

CCNA SRWE

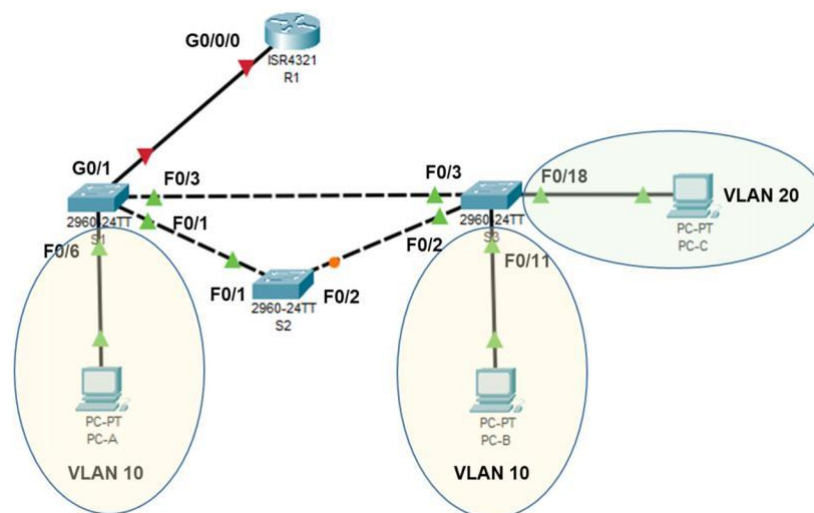
Lab 1

Homework

Deadline: 25.1.2021

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VLANs and 802.1Q Trunks Inter-VLAN-Routing



NP Course NP Chapter 8

SRWE Modules 1 - 4:

Switching Concepts, VLANs, and InterVLAN Routing Exam

Upload

Record your answers in this PDF File SRWE-Lab1-Homework.pdf.

Write your answers in **red color**. You may use the comment capabilities of the free Adobe reader.

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Homework / Preparation

Part 1: Cisco IOS Basic Configuration Commands

- a. Read the **Lab Instructions** of this Lab, and read NP chapters 8
- b. Check the **IOS Command List**, provided for the Labs and Review already used and new configuration commands.

Part 2: Recall Basic Configuration Commands

- a. Basic router interface commands
 - Configure router interface g0/1 with description "Link to LAN-A", IP address 172.16.10.1/29 and activate it

```
R1 (config)#int g0/1
```



```
R1 (config-if)# description Link to LAN-A
```



```
R1 (config-if)# ip address 172.16.10.1 255.255.255.248
```



```
R1 (config-if)#no shutdown
```
 - Display the status of all **interfaces** in brief. **R1(config)#exit**

```
R1# show ip interface brief
```
 - Display the status of all **interfaces** in brief.

```
R1# show interface brief
```
 - Display the **detailed status** of the interface g0/1

```
R1# show ip int g0/1
```
 - Display the **routing table**.

```
R1#show ip route
```
 - Display the **running configuration**.

```
R1#show running-config
```

Part 3: Cisco IOS Switch VLAN / Trunk Commands

- a) **Basic VLAN switch configurations**
 - Create **VLAN 57** with name "students" on switch S1

```
S1 (config)# vlan 57
```



```
S1 (config-vlan)# name student
```

- Configure S1 switch port f0/23 to be **access port** for VLAN 57

```
S1(config)#int f0/23
```

```
S1(config-if)# switchport mode access
```

```
S1(config-if)#switchport access vlan 57
```

- Display the **VLAN database** in brief

```
S1# show vlan brief
```

b) Basic Trunk switch configurations

- Configure the interface f0/5 as trunk port with native VLAN 99, VLAN allowed 57, 58, 59, 99

```
S1(config)# int f0/5
```

```
S1(config-if)# switchport mode trunk
```

```
S1(config-if)# switchport trunk native vlan 99
```

```
S1(config-if)# switchport trunk allowed vlan 57,58,59,99
```

- Display the status of **trunk interface f0/5**

```
S1#show interface f0/5 trunk
```

c) Basic SVI switch configurations

- Create management VLAN 100 (Name Management)

```
S1(config)# vlan 100
```

```
S1(config-vlan)#name management
```

- Create the interface, configure IP address 192.168.100.11/24 for the management VLAN 100

```
S1(config)# int vlan 100
```

```
S1(config-if)#ip address 192.168.100.11 255.255.255.0
```

```
S1(config-if)#no shutdown
```

- Set switch port f0/1 to be access port for VLAN 100.

```
S1(config)# int f0/1
```

```
S1(config-if)# switchport mode access
```

```
S1(config-if)# switchport access Vlan 100
```

- Configure an IP default gateway with IP address 192.168.100.1 on switch S1.

```
S1(config)#ip default-gateway 192.168.100.1
```

Part 4: Cisco IOS Inter-VLAN-Routing Commands

a) Switch Trunk to Router configurations

Configure the interface f0/5 of switch S1 as trunk port with native VLAN 100, VLAN allowed 10,20,100

```
S1(config)# int f0/5  
S1(config-if)# switchport mode trunk  
S1(config-if)# switchport trunk native vlan 100  
S1(config-if)# switchport trunk allowed vlan 10,20,100  
S1(config-if)#end
```

b) Router sub-interface and physical interface

- Create a sub-interface for VLAN 10 at router R1 interface g0/0 with description "VLAN 10 interface", IEEE 802.1q encapsulation and IP address 10.0.0.1 / 24.

```
R1(config)# int g0/0  
R1(config-subif)#switchport trunk encapsulation dot1q  
R1(config-subif)# ip address 10.0.0.1 255.255.255.0  
R1(config-subif)#exit
```

- Configure router R1 interface g0/0 as native trunk interface for VLAN 100 with description "VLAN 100 interface", IP address 192.168.100.1 / 24 and switch-on this physical interface.

```
R1(config)# int g0/0  
R1(config-if)# description vlan 100 interface  
R1(config-if)#ip address 192.168.100.1 255.255.255.0  
R1(config-if)#no shutdown
```