

**Sun City Summerlin Computer Club
Seminar**

“Streaming TV- 2026”

**TV and Internet Services:
Exploring Your Options**

Tom Burt

02-26-2026

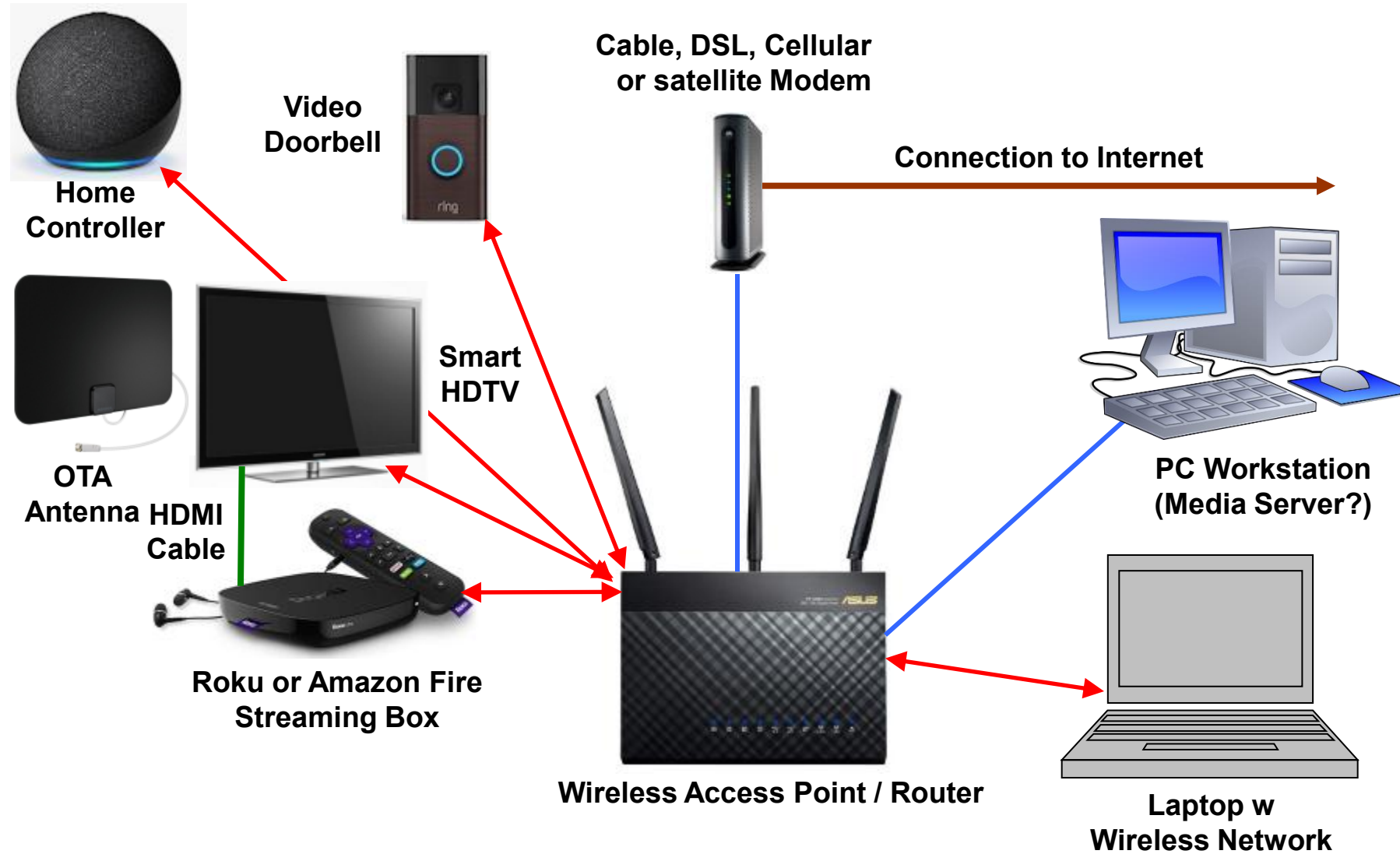
Agenda

- **What is Streaming?**
- **OTA Antennas**
- **HDTV Content Options**
- **Streaming Services**
- **Internet Services in LV**
- **Digital Television Technology (*For reference*)**

What is “Streaming”?

- **Being able to get entertainment, news and other TV programming *without* using a cable or satellite TV service.**
 - Instead, you use a **high-speed Internet** connection, possibly combined with over-the-air broadcast TV.
 - May include subscriptions to “video on demand” and broadcast streaming services like NetFlix, Peacock, Paramount+, Hulu, Disney TV+ or Amazon Prime, Sling, YouTube TV, Hulu+ or DirecTV Stream.
 - Trade-off is that you may not see programming the day it first airs.
 - Idea is that your total cost is less while keeping access to *most, all or even more* of the programming you enjoy.
- **Possible to also get rid of your CenturyLink or Cox land line phone service.**
 - Cellphone only (if your cell service is solid)
 - Voice over IP services (Vonage, Ooma, Magic Jack)

Typical Home Network Setup



Over the Air Digital TV Antennas

- Use them to receive local LV area channels – about 60 in all
- Indoor, Attic mount or Outdoor (roof mount)
 - <http://www.bestbuy.com/site/tv-video-accessories/tv-antennas/abcat0107004.c?id=abcat0107004>
 - https://www.amazon.com/s?k=tv+antennas&i=electronics&ref=nb_sb_noss_1
 - www.MrAntenna.com, others: \$150 to \$500 exterior (parts, labor & setup)
 - Pricier indoor antennas are amplified (may need this in Sun City)
 - If doing an outdoor mount, **be sure to file an ARC application** and get approval. Latest FCC rules allow roof peak/side mounts of satellite dishes and TV antennas on masts.
 - Best results with an omnidirectional outdoor antenna.
- Most broadcast TV antennas in LV located in Henderson
 - From Sun City - ESE (100 & 110 degrees)
 - About 25 miles away
 - Sun City TV reception can be spotty – especially on indoor antennas
- Most OTA HDTV content format is 1080i or 720p
 - Both upscale well to HDTV's native 1080p or 4K resolutions
- <https://www.tablotv.com/> - OTA Receiver / DVR

Making Your Older HDTV “Smart”

- You can buy “Smart” Internet TV boxes or set up a “Media” PC:
 - Amazon Fire TV & Fire Stick
 - Roku & Roku Stick
 - Dlink Boxee Box
 - Google ChromeCast / ChromeCast with Google TV
 - Apple TV box
 - Sony PlayStation
- Smart boxes/sticks are useful if you do not have a *late model* “smart” HDTV
 - Many have their own free content channels – movies, original series, news
 - Many allow you to wirelessly “cast” the screen of a PC, tablet or smartphone to your HDTV
- Use a spare PC that can run Media Server software (see upcoming slide)
 - This is mainly an option for serious techies

Paid & Free Internet Streaming (1)

- Most “Smart” HDTVs now have built-in wireless (and wired) connections to your home network router.
- “Dumb” HDTVs need a HDMI feed from a PC, BD player or streaming device to a HDMI port on the HDTV.
- Streaming Prices are going up steadily
 - But so are cable and satellite.
 - Many ad-supported “free” streaming services (Tubi, FreeVee) available
 - <https://www.usnews.com/360-reviews/streaming-services>
 - <https://www.zdnet.com/home-and-office/home-entertainment/is-your-live-tv-streaming-service-still-worth-it-i-reassessed-the-options-for-us-both/>
- [Suppose.tv](#) - Compares channel lineups for various services
 - Let’s take a look

Paid & Free Internet Streaming (2)

- **Popular Paid Subscription Services – many with free trials or tiers:**
 - **Hulu + Live** - <https://www.hulu.com/welcome> - Has local channels
 - **YouTube TV** - <https://tv.youtube.com/welcome/> - Has local channels
 - **Sling TV** - <https://www.sling.com>
 - **DirecTV Stream** - <https://www.directv.com/stream/> – Has local channels
 - **Amazon Prime** - <https://www.amazon.com/Prime-Video/b?node=2676882011>
 - **NetFlix** - <https://www.netflix.com>
<https://www.zdnet.com/home-and-office/home-entertainment/dont-cancel-netflix-yet-i-used-these-secret-codes-to-unlock-the-full-catalog-of-shows/>
 - **Howdy (by Roku)** - <https://www.roku.com/>
 - **Disney TV+** - <https://preview.disneyplus.com>
 - **Peacock Network** - <https://www.peacocktv.com/> (NBC)
 - **Paramount+** - <https://www.paramountplus.com/> (formerly CBS All Access)
 - **Apple TV+** - <https://www.apple.com/apple-tv-plus/>
 - **Fandango** - <https://athome.fandango.com/> – Rentals – some free with ads
 - **Also, many TV network websites offer on-demand content.**

Paid & Free Internet Streaming (3)

- Free Streaming Channels (Movies & TV series with Ads)
- Most have apps for Smart TVs, Roku, Amazon Fire TV.
- You can also view content via your web browser.
 - [Tubi](#)
 - [Pluto TV](#)
 - [FreeVee](#) (Free from Amazon, Prime not required. Install the FreeVee app.)
 - [The Roku Channel](#) (requires a Roku device and account)
 - [Stirr](#)
 - [Hoopla](#) (free with public library card)
 - [YouTube](#) (millions of videos, podcasts, channels, tutorials)
 - [Fawesome.TV](#) (Free and Awesome TV)
 - [NewsON](#)
 - [Samsung TV +](#) (built-in to newer Samsung HDTVs, 100+ channels)
- IPTV Services (free and paid) – *For more advanced users*
 - <https://troypoint.com/iptv/>

Paid & Free Internet Streaming (4)

- **Las Vegas Clark County Library District: www.lvccld.com**
Free Media Services – Register with your Library card number.
 - **Acorn TV**
 - Acorn TV offers unlimited streaming of world-class mysteries, dramas, and comedies from Britain and beyond, including a full slate of original and exclusive programming.
 - **Great Courses**
 - Start your journey of lifelong learning taught by the top 1% of university professors and experts from the Ivy League and other renowned schools and institutions.
 - **Hoopla**
 - Hoopla is a digital media service that allows you to borrow movies, music, audiobooks, ebooks, comics and TV shows to enjoy on your computer, tablet, or phone – and even your TV!
 - **Kanopy**
 - *Kanopy* is an award-winning video streaming service providing access to more than 30,000 independent and documentary films.
 - **Kanopy Kids**
 - *Kanopy Kids* highlights films and TV series that inspire and inform, helping children develop empathy, mindfulness, and self-esteem through entertaining and educational videos.

Example Cost Layout 1

Example: Basic “Streaming” Package (Assumes a “Smart” 4K HDTV)

- **Cox Internet Service (300 Mbps)** **\$50.00 / mo**
 - Includes web surfing, email, streaming, podcasts, maybe phone
 - **Indoor amplified antenna \$60** **\$ 1.00 / mo**
 - Based on 5-year life; gets all local channels
 - **Amazon Prime** **\$11.58 / mo (\$139/yr)**
 - free Amazon shipping, video on demand, books, music
 - **Paramount + (ad free)** **\$11.67 / mo**
 - Vast archive of movies and TV programs + original programming
 - May get discount via Walmart+ or other services
 - **YouTube TV (110+ local & cable channels)** **\$83.00 / mo**
- Internet + TV Monthly Total ... \$157.25 / mo**

Example Cost Layout 2

Example: Basic Streaming Package (Assumes a “Smart” 4K HDTV)

• Cox Internet Service (300 Mbps)	\$50.00 / mo
– Includes web surfing, e-mail, streaming	
• Indoor amplified antenna \$60	\$ 1.00 / mo
– Based on 5-year life; gets all local channels	
• Amazon Prime	\$11.58 / mo (\$139/yr)
– free Amazon shipping, video on demand	
• Paramount + (ad free)	\$11.67 / mo
– Vast archive of movies and TV programs + original programming	
• Sling TV (46+ cable channels)	\$61.00 / mo
Internet + TV Monthly Total ...	\$135.25 / mo

Internet Services In Las Vegas

High Speed Internet Service in LV

- **Cox Cable**
 - Speeds from 10 to 940 Mbps (See next slide)
- **CenturyLink DSL (fiber / DSL hybrid)**
 - Speeds from 10 to 40 Mbps (DSL), 940 Mbps (fiber)
- **Google Fiber – GFiber (coming to Summerlin this year?)**
 - <https://fiber.google.com/cities/metrolasvegas/>
 - Options: 1 Gbps (\$70/mo) to 8 Gbps (\$150/mo) down
 - All equipment included, free installation, no contract
- **4G/5G Fixed Wireless Access Internet Connection**
 - T-Mobile – available now! \$50 per month (see upcoming slide).
 - Verizon – available some areas \$~\$70 per month. Speeds vary.
 - Pricing competitive with Cox & CenturyLink

Cox Cable Internet

- <https://www.cox.com/local/residential/nv/las-vegas/internet>
- **Cox offers high speed Internet access – various plans**
 - 300 Mbps \$50 / mo No contract
 - 500 Mbps \$70 / mo No contract
 - 1 Gbps \$90 / mo No contract
 - 2 Gbps \$140 / mo 2-year contract

(Starter rates – 1st two years)
- **You can get Internet-only service w/o TV**
 - Some savings if you bundle with Cox TV or Cox Phone
 - 1.25 T-byte / monthly limit
- **Plans feature “Powerboost” – increases download speed when doing large downloads**
- **500 Mbps & above plans require a DOCSIS 3.1 cable modem**

T-Mobile Home Internet

- <https://www.t-mobile.com/home-internet/plans>
- **Base speed tier – Price is \$40 / month if using autopay & have a T-Mobile voice plan.**
 - Guarantee minimum of 25 Mbps down
 - Normally get about 70 - 250 Mbps down
 - Speeds attained vary based on cellular signal strength and on load volumes
 - Using a mix of 4G and 5G technology – distances to antenna about 1 mile
- **No equipment charges – all bundled into monthly price**
 - Includes a Cellular data modem / WiFi 6 router combo
- **No contract – can cancel anytime**
- **Available now in most Sun City Locations**

Verizon Home Internet

- <https://www.verizon.com/sales/home/progressiveplan.html>
- **Base tier – Price is \$50 / month if using autopay.**
 - Guarantee minimum of 25 Mbps down
 - Normally get about 50-70 Mbps down
 - Speeds attained vary based on cellular signal strength and on load volumes
 - Using 5G technology – distances to antenna about 500 feet
- **No equipment charges – all bundled into monthly price**
 - Includes a Cellular data modem / WiFi 6 router combo
- **No contract – can cancel anytime**
- **Available now in most Sun City Locations**

Digital Television Technology Reference

Digital TV Overview (1)

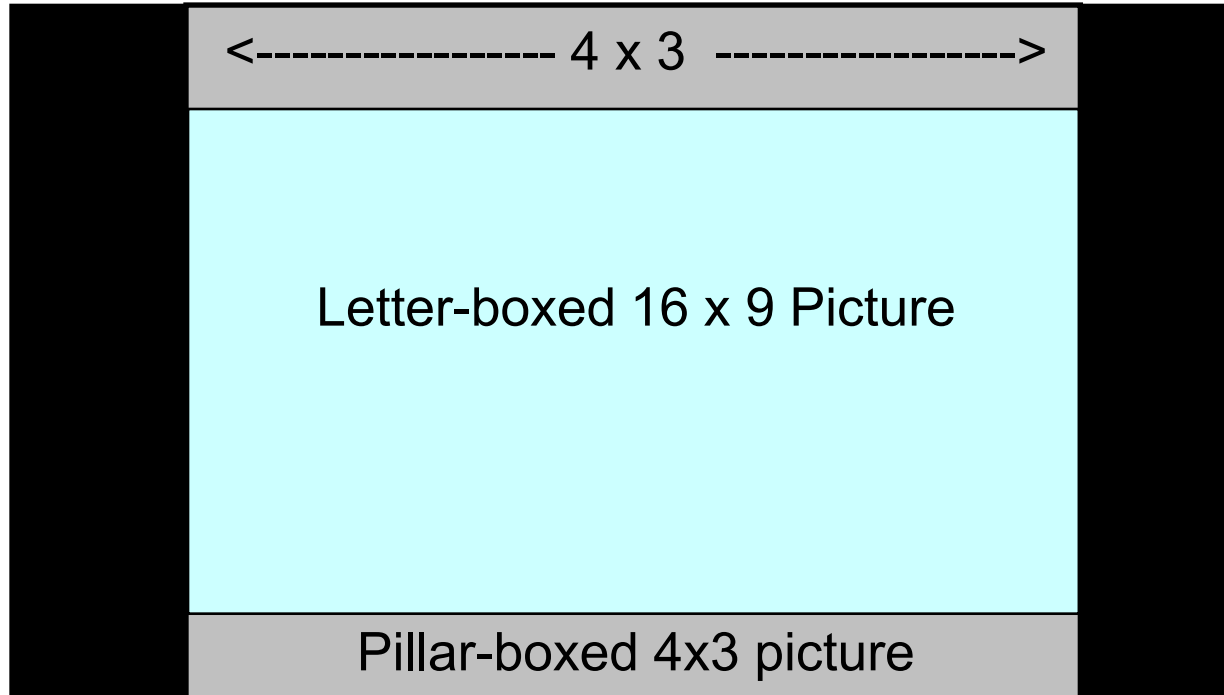
- **Advanced Television Systems Committee (ATSC) Digital Television Standards**
 - Audio / video signal sent as stream of numbers representing compressed picture and sound.
 - Circuits in digital TV receive, decode and display picture.
 - Older DTV sets can still also accept “analog” signals (dual tuner), **but none are transmitted in Las Vegas.**
 - Digital picture stream not affected by electronic interference; includes error detection & correction.
 - Result: “snow free”, crisp broadcast pictures, sound.
- **High-definition Digital Television (HDTV)**
 - Adds higher picture quality and widescreen modes.
 - Standard (4 x 3) and Widescreen (16 x 9) aspect ratios.
 - 480p, 720p, 1080i and 1080p horizontal scan line density.
 - HDTV sets are 1920 x 1080 pixels.
 - Almost all new sets are 3840 x 2160 pixels (“Ultra HD” or 4K)

Digital TV Overview (2)

- **Broadcast Digital Television**
 - “Over the air” (OTA), cable, satellite
 - Outbound only from broadcaster to receiver
- **No retransmit; if data scrambled or lost, picture suffers**
 - OTA broadcasts drop off sharply once out of range of transmitter (parts of Sun City at the edge of reception range)
 - Weather (rain, lightning or snow) can affect OTA and satellite reception
- **DTV displays video as a series of “frames” (pictures)**
 - Minimum display rate is 30 frames per second
 - Progressive (P) modes (720P, 1080P) display 60 frames per second
 - OTA and cable transmit 1080 frames in “interlace” mode (1080i) alternating even and odd scan lines
 - Satellite and DVD/Blu-ray can sustain full 1080P modes
- **When a frame in the stream is lost or too garbled to decode, the TV picture breaks up into squares (pixilation)**
 - Each compressed frame’s display depends on the frame before it, so loss of one frame can affect many following frames.

TV Aspect Ratios

<----- 16 x 9 ----->



HDTV Connections

- **High-Definition Multi-media Interface (HDMI) - Best**
 - **Best (all digital)**
 - **Combines video & sound in one signal cable**
 - **Can be passed through newer stereo receivers**
 - **Most HDTVs now have two to four HDMI connections**
 - **Cheap HDMI cables work fine *BUT ...***
 - **Get cables rated for HDMI 2.0 or 2.1 to support 4K / UHD**
- **Component Video (red, green, blue wires) - Good**
 - **Supports HD & widescreen (1080i only)**
 - **Need separate cable (digital or analog) for audio**