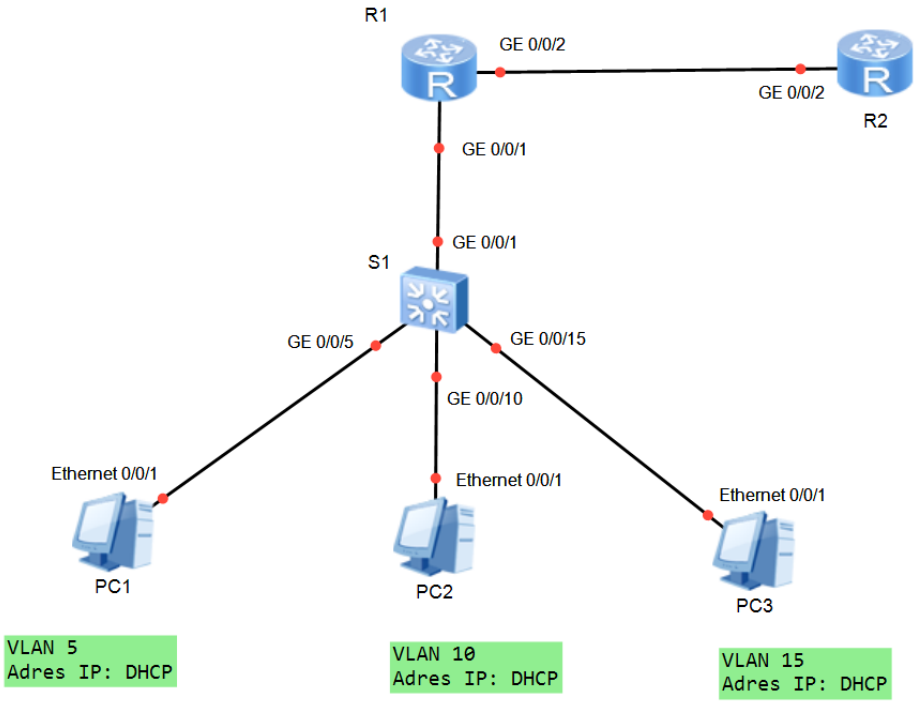
EC Advanced Topics in Networks

Configuration of real Huawei devices – DHCP



Addressing table:

Device	Interface	IP address	Default gateway
R1	GE0/0/1	-	-
	GE0/0/1.5	192.168.5.1 /24	-
	GE0/0/1.10	192.168.10.1 /24	-
	GE0/0/1.15	192.168.15.1 /24	-
	GE0/0/1.20	192.168.20.1 /24	-
	GE0/0/2	10.0.0.1 /30	-
R2	GE0/0/2	10.0.0.2 /30	-
S1	VLAN 20	DHCP	ip route-static
PC1	Ethernet 0/0/1	DHCP	DHCP
PC2	Ethernet 0/0/1	DHCP	DHCP
PC3	Ethernet 0/0/1	DHCP	DHCP

Exercises

1. Configure IP addresses on R1 router according to table above.

```
[RX]interface GigabitEthernet 0/0/X

[RX- GigabitEthernet 0/0/X]ip address X.X.X.X Y.Y.Y.Y
```

```
  X.X.X.X      IP address

[RX]interface GigabitEthernet 0/0/X.Y

[RX- GigabitEthernet 0/0/X.Y]ip address X.X.X.X Y.Y.Y.Y
[RX- GigabitEthernet 0/0/X.Y]dot1q termination vid X
```

2. Configure IP addresses on R2 router according to table above.
3. Create vlans 5, 10, 15 and 20 on S1 switch.

```
[S1]vlan batch ?
  INTEGER<1-4094>  VLAN ID
```

4. Create interface vlan 20 and configure DHCP addressing on this interface.

```
[S1]interface Vlanif ?
  <1-4094>  VLAN interface number

[S1-Vlanif20]ip address dhcp-alloc?
```

5. Set appropriate ports of S1 switch in access mode and assign to proper vlans.

```
[S1-GigabitEthernet0/0/X]port link-type access

[S1-GigabitEthernet0/0/X]port default vlan ?
  INTEGER<1-4094>  VLAN ID
```

6. Set appropiate ports of S1 switch in trunk mode

```
[S1-GigabitEthernet0/0/X]port link-type trunk
[S1-GigabitEthernet0/0/X]port trunk allow-pass vlan all
```

7. Configure static routes on R2 router to the networks 192.168.5.0/24, 192.168.10.0/24, 192.168.15.0/24 and 192.168.20.0/24

```
[R2]ip route-static 192.168.5.0 255.255.255.0 10.0.0.1
[R2]ip route-static 192.168.10.0 255.255.255.0 10.0.0.1
[R2]ip route-static 192.168.15.0 255.255.255.0 10.0.0.1
[R2]ip route-static 192.168.20.0 255.255.255.0 10.0.0.1
```

8. Configure on R2 router appropriate DHCP pools for all networks connected to interface G0/0/1 of R1 router.

```
[R2]dhcp enable

[R2] ip pool X
[R2-ip-pool-1] gateway-list X.X.X.X
[R2-ip-pool-1] network X.X.X.X mask X.X.X.X
[R2-ip-pool-1] dns-list 8.8.8.8
[R2-ip-pool-1] quit
[R2]interface GigabitEthernet0/0/X
[R2-GigabitEthernet0/0/X]dhcp select global
```

9. Due to the fact that the DHCP server is not on the local network of computers PC1, PC2 and PC3, you need to configure the DHCP Relay. To do this, follow the instructions below. Use below command on the interfaces of R1 to which the switch is connected.

```
[R1]dhcp enable
[R1]interface GigabitEthernet0/0/1.X
[R1-GigabitEthernet0/0/1.X] dhcp select relay
[R1-GigabitEthernet0/0/1.X] dhcp relay server-ip X.X.X.X
```

10. Connect computers PC1, PC2 and PC3 to appropriate ports of the switch and configure DHCP addressing.
11. Use ping command to verify connections between computers.