

Broadband Speed Chart
(Based on running one activity at a time)

Application	Data Rate Required
Personal Communications, Instant Messengers	300 bps to 9.6kbps
Remote control programs	9.6kbps to 56kbps
Streaming radio	Less than 0.5Mbps
Phone calls (VoIP)	Less than 0.5Mbps
E-mail	0.5Mbps
Web browsing: job searching, navigating government websites	0.5Mbps
Database query	Up to 1Mbps
Web browsing: Interactive pages and short educational videos	1Mbps
Basic video conferencing	1Mbps
Game console connecting to the Internet	1Mbps
Skype HD video calling	1.5Mbps symmetrical
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Digital audio	1-2Mbps
Access images	1-8Mbps
Skype group video-3 people	2Mbps download/512kbps upload
Compressed video	2-10Mbps
HD quality video streaming/HD video conferencing/telelearning	4Mbps
Two-way online gaming in HD	4Mbps
Skype group video-5 people	4Mbps download/512kbps upload
Netflix recommended download speed for HD	5Mbps
Skype group video-7+ people	8Mbps download/512kbps upload
Telecommuting (high quality video)	10 Mbps-100Mbps
Netflix recommended download speed for Ultra HD	25Mbps
Medical Transmissions (At 50Mbps, a digital chest film takes 3 seconds, an MRI takes 30.5 seconds, an echocardiogram study takes 10.1 minutes)	Up to 50Mbps
Download a 1 MB book in 0.1 seconds, or a 4 MB song in 0.3 seconds or a 6144 MB movie in 8 minutes	50 to 100Mbps