Internet/Connectivity Support
Summer 2020

Best Practices

All attendees

- Close all programs on your computer except for the browser you are using for your Collaborate session.
- Use a hard-wired, cable (Ethernet) connection, if available. If not available, use a Wi-Fi connection.
- Only use up to date, supported internet browsers for Blackboard Collaborate/Ultra (see list below)
- Use video during the session as necessary, but there may be times when it may be needed to turn off the video.
- It is suggested to set up your computer with the following:

  - 4 GB RAM minimum, more recommended
  - Internet connection of 360kbps minimum. Faster connection is strongly recommended
  - Headset required
  - Webcam required
  - For the optimal session all users attend with Google's Chrome browser or Mozilla's Firefox browser
  - It is not recommended to use Internet Explorer
  - Please read the Blackboard Ultra requirement for more details here.

Browser	Desktop	Mobile
Chrome™	Windows®, macOS, Ubuntu	Android™
Firefox®	Windows, macOS	Not supported

Safari®	macOS 10.13+	iOS® 12+, iPadOS
Microsoft Edge® (Chromium)	Windows, macOS	Android, iOS

Moderators

If you are concerned about attendees missing something because of poor network connections, you also can try these things.

- Consider recording sessions so attendees can review what they may have missed. Sessions should not be recorded without written consent from all participants.
- Upload presentations and scripts where attendees can find them.
- Mute attendees in large sessions. If you need to, you can also stop participants from sharing their video from Session Settings.
- Monitor connection status of attendees to see if anyone may be missing anything. Keep the Attendees panel open to make this easier.

Blackboard Collaborate Ultra Bandwidth

The primary factors in bandwidth consumption for Blackboard Collaborate Ultra are sharing webcam videos and sharing applications. Below is a graph for consumption for both presenters and participants.

Use Case	Bandwidth for Presenter	Bandwidth for Participant
Audio only	48 kbps	48 kbps
Application sharing and audio	70 - 500 kbps	Minimum of 88 kbps
Audio and video (up to 4 cameras)	20 - 360 kbps	128 - 1488 kbps
Chat	Small amount of bandwidth required if enabled	Small amount of bandwidth required if enabled

- *Note:* **Kbps** stands for "kilobits per second," while **Mbps** stands for "megabits per second." Because one megabit is equal to 1,000 kilobits, 1 **Mbps** is 1000 times faster than 1 **Kbps**.

High-speed internet (broadband) carriers

Most internet providers offer high speed internet with no monthly data caps and have introductory pricing of $50 per month or less. Contact your local carrier to determine if service is offered at your residence. In many cases, you can also check availability online.

A list below is provided for common providers and their download speeds. You can also search for providers in your area using this advertising-supported site.

Not served by wired high-speed internet providers?

Unfortunately, access to wired internet in rural areas can be challenging. For those not served by wired internet, you may have access to a satellite broadband provider. Note that there are usually monthly data caps. (See 'satellite' type in chart below)

Connecting with mobile hotspots

While mobile hotspots are convenient for occasional internet access and for internet access when traveling, they do not provide enough data in their plans to sustain full-time work from home. Even the "unlimited" plans are capped at about 20 GB of data, which is not enough data for most people to get through the month before the cap resets.

A note about connecting with mobile hotspots: In situations where internet access is not readily available, individuals with devices capable of producing data hotspots may want to contact their service providers regarding lifting any data caps that may be a part of their service plan. While not comprehensive, see this list of providers temporarily lifting data caps in response to COVID-19. However, UW-Madison's tech support, DoIT, still recommends a standard home broadband setup if the option is available.

Providers

Please ensure that your internet provider can establish enough bandwidth and speed to secure connection. Below is a list of common internet providers (with links to websites) and their download speeds.

Provider	Type	Download speeds up to	Link to no-contract / pre-paid plans
COX	Cable	25 Mbps	COX Straight Up Plan ($50/mo.)
Spectrum	Cable	100 Mbps	(Only 12-month plans available $49.99/mo.)

AT&T	DSL & Fiber	1000 Mbps	AT&T Prepaid Plan (Only available for tablets & mobile hotspot. Between $25 - $75/mo.)
CenturyLink	DSL	20 Mbps	CenturyLink Simple Pay Plan ($49/mo.)
Frontier	DSL	25 Mbps	Frontier No-Contract Plan (~34.99/mo.)
HughesNet	Satellite	25 Mbps	(Only 24-month commitment available $59.99mo.)
Viasat	Satellite	25 Mbps	(Only 24-month commitment available $70/mo.)

Technology Type

Cable:
Cable provides internet speeds faster than DSL through the same cables used for cable TV.

Fiber:
Fiber relies on glass strands to relay digital code and is much faster than both DSL and cable.

DSL:
DSL provides internet service via phone cables and is up to ten times faster than dial-up service.

Satellite:
Satellite internet is widely available but offers slower speeds due to a far-traveling signal. Perfect for rural areas.

Bitrate

Bitrate is a measure of how much audio and video data is being delivered. Generally, the higher the number, the better the quality. However, the content being shared has an impact on this number as well. For example, if you are only sharing audio, this number will be low simply

because audio does not have a very high bitrate. These are some examples of how much different features contribute to the bitrate:

- Audio always uses 48 kbps.
- Each video typically uses 360 kbps but can drop as low as 20 kbps depending on network conditions.
- Application sharing ranges from 70 kbps to 500 kbps depending on the content being shared and network conditions.
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Conclusion

It is UW-Madison's hope that, with the above information, students will be able to receive high-speed download and upload service, which will help mitigate the connectivity issues that may arise during remote classes.

If a student is in need of assistance from blackboard, they may reach out to the help desk.

In addition, students can access the UW-Madison team, DoIT, for tech support and computer needs.