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| Request for proposal  The Campus Area Network Design Team has created a summary of the information in the request for proposal. We have categorized the information by customer business goals, customer business constraints, user and administrative and services required, technical goals and technical constraints. | By Jane Whelan  and Christopher Iwen  March 11, 2016  Professor Gulledge  Devry University |

Customer goals:

* To connect 1050 current users across three buildings on campus and make the network scalable to accommodate 1365 users without over taxing the infrastructure and degrading the quality of education Farmingdale State college can provide for its students.
* To stay competitive with other colleges offering the same degree programs.
* To offer convenience for the students and faculty alike by having everything they need available at their fingertips anytime they are online.
* To offer strong collaboration tools and incentives to expand the reach and education of students and professors.
* To garner more prestige for the school as their students become the market standard.

Customer constraints:

* Interference with student and faculty's daily life.
* Limited space to fit everything into.
* Building codes and inspections or laws.
* The overall cost and success of the setup is a major concern, but with an overall budget of 2 million dollars we should be able to get top quality equipment and have everything done in a timely manner so that the buildings are ready for use next school session.
* We don’t want to disrupt day to day business activities on the campus. Thankfully the buildings themselves are gutted and not currently occupied so that part can be done at any time of the day. The trenching, which is going to tear up the ground, will need to be done before the end of the project. Most of this is in student walkway areas that can be covered with temporary bridges. There will be a small section of roadway that must be dug up to lay the cables. The path we have laid out will only affect a small parking area between Gleeson Hall and Whitman Hall. We will make this the area that gets trenched last and fixed first to minimize the disturbance to students and faculty.

User and administrative applications:

* Cloud storage for the student and faculty
* Printing services at each of the buildings.
* Email server and accounts for each student and faculty member.
* Wi-Fi in the lobby of each building and in the class rooms for the convenience students, professors, and visitors.
* DHCP services set up in Horton Hall to give out ip addresses to everyone on the intranet.
* NAT overload to facilitate connection of all these users to the internet with a limited number of public ip addresses.
* DNS setup so that network users can get to webpages using a url.
* Desktop virtualization with all the applications a student or professor might need on a remote server like Citrix.

Technical goals:

* Redundancy without loops
* Small failure domains (simplified troubleshooting)
* Equipment needs to be able to handle to combined bandwidth of everything connecting through it.
* Set up a central location for administration
* Allow for future growth starting with 1050 users and expanding to 1365 in the near future.
* Security (security badges, pin numbers, cameras)

Technical constraints:

* Space for equipment to have a secure room in each building, and room to run the wires through the ceiling.
* Security: badges, pin numbers, cameras, passwords, sticky mac, bdpu guard, firewalls, ACL’s
* Server room:

Finger print reader and pin number for outside door. Video cameras on both sides of the server room door, and only one way in and out of the server room. Everything in the sever room is locked behind cages that requires a physical key to open.

* Security Room:

Security room is in front of the server room with one way glass wrapping around the security room. Chip readers connected to any terminal that can SSH into the servers, acl’s to restrict all other ip’s from creating remote connections to the server room. The chip reader requires the card to be in to operate the computer. As soon as the card is removed the computer locks down. Only computers in the security room can SSH into the server room.