EAST WEST UNIVERSITY

Course title: Computer Networking

Course code: CSE405

Semester: Spring21

Section: 03

Project report

Project title: Design a full-fledged network for an organization with multiple subnets.

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Problem Statement:

INTERNATIONAL Apollo University, is an enterprise like East West University, owns a large number of computers, with a complex network infrastructure. Apart from wired internet access to all the classrooms, labs, employee PCs, library and other administrative and academic wings, the university also provides wireless internet access for everyone. On top of that the university runs a number of complex networked systems to support several of its business process like admissions, advising, results, eTender, library management, accounts and so on. This complex network infrastructure is subnetted and switching/routing mechanisms are in practice.

here is the design of Apollo international university network,

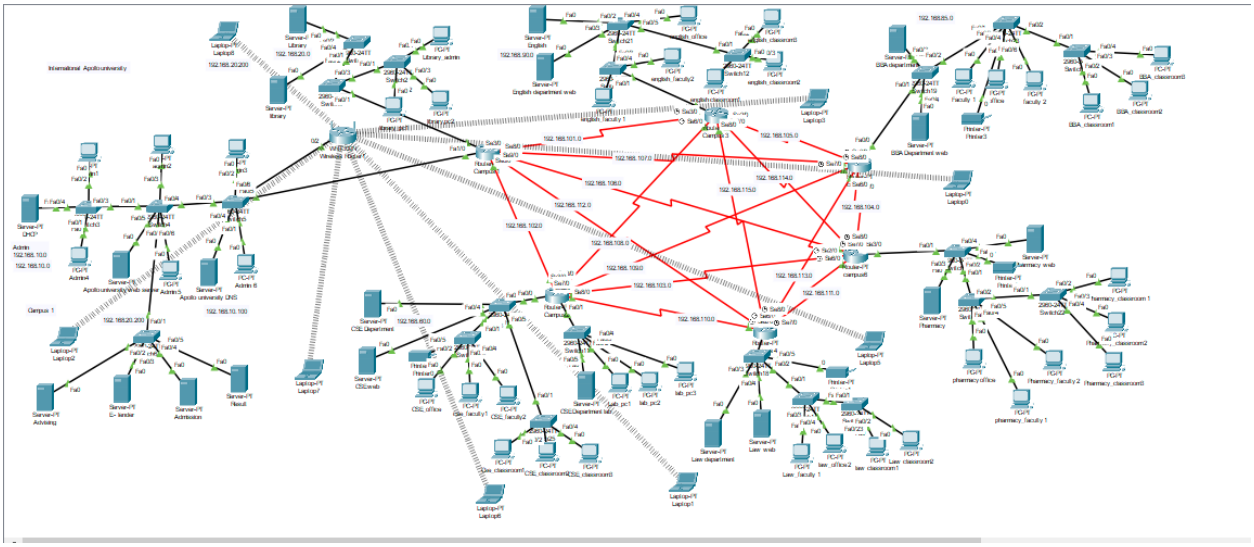


Fig: a full-fledged network

Tools Used: I used **Cisco Packet Tracer 7.3.1** for designing the whole network.

1. Routers:
   - PT-Router
   - -WRT300N (wireless router)
2. Switch:
   - 2960-24TT
3. End devices:
   - PC-PT
   - Server-PT

- Laptop-PT

4. Cable used:

- Copper straight-Through
- Serial DTE

Router Network connection:

config t

interface fa1/0

ip address 192.168.70.254 255.255.255.0

no shut

do wr

exit

config t

interface Se2/0

ip address 192.168.120.1 255.255.255.0

clock rate 64000

no shut

do wr

exit

I used ospf for routing table. All the code are almost same. So I only give router 6 routing table.

config

router ospf 6

network 192.168.100.0 0.255.255.255 area 1

network 192.168.110.0 0.0.0.255 area 1

network 192.168.104.0 0.0.0.255 area 1

network 192.168.111.0 0.0.0.255 area 1

network 192.168.106.0 0.0.0.255 area 1

network 192.168.114.0 0.0.0.255 area 1

Project description:

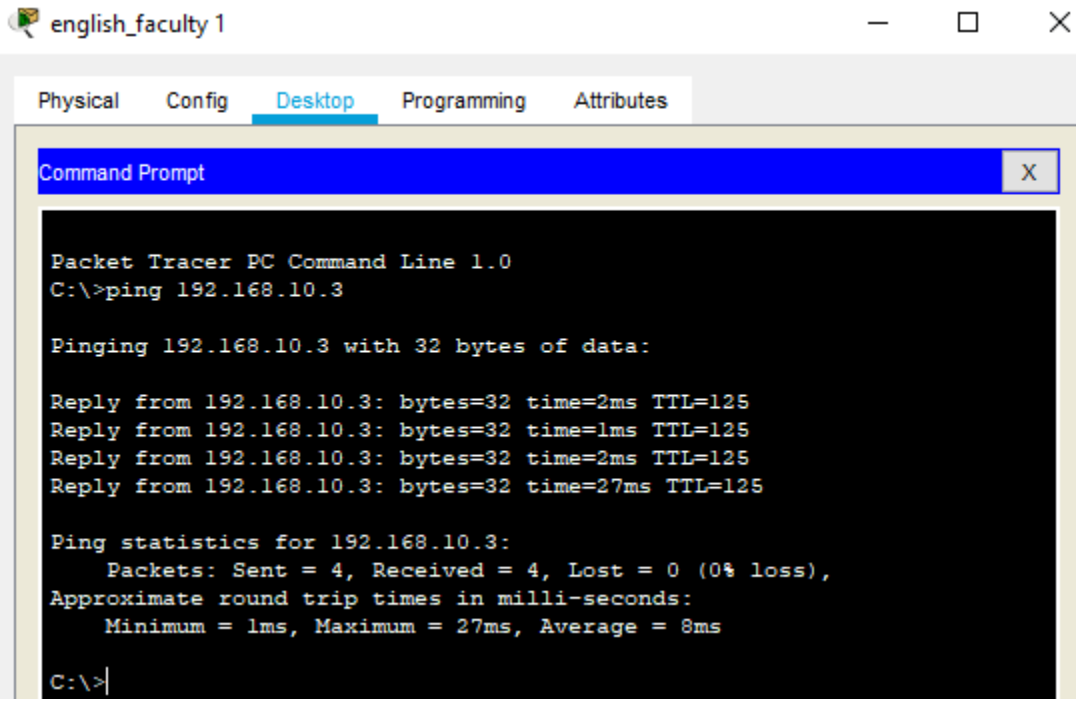
- Admin wing:
    1. Admin wing has his own DHCP server which control the admin sector and also have a web server which generate www.appolointernational.edu website.
    2. Admin sector also have e centeral DNS server which control the other server ip address in the network.
    3. Wireless router for wireless connection.
    4. Admin sector is control the etender, admission and result server.
    5. All the devices were connected using a switch and necessary connecting cables.
- Academic Wing:
    1. Five different department Each depart have their own DHCP server and web server.
    2. Each department contains different ip Address.
    3. CSE department have a lab also which also have different ip address from its own DHCP server.
    4. All department have PCS for the classroom and faculty office connected with deferent switch.

Connectivity between All the routers are mesh.

Here, is some sample output to understand whether the pc are connected or not:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num
	Successful	Admin3	english_fa...	ICMP		0.000	N	1
	Successful	Admin 6	CSE_office	ICMP		0.000	N	2
	Successful	CSE_...	english_fa...	ICMP		0.000	N	3

I also test the interconnected pc and router by doing ping with each other:



Limitation: There are too many limitations. First of all, this network is too small so we can not use it. In real life network is more and more complex.

Conclusion:I have gather some good experience while designing the network. In future I can design any kind of network.