**DHCPv4 Switch**

**Part 2: Change the SDM preference**

1. **Display the SDM preference on S1**

On S1, issue the **show sdm prefer** command in privileged EXEC mode. If the template has not been changed from the factory default, it should still be the **default** template. The **default** template does not support static routing. If IPv6 addressing has been enabled, the template will be **dual-ipv4-and-ipv6 default**.

S1# **show sdm prefer**

The current template is "default" template.

The selected template optimizes the resources in

the switch to support this level of features for

0 routed interfaces and 255 VLANs.

number of unicast mac addresses: 8K

number of IPv4 IGMP groups: 0.25K

number of IPv4/MAC qos aces: 0.125k

number of IPv4/MAC security aces: 0.375k

1. **Change the SDM preference on S1**

Set the SDM preference to **lanbase-routing**. (If lanbase-routing is the current template, please proceed to Part 3.) From global configuration mode, issue the **sdm prefer lanbase-routing** command.

S1(config)# **sdm prefer lanbase-routing**

Changes to the running SDM preferences have been stored, but cannot take effect

until the next reload.

The switch must be reloaded for the template to be enabled.

S1# **reload**

System configuration has been modified. Save? [yes/no]: **no**

Proceed with reload? [confirm]

1. **Verify that lanbase-routing template is loaded**

S1# **show sdm prefer**

The current template is "lanbase-routing" template.

**Part 3: Configure DHCPv4**

1. **Config DHCP for VLAN 1**

Exclude the first 10 valid host addresses from network 192.168.1.0/24.

Create a DHCP pool named **DHCP1**.

Assign the network 192.168.1.0/24 for available addresses.

Assign the default gateway as 192.168.1.1.

Assign the DNS server as 192.168.1.9

Assign a lease time of 3 days.

S1(config)# **ip dhcp excluded-address 192.168.1.1 192.168.1.10**

S1(config)# **ip dhcp pool DHCP1**

S1(dhcp-config)# **network 192.168.1.0 255.255.255.0**

S1(dhcp-config)# **default-router 192.168.1.1**

S1(dhcp-config)# **dns-server 192.168.1.9**

S1(dhcp-config)# **lease 3**

1. **Verify DHCP and connectivity**

**Part 4: Configure DHCPv4 for Multiple VLANs**

1. **Assign a port to VLAN 2**

Place port F0/6 into VLAN 2

S1(config)# **interface f0/6**

S1(config-if)# **switchport access vlan 2**

1. **Configure DHCPv4 for VLAN 2**

Exclude the first 10 valid host addresses from network 192.168.2.0/24.

Create a DHCP pool named **DHCP2**.

Assign the network 192.168.2.0/24 for available addresses.

Assign the default gateway as 192.168.2.1.

Assign the DNS server as 192.168.2.9

Assign a lease time of 3 days.

S1(config)# **ip dhcp excluded-address 192.168.2.1 192.168.2.10**

S1(config)# **ip dhcp pool DHCP2**

S1(dhcp-config)# **network 192.168.2.0 255.255.255.0**

S1(dhcp-config)# **default-router 192.168.2.1**

S1(dhcp-config)# **dns-server 192.168.2.9**

S1(dhcp-config)# **lease 3**

1. **Verify DHCPv4 and connectivity**

**Part 5: Enable IP Routing**

1. **Enable IP routing on S1**

S1(config)# **ip routing**

1. **Assign static routes**

Enabling IP routing allows the switch to route between VLANs assigned on the switch. For all VLANs to communicate with the router, static routes must be added to the routing table of both the switch and the router.

On S1, create a default static route to R1.

S1(config)# **ip route 0.0.0.0 0.0.0.0 192.168.1.10**

On R1, create a static route to VLAN 2.

R1(config)# **ip route 192.168.2.0 255.255.255.0 g0/1**