



INTERNET VIDEO STREAMING

This article contains:

- Information about video streaming using an Internet connection
- Devices & equipment that can be used to stream video
- Sources for video streaming content
- Other considerations

What is video streaming?

Video Streaming is a term used to describe the viewing of video content using an Internet connection. Video can be viewed on many different “devices” including computers, tablets, smart phones, gaming consoles and even TV sets. Free content available includes short news clips, video advertisements, “how to” videos and many other subjects. Some web sites are dedicated to providing free video clips that are typically uploaded by Internet users. Other sites offer TV shows and movies and usually require a monthly subscription.

How does video streaming work?

When you click to start viewing a video, your Internet connection transfers the content from a website to the display on your device a portion at a time (hence the term “streaming”). This transfer must be continuous

and occur at a rate that is fast enough for the video to be viewed without interruption.

What kind of Internet service do you need?

Video streaming uses more of your available Internet capacity (your “bandwidth” or “speed”) than just simply viewing a web page. Some videos (High Definition movies, for example) require significant speed and may even require more than you have available with your service.

Streaming Video works best when the Internet service is a stable consistent connection with adequate speed. “Wired” connections such as DSL, Cable Internet or Fiber Internet usually perform well. Good wireless connections can also be used.

The speed (or bandwidth) of your Internet connection should be documented either on your bill or on some other documentation from the company that provides your service (possibly on their web site). The documented speed will typically be the maximum speed that you could experience. The speed should be shown as 2 numbers – the first for download and the second for upload (5 Mbps/2 Mbps, for example). The unit of measure will be Kbps (kilobits per second) for slower connections and Mbps (megabits per second) for faster ones. When you watch a video, you are downloading

so the download speed (first number) is the most important.

You should also check the actual speed of your connection by using a speed test web site. Use a search engine to look for “Internet Speed Test” and try 2 or 3 of the top sites. Most sites ask you to select a server with a geographic location (“Dallas”, for example) and you should choose the location closest to you. Test your speed 3 to 5 times on each site and you can get a good idea of the average speed that you are getting. Again, the most important speed test result for video streaming is the download speed. This is the rate that your connection transfers data from a web site to your computer or device.

Be aware that the highest speed results will be seen when the device is connected directly to the Internet service (your computer is plugged directly into a modem, for example). If you are accessing a wireless router in order to connect, your speed will be slower. It is not uncommon to see speeds that are 25% slower or more depending on the quality of the wireless signal.

The amount of bandwidth required depends on the type of video that is being streamed:

Type of Video	Speed Recommended
Small Video Clip	500 Kbps
YouTube Video	1 Mbps
TV Show/Movie (Full Screen Quality)	3 Mbps – 5 Mbps
High Definition TV Show/Movie (HD)	5 Mbps – 10 Mbps
3D Movie	9 Mbps - 18 Mbps

Based on these recommended speeds, if you have a 5 Mbps connection and you are planning on watching an HD movie, there is a possibility that you may see issues such as pausing, poor quality video and/or inconsistent sound. This is because the movie requires 100% of your connection speed to be available at all times while you are viewing.

3D (3-Dimensional) movies & shows are a relatively new offering and require extremely high speed connections in order to be viewed. Many Internet connections are too slow for streaming 3D.

You also need to be aware of how many devices are using your connection at the same time. You may have enough speed to view a video when you have only one device connected, but if you have a router and someone else is using your Internet connection at the same time you may experience problems.

Can you watch streaming video on your TV?

Some TVs have built-in Internet access capability (usually referred to as “Smart” TVs). If you have one of these TVs, you can connect it to the Internet using your wireless or wired router and stream Internet video to the TV screen. If your TV is not a Smart TV, you will need to connect another device to it.

A popular device that you can use to connect the Internet to your TV is often called an Over The Top (OTT) box. There are a number of brands of these boxes that can be found at retail electronics stores and web sites that sell computers and accessories.

OTT boxes are connected to the Internet with a cable or can also connect via a Wi-Fi signal from a wireless router. They also support the necessary connections to a TV. An HDMI cable from the OTT box to the TV will provide the best quality.

What other things do you need to consider?

Many Internet services limit the amount of data that you can download per month. This limit is sometimes called a bandwidth cap or data cap. Internet Service Providers also may use the term “data plan”. Make sure that you know if there is a limit on your service before you decide to stream significant amounts of video over your connection. If you go over this limit, you may be billed for your additional usage. There

are also Internet Service Providers who will throttle (decrease) the speed of your connection for the rest of the billing period.

If you have a limit on your service (and you want to make sure that you don't exceed it) you will need to keep track of the amount of video streaming that you do. Most importantly, you need to be aware of the number of longer videos that you watch (movies & TV shows, for example) and the resolution (Standard Definition, High Definition, 3D etc.) of these videos.

It is difficult to determine exactly how much total data would be used for a video but you can make a reasonable estimate. If a Standard Definition (SD) movie requires a 3 Mbps speed of connection and the movie is 2 hours long the calculation would be:

$$\begin{aligned} & \mathbf{3\ Mbps\ X\ 7200\ seconds} \\ & \mathbf{=} \\ & \mathbf{21600\ total\ Mb\ of\ data} \end{aligned}$$

This calculation gives you estimated total megabits used and this will need to be converted to gigabytes to compare to the typical usage limit:

$$\begin{aligned} & \mathbf{21600\ Mb/8 = 2700\ MB} \\ & \mathbf{2700\ MB/1024 = 2.6\ GB} \end{aligned}$$

If you have a bandwidth cap, Internet Service Providers typically limit your total bandwidth usage on a monthly basis. If you have a 50 Gigabyte limit, you could watch about 20 2-hour SD movies per month. This assumes, of course, that you are not using your connection for other purposes.

Summary

Video streaming can provide you with another source for video entertainment. Research the devices that can make streaming an option for you. Make sure you know the limitations of your Internet service so you can decide how often you will be viewing and what kinds of videos you can watch.



OneSource Communications

Customer Service Please call 817-745-3000 * 4800 Keller Hicks Rd. Fort Worth, TX 76244