



Media Streaming

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- *Streaming media is multimedia that is constantly received by and presented to an end-user while being delivered by a streaming provider.*
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**Increasing
important
technology for**

*Multimedia
Home
Entertainment*

Internet



Merging of PC and TV Technologies

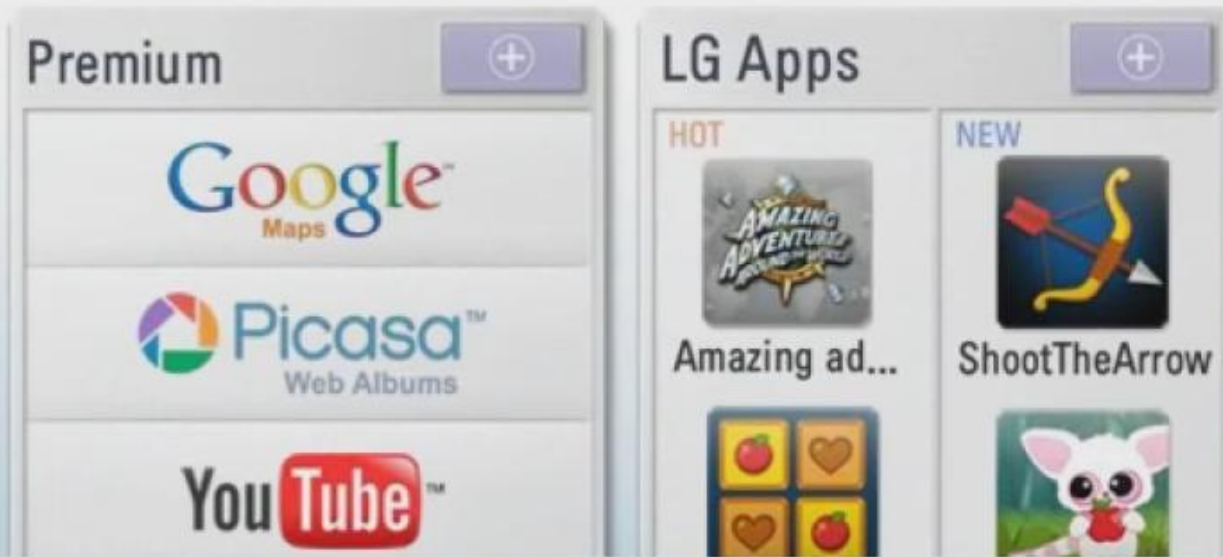
The latest TV offerings - typical



User interface

Easy Navigation

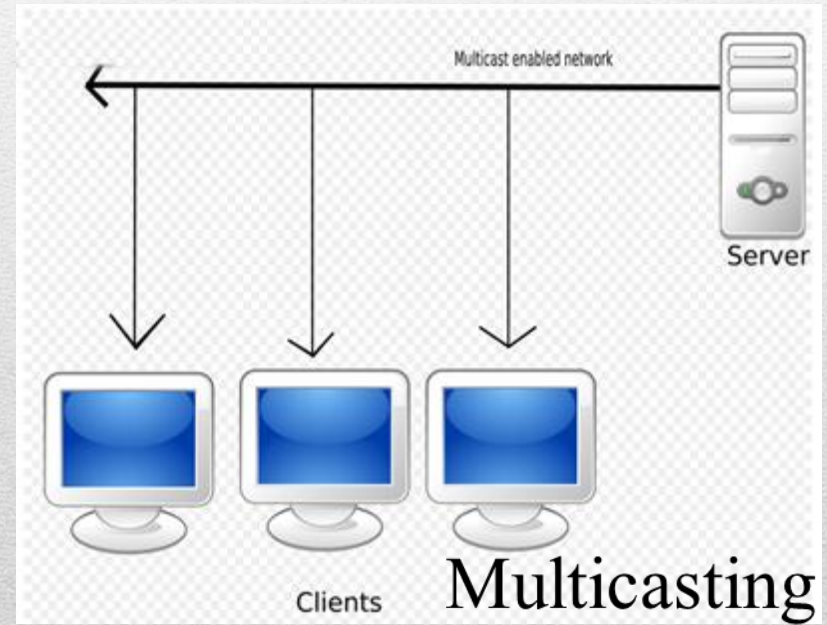
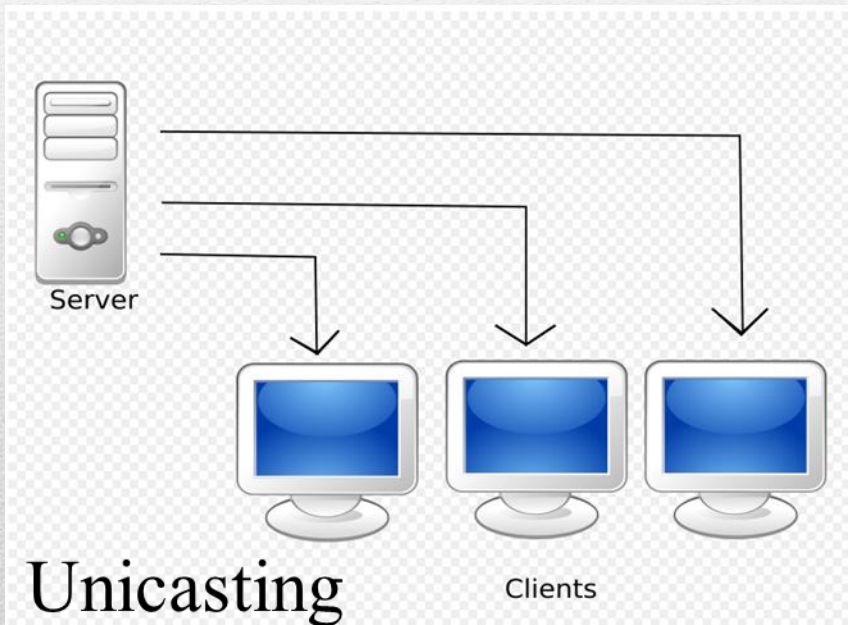
Card Section



Streaming Servers

Special servers designed for high loads

- Flash Media Server, Quicktime, Broadcaster, VideoLan, PS3 MediaServer



3 Hour video to 3000 viewers using Unicasting - about 200Gb data

Codec, bitstream, transport, control

- The audio stream is compressed using an audio codec such as MP3, Vorbis or AAC.
 - The video stream is compressed using a video codec such as H.264 or V8.
 - Encoded audio and video streams are assembled in a container bitstream such as FLV, WebM, ASF or ISMA.
 - The bitstream is delivered from a streaming server to a streaming client using a transport protocol, such as RTP.
 - The streaming client may interact with the streaming server using a control protocol, such as RTSP.
 - (RTSP) Real-time Streaming Protocol
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Streaming Methods

There are two ways to view media on the internet (such as video, audio, animations, etc): Downloading and Streaming.

- *Downloading (HTTP streaming)*
 - When you download a file the entire file is saved on your computer (usually in a temporary folder), which you then open and view.
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Streaming Methods

Streaming

- the end user can start watching the file almost as soon as it begins downloading.

Streaming media has additional advantages such as being able to broadcast live events (sometimes referred to as a *webcast or netcast*).

Streaming Methods

- *Progressive Downloading*

There is also a hybrid method known as *progressive download*. In this method the video clip is downloaded but begins playing as soon as a portion of the file has been received. This simulates true streaming, but doesn't have all the advantages.



Playback

Adobe Flash Player Browser Plugin FLV files

HTML5 does not require browser plugins H264, WebM

Uploads

Accepts videos uploaded in most container formats, including .AVI, .MKV, .MOV, .MP4, DivX, .FLV, and .ogg and .ogv.

These include video formats such as MPEG-4, MPEG, VOB, and .WMV. It also supports 3GP, allowing videos to be uploaded from mobile phones.

Comparison of YouTube media encoding options

Default container		FLV			MP4				WebM			3GP
Video	Encoding	Sorenson H.263		MPEG-4 AVC (H.264)				VP8			MPEG-4 Visual	
	Profile	-		Main	Baseline	High		-			-	
	Max width (pixels)	400	640	854	640	1280	1920	4096	640	854	1280	176
	Max height (pixels)	240	360	480	360	720	1080	3072	360	480	720	144
	Bitrate ^[2] (Mbit/s)	0.25	0.5	0.8–1.0	0.5	2.0–2.9	3.5–5.0	-	0.5	1	2	-
Audio	Encoding	MP3		AAC				Vorbis			AAC	
	Channels	1–2		2 (stereo)								
	Sampling rate (Hz)	22050		44100								
	Bitrate ^[2] (kbit/s)	64		128	96	152		128	192	-		

Streaming Client and Players

- MediaMonkey
- MPlayer
- Screamer Radio
- StationRipper
- Streamripper
- Totem
- VLC media player
- Winamp a freeware media player for Microsoft Windows
- XBMC, a free and open source media center software
- XMMS
- Zinf
- Total Recorder

- Adobe Media Player (freeware)
 - Media Player Classic (free software)
 - MPlayer (free software)
 - RealPlayer (freeware)
 - VLC media player (free software)
 - Winamp (freeware)
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Streaming - *Capture and Recording*

Demonstration Using Software Suite from *Applian*

Site software <http://www.applian.com>
