The New High-Def Streaming Tools for Your HDTV

SEEMS EVERY DAY brings a new gizmo that promises to stream high-definition (HD) video from your PC or the Web to your HDTV. Such devices range from specialized appliances to Media Center PCs and extenders, game consoles, and set-top boxes.

To help you make sense of all the options, we’ve divided the streaming landscape into five distinct regions. We have also limited it to products offering HD playback of at least 720p. Most support up to 1080i or 1080p.

Streaming Appliances—For Experts Only

If you’re a tech-savvy video hound who likes to download movies through BitTorrent or to rip all your DVDs to hard disk, a new category of streamers is just for you. These networked devices make a point of supporting nearly every major video codec and streaming transport container, from MPEG-1/2/4, AVI, and H.264 to DivX, XViD, Matroska (MKS), MOV, and VOD. Many also support DVRMS, the file format that Media Center PCs use for recorded TV shows. The devices do not, however, play files that have any form of DRM protection.

We reviewed three new 1080p and HDMI-capable streaming players, all of which have a 3.5-inch drive bay for laptop-size hard disks and dual external USB ports for adding internal or external storage (or both). The USB ports are handy for playing back files copied to a flash drive from your PC. You can even attach an optical drive to play back video, music, and photo files stored on CDs and DVDs.

A growing range of video-streaming products can expand the content you see on your HDTV. Here’s a quick guide to what’s available.

STREAMERS FOR PROS: Appliances from Mvix (left), MediaGate (center), and Popcorn Hour A-100 are powerful, but not for beginners.
**Mvix MX-780HD and MediaGate MG-450HD**

These two models also support many formats, but they cost more than the A-100, lack the BitTorrent client, and can't play Web video. They do add 802.11g Wi-Fi, which the Popcorn lacks, but we don’t recommend trying to stream high-def video over 802.11g wireless—usually it's not fast enough.

On paper, the Popcorn, the Mvix (find.pcworld.com/60968), and the MediaGate (find.pcworld.com/60967) streamers should be great, with their laundry lists of playback features and their multiple storage options.

But all three were absolute nightmares to set up properly, and they have seriously immature and often-buggy interfaces. With each, we spent hours on the Web reading tutorials and checking user forums for answers to basic questions that should have been covered in a user guide, or obviated by intuitive design in the first place.

Constant firmware updates kept changing the status quo, as well, making it hard to know exactly what the boxes did or did not support. If you're the type who likes to build Linux boxes and tweak Registry files, you'll have fun with these devices; the plug-and-play crowd, however, should look elsewhere.

**Simpler Streamers**

If you expect to stream a lot of movies and videos, or if you want to maintain a central music/photo library, and if you also want deep playback and navigation features, consider a mainstream high-def streamer like the Apple TV Take Two or the Netgear Digital Entertainer HD.

**Apple TV**

The Apple TV Take Two was the top-rated choice in our recent chart of streaming devices (find.pcworld.com/60759), thanks to its easy-to-use interface, internal storage capability, and newfound independence from your PC (see find.pcworld.com/60882).

The Apple TV can play back all your protected iTunes Store purchases, as well as home movies and other videos converted to H.264 and stored on its built-in hard drive.

High-def rentals are also available, and can be streamed directly from the iTunes store. Music and photo support is excellent, as you would expect, and you can easily create great...

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**ADD-ON OPTION**

**High-Def Media Center Extenders**

*MEDIA CENTER EXTENDERS* are good choices for people who want more than the limited streaming options of their game consoles and who already have a Media Center computer (the Media Center software comes with Vista Home Premium and Vista Ultimate).

Extenders connect to your Media Center PC and put the full functionality of the Media Center interface on your HDTV, including access to Microsoft's many content channels, a DVR interface (assuming you have a TV tuner and capture card), playback of files protected by Windows Media DRM (digital rights management), and much more.

HP is building extenders into some of its MediaSmart HDTVs, but most buyers will probably prefer to purchase a separate box.

You can find high-definition Media Center extenders from D-Link and Linksys now; other vendors may soon bring out their own models.

These products have very similar capabilities, but note that the $300 Linksys DMA2200 we previously reviewed (see find.pcworld.com/60976) includes an upconverting DVD player.

If you don't need the DVD player, the otherwise similar Linksys DMA2100 will cost you $50 less, or $250. D-Link's model, the DSM-750 Extender, also costs about $250.

Some media extenders use their own PC software, instead of Microsoft’s Media Center. SageTV's HD Media Extender is one example.

**THE LINKSYS DMA2200 includes an upconverting DVD player and costs $300.**
slide shows set to music.

The downside: Relatively few HD titles are available, and presently the box is limited to 720p playback. You’ll also need to convert most non-iTunes Store videos to the H.264 format. This process can be automated, but it is still time-consuming.

**Netgear Digital Entertainer HD EVA8000**

Netgear’s device (find.pcworld.com/60968) is pricey, but it can do fancy tricks even if you have only Windows XP. It puts out a full 1080p, and was the sole player in our recent chart to support both Apple and Windows Media DRM-protected files.

The Netgear unit can integrate with an HDTV tuner/capture card attached to your PC, to act as a digital video recorder and player. And it can also stream video, photos, and Internet radio from a variety of popular sources, including Flickr, Shoutcast, and YouTube. While it has no internal storage, it can stream from a UPnP NAS drive. The EVA8000 is by far the best streaming option for Windows XP users who do not have Media Center.

**The HD Streamer You May Already Own**

If you own a TiVo HD, Microsoft Xbox 360, or Sony PlayStation 3, you already have an HD streamer. The Xbox 360, in particular, can double as an HD Media Center extender, connecting to your Media Center PC over a network and streaming HD video, photos and music, among other features. To turn the console into an extender, you just download the necessary software and install it. If your PC doesn’t have Microsoft’s Media Center software installed, you can still stream media from your PC to your Xbox 360 using Windows Media Player 11.

Alternatively, the combo of a networked TiVo HD and the TiVo Desktop Plus software lets you stream unprotected photos, MP3s, and videos from your PC, as well as Amazon Unbox movies from the Web (although those are not yet in HD).

The PlayStation 3 also streams unprotected movies, music, and photos from networked PCs using Windows Media Player 11 or another DLNA-compliant media server.

You won’t find fancy slide-show effects or other such bells and whistles on these dual-purpose boxes, but the price is right.

Sorry, Wii fans, that little console isn’t HD-capable; however, a way exists to enable it to stream media from your computer to your TV. Browse to find.pcworld.com/60968 for the details.

**Why Compromise? The Living-Room PC**

Fortunately, achieving maximum playback and storage flexibility doesn’t mean you have to torture yourself. Instead of buying a streamer box, we recommend spending a little more to put a Media Center PC (or a Mac, for that matter) in your living room and hooking the PC up to your HDTV via HDMI. Every other streaming device is basically a compromise, offering just a subset of a full PC’s capabilities.

Using a PC for streaming has many advantages:

- You aren’t limited to what you can stream through Windows Media Center or any particular set-top box. Your TV simply becomes a de facto computer display. Anything you can play on your PC you can also show on the big screen.

- You won’t be left behind every time some new video codec or streaming service comes along—you’ll be able to enjoy new video sources as soon as they appear.

- You can interact with the PC interface you already know, and you can keep a wireless keyboard and mouse on the coffee table for anything the Media Center remote can’t handle.

- You can expand storage as much as you need to, and you can even use your PC as an HD DVR with an off-air ATSC tuner such as Pinnacle’s PCTV HD Pro Stick.

- You can use whatever network connection you prefer, including gigabit ethernet or 5-GHz 802.11n WiFi, both of which are rare in set-top boxes.

Brand-new Vista Media Center PCs, including ones with HDMI output, can be had for as little as $500 to $600. Considering a set-top box or an extender with decent storage will run you $350 or so, those extra bucks go a long way. You can also repurpose an old machine for the job, although you’ll likely need to upgrade the video card for HDMI output and maybe improve a few other things like memory and storage.

The PC should have Windows Vista Home Premium or Ultimate for the best Media Center experience.

One caution: Make sure that the fan and disk drives are near-silent. Even a soft hum can be annoying when you are watching a movie.

Thinking of building your own HD media PC yourself? For tips, check out our must-see slide show, “12 Great Components for the Ultimate HD PC,” at find.pcworld.com/60975.

—Becky Waring