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# KITE Client – Bandwidth Requirements

During testing, the KITE Client communicates with our servers, both retrieving test questions and sending student responses. Depending upon the bandwidth available at your location and the number of students testing at one time, you will probably benefit from using a Local Caching Server (LCS) to manage the flow of data during testing.

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**Note: Using a Local Caching Server (LCS) lowers the total amount of bandwidth that your location will need during testing.**

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## Internet Speeds

Internet speed is typically measured in kilobits per second (kbps) or megabits per second (mbps). Note that line speed and amount of bandwidth actually available for transferring data are rarely the same. Because of multiple factors, including network configuration, other data needs, and latency, most locations find that only a percentage of their internet connectivity is actually available to transfer data at any given time.

## Data Transfer Rates

Some internet service providers (ISPs) may describe bandwidth in terms of data transfer rates rather than internet speed. Data transfer rates are usually measured in kilobytes per second (KBps) or megabytes per second (MBps). To compare data transfer rates to internet speed, you may convert kilobytes per second (KBps) to megabits per second (mbps) using the following formula:  $\text{KBps} \times 0.008 = \text{mbps}$ . For convenience, we have listed the internet speed requirements below along with the closest commonly referenced data transfer rates in parenthesis.

### Without an LCS

Number of Students	Minimum megabits per second	Recommended megabits per second
1	3 mbps (about 384 kilobytes per second)	5 mbps (about 512 kilobytes per second)

Hint: Multiply mbps by number of students testing at the same time.

### With an LCS

Number of Students	Minimum megabits per second	Recommended megabits per second
Any	1 mbps (about 125 kilobytes per second)	5 mbps (about 512 kilobytes per second)