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An Overview of Terms Related to Video and Audio on the Web

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File Compression

Compression software takes a video or audio file and makes it smaller, usually by losing some data. Most video and audio files that are put on the Internet or players like iPods are compressed. It is used so that downloading, or streaming, files can be done more quickly and take up less space.

In the case of audio files, compression will start by taking out imperceptible frequencies. Video files tend to be compressed by taking out frames that are replicated in a shot.

However, more heavy handed compression can lead to problems – music becomes distorted and videos become pixilated. A happy medium has to be found between the quality of the file after compression, the size of the file and what you wish to do with it, whether offering as a stream, download, or for use on your iPod.

Podcasts

Podcasts are usually audio or video files that are downloaded from the web to your machine. 'Vodcasts' refer to video files. It is safe to refer to either audio or video files as podcasts when disseminated in this fashion.

Importantly, once you subscribe to a podcast, your machine will automatically download any new file when it is available, which keeps you up to date without your having to do anything after the initial subscription (which is usually free). This is very useful for news or radio programmes.

To subscribe and play a podcast you need to download an aggregator (player), such as iTunes, which is free. There are other free aggregators available. Just search with Google for 'free podcast aggregators'.

The web page containing the podcast will offer you a url (web address) for you to copy and paste into your aggregator. In iTunes, you drop down the 'Advanced' menu, and paste the url into the 'Subscribe to Podcast' window. Your iTunes software will then download the latest programme every time you open it. If you have an iPod, that will be automatically updated when you plug it into your computer.

If you want to put a video or audio file on the web to allow people to watch on a permanent basis, you would not podcast, you would stream or simply offer it as a download. Podcasts are designed to be updated regularly. Streaming and downloading tend to be used for files that are not updated regularly.

RSS Feeds

RSS feeds are a means of getting updated content automatically. They are like podcasts in that you subscribe to them, and then video or audio files are refreshed on your player when new material is offered, without your having to do anything (your player being a news reader or RSS enabled web browser – go to the BBC link below for a full and very good explanation). The difference to a podcast is that an RSS feed can also enable text, updated web pages and videos to be downloaded to your player, whereas podcasts tend to only work with audio or video files.

Go to the BBC webpage for a full description of how RSS feeds work. There are also lots of interesting RSS feeds there, and the BBC encourage you to add their RSS feeds to your websites: http://news.bbc.co.uk/1/hi/help/3223484.stm

Streaming

Streaming is the process by which you can click on a link and watch a video file or listen to an audio file without downloading it to your computer. A video or audio file is usually placed on a server dedicated to streaming.

Streamed video and audio content can and usually is set up so nothing is downloaded to your machine. The advantage is that the files can't easily be copied, which is useful in terms of protecting copyright. Also, the viewer doesn't have to worry about the download size of a file, and streams can be set up to be very low or even variable bitrates (speed of information transfer) to suit the speeds of your Internet provision. Streaming is often the preferred way to show long video files to viewers.

When creating and compressing files to be streamed, particular attention has to be paid to the file format/codec that is used, i.e. .wmv, .rm, .mov, etc. Also, settings have to be made specifically within these codecs to specify whether you're using that particular file type to stream or simply to download.

Codecs

A codec is a device or program that encodes your video/audio into a format, and also decodes the format of a file so it can be played on a computer/the web, etc.

The format of the file will tell your computer to open it in a particular program, so a Windows .wmv file will need to be opened in a Windows player. The codec will then decode the video.

Occasionally, you may have a video that will not play, even though it seems to be a .wmv file. This may be because the codecs on your computer are not up to date. You may get an error message telling you this. You should keep your player up to date by accepting updates that you will receive if your computer is connected to the Internet.

File Formats

If you want to show a piece of video over the Internet, you will have to decide which file format to use and how your viewers will see it. Why? You may remember the Betamax and VHS video formatting competition in the 80s. The same situation exists with wmv, .rm, .mov and the codecs to decode those files, in terms of their being in competition, needing particular players to view them, and having slight differences in quality and the way they are coded.

MP3 (officially known as MPEG-1 Audio Layer 3)

An MP3 is an audio file. MP3s are small in file size, which makes them ideal for use on the web or players like iPods, which have a finite amount of disc space. An MP3 works through clever software taking audio files and cutting out varying levels of data (see 'File Compression').

In general, an audio file of a person speaking should not be compressed less than 128 kbps, and music shouldn't be compressed lower than 320 kbps.

WAV (waveform audio format – sometimes called WAVE)

WAVs are uncompressed audio files, sometimes known as RAW audio file format. WAVs tend to be large files. A user may record something in WAV and use that as a master file, then compress into MP3 for use on the web. You wouldn't offer WAVs for download or streaming on the web, as the files are too large.

.wmv (Windows Media Video)

.wmv is a file format. You will see video files in .wmv format, e.g. myfirstvideo.wmv

.wmv files require a Windows Media Player to view them. You can offer .wmv files for download, or stream them.

.rm (Real Media)

.rm files are known as Real Media files. .rm files usually only play on Real Media players. They can be streamed and downloaded.

.mov (or) .qt (QuickTime Movie)

This is Apple's file format for video. You will need a QuickTime player to play files with either a .mov or .qt file extension. It can also be used as a download, or streamed, though when streaming .mov you will need to tell your software to create 'hinted' .mov files. (Contact Jason Williams at INSPIRE: j.l.williams@anglia.ac.uk, for information.)

MPEG-4 (Moving Picture Experts Group, MPEG)

MPEG-4 refers to a range of compression and encoding for video and audio files. H.264 is one of them.

H.264

A relatively new standard for compression – also known as MPEG-4 part 10 – this is great for compressing videos for use on video iPods and mobile phones. H.264 was created to achieve smaller files with better quality.

Flash.swf (Abode Flash)

Flash is a player and system for creating files like video files, animation, etc. Your web browser probably has a Flash Player already installed. YouTube uses Flash to convert uploaded videos.

The benefits of using Flash are that the player is small and easy to download, the files tend to be small, and stream very well, and a great deal of interactivity can be incorporated into the file. An example of interactivity might be that a person talking on a video could say, 'Click on my hand', and after clicking you would be taken to another piece of video. The file extension (name) for Flash files is .sfw.

YouTube will accept any of the three main formats (.wmv/.mov/.rm) and automatically converts them to Flash.

Technology Acronyms – George Evangelinos, INSPIRE

ADSL	Asymmetric Digital Subscriber Line
AIFF	Audio Interchange File Format
ASCII	American Standard Code for Information Interchange
ASF	Advanced Streaming Format
ASP	Active Server Pages
ATA	Advanced Technology Attachment
ATM	Asynchronous Transfer Mode
AV	Audio Visual
AVI	Audio Video Interleaved
CAD	Computer Assisted Design
CCTLD	Country Code Top Level Domain
CD-RAM	Compact Disc – Random Access Memory
CD-ROM	Compact Disc – Read Only Memory
CD-RW	Compact Disc – ReWritable
CGI	Common Gateway Interface
CMS	Content Management System
CODEC	COder DECoder
CPU	Central Processor Unit
CRM	Customer Relation Management
CSS	Cascading Style Sheets
DBMS	DataBase Management System
DDoS	Distributed Denial of Service
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
DoS	Denial of Service
DOS	Disk Operating System
DSL	Digital Subscriber Line
DTP	DeskTop Publishing
DVD	Digital Versatile Disk
DVD-RAM	Digital Versatile Disc – Random Access Memory
DVD-ROM	Digital Versatile Disk – Read Only Memory
DVD-RW	Digital Versatile Disk – ReWritable
FDDI	Fibre Distributed Data Interface
FLV	Flash Video
FPS	Frames Per Second
FTP	File Transfer Protocol
GIF	Graphics Interchange Format
HTML	Hyper Text Mark-up Language
HTTP	Hyper Text Transfer Protocol
HTTPS	HTTP over SSL
ICANN	Internet Corporation for Assigned Names and Numbers
ICMP	Internet Control Message Protocol
IP	Internet Protocol
IPTV	Internet Protocol TeleVision
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
JPEG	Joint Photographic Experts Group
LAN	Local Area Network
MOV	MOVie file format
MP3	MPeg1 audio layer 3
MPEG	Moving Picture Experts Group
NAS	Network Attached Storage
NAT	Network Address Translation
NFS	Network File System
OCR	Optical Character Recognition
ODP	Open Directory Project
OLE	Object Linking and Embedding
P2P	Peer to Peer
PATA	Parallel Advanced Technology Attachment
PCM	Pulse Code Modulation
PCMCIA	Personal Computer Memory Card International Association
PDA	Personal Digital Assistant
PDF	Portable Document Format
PEARL	Practical Extraction and Report Language
PHP	Personal Home Page (PHP) Hypertext Pre-processor
PNG	Portable Network Graphics
POP	Post Office Protocol
PPP	Point to Point Protocol
QoS	Quality of Service
QT	QuickTime Movie
RAM	Random Access Memory
RDBMS	Relational Database Management System
RGB	Red Green Blue
RM	Real Media
ROM	Read Only Memory
RSS	Really Simple Syndication or Rich Site Summary
RTSP	Real Time Streaming Protocol
SAN	Storage Allocation Network
SAS	Serial Attached Storage
SATA	Serial Advanced Technology Attachment
SCSI	Small Computer Standard Interface
SET	Secure Electronic Transaction
SGML	Standard Generalised Mark-up Language
SMTP	Simple Mail Transfer Protocol
SQL	Structured Query Language
SSL	Secure Socket Layer
SWF	Small Web Format
TCP	Transmission Control Protocol
TIFF	Tagged Image File Format
TLD	Top Level Domain
UDP	User Datagram Protocol
UNIX	UNIpleX information and computer services
UPS	Uninterrupted Power Supply
URL	Universal Resource Locator
VDU	Video Display Unit
VoIP	Voice over Internet Protocol
VRML	Virtual Reality Modelling Language
W3C	World Wide Web Consortium
WAN	Wide Area Network
WAP	Wireless Application Protocol
WAV	WAVeform audio
WIFI	WIreless FIdelity
WMA	Windows Media Audio
WML	Wireless Mark-up Language
WMV	Windows Media Video
WWW	World Wide Web
WYSIWYG	What You See Is What You Get
XHTML	eXtensible HyperText Mark-up Language
XLL	eXtensible Linking Language
XML	eXtensible Mark-up Language
XSL	eXtensible Style Sheet Language

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