



Broadband for Learning

What is Broadband?

Broadband (Internet) access is almost ubiquitous today and comes in many forms. Not all locations support high-speed network connectivity and the types of connections range from dial-up modems, cellular, satellite, phone company digital subscriber lines (DSL), cable (bundled with television content or telephone lines), fixed wireless and, for a very lucky few, fiber to the home.

Not all connection types are equal and many are below or borderline capable of supporting online learning or home-based businesses. High-speed Broadband is an often used term referencing a basic connection to Internet capable of supporting typical tasks, like e-mail, web browsing, online gaming, video-conferencing and video streaming. There are many technical variables and specifics to consider with many aspects totally beyond the scope of the student or homeowner.

Is My Internet Connection High-Speed?

Some online tasks, such as checking e-mail, are not demanding of Internet speeds unless messages contain large attachments or web links to Internet sites that have challenging web content and inline videos. Some websites are fairly simple, while others like news and sports can contain embedded video frames that take “bandwidth” to load. Bandwidth demands increase with the amount of data needed to go from the site source to the user’s device.

High-Speed Broadband is capable of moving the larger and more demanding content without delays in timing delivery. Some Internet connections are designed for greater downloads (think Netflix or YouTube) but may have little reverse capacity hindering a two-way video conference or uploading larger files. Satellite connections also add delays caused by the distance to and from the earth. Jitter and latency can be introduced and affect the experience.

How to Test an Internet Connection?

Internet connection professionals range from the salesperson to the technical support person that can install a connection and assist with troubleshooting issues.

Not all computers are well maintained, and many systems need updates and routine cleaning tasks. Not all users are knowledgeable on these tasks and should seek professional assistance when needed.

On the next page, a simple test of Internet connectivity for download, upload and ping speed will be outlined. If the user is questioning if their computer and connection are adequate for Online Learning, knowing the results of this test will be helpful to the Help Desk. Run the test and know the results.



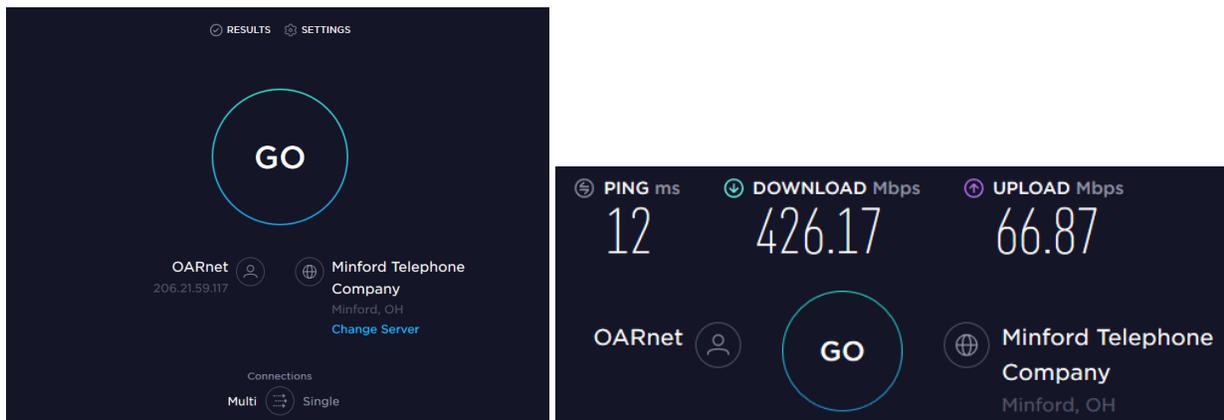
SpeedTest.net: Checking your connection

There are many Internet testing tools providing a wide range of technical results that can aid in diagnosing possible causes to performance issues and operational failures.

The website:  <https://www.speedtest.net> is well known and trusted for simple testing and measurable results.

Free sites are supported by advertisements – do not be distracted, focus on the center section.

- Click the center circle with GO inside.
- Allow the testing to proceed and the Results to display.
- The Results link above the Upload speed will display more information.
- The Settings link allows the user to select another testing server.
- Testing a few others is OK...



The screenshot shows the Speedtest.net interface. On the left, there is a large circular button with the word "GO" inside. Below it, two server options are listed: "OARnet" with IP 206.21.59.117 and "Minford Telephone Company" in Minford, OH, with a "Change Server" link. At the bottom, there are "Connections" options for "Multi" and "Single". On the right, the test results are displayed: "PING ms" is 12, "DOWNLOAD Mbps" is 426.17, and "UPLOAD Mbps" is 66.87. Below the results, there is a "GO" button and the "Minford Telephone Company" server information.

Results

This test displays connectivity from a RioNET connected computer and very high speeds. Everyone will give different answers to what constitutes High-Speed, but look for something above 4 or 5 Mbps.

Latency is also another connection factor measuring the delay of data transport between host and computer. High latency can cause the connection to time-out and sometimes closes the connection.

The location of a wireless router in a home environment and the number of running applications on a computer can all have effects on tested speeds and the overall resulting performance. For starters, let's just know how we connect to the Internet and the results of our speed test, then call the Help Desk.

RioNET Information Sheets – Troubleshooting & Assistance Guides

Using technology does not always come easy. What is easy for some, may offer challenges or technical issues for another person. Please reference our Guides for more assistance: <https://www.rio.edu/myrio>