Media server

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A **media server** is a [computer appliance](https://en.wikipedia.org/wiki/Computer_appliance) or an [application software](https://en.wikipedia.org/wiki/Application_software) that stores [digital media](https://en.wikipedia.org/wiki/Digital_media) (video, audio or images) and makes it available over a network.

Media servers range from [servers](https://en.wikipedia.org/wiki/Server_(computing)) that provide [video on demand](https://en.wikipedia.org/wiki/Video_on_demand) to smaller [personal computers](https://en.wikipedia.org/wiki/Personal_computer) or [NAS (Network Attached Storage)](https://en.wikipedia.org/wiki/Network-attached_storage) for the home.



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Purpose[[edit](https://en.wikipedia.org/w/index.php?title=Media_server&action=edit&section=1)]

By definition, a media server is a device that simply stores and shares media. This definition is vague, and can allow several different devices to be called media servers. It may be a [NAS](https://en.wikipedia.org/wiki/Network-attached_storage) drive, a [home theater PC](https://en.wikipedia.org/wiki/Home_theater_PC) running [Windows XP Media Center Edition](https://en.wikipedia.org/wiki/Windows_XP_editions#Media_Center_Edition), [MediaPortal](https://en.wikipedia.org/wiki/MediaPortal) or [MythTV](https://en.wikipedia.org/wiki/MythTV), or a commercial [web server](https://en.wikipedia.org/wiki/Web_server) that hosts media for a large web site. In a home setting, a media server acts as an aggregator of information: [video](https://en.wikipedia.org/wiki/Video), [audio](https://en.wikipedia.org/wiki/Sound_recording), photos, books, etc. These different types of media (whether they originated on [DVD](https://en.wikipedia.org/wiki/DVD), [CD](https://en.wikipedia.org/wiki/Compact_disc), [digital camera](https://en.wikipedia.org/wiki/Digital_camera), or in physical form) are stored on the media server's [hard drive](https://en.wikipedia.org/wiki/Hard_drive). Access to these is then available from a central location. It may also be used to run special applications that allow the user(s) to access the media from a remote location via the internet.

Hardware[[edit](https://en.wikipedia.org/w/index.php?title=Media_server&action=edit&section=2)]

The only requirement for a media server is a method of storing media and a network connection with enough bandwidth to allow access to that media. Depending on the uses and applications that it runs, a media server may require large amounts of [RAM](https://en.wikipedia.org/wiki/RAM), or a powerful [multicore](https://en.wikipedia.org/wiki/Multi-core_processor) [CPU](https://en.wikipedia.org/wiki/CPU). A [RAID](https://en.wikipedia.org/wiki/RAID) array may be used to create a large amount of storage, though it is generally not necessary in a home media server to use a [RAID](https://en.wikipedia.org/wiki/RAID) array that gives a performance increase because current home network transfer speeds are slower than that of most current [hard drives](https://en.wikipedia.org/wiki/Hard_drive). However, a [RAID](https://en.wikipedia.org/wiki/Standard_RAID_levels#RAID_1) configuration may be used to prevent loss of the media files due to disk failure as well.

Many media servers also have the ability to capture media. This is done with specialized hardware such as TV tuner cards. Analog TV tuner cards can capture video from analog broadcast TV and output from cable/satellite set top boxes. This analog video then needs to be encoded in digital format to be stored on the media server. This encoding can be done with software running on the Media server computer or by hardware on the TV tuner card. Digital TV tuner cards take input from broadcast digital TV. In North America and in South Korea, the ATSC standard is used. In most of the rest of the world, DVB-T is the accepted standard. Since these transmissions are already digital, they do not need to be encoded.

HTPC packages with server capabilities[[edit](https://en.wikipedia.org/w/index.php?title=Media_server&action=edit&section=3)]

* [GB-PVR](https://en.wikipedia.org/wiki/GB-PVR)
* [LinuxMCE](https://en.wikipedia.org/wiki/LinuxMCE)
* [MediaPortal](https://en.wikipedia.org/wiki/MediaPortal)
* [MythTV](https://en.wikipedia.org/wiki/MythTV)
* [Orb](https://en.wikipedia.org/wiki/Orb_(software))
* [Plex](https://en.wikipedia.org/wiki/Plex_(software))
* [Kodi Entertainment Center](https://en.wikipedia.org/wiki/Kodi_(software)) (formerly XBMC)
* [TVersity Media Server](https://en.wikipedia.org/wiki/TVersity_Media_Server)
* [Jellyfin](https://en.wikipedia.org/wiki/Jellyfin)

Media servers in performance environments[[edit](https://en.wikipedia.org/w/index.php?title=Media_server&action=edit&section=4)]

The growing use of [motion graphics](https://en.wikipedia.org/wiki/Motion_graphics) in environments such as [theatre](https://en.wikipedia.org/wiki/Theatre), [dance](https://en.wikipedia.org/wiki/Dance), [corporate events](https://en.wikipedia.org/wiki/Corporate_entertainment) and [concerts](https://en.wikipedia.org/wiki/Concert) has led to the development of media servers designed specifically for live events. These machines are often high-spec home computers with increased [RAM](https://en.wikipedia.org/wiki/RAM) or hard drive technologies such as [RAID](https://en.wikipedia.org/wiki/RAID) arrays or [solid-state drives](https://en.wikipedia.org/wiki/Solid-state_drive). They are then supplied with software which allows the control and manipulation of video content, much like [VJ](https://en.wikipedia.org/wiki/VJing) software. One of the primary functions of these machines is to allow current show control technologies to control the playback of video content. Thus, a media server system may include inputs for [DMX512-A](https://en.wikipedia.org/wiki/DMX512-A), [MIDI](https://en.wikipedia.org/wiki/MIDI), [Art-Net](https://en.wikipedia.org/wiki/Art-Net) or similar control protocols.

Media servers in telephony[[edit](https://en.wikipedia.org/w/index.php?title=Media_server&action=edit&section=5)]

In the world of telephony, a media server is the computing component that processes the audio or video streams associated with telephone calls or connections. Conference services are a particular example of how media servers can be used, as a special 'engine' is needed to mix audio streams together so that conference participants can hear all of the other participants. Conferencing servers may also need other specialized functions like "loudest talker" detection, or [transcoding](https://en.wikipedia.org/wiki/Transcode) of audio streams, and also interpreting [DTMF](https://en.wikipedia.org/wiki/DTMF) tones used to navigate menus. For video processing, it may be needed to change video streams, for example transcode from one video codec to another or rescale a picture from one size to another. These media processing functions are the core responsibility of a media server.

With telephony networks moving towards [VoIP](https://en.wikipedia.org/wiki/VoIP) technology, and using [Session Initiation Protocol](https://en.wikipedia.org/wiki/Session_Initiation_Protocol) (SIP), the idea of media servers has started to gain some traction. Typically, an application (the 'application server') has the controlling logic, and controls a remote media server (or multiple servers) over an [IP](https://en.wikipedia.org/wiki/Internet_protocol) connection, possibly using SIP. Protocols such as Netann, [MSCML](https://en.wikipedia.org/wiki/MSCML) and [MSML](https://en.wikipedia.org/wiki/MSML) have been created for this way of working, and a new protocol, MediaCTRL, is under development at the [IETF](https://en.wikipedia.org/wiki/IETF).

The [IP Multimedia Subsystem](https://en.wikipedia.org/wiki/IP_Multimedia_Subsystem) (IMS), the blueprint for next generation networks, defines a component called the MRF (Media Resource Function), which is a kind of media server. In the case of IMS, the 'controlling logic' is provided by the MRFC (MRF controller), which, along with layers above, constitutes an 'application server'. Although the MRF has been associated largely with the legacy telecom H.248 protocol (see [Gateway Control Protocol](https://en.wikipedia.org/wiki/H.248)), it is claimed that SIP-based protocols like MediaCTRL will ultimately prevail.

See also[[edit](https://en.wikipedia.org/w/index.php?title=Media_server&action=edit&section=6)]

* [Comparison of PVR software packages](https://en.wikipedia.org/wiki/Comparison_of_PVR_software_packages)
* [Digital Living Network Alliance](https://en.wikipedia.org/wiki/Digital_Living_Network_Alliance)
* [Digital media receiver](https://en.wikipedia.org/wiki/Digital_media_receiver)
* [Home theater PC](https://en.wikipedia.org/wiki/Home_theater_PC)
* [Standard RAID levels](https://en.wikipedia.org/wiki/Standard_RAID_levels)
* [Streaming media](https://en.wikipedia.org/wiki/Streaming_media)
* [UPnP AV Media Servers](https://en.wikipedia.org/wiki/UPnP_AV_MediaServers)
* [Windows Home Server](https://en.wikipedia.org/wiki/Windows_Home_Server)
* [TV gateway](https://en.wikipedia.org/wiki/TV_gateway)