

CCNA SRWE

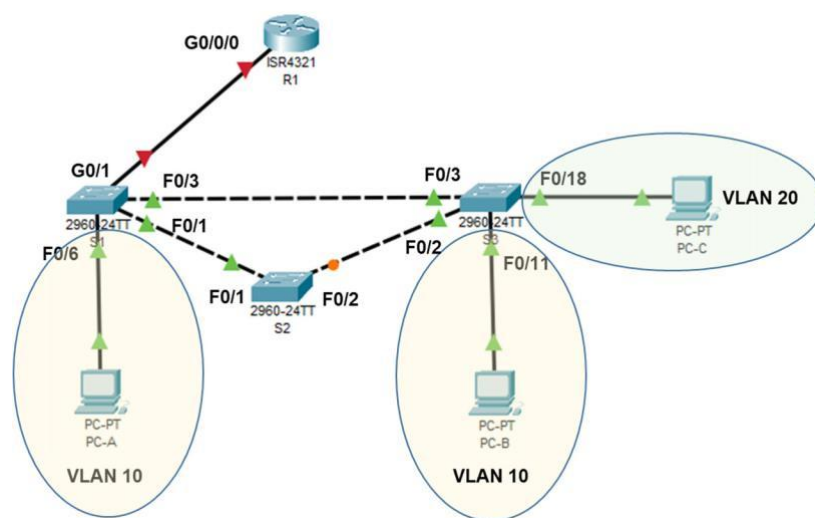
Lab 1

Homework

Deadline: 25.1.2021

Name: **Rubaiya Kabir Pranti**

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.

Upload the PDF file with your answers is Ilias.

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)# interface g0/1
R1(config-if)# description Link to LAN-A
R1(config-if)# ip address 172.16.0.1 255.255.255.248
R1(config-if)# no shutdown
```

- Display the status of all **interfaces** in brief.
R1# show ip interface brief or sh ip int br
 - Display the **detailed status** of the interface g0/1
R1# show ip interface g0/1
 - Display the **routing table**.
R1# show ip route
 - Display the **running configuration**.
R1# show running-config or sh run

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 students
```

- Configure S1 switch port f0/23 to be **access port** for VLAN 57
S1(config)# interface 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)# interface 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 trunk f0/5
- 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)# interface 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)# interface 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)# interface 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)# exit
```

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)# interface g0/0.10
R1(config-subif)# description VLAN 10 interface
R1(config-subif)# encapsulation dot1Q 10
R1(config-subif)# ip address 10.0.0.1 255.255.255.0
```

further-

```
R1(config-subif)# exit
R1(config-if)# no shutdown (switching-on)
```

- 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)# interface g0/0.100
R1(config-if)# description VLAN 100 interface
R1(config-if)# ip address 192.168.100.1 255.255.255.0
R1(config-if)# exit
```