Speech

Link: <https://prezi.com/p/t7velucq9oci/?present=1>

Introduction

(Company intro + Beneficiary) Reutlingen University is one of the most renowned universities for applied sciences in Germany. The campus sits on the southwestern edge of [Reutlingen](https://en.wikipedia.org/wiki/Reutlingen), close to recreation and sport areas. Our company, Future networks GmbH, makes the commitment of providing a new network infrastructure that ensures access to network communication services and resources to end users and devices that spread over its geographic location.

Lan scenario

(Beneficiary - campus view) As you can see in the plan we designed in Visio the campus consists of 26 buildings: 7 hostels, buildings dedicated to the degree programs, an aula, a computer and media center, a learning center, a cafeteria, a gym and a day care center. In addition it has a parking lot with 1500 spaces. We plan on implementing wireless access in the whole perimeter as well as establishing cable connections for everything else (labs & administrative buildings\*).

IP address analysis & simulation sketch

(The network - today’s network) After reviewing the number of students and both administrative and academic staff (6100) we decided that 10 subnetworks are to be needed. We assigned a B Class IP address that will cover the number of hosts, the largest subnet having a 2500 hosts expectation.

(The network - future network) Giving the fact that Reutlingen is situated in a growing industrial environment and is recommended by its internationality, in the near future we plan on expanding the network with 6 additional subnets. This will cover a number 4092 host for the largest subnetwork.

(Cisco Simulation) Using Cisco Packet tracer we simulated a part of the network, as so: the office building subnetwork, the dorm, the engineering school and the learning center subnetwork.We implemented these subnetworks as you can see. We transmitted a message from one device inside a subnetwork to another device located in the same subnetwork. Then we sent a message from one subnetwork to another subnetwork. The simulation was completed successfully.

Materials, Budget & Time

(Material + human resources) To finalize this project our team will consist of 2 engineers and 20 technicians. Our engineering department established a solid bill of materials with the best equipment within a favorable price range. Two 24 T servers will grant a high performance along with suitable routers, switches and access points. We chose FTP cable for the CCTV to ensure crisp clear video and a clean future-ready installation and for the rest of the connections we’ll use UTP. In the dorms we’ll equip the rooms with dual network sockets.

(Time) The completion time is estimated to be one month. The 20 technicians and the two engineers will work 6 days per week, 8 hours a day. The project will be completed in the most efficient way due to a well organized team that has a well planned strategy.

Installation Recommendations

We recommend a structure that harnesses the email system with some batch files to provide college staff the request of repair/maintenance work without making a phone call or sending a paper form. The Maintenance Department managers will assign the work to the tradespeople via email and track the work orders in a database. The system is expected to save time for both staff and the Maintenance Department.

In addition we propose computer security on campus. To build a more secure robust campus network, the security risk should be analyzed, and on the basis of that, a unified plan to take action should be prepared. We suggest adopting more and more advanced technology generously in the network: Firewall technology, virtual Local Area Network (VLAN), encryption technology, Virtual Private Network (VPN) and multiple operating system at server side. We can use virtual private network (VPN) technology which uses special software on each computer (i.e. VPN client), to encrypt network traffic from that computer to a VPN concentrator on the institution’s network. Generally, we do not use VPN on-campus, as the functionality that VPN provides is already present on campus. However, it would be more theft and misuse proof on Wireless Network. It can also be used to authenticate via VPN. Through VPN, member of campus computer can connect securely.