

St. Peter's Hospital

Introduction

St. Peter's Hospital is currently located in the heart of downtown and is considering a move out of the downtown area due to the lack of parking for patients and doctors. The new site will have ample parking and direct access to a new highway with access to a major interstate. The move will also allow the hospital to upgrade their technology and their computer facilities to become cost effective and more competitive at the new location. Key to this will be creating an infrastructure that allows the multiple systems that currently do not communicate to do so. Additionally, upgrades that will be made to the antiquated systems need to be considered as the new technologies are put in place.

Business

1. The primary activities impacted in this case are as follows. All areas of the Hospital will now have access to patient records and the ability to order services. Including patient admissions, the emergency room, the nurses' stations, the lab, all operating rooms, the doctor's lounge and even the morgue.
2. The Board of Regents in particular has asked for all the doctor's with medical offices to be networked to the Hospital's LAN and to be given full access to the Internet. Currently only the administrative portion of the network has access to the Internet and that is over a 56kps modem.

3. The motivating factor behind the creation of a TCP/IP LAN is to give the entire Hospital System access to all of its' databases with one common LAN.

Currently, there are two systems being used. One services the administrative side and the other services the medical side. In order for information to be shared each side has to enter the others information manually into their database. Subnetting the network will also allow traffic to be kept within its respective area as well as allowing network administrators to isolate areas of the hospital if necessary.

Application

The ordering system used to track patient records and order patient services is an antiquated DOS-based system that needs to be replaced. The new software should be able to take advantage of port assignments that dynamic network address translation will allow.

Data

Currently, the devices on the Netware LAN are realizing a maximum data throughput of 10Mbps between devices baring no collisions and a maximum throughput of 56kps to the Internet.

Network

1. The introduction of TCP/IP technology will enable the hospital to create one LAN and segment individual departments with different subnets. By purchasing T1 lines, routers, and switches throughputs of 100Mbps can be attained through Cat 5 cable.

2. The potential benefit of using this new technology is efficiency gained through faster technology and the ability to share all information with all areas of the Hospital system. Segmenting high traffic areas will now reduce bottlenecks that might have occurred on the current network. The use of network address translation will allow more devices to be added to each segment and allow for additional levels of security by not using public IP addresses.

Technology

1. The current technology's being used are a LAN with a server running Novell Netware 3.12 and a second LAN with a server running Novell Netware 4.11. In addition an antiquated DOS-based ordering system is being used.

2. The total number of hosts being served by both Novell servers is 270.

3. Only the administrative offices are linked to the Internet with a Class B network address using a 56kps network modem.

Conclusion

The ability to segment each area of the hospital will allow for better traffic management within the LAN, as well as increasing security of data being transmitted within the network. Increased access speeds for staff to the internet will provide for an increase in productivity. Current technologies utilize IPv4 protocol, so monies should be reserved for possible hardware and software upgrades become necessary.