



EAST WEST UNIVERSITY

Project Report

CSE405

Computer Networks

Sec-03

Submitted to:

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Associate Professor

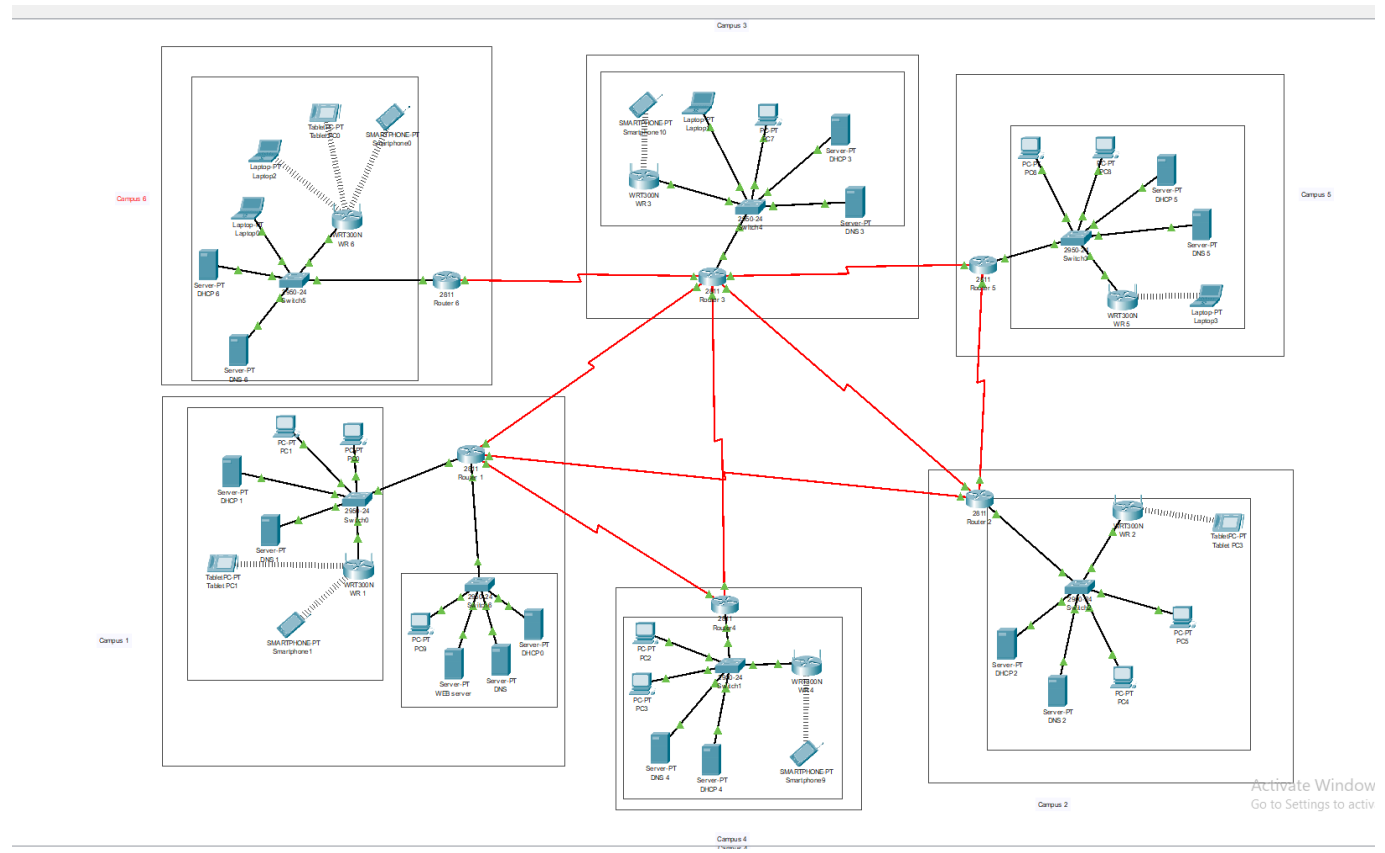
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Introduction:



The network shows the arrangement of the "University of Professionals" complex network system. The university owns a large number of computers. And the university has 6 Campuses. So, we use each router for each campus and connect to each other.

Tools: Cisco Packet Tracer, snipping tool (for screenshot), microsoft word.

Report:

The parts of the network:

Hardware: PCs, Laptops, Tablets, Smartphones, Servers, Switches, WiFi Routers, Routers stc.

Transmission Media: Copper Wire, Wireless and Serial DTE.

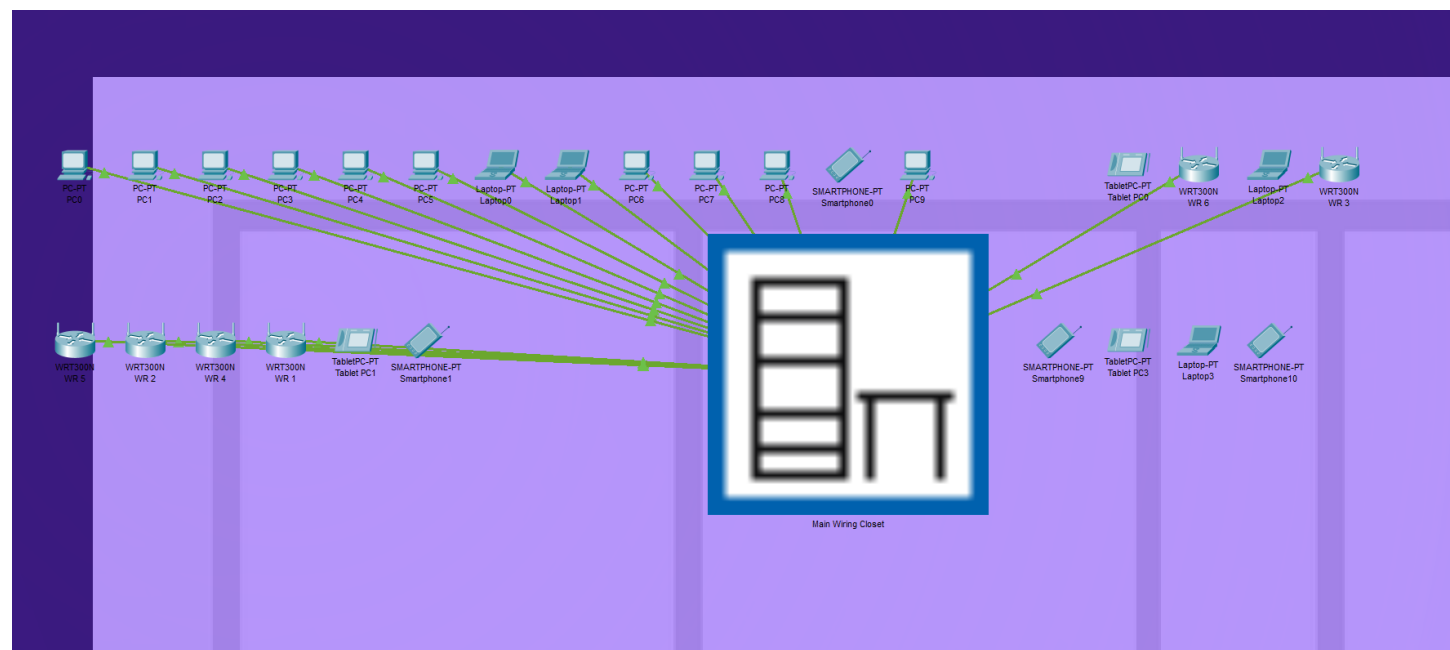
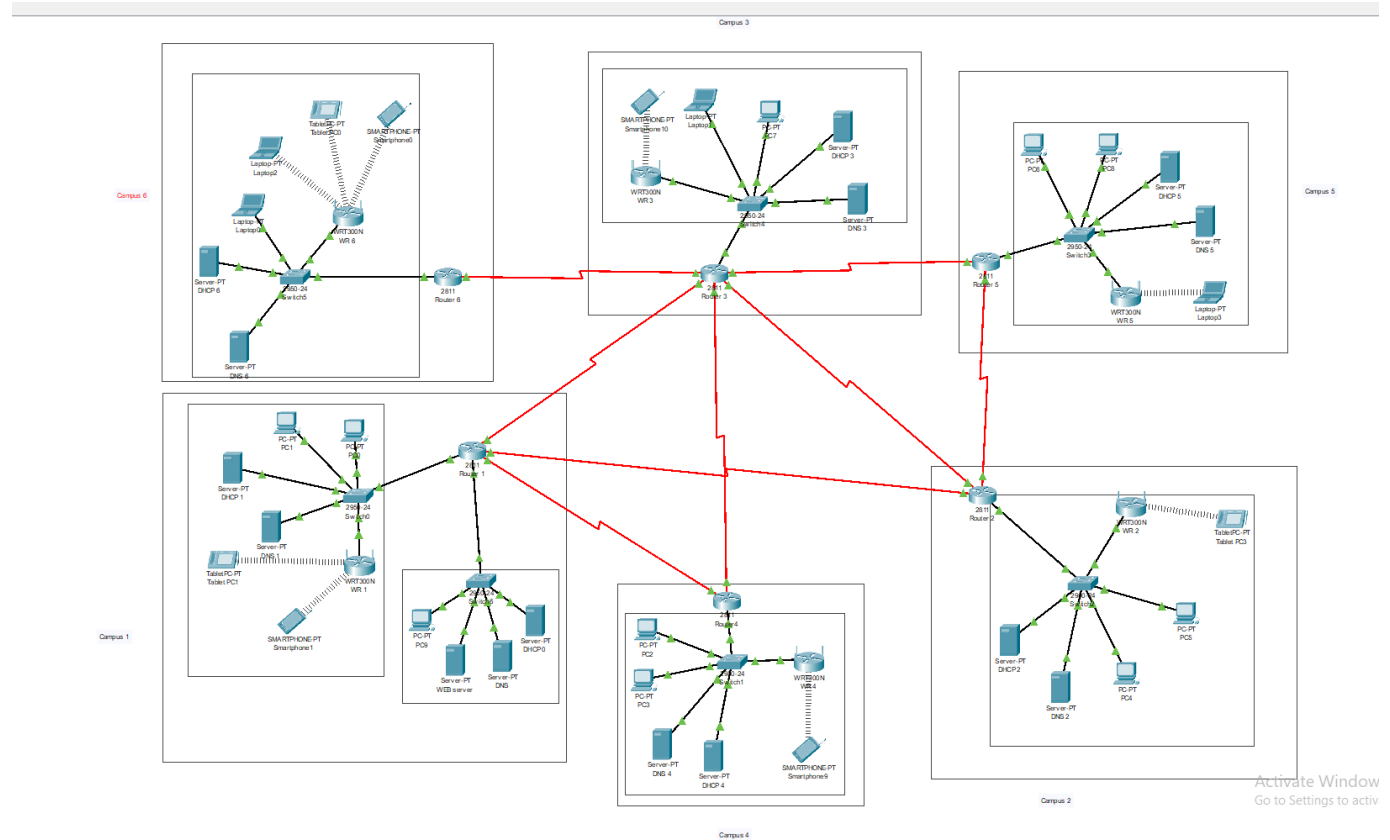
Protocols:

For Routing: RIP etc.

For TCP/IP: HTTP, HTTPS, DHCP, DNS etc.

Topology: All devices are connected to Six main Routers.

Components of the Network:



Copper wires used for connecting pcs to switches, server and WiFi Routers connect to switches and all switches to routers. Laptops, Tablets, Smartphones are connected to WiFi Routers through Wireless connection. Router to router connections is through Serial DTE.

The network is separated into 6 Campuses in addition to being about connecting to devices. The devices under Campuses can connect with each other and can browse the university website.

In this network is 15. I create a university web server. And for access the web server through the network, I use DNS for each switch. And for smartphone users, wireless links add to the networks.

Limitations:

The limitations of this network are there are too many DHCP and DNS servers. And for that, the maintenance cost will be high, and maintenance will be difficult. If we can use one DNS and one DHCP server for the whole campus then the maintenance will be low and it will be easy for maintenance.

Lines of codes:

The list of IPs I use in this network:

DHCP1: 140.168.10.10 default gateway: 140.168.10.1
DNS : 140.168.10.5 default gateway: 140.168.10.1
WEB : 140.168.10.7 default gateway: 140.168.10.1 www.professionals.edu
DHCP1: 192.168.10.10 default gateway: 192.168.10.1
DNS : 192.168.10.5 default gateway: 192.168.10.1
DHCP2: 194.168.10.10 default gateway: 194.168.10.1
DNS : 194.168.10.5 default gateway: 194.168.10.1
DHCP3: 196.168.10.10 default gateway: 196.168.10.1
DNS : 196.168.10.5 default gateway: 196.168.10.1
DHCP4: 198.168.10.10 default gateway: 198.168.10.1
DNS : 198.168.10.5 default gateway: 198.168.10.1
DHCP5: 200.168.10.10 default gateway: 200.168.10.1
DNS : 200.168.10.5 default gateway: 200.168.10.1
DHCP6: 202.168.10.10 default gateway: 202.168.10.1
DNS : 202.168.10.5 default gateway: 202.168.10.1

Code for hosts to Switches connection:

For switche to router1

```
en
config t
interface fa0/0
ip address 192.168.10.1 255.255.255.0
no shutdown
exit
exit
```

For switche to router1

```
en
config t
interface fa0/0
ip address 140.168.10.1 255.255.255.0
no shutdown
exit
exit
```

For switche to router4

```
en
config t
interface fa0/0
ip address 194.168.10.1 255.255.255.0
no shutdown
exit
exit
```

For switche to router2

```
en
config t
interface fa0/0
ip address 196.168.10.1 255.255.255.0
no shutdown
exit
exit
```

For switche to router5

```
en
config t
interface fa0/0
ip address 198.168.10.1 255.255.255.0
no shutdown
exit
exit
```

For switche to router3

```
en
config t
interface fa0/0
ip address 200.168.10.1 255.255.255.0
no shutdown
exit
exit
```

For switche to router6

```
en
config t
interface fa0/0
ip address 202.168.10.1 255.255.255.0
no shutdown
exit
exit
```

For router to router

I use RIP , but first I create version 2 for RIP

Code

```
en
config t
router rip
version 2
no auto-summary
```

After that, I insert the router connection in RIP for each router and configure the router. And routers are connected to each other and hosts connect to each other through the same network.

Features to get Bonus

- ☐ Network addresses add for all 3 classes (for router to router I use class A IP, for university web server I use class B IP , and for host we use class C IP).
- ☐ Incorporation of different subnets.

Conclusion

New elements and devices were added to the network, and certain device settings were changed as a result of the complicated network design. Increasing a switch's port number, for example, or changing the wifi settings on a computer or laptop. setting up a server, a wifi connection, and many other things. Most interesting was the RIP settings which was very easy to configure and easy to set-up compared to the Static settings set-up.