Lab 9 Guide

**NSOT Updates:**

First add the unit tests for the new devices, here I am adding ping tests for all devices as a new unit test in my suite:

A computer screen shot of a program code

Description automatically generated

A black screen with white text

Description automatically generated

(devices R8 and S5 will be added and shown in the lab9video)

Next add new devices to the gnmic.yml file for gRPC connectivity:

A computer screen shot of a program

Description automatically generated

Next add new devices to the Prometheus.yml file for SNMP connectivity:

A screen shot of a computer

Description automatically generated

Next, add devices to the IPAM and to get golden configs use the tool on the website.

**Device Configs:**

First configure the DHCP options on R1:

ip dhcp relay information option

dhcp server

   subnet 10.40.200.0/24

      reservations

         mac-address a2b2.a1b1.c3c3

            ipv4-address 10.40.200.2

      !

      range 10.40.200.3 10.40.200.100

      default-gateway 10.40.200.1

   subnet 3.3.3.0/24

      reservations

         mac-address 12:3a:44:4a:55:55

            ipv4-address 3.3.3.2

      !

      range 3.3.3.6 3.3.3.100

      default-gateway 3.3.3.1

   !

!

interface Ethernet2.100

   encapsulation dot1q vlan 100

   ip address 10.100.0.6/24

   dhcp server ipv4

!

!

Next, configure relay options on R2:

interface Ethernet3

   no switchport

   ip address 10.40.200.1/24

   ip helper-address 10.100.0.6

!

ip dhcp relay information option

#ip dhcp relay always-on

ip dhcp relay all-subnets default

!

Next do a dhclient eth1 on R8 and use ZTP tool to apply day0 config:

snmp-server community NMAS ro

snmp-server host 10.100.0.5 version 2c NMAS

!

logging host 10.100.0.5

!

management api gnmi

   transport grpc def

!

management api netconf

   transport ssh def

!

ip dhcp relay information option

ip dhcp relay always-on

ip dhcp relay all-subnets default

!

interface Ethernet1

   no switchport

   ip address 10.40.200.2/24

!

interface Ethernet2

   no switchport

   ip address 3.3.3.1/24

   ip helper-address 10.100.0.6

!

interface Loopback0

   ip address 10.40.8.1/32

!

ip routing

!

ipv6 unicast-routing

!

ip route 10.100.0.0/24 10.40.200.1

!

router ospf 20

   router-id 10.40.8.1

   network 3.3.3.0/24 area 20

   network 10.40.200.0/24 area 20

   max-lsa 12000

!

Next do a dhclient eth1 on S5 and apply config using ZTP tool:

snmp-server community NMAS ro

snmp-server host 10.100.0.5 version 2c NMAS

!

logging host 10.100.0.5

!

management api gnmi

   transport grpc def

!

management api netconf

   transport ssh def

!

vlan 10

   name HOST\_10

interface Ethernet2

   switchport access vlan 10

!

interface Ethernet3

   switchport access vlan 10

!

interface Vlan10

   ip address 3.3.3.2/24

!

no ip routing

!

interface Ethernet1

   switchport mode trunk

   switchport

!

Finally, apply day1 config for R8 to connect the devices:

interface Ethernet2

no ip address

no ip helper-address

interface Ethernet2.10

   encapsulation dot1q vlan 10

   ip address 3.3.3.1/24

   ip helper-address 10.100.0.6

!