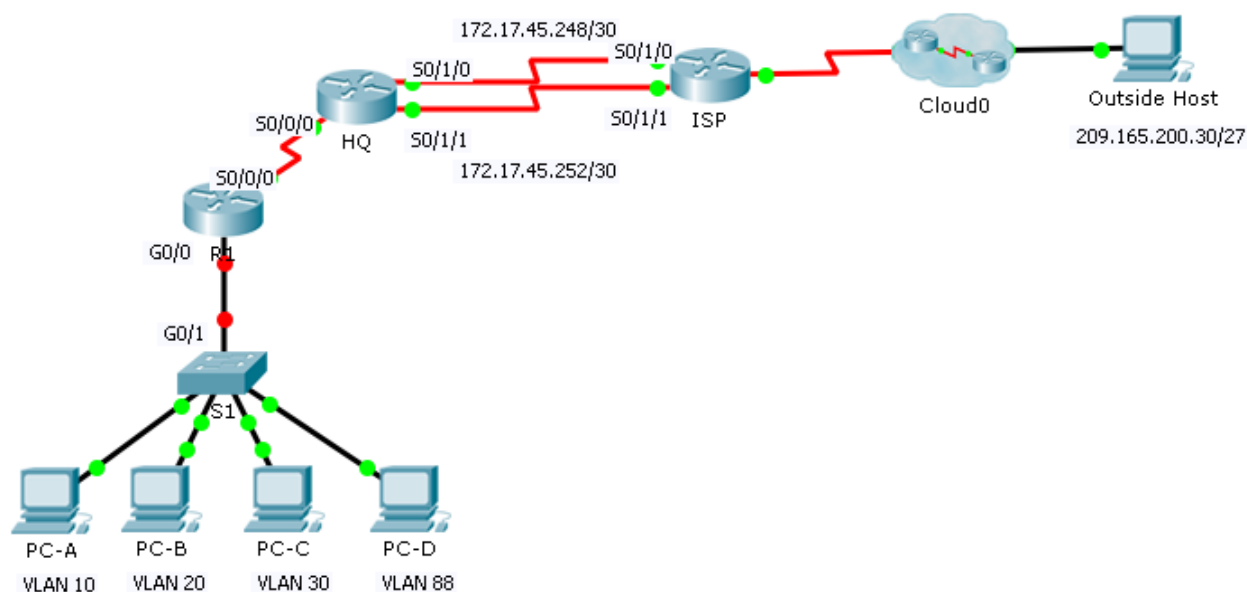# Packet Tracer – Skills Integration Challenge (Instructor Version)

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

Topology

Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway	VLAN
R1	S0/0/0	172.31.1.2	255.255.255.0	N/A	N/A
	G0/0.10	172.31.10.1	255.255.255.0	N/A	10
	G0/0.20	172.31.20.1	255.255.255.0	N/A	20
	G0/0.30	172.31.30.1	255.255.255.0	N/A	30
	G0/0.88	172.31.88.1	255.255.255.0	N/A	88
	G0/0.99	172.31.99.1	255.255.255.0	N/A	99
S1	VLAN 88	172.31.88.33	255.255.255.0	172.31.88.1	88
PC-A	NIC	172.31.10.21	255.255.255.0	172.31.10.1	10
PC-B	NIC	172.31.20.22	255.255.255.0	172.31.20.1	20
PC-C	NIC	172.31.30.23	255.255.255.0	172.31.30.1	30
PC-D	NIC	172.31.88.24	255.255.255.0	172.31.88.1	88

VLAN Table

VLAN	Name	Interfaces
10	Sales	F0/11-15
20	Production	F0/16-20
30	Marketing	F0/5-10
88	Management	F0/21-24
99	Native	G0/1

Scenario

In this activity, you will demonstrate and reinforce your ability to configure routers for inter-VLAN communication and configure static routes to reach destinations outside of your network. Among the skills you will demonstrate are configuring inter-VLAN routing, static and default routes.

Requirements

- Configure inter-VLAN routing on **R1** based on the **Addressing Table**.
- Configure trunking on **S1**.
- Configure four directly attached static route on **HQ** to each VLANs 10, 20, 30 and 88.
- Configure directly attached static routes on **HQ** to reach **Outside Host**.
  - Configure the primary path through the Serial 0/1/0 interface.
  - Configure the backup route through the Serial 0/1/1 interface with a 10 AD.
- Configure directly attached primary and backup summary routes on **ISP** for the entire 172.31.0.0/17 address space.

- Configure the primary path through the Serial 0/1/1 interface.
- Configure the backup route through the Serial 0/1/0 interface with 25 AD.
- Configure a directly attached default route on **R1**.
- Verify connectivity by making sure all the PCs can ping **Outside Host**.

Answer Scripts

```
!R1!!!!!!!!!!!!!!!!!!!!!
en
config t
interface GigabitEthernet0/0
 no shutdown
!
interface GigabitEthernet0/0.10
 description Sales VLAN
 encapsulation dot1Q 10
 ip address 172.31.10.1 255.255.255.0
!
interface GigabitEthernet0/0.20
 description Production VLAN
 encapsulation dot1Q 20
 ip address 172.31.20.1 255.255.255.0
!
interface GigabitEthernet0/0.30
 description Marketing VLAN
 encapsulation dot1Q 30
 ip address 172.31.30.1 255.255.255.0
!
interface GigabitEthernet0/0.88
 description Management VLAN
 encapsulation dot1Q 88
 ip address 172.31.88.1 255.255.255.0
!
interface GigabitEthernet0/0.99
 description Native VLAN
 encapsulation dot1Q 99 native
 ip address 172.31.99.1 255.255.255.0
!
ip route 0.0.0.0 0.0.0.0 Serial0/0/0
!
end
```

```
!S1!!!!!!!!!!!!!!!!!!!!!!!!!!
en
config t
int g0/1
switchport mode trunk
switchport trunk native vlan 99
end
wr

!HQ!!!!!!!!!!!!!!!!!!!!!!!!!
en
conf t
ip route 172.31.10.0 255.255.255.0 Serial0/0/0
ip route 172.31.20.0 255.255.255.0 Serial0/0/0
ip route 172.31.30.0 255.255.255.0 Serial0/0/0
ip route 172.31.88.0 255.255.255.0 Serial0/0/0
ip route 209.165.200.0 255.255.255.224 Serial0/1/0
ip route 209.165.200.0 255.255.255.224 Serial0/1/1 10
end
wr

!ISP!!!!!!!!!!!!!!!!!!!!!!!!!
en
conf t
ip route 172.31.0.0 255.255.128.0 Serial0/1/1
ip route 172.31.0.0 255.255.128.0 Serial0/1/0 25
end
wr
```