

## *NYSErNet, New York University, and Internet2 Demonstrate First Native Ipv6 Multicast in North America*

### *Research and Education Community Continues to Pioneer Use of Next-Generation Internet Protocols*

Ann Arbor, MI and Syracuse, NY - October 31, 2005 - NYSErNet, New York University, and Internet2 today announced the first successful demonstration of production native Ipv6 multicast networking on a nationwide North American network.

Unlike previous Ipv6 multicast implementations in North America, this demonstration used non-tunneled or "native" Ipv6 multicast across Internet2's next-generation Abilene network, which connects over 240 research and education institutions and 34 state education networks in the United States. Ipv6 multicast shares the advantages of Ipv4 multicast, allowing a single source to provide content to an unlimited number of receivers without duplicating bandwidth. The tunneled connections previously used for Ipv6 multicast development would have been unable to support the roughly 40 million bits per second (Mbps) of video traffic needed to support the technology used in this demonstration.

"The Internet2 community has played an integral role in promoting and pioneering the adoption of next-generation IP protocols like native Ipv6 multicasting," said Bill Cerveny, Internet2 network engineer and co-organizer of the Ipv6 multicast demonstration, "With its advanced architecture and high-performance engineering, Internet2's Abilene network is in a unique position to provide researchers, scientists and students from around the world with the ability to test new applications that rely on the latest protocols to ensure quality and reliability."

Five locations participated in the demonstration. NYSErNet hosted two IP video sources: one in Syracuse, New York that used the WIDE Project's Digital Video Transport System (DVTS) software and the other in New York City. New York University, which recently became the first university in North America to have native Ipv6 multicast capability, originated a video stream from their campus in New York City. Internet2 provided video from its Ann Arbor, Michigan office. These four video sessions were received and displayed at the demonstration site.

Although multicast technology has many applications, video streaming was chosen for the demonstration both because it demands large bandwidth and high reliability networking. As Ipv6 is deployed around the globe, more applications will be designed to use it, including the high-quality streaming and interactive video that has become integral to the work of the research and education community. Internet2 members will be able to take advantage of Ipv6 multicast connectivity not only within the Abilene network but also with their peers in Asia and Europe, where Ipv6 deployment is progressing very quickly.

Bill Owens, director of advanced technology and networking for NYSErNet and co-organizer of the Ipv6 multicast demonstration, encourages other institutions connected to the Abilene network to experiment with Ipv6 multicast connectivity.

According to Owens, "IPv6 multicast capabilities are being rapidly integrated into today's router technologies. This demonstration proves that Abilene and its regional connectors can support these capabilities on a regular basis. As we continue to deploy and test these technologies, I expect to see a broader range of commercial and open source applications such as high definition television generate high-bandwidth Ipv6 multicast traffic flows."

NYSErNet has been experimenting with Ipv6 multicast since late 2003 as part of the m6bone <<http://www.m6bone.net>>. Internet2's Abilene network has provided Ipv6 unicast connectivity since 2000 and native Ipv6 unicast connectivity since 2002.

Further information about Ipv6 within Internet2 can be found at the Internet2 Ipv6 working group web pages at <http://ipv6.internet2.edu>.

Further information about multicast networking within Internet2 can be found at the Internet2 multicast working group web pages at <http://multicast.internet2.edu>.

#### About Internet2

Led by more than 200 U.S. universities working with industry and government, Internet2 develops and deploys advanced network applications and technologies for research and higher education, accelerating the creation of tomorrow's Internet. Internet2 recreates the partnerships among academia, industry, and government that helped foster today's Internet in its infancy. For more information, visit: [www.internet2.edu](http://www.internet2.edu).

#### About NYSERNet

NYSERNet is a private New York State not-for-profit corporation created to foster science and education in New York State through advanced network technologies and applications. An Internet pioneer, NYSERNet has delivered next-generation network services to New York State's education and research community for twenty years. More information about NYSERNet can be found at <http://www.nysernet.org>.

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