



## South Data Center



### Power

**N+1** Active capacity components supporting IT load are able to carry the load (N) after the failure of any component.

**A&B Circuits** Each cabinet or IT device has two active distribution paths (A&B redundant circuits) available. AC voltages from 120 to 240, single and three phase power are available.

**Concurrent Maintenance** All systems are concurrently maintainable (scheduled maintenance will not disrupt service).

**Fault Tolerance** All critical systems are single event fault tolerant.

**Cabling** All power cabling below floor.

**Dual Power** Normal electrical power supplied from campus grid, which is supplied by multiple entrances from Omaha Public Power District.

**Generator** Emergency Diesel Generators on campus electrical grid.

**PDU** (4) Liebert Precision Power 150kVA 480V 120-208V PDU; (2) Liebert STS2 PDU's Input Voltage 480 60Hz and (1) Liebert STS2 Static Transfer Switch 250A.

**UPS** (2) 750kVA Liebert Uninterruptible Power Supply (UPS) units installed in a secured area below the Data Center. Each UPS has 3 battery cabinets utilizing front terminal regulated lead acid batteries and individual battery monitoring.

### Raised Floor

**Total Raised** 5000 square feet expandable to 6000 (includes Command Center).

**Air Quality** Air temperature under the floor delivered at an average of 67 degrees and 45% humidity.

**Continuous Cooling** Chilled water for cooling supplied from the campus utility grid, which ties together several chillers in two utility plants. Redundant cooling from an on-site air cooled dx system

- (6) Computer Room A/C Units
- (7) In-row coolers for a hot aisle containment unit

**Fire Suppression** FM200 fire extinguishing system with smoke and heat sensors.

**Floor Height** 18"

**Ceiling Height** 9'6" +/- ceiling height above raised floor.

**Floor Tiles** AS1250 lb rated system with a bolted-stringered system.

**Monitoring** Liebert Sitescan is used to monitor and control Liebert precision cooling, power, UPS, leak detection, control panels and other critical equipment. Alber is used for battery monitoring.

**Water Detection** Water detection system install throughout data center.

### Physical Security

**Data Center Access** IT Security Procedures exist for access to Data Centers, Tape Vault, Switch Rooms and Network Closets. Card access required for ITS area and Data Center. All non-Data Center employees have to use a phone mounted outside the data center for access and are required to record their entry/exit in a log book.

**Electronic Tracking** Interior doors have magnetic locks requiring pre-programmed security badges which limit access to all security zones.

**Security** Campus provides 24x7 security. Exterior and interior doors are secured by means of mechanical and/or electronic locking mechanisms.

**Video Tracking** Movement within the data center and adjacent hallways is monitored and automatically recorded with DVR system.

### 7 x 24 Support Monitoring

Data Center Operations is staffed 7x24 to execute batch, monitor, track and report on alerts, incidents and key events. Documented escalation procedures exist for all systems. Multiple application specific monitoring tools are used.



## South Data Center



### Network

- Internet Access** Multiple major carriers provide Internet access with redundant diverse paths to both the Internet and Internet 2.
- Internal Cabling** Access to private and public networks and Internet connectivity is delivered using cable management trays.
- Fiber Entrances** Diverse, redundant underground entrances.
- Infrastructure** Fully redundant Carrier-Class Cisco core routing and switching equipment with Server Load Balancing (SLB) and Global SLB in both North and South Data Centers.
- Monitoring** All infrastructure components are actively monitored using SNMP Management Tools: WhatsUp Gold, NetMRI, Cisco Prime Infrastructure, Statseeker as well as custom developed tools.
- Services** Critical network services such as DNS, DHCP, and Authentication are offered in a high-availability configuration across all three data-centers.
- Network** Private 10 Gbps back-bone throughout UNMC's Network Core, North and South Data Centers and Private Gbps back-bone in and to the CSN DR Data Center.
- Security** Multivendor products for internet firewalls, Intrusion Protection and remote access provides seamless access and protection for all critical services.
- ARIN IP Addresses** UNMC's IP management enables seamless routing between multiple Internet/Internet 2 providers insuring the highest quality route performance and availability.

### Data Center Facility

- Building** Equipment room constructed beneath the third floor office space for structural protection. Reinforced poured concrete construction.
- Construction** Equipment room walls 'hardened' utilizing FEMA design concepts (steel studs, steel sheeting, plywood & GWB).
- Data Center Entrance** Main entrance ramp to accommodate ADA and equipment installation (stairs at other entry / exit points).
- Receiving** 8000 lbs rated freight elevator.
- Receiving Docks** Loading dock lift for all sized vehicles.
- Storage** Secure storage spaces for equipment and paper outside of the Data Center.
- Other Service Management** Incident, Problem, Release and Change Management procedures are followed using in-house developed tools.
- Services** The South Data Center is the disaster recovery site for the State of Nebraska and the University of Nebraska Central Administration.
- Services** The South Data Center is the Nebraska Telehealth Hub Site
- Governance**
- Compliant** HIPAA/HITECH, GLBA, PCI, FERPA, HEA, FTC, FDA, Medicare Conditions of Participation, JCAHO