CNS /Update Newsletter Feature

NERDC, Cisco and IBM Ramp Up UF Intranet

UFIT

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The UF Intranet will be faster soon. NERDC is installing an upgrade which will significantly increase the speed of the UF campus core network and will use Asynchronous Transfer Mode (ATM).

"Initially it should offer more than twice the bandwidth of what it is currently a shared 100 megabit core network. This will enable new applications, such as video, and will address quality of service issues," said Dan Miller, NERDC network coordinator.

Products from IBM and Cisco Systems, Inc., make this upgrade possible. On the high-speed core are IBM 8265 ATM switches. Connecting buildings on campus will be Cisco 5500 routing edge devices.

NERDC began preparing for this upgrade last year when it used a Shared University Research (SUR) grant with IBM to purchase seven IBM 8265 ATM switches. SUR grants help provide equipment to universities to fund research in areas in which both IBM and the university have an interest. The IBM 8265 switches that NERDC purchased with the grant money are 12.5 gigabit switches that are upgradeable to 25 gigabits.

The fiber used to tie the upgrade together will be a mixture of multimode and singlemode optical fiber with mostly OC12 type connections (622 megabits full duplex) with a few links having OC3 (155 megabits full duplex) connections, Miller said.

According to Miller, the Cisco 5500s serve three functions: a router, an ATM switch and an ATM edge device. An ATM edge device is the connecting point of the two types of networks -- to the "outside" is Ethernet to the building networks and on the "inside" is the ATM core.

"This upgrade will enable us to provide more 100 megabit Ethernet connections on campus and reduce strain on some of the servers," Miller said. The new core network will be switched, a type of network that is more efficient than shared.

According to NERDC Director Ron Schoenau, the time to upgrade had finally come.

"The FDDI (fiber distributed data interface) core was a decent design that has served the university well, but its time has passed. This is the new generation of networking," Schoenau said.

A team from NERDC's Network Services will be responsible for the upgrade and maintenance of the network. NERDC has been, and will continue to be, receiving guidance from the campus Network and Technical Advisory Committee and the vendors, IBM and Cisco.

Network Services will upgrade one or two building networks at a time.

One of the most exciting applications of the upgrade is giving the UF Brain Institute its high speed connectivity. The UF core network will also hook up with an ATM connection to the FloridaNet, which is a part of Internet2. The FloridaNet is the new statewide network which will eventually connect Florida public universities and the University of Miami.

Another possibility that the ATM technology will allow is the transmittal of video over the UF
"Right now there are separate coax cables sending video over campus. With the upgrade, it would be possible to run high quality video over the UF Intranet. The only drawback is that departments would need a codec, a device which digitizes and compresses signals. The better the digitizing and compression, the more costly the codec. For a quality picture, codecs run $10,000 for a pair. For powerful compression and digitizing, a top of the line MPEG2 (the standard for digital motion video compression) codec can cost $40,000 and up for a pair," Miller continued. So while it's possible, it's not very likely that many people will take advantage of video over the intranet yet.

"Some voice traffic is also possible," said Miller.

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