

A photograph of the National Institute of Health building, a large, classical-style structure with a prominent portico supported by tall columns. The building is made of red brick with white columns and a white pediment. The words "NATIONAL INSTITUTES OF HEALTH" are inscribed on the pediment. A circular seal is visible in the center of the pediment. The building is surrounded by lush green trees under a clear blue sky.

National Institute of Health

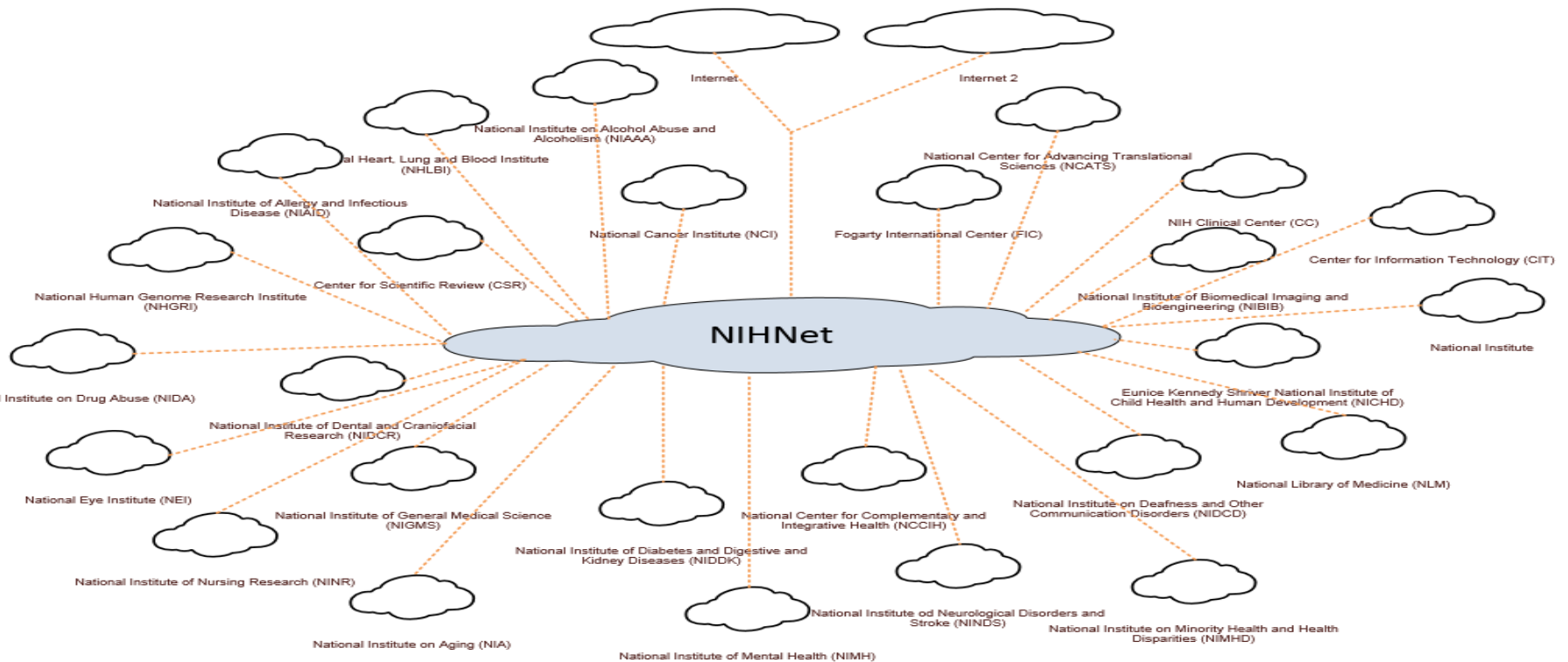
The NIH Enterprise Network

NIH Enterprise Network

- NIH has a large, complex IT environment that consists of approximately 44,000 staff distributed among more than 200 buildings and facilities in the Washington, DC/Maryland/Virginia metropolitan area, Arizona, Montana, and North Carolina
- The NIH Enterprise Network supports the patients, staff on the NIH campus and in other NIH facilities, including thousands of teleworkers and travelers. In addition to supporting the NIH employees the network also supports roughly 70,000 visitors each year.

NIHNet

- The NIH Network (NIHNet) consists of the NIH backbone network which provides a high-speed, highly available network infrastructure for NIH, other Government agencies, and a growing number of local area networks (LANs) supporting NIH's Office of the Director and 27 ICs.



Network Architecture

- NIHnet is a high-speed, highly available network that interconnects NIH with the commodity Internet and the Internet2 research network. NIHnet runs over a 100G Multiprotocol Label Switching (MPLS)/Multiprotocol Extensions for Border Gateway Protocol (MBGP)/Virtual Private Network (VPN) Quality of Service (QoS) enabled backbone.
- The backbone consists of a mix of dark and lit fiber, including five Dense Wavelength Division Multiplexed (DWDM) rings, in addition to provisioned DS3, T3, T1 and PRI/BRI circuits (for out of band access) from commercial service providers. The backbone is designed so that there is no single network point-of-failure, and to be fault tolerant at the power and cable plant levels.

Enterprise Cellular Distributed Antenna System (DAS)

- The cellular Distributed Antenna System (DAS) is the in-building cellular system that brings cellular phone signal coverage indoors and enhances the in-building cellular phone signal.
- NIH implemented the first DAS system in 2005 and covered approximately 820,000 square feet. Now, the total DAS coverage area has reached 4.9 million square feet throughout the majority of NIH critical campus buildings.
- The NIH DAS is a neutral host system that supports and distributes 4G technology from AT&T, Verizon, Sprint, and T-Mobile wireless services. It is a passive system which is not connected to the NIH Network.

Center for Information Technology Network Services

- Network Services (NS), a Service Area within the Center for Information Technology(CIT), manages and operates state-of-the art network and telecommunications infrastructures 24 hours per day 7 days a week for the NIH community. NS provides high-speed network access (NIHNet), network security, telecommunications, wireless, and cabling in a cost-efficient and effective manner for NIH's scientific and administrative communities.



Questions & Answers

"Any opinions, findings, conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Networking and Information Technology Research and Development Program."

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