Packet Tracer - Inter-VLAN Routing Challenge (Instructor Version)

**Instructor Note**: Red font color or gray highlights indicate text that appears in the instructor copy only.

# Addressing Table

| Device | Interface | IP Address | Subnet Mask | Default Gateway |
| --- | --- | --- | --- | --- |
| R1 | G0/0 | 172.17.25.2 | 255.255.255.252 | N/A |
| R1 | G0/1.10 | 172.17.10.1 | 255.255.255.0 | N/A |
| R1 | G0/1.20 | 172.17.20.1 | 255.255.255.0 | N/A |
| R1 | G0/1.30 | 172.17.30.1 | 255.255.255.0 | N/A |
| R1 | G0/1.88 | 172.17.88.1 | 255.255.255.0 | N/A |
| R1 | G0/1.99 | 172.17.99.1 | 255.255.255.0 | N/A |
| S1 | VLAN 99 | 172.17.99.10 | 255.255.255.0 | 172.17.99.1 |
| PC1 | NIC | 172.17.10.21 | 255.255.255.0 | 172.17.10.1 |
| PC2 | NIC | 172.17.20.22 | 255.255.255.0 | 172.17.20.1 |
| PC3 | NIC | 172.17.30.23 | 255.255.255.0 | 172.17.30.1 |
| Server | NIC | 172.17.50.254 | 255.255.255.0 | 172.17.50.1 |

# VLAN and Port Assignments Table

| VLAN | Name | Interface |
| --- | --- | --- |
| 10 | Faculty/Staff | F0/11-17 |
| 20 | Students | F0/18-24 |
| 30 | Guest(Default) | F0/6-10 |
| 88 | Native | G0/1 |
| 99 | Management | VLAN 99 |

# Scenario

In this activity, you will demonstrate and reinforce your ability to implement inter-VLAN routing, including configuring IP addresses, VLANs, trunking, and subinterfaces.

# Instructions

Configure the devices to meet the following requirements.

* Assign IP addressing to R1 and S1 based on the Addressing Table.
* Configure the default gateway on S1.
* Create, name, and assign VLANs on S1 based on the VLAN and Port Assignments Table. Ports should be in access mode. Your VLAN names should match the names in the table exactly.
* Configure G0/1 of S1 as a static trunk and assign the native VLAN.
* **All** ports that are not assigned to a VLAN should be disabled.
* Configure inter-VLAN routing on R1 based on the Addressing Table.
* Verify connectivity. R1, S1, and all PCs should be able to ping each other and the server.

End of document

# Answer Scripts

# Switch S1

en

config t

interface vlan 99

ip address 172.17.99.10 255.255.255.0

no shutdown

ip default-gateway 172.17.99.1

!Note: VLAN naming only requires the first letter be correct

vlan 10

name Faculty/Staff

vlan 20

name Students

vlan 30

name Guest(Default)

vlan 88

name Native

vlan 99

name Management

interface range f0/11 - 17

switchport mode access

switchport access vlan 10

interface range f0/18 - 24

switchport mode access

switchport access vlan 20

interface range f0/6 - 10

switchport mode access

switchport access vlan 30

interface g0/1

switchport mode trunk

switchport trunk native vlan 88

interface range f0/1-5,g0/2

shutdown

end

# Router R1

ena

conf t

interface GigabitEthernet0/1

no shutdown

interface GigabitEthernet0/1.10

encapsulation dot1Q 10

ip address 172.17.10.1 255.255.255.0

interface GigabitEthernet0/1.20

encapsulation dot1Q 20

ip address 172.17.20.1 255.255.255.0

interface GigabitEthernet0/1.30

encapsulation dot1Q 30

ip address 172.17.30.1 255.255.255.0

interface GigabitEthernet0/1.88

encapsulation dot1Q 88 native

ip address 172.17.88.1 255.255.255.0

interface GigabitEthernet0/1.99

encapsulation dot1Q 99

ip address 172.17.99.1 255.255.255.0

end