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White Papers

RealSystem G2 Overview

I. Overview

RealSystem G2 is a complete streaming solution that provides the richest streaming media experience for end-users over all bandwidths. For developers, it is an open, standards-based, extensible platform for application development. For broadcasters, RealSystem is the most reliable, versatile and thoroughly tested system, that delivers the highest quality audio and video, and supports a wide variety of intranet, Internet and commerce applications. For content producers, it provides a unique set of tools and system capabilities that allow rich, Internet programming that blends multiple media types into one presentation.

II. The RealSystem G2 Highlights

Highest Quality Audio and Video
RealSystem G2 codecs have been substantially enhanced to offer outstanding quality at all bit rates and under lossy network conditions. The new RealAudio G2 music codec enhances frequency response by 80% for 28.8 modem users. RealAudio and RealVideo files now automatically scale to all bandwidths, and, using RealSystem G2's SureStream� technology, bitrate is dynamically adjusted to match available bandwidth, eliminating rebuffering.

Rich New Multimedia Experiences
The addition of two new datatypes (RealText and RealPix) as well as full support for SMIL (Synchronized Multimedia Integration Language) create professional, compelling multimedia that has broadband impact at narrowband delivery rates. Authors can create content combining smooth scrolling text with selectable fonts and colors, high resolution images using powerful transition effects, along with streaming audio, video, or even animation. RealSystem G2's open architecture allows new datatypes to be added, such as MIDI, VRML, and MPEG.

Next Generation RealPlayer G2
A preview release of RealSystem G2 will be made publicly available in May. RealPlayer G2 will offer consumers unparalled ease of use and control over their experience. Channels will give one-click access to over 60 leading media content providers and will show dynamically generated "Headline" text from each channel. New presets will allow users to conveniently organize and access favorite content. AutoUpdate will enable the RealPlayer G2 to intelligently update itself to the newest version in the background, eliminating the need for re-installation of the application during upgrades. New video and audio controls will allow RealPlayer Plus G2 users to fine-tune their multimedia experience using a 10-band graphic equalizer, audio waveform display, and contrast/brightness/saturation adjustments.

Open, Extensible Standards-based System
RealSystem G2 is the first media system to implement two important industry standards, RTSP (Real Time Streaming Protocol), a client/server transport protocol, and SMIL (Synchronized Multimedia Integration Language), a multimedia layout and integration language. Additionally, native support for standard media types is offered as well as support for standard client technologies.

III. The Products

RealSystem G2 is a complete open and extensible system, based on standards, that enables the richest multimedia experience available on the Internet and intranets today. The system is comprised of Players, Servers, and Tools and includes free entry level as well as revenue generating, advanced full-featured products in each of these system component areas.

III.A RealPlayer G2 and RealPlayer Plus G2

Since the launch of RealAudio1.0 in 1995, RealAudio and RealVideo products have become the most popular streaming media solutions on the Internet. Over 200 million RealPlayers have been downloaded from RealNetworks Web site, at a current rate of more than one download per second.

Watch for the next generation of RealPlayer to deliver compelling new features to create the richest multimedia experience available. RealPlayer G2 and RealPlayer Plus G2 users will have more control over their experience and higher quality delivered content than ever before.

- **New RealAudio G2 codecs offer significant improvements in quality**
  End users can experience high quality audio and video during periods of lossy network conditions and over 28.8 Kbps network connections. RealAudio G2 music codec offers amazing improvements in audio quality.

- **SureStream™ technology delivers new levels of reliability**
  RealSystem G2 eliminates objectionable rebuffering by dynamically reducing stream bandwidth to match available capacity. RealAudio files can now scale from 14.4Kbps to 56Kbps smoothly enabling access to content from the widest range of network access rates.

- **Powerful new classes compelling multimedia content and presentation**

RealText, high impact static and live text, can be added to multimedia presentations and offers smooth scrolling, selectable fonts and colors. SMIL allows choreographed presentation of multiple datatypes.

□ **Easy access to great content, greater control over audio and video playback**
Using Channels, users have one-click access to content from 60 leading media providers and can browse headlines dynamically generated from these sources. Presets offer the ability to for users to conveniently organize and access favorite sources. New Graphic Equalizer, waveform display, and video controls allow users to fine-tune their experiences.

□ **AutoUpdate keeps Players at newest version automatically**
Users can now take advantage of the most current versions of software through automatic notification and background installation, eliminating the need to reinstall the entire application. Needed datatypes or other new components are securely downloaded when required.

III.B RealSystem G2 Servers

RealSystem G2 streamlines the process of deploying streaming media for site adminstrators, and dramatically improves accessibility of content and quality of experience for site consumers. Built on a proven track record, RealSystem G2 enables broad scale distribution of content, adaptability for Internet and corporate intranet usage, and support for revenue generation. RealSystem G2 introduces to the streaming media market a powerful, extensible server, including:

□ **Standards-based architecture**
Delivers the first media-system implementation of two industry standards (RTSP and SMIL) that provide the basis for interoperability with legacy and future systems along with multi-vendor support.

□ **Open and extensible architecture**
Allows third party development of client and server applications, utlities and datatypes.

□ **SureStream™**
Enables the author to encode only once, but allows the server to deliver at any fixed or changing bandwidth without stream breakup or pauses (rebuffering).

□ **SMIL-based server-side media presentation layout**
Enables the server to deliver and choreograph multiple live and pre-recorded events, graphics, ads, and text feeds into a single compelling presentation.

□ **Improved audio and video codecs**
Providing better quality RealAudio at all bit-rates and lossy network environments, and better frame rates and image quality for RealVideo.

III.C RealSystem G2 Tools

Authors can take advantage of the compelling new codecs and presentation/layout capabilities of RealSystem G2 to create rich multimedia content. Key tools capabilities offered in RealSystem G2 include:

□ **RealAudio G2 codecs with significantly improved quality**
RealAudio G2 music codecs offer amazing quality at all bitrates and under lossy conditions.

□ **"Encode once" feature**
Allows a single RealAudio or RealVideo file to scale to all bandwidths, reducing production complexity and minimizing administration efforts.

□ **SMIL Wizard**
A template driven tool for creating advanced multimedia presentations using SMIL, the new media layout standard from the W3C.

□ **RealProducer SDK and Active X Control**
Software Developer Kit (SDK) that exposes API's to third parties to integrate RealAudio and RealVideo compression into their tools and applications for both real-time and static encoding.

III.D The Data Types

RealSystem G2 includes improved versions of RealAudio, RealVideo and adds two new important data types, RealPix and RealText. In addition, RealSystem G2 now supports many new streaming third-party data types and standard media types.

□ **RealPix**
Allows existing image formats like JPEG to be easily added to presentations, offering powerful transition effects and overlay capabilities. RealPix allows content creators to be only a scanned image away from compelling streaming multimedia.

□ **RealText**
Allows both static and live XML-compliant text to be added to presentations with powerful effects like smooth scrolling, selectable fonts, and selectable colors.

□ **RealVideo**
Available with smoother video playback using post-filtering which scales to client CPU capability, automatic bitrate scalability across all

Offering 80% greater frequency response for 28.8Kbps modem connections, and dramatically increased packet loss tolerance using sophisticatd interleaving and loss interpolation techniques.

☐ **Real G2 with Flash**
Combines the compelling animation technology from Macromedia with the leading streaming media technology from RealNetworks to deliver high quality animation synchronized with RealAudio.

☐ **Third party datatypes**
Extensive 3rd party support delivers new datatypes such as VRML, MIDI, MPEG, and more from leading developers such as Iterated Systems, LivePicture, LiveUpdate, Macromedia, OZ, and P7.

☐ **Standard datatypes**
A wide range of standard media types include AVI, WAV, ASF, VIVO, MPEG, JPEG, AU, AIFF

IV. Summary

RealSystem G2 provides the most powerful next generation media delivery system, creating the richest streaming multimedia experience on the Internet and corporate intranets today. This extensible open system built on industry standards is a powerful, generalized system for third party and corporate application developers.

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