



POWER OF THE
PAST
FORCE OF THE
FUTURE

EVERYTHING YOU NEED TO KNOW
ABOUT BROADBAND


RainbowSM
COMMUNICATIONS

Our mission at Rainbow Communications is to enhance our rural communities by providing exceptional broadband service. "Power of the Past, Force of the Future" is celebrated throughout this guidebook. The successes and investments behind us will fuel us as we move forward into the future!

First, we are dedicated to our communities by continuing to build a broadband network that will handle the modern-day bandwidth demand. Currently, residents within our cooperative area and businesses and anchor institutions throughout our entire service area can connect to our fiber network and receive up to a 1-gigabit connection. Over the past ten years, we have invested more than \$30 million to our infrastructure to get to where we are today. Our next goal is to deliver up to a 100 Mbps connection to all of our residential households by January 2020, which includes a \$300,000 investment in our cable modem network.

Second, we are dedicated to supporting our local organizations, nonprofits, and schools in our service area. Rainbow has donated to more than 400 different organizations, and employees have volunteered over 2,000 hours each year by serving on local boards, chambers, and economic development committees. Plus, our local content department, channel 68, continues to explore new partnerships with local schools to bring new programs to our communities.

Whether it is investing in our broadband network to deliver the best internet experience possible or investing in our local organizations, we are committed to the communities we live in and service.

We appreciate having you as a customer and look forward to continuing being your preferred broadband provider in the future.

WHAT IS BROADBAND?

According to the FCC, an Internet service must deliver at least 25 Mbps download and at least 3 Mbps upload speed to qualify as broadband.

Why?

Due to the way a typical household now uses the Internet, it takes a faster capacity bandwidth connection.

Internet users need a faster broadband plan because each of these factors will decrease your available bandwidth speed:

- Multiple people may use the Internet in your home at the same time.
- Multiple people are sharing a Wi-Fi signal from your wireless router.
- The number of connected devices in your home are increasing at a fast rate.
- Members of your family may be streaming video in high definition or downloading files.

What is the importance of Internet speed in a typical household?

Anything lower than 25 Mbps is either not equipped to handle the demand and will lose connection, or will deliver a bad customer experience with intermittent outages or slow response times.

WHAT IS MBPS?

Megabits per second (Mbps) is the standard measure of broadband speed. It refers to the speed with which information packets are downloaded from, or uploaded to, the Internet.

WHAT CAN I DO WITH TEN MBPS?

According to the FCC's minimum speed guidelines, with a 10 Mbps connection, you should be able to do a high-demand activity, such as watching a high definition video, and basic functions, such as browsing web pages at the same time. (A)

Or, have two users doing basic functions, such as browsing web pages, checking emails, or scrolling through Facebook. (B)



HOUSEHOLD BROADBAND GUIDE

AS DETERMINED BY THE FCC



LIGHT USE

Basic functions

email, browsing,
basic video, VoIP,
Internet radio



MODERATE USE

Basic functions + one high-demand application

streaming HD video,
multiparty video
conferencing,
online gaming,
telecommuting



HIGH USE

Basic functions + more than one high-demand application running at the same time



BASIC SERVICE

3 to 8 Mbps



MEDIUM SERVICE

12 to 25 Mbps



ADVANCED SERVICE

More than 25 Mbps

Mbps (Megabits per second) is the standard measure of broadband speed. It refers to the speed with which information packets are downloaded from, or uploaded to, the internet.

GENERAL USAGE



LIGHT USE

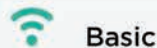


MODERATE USE



HIGH USE

1 user on 1 device



Basic

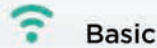


Basic



Medium

2 users or devices at a time



Basic



Medium



Medium/Advanced

3 users or devices at a time



Medium



Medium



Advanced

4 users or devices at a time



Medium



Advanced



Advanced

SPEED RECOMMENDATIONS FOR COMMON ACTIVITIES

The FCC recommends a minimum speed for doing the following activities.

GENERAL USAGE

General Browsing and Email	1
Streaming Online Radio	Less than 0.5
VoIP Calls	Less than 0.5
Student	5 - 25
Telecommuting	5 - 25
File Downloading	10
Social Media	1

WATCHING VIDEO

Streaming Standard Definition Video	3 - 4
Streaming High Definition (HD) Video	5 - 8
Streaming Ultra HD 4K Video	25

VIDEO CONFERENCING

Standard Personal Video Call (e.g., Skype)	1
HD Personal Video Call (e.g., Skype)	1.5
HD Video Teleconferencing	6

GAMING

Game Console Connecting to the Internet	3
Online Multiplayer	4

HI SPEED

Notice how little speed is recommended for these activities?

- These are recommended minimum speed requirements. For example, it's better to have more than 5 Mbps to stream HD video so you don't experience the frustrating buffering wheel.
- These recommended speeds don't take into account other factors mentioned earlier: the number of connected users and the number of connected devices. It's noted as one user on one device doing the activity.

SPEED + 5

We recommend adding at least 5 Mbps of additional speed to your Internet plan on top of what's recommended for Internet activities.

Why?

The Internet is a shared utility, and during peak usage times, it does slowdown from time to time.

Adding 5 Mbps should help fend off slower speeds due to network congestion.

IS 25 MBPS ENOUGH FOR YOUR HOUSEHOLD?

Visit www.rainbowtel.net/broadbandcalculator or fill out our Broadband Calculator below to see what speed best suits your household.

Circle one answer for each question. _____

How many Internet connected devices do you have in your home?

Examples: smartphone, activity tracker/watch, game console, computer/laptop/tablet, streaming device, smart appliance

- 1-2**
1 POINT
- 3-5**
2 POINTS
- 6-10**
3 POINTS
- 11+**
4 POINTS

Are multiple users using your Internet connection in your home at one time?

- No**
1 POINT
- Yes**
2 POINTS

Which description is the most similar to the Internet usage in your home?

Light use 1 POINT

Basic functions, such as email, browsing, basic video, Internet radio

Moderate use 2 POINTS

Basic functions + one high demand application, such as streaming HD video, video conferencing, online gaming

High use 3 POINTS

Basic functions + more than one high demand application running at the same time

TOTAL SCORE

Recommendations:

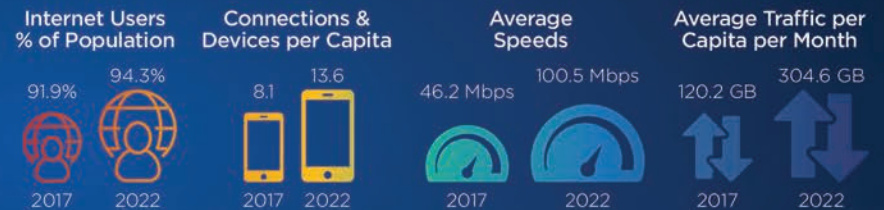
- 3-6 POINTS**
Up to 25 Mbps
- 7-8 POINTS**
Up to 50 Mbps or 75 Mbps
- 9 POINTS**
Up to 100+Mbps

*Our goal is to deliver up to 100 Mbps to all residential towns in our service area by January 2020. If it isn't available in your town now, it soon will be!

MORE ABOUT BROADBAND

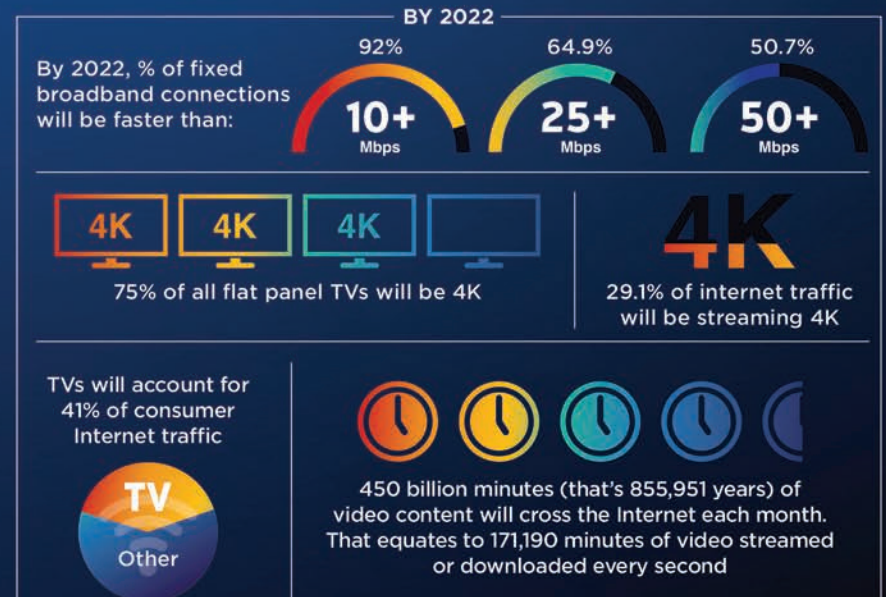
Why do you advertise "up to", such as "up to 25 Mbps"?

Bandwidth connection speed is an "up to". Several factors can slow your Internet speed from reaching its full bandwidth, but a connection's bandwidth will always cap at how fast it can transmit information over the Internet. This is why Internet Service Providers list their Internet speeds with "up to" a given speed. We're advertising the bandwidth of our connections by informing you of the highest speed those connections are capable of transmitting.



Interesting Broadband Facts from Cisco

According to Cisco, 94.3% of U.S. households will have an Internet connection by 2022. Those households will average 13.6 connection devices on a 100.5 Mbps connection. The users in the household will be averaging 304.6 GB of traffic per month.





RainbowSM
COMMUNICATIONS

608 Main St., Everest, KS 66424
rainbowtel.net | 1-800-892-0163