

## **HealthNet Service-Level Objectives:**

The purpose of this document is to describe the function and purpose of HealthNet, to assist in defining user expectations, and to provide some general information about the operation. It includes descriptions of the type and nature of various network and telephony services provided to the Health Science Center (HSC) by HealthNet. The document is organized into the following sections:

- Definition of Network Services
- HealthNet Organization
- HealthNet History
- HealthNet Funding Model
- HealthNet Oversight
- Problem Resolution Procedures

HealthNet is the only organization authorized to provide network services and infrastructure in the HSC. Network Services includes network enabling applications, such as Domain Name Services (DNS), Dynamic Host Configuration Protocol (DHCP), IP address management, etc. that are required for the operation of the network.

HealthNet provides “service to the wallplate.” Applications that use the network for connectivity are handled by application support groups and are not addressed in this document.

HealthNet provides services to the HSC and affiliated organizations. Networking and telephony on main campus and for main campus affiliated organizations is provided by Computing and Network Services (CNS), Housing, and others. See <http://www.cns.ufl.edu/>

## **Services Provided by HealthNet**

**Network services provided by HealthNet include:**

1. Desktop Connections
2. Server Connections
3. Core Network Support

4. Supported Equipment and Infrastructure
5. Network Malfunction Resolution
6. Network Performance Monitoring
7. Network Upgrades
8. Network Enabling Applications
9. Security Services
10. Network Address Space Management
11. Client Remote Access VPNs
12. Wireless Services
13. Voice Services
14. Virtual Private Networks (VPNs) and Private WAN links
15. Video Services (Provided by AISS – Distance Learning)
16. Connectivity to HPC Research Network

## **Definition of Network Services**

Network Services are delivered to the end user via data equipment, building and intra-building wiring and fiber infrastructure that conform to the current design standards of the University. The Design Standards represent currently available and cost-effective technologies, and configuration and design guidelines that best address current campus needs and provide for future upgrade.

### **1. Desktop Connections**

The current standard for desktop connections is switched, 1000 Mbps with Power over Ethernet (PoE) over existing cabling, which can be of various types. All new construction or retrofit projects are provided with Unshielded Twisted Pair Category 6 copper cabling (UTP Cat6).

Local administrators and users must not attempt to implement their own network infrastructure. This includes, but is not limited to basic network devices such as hubs, switches, routers, network firewalls, and wireless access points. They must not offer alternate methods of access to UF IT resources such as modems and virtual private networks (VPNs). HealthNet should be contacted if there are any requirements that are not met by the standard wallplate installation. HealthNet will work with the customer to devise a workable solution that meets the customer's needs.

### **2. Server Connections**

Server connections are also supplied as switched 1000 Mbps connections. Custom configurations are available to meet the needs of machine rooms, testing centers or other specialized facilities with more than a few connects.

### **3. Core Network Support**

HealthNet provides access to the Internet, Florida LambdaRail, National LambdaRail, Internet 2, and the UF and Shands Intranet as a component of its network service.

Current core bandwidth is 1 Gigabit with redundant 1 Gigabit connections to the Campus Core. As of Fall 2008, a planned upgrade to the core is imminent, which will begin the process of increasing core bandwidth and campus connectivity to 10 Gigabit.

### **4. Supported Equipment and Infrastructure**

Communications equipment rooms and pathways should meet University standards as defined in the University Telecommunications Standards.

HealthNet provides service with Cisco active electronics. All electronics on the network are supplied, managed, operated and monitored by HealthNet. Some of these functions are provided by Shands Network Services under contract to HealthNet.

The physical infrastructure of the network (wires, fiber, racks, patch panels, etc.) is installed and maintained by HealthNet. HealthNet engages contractors as necessary to install and service physical infrastructure. Individual units are not authorized to run their own wiring or to install any extension to the network. HealthNet must be contacted with any requirements for additional network infrastructure.

## **5. Network Malfunction Resolution**

Troubleshooting, analysis, repair, and problem resolution of malfunctioning networks, and all types of network maintenance, are provided by HealthNet.

Suspected problems must first be reported to local IT support personnel. It is the responsibility of local IT providers to determine if the problem is a local equipment problem or a network related problem. If the problem is determined to be network related, HealthNet should be contacted. Procedures for dealing with network problems are detailed in the section on Problem Resolution Procedures.

HealthNet, in conjunction with Shands, CNS and HSC Security, monitors the network for devices that disrupt the network or are potential security issues. HealthNet will attempt to contact the end user to remedy the problem. In the event that the user cannot be reached, disruptive devices will be disconnected until the end-user can arrange repair of the malfunctioning device.

HealthNet will not troubleshoot any network problem where a user or local administrator has deployed active electronics for the purpose of expanding the network connectivity beyond that of the wall plate. These devices will be confiscated once they are identified and located. This event will be reported to the HSC Security Office as a security incident.

Support of desktop computers and other end-user network devices is not provided by HealthNet. This is the responsibility of local support personnel.

## **6. Network Performance Monitoring**

All HealthNet managed network devices are monitored for availability and performance.

## **7. Network Upgrades**

HealthNet provides for periodic upgrades to network electronics with a rotating, nominally four year, replacement cycle. Should a customer have any requirements not provided by the current installation, they should contact HealthNet for a solution.

HealthNet provides for sufficient bandwidth to perform all reasonably anticipated functions, and provides for custom solutions where necessary.

HealthNet is continuously planning and preparing for upgrades to maintain network performance at the highest level as equipment is replaced on a rolling basis.

Physical infrastructure is upgraded or replaced as areas are renovated, or as necessary to provide for the service that is required in a particular area. Any renovations must include in the budget provisions for network infrastructure and associated electronics, if required. HealthNet should be contacted early in the planning process to provide guidance to the architect/engineer team and to review electric and telecommunications plans.

## **8. Network Enabling Applications**

HealthNet, in cooperation with CNS and Shands, includes the provision of essential network services such as Domain Name Service (DNS), Dynamic Host Configuration Protocol (DHCP), Network Time Protocol (NTP), Trivial File Transfer Protocol (TFTP) and Gatorlink authenticated network access.

## **9. Security Services**

Security will be monitored and enforced in accordance with the HSC Security Program for the Information and Computing Environment (SPICE). Details of these policies are located at the SPICE website. <https://security.health.ufl.edu/>

Policies specific to the network may be found at <https://security.health.ufl.edu/policies/>

## **10. Network Address Space Management**

HealthNet contracts with Shands Information Services for network address space management. Customers should contact HealthNet with IP needs.

For customers operating machine rooms or data centers, maskable blocks of IP addresses can be assigned for ease of management.

## **11. Client Remote Access VPNs**

CNS offers a remote access VPN solution to all University Faculty, staff, and students with active Gatorlink accounts. [http://net-services.ufl.edu/provided\\_services/vpn](http://net-services.ufl.edu/provided_services/vpn)

The Health Science Center (HSC) also offers a remote access VPN. The HSC's VPN is limited to those faculty and staff that are located at the HSC

<https://intranet.security.health.ufl.edu/ism/vpn/hsc-vpn-service>

VPN allows Gatorlink users to remotely access most campus services via a general UF assigned IP address.

## **12. Wireless Services**

HealthNet provides wireless networking services throughout the HSC. Higher density is provided where required, such as in classrooms. Should additional wireless connectivity be required, customers should contact HealthNet, and wireless access points will be installed at no charge. Customers are prohibited from deploying their own wireless access points. Private access points will be confiscated once identified and located.

Wireless is for mobile devices. The purpose of the wireless system is to facilitate the use of devices that must be mobile for the convenience of users, and it is a violation of our policy to circumvent wired port charges by using wireless connectivity as a substitute for a wired port.

Cisco Network Access Control (NAC) is used to control admission to the wireless network. Two wireless networks are provided.

The network “hnet-public” is for use by unmanaged devices, including student laptops and visitor laptops, and a valid GatorLink ID is required for access. Devices will be scanned for compliance with HSC security policy prior to admission to the network. Non-compliant devices will be excluded from the network and directed to a webpage that provides guidance on remediation. Traffic is not encrypted on “hnet-public.”

The network “hnet-secure” is for use by devices managed by HSC IT providers. These devices must be registered by the appropriate HSC IT Provider. Contact your IT provider for access to this network. “hnet-secure” uses an 802.1x supplicant; all traffic is encrypted. All Faculty and Staff should use “hnet-secure.”

## **13. Voice Services**

HealthNet operates a Voice over IP telephone service in the HSC. This service operates on the installed network, and does not require any ports in addition to the port used by the customer’s computer. HealthNet should be contacted with any requests for installation of IP phones. IP Phone handsets should not be purchased prior to consulting with HealthNet.

## **14. Virtual Private Networks (VPNs) and Private WAN links**

HealthNet, in conjunction with Shands, offers WAN connectivity. Organizations interested in having either a private WAN link or in using specialized VPN services can have these services managed by HealthNet.

## **15. Video Services**

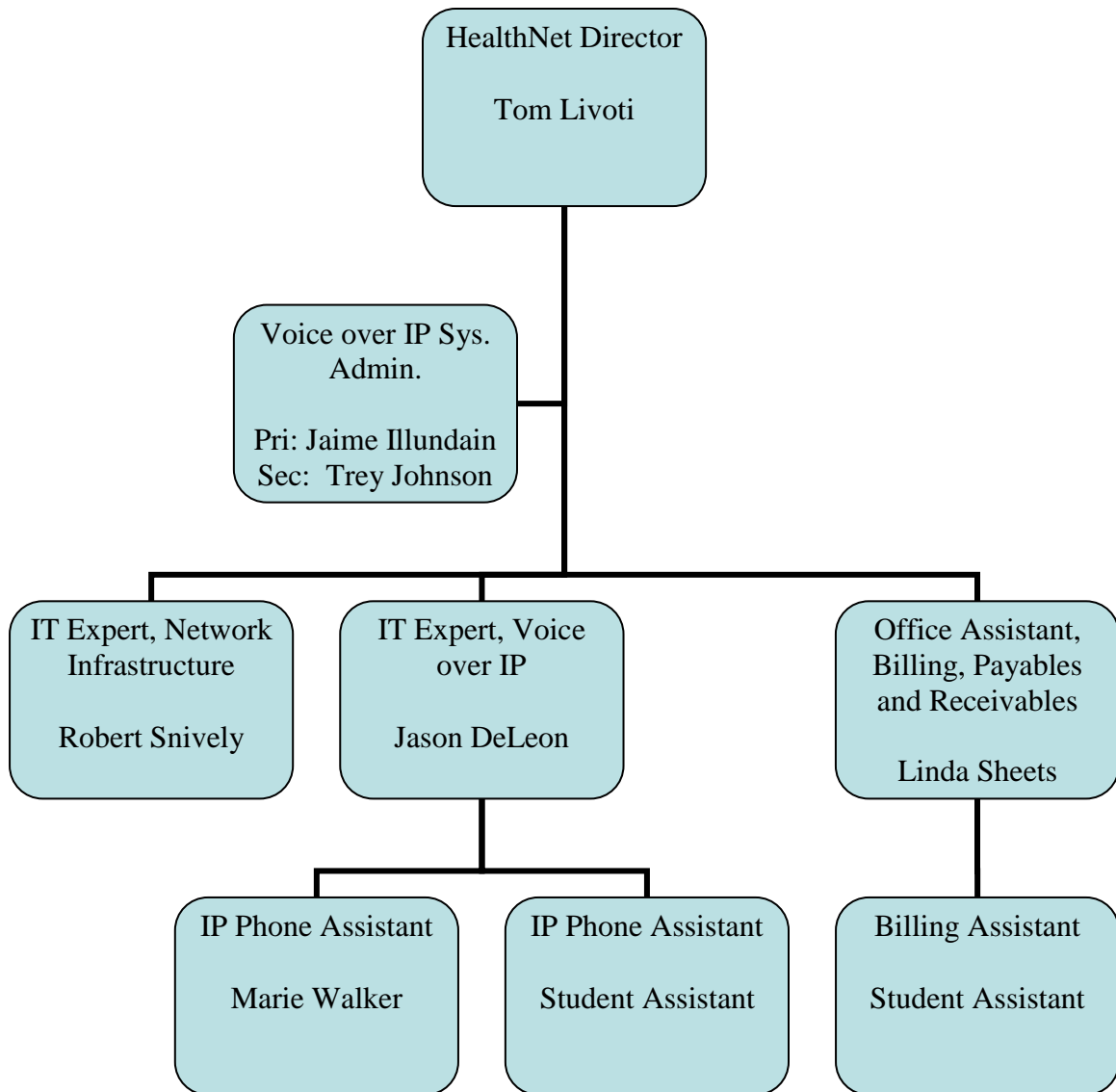
Specialized video services such as multipoint video conferencing are available. In-depth assistance to support basic video conferencing issues such as room setup, design, and renovation are available through the Academic Information Systems and Support Distance Learning Office. Should you need to conduct a video conference, facilities are available through distance learning.

## **16. Connectivity to the High Performance Computing (HPC) Research Network**

The HPC network is entirely separate from HealthNet. For users who desire connection to the Campus HPC, HealthNet will facilitate the process of determining requirements, obtaining approvals, and installing the required infrastructure.

## HealthNet Organization

HealthNet is a relatively small organization. The permanent staff is kept small, and various functions are outsourced in order to reduce costs and allow for flexibility as workloads fluctuate. The Director, HealthNet reports to the Assistant Vice President, Academic Information Systems and Support. (AISS) Financial planning is provided by the AISS Business Manager.



## HealthNet History

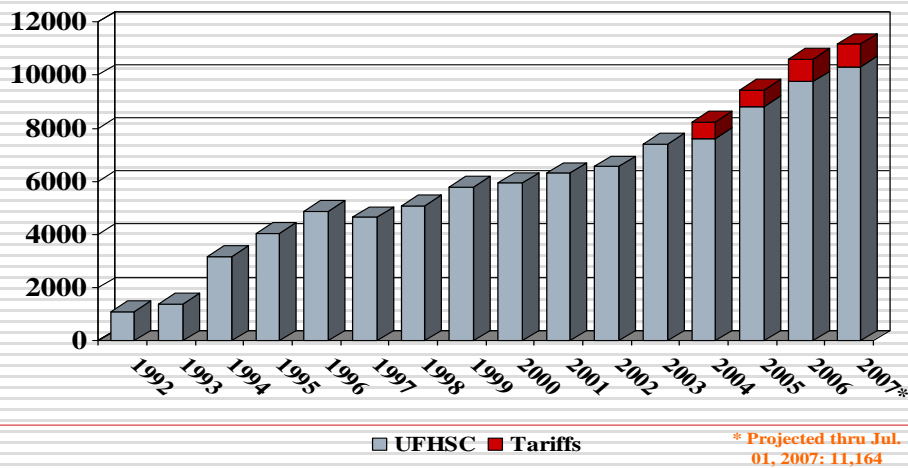
HealthNet formally began in 1992 when the auxiliary was created. The purpose of HealthNet was to provide a centralized department with a stable funding source to install operate and maintain the network infrastructure of the Health Science Center.

The idea was to create a utility where colleges, departments and units could purchase network access without having to incur the cost of managing their own networks. Prior to the establishment of HealthNet, departments typically ran their own wires, and purchased and operated their own equipment. This created problems across the enterprise with respect to compatibility, quality, funding, and lack of installation and operating standards.

In 1998 HealthNet instituted the first operational lease on campus which allowed HealthNet to acquire network electronics on a four year cycle and easily respond to network needs without having to incur large capital costs, while complying with Federal Cost Accounting Standards.

The growth of the network managed by HealthNet is shown in the graph below:

### Growth of the Network



In 2003 a voice over IP pilot was started with 50 phones. The system has since grown to over 3,350 billable phone lines.

HealthNet has also installed a HSC wide wireless network that is centrally managed.

## HealthNet Funding Model

HealthNet operates as a full auxiliary of the University. That is, all of the funding required to support HealthNet is obtained from charges paid by users of its services. HealthNet receives no appropriated funds, grant overhead or any other external funding. Expenditures and the associated rates are fully compliant with Federal Cost accounting Standards (Circular OMB A-21) and University policy. HealthNet fees are set so that costs are recovered, but so that there is no profit. In addition, the fees for each service pay for only that service, there is no subsidy to other services. HealthNet provides three basic services; network operations, installations for customers, and Voice over IP.

Network operations consist of operation, maintenance, repair, monitoring and regular replacement of network electronics, as well as routine maintenance and upgrade of the physical infrastructure of the network. It also includes operation of the wireless network. This service is charged back to customers by active port. That is, organizations are charged a monthly fee for each active port they have that they can use to attach to the network. If a port is no longer needed, the customer can have it turned off, and is no longer charged for that port. Machine rooms, data centers, or other similar facilities can be charged by the switch, rather than by an individual port. The price is determined in advance of each FY by totaling all costs associated with network operations, including personnel costs, costs of hardware maintenance and replacement, various overhead costs, and fees charged by the University, and dividing this total by the number of ports projected to be provided during the coming year. In recent years, the price has fluctuated between \$13.00 and \$13.84 per month.

Installations for customers are provided at cost, plus a small markup for the HealthNet time associated with administering the installation. Installation (and renovation) work is contracted out to an outside vendor. HealthNet plans the work, contracts with the vendor, supervises the work, inspects the work upon completion, and pays the vendor. The only cost to the customer beyond the direct cost of the installation goes to pay for the HealthNet employee time associated with the project.

Voice over IP service provides telephone service that to the user looks very much like traditional telephone service; the service available is, however, much more flexible. This service, like network operations, is billed monthly, and is priced in exactly the same way. In addition to the HealthNet fee, there is a small additional charge paid monthly to Campus Telecommunications for services they provide, including long distance. The base monthly pricing includes adds, moves, changes, repairs, custom programming, and phone replacement should the device fail. The total monthly fee in FY 2009 is \$8.68. \$7.18 of this cost is the HealthNet charge.

The spreadsheet that was used to determine the rates, with all of the source information, and a projection of future year's rates, is located at:  
<http://www.healthnet.ufl.edu/presentation/healthnet0809/HealthNet%20Rates%20for%2007-08%20Working%20Copy%204.xls>

## **HealthNet Oversight**

HealthNet answers to a committee called the Public Service Commission, made up of representatives from the HSC. They represent the Senior Vice Presidents Office, the six Colleges, major centers and institutes. Each of these members has one vote on issues requiring a vote. The purpose of this advisory group is to provide input to the HealthNet staff on matters regarding HealthNet policy, practices, projects and financial decisions. A major focus of the group is to review the projected costs and projects for the next Fiscal Year, and to make a recommendation regarding the rates for the next year for network ports and IP Phone service. HealthNet and the Public Service Commission are part of the overall HSC IT Governance structure. See:  
<http://www.health.ufl.edu/aiss/isac/UF-HSC-IT-GovernanceStructure-Revised-20080220.pdf>

## Problem Resolution Procedures

When a problem is encountered by an end-user in which he/she needs assistance, one of two courses of action will be followed:

If a suspected network problem occurs during business hours that local unit support is available:

1. The user must contact unit/departmental IT support for assistance. See <http://www.health.ufl.edu/itcenter/services/compcord.shtml>
2. It is the responsibility of local IT Support personnel to triage the problem to determine if the issue is a local hardware or application issue, or if the problem is network related. If IT support personnel determine that the problem is network related, they should contact the Shands Help Desk at 265-0LAN (265-0526)
3. If the problem is urgent, or prevents the user from doing critical work, the problem should be identified as “WORK STOPPAGE.” This code word will raise the priority of the response, but should only be used for authentic urgent situations.
4. A trouble ticket number should be obtained on the phone.
5. If there is no response to work stoppage problems within two hours, or to other problems within a reasonable time frame, contact HealthNet for follow up assistance.

If a suspected network problem occurs during other than normal working hours:

1. Contact Shands Help Desk directly, and follow the procedure above.

Network related problems are resolved/repared by HealthNet at no cost to the user. Should technicians be dispatched to remedy a problem that reasonably competent IT support should have identified as a fault with the user’s hardware or applications, the user will be billed for technician time and HealthNet overhead.

If the customer requires installation of a port, assistance in a renovation, or has any other requirement which requires development of a solution or plan of action, go to <https://webapps.health.ufl.edu/healthnet/> and enter your request. The system will provide you a ticket number by e-mail.

Of course, a customer should feel free to contact HealthNet at any time to discuss problems, projects or needs. If there are issues with Shands or HealthNet response to a problem, please contact the Director of HealthNet at 273-5930 or at [tlivoti@ufl.edu](mailto:tlivoti@ufl.edu) to discuss the issue. HealthNet is very interested in providing quality service and is anxious to know of any failures in the system.

Should HealthNet personnel provide an unsatisfactory response, please contact the Assistant Vice President for Academic Information Systems and Support directly, at 273-5000 or at [vanderaa@ufl.edu](mailto:vanderaa@ufl.edu)