NIH Center for Information Technology

AT A GLANCE:
The NIH Network—Moving Big Science Data and Connecting Researchers Around the World

WHAT IS THE NIH NETWORK?

As the largest biomedical research agency in the world and one of the preeminent research facilities in the United States, the National Institutes of Health (NIH) requires a secure, reliable, and fast way to share large amounts of information.

Through a modernized network—both high speed and high bandwidth—NIH researchers and external collaborators are now transferring large research data sets at faster rates than ever.

With its powerful 100Gb core, the NIH network can move up to 8Pb of data per day—that's almost 32 times all the material in the Library of Congress!—and features a 100Gb connection to the Internet2 (an advanced technology community and network founded by the nation's leading higher education institutions).

At such speeds, researchers on the NIH network could send an entire human genome file from one lab to another in under two minutes, making collaboration on data-intensive work like biomolecular imaging faster and easier, creating new possibilities for effectively working with large quantities of data.

Currently, the network serves more than 40,000 people in over 200 NIH facilities across the Washington, DC and Maryland metropolitan areas, Arizona, Montana, and North Carolina.

WHAT CAN THE NIH NETWORK DO FOR YOU AND NIH?

Anticipating that the growing data demands of the NIH science and research community would fuel a rapid increase in network traffic, NIH invested $20 million in a multi-year initiative to expand its high-speed network to guarantee optimal support for its mission-critical research and key business operations. As a result, the NIH research community now boasts a state-of-the-art, high-capacity network connecting more than 65,000 scientific research devices, laptops, desktops, and mobile devices to each other, the Internet, and Internet 2 at remarkable speeds.

The 100-gigabit network infrastructure is four times faster at moving big data than the legacy network, connecting labs and buildings on and off campus at speeds of 10Gb, 40Gb, and 100Gb per second, which is up to 100,000 times faster than the Internet access for most U.S. households. This robust network is now primed to support the dynamic nature of today's scientific research while providing flexibility for future expansion.

Among the NIH Network's most notable features are its:

- **High capacity** with scalable, on-demand bandwidth, which means that the network can easily increase its ability to carry more information according to staff needs.

- **Flexibility** to meet dedicated research needs through Science DMZ, a scientific network "fast lane" that prioritizes and increases the speed of sending science data sets at NIH, with added layers of security.

- **Reliable and highly available service** for the patients, staff, and roughly 70,000 annual visitors on the NIH campus and in other NIH facilities, including thousands of teleworkers and travelers. Secure and guest wireless (Wi-Fi) network service with 4,300 wireless access points throughout NIH that support over 30,000 connections on a typical day.

- **Security** through secure Internet access not only to NIH but also to the entire Department of Health and Human Services (HHS) through the Trusted Internet Connection, or TIC, which supports about 65 terabytes of HHS Internet traffic per day.

- **Anytime, anywhere access** through increased capacity for NIH's Virtual Private Network (VPN), a secure remote connection that gives NIH staff access to their work files at any time and place.

- **Agility** for adaptable future expansion as needs change.

LEARN MORE

To learn more about connecting to the NIH network and related services, contact your IC's Chief Information Officer, call the NIH IT Service Desk at 301-496-4357 (HELP), 301-496-8294 (TTY), or 866-319-4357 (HELP), or visit the following resources:

- CIT website: https://www.cit.nih.gov/solutions

- NIH IT Service Desk: https://itservicedesk.nih.gov

- CIT's Network Services page: https://www.cit.nih.gov/service/network-services

- CIT's high-speed research network at NIH initiative page: https://www.cit.nih.gov/initiative/high-speed-research-network