

# Kirk samuda, securing a hospital's computer network

[Technology](#), [Computer](#)



To commence this exercise, adequate consideration must be given to the business requirement document (BRED) and its financial constraints, while focusing on the provision of hardware and software that effectively satisfies the BRED. A quick analysis of the Hospital Information System shows a networking model that is in need of marginal upgrade.

First I would recommend that all Servers with less than 16 gigabytes of Memory be upgraded to 32 KGB RAM, and that RAID 1 be upgraded to RAID 5, for better redundancy, performance, and higher data security across the entire networking platform. Of great Importance Is a change from the huge dependence of laptops, workstations, ND other mobile devices on the Windows SO; to the Linux Mint 15 platform that offers greater reliability, security, efficiency, scalar user friendliness with flexible graphical user interfaces.

It must be noted that if information security is of The overall network architecture for Patton Fuller Hospital will showcase an immediate change from the dependence on twisted pair CAT cabling, to a greater inclusion of the fiber optic methodology, a modern and robust architecture, that offers better wireless capabilities, faster data access, advanced and enhanced security protocols and standards, and most important direct contact to information regardless of location.

Diagram 1. 0 below reflects the physical topology of the networking infrastructure within the hospital. Diagram 1. 0 - Hospital HIS System It is hence important for Patton Fuller Community Hospital to distinguish between the Local Area Networks (Lana), Wide Area Networks (WANTS), and the

inclusion of wireless technologies that serve to improve efficiency and reliability; both internally and externally with proper authentication protocols in place.

This hospital based on the size and functions of the institution must initiate a new HIS that requires immediate collaboration between the various networks that collaborate to form a revised Enterprise Resource Management (ERM) system, that is responsible for the management and networking processes. As such, any change in the logical and physical network infrastructure, will reflect an impressive enhancement in both technological magnitude and scope. The Network infrastructure must implement a traditional three-tier network design with aggregation, edge, and core layers.

The edge must include both wireless access points and wired switches, designed with enhanced fiber optic capabilities, and multiple TO Lines for dual communication between the 3 other local hospitals and the doctors' homes, taking advantage of the 801 IEEE 802. 11(ad) protocols to be included. This inclusion will enhance the support for all the prior members of the 802. 11 family, seamless switching between 2. 4 and GHZ bands, a huge increase in the channel width up to 2160 Mash, improved functionality of mobile devices, impressive expansion in working range, and advanced security features.

Please note that three (3) tier network architecture will accommodate the growing number of diverse workstations, laptops, mobile devices, monitoring equipment, phones, imaging modalities and other hospitals at the network

edge. These devices will be allowed via strict authentication policies into the hospitals central network via an aggregation layer, which ties the network edge to the network core. To acquire an effective ERM, it is important that the Local Area Networks (LANA) located In the respective departments of the hospital be built on the star topology avian the fastest data transmission rates available for 1000.