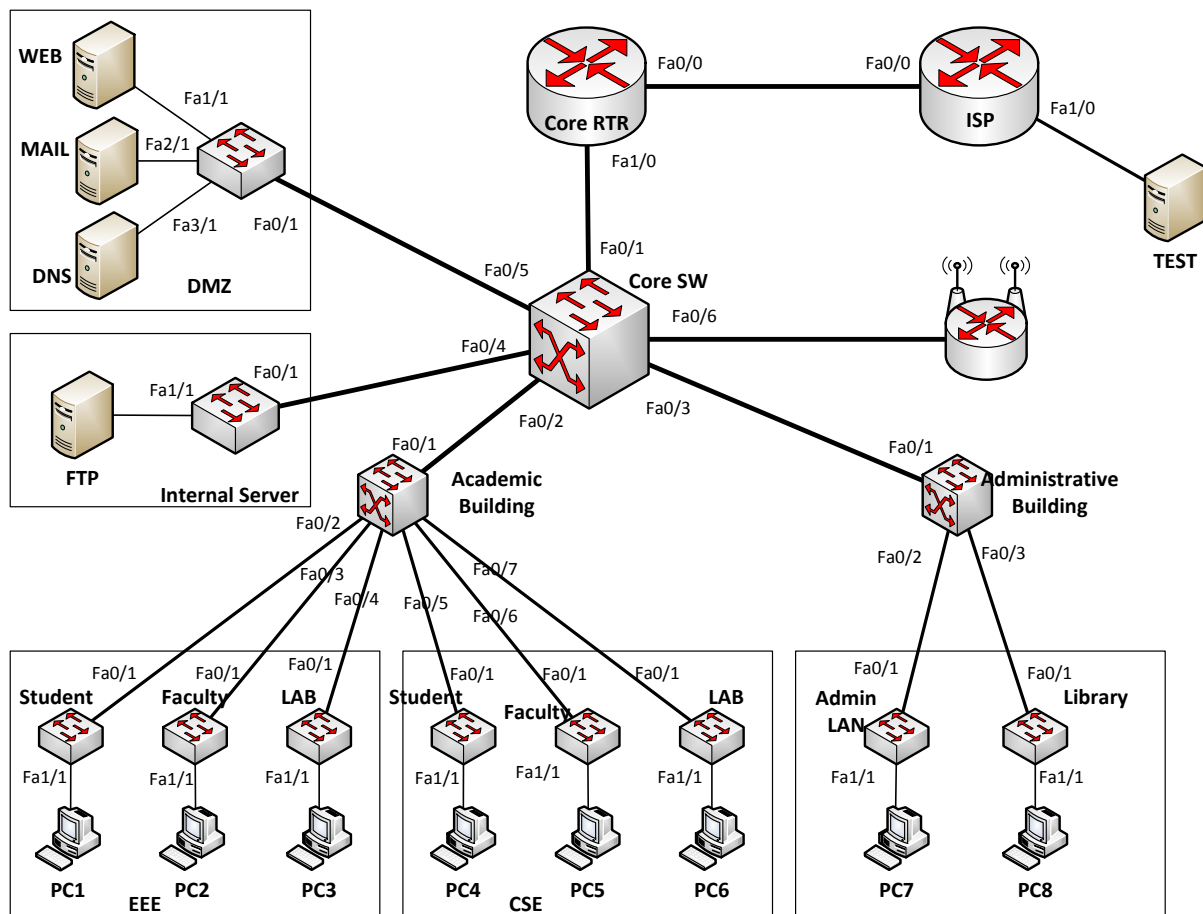


## 1. LAB DIAGRAM



## 2. IP and VLAN Plan

User Group	Subnet	Subnetwork	Mask	No. of Host
Student	VLAN 100	192.168.1.0/24	255.255.255.0	256
Faculty	VLAN 200	192.168.2.0/24	255.255.255.0	256
Lab	VLAN 300	192.168.3.0/24	255.255.255.0	256
Admin	VLAN 400	192.168.4.0/24	255.255.255.0	256
Library	VLAN 500	192.168.5.0/24	255.255.255.0	256
IN-SERVER		192.168.6.0/24	255.255.255.0	256
EX-SERVER		203.0.113.0/24	255.255.255.0	256
CORE-RTR – CORE-SW		192.168.10.0/30	255.255.255.252	4
CORE-SW – ACADEMY		192.168.10.4/30	255.255.255.252	4
CORE-SW – COMMON		192.168.10.8/30	255.255.255.252	4
CORE-SW – IN-SERVER		192.168.10.12/30	255.255.255.252	4
CORE-SW – Wi-Fi		192.168.10.16/30	255.255.255.252	4
Wi-Fi Network		192.168.7.0/24	255.255.255.0	256

OSPF Router ID:

Core-Router	1.1.1.1
Core-Switch	2.2.2.2
Academy	3.3.3.3

Common	4.4.4.4
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### 3. DEVICE AND CONNECTIVITY

Options	Name	Model/Type
Devices	Core (Core-RTR, ISP)	Router-PT
	Distribution (CORE-SW, ACADEMY, ADMIN)	Switch 3560-24PS
	Access	Switch-PT
	PC / Server	PC-PT / Server-PT
Connectivity	Router/PC/Server – Router/PC/Server	Copper Cross-Over
	Switch – Switch	Copper Cross-Over
	Router – Switch	Copper Straight-Through
	Switch – PC/Server	Copper Straight-Through
	Router – PC/Server	Copper Cross-Over

### 4. IP ADDRESSING

Connectivity	Node A	Gateway	Subnet Mask
PC 1	192.168.1.1	192.168.1.254	255.255.255.0
PC 2	192.168.2.1	192.168.2.254	255.255.255.0
PC 3	192.168.3.1	192.168.3.254	255.255.255.0
PC 4	192.168.1.2	192.168.1.254	255.255.255.0
PC 5	192.168.2.2	192.168.2.254	255.255.255.0
PC 6	192.168.3.2	192.168.3.254	255.255.255.0
PC 7	192.168.4.1	192.168.4.254	255.255.255.0
PC 8	192.168.5.1	192.168.5.254	255.255.255.0
FTP	192.168.6.1	192.168.6.254	255.255.255.0
WWW	203.0.113.1	203.0.113.254	255.255.255.0

### 5. PING TEST

Source	Destination	Test 1	Test 2	Test 3	Test 4	Test 5
PC1	PC4					
PC2	PC5					
PC3	PC6					
PC1	PC2					
PC1	PC3					
PC1	PC5					
PC1	PC6					
PC7	PC8					
PC1	PC7					

## **6. Basic and Interface Configuration**

### IP Configuration:

Set IP Address, Subnet Mask and Default Gateway in all PCs and Server

### **ACADEMY :**

```
Switch>enable
Switch#configure terminal
Switch(config)#hostname ACADEMY
ACADEMY (config)#no ip domain-lookup
ACADEMY (config)#exit
ACADEMY #clock set 11:50:14 MAY 02 2014
ACADEMY #wr
```

```
ACADEMY>enable
ACADEMY#conf t
ACADEMY (config)#ip routing
```

```
ACADEMY (config)#interface fa0/2
ACADEMY (config-if)#switchport mode access
ACADEMY (config-if)#switchport access vlan 100
ACADEMY (config-if)#exit
```

```
ACADEMY (config)#interface fa0/3
ACADEMY (config-if)#switchport mode access
ACADEMY (config-if)#switchport access vlan 200
ACADEMY (config-if)#exit
```

```
ACADEMY (config)#interface fa0/4
ACADEMY (config-if)#switchport mode access
ACADEMY (config-if)#switchport access vlan 300
ACADEMY (config-if)#exit
```

```
ACADEMY (config)#interface fa0/5
ACADEMY (config-if)#switchport mode access
ACADEMY (config-if)#switchport access vlan 100
ACADEMY (config-if)#exit
```

```
ACADEMY (config)#interface fa0/6
ACADEMY (config-if)#switchport mode access
ACADEMY (config-if)#switchport access vlan 200
ACADEMY (config-if)#exit
```

```
ACADEMY (config)#interface fa0/7
ACADEMY (config-if)#switchport mode access
```

```
ACADEMY (config-if)#switchport access vlan 300
ACADEMY (config-if)#exit

ACADEMY (config)#interface vlan 100
ACADEMY (config-if)#ip add 192.168.1.254 255.255.255.0
ACADEMY (config-if)#exit

ACADEMY (config)#interface vlan 200
ACADEMY (config-if)#ip add 192.168.2.254 255.255.255.0
ACADEMY (config-if)#exit

ACADEMY (config)#interface vlan 300
ACADEMY (config-if)#ip add 192.168.3.254 255.255.255.0
ACADEMY (config-if)#end
ACADEMY#write
```

### **COMMON:**

```
Switch>enable
Switch#configure terminal
Switch(config)#hostname COMMON
COMMON (config)#no ip domain-lookup
COMMON (config)#exit
COMMON #clock set 11:50:14 MAY 02 2014
COMMON #wr

COMMON>en
COMMON#conf t
COMMON(config)#ip routing
COMMON(config)#interface fa0/2
COMMON(config-if)#switchport mode access
COMMON(config-if)#switchport access vlan 400
COMMON(config-if)#exit

COMMON(config)#interface fa0/3
COMMON(config-if)#switchport mode access
COMMON(config-if)#switchport access vlan 500
COMMON(config-if)#exit

COMMON(config)#interface vlan 400
COMMON(config-if)#ip address 192.168.4.254 255.255.255.0
COMMON(config-if)#exit

COMMON(config)#interface vlan 500
COMMON(config-if)#ip address 192.168.5.254 255.255.255.0
COMMON(config-if)#end
COMMON#write
```

## **CORE-SW:**

```
CORE-SW>en
CORE-SW#conf t
CORE-SW(config)#hostname CORE-SW
CORE-SW(config)#no ip domain-lookup
CORE-SW(config)#exit
CORE-SW#clock set 01:03:12 MAY 02 2014
CORE-SW#write
```

## **Routing:**

### **CORE-SW:**

```
CORE-SW>en
CORE-SW#conf t
CORE-SW(config)#ip routing
CORE-SW(config)#interface fa0/1
CORE-SW(config)#no switchport
CORE-SW(config-if)#description ## Core-sw - Core router##
CORE-SW(config-if)#ip address 192.168.10.2 255.255.255.252
CORE-SW(config-if)#no shutdown
CORE-SW(config-if)#ex

CORE-SW(config)#interface fa0/2
CORE-SW(config-if)#no switchport
CORE-SW(config-if)#description ##Core_SW-ACADEMY ##
CORE-SW(config-if)#ip address 192.168.10.5 255.255.255.252
CORE-SW(config-if)#no shutdown
CORE-SW(config-if)#ex

CORE-SW(config)#interface fa0/3
CORE-SW(config-if)#no switchport
CORE-SW(config-if)#description ## CORE_SW- COMMON ##
CORE-SW(config-if)#ip address 192.168.10.9 255.255.255.252
CORE-SW(config-if)#no shutdown

CORE-SW(config)#interface fa0/4
CORE-SW(config-if)#no switchport
CORE-SW(config-if)#description ## CORE-SW-IN-SERVER ##
CORE-SW(config-if)#ip address 192.168.6.254 255.255.255.0
CORE-SW(config-if)#no shutdown
CORE-SW(config-if)#end
CORE-SW#write
```

### **ACADEMY :**

```
ACADEMY>en
ACADEMY#conf t
ACADEMY(config)#interface fa0/1
ACADEMY(config-if)#no switchport
ACADEMY(config-if)#description ## ACADEMY-CORE-SW ##
ACADEMY(config-if)#ip address 192.168.10.6 255.255.255.252
ACADEMY(config-if)#no shutdown
ACADEMY(config-if)#exit
ACADEMY(config)#end
ACADEMY#wr
```

### **COMMON :**

```
COMMON>en
COMMON#configure t
COMMON(config)#interface fa0/1
COMMON(config-if)#no switchport
COMMON(config-if)#description ## COMMON-CORE-SW ##
COMMON(config-if)#ip address 192.168.10.10 255.255.255.252
COMMON(config-if)#no shutdown
COMMON(config-if)#end
COMMON#wr
```

### **OSPF Configuration:**

#### **CORE ROUTER:**

```
Router>enable
Router#configure terminal
Router(config)#hostname CORE-RTR
CORE-RTR (config)#no ip domain-lookup
CORE-RTR (config)#exit
CORE-RTR #clock set 10:14:12 MAY 02 2014
CORE-RTR #wr
```

```
CORE-RTR#conf t
CORE-RTR(config)#router ospf 1
CORE-RTR(config-router)#router-id 1.1.1.1
CORE-RTR(config-router)#passive-interface default
CORE-RTR(config-router)#no passive-interface fa1/0
CORE-RTR(config-router)#network 192.168.10.0 0.0.0.3 area 0
CORE-RTR(config-router)#default-information originate
CORE-RTR(config-router)#end
CORE-RTR#wr
```

```
CORE-SW:
CORE-SW>enable
CORE-SW#conf t
CORE-SW(config)#router ospf 1
CORE-SW(config-router)#router-id 2.2.2.2
CORE-SW(config-router)#passive-interface default
CORE-SW(config-router)#no passive-interface FastEthernet0/1
CORE-SW(config-router)#no passive-interface FastEthernet0/2
CORE-SW(config-router)#no passive-interface FastEthernet0/3
CORE-SW(config-router)#no passive-interface FastEthernet0/4
CORE-SW(config-router)#network 192.168.10.0 0.0.0.3 area 0
CORE-SW(config-router)#network 192.168.10.4 0.0.0.3 area 0
CORE-SW(config-router)#network 192.168.10.8 0.0.0.3 area 0
CORE-SW(config-router)#
CORE-SW(config-router)#end
CORE-SW#wr
```

#### **ACADEMY:**

```
ACADEMY>en
ACADEMY#conf t
ACADEMY(config)#router ospf 1
ACADEMY(config-router)#router-id 3.3.3.3
ACADEMY(config-router)#passive-interface default
ACADEMY(config-router)#no passive-interface fa0/1
ACADEMY(config-router)#network 192.168.10.4 0.0.0.3 area 0
ACADEMY(config-router)#network 192.168.1.0 0.0.0.255 area 0
ACADEMY(config-router)#network 192.168.2.0 0.0.0.255 area 0
ACADEMY(config-router)#network 192.168.3.0 0.0.0.255 area 0
ACADEMY(config-router)#end
ACADEMY#wr
```

#### **COMMON:**

```
COMMON>en
COMMON#conf t
COMMON(config)#router ospf 1
COMMON(config-router)#router-id 4.4.4.4
COMMON(config-router)#passive-interface default
COMMON(config-router)#no passive-interface fa0/1
COMMON(config-router)#network 192.168.10.8 0.0.0.3 area 0
COMMON(config-router)#network 192.168.4.0 0.0.0.255 area 0
COMMON(config-router)#network 192.168.5.0 0.0.0.255 area 0
COMMON(config-router)#end
COMMON#wr
```

## **CORE-ROUTER:**

```
CORE-RTR>en
CORE-RTR#conf t
CORE-RTR(config)#interface fa0/0
CORE-RTR(config-if)#description ### CORE-RTR-ISP ###
CORE-RTR(config-if)#ip address 192.168.100.2 255.255.255.0
CORE-RTR(config-if)#no shutdown
CORE-RTR(config-if)#end
CORE-RTR#wr
```

## **ISP:**

```
Router>en
Router#conf t
Router(config)#hostname ISP
ISP(config)#no ip domain-lookup
ISP(config)#exit
ISP#clock set 01:17:05 MAY 03 2014
ISP#wr
```

```
ISP#conf t
ISP(config)#interface fa0/0
ISP(config-if)#description ###ISP-CORE-RTR ###
ISP(config-if)#ip address 192.168.100.1 255.255.255.0
ISP(config-if)#no shutdown
ISP(config-if)#exit
ISP(config)#interface fa1/0
ISP(config-if)#description ###ISP-SERVER-PC ##
ISP(config-if)#ip address 192.168.50.254 255.255.255.0
ISP(config-if)#no shutdown
ISP(config-if)#end
ISP#wr
```

## **Configuring Static & Default Route**

### **CORE-RTR:**

```
CORE-RTR>en
CORE-RTR#configure t
CORE-RTR(config)#ip route 0.0.0.0 0.0.0.0 fa0/0
CORE-RTR(config)#end
CORE-RTR#wr
```

### **ISP:**

```
ISP#conf t
```



```
ISP(config)#ip route 192.168.0.0 255.255.0.0 fa0/0
ISP(config)#end
ISP#wr
```

### **EVENT FEEDBACK FORM: CAMPUS NETWORK DESIGN AND DEPLOYMENT WORKSHOP**

\*1. Overall, how would you rate the workshop?

- ☐ Extremely good
- ☐ Very good
- ☐ Fairly good
- ☐ Mildly good
- ☐ Not good at all

\*2. How well-organized was the instructor?

- ☐ Extremely well-organized
- ☐ Quite well-organized
- ☐ Moderately well-organized
- ☐ Slightly well-organized
- ☐ Not at all well-organized

\*3. How would you rate the instructors in terms of experience, knowledge and friendliness?

- ☐ Extremely good
- ☐ Very good
- ☐ Fairly good
- ☐ Mildly good
- ☐ Not good at all

\*3. How helpful were the workshop contents and resources?

- ☐ Extremely helpful
- ☐ Very helpful
- ☐ Moderately helpful
- ☐ Slightly helpful
- ☐ Not helpful at all

\*4. How helpful was the workshop to enhance your knowledge?

- ☐ Extremely helpful
- ☐ Very helpful
- ☐ Fairly helpful
- ☐ Slightly helpful
- ☐ Not helpful at all

5. Do you have any suggestion for improving our activities?

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