



General Technology FAQ

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General Technology Questions

Why helloNetwork?

By employing new technologies and an advanced architecture, helloNetwork's innovative Streaming Media Platform eliminates several significant hurdles that have limited the success of streaming media to date. The following key advantages illustrate the value of helloNetwork's platform:

Easy to Use: audience doesn't have to work to watch

- No downloads, plug-ins, player installations, or upgrades required
- 'Click and play' or 'arrive playing' functionality

Ubiquitous: Multi-platform, multiple bit rate, Java-based solution

- Greatest reach of target audience
- Encode once, stream anywhere: platform reaches any Java-enabled web browser, mobile phone, PDA or set-top box
- Assured delivery: HTTP streaming via port 80 penetrates existing corporate firewalls and proxies
- Optimized for available bandwidth, including low bandwidth wireless networks and dial-up connections

Innovative: versatile, flexible, extensible

- Breakthrough streaming media platform enables both live and on-demand content
- Flexible architecture: codec agnostic, transport neutral, platform independent
- Extensible architecture: with helloNetwork's robust stream generator development software, helloStreamGen and helloMobileStreamGen, developers can customize, extend, and integrate the helloNetwork platform to meet specific business needs

Easy to Deploy: Cost-effective deployment and management

- Dynamic upgrades and easy-to-implement installations
- Scalable over large user/subscriber networks, even with inexpensive infrastructure configurations
- Cost-efficient solution allows a single platform with greater reach than existing solutions to do the work of multiple complex, resource-intensive systems

Ready-to-Go: a platform for today and tomorrow

- Works over today's wireless (2G and 2.5G) and wireline networks
- Forward compatible with 3G and future networks
- Technical support and helloNetwork's Professional Services Group enable any business to start streaming today

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Do I have to upgrade my clients (viewer) every time there is a new version?

No. We offer streaming media technology that does not require any plug-ins, downloads or player installations. Unlike Real, Windows Media and Quick Time there is no need to touch a client's machine. All of the player upgrades are done on the server side and the viewer simply gets the new applet (player) the next time a stream is viewed.

What client (viewer) configuration is required?

None. The beauty of a Java solution is that the entire configuration is done on the web page where the applet resides. Changes to the applet are automatically incorporated into the stream the next time the web page is accessed. The viewer is required to use a Java enabled browser.

Are there any inherent securities issues when using a Java applet?

Java has built-in security making viruses and security issues extremely rare. Unlike many forms of "executable" code, Java runs in a software "sandbox" in the browser that prevents it from gaining control of the computer. As a result, Java viruses have been rare.

Motoaki Yamamura, development manager for the antivirus software maker Symantec Corp., estimated that about a dozen Java viruses have been found by researchers, compared with thousands based on the "macro" programming features of Word and Excel.

"The threats that I would put at a red-alert level have been zero in the Java category," added Bob Hansmann, enterprise software manager for Trend Micro Inc., another antivirus specialist in Cupertino, Calif.

Will my firewall prevent the application from working?

Generally the application will not be affected by a firewall. Our software solutions are designed to utilize port 80 and therefore are routinely passed along as normal Internet traffic. However, administrators have the ability to set firewalls to interrogate or block Java applets. Firewalls can also be set to block file formats as well as block entire IP or domain names. Administrators may also prevent or restrict the streaming connection time. Although it is possible for the administrator set the firewall in these manners, in our experience, these settings are the rare exception and not the norm.

What is the backend of your software and how is it implemented and delivered, Multicast or Unicast?

Currently our software is only Unicast enabled. New versions for Multicast enabled networks as well as increased caching and routing technology to take advantage of high-speed networks are currently part of the product roadmap.

Will your software work with my current CDN?

Our goal is to produce software that powers IP communication solutions to a wide variety of connected devices. We feel that CDNs are positioned as large prospective customers of helloNetwork's solutions. Our helloOnDemand software, which streams archived content,

can currently be delivered over any CDN provider including Akamai and Digital Island because it has the same characteristics as a flat file.

The helloLive software requires specialized server software. At this time no CDN infrastructure service has implemented our helloLive software into their infrastructure.

How much bandwidth do I need?

That depends if you stream internally on your Intranet or externally over the Internet. The amount of viewers and at what speed the stream is served will also determine the amount of bandwidth required. Our technical staff will help you determine the exact hardware and bandwidth requirements for your event.

Does your application run on the MAC OS?

helloNetwork's testing has been limited with the Mac due to documented support issues with the Mac and Java applets. These issues are not specific to our software, as the Mac is having problems working any Java applet. However, we have had success running our software with certain revisions of particular operating systems. For example, our product has worked on Mac OS 9. Due to the difficulties that Mac is having with Java, helloNetwork currently has limited information regarding the Mac OS but will continue with its development efforts in the Mac environment.

Is the MPEG format a threat to Java enabled software?

No. MPEG-4 is a great deal more than a simple series of audio and video codec profiles. MPEG-4 is an open specification addressing an entire multimedia delivery architecture to both wired and wireless devices. MPEG-7 and MPEG-21 extend these concepts. As such, the MPEG-4 standard is not a competitor of helloNetwork. Companies designing solutions on this standard, such as Emblaze and PacketVideo, are competitors. However, because of the massive player-side requirements and generally poor performance of their product offerings it appears that these competitors' solutions are not credible mechanisms for the delivery of multimedia content over cellular networks.

helloNetwork's streaming media architecture is designed to be as open and flexible as possible. In line with this vision, the platform is platform agnostic, transport agnostic and codec agnostic. helloNetwork currently supports an implementation of the DivX codec which is MPEG-4 compliant.

What's your real competition, especially among the companies based on Java-enabled software?

There are a number of Java-based "competitors" in the market today. However, because of a significant lack of depth and breadth to their product offerings, helloNetwork has a large technology lead. These competitors lack production-ready live streaming media offerings, production-ready wireless solutions and the strong financial and management backing of helloNetwork.

What file formats are supported as a video or media source within your software?

As a stand-alone application, the helloOnDemand File Encoder can encode AVI (.avi) and WAV (.wav) files without supplemental software support.

helloOnDemand supports other source media formats by using the Java Media Framework (JMF) 2.1.1, which is provided as an option during installation. The JMF is an application programming interface (API) that enables audio, video and other time-based media to be added to Java applications and applets. By using the Java Windows Performance Pack, other media file formats can be encoded through the file encoder as well. The other file formats are first converted into AVI files and then accepted as proper source media formats by the File Encoder. For additional information on supported media formats with JMF 2.1.1, refer to the Windows Performance Pack column in the table located at:

<http://java.sun.com/products/java-media/jmf/2.1.1/formats.html>

In order to create a live broadcast, you will need a video source from a camera or video capture device as well as an audio source from a microphone or headset.

What type of skill-set requirements will our programmers need to create applications with your software?

Basic skill sets are:

- Basic knowledge of web server configuration
- Some experience with Java applets and JavaScript
- Database experience with the chosen database platform – the amount of experience will be determined by the level of database customization required.
- Knowledge of HTML

What about Windows XP and Java support?

Microsoft is reducing the support of Java in the new release of Windows XP. Microsoft is prohibited by the courts from enhancing their JVM, which is the main reason for their decision to eliminate the support of the JVM within their software. The immediate impact on our technology due to this decision will not be significant. Below are four considerations that will reduce the long-term impact of this issue on our products.

- Microsoft has already stated that some OEM manufacturers, such as Dell and Compaq, are going to ship new PCs with the JVM already installed.
- The JVM is a generic plug-in and will be used by the end user to display content on many web sites and other types of Java content. This can be related to having to download a browser to view Internet content. When someone changes a web site's content, you are not required to download the browser again. It is important to make the distinction that this plug-in is not specific to the helloNetwork product suite.
- This only affects new PC buyers with the Windows XP platform or fresh installs of the Windows XP platform, that have not installed the JVM plug-in. Any user that upgrades

to Windows XP or upgrades to a newer version of Internet Explorer will automatically retain the JVM plug-in.

- If a user does a full download of Netscape 6.x then the Java Runtime Environment (JRE) 1.3.1 will be installed, which includes the JVM. The JVM will then be accessible by IE on their machine. This is significant as AOL and Netscape are both members of the Time Warner Company. AOL currently has over 30 million subscribers most of whom are consumers. Should AOL start shipping prepackaged with Netscape or the JVM, this will significantly reduce the number of consumers who would not already have the JVM plug-in.

There is a bright side to this decision. JVMs installed by OEMs (Compaq, Dell etc.) and installed by end users will be the latest version and not Microsoft's version, JVM 1.1. The major issue with JVM 1.1 is that it only allows for 8khz mono sound. The updated version (JVM 1.3) will allow users to experience full stereo sound as well as a fistful of other less obvious improvements in performance.

Do you currently support stream thinning and/or bandwidth negotiation?

Stream Thinning creates content that can be accessed at multiple data rates. helloLive, helloNetwork's live streaming media product, has the capability to accept a content stream and "thin" the media data until the content can be delivered to additional lower bit rates. For example, a live broadcaster can use a single station to webcast to a diverse audience. The broadcaster needs to broadcast at 300 kbps, 80 kbps and 40 kbps. During the broadcast the live encoder and server execute a series of complex algorithms and repackage less data-rich media streams to satisfy 80 kbps and 40 kbps viewers, in addition to the broadband 300 kbps audience. helloNetwork's latest production release of helloLive restricts stream "thinning" to video frames of the same size. However, video scaling, providing different video frame sizes at the various bit rates, is targeted as an enhancement in the near future. helloNetwork is also targeting stream "thinning" as an enhancement to helloOnDemand, our recorded streaming media product.

Bandwidth Negotiation adjusts the stream that the user is accessing dynamically to ensure delivery of the content at the most appropriate bit rate. This dynamic process of bandwidth negotiation will continually monitor the player's network conditions and act in time of network congestion or network availability. helloNetwork is working to support this functionality in both helloLive and helloOnDemand. helloNetwork currently offers a one-time bandwidth estimation when a viewer first accesses the content and directs them to the content most appropriate for the user.