISP to take care of it.
- Update your hardware. If your computer, modem, or router is old, then everything will seem to be running slow even with a fast connection. It might be worth upgrading your hardware if all else fails. See more details on this below.
- Check with the other participant. Remember, even if everything's good at your end, the other participant might have a problem with their connection.

<https://support.office.com/en-us/article/troubleshoot-audio-and-video-in-skype-for-business-62777bc6-c52b-47ae-84ba-a8905c3b71dc>

Skype/Teams for Business Network Assessment tool:

<https://www.microsoft.com/en-us/download/details.aspx?id=53885>

2) **How to increase the Wi-Fi speed on your device by optimizing the settings to boost signal and extend range.**

Place your wireless router in an open area in the middle of your house or if that isn't possible ensure your computer is close enough to receive a strong signal (at least 3 bars).

Because Wi-Fi is just that—wireless—its connection speed is affected by distance, obstacles (such as walls, floors, and ceilings), electronic interference, and the number of users on the network. All these things contribute to the slow-down of Wi-Fi connection speed.

For the best signal, put the wireless router out in the open on the main floor of your house, away from walls and obstructions. Ideally, you'll want to position it off the floor, above the furniture. Keep it away from other electronics that might cause interference, like microwaves, baby monitors, and cordless phones. You might also try pointing the antennas perpendicularly, with one horizontally and one vertically.

If necessary, install a repeater or range extender to boost the wireless signal of your router.

While this may not speed up the connection, it can boost the signal into the dead spots of your house or office. For example, if your router is on the first floor of your house, you may want to add a wireless range extender on another floor to boost the signal. It can be a big help in areas with thick walls or other physical structures that can impede a wireless signal.

That invisible wireless connection can have a huge impact on our daily lives—determining how much we get done or how much we can kick back and relax. No one wants dropped video calls, choppy video streaming, or slow file downloads. With a little know-how and some persistence, you can tweak your wireless router's settings to increase your Wi-Fi connection speed and extend its range.

If you can't get a strong signal to your computer, hardware your computer to your router using a good quality patch cable (available in several different lengths).

3) **Limit devices and optimize settings.** Playing online games, conducting video chats, and streaming movies and videos take up a lot of bandwidth, and they can slow down Internet speed and access for everyone connected to that Wi-Fi network. Some routers have a Quality of Service (QoS) setting that lets you control which apps have priority access to the Internet bandwidth. For example, you may want to prioritize video calls if you have a lot of meetings, and deprioritize file downloads from the cloud. You can always get your files later, but you don't want to drop a call with an important client or family member!

You'll also want to make sure that your wireless router has the latest updates to its firmware. While many newer routers have a built-in update process, you may need to access your router's settings to manually start an update.

It's also a good idea to plug stationary devices, like desktop computers and gaming consoles, directly into the router to provide better bandwidth for your mobile devices. You can install browser extensions that can block ads, animations, and videos that hog bandwidth. Even small tweaks like blocking streaming ads can improve your user experience.

You can also fine-tune the channel selection on your router. By default, many wireless routers are set to run on channel 6. This means that your neighbors' routers might also be running on channel 6, causing congestion on that channel because of the number of devices connected to it. Using a tool like Wi-Fi Analyzer* or Wi-Fi Scanner* can help you identify router channels with more bandwidth giving you improved Internet speed.

If your router is relatively new, it should be able to switch between two radio frequencies—2.4 GHz (the older standard) and 5 GHz (the newer standard). Smart wireless routers can choose the best frequency for you and your environment. Each frequency has multiple channels: 14 at 2.4 GHz and 30 at 5GHz. So, if your router has the capability to automatically switch between frequencies, it can choose among 44 channels. If it is older and can only access the 14 channels at 2.4 GHz, then it's more likely to encounter "traffic" on the Wi-Fi connection. You can check your wireless router settings to see if it is auto-switching between channels and frequencies for the optimal setting.

- 4) Upgrade your wireless router so it supports the latest wireless technologies for optimal performance.

Technologies change rapidly, and one of the best ways to speed up your wireless network is to use the latest hardware. Wireless-N (802.11n) and Wireless-AC (802.11ac) are newer, faster technologies, with Wireless-A (802.11a), -B (802.11b), and -G (802.11g) being older and slower.

Newer Wireless-AC routers have data transfer speeds up to three times faster than older Wireless-B/G/N models, and they offer "dual-band" functionality so you can free up channels for older wireless devices to access.

And, of course, you'll want to secure your Wi-Fi network with a password so your neighbors can't stream their movies on your wireless connection!

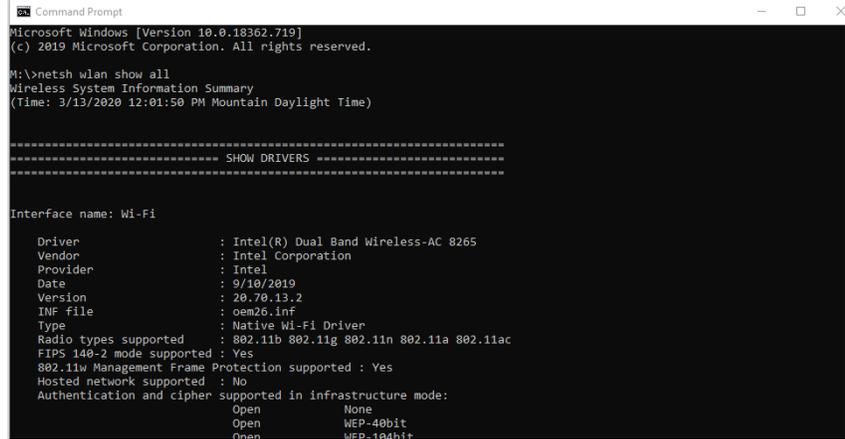
If you are using ISP (Internet Service Provider) Equipment then contact your Internet Service provider for updating firmware etc.

5) Change That Channel

Interference is a big issue, especially for those who live in densely populated areas. Signals from other wireless networks can impact speeds, not to mention some cordless phone systems, microwaves and other electronic devices.

In the same vein, all modern routers can switch across different channels when communicating with your devices. Most routers will choose the channel for you, but if

neighboring wireless networks are also using the same channel, then you are going to encounter signal congestion. A good router set to Automatic will try to choose the least congested channel, but many cheaper routers will just choose a predefined channel, even if it isn't the best one. That could be a problem. On Windows-based PCs, you can see what channels neighboring Wi-Fi networks are using. From the command prompt type netsh wlan show all, and you'll see a list of all wireless networks and the channels being used in your vicinity. There are other tools available for the desktop or smart phone to help you with this.



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Microsoft Windows [Version 10.0.18362.719]
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C:\>netsh wlan show all
Wireless System Information Summary
(Time: 3/13/2020 12:01:50 PM Mountain Daylight Time)

----- SHOW DRIVERS -----
Interface name: Wi-Fi

Driver           : Intel(R) Dual Band Wireless-AC 8265
Vendor           : Intel Corporation
Provider         : Intel
Date             : 9/10/2019
Version          : 20.70.13.2
INF file         : oem26.inf
Type             : Native Wi-Fi Driver
Radio types supported : 802.11b 802.11g 802.11n 802.11a 802.11ac
FIPS 140-2 mode supported : Yes
802.11w Management Frame Protection supported : Yes
Hosted network supported : No
Authentication and cipher supported in infrastructure mode:
  Open           : None
  Open           : WEP-40bit
  Open           : WEP-104bit
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6) Additional tips on help reduce Buffering or improve Video Calls:

Often buffering is a result of poor download speeds, which is to do with your download speeds, and how many people you are sharing with. As the computer gets overloaded, the quality of the signal between it and your device suffers, and becomes weaker. A common reason that keeps you buffering is your own device – especially if it has a bug, or is running too many programs at once. Viruses often cause buffering if malicious software is running in the background on your device – make sure you check for viruses regularly and use anti-virus software.

a) Delete temporary files

Deleting your temporary cache and Internet files may help, because they're weighing your device down.

Before you stream, go into your browser's settings and clear the recent history and all temporary Internet files to ensure you're allowing it to work unrestrained.

b) Get a faster connection: One of the easiest things you can do to banish buffering is get a faster broadband connection. Check with your Service Provider. If you are not achieving desired speed then, it can be a loose wire connection, old router or problem with your Service provider connection in the area. Service provider should Test connection.

c) Run antivirus: Run antivirus software to get rid of malicious software that could be running in the background of your device, causing other programs to buffer.

Help articles and tools:

How to check Internet speed:

Using Windows Based Computer: Open up your browser and type

A) www.speedtest.net

B) www.speedcheck.org/ca/

C) Some Service providers like TELUS, Bell, and Shaw have their own web page:

<https://www.telus.com/en/bc/support/article/wifi-speed-and-coverage-explained>

<https://speedtest.shaw.ca/>

<https://support.bell.ca/internet/internet-speed-test>

<https://www.speedtest.net/apps/mobile>

Articles:

1) <https://www.netspotapp.com/top-10-ways-to-boost-wifi.html>

2) <https://www.allconnect.com/blog/boost-your-wi-fi-signal-to-get-the-most-out-of-your-high-speed-internet-connection>

Videos:

a) <https://youtu.be/WFuSmMxyREY>

b) <https://www.wthr.com/article/13-investigates-are-you-getting-internet-speed-you-paid>

c) <https://youtu.be/oYJKiLCmM20>