

Computer Communication and Networking : Lab assignment 2019

Total Marks : 50 (25%)

CCN Assignment

Design and develop a network for CCN organization with following specifications. Use Packet tracer software to design the same.

An organization CCN need to connect around 100 nodes. The organization uses a DHCP server for allocating IP addresses for each subnet. Each subnet contains approximately 50 nodes. Following addresses are allocated from an Internet Service Provider (ISP) for organization CCN. 201.17.32.0 and 201.17.33.0

- 1) Design a network for organization CCN with two subnets. Use switches to connect various devices. One switch can be connected to 24 systems.
- 2) A router R is connected to organization CCN and the outside world. Set up three or more web servers and try to access the web server from various subnets. Record the type of packets sent and received in a network.
- 3) Set up email servers and analyze on email communication.
- 4) If only one IP address, i.e., 201.17.32.5 is given as a valid IP address, then how the organization can still make all 100 nodes to communicate with the outside world? Design same and compare the result through running Web and email application. (Hint: Use Network Address Translation (NAT) setting at the router.)

Evaluation Components:

1. Design of network : (subnet design): 10 Marks
2. Web server running application from any client: 05 Marks
3. Running email application from any client : 05 Marks
4. Explain working of TCP and routing with proper packet headers in simulation : 10 Marks
5. Explain working of UDP and routing with proper packet headers in simulation : 10 Marks
6. Presentation : 10 Marks