

Service Provider Enables Lower Cost Coverage of National Party Conventions

Genesis Networks used its video-over-IP backbone to provide global video transmission services for Reuters Media customers.

EXECUTIVE SUMMARY

GENESIS NETWORKS, INC

- Service Provider
- New York headquarters
- 75 employees

CHALLENGE

- Give Reuters Media customers the flexibility to extend coverage or increase number of feeds
- Help ensure network reliability
- Offer competitive price point

SOLUTION

- Built a global video-over-IP backbone and used advanced video-encoding technology

RESULTS

- Offered a more cost-effective and flexible video transmission solution
- Gained a competitive advantage over satellite-only service providers
- Reduced customers' costs by an estimated 20 to 50 percent

Challenge

Founded in 2001, Genesis Networks, Inc. provides managed video transmission services for broadcasters and has more than 170 points of presence in 20 countries. Customers include leading global sports and news organizations around the world.

Reuters selected Genesis Networks to provide video distribution services for its media customers to cover the United States Democratic National Convention held August 25-28, 2008 in Denver, Colorado and the Republican National Convention held September 1-4, 2008 in Minneapolis/St. Paul Minnesota. To cover past conventions, service providers had to dispatch a satellite truck to the convention venue and deploy a large team of engineers and production specialists to facilitate transmission to global video

distribution sites. Broadcasters had to reserve satellite bandwidth capacity for a fixed amount of time with limited options to increase or decrease bandwidth or extend the time. "Because broadcasters cannot increase the amount of satellite bandwidth during an event, they tend to buy more bandwidth than they need, just in case," says Antonios Moshonas, senior network engineer, Genesis Networks.

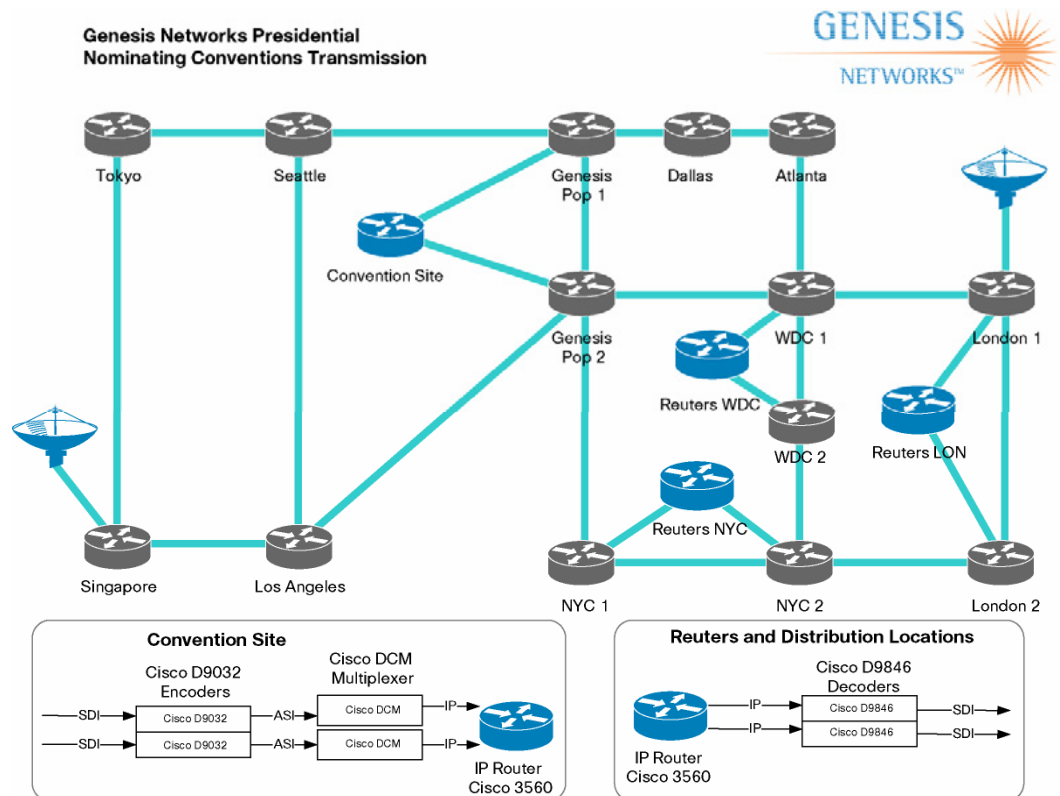
Improved fiber quality has strengthened the appeal of IP for video transmission because the signal does not degrade over distance as it does with satellite transmission. "Satellite was the preferred medium five years ago, but today 40 to 60 percent of video is transmitted over fiber," says Chris Stocking, president, Europe, Genesis Networks. With an IP-based video transmission solution for the conventions, Reuters Media customers would be able to dynamically increase bandwidth to add more video feeds if unexpected events occurred at the convention and extend the time frame of coverage if the conventions continued longer than expected.

Solution

For the national party conventions, Genesis Networks used Cisco® routers, switches, and encoding solutions. "We chose Cisco because of the stability and scalability," says Moshonas. "In addition, we liked that Cisco has a team of experts that provide planning, preparation, design, and implementation services to help us meet our guaranteed uptime requirements."

The Genesis Networks platform is a global IP-based fiber optic video network that incorporates Cisco switches and routers (Figure 1). Layer 2 and Layer 3 Ethernet and IP protocols deliver dependability rivaling that of satellite networks. The network is fully protected with redundant equipment and diverse routing, including satellite backups in case of rare fiber outages. Service is monitored 24 hours a day at a Network Operations Center in Manhattan, New York. The highly reliable Layer 2 Ethernet infrastructure is built on traditional SONET protected circuits, for added reliability. Multiple levels of service protection include route and nodal diversity.

Figure 1. Genesis Networks Infrastructure Used for the Democratic and Republican National Conventions



Results

By transmitting video over Genesis Networks' Cisco-supported IP infrastructure, Reuters Media customers gained more flexibility and control in their coverage of the 2008 Democratic and Republican National Conventions, with superior quality at less cost. And by offering these benefits, Genesis has gained a competitive advantage as a video transmission solutions provider.

“With the Cisco solution, Genesis Networks can offer a turnkey solution, including broadcast-quality video, voice, and data services, all going out from one fixed point. One engineer can manage the network connection, providing a solution that is not only cost effective but also allows superior levels of quality, flexibility, and control.”

—Chris Stocking, President, Europe, Genesis Networks, Inc.

“With the Cisco solution, Genesis Networks can offer a turnkey solution, including broadcast-quality video, voice, and data services, all going out from one fixed point,” says Stocking. “One engineer can manage the network connection, providing a solution that is not only cost effective but also allows superior levels of quality, flexibility, and control. In summary, video transmission over fiber is quicker, better, and less expensive.”

“When an event happens in New York, bureaus throughout the world can receive the feeds right away over Genesis Networks’ global IP infrastructure. The broadcaster avoids the costs and delays of setting up satellite hops to various distribution locations.”

—Antonios Moshonas, Senior Network Engineer, Genesis Networks, Inc

Genesis Networks estimates that using IP for video transmission typically reduces costs by 20 to 50 percent. Additional savings result from not having to dispatch engineers to the remote distribution sites to set up satellite links, and much lower floor space requirements compared to a satellite truck. “All of our gear fits in an area the size of a travel road case, which is less than a single full rack,” says Brittany Neal, vice president, marketing and business development, Genesis Networks.

“When an event happens, bureaus throughout the world can receive the feeds right away over Genesis Networks’ global IP infrastructure,” says Moshonas. “The broadcaster avoids the costs and delays of setting up satellite hops to various distribution locations.”

Reuters used a subset of Genesis’ capabilities for the convention coverage. Other Genesis customers take advantage of additional benefits of the IP-based transmission package, including:

- **Web-based bandwidth provisioning:** Using Genesis Networks’ web-based IRIS software provisioning system, customers can book video feeds and reserve network equipment up to five years in advance and cancel up to a minute beforehand. The IRIS system interfaces with the Cisco routers to dynamically provision the needed bandwidth.
- **IP telephony:** Onsite broadcasting personnel at major events need reliable phone service between the venue and the production facility. Genesis Networks uses its infrastructure to offer voice and high-speed Internet, sparing customers from having to coordinate with multiple service providers.
- **Travel avoidance:** Using Genesis’ economical and flexible connections, broadcasters do not need to establish production facilities at the event venue. Instead, they can bring the feed from each camera to an established facility, such as a New York studio, and produce the show there. “Our customers can save the money that they would otherwise spend to send a team of people to live in hotels for the duration of the event,” says Stocking.
- **Flexibility to distribute video to three screens:** By transmitting video over IP, broadcasters have the option to package the same video content for broadcast TV, broadband Internet for viewing on PCs, and streaming video for viewing on handheld mobile devices.

PRODUCT LIST

Routing and Switching

- Cisco Catalyst 3560 Switch

Video

- Scientific Atlanta D9032 MPEG Encoder
- Scientific Atlanta Professional Decoder D9846
- Scientific Atlanta Digital Content Manager (DCM) D9900

Technical Implementation

Genesis Networks uses Cisco's latest video equipment to encode video at the event venues and decode it at the distribution sites. "The result is that we can deliver the highest quality signal transmission at any bit rate, and without unnecessary conversions," says Neal.

The Cisco solution supports a wide range of video

standards, including:

- Standard definition (SD): MPEG-2 from 1.5Mbps to 50Mbps and MPEG-4 or Windows Media from 256Kbps up to 20Mbps
- High Definition (HD): MPEG-2 from 10Mbps to 80Mbps, MPEG-4 or Windows Media from 6Mbps to 20Mbps, and JPEG 2000 for loss-less compression at very high bitrates
- Other standards: PAL, NTSC, Analog, Digital, DVB-ASI



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV
Amsterdam, The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

CCDE, CCENT, Cisco Eos, Cisco Lumin, Cisco Nexus, Cisco StadiumVision, Cisco TelePresence, Cisco WebEx, the Cisco logo, DCE, and Welcome to the Human Network are trademarks; Changing the Way We Work, Live, Play, and Learn and Cisco Store are service marks; and Access Registrar, Aironet, AsyncOS, Bringing the Meeting To You, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, CCVP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Collaboration Without Limitation, EtherFast, EtherSwitch, Event Center, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, iQuick Study, IronPort, the IronPort logo, LightStream, Linksys, MediaTone, MeetingPlace, MeetingPlace Chime Sound, MGX, Networkers, Networking Academy, Network Registrar, PCNow, PIX, PowerPanels, ProConnect, ScriptShare, SenderBase, SMARTnet, Spectrum Expert, StackWise, The Fastest Way to Increase Your Internet Quotient, TransPath, WebEx, and the WebEx logo are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0809R)