



Ditch the Dish!

Streaming Media 101

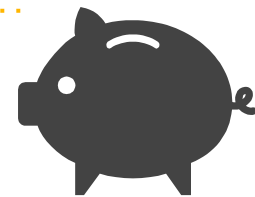


Hello!

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\$15.9 Billion

That's how much Americans spent on subscription streaming services in 2019, according to the Digital Entertainment Group (DEG) year-end industry data.

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What is streaming?



What is **streaming**?

“Streaming media is multimedia that is constantly received by and presented to an end-user while being delivered by a provider.”

- Wikipedia



Assumptions

- You have internet service at home
- You have an email account
- You have basic internet navigation skills



Photo by [Marcel Strauß](#)

What do I need?

Internet connection | Television | Streaming device | Streaming service

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Internet Service

Speed | Data usage | Connection types | Setup

Internet Service



SPEED

Audio: **128 Kbps**

SD video: **3 Mbps**

HD (1080p) video: **5-8 Mbps**

4K video: **18-25 Mbps**

Multiple streams: **50 Mbps+**

speedtest.net

DATA

Netflix

1 GB/hour in standard def
7 GB/hour for high def

YouTube

562 MB/hour for 480p,
3 GB/hour at 1080p,
16 GB/hour at 4K

Amazon Prime

800 MB/hour for 480p "good"
2 GB/hour for HD "better"
6 GB/hour for 4K "best"

CONNECTION

In order of speed:

- Ethernet
- Wifi 802.11ax
- Wifi 802.11ac
- 802.11n, a, b, or g

Why is it **slow**?



Interference - Microwave ovens, cordless phones, etc.

ISP slow downs - Time of day, hardware/software problems

Busy source - Popular live events can get overwhelmed with data requests.

Your equipment - Older and less-powerful devices don't always stream well. Older Wifi router might be using a slower protocol.

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Television & other screens

Smart TVs | TV requirements & specs | Mobile devices & PCs

Smart TVs

What's a Smart TV?

One that can connect to the internet and install/run apps

Do I need one?

Nope!

60% of Smart TV owners use another device anyway.

Security concerns, too.

Can I use one anyway?

Sure!



TV Specs



Ports

High Definition Multimedia Interface (HDMI)

A USB port is useful if you have "stick" devices that need power



Other TV terminology

4K Ultra HD - Standard on most new TVs; about 4 times better resolution than 1080p.

High definition - 720p, 1080i, 1080p; **Standard def** - 576i, 480i

HDR - High dynamic range. Better contrast and more colors.

Dolby Vision - a dynamic HDR format.

Dolby Atmos - a high-end sound format.

Other Screens



Tablets and smartphones

Apps that work with most streaming services are free.
Just watch your mobile data consumption!

PCs and Chromebooks

Streaming services work through your browser or through apps on your PCs and Chromebooks.

Chromebooks can also use one of the least-expensive devices, the Chromecast, to send movies, TV, photos, and more to your television.

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Streaming media players

Amazon Fire | Roku | AppleTV | Google Chromecast | Nvidia Shield |
Mobile apps | Others

*Prices as of 9 Feb 2020

Amazon Fire TV



Fire TV Stick - \$40

Up to 1080p, Dolby Audio

Fire TV Stick 4K - \$50

4K, HDR, and Dolby Atmos support

Fire TV Cube - \$120

Ethernet adaptor, far-field voice control, 16GB storage, Dolby Atmos, 4K, HDR

Roku

Roku Express - \$25

Simple remote, 1080p

Roku Premier - \$40

Simple remote, 4K and HDR

Roku Streaming Stick - \$50

Better wireless range, voice remote

Roku Ultra - \$100

Enhanced voice remote with "lost" feature, faster channel launch and "better experience"



Apple TV

Apple TV HD - \$149

Bluetooth rechargeable remote, ethernet, built-in power supply, A8 chip, Dolby surround sound.

Apple TV 4K - \$179 (32GB) and \$199 (64GB)

As above plus optional larger storage, 4K video, Dolby Atmos, A10 chip

This is the only device that gives you access to your iTunes library.



Chromecast

Google Chromecast - \$35

Up to 1080p

Google Chromecast Ultra - \$70

4K and HDR, built-in ethernet port

See https://store.google.com/product/chromecast_apps for Chromecast-enabled apps



Nvidia Shield

Nvidia Shield - \$149-\$199

Android TV streaming media player; Google assistant built-in.
4K HDR, Dolby Vision and Dolby Atmos, fast processor.

The choice for streaming games from Google Play Games and GeForce NOW.
Supports a game controller.



Mobile Apps



If you plan to watch on your mobile device,
you're all set!



Watch for free

Over-the-air stations | PlutoTV | NewsON | Crackle, Tubi & others |
TV provider login credentials

Over-the-Air

Indoor antennas - \$35+

Not great range, but cheap and easy to install.

Outdoor antennas - \$40+

Better range. Can get expensive if you want to have a really big one installed.

PBS - 36 Park Falls

ABC - 34 Eagle River

CBS - 7 Wausau

NBC - 12 Rhinelander

Fox - 21 Hayward/Ashland

Duluth stations?

News websites

WJFW - Channel 12, Rhinelander

www.wifw.com

WSAW Channel 7, Wausau

www.wsaw.com

National news networks

Most of the major news networks will let you watch news clips on their websites.

Free streaming



100+ live channels of news, TV, movies, and entertainment.
Free apps for most streaming media players and mobile devices.



Recent local news broadcasts from stations around the country, including Duluth, Eau Claire, Wausau & Negaunee.

On-demand services

Netflix | Hulu | Amazon Prime | Disney+ | AppleTV+ | ESPN+ |

Premium channels: HBO, Starz, Cinemax, Showtime | All-access
subscriptions: CBS All Access, Hallmark, PBS Masterpiece, BritBox, etc.

Netflix



Basic - \$8.99/month

One device, SD video, download titles to one device

Standard - \$12.99/month

Two simultaneous devices, HD when available, download to two devices

Premium - \$15.99/month

Four simultaneous devices, HD when available, download to two devices

Hulu



Hulu - \$5.99/month

Hulu (No Ads) - \$11.99/month

"No ads" only applies to on-demand content, and a few shows do still have ads.

Prime Video



Amazon Prime membership - \$119/year

You can get just Prime Video for \$8.99/month, or pay by the month for your Prime membership at \$12.99/month.

Not all the video content on Amazon is included in your Prime membership

You can purchase or rent new movies and TV shows in addition to what you can watch for free with Prime Video.

AppleTV+

\$4.99/month

Purchase a new Apple device and get a free year

Unlike other services, there's no "back catalog" here. This subscription gets you access to Apple's original content, including The Morning Show, Oprah's Book Club, and Snoopy in Space.



Disney+

Disney+ - \$7/month

Bundle Hulu, ESPN+ and Disney+ starting at \$13/month

Generally the only place to stream Disney, Pixar, Marvel, Star Wars and National Geographic content



ESPN+



\$5/month

Bundle Hulu, ESPN+ and Disney+ starting at \$13/month

NOT the same as ESPN

Includes classic and original content.

Select live events from MLB, NHL, NBA, MLS, college sports, boxing, and Grand Slam tennis. Lots of soccer, too.

"Condensed" version of SportsCenter Roundup and NFL Prime Time

Premium & All-Access

\$5 to \$15/month

Premium channels: HBO, Starz, Cinemax. Showtime - \$10-15/month

All-Access channels give you on demand access to the back catalogs of popular channels. \$5-\$10/month. Examples:

- Hallmark Movies Now
- PBS Masterpiece
- BritBox - BBC and iTV
- CBS Now - popular because of "Picard"
- Gaiam TV - yoga
- 100+ channels!

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Live streaming services

SlingTV | Hulu Live | Philo | AT&T Now | YouTube TV

SlingTV

\$30-\$45/month depending on package

- \$5-\$10 extra packages for kids, sports, news, lifestyle
- A la carte packages also available
- Watch for deals:
currently, \$5 first month plus an AirTV and HD antenna
- Local channels only with AirTV and antenna



Hulu Live



\$54.99 - \$60.99/month

- Pretty comprehensive channel package
- Available entertainment and Spanish language add-ons, add-on for unlimited screens
- Local channels where available

Philo



\$20/month

- 59 channels
- No local channels and no ESPN.
- Only news is BBC
- Works on most streaming devices.

AT&T Now



\$65-135/month

- The most expensive live TV option, but also the most comprehensive
- Some packages include premium channels like HBO and Cinemax
- Sports packages (NBA League Pass and others) available
- Local networks and regional sports networks included

YouTube TV



\$50/month

- 70+ channels
- Includes local channels, sports networks, and news networks
- Unlimited DVR storage space
- Not the same as YouTube Premium, which allows you to watch online YouTube videos without ads

How to choose

Budget | Internet speed | Devices | Content



So many options!

Budget

How much do you want to spend each month?

What's your budget for a new streaming media device?

Internet speed

What speed do you have now?
Do you need to increase it?
Can you? If so, what will that do to the budget?

How do you watch?

Do you have an existing device to use, or do you need to purchase a new streaming device?

Will your current TV work with your preferred device?

Do you want to watch away from home? (Netflix and Hulu (No Ads) will let you download shows and movies.)

What content do you want?

- Live or on-demand?
- Sports?
- News?
- Networks/local channels?
- Premium channels?
- Specific shows?
- What do you already have?

A space-themed illustration featuring a black rocket ship with three exhaust flames, a black planet with a white ring and three white spots, and several yellow stars of varying sizes. The entire scene is enclosed within a dashed orange border.

Don't forget

You can always check out DVDs at the library!



Thanks!

Any questions?

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www.mercerpubliclibrary.org/program-and-class-handouts

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