

Internet2 speeds things up

■ The newer, faster Internet connects 180 universities and offers many advantages

By Andrew Adams
Oregon Daily Emerald

Most students don't realize that when they sign on to the Internet through the campus server they are actually signing on to Internet2, a system completely different than what the majority of net users surf.

Internet2 is a recently developed high-speed research network that connects 180 universities at levels quicker and more efficient than the standard Internet system.

The system originated in 1995 with a grant from the National Science Foundation. Corporations and universities then came together to maintain and improve the system. The University has been using Internet2 for the past two years and researchers in the Computing Center are continually experimenting and adjusting the University's part in the system.

Lucy Lynch, an academic and user support specialist with the Computing Center, said most students are completely unaware they're using a different Internet system when they log on from the campus.

"To most people this is transparent," she said. "It's seamless."

She said the system originated to give universities a more direct and quicker route to transfer large amounts of research information.

"Traffic travels on a different path, a more direct path," she said.

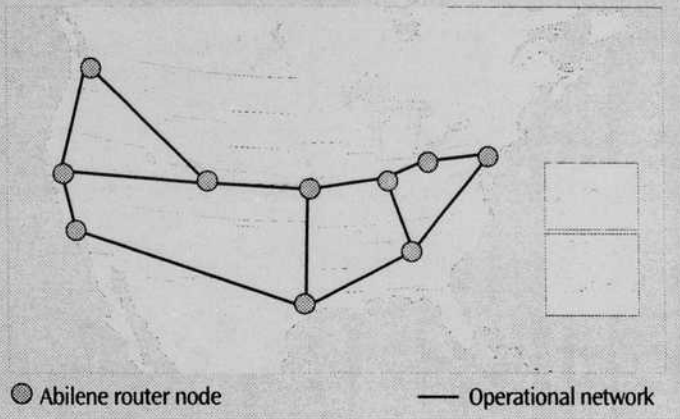
Internet2 also has a larger bandwidth than the regular Internet, which Lynch explained allows users to transfer and view "broadcast quality" audio and video.

One other key difference between the two Internets, Lynch said, is that programmers on Internet2 have more freedom to experiment with new technology. She explained that on the standard Internet programmers fear using unproven systems because a system crash could result in lost revenue.

Lynch said an example of Internet2 being more advanced than the regular Internet is that it uses the sixth version of Net protocol and the standard Internet still uses the fourth version.

High-speed education

The University is part of the Abilene network, which is part of the Internet2 system.



SOURCE: <http://www.internet2.edu>

Assistant director of academic user services at the Computing Center Joe St. Sauver analyzes the University's use of Internet2 and also helped Eastern, Western and Southern Oregon universities set up Internet2 connections.

Most of the schools in the Oregon University System are linked together on Internet2 via a server operated on the University campus.

St. Sauver explained a big advantage of the system is that while it may be smaller, it has a larger rate of connectivity.

“Traffic travels on a different path, a more direct path.”

Lucy Lynch
support specialist
UO Computing Center

"The number of connected sites is smaller, but the sites are larger," he said. "A typical small liberal arts college might connect to the commodity Internet with the smallest size connection available; from Internet2 now is a [connection] one hundred times that size."

St. Sauver said Internet2 will eventually link K-12 schools and is even planning to link a growing list of international locations in South America and Latin America.

He also said a key element of Internet2 is research and experimen-

tion. One of the current projects is multicast systems that are being developed in the University's Video Lab.

Hans Kuhn, an academic and user support specialist developing multicast technologies, said only 5 to 10 percent of the regular Internet is capable of supporting multicast, but 50 percent of Internet2 can support the new technology.

He explained multicast systems speed up the transfer of large amounts of information by delaying the copying of such information until the last possible second. Kuhn said with the standard Internet, a server has to copy the information for every receiver. This process creates long delays as all the recipients wait for the server to copy information for them. Multicast cuts that copying process out of the information loop.

"Rather than send 100 copies over the Internet you only send one," he said. "It's like if I would send one copy to the office secretary and she'd Xerox copies and put it in everyone's box."

Kuhn said multicast is ideal for sending and receiving live audio and video broadcasts through the Internet.

He will put this to a test when he transmits a webcast of a meeting of university programmers at the University of Hawaii in January.

"It'll be a real-world application of what we're doing," he said.

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