



The QuickTime Solution for Mobile Multimedia

The most versatile, cost-effective media platform for the creation, delivery, and playback of rich content for mobile networks and devices.

QuickTime Mobile Multimedia Benefits

Industry-leading desktop player with native support for mobile media

Apple's QuickTime Player enables playback of mobile content on desktop computers through its native support for the mobile multimedia standards 3GPP and 3GPP2.

Powerful mobile content creation tools for professionals and consumers

- Edit and encode 3GPP and 3GPP2 content using Apple's Final Cut Pro, Final Cut Express, QuickTime Pro, or iMovie applications.
- Choose from a variety of content creation applications for the Mac and PC that utilize the QuickTime architecture with native support for 3GPP and 3GPP2 authoring and playback.

Standards-based, license-free platform for mobile media delivery

- Deliver multimedia content to a wide range of 3GPP- and 3GPP2-based handsets with Apple's highly scalable Xserve, Xserve RAID, Mac OS X Server, and QuickTime Streaming Server.
- Provide unlimited streaming at no additional cost.

The QuickTime family of standards-based products provides the industry with a complete solution for enabling mobile multimedia services over 3G networks. When deployed on a high-speed mobile network, QuickTime brings to life exciting new mobile services that will entertain and inform subscribers and generate new revenue streams for mobile operators and content providers. Combined with Apple's wide range of professional and consumer hardware and software products, QuickTime provides a complete, end-to-end solution for key 3G service offerings such as video messaging and multimedia publishing.

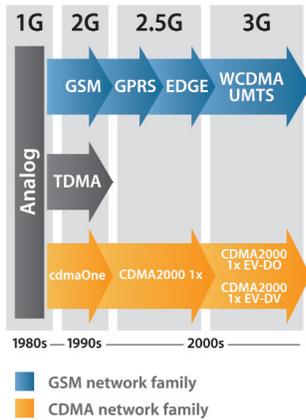
QuickTime is an industry-leading mobile multimedia solution that offers:

- The industry's first mainstream content creation, delivery, and playback solution with native 3GPP and 3GPP2 support.
- Hundreds of millions of distributed players for seamless playback of handset-generated multimedia on the desktop.
- Native support of mobile standards, enabling seamless interoperability with operator infrastructures and multimedia-capable handsets.
- QuickTime Pro, an easy-to-use, low-cost consumer editing and encoding tool for the Mac and PC.
- A variety of QuickTime-powered editing and encoding tools for the Mac and PC for professional content creators.
- A highly scalable and cost-effective media delivery solution, leveraging the power of Xserve, Xserve RAID, Mac OS X Server, and QuickTime Streaming Server.
- Robust hardware- and software-based multimedia messaging and publishing solutions for mobile operators, content providers, and handset manufacturers.



Technology Brief

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The path to 3G

The evolution of high-speed wireless digital networks is based on two predominant technologies: GSM and CDMA. By definition of the International Telecommunication Union (ITU), 3G networks range from a minimum of 144 Kbps to 2.4 Mbps depending on the type of transmission technology. Both types of 3G networks are being deployed worldwide to offer consumers a variety of on-the-go multimedia services.

QuickTime Player on mobile phones

The benefit of standards is interoperability; products based on the same standard simply work together. This is the case with QuickTime and 3GPP/3GPP2-based mobile phones. Because phone manufacturers all adhere to the 3GPP/3GPP2 standard and because QuickTime adheres to the 3GPP/3GPP2 standard, phones and QuickTime-based products automatically work together. This eliminates the need for Apple to port QuickTime Player to mobile phones, and at the same time, it allows QuickTime to maintain compatibility with more phones than other mobile media technologies combined.

What Is 3G?

3G stands for “third generation,” a wireless industry term for high-speed mobile data delivery over cellular networks. 3G networks allow users to send and receive bandwidth-intensive information such as video, video conferencing, high-quality audio, and web data on demand, virtually any time and any place. Around the world, operators are offering consumers a variety of mobile data services, including video messaging, breaking news, weather, sports, movie trailers, music clips, mapping information, and much more.

3GPP and 3GPP2

3GPP is the worldwide standard for the creation, delivery, and playback of multimedia over Global System for Mobile Communication (GSM) networks, the most popular type of 3G network around the globe. GSM subscribers currently account for more than 850 million of the world’s wireless users in 174 countries, including the Middle East, Asia Pacific, Africa, Europe, India, North America, and South America.

3GPP2 is the worldwide standard for mobile multimedia on the second most popular high-speed wireless communication network technology, Code Division Multiple Access (CDMA) 2000. CDMA2000 network subscribers currently total more than 150 million worldwide in 36 countries on six continents.

Both 3GPP and 3GPP2 seek to provide uniform delivery of rich multimedia over 3G mobile networks to a new class of multimedia-enabled wireless devices. Tailored to the unique requirements of mobile devices, 3GPP and 3GPP2 are based on MPEG-4, the standard for delivery of video and audio over the Internet and other IP-based networks.

QuickTime at the core

When defining the MPEG-4 standard, the ISO (International Organization for Standardization) chose to base MPEG-4 on the QuickTime architecture. Because 3GPP and 3GPP2 are based on the MPEG-4 standard, both file formats benefit from the extensibility, scalability, and stability of QuickTime. This means that 3GPP (.3gp) and 3GPP2 (.3g2) files inherit from QuickTime the ability to mix different types of media, like video, audio, and text, in a single file, thanks to its track-based file format.

These files also inherit the scalability of QuickTime, allowing media at a broad range of bandwidths to be delivered in the same type of file. In addition, both 3GPP and 3GPP2 benefit from the stability of QuickTime. For more than a decade, the flexible QuickTime format has been expanded—not rearchitected—to include new technologies.

3GPP and 3GPP2 media types

To ensure interoperability between content created, delivered, and played back with a wide variety of development tools, web and streaming servers, and mobile handset players, the 3GPP and 3GPP2 specifications call out specific types of media that can exist in .3gp and .3g2 files. While the specifications include extensive sets of multimedia technologies, video, audio, and text are the core dynamic media elements. QuickTime includes support for these key components.

3GPP and 3GPP2 in QuickTime

File format	3GPP	3GPP2
Network type	GSM	CDMA2000
Video	MPEG-4, H.263	MPEG-4, H.263
Audio	AAC, AMR	AAC, AMR, QCELP
Text	3G Text	3G Text
File format basis	QuickTime	QuickTime
File extension	.3gp	.3g2



NTT DoCoMo, the world's leading mobile communications company, chose QuickTime as the exclusive desktop player and content creation tool for their 3G FOMA i-motion video clip distribution and mail service because of the massive distribution and high-quality encoding tools of QuickTime.

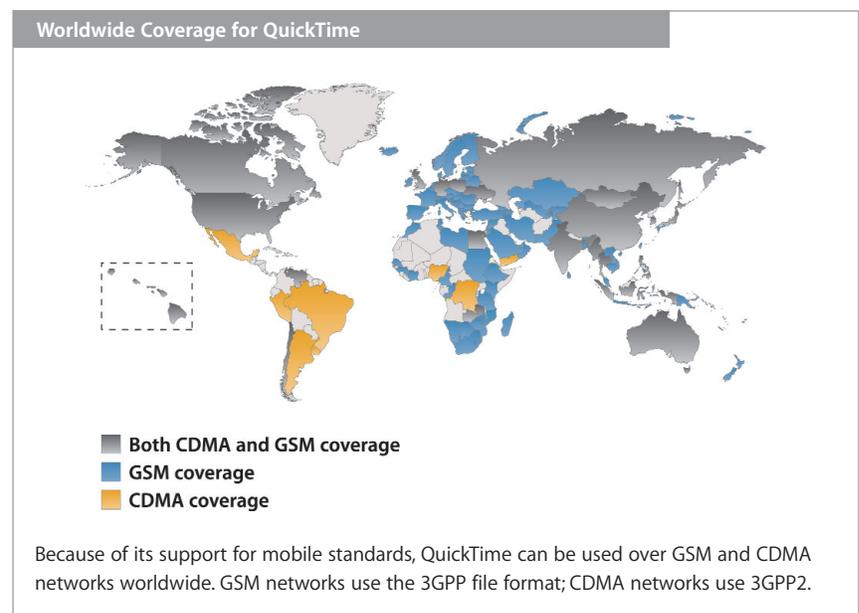
Users of DoCoMo's i-motion mail can transfer and play back multimedia messages on a Mac or PC from FOMA handsets with the easy-to-use QuickTime Player. In addition, i-motion users can download and view professional video content from a wide range of content providers.

Video. QuickTime delivers 3G video support with both MPEG-4 and H.263 video. MPEG-4 is a modern, highly efficient video codec using the latest advances in compression technology, which result in high-quality video across a wide bandwidth spectrum. H.263 is a widely distributed codec long used in Internet streaming and video conferencing. Both codecs are standards based and provide excellent results at low data rates. The broad video support in QuickTime thus satisfies the specifications of virtually all 3GPP- and 3GPP2-enabled mobile devices.

Audio. QuickTime 3G audio support includes AAC (Advanced Audio Coding) and AMR (Adaptive Multi-Rate) audio for 3GPP, with the addition of Qualcomm Code Excited Linear Predictive (QCELP) audio for 3GPP2. AAC compresses audio much more efficiently than older formats such as MP3, yet delivers quality rivaling that of uncompressed CD audio. AMR provides narrowband audio encoding designed specifically for speech. The result is clear, crisp sound, similar to the quality of a high-end standard telephone, at extremely low data rates. Much like AMR, QCELP is a low-bandwidth audio technology designed for pristine speech on CDMA2000 handsets.

3G Text. Because text is a key element in wireless communications, QuickTime supports the 3GPP and 3GPP2 specifications for 3G Text (TX3G). This text format is time based, meaning it can be appropriately synchronized with audio and video tracks for titling, captioning, and even karaoke. QuickTime includes support for importing and exporting 3G Text as well as XML. In addition, because of the extensive text support in QuickTime, nearly any ASCII text file can be imported into QuickTime Pro and exported as 3G Text in a .3gp or .3g2 file.

Movie Fragments. QuickTime supports the creation of Movie Fragments, an Apple-designed, standards-ratified, 3GPP2-specified technology that provides mobile operators and content providers with many of the advantages of real-time streaming while leveraging their existing web infrastructure. When Movie Fragments are used, the multimedia content is delivered incrementally over standard TCP/IP wireless networks, providing a more immediate viewing experience for the end user.





Verizon Wireless chose QuickTime as the exclusive desktop player for their getFLIX video messaging service because of its cross-platform support, ease of use, and support for standards.

When users capture videos on getFLIX-enabled phones, they can easily send them to friends and family via email or share them online on the PixPlace website using QuickTime for playback on the desktop. Consumers can also create personal mobile multimedia content in the 3GPP2 format using QuickTime Pro on their computer to share with Verizon Wireless getFLIX subscribers.



The first wireless carrier in the U.S. to deliver video mail services, Sprint allows customers to capture, view, and share 15 seconds of everyday moments directly from their Sprint PCS Vision(SM) Video Phones to any email address for desktop playback with QuickTime Player.

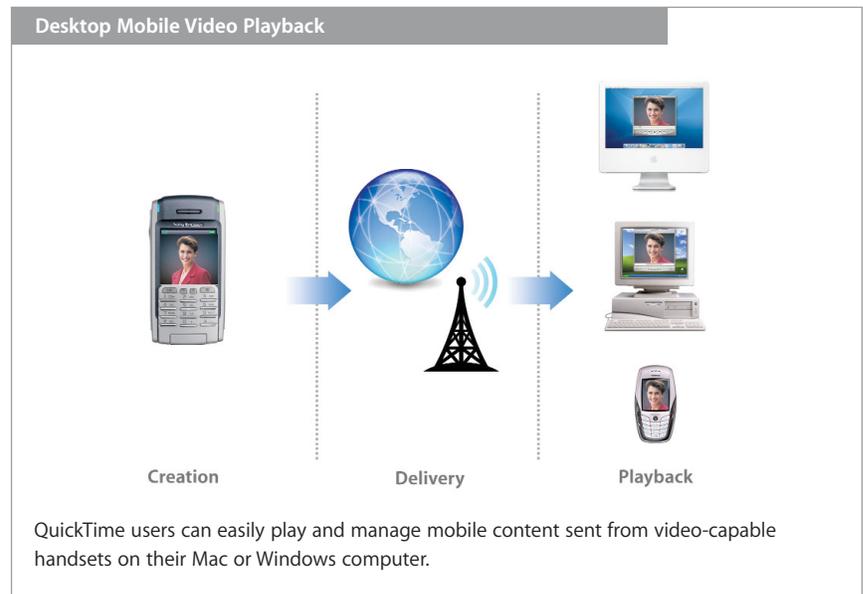
Sprint PCS Video Mail is powered by the LightSurf 5 Open Standards MMS Platform, a comprehensive suite of scalable and secure Multimedia Messaging software components that leverage the open standards in QuickTime to display personal audio and video clips.

QuickTime Mobile Multimedia Messaging Solution

One of the most popular applications of mobile multimedia is the creation and playback of multimedia messages exchanged between mobile users. Because it supports the key multimedia video formats and runs on Mac and Windows computers, QuickTime plays a key role in the desktop playback and creation of multimedia messages and is an ideal cross-platform solution for consumers.

Playback of mobile multimedia messages

Users who capture multimedia content on their phones will want to share that content via email with others who may not have a multimedia-capable phone. When they do, the multimedia content arrives as an email enclosure and requires a 3GPP or 3GPP2 player to view the message. QuickTime Player is the ideal solution for desktop mobile video playback: It has massive distribution, is very easy to use, and provides native support for 3GPP and 3GPP2.



QuickTime Player. The free QuickTime Player is an easy-to-use application for playing, interacting with, or viewing any video, audio, or graphics file that is compatible with QuickTime. Whether 3G audio or video content is created on the phone or the desktop, QuickTime provides the playback solution for both the Macintosh and the PC. 3GPP and 3GPP2 files sent to the desktop can be stored for future use, minimizing storage requirements on the handset.

Key benefits of QuickTime mobile messaging

- QuickTime Player provides native support for playback of multimedia messages on Mac and Windows computers.
- QuickTime Pro makes creation of mobile multimedia content easy for consumers.
- Final Cut Express enables more complex content creation for prosumers and advanced users.



KDDI, a leading Japanese mobile operator, chose QuickTime and QuickTime Pro to enable their Movie Mail and EZ-Web services. Movie Mail users can play back content from their handsets using QuickTime and create content to send to friends using QuickTime Pro.

Using KDDI's 3G CDMA2000 network, EZ-Web users can download and play multimedia content at broadband speeds of up to 2.4 Mbps from a broad range of content providers who use QuickTime Pro and other QuickTime-based applications.

Creation of mobile multimedia messages

As mobile service providers' networks evolve, more and more consumers will be able to author content on the desktop and share it with friends and family over 3G networks. Apple provides a range of tools for consumers to author 3GPP and 3GPP2 content for delivery to mobile devices:

QuickTime Pro. This invaluable cross-platform tool provides consumers with a host of editing and encoding capabilities. The export dialog walks users through creation of their own 3GPP and 3GPP2 files. They can choose video and audio settings such as frame size and format and add 3G Text tracks, all part of the 3G standard. QuickTime Pro allows consumers to transcode personal content to and from a vast array of formats for use in nearly any arena, from 3G to CD-ROM, broadcast, and beyond.

iMovie. iMovie, part of Apple's iLife suite included with every Mac, provides consumers with everything they need to produce their own 3GPP and 3GPP2 movies, complete with titles, transitions, soundtracks, and special effects. It's ideal for creating movies of vacations, birthday parties, picnics, highlights of a child's sport season, and special events and occasions of all kinds. Because iLife applications are so well integrated, it's easy to combine video footage and digital photos from iPhoto into a single movie. Once the movie is complete, it's easy to export to a variety of delivery formats suitable for DVD, Internet, email, and mobile playback.

Final Cut Express. Featuring the same interface as the Emmy Award-winning Final Cut Pro, Final Cut Express is a robust editing solution for digital video (DV) enthusiasts. It provides professional-level editing, compositing, and real-time effects for full-featured DV editing. Final Cut Express is an innovative combination of power, ease of use, and affordability for mobile content creation.



Sprint, the market leader in wireless mobile video services in the U.S., certified Apple's world-class mobile multimedia platform for their Sprint PCS Vision(SM) Multimedia Service. QuickTime Pro, Xserve, and QuickTime Streaming Server are now compatible with Sprint's 3G network, allowing professional content providers to create and deliver streaming audio and video clips to Sprint customers.

The Sprint PCS Vision(SM) Multimedia Service offers more than 600 new streaming multimedia clips a day from familiar sources such as CNN, NBC Universal, FOX Sports, The Weather Channel, E! Entertainment, mFlix, and Twentieth Century Fox.



AT&T Wireless recently launched its 3G UMTS network in the U.S. With UMTS, AT&T Wireless customers can now experience advanced wireless services, including streaming multimedia content at speeds up to 384 Kbps. The QuickTime multimedia publishing solution was certified by AT&T Wireless as a cost-effective and scalable platform for professional content providers to create and deliver audio and video streams to mMode customers.

mMode offers a host of high-speed, premium streaming and downloadable video and audio entertainment services, including ABC News, NPR News, and CBS Marketwatch, as well as prime-time TV, movie reviews, and more.

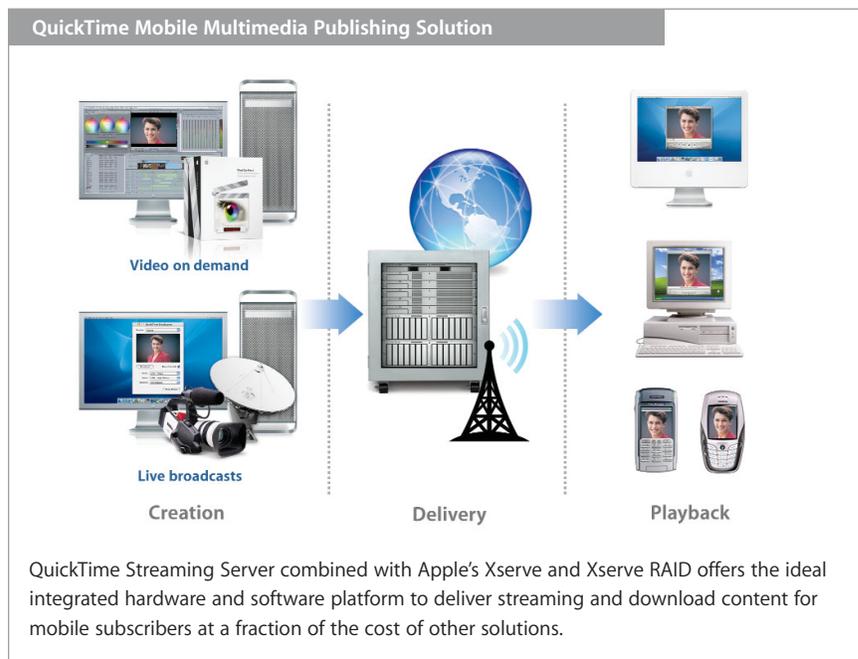
QuickTime Mobile Multimedia Publishing Solution

Apple's mobile multimedia publishing solution is an end-to-end suite of hardware, software, and support products that provides mobile operators and content developers with the ability to create, manage, and deliver multimedia for successful mobile content services.

Built on standards and designed for scalability, QuickTime products offer the ideal integrated platform for the deployment of compelling content for mobile subscribers at a fraction of the cost of other solutions.

Apple provides the essential components for publishing mobile content:

- Professional content creation tools for capturing, editing, and encoding rich media for delivery over wireless networks
- High-performance, scalable server and storage hardware products designed for media delivery over GSM- and CDMA2000-based networks
- An award-winning UNIX-based server operating system, combining the latest open source technologies with Apple's industry-leading manageability and ease of use for integration into almost any network environment
- A license-free, industrial-strength, standards-based streaming server for delivering mobile multimedia in real time via standard RTP/RTSP protocols and an Apache web server for serving content via HTTP download
- An integrated, low-cost hardware and software solution with an unlimited-client license and no per-stream fees
- Comprehensive, IT department-level technical support for server hardware and software





SmarTone

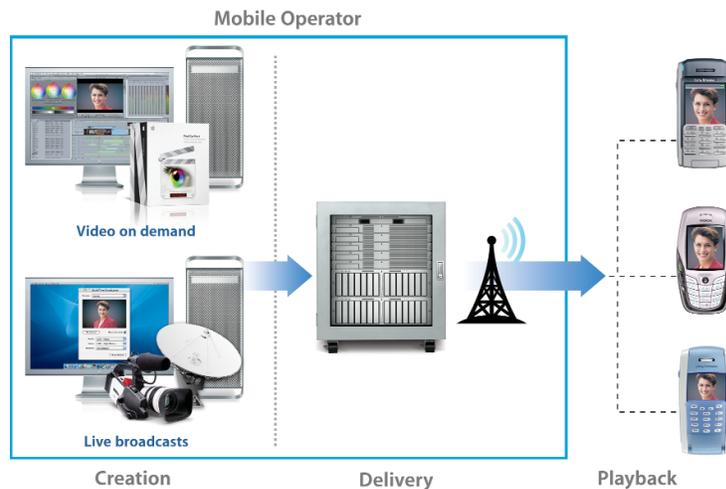
SmarTone, Hong Kong's leading data services mobile operator, selected Xserve and QuickTime Streaming Server as the mobile delivery platform for their ground-breaking multimedia service SmarTone IN. SmarTone IN's Video World offers its customers the widest choice of mobile video entertainment, ranging from sports to movies, fashion, and more, streamed directly to the handset via Apple's QuickTime multimedia publishing solution.

Flexible architecture to support a range of publishing models

Apple's mobile multimedia solution supports a wide range of operator content strategies, from internal infrastructure build-outs to more leveraged methods in which content providers and partners play a greater role in creating and delivering mobile multimedia.

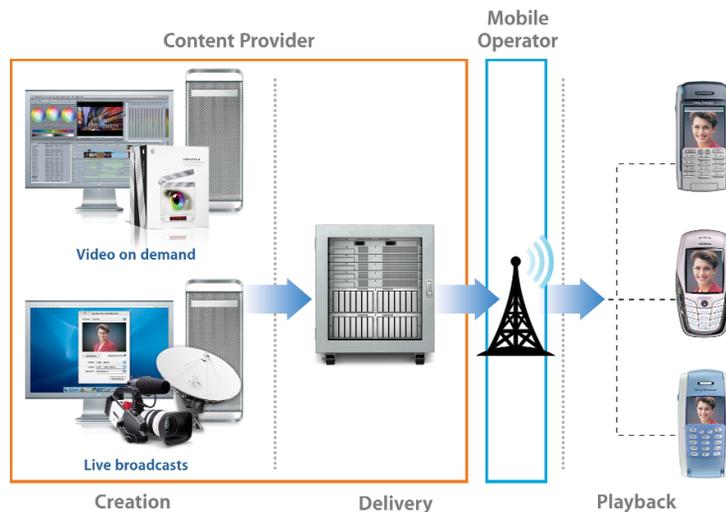
In-house publishing

Many mobile operators choose to develop and deploy a comprehensive set of mobile multimedia services using their own brand and in some cases their own content. Apple hardware and software products are an ideal investment for mobile operators: They are low cost, easy to manage, and UNIX based, and they support a range of open standards and protocols.



Partner aggregation

For mobile operators who want to leverage the infrastructure of partners, a common content strategy involves the aggregation of content from third-party providers. Apple hardware and software products are an ideal investment for content providers: They are low cost, easy to use, and don't require UNIX expertise to deploy and manage.



Professional content creation

Apple offers the ultimate tools for authoring high-quality 3GPP and 3GPP2 content.



Power Mac G5. The 64-bit professional dream machine.



Apple Cinema HD Display. A high-definition 30-inch LCD display with 2560-by-1600 resolution.



Final Cut Pro HD. A non-linear video editor that provides powerful and flexible tools for professional video and audio creation.



Mac OS X v10.3 "Panther." The latest release of Mac OS X, delivering rock-solid UNIX-based performance with an intuitive user interface and robust video and graphics support.

Mobile multimedia publishing components

Deploying successful mobile multimedia services requires a standards-based, integrated hardware and software solution allowing rich media to reach the maximum number of subscribers. Apple's comprehensive lineup of hardware and software products provides mobile operators and professional content creators with all the tools they need to create and deliver rich content to mobile subscribers.

Media creation

To ensure interoperability with the widest variety of mobile devices and handset media players, content for delivery over next-generation wireless networks must be created in either the 3GPP or 3GPP2 standard format. Apple products give content creators the tools to capture, edit, and encode files in all standard mobile formats for live and on-demand delivery over wireless networks.

Final Cut Pro HD. Final Cut Pro HD includes the editing tools professional editors expect: extensive compositing capabilities, motion graphics, and effects and an incredibly robust real-time effects architecture. It provides superb audio support, broadcast titling, advanced color correctors, and image controls for finishing broadcast projects. The comprehensive media manager makes working with complex projects and large numbers of clips simple. Because Final Cut Pro HD is built on the QuickTime architecture, 3GPP and 3GPP2 capabilities are instantly available to encode content for mobile networks.

QuickTime Pro. This invaluable cross-platform tool provides consumers and professionals with a host of easy-to-use editing and encoding capabilities. The export dialog walks users through creation of their own 3GPP and 3GPP2 files. They can choose video and audio settings such as frame size and format and add 3G Text tracks, all part of the 3G standard. QuickTime Pro allows users to transcode personal content to and from a vast array of formats for use in nearly any arena, from 3G to CD-ROM, broadcast, and beyond. This simple, low-cost software is easily accessible from QuickTime Player by millions of users.

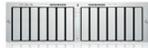
A variety of professional Mac and Windows authoring tools. In addition to the products created by Apple, there are a wide variety of third-party tools built on the QuickTime architecture for creating live and on-demand 3GPP and 3GPP2 content for both Mac and Windows.

Media delivery

Apple offers a robust, standards-based media delivery platform for mobile operators and content providers.



Xserve. Rack-optimized servers with phenomenal power, storage capacity, high-bandwidth I/O, and remote management tools.



Xserve RAID. Massive storage in a rack-optimized 3U enclosure that delivers up to 3.5TB in a flexible, high-performance architecture.



Mac OS X Server. UNIX-based server operating system that melds the most popular open source technologies with the latest version of BSD.



QuickTime Streaming Server. Industrial-strength, license-free, and standards-based streaming server that delivers media in real time over mobile networks.

Mobile multimedia delivery

Much like delivery over the Internet, mobile content is typically delivered in one of two ways: HTTP download or real-time streaming. Right out of the box, Apple's server hardware and software products come equipped with everything needed for deploying either service to mobile subscribers. Because of strong support for standards in QuickTime, content created and delivered using Apple solutions can be played back on any mobile player that supports 3GPP or 3GPP2.

Mac OS X Server. Mac OS X Server is Apple's award-winning UNIX-based server operating system that combines the latest open source technologies with Apple's industry-leading manageability and ease of use. Providing standards-based services from Apache to RTSP streaming, it is both easy and affordable to integrate into existing network environments.

QuickTime Streaming Server. QuickTime Streaming Server (QTSS) is Apple's industrial-strength, license-free, standards-based streaming server for delivering media in real time over IP networks. Using the open standard RTP/RTSP streaming protocol, QTSS provides native streaming of MPEG-4 and 3GPP files—ideal for reaching the widest range of media players and handsets around the world. Massively scalable and customizable, QTSS fits into almost any network environment with no per-stream or per-CPU licenses.

Xserve G5. Designed from the ground up for performance, serviceability, and easy integration into a wide variety of environments, Xserve G5 provides enormous processing power and ample storage in a compact 1U enclosure. Together with dual 64-bit processors, these features make Xserve G5 the ideal platform for streaming media.

Xserve RAID. The perfect companion to Xserve, Apple's Xserve RAID is a 3U rack storage system that delivers a massive 3.5 terabytes of storage capacity, blazing performance of up to 210-megabyte-per-second throughput, and the industry's most aggressive price for storage at just over \$3 per gigabyte.

AppleCare service and support. When operations hinge on network availability, media professionals can't afford server downtime. To ensure rapid issue resolution for server deployments, Apple offers a comprehensive range of technical support plans for Xserve hardware and Mac OS X Server software.

Deploying mobile multimedia services

Regardless of whether operators choose in-house publishing or the partner aggregation strategy, the integration of the QuickTime mobile delivery solution into a mobile network is a multistage process that includes network testing, production network trials, and ultimately a full deployment.

Network test

Stage one of the deployment process typically involves the integration of Apple hardware and software on a test network with sample content files or a single live feed. The goal of this phase is to ensure compatibility with an operator's network, resolve any firewall configuration issues, and test playback with a defined number of target handsets.

Recommended configuration:

- One video-on-demand encoding system—dual processor Power Mac G5
- One live encoding system—dual processor Xserve G5
- One streaming server—dual processor Xserve G5

Production network trial

The second stage of integration involves the deployment of Apple hardware into the data center, connectivity with a live production network, and a variety of content types. The goal of this phase is to refine the content production process, test integration with content management systems, and provide a platform for end-user trials.

Recommended configuration:

- Two video-on-demand encoding systems—dual processor Power Mac G5
- Two live encoding systems—dual processor Xserve G5
- Four streaming servers—dual processor Xserve G5

Full deployment

The final stage of integration builds on the previous steps and adds load-balancing and redundancy measures, integration with billing and authentication systems, and content management of multiple video-on-demand and live content sources. To determine the optimal configuration for your needs, please send email to mobilesolutions@apple.com; an Apple representative will contact you.

QuickTime: The Perfect Mobile Delivery Solution

Because of its robust, standards-based content creation tools, its popular, easy-to-use desktop media player, and its powerful and affordable integrated hardware and software platform for streaming and download, QuickTime is the most versatile solution for professional and consumer multimedia content creation, delivery, and playback on a Mac or PC. From the desktop to the data center, Apple's support of the latest mobile standards positions the QuickTime mobile delivery solution as an integral part of mobile data services worldwide.

Features

Benefits

Client software: QuickTime Player

Cross-platform compatibility	Runs on Mac and Windows computers
Native support for playback of mobile multimedia standards	Supports playback of 3GPP and 3GPP2 formats
Wide support for playback of mobile media types	Supports playback of MPEG-4, H.263, AAC, AMR, QCELP, and 3G Text

Encoding software: QuickTime Pro

Cross-platform compatibility	Runs on Mac and Windows computers
Native support for encoding of mobile multimedia standards	Supports encoding of 3GPP and 3GPP2 formats
Wide support for mobile media types	Supports encoding of MPEG-4, H.263, AAC, AMR, QCELP, and 3G Text

Server software: Mac OS X Server

UNIX-based foundation	Based on the Mach 3, FreeBSD 4.8 kernel
Open source made easy	Incorporates the latest open source technologies, including Apache, OpenLDAP, MySQL, and more
High availability	Maximizes the availability of network services with sophisticated fault resilience and recovery capabilities, including IP failover, file system journaling, and software RAID
Robust management and monitoring tools	Server Admin, providing an intuitive interface for securely managing and monitoring Mac OS X Server SSH2 for secure remote administration from the command line SNMPv3 support for integration with third-party monitoring and management software
Content management	QTSS Publisher for managing server-side media WebDAV support

Server hardware: Xserve G5

High performance	64-bit processing power with PowerPC G5 architecture Support for up to 8GB of 400MHz ECC RAM
High-bandwidth server architecture	1GHz frontside bus per processor for up to 16GB/s of throughput Dual onboard Gigabit Ethernet interfaces Dual FireWire 800 interfaces Serial ATA storage with three independent, high-performance 150MB/s Serial ATA drive controllers
Innovative hardware monitoring	38 embedded hardware sensors for monitoring everything from fan speed to temperature SNMP for integration with third-party monitoring and management software
Flexible storage	Support for up to 750GB of storage and three hot-swappable drives
Affordability	Unlimited-client-access license for Mac OS X Server included with Xserve

Features

Benefits

Storage: Xserve RAID

Massive storage	Support for 14 hot-swappable drive modules for up to 3.5TB of storage
High-availability design	Redundant hot-swappable power and cooling modules
Fast data access	Sustained throughput up to 336MB/s; dual independent RAID controllers
Intuitive management and monitoring tools	Java-based RAID Admin for building, managing, and repairing Xserve RAID from anywhere
Advanced data protection	Support for RAID levels 1, 3, 5, and 0+1 Hybrid support for RAID levels 10, 30, and 50

Streaming software: QuickTime Streaming Server

Flexible delivery methods	Live, simulated live, and on-demand streaming
Standard file formats	Support for native hinted MPEG-4, 3GPP, and 3GPP2 streaming
Standard delivery mechanisms	Serving via RTP/RTSP Support for both unicast and multicast transport
Industrial-strength performance	Support for over 10,000 simultaneous streams from a single Xserve* Relay support for scaling the delivery of streams by forwarding streams to additional servers
Open platform	Plug-in APIs for writing modules to customize the server (C++ or C) Darwin streaming server open source available
Economical delivery	No streaming license fees
Flexible administration	Mac OS X Server Admin for administering QTSS from any Mac OS X system Secure web-based administration for managing and monitoring QTSS from any web browser Command-line administration
Full logging support	Ability to view logs in standard W3C format Real-time access to information such as number of connected users, processor usage, and bandwidth consumption Ability to check for problems via full-spectrum error logging

Service and support

Mac OS X Server Software Support	IT department-level support options to maximize server uptime 24/7/365 telephone support and 1-hour response time
AppleCare Premium Service and Support for Xserve and Xserve RAID	24/7/365 telephone and email support 4-hour onsite hardware repair coverage
AppleCare Service Parts Kit for Xserve and Xserve RAID	Quick and easy swapping of crucial parts with no special training or certification Xserve G5 kit includes logic board, power supply, PCI fan, and fan array Xserve RAID kit includes RAID controller module, power supply, cooling module, and 250GB Apple Drive Module

For More Information

For more information about QuickTime products and 3GPP technologies, visit www.apple.com/quicktime or www.apple.com/quicktime/mpeg4/3gpp.

For more information about Apple server solutions, visit www.apple.com/server.

For information on QuickTime mobile business opportunities, send email to mobilesolutions@apple.com.

*Tests were performed with modem-rate live streams on a dual 2GHz Xserve G5 running Mac OS X Server v10.3.

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