Services

NUIT offers professional management of every facet of the data center, enabling University schools and departments to focus on their core mission while NUIT focuses on the IT equipment.

Virtual Server Hosting:
As a cost-saving alternative to hosting or managing physical servers University schools, departments, researchers, or other members of the University can request virtualized hosting services for a new project or application, a new service, or new portions of an existing environment.

Physical Equipment Hosting:
Space, power, cooling, and maintenance services are supported for academic and research computing equipment to address specialized needs. Dedicated space may also be provided to house computational equipment necessary to carry out research grant projects on campus.

Gigabit Ethernet:
The Northwestern IP network supports the most recent products from major vendors. Network connectivity to the Internet can be provisioned at 100 Mbps, 1 Gbps, or 10 Gbps.

High Performance Computing (HPC):
Researchers can apply for computational time on Quest, Northwestern's centrally provided HPC cluster, or the Social Sciences Computing Cluster. These systems offer flexible and extensible research data storage, shared software licenses and applications, and visualization tools.
it.northwestern.edu/data-centers/research-data-centers.html

Research Data Storage:
A centrally provided research data storage service, called Vault, offers alternate platforms for the storage of critical data. An initial 50GB is provided at no cost. Additional storage may be purchased incrementally on a cost per 100GB or 500GB basis.
**it.northwestern.edu/research/services/vault/**

To request any of these services, contact the NUIT Support Center.
it.northwestern.edu/supportcenter/

The Northwestern University Data Center stands ready to support the University's core IT services by providing facilities that are:

- ◈ **Secure**
- ◈ **Powerful**
- ◈ **Sustainable**

Northwestern University Information Technology (NUIT) provides a reliable infrastructure that is highly adaptable to the changing needs of the University's administrative, academic, and research environments.
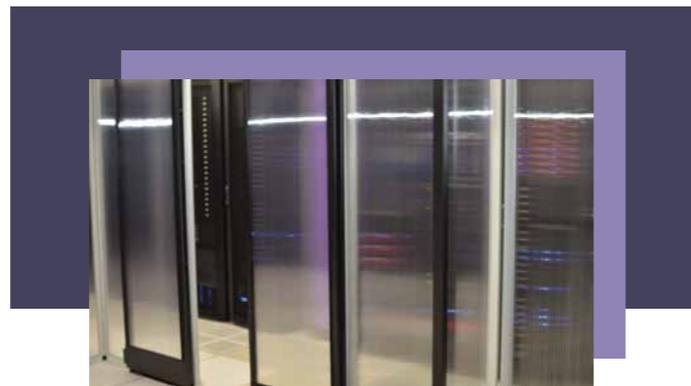
Sustainable cold aisle containment ensures optimal performance for high-end research equipment.

NORTHWESTERN UNIVERSITY

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Northwestern University Data Center

2014–2015

Northwestern University Information Technology

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Data Center Facilities

it.northwestern.edu/data-centers/

A secure, enterprise-wide, redundant, and adaptable infrastructure for the reliable delivery of mission-critical University systems.

Features and Benefits
- 19,000 square feet
- 6,841 square feet raised data floorspace
- Reliable and scalable infrastructure
- 24x7x365 systems monitoring and notification
- Physical security and restricted access
- Secure data networks
- 42 U cabinets with 3-phase 208v power
- 10 Gbps campus and Internet connectivity
- Disaster recovery/business continuity
- HIPAA/HITECH ready
- Server virtualization management

Efficient Energy Management
- Redundant power to all rack locations
- UPS (uninterrupted power supply) and generator
- Energy efficient PDUs (power distribution unit) with high efficiency transformers
- Power protection with N+1 UPS system

Supporting Spaces
- Adjacencies of electrical and mechanical functional spaces
- Service operations center manned 24/7
- Telecommunications transport area
- Engineering and administrative offices
- Secure storage, loading dock, staging area, and contractor work space

Proximity readers use employee credentials, including biometrics, to authorize access to restricted areas.

Security

NUIT uses data center management standards and industry-recommended practices to ensure the safety and security of the University's critical computer processing and data storage equipment.

Authenticated Facility Access: Employees are required to wear photo ID badges and must pass two- and three-factor authentication, requiring employee credentials and biometrics, to access sensitive areas within the facility.

Surveillance Cameras: Video security surveillance IP cameras monitor all activity in restricted areas of the facility.

Visitor Management System: An ID badging kiosk provides a highly secure method for visitors to sign in and out of the data center facility. Daily visitor activity is recorded in the system's secure database.

Firewall and Intrusion Detection: Systems within the University network protect the data center from electronic compromise. In addition, dedicated firewalls protect the data center's internal networks.

Off-Site Media Storage: Backup tapes are securely stored in an off-site storage facility that provides protection from loss of critical data and aids in quicker recovery of that data in the event of a major disaster.

Disaster Recovery: Emergency management processes ensure rapid recovery of systems and services in the event of an unexpected network or power outage. Emergency shutdown controls and fire suppression equipment undergo regular maintenance for optimal performance.

Environmental Management: The data center environment is monitored and controlled for temperature and humidity and protected against fire, power surges, overheating, and flooding.

Power

A reliable and redundant infrastructure provides a high level of service availability for core systems supporting the business of the University.

Protected Power Design: 3-phase UPS modules in N+1 configuration deliver continuous power to the data center floor during utility power outages or surges.

Sustained Power Design: In the event of a utility outage, 3-phase UPS modules in N+1 configuration maintain continuous power to the data floor by automatically transferring to generator power until the outage is resolved.

Power Systems
- UPS room - 3,500 square feet
- 1.5MW diesel generator
- 3-phase UPS modules in N+1 configuration
- Energy-efficient step down transformers
- Two in-cabinet 3-phase 208v 30A CDUs (cabinet power distribution unit)

Cooling Design and Capacity
- Perimeter cooling in N+1 configuration
- Thirteen 30-ton Liebert cooling units
- Glycol loop with pumps in N+1 configuration
- Cold aisle containment

The UPS room housed at the data center supplies power to ensure the safety and security of Northwestern's networks, equipment, and data.

Sustainability

Designed to maximize the use of efficient energy solutions while minimizing the impact on the environment.

Virtualization: Over 80 percent of the University's data center environment operates on managed virtual servers resulting in a more efficient and environment-friendly use of resources.

Cold Aisle Containment: To ensure optimal performance, servers are housed within sustainable cold aisle containment units designed to bring air up through regularly spaced diffuser floor tiles to cool the front of the systems with hot aisles allowing warm air to return back to the cooling units.

Energy-Saving Lighting: Low-energy lighting systems are equipped with motion sensors to reduce energy consumption by turning off automatically when areas of the building are unoccupied.

System Monitoring

Mechanical and power systems, as well as individual and network components, are continuously monitored by NUIT staff to ensure maximum service availability and rapid restoration of services if needed.

Critical System Monitoring: Critical systems are monitored by automated management systems 24-hours a day, seven days a week. Alarms are relayed to NUIT support staff on call 365 days a year.

Status of University IT Services: Important system status alerts and late breaking news provide up-to-date announcements on service interruptions and system maintenance schedules affecting University IT networks and services.
it.northwestern.edu/servicestatus/

Capacity and Availability Service Monitoring: University system administrators and developers can view real-time statistics of web application performances as well as past service statistics on the web-based dashboard.
it.northwestern.edu/about/stats/truesight.html