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.

<table>
<thead>
<tr>
<th>Browser</th>
<th>Desktop</th>
<th>Mobile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chrome™</td>
<td>Windows®, macOS, Ubuntu</td>
<td>Android™</td>
</tr>
<tr>
<td>Firefox®</td>
<td>Windows, macOS</td>
<td>Not supported</td>
</tr>
</tbody>
</table>
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.

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

- **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.

<table>
<thead>
<tr>
<th>Provider</th>
<th>Type</th>
<th>Download speeds up to</th>
<th>Link to no-contract / prepaid plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>COX</td>
<td>Cable</td>
<td>25 Mbps</td>
<td>COX Straight Up Plan ($50/mo.)</td>
</tr>
<tr>
<td><strong>Spectrum</strong></td>
<td>Cable</td>
<td>100 Mbps</td>
<td>(Only 12-month plans available $49.99/mo.)</td>
</tr>
<tr>
<td>Technology Type</td>
<td>Service Type</td>
<td>Bitrate</td>
<td>Plan Details</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------</td>
<td>---------</td>
<td>--------------</td>
</tr>
<tr>
<td>AT&amp;T</td>
<td>DSL &amp; Fiber</td>
<td>1000 Mbps</td>
<td><strong>AT&amp;T Prepaid Plan</strong> (Only available for tablets &amp; mobile hotspot. Between $25 - $75/mo.)</td>
</tr>
<tr>
<td>CenturyLink</td>
<td>DSL</td>
<td>20 Mbps</td>
<td><strong>CenturyLink Simple Pay Plan</strong> ($49/mo.)</td>
</tr>
<tr>
<td>Frontier</td>
<td>DSL</td>
<td>25 Mbps</td>
<td><strong>Frontier No-Contract Plan</strong> (~$34.99/mo.)</td>
</tr>
<tr>
<td>HughesNet</td>
<td>Satellite</td>
<td>25 Mbps</td>
<td>(Only 24-month commitment available $59.99/mo.)</td>
</tr>
<tr>
<td>Viasat</td>
<td>Satellite</td>
<td>25 Mbps</td>
<td>(Only 24-month commitment available $70/mo.)</td>
</tr>
</tbody>
</table>

**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.