# Group Assignment 2 - Group Lab Activity 2

TNE10006/TNE60006 S2 2021

**Assignment Weight:**   
5%

**Assignment Points:**   
50

**Submission Due Date:**

By the end of Week 7 Lab Session.

**Reference Material:**

* Lab SU-6a Troubleshooting Inter-VLAN Routing

**Instructions:**

1. Form a group of 3-4 people amongst the students present in the lab session
2. Your group discussion time will be in the last 20 minutes of the lab session in Collaborate Ultra, Breakout groups.
3. Discuss and answer the questions in Group Assignment 2 in your breakout group.
4. Organise for your group to meet again to complete all the questions.
5. Each group will submit one completed Group Assignment 2
6. Submit Group Assignment 2, in the Canvas shell, under the Group Lab Activity 2
7. Late penalties will apply for submission after the due date.

**Group Assignment 2 Questions:**

* Section 1: Troubleshoot Inter-VLAN Routing Configuration (10 marks)
* Section 2: Verify VLAN Configuration, Port Assignment and Trunking (16 marks)
* Section 3: Troubleshooting and Re-configuration Commands (18 marks)
* Section 4: Connectivity Scenarios (6 marks)

**Group Assignment 2:**

|  |  |
| --- | --- |
| **Group Members** | |
| **Name** | **Student Id:** |
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**Section 1: Troubleshoot Inter-VLAN Routing Configuration (10 marks)**

Refer to **Part 2 Troubleshoot Inter-VLAN Routing Configuration of Lab SU-6a**

Q1. Regarding R1’s routing table,

* + 1. Were there any networks missing? If so, which networks?   
       (2 marks)

Yes. We are missing “c” and “l” networks for the subinterfaces that had been created in the commands

* + 1. Were there any networks that should not have been present? If so, which networks?   
       (2 marks)

No. it is because the loopback were configured before so there isn’t any network there that weren’t supposed to be there.

Q2. Regarding R1’s interface configuration

1. Were all interfaces, loopback and sub-interfaces configured correctly? If not, list the configuration issues you found.  
   (6 marks)

No, because the main interface which is GigabitEthernet0/0/1 was shutdown and the IP was showing 11 instead of VLAN 10.

The following configurations were wrong:

!

interface GigabitEthernet0/0/1

no ip address

!

(here after no ip address, “no shutdown” command should have also been written)

!

interface GigabitEthernet0/0/1.10

encapsulation dot1q 10

ip address 192.168.11.1 255.255.255.0

!

(here the ip address should be 192.168.10.1 as it is for vlan10)

**Section 2: Verify VLAN Configuration, Port Assignment and Trunking   
(16 marks)**

Refer to **Part 3 Verify VLAN Configuration and Port Assignments and Trunking of Lab SU-6a**

Q1. Regarding S3’s VLAN Database,

* + 1. Were there any VLANs numbers or names missing in the output? If so, list them.  
       (2 marks)

Yes. Vlan 20 Engineering was missing in the output

* + 1. Were all access ports assigned to the correct VLANs? If not, list the missing or incorrect assignments.  
       (2 marks)

No. the port for vlan 10 had not been allocated.

Q2. Regarding S4’s VLAN Database,

* + 1. Were there any VLANs numbers or names missing in the output? If so, list them.  
       (2 marks)

Yes. Vlan 10 is missing its name “R&D”

(But here vlan10 is not really needed for S4 as only vlan 20 is connected to it. So it will be best to remove vlan 10 from there completely for security purposes. Thus, following that reasoning, I am giving the configuration to remove vlan10 completely from S4.)

* + 1. Were all access ports assigned to the correct VLANs? If not, list the missing or incorrect assignments.  
       (2 marks)

No. Vlan 20 should have port Gi1/0/24

Q3. Regarding Trunking configuration,

* + 1. Based on the topology diagram, which port(s) on S3 should operate in trunking mode?   
       (2 marks)

Gi1/0/11 and Gi1/0/5 should be in trunk mode

* + 1. Based on the topology diagram, which port(s) on S4 should operate in trunking mode?   
       (2 marks)

Gi1/0/5 should be in trunk mode.

* + 1. Were all ports that should operate in trunking mode configured correctly? If not, list the configuration issues you found  
       (4 marks)

No. In s3, Gi1/0/5 had not been properly set in trunk mode.

The following configuration was wrong:

!

interface GigabitEthernet1/0/5

switchport mode access

!

(it should be trunk not access)

**Section 3: Troubleshooting and Re-configuration Commands (18 marks)**

Q1. Use the table provided to list the configuration issues you found in Lab SU-6a. For each issue, list the troubleshooting command(s) that helped you find it and the configuration command(s) you used to fix it.  
(3 marks for each correct issue)

|  |  |  |  |
| --- | --- | --- | --- |
| **Device** | **Configuration Issue** | **Troubleshooting Command(s)** | **Re-Configuration Command(s)** |
| S3 | Vlan20 and name not set on switch and thus traffic for vlan 20 wouldn’t be able to reach router | This command had not been stated at all in the configuration file | conf t  vlan 20  name Engineering  end |
| S3 | G1/0/7 had not been configured into access port and had not been allocated to carry traffic for vlan 10 only | This command had not been stated at all in the configuration file | conf t  int g1/0/7  switchport mode access  switchport access vlan 10  end |
| S3 | G1/0/5 had not been made into trunk | interface GigabitEthernet1/0/5  switchport mode access | conf t  interface GigabitEthernet1/0/5  switchport mode trunk  end |
| S3 and S4 | Vlan1 has an ip address but it has not been turned on and instead is in shutdown mode | interface vlan1  ip address 192.168.1.11 255.255.255.0 | conf t  interface vlan1  ip address 192.168.1.11 255.255.255.0  no shutdown  end |
| S4 | Vlan10 is not needed in s4 and instead is a security risk | interface GigabitEthernet1/0/24  switchport access vlan 10  switchport mode access | conf t  no vlan 10  end |
| S4 | Port g1/0/24 has been configured to the wrong vlan | interface GigabitEthernet1/0/24  switchport access vlan 10  switchport mode access | conf t  int g1/0/24  switchport mode access  switchport access vlan 20  end |
| R1 | Main interface for the sub-interfaces had been kept in shutdown mode | interface GigabitEthernet0/0/1  no ip address | conf t  interface GigabitEthernet0/0/1  no ip address  no shutdown  end |
| R1 | The port had the wrong ip address for vlan10 | interface GigabitEthernet0/0/1.10  encapsulation dot1q 10  ip address 192.168.11.1 255.255.255.0 | conf t  int g0/0/1.10  encapsulation dot1q 10  ip address 192.168.10.1 255.255.255.0  end |
| R1 | The port had the wrong vlan encapsulation. | interface GigabitEthernet0/0/1.1  encapsulation dot1q 11  ip address 192.168.1.1 255.255.255.0 | interface GigabitEthernet0/0/1.1  encapsulation dot1q 1  ip address 192.168.1.1 255.255.255.0 |

**Section 4: Connectivity Scenarios (6 marks)**

Q1. After fixing all configuration issues in Lab SU-6a,

* + 1. Can S3 and S4 ping each other? If so, does this traffic traverse R1? Give reasons for your answers.  
       (1 mark)

Yes they can ping each other. No they are on the same vlan1

* + 1. Can S3 ping all router sub-interfaces and loopback interface? Give reasons for your answer.  
       (1 mark)

Yes. Because now the gateway, trunk port, vlans, vlan ip addresses and vlan ports have been properly allocated.

* + 1. Can S4 ping all router sub-interfaces and loopback interface? Give reasons for your answer.  
       (1 mark)

Yes. Because now the gateway, trunk port, vlans, vlan ip addresses and vlan ports have been properly allocated.

Q2. If you were to connect PC-A and PC-B to the network as shown in the Topology Diagram,

* + 1. What IP address would you configure on PC-A as the Default Gateway?   
       (1 mark)

192.168.10.1

* + 1. What IP address would you configure on PC-B as the Default Gateway?   
       (1 mark)

192.168.20.1

* + 1. Would PC-A and PC-B be able to ping each other? If so, would this traffic traverse R1? Give reasons for your answers.  
       (1 mark)

Yes. Yes it wil transverse R1 as they are in different vlans and intervlan traffic is only possible in router as it is a L3 device