



# Lecture (08)

# Building Enterprise LAN and accessing Internet

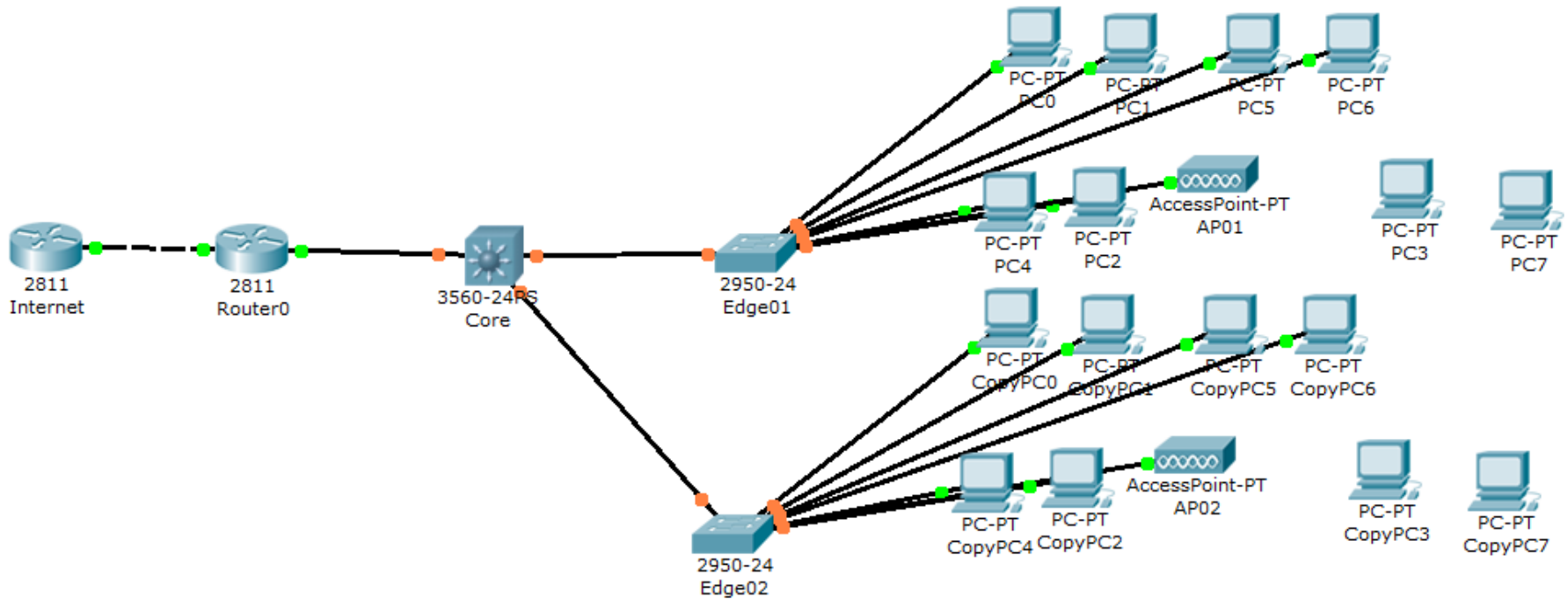
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**By:**

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# Topology 01 – simulation

---



```
enabl
config t
hostname Core
ip routing

interface vlan 1
ip address 10.0.10.1 255.255.255.0
no shutdown

vlan 2
name vlan2

interface vlan 2
ip address 10.0.20.1 255.255.255.0
no shutdown

vlan 3
name vlan3

interface vlan 3
ip address 10.0.30.1 255.255.255.0
no shutdown

vlan 4
name vlan4

interface vlan 4
ip address 10.0.40.1 255.255.255.0
no shutdown

vlan 5
name wlan

interface vlan 5
ip address 10.0.50.1 255.255.255.0
no shutdown

interface range fa0/1-5
switchport mode access
switchport access vlan 1

interface range fa0/6-24
switchport trunk encapsulation dot1q
switchport mode trunk

ip route 0.0.0.0 0.0.0.0 10.0.10.2

spanning-tree vlan 1,2,3,4,5 root primary

end
```

```
enabl
config t
```

```
ip address switch 10.0.10.1
ip address netmask 255.255.255.0
ip default-gateway 10.0.10.2
```

```
vlan name 1 "vlan 1"
interface vlan 1
ip address 10.0.10.1 255.255.255.0 1
```

```
vlan create 2 name "vlan 2" type port
interface vlan 2
ip address 10.0.20.1 255.255.255.0 2
```

```
vlan create 3 name "vlan 3" type port
interface vlan 3
ip address 10.0.30.1 255.255.255.0 3
```

```
vlan create 4 name "vlan 4" type port
interface vlan 4
ip address 10.0.40.1 255.255.255.0 4
```

```
vlan create 5 name "wlan" type port
interface vlan 5
ip address 10.0.50.1 255.255.255.0 5
```

```
ip routing
ip route 0.0.0.0 0.0.0.0 10.0.10.2 1
```

```
vlan port 6-24 tagging TagAll
vlan members add 1 1-24
vlan members add 2 1-24
vlan members add 3 1-24
vlan members add 4 1-24
vlan members add 5 1-24
```

```
vlan port 6-24 pvid 1
```

```
mlt 1 disable
mlt 1 name "MLT_to_7-8"
mlt 1 learning disable
mlt 1 member 7,8
mlt 1 enable
```

```
interface fastEthernet All
spanning-tree learning fast
rate-limit both 10
exit
```

```
exit
```

```
enabl
config t
hostname Edge01
```

```
interface vlan 1
ip address 10.0.10.3 255.255.255.0
no shutdown
```

```
vlan 2
name vlan2
```

```
vlan 3
name vlan3
```

```
vlan 4
name vlan4
```

```
vlan 5
name wlan
```

```
interface range fa0/24
switchport mode trunk
```

```
interface range fa0/1-7
switchport mode access
switchport access vlan 2
```

```
interface range fa0/8-14
switchport mode access
switchport access vlan 3
```

```
interface range fa0/15-21
switchport mode access
switchport access vlan 4
```

```
interface range fa0/22-23
switchport mode access
switchport access vlan 5
```

```
ip default-gateway 10.0.10.1
```

```
end
```

```
enabl
config t
hostname Edge02
```

```
interface vlan 1
ip address 10.0.10.4 255.255.255.0
no shutdown
```

```
vlan 2
name vlan2
```

```
vlan 3
name vlan3
```

```
vlan 4
name vlan4
```

```
vlan 5
name wlan
```

```
interface range fa0/24
switchport mode trunk
```

```
interface range fa0/1-7
switchport mode access
switchport access vlan 2
```

```
interface range fa0/8-14
switchport mode access
switchport access vlan 3
```

```
interface range fa0/15-21
switchport mode access
switchport access vlan 4
```

```
interface range fa0/22-23
switchport mode access
switchport access vlan 5
```

```
ip default-gateway 10.0.10.1
```

```
end
```

```
enable
Config t
hostname InternetRouter

Interface fa0/1
IP address 192.168.1.254 255.255.255.0
No sh

interface loopback 0
no sh
ip address 8.8.8.8 255.255.255.255

interface loopback 1
no sh
ip address 4.2.2.2 255.255.255.255

IP route 10.0.10.0 255.255.255.0 fa0/1
IP route 10.0.20.0 255.255.255.0 fa0/1
IP route 10.0.30.0 255.255.255.0 fa0/1
IP route 10.0.40.0 255.255.255.0 fa0/1
IP route 10.0.50.0 255.255.255.0 fa0/1
IP route 192.168.1.0 255.255.255.0 fa0/1
IP route 0.0.0.0 0.0.0.0 fa0/1
```

```
enable
Config t
hostname Router01
```

```
Interface fa0/0
IP address 10.0.10.2 255.255.255.0
No sh
```

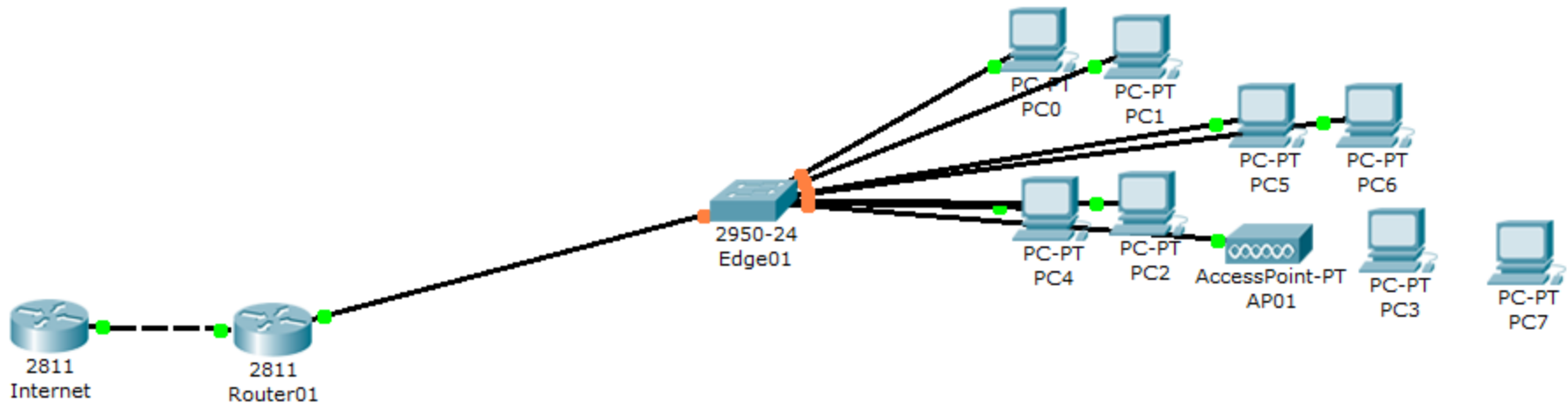
```
Interface fa0/1
IP address 192.168.1.2 255.255.255.0
No sh
```

```
IP route 10.0.10.0 255.255.255.0 fa0/0
IP route 10.0.20.0 255.255.255.0 fa0/0
IP route 10.0.30.0 255.255.255.0 fa0/0
IP route 10.0.40.0 255.255.255.0 fa0/0
IP route 10.0.50.0 255.255.255.0 fa0/0
IP route 0.0.0.0 0.0.0.0 fa0/1
```



# Topology 02 – on cisco equipment's

---



```
enable
Config t
hostname InternetRouter

Interface fa0/1
IP address 192.168.1.1 255.255.255.0
No sh

interface loopback 0
no sh
ip address 8.8.8.8 255.255.255.255

interface loopback 1
no sh
ip address 4.2.2.2 255.255.255.255

IP route 10.0.10.0 255.255.255.0 fa0/1
IP route 10.0.20.0 255.255.255.0 fa0/1
IP route 10.0.30.0 255.255.255.0 fa0/1
IP route 10.0.40.0 255.255.255.0 fa0/1
IP route 10.0.50.0 255.255.255.0 fa0/1
IP route 192.168.1.0 255.255.255.0 fa0/1
IP route 0.0.0.0 0.0.0.0 fa0/1
```

```
enabl
config t
hostname Edge01
```

```
interface vlan 1
ip address 10.0.10.2 255.255.255.0
no shutdown
```

```
vlan 2
name vlan2
```

```
vlan 3
name vlan3
```

```
vlan 4
name vlan4
```

```
vlan 5
name wlan
```

```
interface range fa0/24
switchport mode trunk
```

```
interface range fa0/1-7
switchport mode access
switchport access vlan 2
```

```
interface range fa0/8-14
switchport mode access
switchport access vlan 3
```

```
interface range fa0/15-21
switchport mode access
switchport access vlan 4
```

```
interface range fa0/22-23
switchport mode access
switchport access vlan 5
```

```
ip default-gateway 10.0.10.1
```

```
end
```

```
enable
Config t
hostname Router01

Interface fa0/0
IP address 10.0.10.1 255.255.255.0
No sh

interface fa0/0.1
encapsulation dot1q 2
IP address 10.0.20.1 255.255.255.0
No sh

interface fa0/0.2
encapsulation dot1q 3
IP address 10.0.30.1 255.255.255.0
No sh

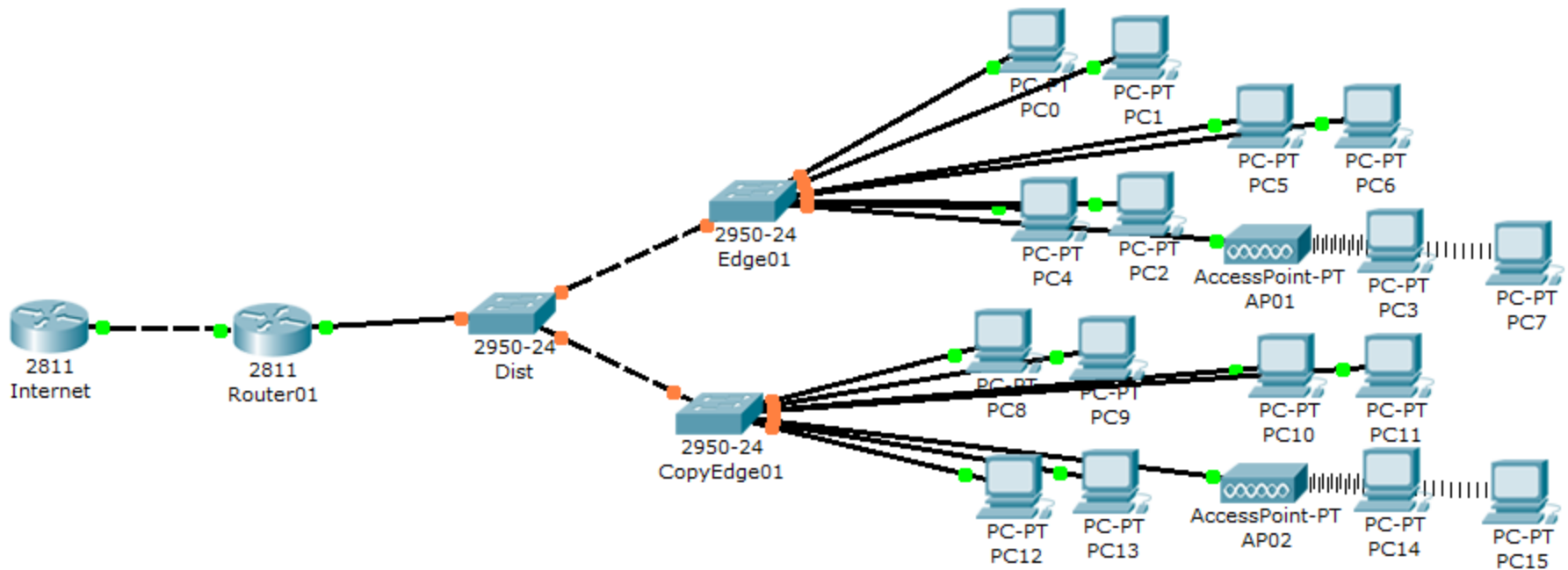
interface fa0/0.3
encapsulation dot1q 4
IP address 10.0.40.1 255.255.255.0
No sh

interface fa0/0.4
encapsulation dot1q 5
IP address 10.0.50.1 255.255.255.0
No sh

Interface fa0/1
IP address 192.168.1.2 255.255.255.0
No sh

IP route 0.0.0.0 0.0.0.0 fa0/1
```

# Topology 03 - simulation



```
enabl
config t
hostname Edge01
```

```
interface vlan 1
ip address 10.0.10.3 255.255.255.0
no shutdown
```

```
vlan 2
name vlan2
```

```
vlan 3
name vlan3
```

```
vlan 4
name vlan4
```

```
vlan 5
name wlan
```

```
interface range fa0/24
switchport mode trunk
```

```
interface range fa0/1-7
switchport mode access
switchport access vlan 2
```

```
interface range fa0/8-14
switchport mode access
switchport access vlan 3
```

```
interface range fa0/15-21
switchport mode access
switchport access vlan 4
```

```
interface range fa0/22-23
switchport mode access
switchport access vlan 5
```

```
ip default-gateway 10.0.10.1
```

```
end
```

```
enabl  
config t  
hostname Edge02
```

```
interface vlan 1  
ip address 10.0.10.4 255.255.255.0  
no shutdown
```

```
vlan 2  
name vlan2
```

```
vlan 3  
name vlan3
```

```
vlan 4  
name vlan4
```

```
vlan 5  
name wlan
```

```
interface range fa0/24  
switchport mode trunk
```

```
interface range fa0/1-7  
switchport mode access  
switchport access vlan 2
```

```
interface range fa0/8-14  
switchport mode access  
switchport access vlan 3
```

```
interface range fa0/15-21  
switchport mode access  
switchport access vlan 4
```

```
interface range fa0/22-23  
switchport mode access  
switchport access vlan 5
```

```
ip default-gateway 10.0.10.1
```

```
end
```

```
enable
Config t
hostname InternetRouter

Interface fa0/1
IP address 192.168.1.1 255.255.255.0
No sh

interface loopback 0
no sh
ip address 8.8.8.8 255.255.255.255

interface loopback 1
no sh
ip address 4.2.2.2 255.255.255.255

IP route 10.0.10.0 255.255.255.0 fa0/1
IP route 10.0.20.0 255.255.255.0 fa0/1
IP route 10.0.30.0 255.255.255.0 fa0/1
IP route 10.0.40.0 255.255.255.0 fa0/1
IP route 10.0.50.0 255.255.255.0 fa0/1
IP route 192.168.1.0 255.255.255.0 fa0/1
IP route 0.0.0.0 0.0.0.0 fa0/1
```



```
enable
Config t
hostname Router01
```

```
Interface fa0/0
IP address 10.0.10.2 255.255.255.0
No sh
```

```
Interface fa0/1
IP address 192.168.1.2 255.255.255.0
No sh
```

```
IP route 10.0.10.0 255.255.255.0 fa0/0
IP route 10.0.20.0 255.255.255.0 fa0/0
IP route 10.0.30.0 255.255.255.0 fa0/0
IP route 10.0.40.0 255.255.255.0 fa0/0
IP route 10.0.50.0 255.255.255.0 fa0/0
IP route 0.0.0.0 0.0.0.0 fa0/1
```

```
enabl
config t
hostname dist

interface vlan 1
ip address 10.0.10.100 255.255.255.0
no shutdown

vlan 2
name vlan2

vlan 3
name vlan3


vlan 4
name vlan4

vlan 5
name wlan

interface range fa0/1-24
switchport mode trunk

spanning-tree vlan 1,2,3,4,5 root primary

end
```



**Thanks,..**  
**See you next week (ISA),...**