

Smart TVs

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Overview

In this class we'll be taking an overview of Smart TVs. We will learn what makes a TV “smart”, how they work, what features to look for, and problems to avoid.

Getting Started

What makes a TV smart is the same thing that makes a phone smart – the addition of the Internet. The addition of the internet gives you a ton of features that you might recognize from your smartphone or tablet. Most smart TVs will have a dashboard with apps. These apps can be used to do a number of things that you previously could only do on a computer or a tablet.

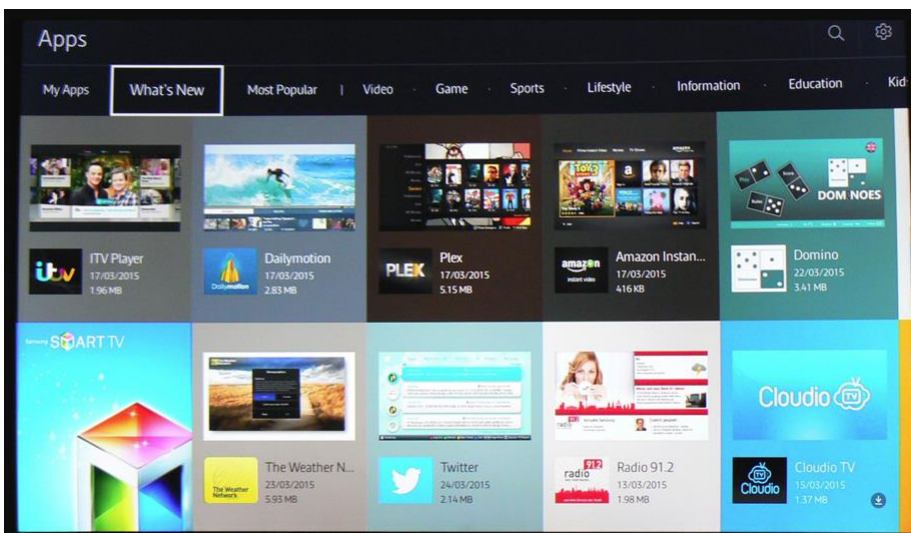
Options To Look For

Ethernet or Wi-Fi Connections

Most Smart TVs sold today will offer built in Wi-Fi connectivity, allowing the TV to connect directly to the Internet, but others will require external connections. These are typically HDMI dongles. Some examples include:

- Roku
- Amazon Fire Stick
- Chrome Cast
- EZ Cast

Built in Apps



Most smart TVs will have menu options allowing you to view a list of installed apps or browse for new ones. The vast majority of these will be free to install, and many will be free to use. However, most of them will require some kind of subscription or confirmation of an external subscription (e.g. your cable provider's information.) The majority of the apps will be content delivery tools – for watching videos, listening to music, etc. – but there are also apps for games and other applications.

A few suggested apps to try:

- YouTube – User supported video sharing
- Pandora – Ad supported music, following designated channels for taste
- Google Photos – Display tool for google photos accounts
- Vimeo – Free high quality video streaming
- Plex – Content storage and sharing
- Dashwhoa – App designed for the start of the day, with a large clock, hourly weather, and traffic
- Spotify – Ad supported music, customized to meet your preferences
- DailyBurn – A variety of streaming exercise classes
- Skype – Video conferencing tool
- AccuWeather – Streaming current weather
- Standard video streaming services (Netflix, Amazon, Hulu, etc)

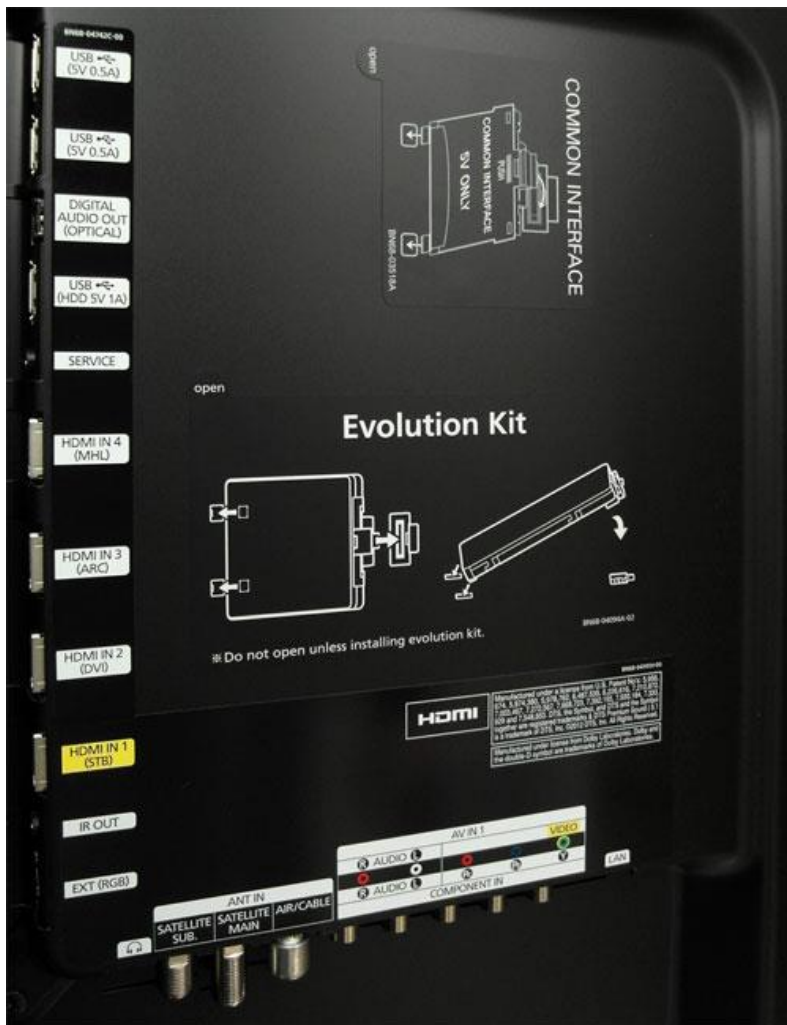
Note that most of these are available on smart BluRay players as well.

Inputs



Your smart TV will have many of the same input options of any modern TV (S-Video, Component, optical sound, coaxial) but the big additions are HDMI and USB ports. This offers a wide range of potential content sources. When shopping for a TV you want to be aware of:

1. The number of these ports available
2. Their physical location
3. The kind of HDMI port
 - a. An HDMI connection can either be single-link (type A/C/D) or dual-link (type B) and can have a video pixel rate of 25 MHz to 340 MHz (for a single-link connection) or 25 MHz to 680 MHz (for a dual-link connection). Video formats with rates below 25 MHz (e.g., 13.5 MHz for 480i/NTSC) are transmitted using a pixel-repetition scheme.



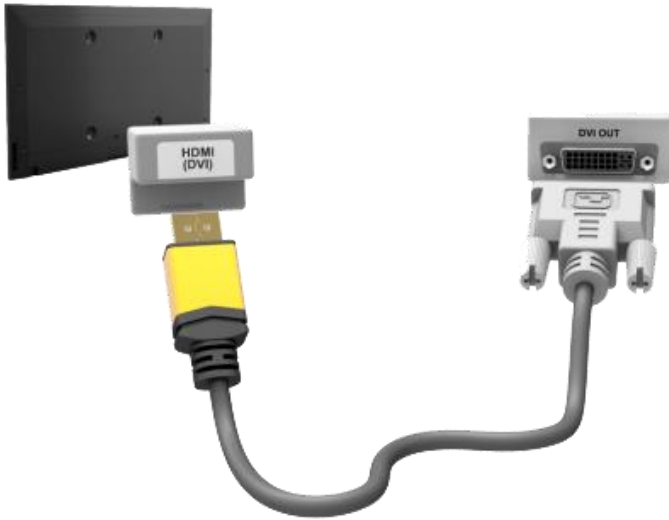
HDMI STB

This HDMI input and having the designation HDMI in1 (STB) is designed to connect consoles, like as xBOX or PlayStation or receiver. But this port is also possible to connect any device.



HDMI DVI

This type of HDMI is HDMI in 2 (DVI) and use to connect to the TV computer or using TV as a display . The feature of this connection is that the sound that DVI is unable to be transmissed. In the HDMI standard 1.4 audio transmission is possible.



HDMI ARC

The port of HDMI in3 (ARC) audio return channel, is a standard HDMI 1.4, HDMI cable other than the video signal is transmissed back from the TV to the speakers and the audio signal so that you can display with the TV and the sound.



Unlike previous versions of the sound output when it was necessary to use external speakers. Reverse channel will allow to take such a signal from the air and listen to the sound using HDMI to the connected speakers.



HDMI MHL

The port of HDMI in4 (MHL) mobile high-definition link, is used to connect to a TV and smartphone display on a television pictures or video directly from your smartphone. This connection has been implemented to the TV's HDMI interface and USB smartphone. Function is supported by the TV, and connect your smartphone MHL, in this case for video transmission needs a passive cable and it is possible to control your smartphone using Moodle from the TV. If for example the HDMI TV does not support MHL a smart phone can also be connected but it is necessary to use an active adapter with external power supply, in this case, you can watch the video, but you cannot control the tv smartphone.

MHL connection allows you to connect your phone to your TV without any additional software

Accessing Inputs

This is typically done through the remote or on TV controls, in the same way that you may have changed between cable and DVD inputs in the past. You might notice options like HDMI 1, HDMI 2, etc. These do not refer to HDMI mode, simply to the location of the port on the TV. Also look for designations like "PC" which sometimes indicates the USB port. USB plugs will also auto run on some TVs, causing a pop up screen asking if you want to view the contents once the TV detects the drive.

What You Can Do

Image/Video Display

This, in my opinion, is an underrated feature of the smart TV. By plugging in a USB drive you can show people image slideshows or view almost any downloadable video content. This is a great way to move things from the computer screen to a more easily viewed big screen.

Streaming Options

As referenced in the apps discussed above there are many different sources of on demand content that you can access through your Smart TV either using it's built in interface, if available, or one of the Wi-Fi enabled dongles that are available for purchase. Once you have the TV connected to the Internet it's merely a matter of

choosing what content you want to make available. NOTE: Some of this may be available already through your cable provider, if you have one. Be sure to check the options they provide before spending extra on an additional service.

Web Browsing

Either via a built in app or, if you prefer, through a computer connected to your computer, you can use your Smart TV as a tool to browse the web.

Apps

We discussed the acquisition of apps earlier in the program but it is worth revisiting the topic to point out that you can use them for almost as wide a variety of tools as your phone apps. I'd encourage you all to explore the options that are available to find what suits you best.

Social Media

Via the apps you can also use Smart TVs to access social media sites such as Facebook and Twitter.

Potential Problems

1. Physical layout of ports preventing dongles, cables, or USB drives
2. Mismatched HDMI ports causing loss of audio
3. Regional blackouts or other restrictions of streaming content