

Netw410 week2 essay



Lab Report 1. What are the business goals? (10 points) Business Goals for this project include addressing the growth of on-campus and online students. To accomplish these goals a centralized server located in new IT wing of the administration building providing online backup of all data. Replacing the PBX-based telephone system with a VoIP based system and connecting all buildings providing high-speed wired network connection for all facility offices will be implemented along with controlled wireless access for students.

Wireless access for students and general population will be provided outside the building. These steps are necessary to build a solid infrastructure for the network and allow for and to plan growth. Funding has been established to purchase land 15 miles away and as the campus expands this will be the next site for expansion.

The actual business goals for this project is to offer new and better services and support, open the network to key constituents, build relationships and information accessibility to a new level, as a basis for the network organizational model, avoid business disruption caused by network security problems, avoid business disruption caused by natural and unnatural disaster, modernize outdated technologies and reduce telecommunications and network costs, including overhead associated with separate networks for voice, data and video. 2.

What are the business constraints? (10 points) The business constraints are like all companies and they include budgets, personnel, policies and schedule. None of which have been defined in our design lab scenario.

Budget costs include equipment purchases, software licensing, maintenance agreement and staff training. Personnel constraints related to the business constraints to be considered include the availability of existing trained personnel and if existing personnel must receive additional training to implement and maintain the proposed network changes.

Policies of the organization must be considered and since this a community college determination of protocols, standards and vendor selection must be determined. The final business constraint addressed should include the schedule of the implementation as not to interfere with current operation by faculty, staff and students. 3. What are the technical goals? (10 points)

Technical goals of the project include improving responsiveness and throughput of the network as many users are added along with additional applications, especially the VoIP based system.

Simplifying network management is obtained by centralizing the server(s) and backup in a newly built IT wing in the administration building. By this centralization and backup improvement should be obtained to the security and reliability of applications and data along with decreased expected downtime. By offering high speed wired network connections to each faculty office and controlled wireless access for the students modernizing outdated technologies shines as one of the technical goals. With all these proposed improvements scalability of the network is achieved. . What are the technical constraints? (10 points) The current system equipment must coexist with the new equipment and as already discovered there must be increased bandwidth. Existing wiring should either be upgraded to accommodate upgraded speeds. The new or expanded network must not interfere with the

current applications. Any new network or expanded network should also ensure IPv6 compatibility. 5. Diagram the existing network. (10 points) The actual Visio drawing is also submitted 6. Describe the existing network traffic. (10 points)

Current network traffic is at 73% or more utilization based on a five minute average with sustained spikes to 100% on the Cisco FastHub 400s installed in each building. Approximately 42 students are logged into each wireless access point. This is creating lag times and most assuredly dropped packets. While dropping packets with data is troublesome it is disastrous for voice or video. According to our text there should be no shared Ethernet segments that are saturated (no more than 40% network utilization.) The current system is working at 73% utilization. Network traffic must be improved. 7.

Complete this table for all of the applications that currently run over the network. (10 points)

Application Name	Type	New or Existing	Criticality	Comments
Google Apps for Education	Email / Web Site	Existing	X	
MS Office	Productivity	Existing	X	
Web Browser (IE)	Productivity	Existing	X	
Catalog / Checkout System / Library	Database	Existing		
Administration Building only	Data Share	Productivity	Existing	X
Terminal Emulation Program (AS400)	Productivity	Existing	X	Administration Building only
Blackboard Learning	Management System (CRM)	NEW	X	Internet Connection