What everyone should know
about QuickTime

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What is QuickTime?

A file that tells the computer *what* kind of media to present and *when* to present it.

- Video
- Audio
- Text
- Flash
- Interactivity
- Tracks

A Complete Solution

QuickTime takes you from capture to delivery and beyond

Delivery

Edit and Compose

Playback

Capture

MOVIE

Archive

Decade of Innovation

1991	1994	1998	1999	2001	2002
QuickTime 1	QuickTime 2	QuickTime 3	QuickTime 4	QuickTime 5	QuickTime 6
First video on PC	QuickTime VR	Interactivity	QuickTime Streaming Server	Sorenson Video 3	MPEG-4 support
"Road Pizza"	Windows playback	Real-time effects and transitions	Darwin Open Source	Enhanced DV	3GPP support
CD-ROM playback	Full-screen video	Sorenson Video	QuickTime TV	Cubic VR	3GPP2 support
Compressed video	MIDI playback	QDesign Music	Sorenson Video 2	Media Skins	Instant-On streaming
Uncompressed audio	MPEG-1 (Mac only)	Windows authoring	QDesign Music 2	Macromedia Flash 4	MPEG-2 Playback Component
Cinepak	Web plug-ins	Qualcomm PureVoice	MP3 audio playback	New music synthesizer	Macromedia Flash 5
Text tracks	AIFF support	QT Java	Macromedia Flash	MPEG-1 support	DVCPro PAL
	Drag and drop	DV/FireWire support	SMIL	Skip Protection	JPEG 2000
	Timecode support	AVI, AVR, and OpenDML	AppleScript	Component Downloader	iTunes Music Store audio (M4A, M4P)
	QuickTime data pipe	SMPTE effects	JavaScript		
		H.261, H.263	Intelligent web installer		

QuickTime Momentum

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10,000,000

Downloads of QuickTime 6 every month

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The Matrix Reloaded	Toyota	Fandango
WGBH	Library of Congress	AOL
Ford Motor Co.	Pixar	Electronic Arts
Nike	Island Def Jam	Macromedia
The Hulk	Rolling Stone	Reebok
britney.com	MSN	Mercedes Benz
Renaissance Hotels	Nissan	Warner Brothers Records
Sony Pictures	Acura	Terminator 3
CNN	Sim City	Lego
Nokia	Yahoo!	pinkfloyd.com
starwars.com	Hummer	NBC
Google	NTT DoCoMo	santana.com
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More than 18,000 referring sites each day

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More than 200 digital devices

QuickTime at Apple
A core technology

QuickTime and Standards

Long-standing support for industry standards

GSM	MPEG-1	IMA
DV	TIFF	RTP
CCIR 601	H.261	RTSP
PNG	H.263	SDP
GIF	ALaw	SMIL
JPEG	SMPTE 258M	MIDI
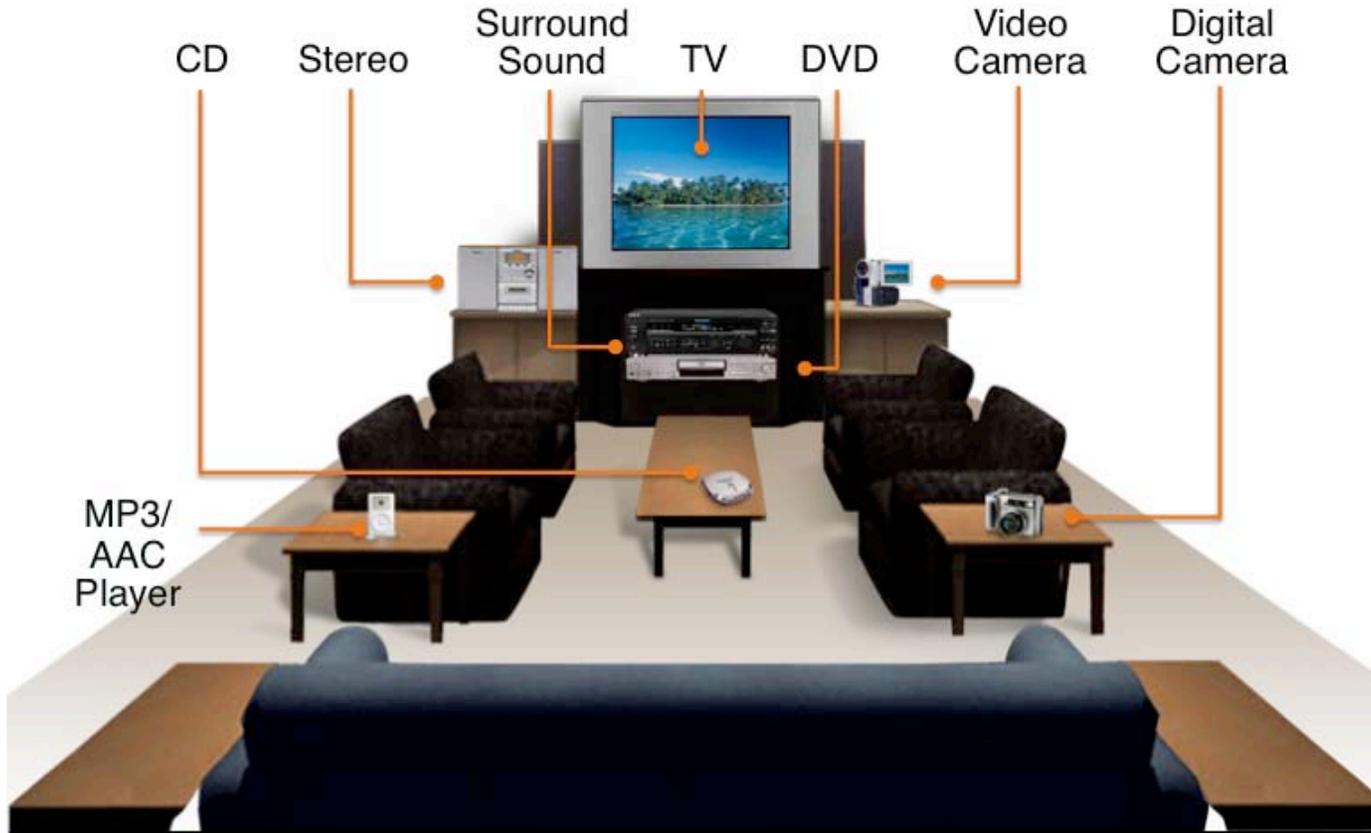
Standards Are Everywhere

RedBook   FM   MPEG-2   NTSC/PAL   AC-3   DV   JPEG
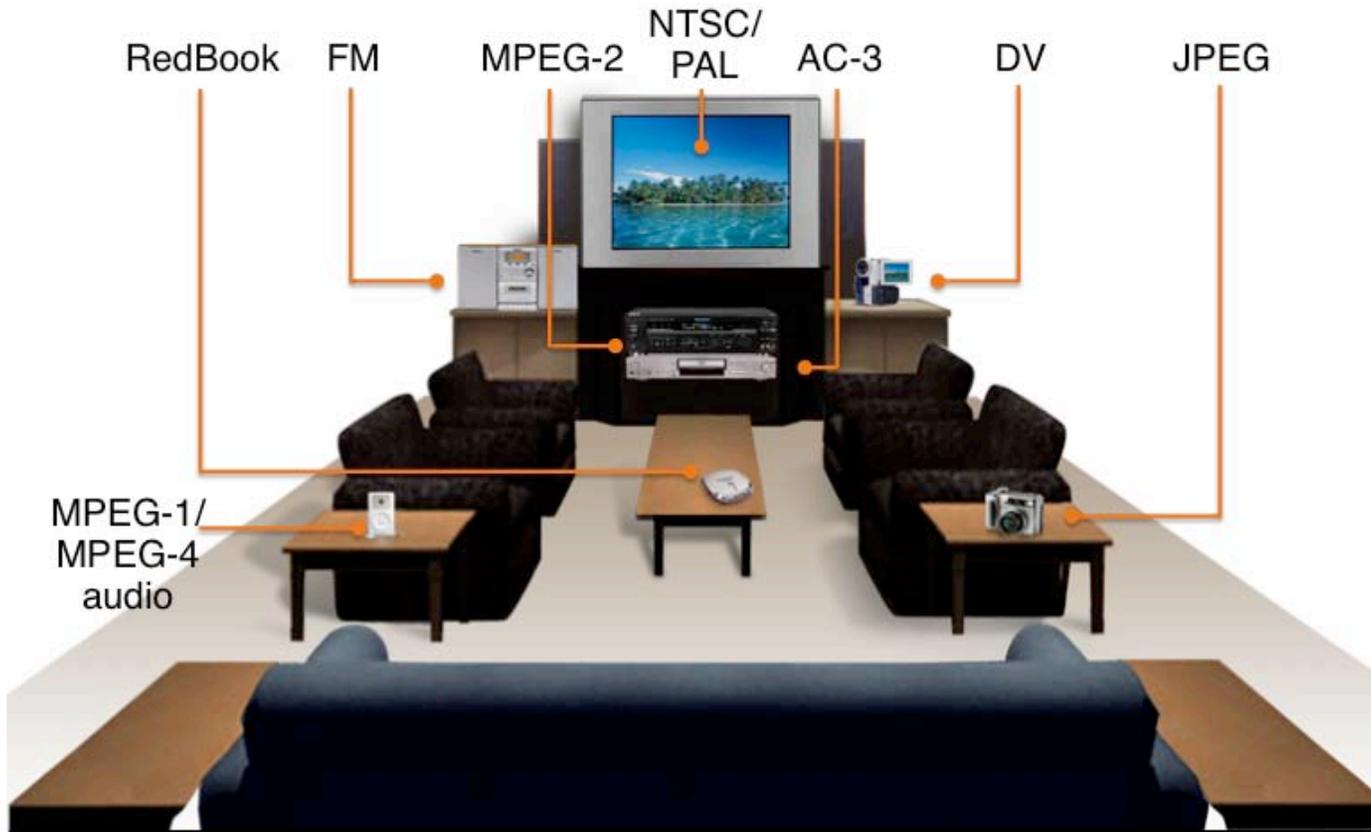
MPEG-1/
MPEG-4
audio

Family of MPEG Standards
The foundation for all digital media

MPEG-1	MPEG-2	MPEG-4
VHS Quality	DVD Quality	Wireless, Internet
1.5 Mbps	6 Mbps	Scalable
1992	1994	1998

MPEG-4: The MPEG for the Internet
The standard for the digital media revolution

- Scales from narrowband to broadband and beyond

- Provides video and audio quality rivaling that of proprietary technologies

- Interoperates with any MPEG-4-compliant device because it is an open standard

MPEG-4: The MPEG for the Internet
The standard for the digital media revolution

· Original DV 37 sec 133.5mb

· MPEG-4 230k to 3.9mb

QuickTime at the Foundation
ISO chose QuickTime as the file format for MPEG-4

Meta Data	
User Data Copyright Information	Video
	Audio
Media Data	VR
	3D
Media Index	MIDI
	Graphics
Types of Tracks Compression Format Edit Information	Text
	and many more…

QuickTime 6 and MPEG-4 Video

Apple-developed high-performance codec

- Fully compliant for interoperability with other MPEG-4 players
- Accelerated for the G4 Velocity Engine for real-time encoding
- Provides single-pass VBR encoding
- Provides highly tuned color management
- Provides a deblocking filter during decode

QuickTime 6 and AAC Audio
MPEG-4 audio that delivers CD-quality sound

- Built on new, state-of-the-art signal processing technology from Dolby Laboratories

- Delivers higher quality than MP3 at lower data rates, resulting in smaller file sizes

- Brings variable bit rate (VBR) audio encoding to QuickTime

AAC

MPEG-4 Ready
Tools built on QuickTime inherit MPEG-4

MPEG Industry Forum (MPEGIF)
Hundreds of companies working together
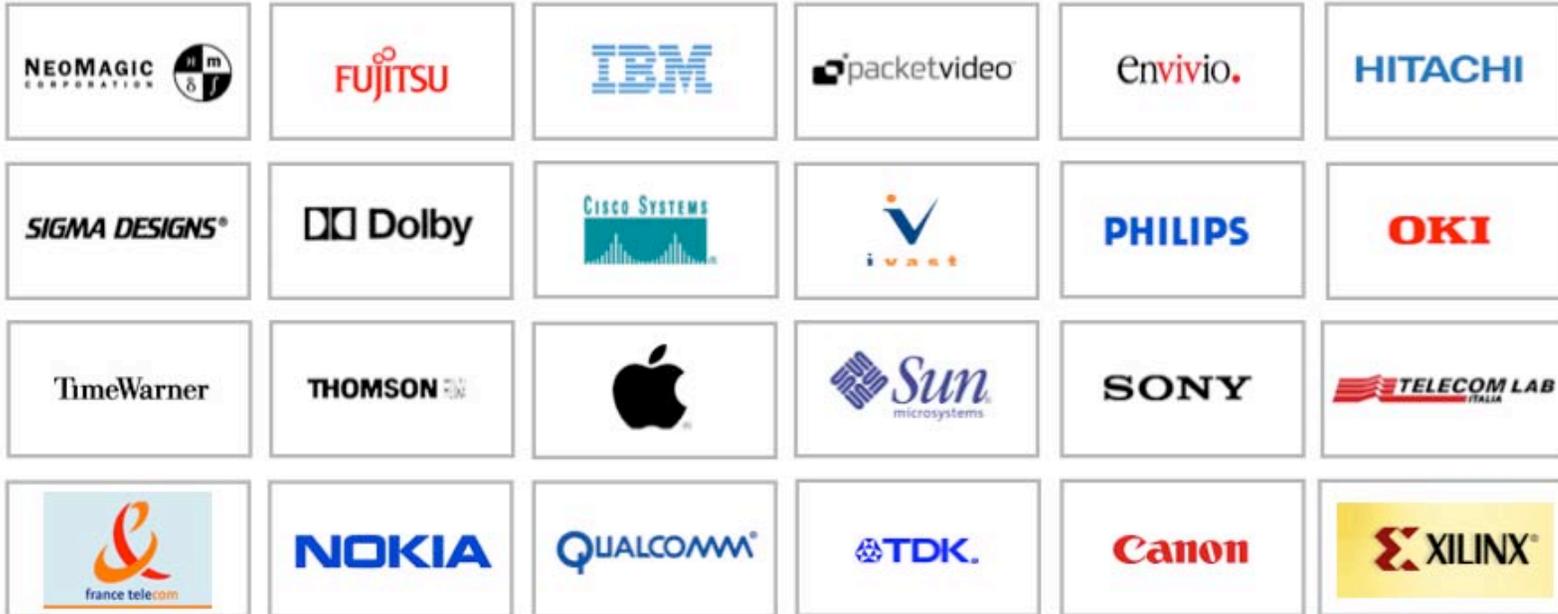
www.mpegif.org

Building on MPEG-4
The foundation of many technologies and standards

- 3GPP
- 3GPP2
- Motion JPEG 2000
- Japanese Association of Radio Industries and Business (ARIB)
- Digital Radio Mondiale
- MPEG-7
- MPEG-21

W3GPP and 3GPP2: An Overview
Worldwide standards for mobile multimedia

- AAC, AMR, and QCELP audio

- MPEG-4 and H.263 video

- 3G Timed Text

- .3g2 file format

- Extending support for the word's second-most predominant mobile network

3GPP and 3GPP2 in Action
Professionals create content for subscription services

Professional
Content Providers

Mobile
Service
Provider

Mobile
User
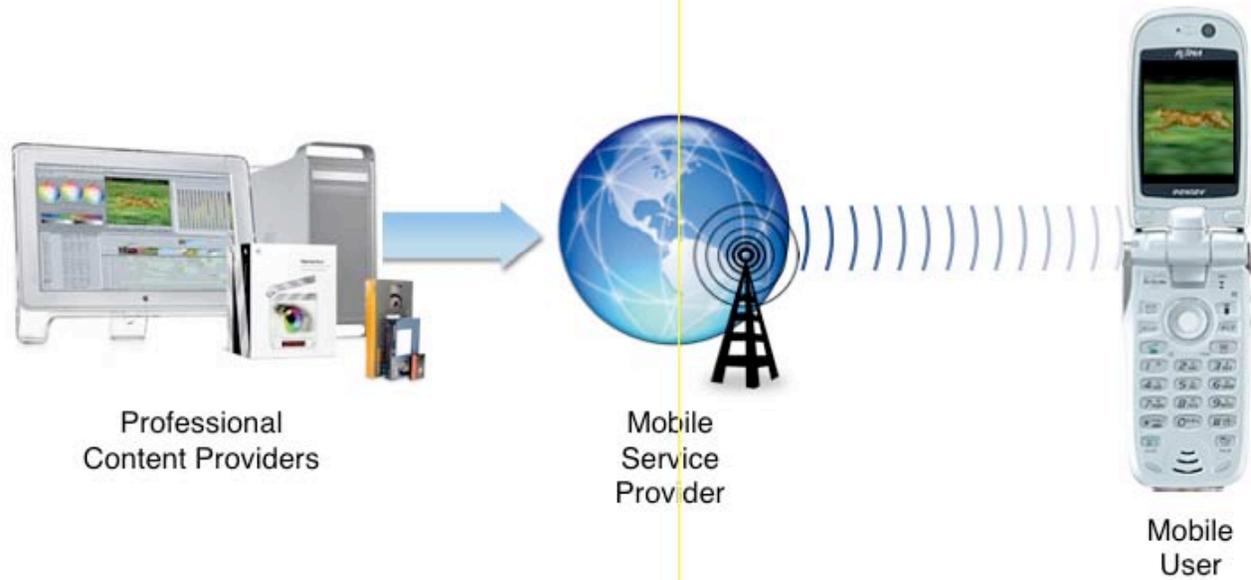
Pixlet
The first studio-quality codec for filmmakers

- High-quality, customized wavelet-based encoding with real-time decoding

- 25:1 compression

- HD/2-resolution playback at 24 fps on any 1 GHz G4

- Supports 16 bit per channel source including alpha

- Easy-to-use slider control for exporting

- Panther only

QuickTime 6 Pro
An incredibly powerful authoring and editing tool

- Play movies in full screen

- Save movies from the web

- Edit as easily as cut and paste

- Create slideshows

- Create Media Skins

- Transcode media

- Adjust and save audio and video settings

QuickTime 6 Pro
Dozens of professional features

- Hint movies for streaming
- Automate with AppleScript
- Edit movie clips from digital cameras
- Convert and resize pictures
- Enhance movies and stills with filters and effects

QuickTime 6 Pro

Author your own MPEG-4 files quickly and easily

- Provides ISO-compliant MPEG-4 video and AAC audio authoring
- Includes enhanced export dialog for easy authoring
- Supports adherence to ISMA profiles

MPEG-4 Settings

| General | Video | Audio | Streaming | Compatibility |

Video Track: Improved

kbits/second

32   536   1040   1544   2048

Frames per second: 15

Key frame every   24   frames

Video will make use of improved MPEG-4 features (known as ISMA Profile 1). This produces files of higher quality, while potentially being incompatible with some MPEG-4 devices. The video will have a data rate of 300 kbits/second and a frame rate of 15 frames per second. The resulting movie will be 320 by 240 pixels.

Audio will be optimized for music (known as Low Complexity AAC). The audio will have the current sample rate in stereo. The data rate of the audio will be 128 kbits/second. The audio encoding will be done in better quality mode.

This MPEG-4 file will support ISMA (Internet Streaming Media Alliance) specifications.

(Cancel)   (OK)

MPEG-2 Playback Component
The perfect add-on for professional content creators

- Enables reviewers to see projects in progress from either Macintosh or Windows PCs

- Works with QuickTime Player and QuickTime Pro

- When paired with QuickTime Pro, transcodes elementary MPEG-2 streams into other formats

- Sold separately in the Apple Store online

# Web Delivery: HTTP Streaming
Fast Start

Development   Standard Web Server   Clients
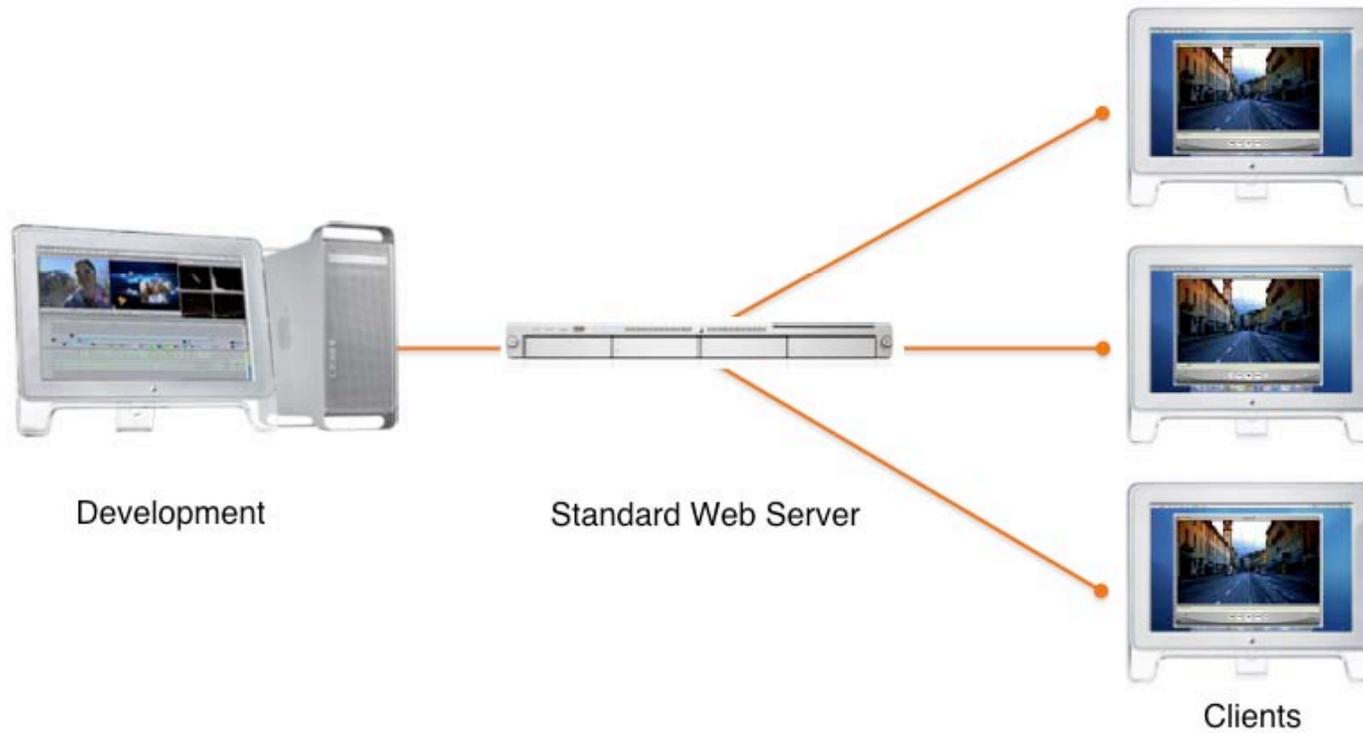
Web Delivery: RTP/RTSP Streaming
QuickTime Streaming Server

Development

Web Server

Streaming Server

Client
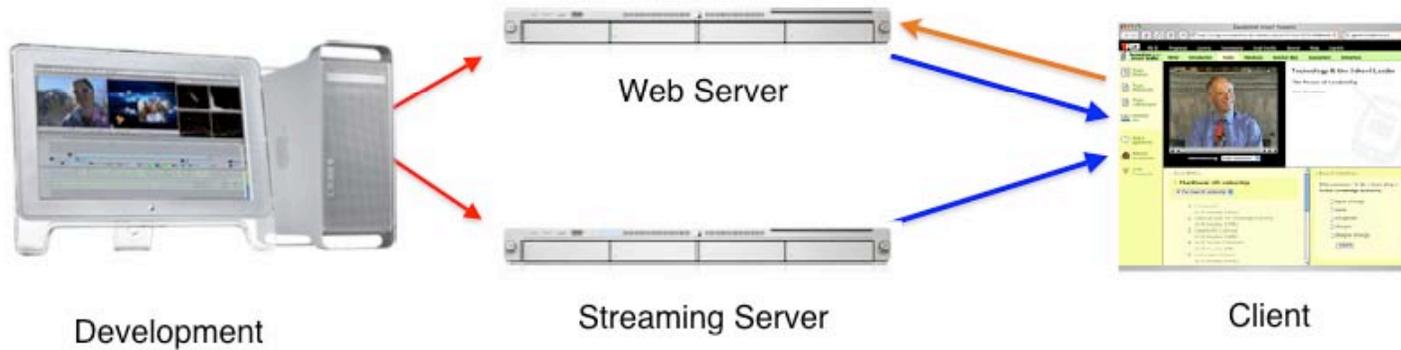
QuickTime Broadcaster

Live Events on the Web
The latest addition to the QuickTime family of products

- Live encoder for Mac OS X
- Power for professionals with ease of use for novices
- Support for QuickTime streaming codecs
- Delivery of ISO-compliant streams to standard MPEG-4 player or devices

Scalable to Any Audience
One-to-one configuration
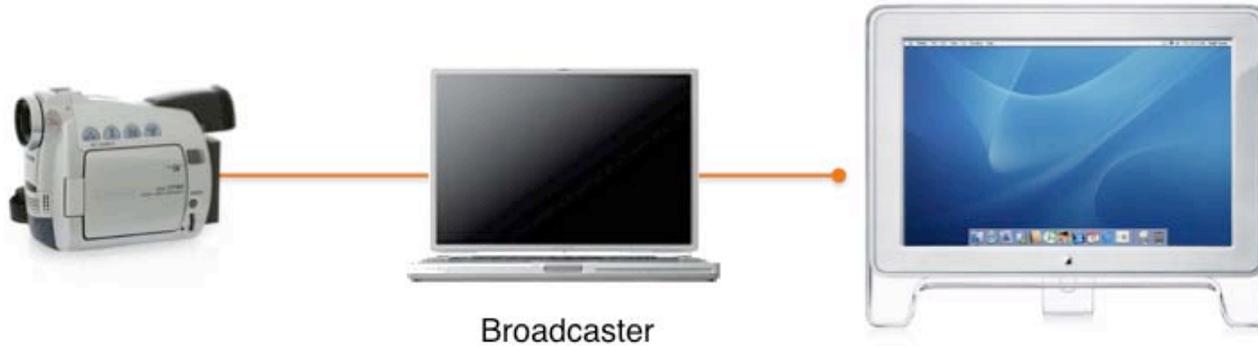
Broadcaster

Scalable to Any Audience
One-to-few configuration

Broadcaster
QuickTime Streaming Server
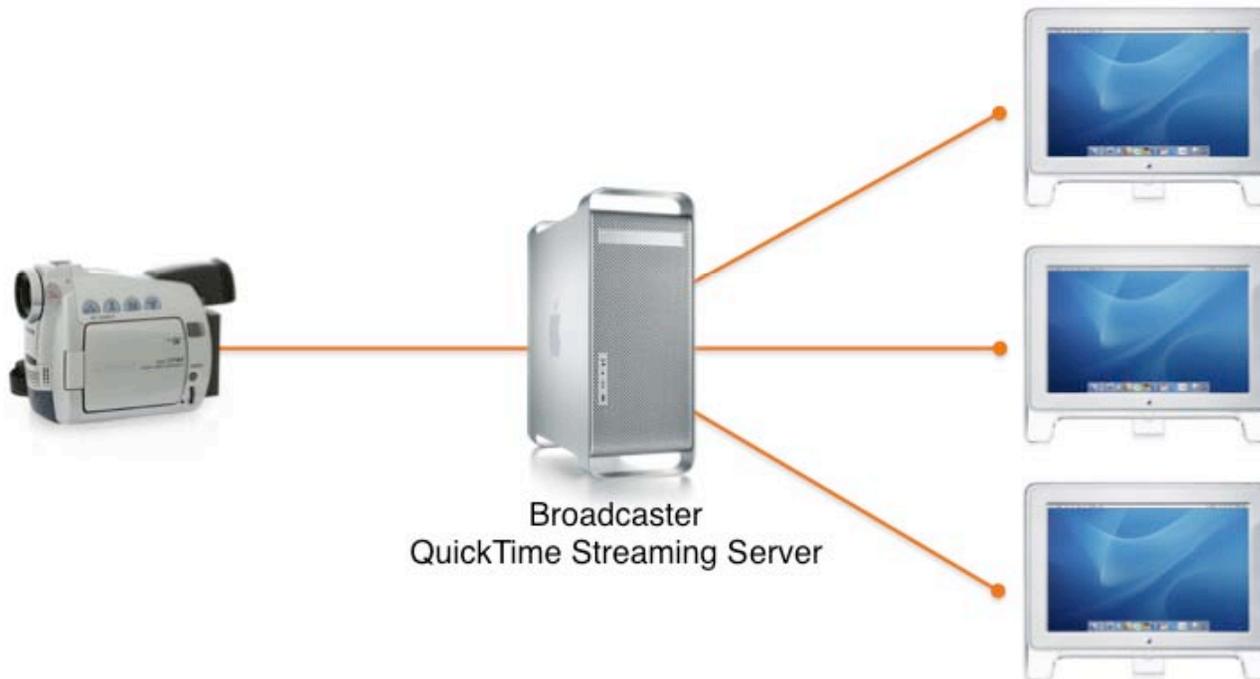
Scalable to Any Audience

One-to-many configuration

Broadcaster   QTSS/DSS
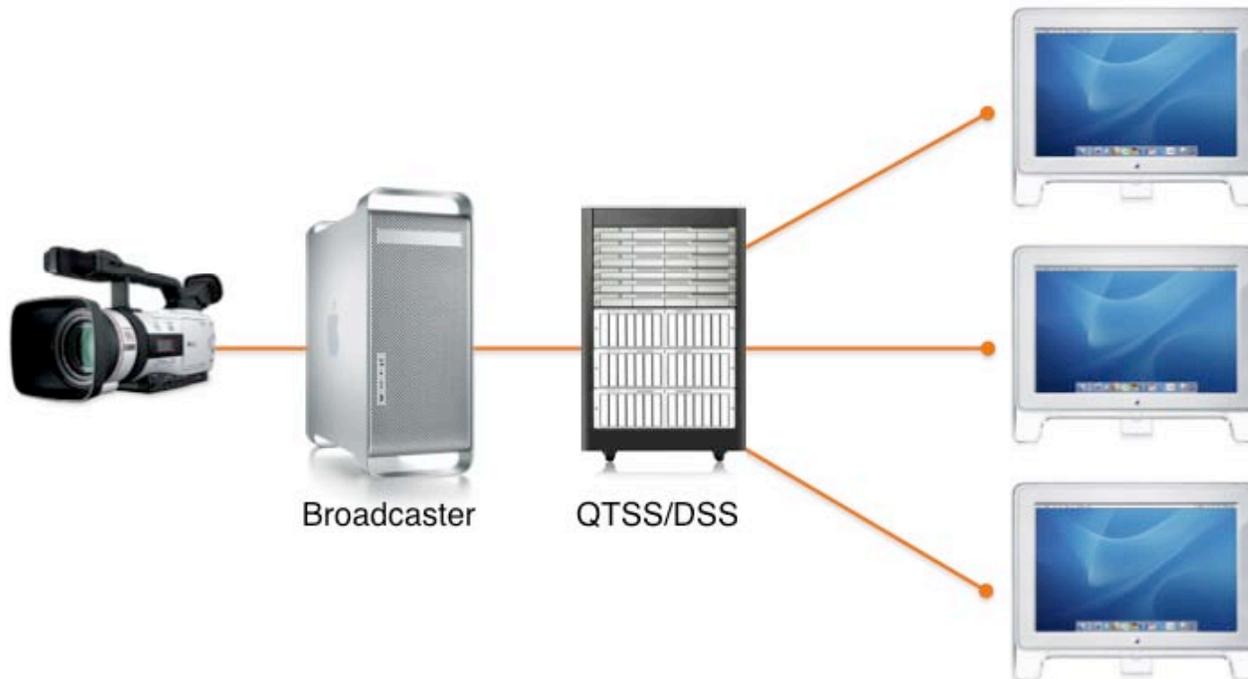
Scalable to Any Audience

One-to-global configuration

Broadcaster

Content Delivery Network
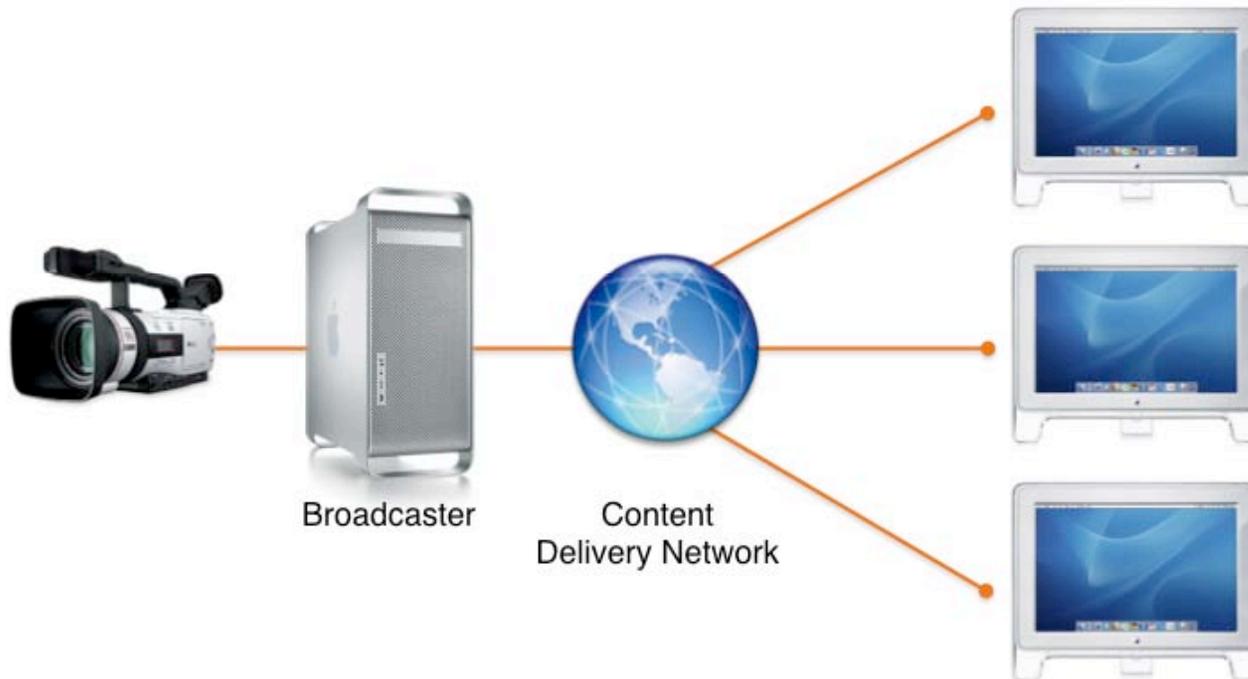
QuickTime Broadcaster Features

Designed for power and convenience

- Presets for easy setup

- Expanded view for customization

- Save and share custom settings

- Instant VOD for immediate on-demand viewing after the event

- Unicast and multicast support

- Support for 3GPP-compliant streams

The QuickTime Solution

The Obvious Choice

QuickTime fulfills all of your digital media needs

- Fully ISO compliant for interoperability with other MPEG-4, 3GPP, and 3GPP2 players

- High-performance, low-cost delivery solution

- Access to exclusive QuickTime media types, such as QuickTime VR, Media Skins and Pixlet

- Extensive architecture that powers multimedia CD-ROMs, authoring tools, and digital cameras

- A ten-year legacy of revolutionizing digital media on the desktop and beyond

A Complete Solution

QuickTime takes you from capture to delivery and beyond

Streaming Media Delivery

Everything you need to deliver content like a pro
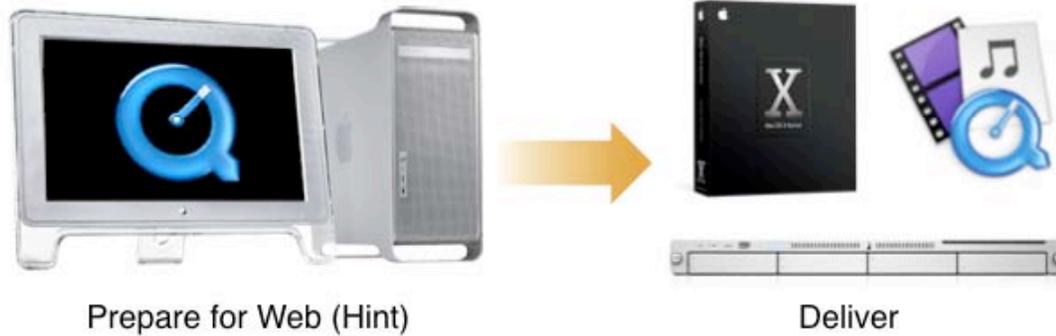
Prepare for Web (Hint)   Deliver
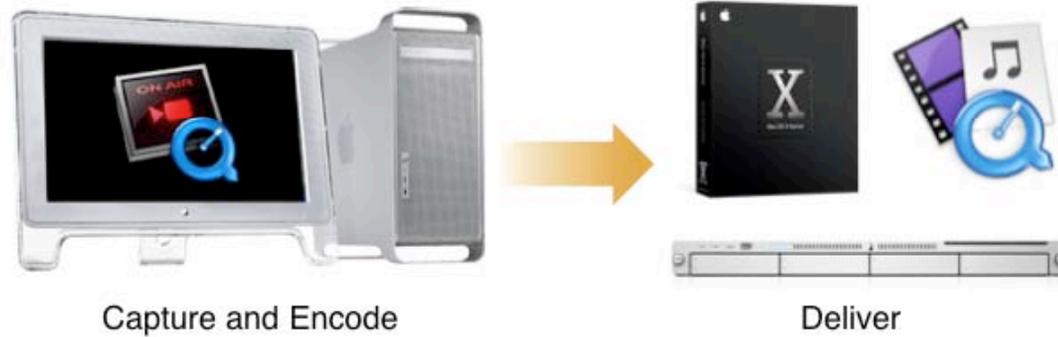
QuickTime Streaming Server

Industrial-strength streaming with Apple ease of use

- Instant-On streaming provides immediate playback for broadband users

- Skip Protection takes advantage of excess bandwidth to ensure a smooth playback experience

- Native MPEG-4 and 3GPP streaming

- Massively scalable architecture for serving an audience of any magnitude

- Plug-in API support for customizing QTSS to fit your needs

QuickTime Product Family

Your end-to-end digital media delivery system

|	
QuickTime 6.5 Player Mac OS X v10.2.5 or later, Windows 98/ME/2000/XP	Free
QuickTime 6 Pro Mac OS X v10.2.5 or later, Windows 98/ME/2000/XP	$29.99
MPEG-2 Playback Component Mac OS X v10.1.5, Mac OS X v10.2.5 or later, Windows 98/ME/2000/XP	$19.99
QuickTime Broadcaster Mac OS X v10.1.5 or later	Free
QuickTime Streaming Server 5 Mac OS X Server v10.3 or later	Included with Mac OS X Server v10.3
Darwin Streaming Server 5 Mac OS X v10.2.8 or later, Solaris 9, Red Hat Linux 9, Windows 2000/2003 Server	Free

www.apple.com/quicktime

Installing QuickTime Standalone Installer

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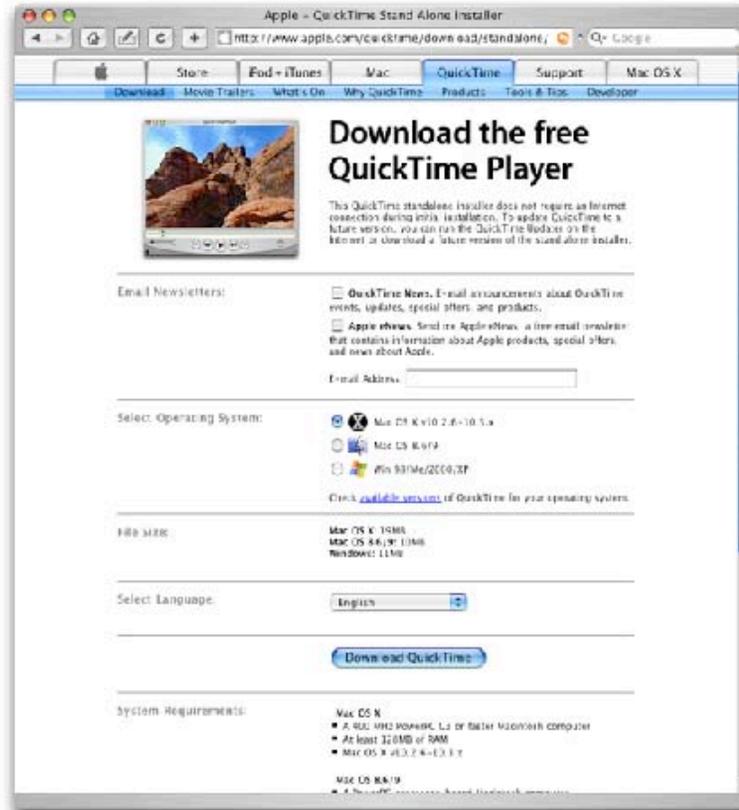
# Resources
QuickTime for the Web

- For Windows and Macintosh

- Third Edition QuickTime Developer Series

- ISBN 1558609040
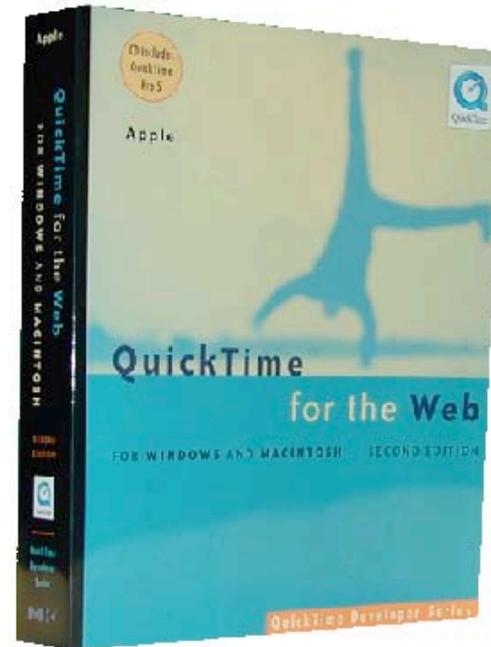
Resources
QuickTime 6:
Visual QuickStart Guide

- For Windows and Macintosh

- Judith Stern & Robert Lettieri

- ISBN 0321127285
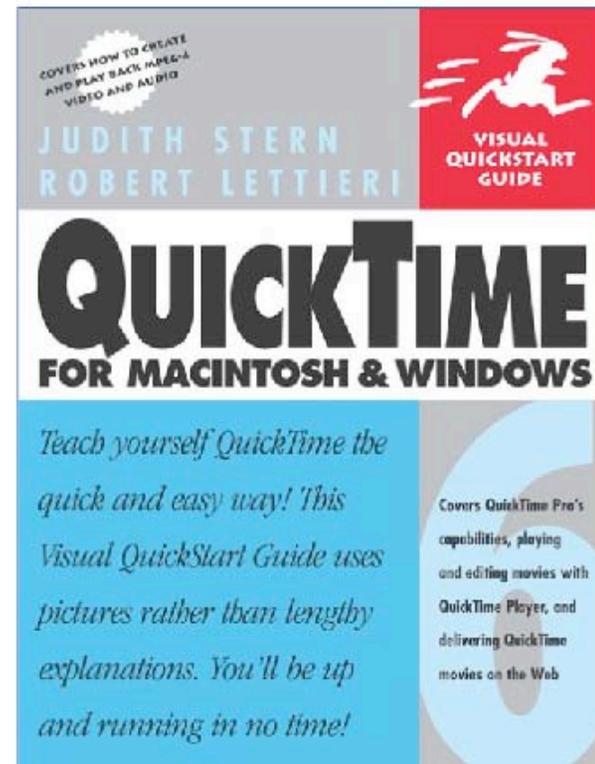
Q&A

Thank You

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