A Review On: NETWORK DESIGN FOR COLLEGE CAMPUS

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ABSTRACT:

The design of computer network differs from one university to another. Installing networks in a university relies on the university’s budget, which differs by institution and from country to country. The main goal of this project to present an enhanced network design for college campus. Many university systems works on layer 2 device but we can also implement network by using layer 3 device to design a network with high quality security, low cost, better routing protocol. Also try to reduce the network devices and reduce network cost.

1. INTRODUCTION:

Over last 14 years, the technology used for the implementation of network was LAN, WLAN etc. In these technology the securing the wireless network was an ongoing process and there was no single true security in place which made the security policy weaker. Due to these it was easy for the hackers to hack the technology.

Lastly as cheap and effective designing methods of the network in this research are not limited to developing countries. Developed countries that are trying to cut cost in any of their network design projects can also adapt the methods using these research. As due to using cheap components the security of the network becomes an important issue to solve these some additional devices had been added to make the network secure like firewall and DNS server.

2. LITERATURE SURVEY:

In paper [1] ‘Enhancing the College Network’, by Jagdish K.P and Pavan Kumar, they had discussed about the advanced network through integrating IOT devices with classical device using CISCO-PACKET Tracer simulation software version 7.0. The technology focused in this paper is Virtual Local Area Network (VLAN) and IOT devices like software sensors, actuator for virtual communication. The count of device number is more, so to avoid large number of devices we are replacing router with layer 3 switches. By which the count of router and switches will reduce and hence the cost of network.

In paper [2] ‘Wireless LAN security Threats and Vulnerabilities’, by Md. Waliullah had discussed about various security issues and common threats in wireless LAN. This paper contains information of attacks like confidentiality, integrity, availability, access control and authentication. So, the main focus was on to prevent the network from the unauthorized person and hackers. But by using WLAN the risk of hacking and attacks of threats increases, hence to avoid these and to make the network more secure we can implement Network Address Translation (NAT) which will hide the private IP address.

In paper [3] ‘College Campus Network Design and Security’, by Shivam Adke and Rutuja Bhawar, focused on network security to protect the digital information, by creating LAN network and preventing the network from unauthorized user by using firewall. Due to use of hardware firewall the design of network becomes a bit complicated so to solve this issue we can use protocol like Access Control List (ACL) which is used to filter network traffic such as routers and firewalls.
In paper [4] ‘Design And Implementation Of Secure Campus Network’, by Mohammad Nadir Bin Ali, Mohamed Emran Hossain, Md. Masud Parvez, focused on the core issues of the security of the network architecture. They also try to do apply simple network design, so that they can maintain the network, increased the security with the result of the network. The technology focused by them was LAN and WAN and for security they used firewall so we can also use other protocols.

In this paper we studied regarding network, such as how different universities design a network with high quality security and low cost by using DHCP, network used WLAN technology so that data must be accessed by the authorized individuals. But while studying these we came through some drawbacks like increased congestion on a particular group of IPs not necessary/optional, various cost minimized in order to maximize the quality of the network, we can have greater availability of wireless LAN etc. also the protocols used were less, by using various protocols the network can become more enhanced and hence we can obtain the required network with more security more life span of network and encryption will be more secure. By analyzing we came with the solution which includes better routing protocol (EIGRP), various protocols like HSRP, NAT, ACL, and PORT SECURITY and also tried to minimize the count of the devices so that the cost of network would become less costly.

CONCLUSION:-

To improve college campus network design service, the technology used was creating LAN, WLAN and using cheap device to reduce cost of the network. But the network can also become more enhanced using better routing protocols and many other protocols can be used to improve the security. So, we are going to try many such protocols using less number of devices and will try to keep the cost of the network less. To design such network we are going to use software Cisco-Packet Tracer

REFERENCES:-


