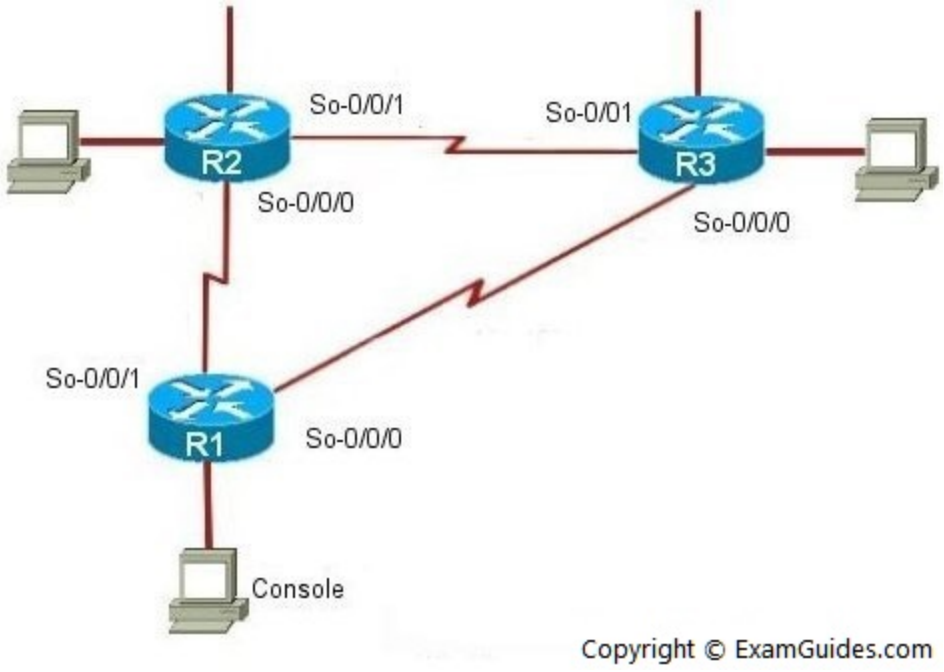
Juniper® Lab Exercises Exam Notes : Setting Host Name

1. Setting Host Name

Description: The purpose of this Lab is to set the router host name. Go to N/W diagram and choose device R1.

Network Diagram :



Instructions:

1. Enter into configuration mode

2. Set hostname as *juniper1*

user@R1>configure
[edit]
user@R1#edit system
[edit system]
user@R1#set host-name juniper1
[edit system]
user@juniper1#exit
[edit]
user@juniper1#commit
commit complete
[edit]
user@juniper1#show

```
system {
hostname = juniper1;
}
```

[edit]

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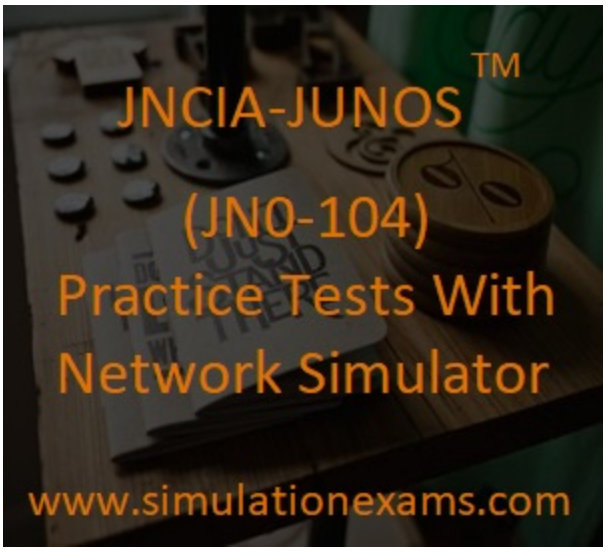


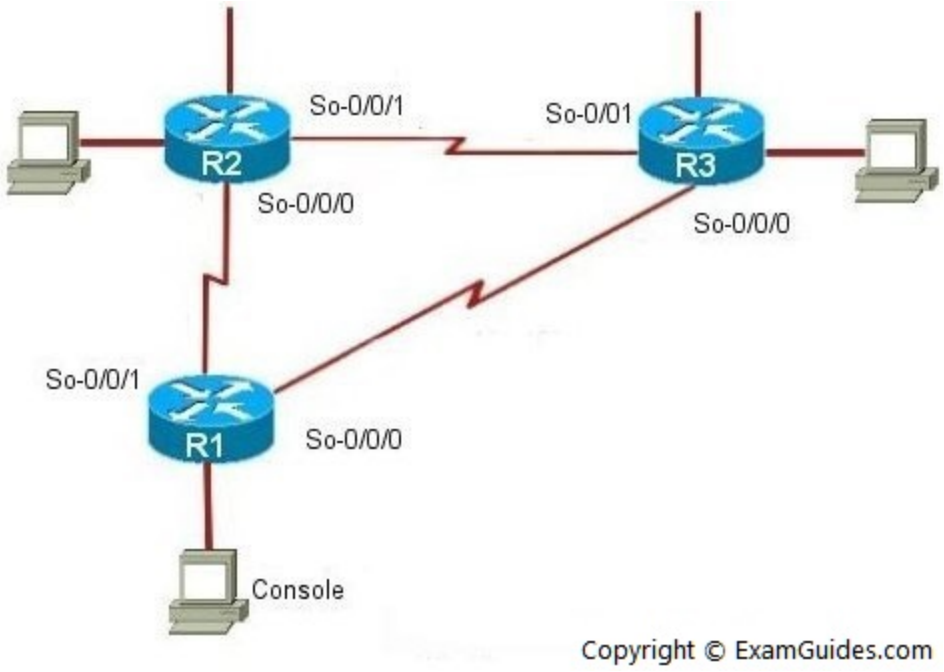
Juniper® Lab Exercises Exam Notes : Configuring Root Password

examguides.com/Juniper-Netsim/config-root-password-jsim-lab.htm

2. Configuring the Root Password (Encrypted Password)

Description: This lab exercise demonstrates configuring root password.

Network Diagram :



Instructions:

1. Enter into configuration mode

2. Move to the root-authentication hierarchy

3. Set the encrypted password as *24adr3e*

user@R1>configure
[edit]
user@R1#edit system root-authentication
[edit system root-authentication]
user@R1#set encrypted-password 24adr3e
[edit system root-authentication]
user@R1#exit

[edit]
user@R1#commit
commit complete
[edit]
user@R1#show

```
system {
root-authentication {
encrypted-password = 24adr3e;
}
}
```

[edit]

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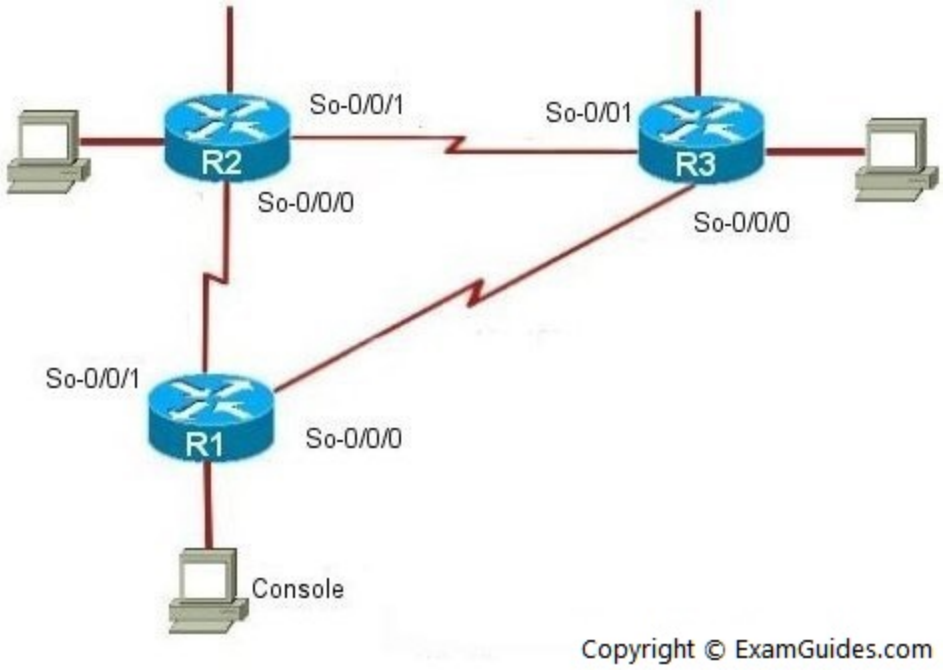
Juniper® Lab Exercises Exam Notes : Router Interface Address Configuration

examguides.com/Juniper-Netsim/router-interface-add-config-jsim-lab.htm

3. Router Interface Address Configuration

Description: In this lab, you configure so-1/1/0 interface under unit 0 and family inet on a router with specified ip address and subnet mask. Choose R1 in the network diagram and exit.

Network Diagram :



Instructions:

1. Enter into configuration mode

2. Set ip address of so-0/0/1 as *196.20.32.15* and subnet mask as *24*

3. Issue show interfaces command to verify the configuration

user@R1>configure
[edit]
user@R1#edit interfaces so-0/0/1
[edit interfaces so-0/0/1]
user@R1#edit unit 0 family inet

[edit interfaces so-0/0/1 unit 0 family inet]
user@R1#set address 196.20.32.15/24
[edit interfaces so-0/0/1 unit 0 family inet]
user@R1#exit
[edit interfaces so-0/0/1]
user@R1#exit
[edit]
user@R1#commit
commit complete
[edit]
user@R1#exit

user@R1>show interfaces so-0/0/1

```
Physical interface:so-0/0/1, Enabled, Physical link is up
Interface index: xxx, SNMP ifIndex: xx
Link-level type: PPP, MTU: 4474, Clocking: Internal, SDH mode, Speed: unassigned,
Loopback: None, FCS: 16, Payload scrambler: Enabled
Device flags : Present Running
Interface flags: Point-To-Point
Logical interface so-0/0/1.0 (Index xx) (SNMP ifIndex xx)
Flags: Point-To-Point SNMP-Traps 0x4000 Encapsulation: PPP
Protocol inet, MTU: 4470
Destination: UA, Local: 196.20.32.15, Broadcast: 10.0.12.3
Protocol iso, MTU: 4470
Flags: Protocol-Down
Protocol mpls, MTU: 4458
Flags: Protocol-Down, Is-Primary

Output omitted for brevity
```

user@R1>

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Juniper® Lab Exercises Exam Notes : Basic Gigabit Ethernet Configuration On A J-series Router

examguides.com/Juniper-Netsim/gigabit-ethernet-config-jsim-lab.htm

4. Basic gigabit ethernet configuration on a J-Series router

Description: This lab exercise demonstrates configuring the gigabit ethernet interface on a Jseries router and also setting other basic parameters like hostname, domain-name, name-server, backup router etc. Show command is issued to verify the configuration set on the router.

Network Diagram :

Instructions:

1. Enter into system hierarchy on R1

2. Set the router hostname as Router1, domain-name as router.net, root-authentication as *vhvc#!*,name-server as *10.148.2.32*, backup-router as *192.168.2.34/24*

3. Exit from system hierarchy and enter into interfaces hierarchy

4. Set the IP address on all the four fixed Gigabit Ethernet ports of J-Series router

5. Commit the configuration

6. Issue show configuration to verify the configuration set on the router.

7. Issue show interfaces brief command to display brief information about all interfaces configured on the router.

8. Issue show interfaces terse command to display summary information about interfaces

user@R1>configure
[edit]
user@R1#edit system
[edit system]
user@R1#set host-name Router1
[edit system]
user@Router1#set domain-name router.net
[edit system]
user@Router1#set root-authentication encrypted-password vhvc#!
[edit system]
user@Router1#set name-server 10.148.2.32
[edit system]
user@Router1#set backup-router 192.168.2.34/24
[edit system]
user@Router1#exit
[edit]
user@Router1#edit interfaces
[edit interfaces]
user@Router1#set ge-0/0/0 unit 0 family inet address 192.168.1.1/24
[edit interfaces]
user@Router1#set ge-0/0/1 unit 0 family inet address 192.168.2.1/24
[edit interfaces]
user@Router1#set ge-0/0/2 unit 0 family inet address 192.168.3.1/24
[edit interfaces]
user@Router1#set ge-0/0/3 unit 0 family inet address 192.168.4.1/24
[edit interfaces]
user@Router1#exit
[edit]
user@Router1#commit
commit complete
[edit]
user@Router1#exit

user@Router1>show configuration

```
 version "9.6I0";
global {
      system{
          backup-router = 192.168.2.34/24
          hostname = Router1
          domain-name = router.net
          name-server = 10.148.2.32
           root-authentication{
               encrypted-password = vhvc#!
          }
     }
      interfaces{
           fxp0{
               speed = unassigned
                unit 0{
                     family inet{
                         address = unassigned
                    }
               }
          }
           ge-0/0/0{
               keepalive_status = enable
               interface_status = enable
               description = unassigned
               encapsulation = unassigned
               speed = unassigned
               hold-time = up unassigned, down unassigned
                GigabitEthernet-options{
                    clock-rate = unassigned
               }
                unit 0{
                    bandwidth = unassigned
                     family inet{
                         address = 192.168.1.1/24
                    }
               }
          }
           ge-0/0/1{
               keepalive_status = enable
               interface_status = enable
               description = unassigned
               encapsulation = unassigned
               speed = unassigned
               hold-time = up unassigned, down unassigned
                GigabitEthernet-options{
                    clock-rate = unassigned
               }
                unit 0{
                    bandwidth = unassigned
                     family inet{
                         address = 192.168.2.1/24
                    }
```

```
          }
     }
      ge-0/0/2{
          keepalive_status = enable
          interface_status = enable
          description = unassigned
          encapsulation = unassigned
          speed = unassigned
          hold-time = up unassigned, down unassigned
           GigabitEthernet-options{
               clock-rate = unassigned
          }
           unit 0{
               bandwidth = unassigned
                family inet{
                    address = 192.168.3.1/24
               }
          }
     }
      ge-0/0/3{
          keepalive_status = enable
          interface_status = enable
          description = unassigned
          encapsulation = unassigned
          speed = unassigned
          hold-time = up unassigned, down unassigned
           GigabitEthernet-options{
               clock-rate = unassigned
          }
           unit 0{
               bandwidth = unassigned
                family inet{
                    address = 192.168.4.1/24
               }
          }
     }
}
protocols{
     rip{

     }
     ospf{

     }
     bgp{
     }


}
 policy-options{
```

```
    }
}
```

user@Router1>show interfaces brief

```
Physical interface: ge-0/0/0, Enabled, Physical link is up
Link-level type: PPP, MTU: 4474, Clocking: Internal, GIGABIT ETHERNET mode, Speed:
unassigned

Physical interface: ge-0/0/1, Enabled, Physical link is up
Link-level type: PPP, MTU: 4474, Clocking: Internal, GIGABIT ETHERNET mode, Speed:
unassigned

Physical interface: ge-0/0/2, Enabled, Physical link is up
Link-level type: PPP, MTU: 4474, Clocking: Internal, GIGABIT ETHERNET mode, Speed:
unassigned

Physical interface: ge-0/0/3, Enabled, Physical link is up
Link-level type: PPP, MTU: 4474, Clocking: Internal, GIGABIT ETHERNET mode, Speed:
unassigned
```

user@Router1>show interfaces terse

```
interface    Admin   Link   Proto    Local               Remote
ge-0/0/0     up      up     inet     192.168.1.1          0/0
ge-0/0/1     up      up     inet     192.168.2.1          0/0
ge-0/0/2     up      up     inet     192.168.3.1          0/0
ge-0/0/3     up      up     inet     192.168.4.1          0/0
```

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Juniper® Lab Exercises Exam Notes : Configuring Static Routes

5. Configuring static routes

Description: Configure static route 172.16.1.0 mask 255.255.255.0 with next hop address of 192.16.2.1.

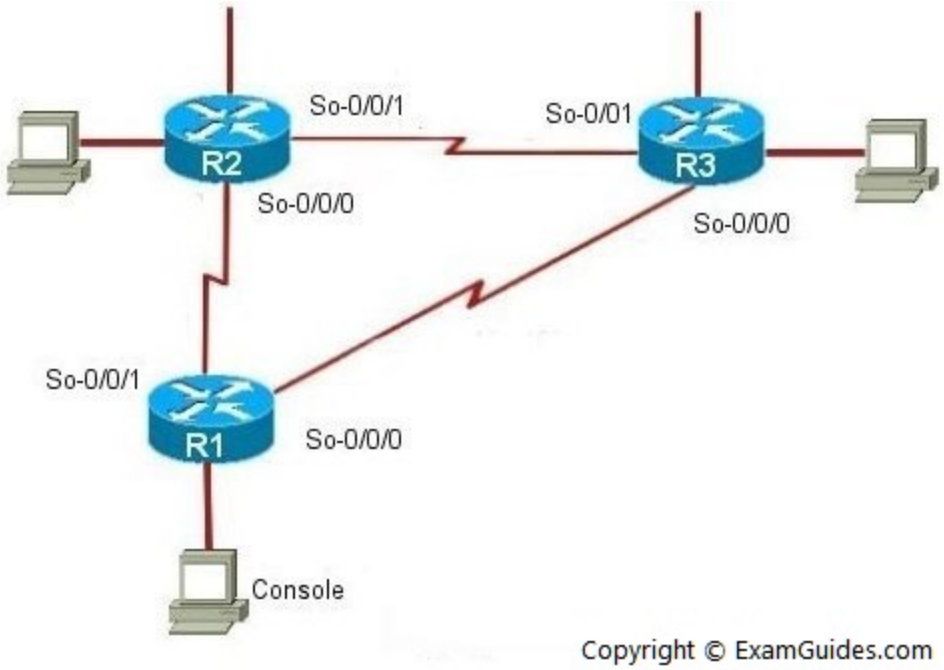
syntax: ip route prefix mask {address|interface} [distance]

prefix mask: is the ip route prefix and mask for the destination.

address|interface: Use either the next hop router ip or the local router outbound interface used to reach the destination.

distance: is the administrative distance and an optional parameter.

Network Diagram :

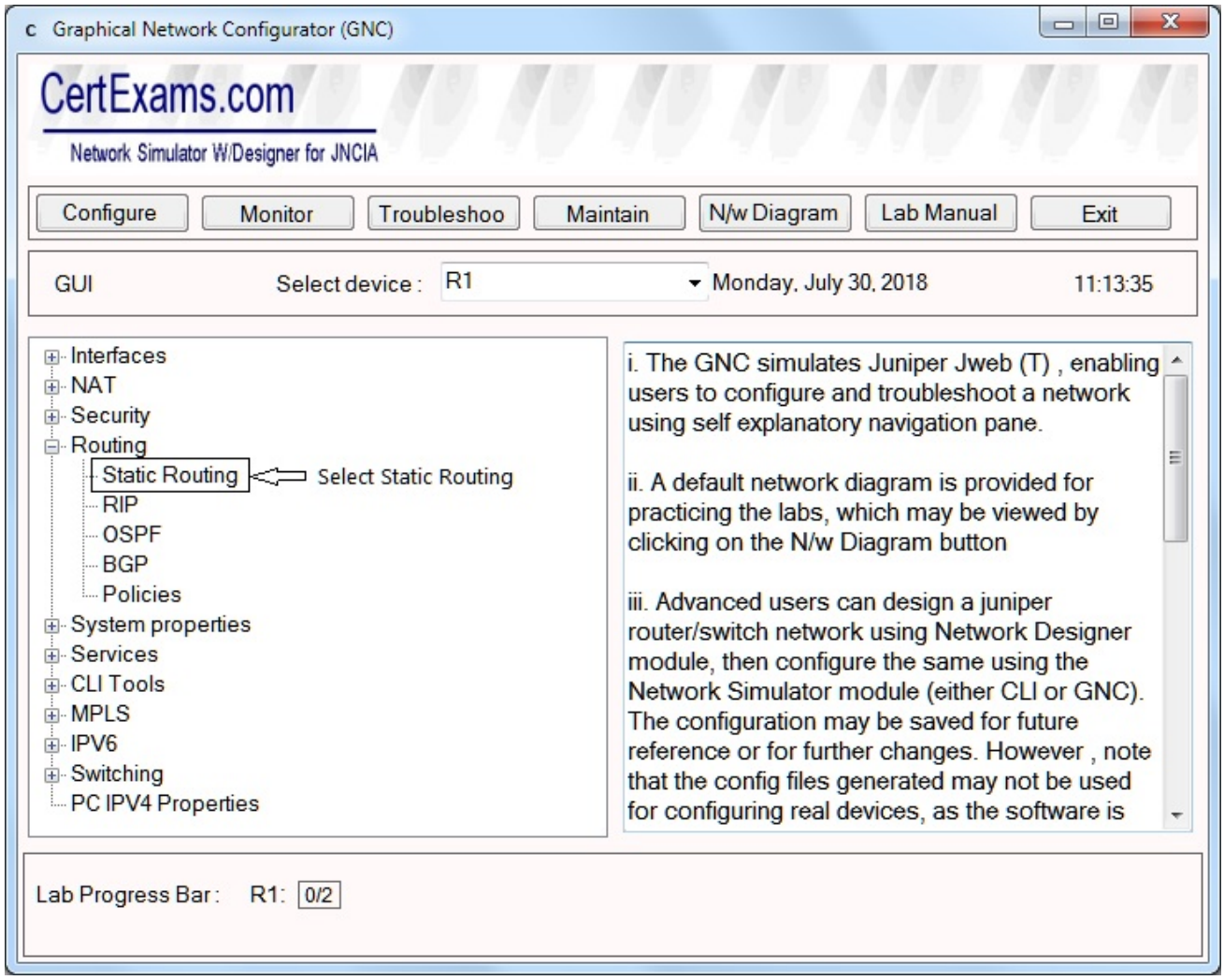


Instructions:

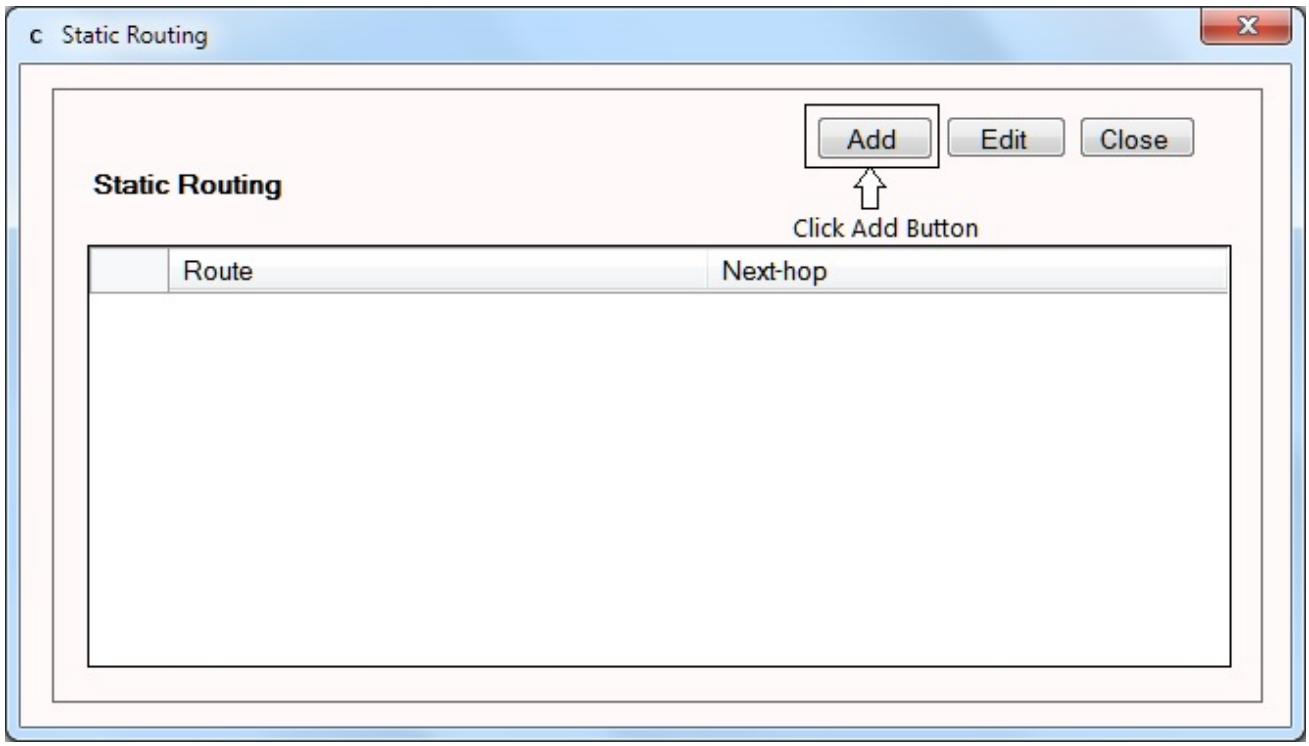
1. Select device R1 from select device drop down box

2. Click Configure button that enables left navigation pane for configure button.

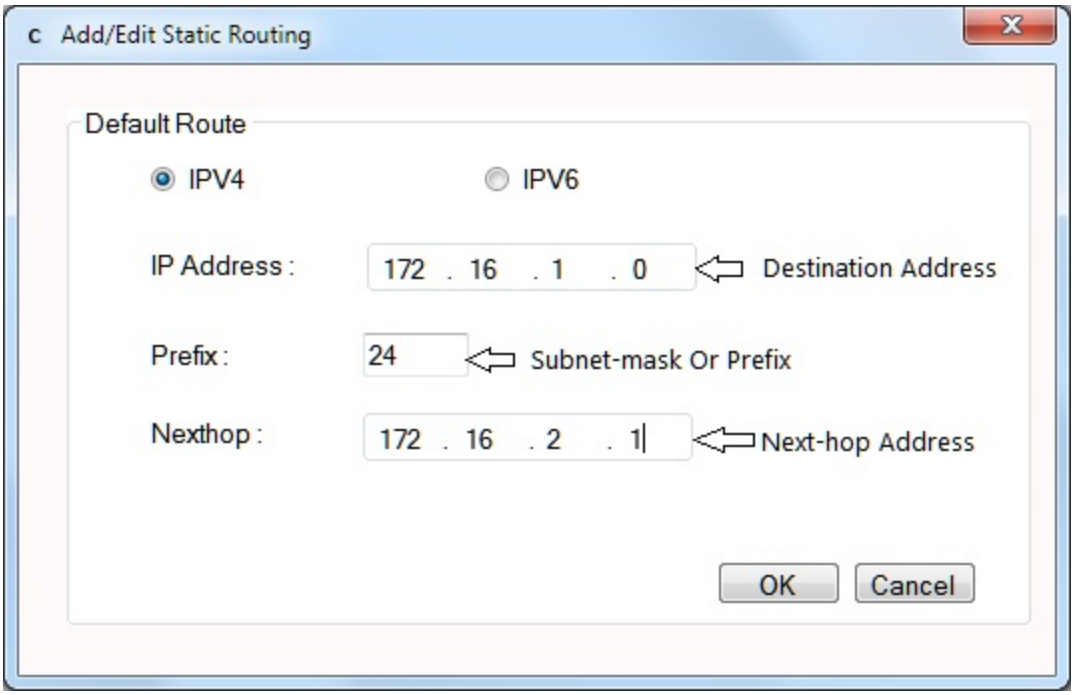
3. Select Routing > Static Routing from left navigation pane



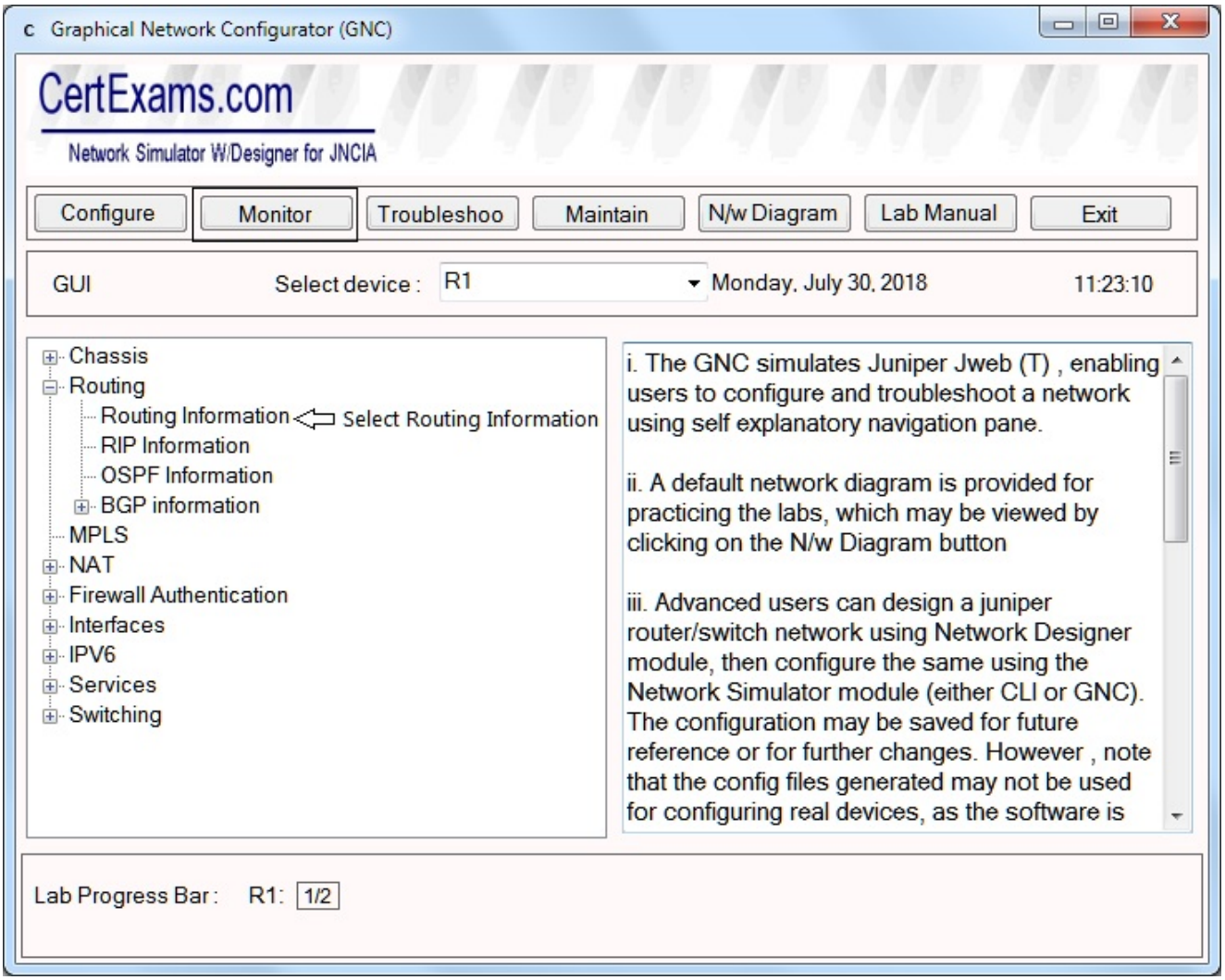
4. Static Routing window appears click Add button



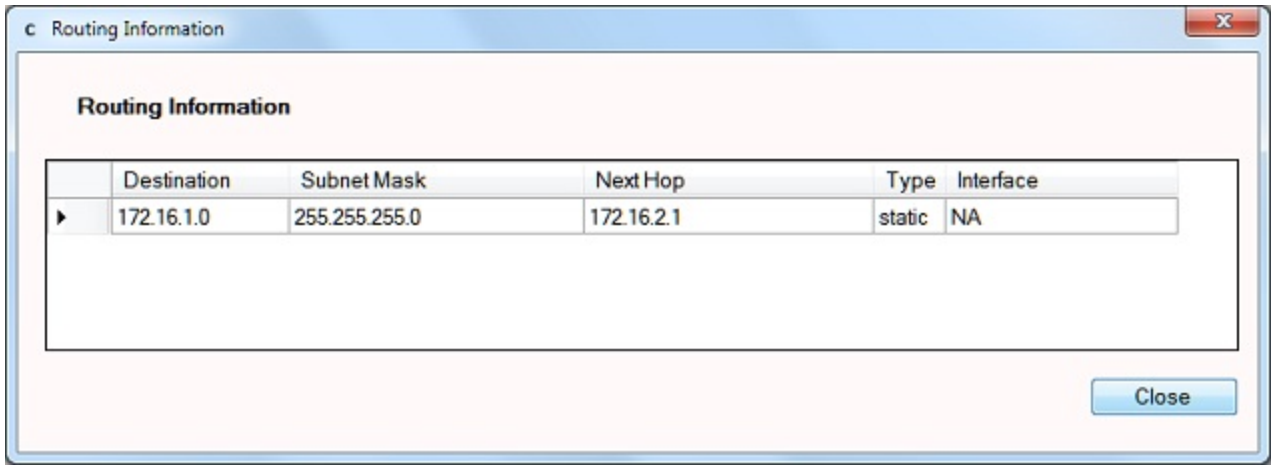
5. Add/Edit Static routing window appears , enter destination address 172.16.1.0 and prefix 24 and next-hop as 172.16.2.1 and click OK button.



6. To view static routing click monitor button that enables left navigation pane



7. Click Routing > Routing Information.



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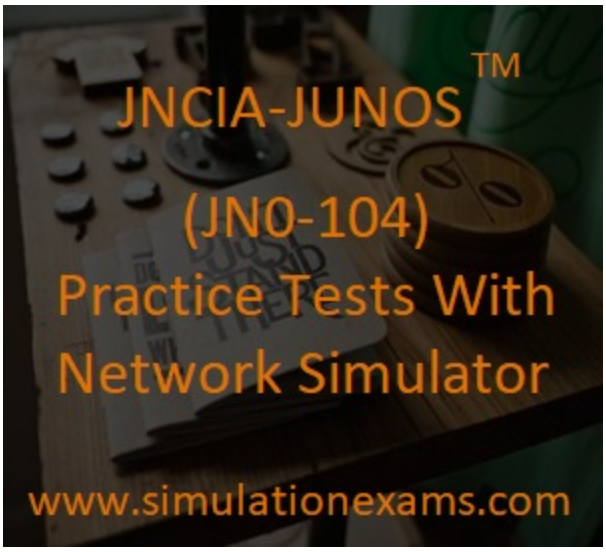

JNCIA-JUNOS™
(JN0-104)
Practice Tests With
Network Simulator
www.simulationexams.com

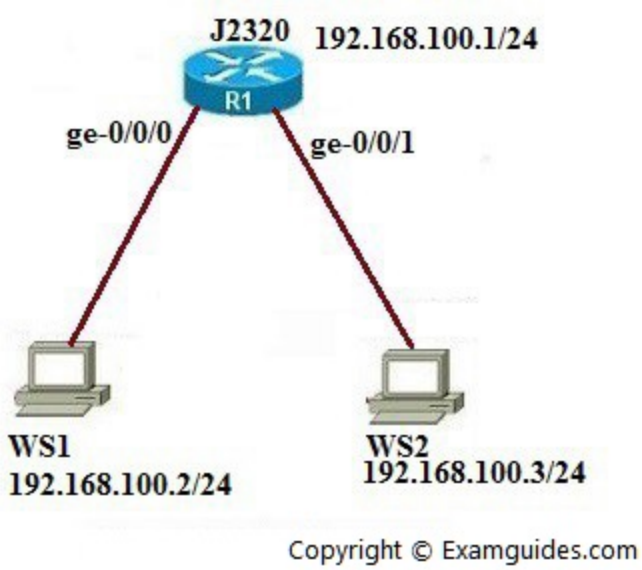
Juniper® Lab Exercises Exam Notes : Connectivity Check Between Router And Workstations

6. Connectivity check between Router and workstations

Description: Lab Exercise explains pinging between router and work station

Network Diagram :

Instructions:



1. Connect to R1 and configure the IP address of *192.168.100.1/24* on the ge-0/0/0 interface

2. To assign ip address to WS1 click network diagram button and in network diagram window click WS1 icon from the diagram. And configure *192.168.100.2/24* as ip address and default-gateway *192.168.100.1*

3. To assign ip address to WS2 click network diagram button and in network diagram window click WS2 icon from the diagram and configure *192.168.100.3* as ip address and default-gateway as *192.168.100.1*

4. Now ping ping R1 from WS1 and WS2 and check the connectivity.

user@R1>configure
[edit]
user@R1#set interfaces ge-0/0/0 unit 0 family inet address 192.168.100.1/24
user@R1#commit
commit complete
[edit]
user@R1#exit
WS1>ip 192.168.100.2/24 192.168.100.1
WS2>ip 192.168.100.3/24 192.168.100.1

WS1>ping R1

```
PING 192.168.100.1:  56 data byte
64 bytes from 192.168.100.1 :  icmp_seq=0 ttl=253 time=1.028 ms
```

WS2>ping R1

```
PING 192.168.100.1:  56 data byte
64 bytes from 192.168.100.1 :  icmp_seq=0 ttl=253 time=1.028 ms
```

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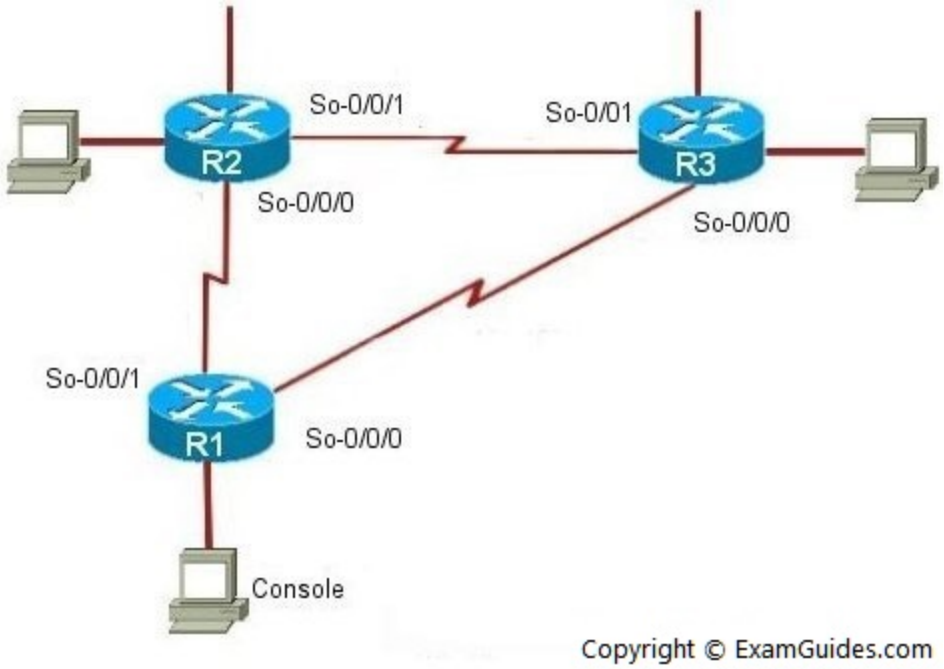
Juniper® Lab Exercises Exam Notes : RIP Configuration

examguides.com/Juniper-Netsim/rip-configuration-jsim-lab.htm

7. RIP Configuration

Description: Use this lab to configure the RIP on router, by applying an export and import policies at their respective hierarchical levels.

Network Diagram :



Instructions:

1. Enter into configuration mode.

2. Enable RIP routing on the router.

3. Create a group called *neighborRouters* apply an export policy *riproutes* to this group.

4. Specify the neighbor interface as so-0/0/0 under the above created group and apply an import policy *riproutes* to this neighbor.

user@R1>configure
[edit]
user@R1#edit protocols rip
[edit protocols rip]

user@R1#edit group neighborRouters
[edit protocols rip group neighborRouters]
user@R1#set export riproutes
[edit protocols rip group neighborRouters]
user@R1#edit neighbor so-0/0/0
[edit protocols rip group neighborRouters neighbor so-0/0/0]
user@R1#set import riproutes
[edit protocols rip group neighborRouters neighbor so-0/0/0]
user@R1#exit
[edit protocols rip group neighborRouters]
user@R1#exit
[edit protocols rip]
user@R1#exit
[edit]
user@R1#commit
commit complete
[edit]
user@R1#show

```
protocols{
          rip{
               group neighborRouters{
                    export riproutes

                    neighbor so-0/0/0{
                         import riproutes
                    }
               }
     }
```

[edit]

user@R1#

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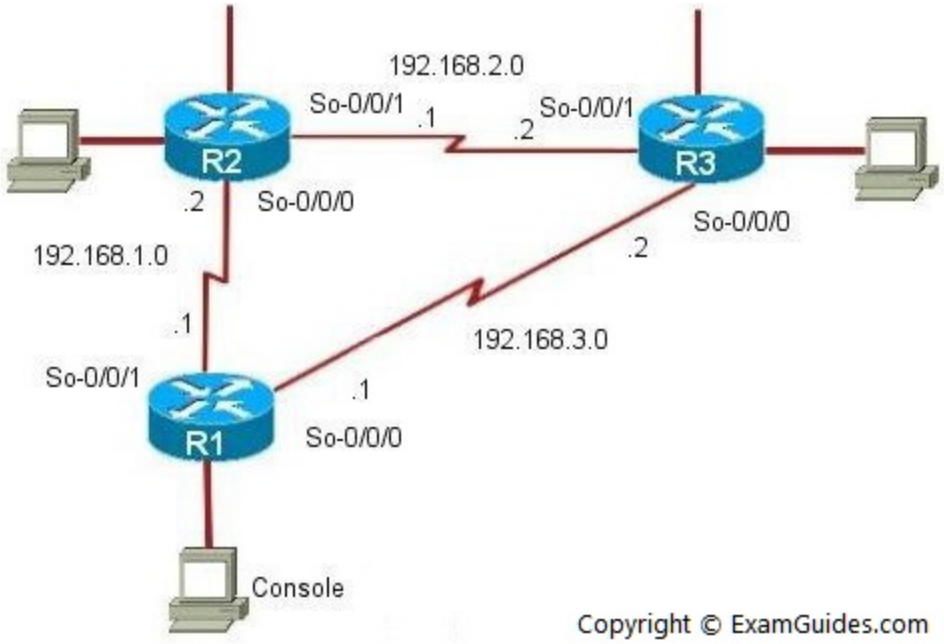
Juniper® Lab Exercises Exam Notes : Ospf Configuration And Verification

examguides.com/Juniper-Netsim/ospf-configuration-jsim-lab.htm

8. OSPF Configuration and Verification

Description: The purpose of this lab is to configure OSPF on all the devices with an area of 100 and to verify the configuration using show commands of OSPF.

Network Diagram :



Instructions:

1. Assign the IP address of all the devices as given below

Device	Interface	IP Address	Mask
R1	So-0/0/0 So-0/0/1	255.255.255.0 255.255.255.0	
R2	So-0/0/0 So-0/0/1	255.255.255.0 255.255.255.0	
R3	So-0/0/0 So-0/0/1	255.255.255.0 255.255.255.0	

2. Enable OSPF (use area number as 100) on all the interfaces of all the devices

3. Issue show ospf interface on R1

4. Issue show ospf neighbor on R1.

5. Issue show ospf database on R1.

On R1:

user@R1>configure
[edit]
user@R1#edit interfaces so-0/0/0 unit 0 family inet
[edit interfaces so-0/0/0 unit 0 family inet]
user@R1#set address 192.168.3.1/24
[edit interfaces so-0/0/0 unit 0 family inet]
user@R1#exit
[edit]
user@R1#edit interfaces so-0/0/1 unit 0 family inet
[edit interfaces so-0/0/1 unit 0 family inet]
user@R1#set address 192.168.1.1/24
[edit interfaces so-0/0/1 unit 0 family inet]
user@R1#exit
[edit]
user@R1#edit protocols ospf area 100 interface so-0/0/0
[edit protocols ospf area 100 interface so-0/0/0]
user@R1#exit
[edit]
user@R1#edit protocols ospf area 100 interface so-0/0/1
[edit protocols ospf area 100 interface so-0/0/1]
user@R1#exit
[edit]
user@R1#commit
commit complete
[edit]
user@R1#

On R2:

user@R2>configure
[edit]
user@R2#edit interfaces so-0/0/0 unit 0 family inet
[edit interfaces so-0/0/0 unit 0 family inet]

user@R2#set address 192.168.1.2/24
[edit interfaces so-0/0/0 unit 0 family inet]
user@R2#exit
[edit]
user@R2#edit interfaces so-0/0/1 unit 0 family inet
[edit interfaces so-0/0/1 unit 0 family inet]
user@R2#set address 192.168.2.1/24
[edit interfaces so-0/0/1 unit 0 family inet]
user@R2#exit
[edit]
user@R2#edit protocols ospf area 100 interface so-0/0/0
[edit protocols ospf area 100 interface so-0/0/0]
user@R2#exit
[edit]
user@R2#edit protocols ospf area 100 interface so-0/0/1
[edit protocols ospf area 100 interface so-0/0/1]
user@R2#exit
[edit]
user@R2#commit
commit complete
[edit]
user@R2#

On R3:

user@R3>configure
[edit]
user@R3#edit interfaces so-0/0/0 unit 0 family inet
[edit interfaces so-0/0/0 unit 0 family inet]
user@R3#set address 192.168.3.2/24
[edit interfaces so-0/0/0 unit 0 family inet]
user@R3#exit
[edit]
user@R3#edit interfaces so-0/0/1 unit 0 family inet
[edit interfaces so-0/0/1 unit 0 family inet]
user@R3#set address 192.168.2.2/24
[edit interfaces so-0/0/1 unit 0 family inet]
user@R3#exit
[edit]
user@R3#edit protocols ospf area 100 interface so-0/0/0
[edit protocols ospf area 100 interface so-0/0/0]
user@R3#exit

[edit]
user@R3#edit protocols ospf area 100 interface so-0/0/1
[edit protocols ospf area 100 interface so-0/0/1]
user@R3#exit
[edit]
user@R3#commit
commit complete
[edit]
user@R3#

On R1:

user@R1>show ospf interface

```
Interface   State     Area            DR ID     BDR ID    Nbrs
so-0/0/1    PtToPt    0.0.0.100       0.0.0.0   0.0.0.0   1
so-0/0/0    PtToPt    0.0.0.100       0.0.0.0   0.0.0.0   1
```

user@R1>show ospf neighbor

```
Address           Interface   State  ID               Pri  Dead
192.168.3.2       so-0/0/0    Full   192.168.3.2      125  37
```

user@R1>show ospf database

```
OSPF link state database, Area 0.0.0.100
Type      ID                  Adv Rtr             Seq           Age   Opt
Cksum   Len
Router    *192.168.1.2        192.168.1.2         0x80000002    215   0x20
0xfeec  28

OSPF link state database, Area 0.0.0.0
Type      ID                  Adv Rtr             Seq           Age   Opt
Cksum   Len
Router    *192.168.2.1        192.168.2.1         0x80000002    215   0x20
0xfeec  28
```

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Juniper® Lab Exercises Exam Notes : Configuring Mpls Using Ospf

examguides.com/Juniper-Netsim/mpls-using-ospf-jsim-lab.htm

9. Configuring MPLS Using OSPF

Description: In this example network is configured with OSPF as routing protocol. Then run MPLS over the IP network.

Network Diagram :

Instructions:

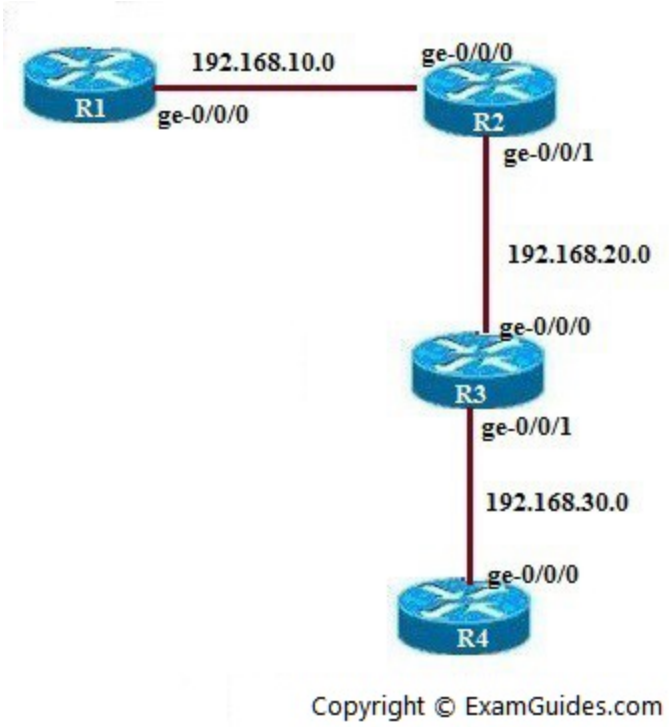
1. Assign the IP addresses to all the devices

2. Enable MPLS family on the interfaces

3. Enable MPLS and LDP protocol on the interfaces

4. Enable OSPF (use area number as 100) on all the interfaces of all the devices

5. Issue ping and trace route command to check the connectivity



user@R1>configure
[edit]
user@R1#edit interfaces ge-0/0/0
[edit interfaces ge-0/0/0]
user@R1#set unit 0 family inet address 192.168.10.1/24
[edit interfaces ge-0/0/0]
user@R1#set unit 0 family mpls
[edit interfaces ge-0/0/0]
user@R1#exit
[edit]
user@R1#edit protocols mpls
[edit protocols mpls]
user@R1#set interface ge-0/0/0
[edit protocols mpls]

user@R1#exit
[edit]
user@R1#edit protocols ldp
[edit protocols ldp]
user@R1#set interface ge-0/0/0
[edit protocols ldp]
user@R1#exit
[edit]
user@R1#edit protocols ospf area 100 interface ge-0/0/0
[edit protocols ospf area 100 interface ge-0/0/0]
user@R1#exit
[edit]
user@R1#commit
commit complete
[edit]
user@R1#

On R2

user@R2>configure
[edit]
user@R2#edit interfaces ge-0/0/0
[edit interfaces ge-0/0/0]
user@R2#set unit 0 family inet address 192.168.10.2/24
[edit interfaces ge-0/0/0]
user@R2#set unit 0 family mpls
[edit interfaces ge-0/0/0]
user@R2#exit
[edit]
user@R2#edit protocols ldp
[edit protocols ldp]
user@R2#set interface ge-0/0/0
[edit protocols ldp]
user@R2#exit
[edit]
user@R2#edit protocols mpls
[edit protocols mpls]
user@R2#set interface ge-0/0/0
[edit protocols mpls]
user@R2#exit
[edit]
user@R2#edit interfaces ge-0/0/1

[edit interfaces ge-0/0/1]
user@R2#set unit 0 family inet address 192.168.20.1/24
[edit interfaces ge-0/0/1]
user@R2#exit
[edit]
user@R2#edit protocols mpls
[edit protocols mpls]
user@R2#set interface ge-0/0/1
[edit protocols mpls]
user@R2#exit
[edit]
user@R2#edit protocols ldp
[edit protocols ldp]
user@R2#set interface ge-0/0/1
[edit protocols ldp]
user@R2#exit
[edit]
user@R2#edit protocols ospf area 100 interface ge-0/0/0
[edit protocols ospf area 100 interface ge-0/0/0]
user@R2#exit
[edit]
user@R2#edit protocols ospf area 100 interface ge-0/0/1
[edit protocols ospf area 100 interface ge-0/0/1]
user@R2#exit
[edit]
user@R2#commit
commit complete
[edit]
user@R2#edit interfaces ge-0/0/1
[edit interfaces ge-0/0/1]
user@R2#set unit 0 family mpls
[edit interfaces ge-0/0/1]
user@R2#exit
[edit]
user@R2#commit
commit complete
[edit]
user@R2#

On R3

user@R3>configure
[edit]
user@R3#edit interfaces ge-0/0/0
[edit interfaces ge-0/0/0]
user@R3#set unit 0 family inet address 192.168.20.2/24
[edit interfaces ge-0/0/0]
user@R3#set unit 0 family mpls
[edit interfaces ge-0/0/0]
user@R3#exit
[edit]
user@R3#edit protocols ldp
[edit protocols ldp]
user@R3#set interface ge-0/0/0
[edit protocols ldp]
user@R3#exit
[edit]
user@R3#edit protocols mpls
[edit protocols mpls]
user@R3#set interface ge-0/0/0
[edit protocols mpls]
user@R3#exit
[edit]
user@R3#edit interfaces ge-0/0/1
[edit interfaces ge-0/0/1]
user@R3#set unit 0 family inet address 192.168.30.1/24
[edit interfaces ge-0/0/1]
user@R3#exit
[edit]
user@R3#edit protocols mpls
[edit protocols mpls]
user@R3#set interface ge-0/0/1
[edit protocols mpls]
user@R3#exit
[edit]
user@R3#edit protocols ldp
[edit protocols ldp]
user@R3#set interface ge-0/0/1
[edit protocols ldp]
user@R3#exit
[edit]
user@R3#edit protocols ospf area 100 interface ge-0/0/0
[edit protocols ospf area 100 interface ge-0/0/0]

user@R3#exit
[edit]
user@R3#edit protocols ospf area 100 interface ge-0/0/1
[edit protocols ospf area 100 interface ge-0/0/1]
user@R3#exit
[edit]
user@R3#commit
commit complete
[edit]
user@R3#edit interfaces ge-0/0/1
[edit interfaces ge-0/0/1]
user@R3#set unit 0 family mpls
[edit interfaces ge-0/0/1]
user@R3#exit
[edit]
user@R3#commit
commit complete
[edit]
user@R3#

On R4

user@R4>configure
[edit]
user@R4#edit interfaces ge-0/0/0
[edit interfaces ge-0/0/0]
user@R4#set unit 0 family inet address 192.168.30.2/24
[edit interfaces ge-0/0/0]
user@R4#set unit 0 family mpls
[edit interfaces ge-0/0/0]
user@R4#exit
[edit]
user@R4#edit protocols mpls
[edit protocols mpls]
user@R4#set interface ge-0/0/0
[edit protocols mpls]
user@R4#exit
[edit]
user@R4#edit protocols ldp
[edit protocols ldp]
user@R4#set interface ge-0/0/0
[edit protocols ldp]

user@R4#exit
[edit]
user@R4#edit protocols ospf area 100 interface ge-0/0/0
[edit protocols ospf area 100 interface ge-0/0/0]
user@R4#exit
[edit]
user@R4#commit
commit complete
[edit]
user@R4#

user@R1>ping 192.168.30.2

```
PING 192.168.30.2:  56 data byte
64 bytes from 192.168.30.2 :  icmp_seq=0 ttl=253 time=1.028 ms
```

user@R1>ping mpls ip 192.168.30.2

```
PING 192.168.30.2:  56 data byte
64 bytes from 192.168.30.2 :  icmp_seq=0 ttl=253 time=1.028 ms
```

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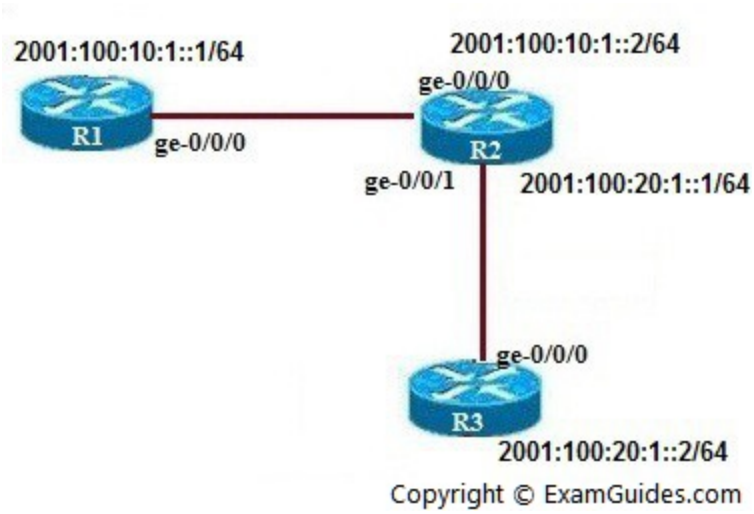
Juniper® Lab Exercises Exam Notes : Configuring Ipv6 Static Routes

10. Configuring ipv6 static routes

Description: The lab exercise demonstrates configuring static routes on ipv6

Network Diagram :



Instructions:

1. Enter into configuration mode

2. Assign ipv6 addresses to all the devices as per the diagram.

3. On device R1 create a static route to device R3 and set the next-hop ip address

4. On device R3 create a static route to device R1 and set the next-hop ip address

On R1

user@R1>configure
[edit]
user@R1#edit interfaces ge-0/0/0
[edit interfaces ge-0/0/0]
user@R1#set unit 0 family inet6 address 2001:100:10:1::1/64

[edit interfaces ge-0/0/0]
user@R1#exit
[edit]

On R2

user@R2>configure
[edit]
user@R2#edit interfaces ge-0/0/0
[edit interfaces ge-0/0/0]
user@R2#set unit 0 family inet6 address 2001:100:10:1::2/64
[edit interfaces ge-0/0/0]
user@R2#exit
[edit]
user@R2#edit interfaces ge-0/0/1
[edit interfaces ge-0/0/1]
user@R2#set unit 0 family inet6 address 2001:100:20:1::1/64
[edit interfaces ge-0/0/1]
user@R2#exit

On R3

user@R3>configure
[edit]
user@R3#edit interfaces ge-0/0/0
[edit interfaces ge-0/0/0]
user@R3#set unit 0 family inet6 address 2001:100:20:1::2/64
[edit interfaces ge-0/0/0]
user@R3#exit

Adding static route on device R1 and R3

user@R1>configure
[edit]
user@R1#edit routing-options
[edit routing-options]
user@R1#set rib inet6 static route 2001:100:20:1::2/64 next-hop
2001:100:10:1::2
[edit routing-options]
user@R1#exit
[edit]

user@R1#show

```
     routing-options{
      rib inet6.0{
        static{
         route 2001:0100:0020:0001:0000:0000:0000:0002/64 next-hop
2001:0100:0010:0001:0000:0000:0000:0002
              }
         }
     }
```

user@R3>configure
[edit]
user@R3#edit routing-options
[edit routing-options]
user@R3#set rib inet6 static route 2001:100:10:1::1/64 next-hop 2001:100:20:1::1
[edit routing-options]
user@R3#exit
[edit]

user@R3#show

```
     routing-options{
       rib inet6.0{
          static{
           route 2001:0100:0010:0001:0000:0000:0000:0001/64 next-hop
2001:0100:0020:0001:0000:0000:0000:0001
              }
          }
     }
```

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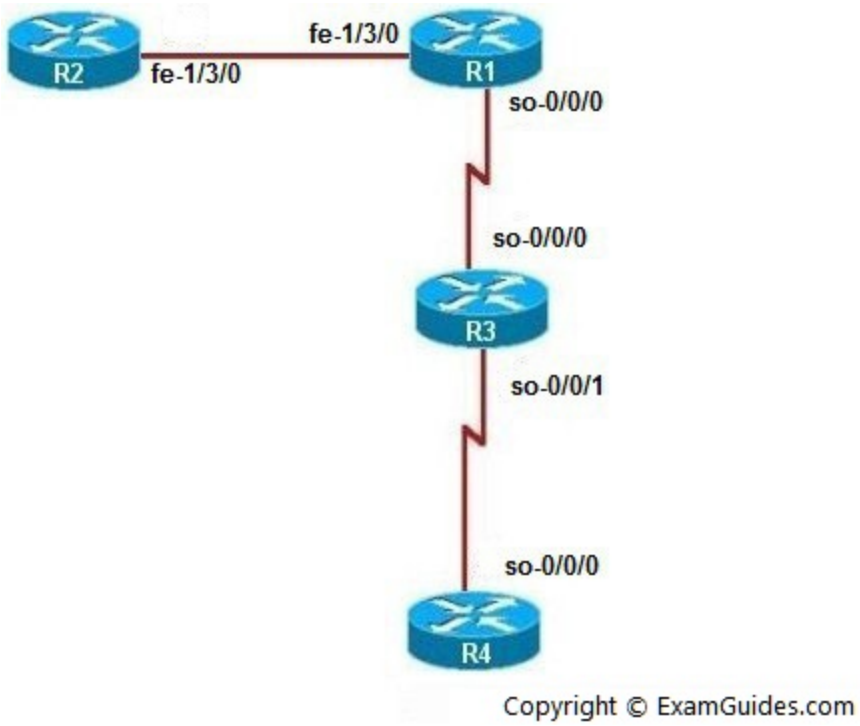
Juniper® Lab Exercises Exam Notes : Configuring And Verifying Firewall Filter

11. Configuring and Verifying firewall filter

Description: The exercise explains configuring and verifying firewall filter based on given set of instructions.

Network Diagram :



Instructions:

1. Enter into Configuration mode

2. Enter the interface mode of the devices and assign the ip address as per the table

3. Ping R2 from both R3 and R4 and see that it is successful

4. Configure ACL on R1 that allows telnet traffic from R3 (192.168.2.2) and allow icmp traffic from R4 (192.168.3.2) and block all other traffic

5. Apply this access-list to R1's Sonet interface inbound traffic

6. Commit your configuration.

7. Verify the ACL applied on R1 by pinging and telnetting R2 from R3 and R4(R3(192.168.2.2)) should not be able to ping R2 but should be able to telnet to R2 and R4 (192.168.3.2) should be able to ping R2 but not telnet to it)

Device	Interface	IP Address
R1	fe-1/3/0 so-0/0/0	192.168.1.1/24 192.168.2.1/24
R2	fe-1/3/0	192.168.1.2/24
R3	so-0/0/0 so-0/0/1	192.168.2.2/24 192.168.3.1/24
R4	so-0/0/0	192.168.3.2/24

On R1

user@R1>configure
[edit]
user@R1#edit interfaces fe-1/3/0 unit 0 family inet
[edit interfaces fe-1/3/0 unit 0 family inet]
user@R1#set address 192.168.1.1/24
[edit interfaces fe-1/3/0 unit 0 family inet]
user@R1#exit
[edit]
user@R1#edit interfaces so-0/0/0 unit 0 family inet
[edit interfaces so-0/0/0 unit 0 family inet]
user@R1#set address 192.168.2.1/24
[edit interfaces so-0/0/0 unit 0 family inet]
user@R1#exit
[edit]
user@R1#commit
commit complete
[edit]
user@R1#exit

On R2

user@R2>configure
[edit]
user@R2#edit interfaces fe-1/3/0 unit 0 family inet

[edit interfaces fe-1/3/0 unit 0 family inet]
user@R2#set address 192.168.1.2/24
[edit interfaces fe-1/3/0 unit 0 family inet]
user@R2#exit
[edit]
user@R2#commit
commit complete
[edit]

On R3

user@R3>configure
[edit]
user@R3#edit interfaces so-0/0/0 unit 0 family inet
[edit interfaces so-0/0/0 unit 0 family inet]
user@R3#set address 192.168.2.2/24
[edit interfaces so-0/0/0 unit 0 family inet]
user@R3#exit
[edit]
user@R3#edit interfaces so-0/0/1 unit 0 family inet
[edit interfaces so-0/0/1 unit 0 family inet]
user@R3#set address 192.168.3.1/24
[edit interfaces so-0/0/1 unit 0 family inet]
user@R3#exit
[edit]
user@R3#commit
commit complete
[edit]

On R4

user@R4>configure
[edit]
user@R4#edit interfaces so-0/0/0 unit 0 family inet
[edit interfaces so-0/0/0 unit 0 family inet]
user@R4#set address 192.168.3.2/24
[edit interfaces so-0/0/0 unit 0 family inet]
user@R4#exit
[edit]
user@R4#commit
commit complete
[edit]

Verification

user@R3>ping 192.168.1.2

```
PING 192.168.1.2:  56 data byte
64 bytes from 192.168.1.2 :  icmp_seq=0 ttl=253 time=1.028 ms
```

user@R4>ping 192.168.1.2

```
PING 192.168.1.2:  56 data byte
64 bytes from 192.168.1.2 :  icmp_seq=0 ttl=253 time=1.028 ms
```

on R1

user@R1>configure
[edit]
user@R1#edit firewall family inet filter filter1
[edit firewall family inet filter filter1]
user@R1#set term term1 from source-address 192.168.2.2/24
[edit firewall family inet filter filter1]
user@R1#set term term1 from protocol tcp
[edit firewall family inet filter filter1]
user@R1#set term term1 from port telnet
[edit firewall family inet filter filter1]
user@R1#set term term1 then accept
[edit firewall family inet filter filter1]
user@R1#set term term2 from source-address 192.168.3.2/24
[edit firewall family inet filter filter1]
user@R1#set term term2 from protocol icmp
[edit firewall family inet filter filter1]
user@R1#set term term2 then accept
[edit firewall family inet filter filter1]
user@R1#exit
[edit]
user@R1#edit interfaces so-0/0/0 unit 0 family inet
[edit interfaces so-0/0/0 unit 0 family inet]
user@R1#set filter input filter1
[edit interfaces so-0/0/0 unit 0 family inet]
user@R1#exit
[edit]
user@R1#commit
commit complete
[edit]
user@R1#exit

Note: If a term does not contain a from statement, the packet is considered to match and the action in the term's then statement is taken. If a term does not contain a then statement or if you do not configure an action in the then statement, and if the packet matches the conditions in the term's from statement, the packet is accepted.

Verification

user@R3>ping 192.168.1.2

```
Trying 192.168.1.2
% Destination unreachable; gateway or host down
```

user@R3>telnet 192.168.1.2

```
Trying 192.168.1..
Connected to R2.
```

user@R4>ping 192.168.1.2

```
PING 192.168.1.2:  56 data byte
64 bytes from 192.168.1.2 :  icmp_seq=0 ttl=253 time=1.028 ms
```

user@R4>telnet 192.168.1.2

```
Trying 192.168.1.2
% Destination unreachable; gateway or host down
```

You can try with different cases as shown below Now , try out different cases of applying ACL and test the same as given below. But before that remove the previously configured ACL on R1 by issuing clear firewall filter command in operational mode.

user@R1>clear firewall filter filter1

Case1: Allow traffic from ip address 192.168.2.2 block all other traffic

user@R1>configure
[edit]
user@R1#edit firewall family inet filter filter1
[edit firewall family inet filter filter1]
user@R1#set term term1 from source-address 192.168.2.2/24
[edit firewall family inet filter filter1]
user@R1#set term term1 then accept
[edit firewall family inet filter filter1]
user@R1#set term term2 then reject
[edit firewall family inet filter filter1]

Apply the firewall filter to router interface

user@R1#edit interfaces so-0/0/0 unit 0 family inet
[edit interfaces so-0/0/0 unit 0 family inet]
user@R1#set filter input filter1
[edit interfaces so-0/0/0 unit 0 family inet]
user@R1#exit
[edit]
user@R1#commit
commit complete
[edit]
user@R1#exit

Verification

user@R3>ping 192.168.1.2

```
PING 192.168.1.2:  56 data byte
64 bytes from 192.168.1.2 :  icmp_seq=0 ttl=253 time=1.028 ms
```

user@R4>ping 192.168.1.2

```
Trying 192.168.1.2
% Destination unreachable; gateway or host down
```

Case 2 : Block traffic from ip address 192.168.2.2 and allow all other traffic

user@R1>clear firewall filter filter1
user@R1>configure
[edit]
user@R1#edit firewall family inet filter filter1
[edit firewall family inet filter filter1]
user@R1#set term term1 from source-address 192.168.2.2/24
[edit firewall family inet filter filter1]
user@R1#set term term1 then reject
[edit firewall family inet filter filter1]
user@R1#set term term2 then accept
[edit firewall family inet filter filter1]

Apply the firewall filter to router interface

user@R1#edit interfaces so-0/0/0 unit 0 family inet
[edit interfaces so-0/0/0 unit 0 family inet]
user@R1#set filter input filter1
[edit interfaces so-0/0/0 unit 0 family inet]
user@R1#exit
[edit]

user@R1#commit
commit complete
[edit]
user@R1#exit

Verification

user@R3>ping 192.168.1.2

```
PING 192.168.1.2:  56 data byte
64 bytes from 192.168.1.2 :  icmp_seq=0 ttl=253 time=1.028 ms
```

user@R4>ping 192.168.1.2

```
PING 192.168.1.2:  56 data byte
64 bytes from 192.168.1.2 :  icmp_seq=0 ttl=253 time=1.028 ms
```

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Juniper® Lab Exercises Exam Notes : Configuring Source Nat Using Multiple Rules

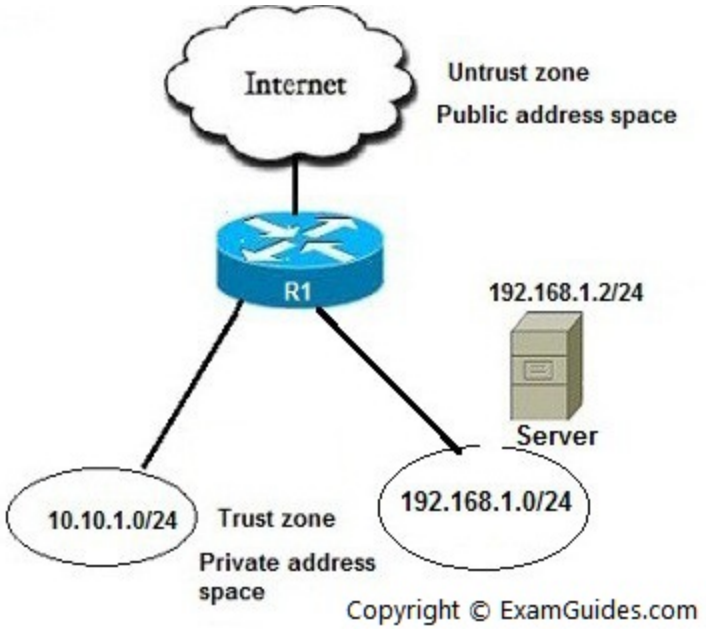
examguides.com/Juniper-Netsim/config-source-nat-jsim-lab.htm

12. Configuring Source NAT using multiple rules

Description: The lab exercise explains configuration source NAT based on given set of instruction.

Network Diagram :

Instructions:



1. Create a source NAT pool *srcnatpool1*

2. Create a source NAT pool *srcnatpool2*

3. Create source NAT rule set rs1 with rule r1 to match packets with a source IP address in the 10.10.1.0/24 subnets. For matching packets, the source address is translated to an IP address in the srcnatpool1 pool.

4. Apply rule r2 to match packets with a source IP address of 192.168.1.2/24. For matching packets, there is no NAT translation performed.

5. Rule r3 to match packets with a source IP address in the 192.168.1.0/24 subnet. For matching packets, the source address is translated to an IP address in the srcnatpool2 pool.

6. From operational mode enter show security nat source summary.

Original Source IP	Translated Source IP
10.10.1.0/24	192.0.0.0/24-192.0.0.24
192.168.1.0/24	192.0.0.100-192.0.0.249 (no port translation)

192.168.1.2/24	no source NAT translation

On R1

```
user@R1>configure
[edit]
user@R1#edit security nat source
[edit security nat source]
user@R1#set pool srcnatpool1 address 192.0.0.1/24 to 192.0.0.24 /24
[edit security nat source]
user@R1#set pool srcnatpool2 address 192.0.0.100/24 to 192.0.0.249/24
[edit security nat source]
user@R1#set rule-set rs1 from zone trust
[edit security nat source]
user@R1#set rule-set rs1 to zone untrust
[edit security nat source]
user@R1#set rule-set rs1 rule r1 match source-address 10.10.1.0/24
[edit security nat source]
user@R1#set rule-set rs1 rule r1 match destination-address 0.0.0.0/0
[edit security nat source]
user@R1#set rule-set rs1 rule r1 then source-nat pool srcnatpool1
[edit security nat source]
user@R1#set rule-set rs1 rule r2 match source-address 192.168.1.2/24
[edit security nat source]
user@R1#set rule-set rs1 rule r2 match destination-address 0.0.0.0/0
[edit security nat source]
user@R1#set rule-set rs1 rule r2 then source-nat off
[edit security nat source]
user@R1#set rule-set rs1 rule r3 match source-address 192.168.1.0/24
[edit security nat source]
user@R1#set rule-set rs1 rule r3 match destination-address 0.0.0.0/0
[edit security nat source]
user@R1#set rule-set rs1 rule r3 then source-nat pool srcnatpool2
[edit security nat source]
user@R1#exit
[edit]

user@R1#show
```

```
source {

          pool srcnatpool1 {
               address {
                    192.0.0.1/24 to 192.0.0.24/24;
               }

          }
          pool srcnatpool2 {
               address {
                    192.0.0.100/24 to 192.0.0.249/24;
               }

          }
          rule-set rs1{
               from zone trust;
               to zone untrust;

               rule r1{
                    match {
                         source-address 10.10.1.0/24;
                         destination-address 0.0.0.0/0;
                    }
                    then {
                         source-nat {
                              pool {
                                   srcnatpool1;
                              }
                         }
                    }
               }
               rule r2{
                    match {
                         source-address 192.168.1.2/24;
                         destination-address 0.0.0.0/0;
                    }
                    then {
                         source-nat {
                              off;
                         }
                    }
               }
               rule r3{
                    match {
                         source-address 192.168.1.0/24;
                         destination-address 0.0.0.0/0;
                    }
                    then {
                         source-nat {
                              pool {
                                   srcnatpool2;
                              }
```

```
                    }
                }
            }
        }
    }
```

[edit]
user@R1#commit
commit complete
[edit]
user@R1#exit

user@R1>show security nat source summary

```
Total port number usage for port translation pool: 0
Maximum port number for port translation pool: 268435456
Total pools :2
pool name      address range                         routing instance  PAT  total
address
srcnatpool1    192.0.0.1/24-192.0.0.24/24            default           YES  24
srcnatpool2    192.0.0.100/24-192.0.0.249/24         default           YES  249
Total Rules : 3
rule name      rule set       from           to             Action
r1             rs1            trust          untrust        srcnatpool1
r2             rs1            trust          untrust        off
r3             rs1            trust          untrust        srcnatpool2
```

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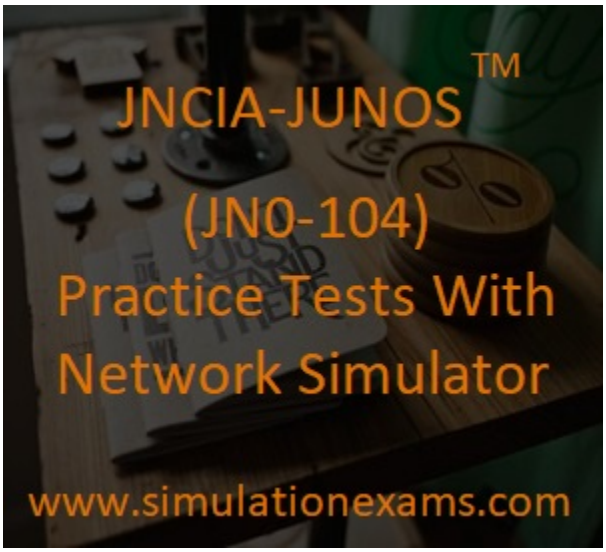
- 15. Routing between vlans and ping test
- 16. Verifying STP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Juniper® Lab Exercises Exam Notes : Configuring Two Dhcp Clients And Dhcp Verification Commands

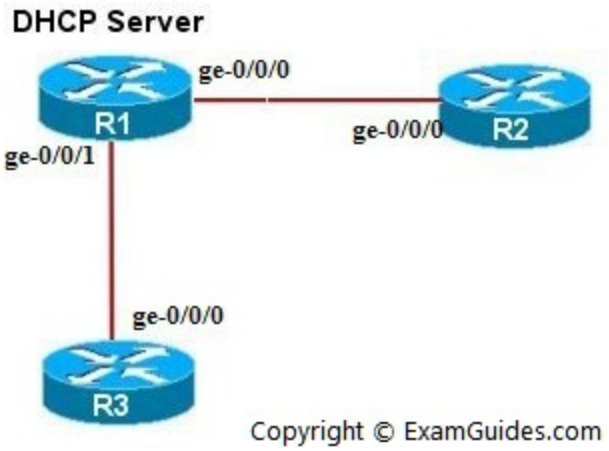
examguides.com/Juniper-Netsim/config-dhcp-client-jsim-lab.htm

13.Configuring two DHCP clients and DHCP verification commands

Description: This lab exercise demonstrates DHCP server configuration and DHCP client configuration on two routers and also shows the verification commands both on the server and the client.

Network Diagram :

Instructions:



1. Enter into configuration mode of device R1

2. Assign ipaddress of ge-0/0/0 interface as 192.168.1.1/24 and ge-0/0/1 interface as 192.168.1.2/24

3. Configure the dhcp server

4. Specify the low and high ip address pool range

5. Configure default and maximum lease-time

6. Configure the domain-name used by client

7. Configure DNS Server IP address

8. Configure the default-router address

9. Confirm the configuration by entering the show command from configuration mode

10. For the security zone (for example, untrust) to which the interface is bound, specify DHCP as a host-inbound service.(ge-0/0/0 and ge-0/0/1)

11. Enter into configuration mode of R2 and specify the interface (ge-0/0/0) on which to enable the DHCP client.

12. Enter into configuration mode of R3 and specify the interface (ge-0/0/0) on which to enable the DHCP client.

13. On R1 issue "show system service dhcp binding" command to view the addresses allocated to clients

14. Issue "show system service dhcp pool" command on R1 to view server ip address pool

15. On R2 and R3 issue "show system service dhcp client" command to view information about DHCP client

On R1

user@R1>configure
[edit]
user@R1#edit interfaces ge-0/0/0 unit 0 family inet
[edit interfaces ge-0/0/0 unit 0 family inet]
user@R1#set address 192.168.1.1/24
[edit interfaces ge-0/0/0 unit 0 family inet]
user@R1#exit
[edit]
user@R1#edit interfaces ge-0/0/1 unit 0 family inet
[edit interfaces ge-0/0/0 unit 0 family inet]
user@R1#set address 192.168.1.2/24
user@R1#exit
[edit]
user@R1#edit system services dhcp
[edit system services dhcp]
user@R1#set pool 192.168.1.0/24 address-range low 192.168.1.1
[edit system services dhcp]
user@R1#set pool 192.168.1.0/24 address-range high 192.168.1.100
[edit system services dhcp]
user@R1#set pool 192.168.1.0/24 domain-name sample.com
[edit system services dhcp]
user@R1#set pool 192.168.1.0/24 name-server 192.168.1.2
[edit system services dhcp]
user@R1#set pool 192.168.1.0/24 router 192.168.1.1
[edit system services dhcp]
user@R1#set pool 192.168.1.0/24 default-lease-time 1428700
[edit system services dhcp]
user@R1#set pool 192.168.1.0/24 maximum-lease-time 2356210
[edit system services dhcp]

user@R1#set pool 192.168.1.0/24 server-identifier 192.168.1.1
[edit system services dhcp]
user@R1#exit

[edit]
user@R1#set security zones security-zone untrust interfaces ge-0/0/0 host-inbound-traffic system-services dhcp
[edit]
user@R1#set security zones security-zone untrust interfaces ge-0/0/1 host-inbound-traffic system-services dhcp
[edit]
user@R1#commit
commit complete
[edit]
user@R1#exit
user@R1>show system services dhcp pool

```
Pool Name             Low Address         High Address        Excluded Address
192.168.1.0/24        192.168.1.1         192.168.1.100       -
```

On R2

user@R2>configure
[edit]
user@R2#edit interfaces ge-0/0/0 unit 0 family inet
[edit interfaces ge-0/0/0 unit 0 family inet]
user@R2#set dhcp
[edit interfaces ge-0/0/0 unit 0 family inet]
user@R2#exit
[edit]
user@R2#commit
commit complete
[edit]
user@R2#exit
user@R2>show system services dhcp client

```
Logical Interface Name : ge-0/0/0
Hardware address      :  00A0.c914.c1f3
Client Status         :  bound
Vendor Identifier     :  ether
Server Address        :  192.168.1.1
Address obtained      :  192.168.1.3
Update server         :  enabled
Lease Obtained at     :  1428700
Lease Expires at      :  2356210

DHCP Options
          Name Server       : 192.168.1.2
          Server Identifier : 192.168.1.1
          Router            : 192.168.1.1
          Domain-Name       : sample.com
```

On R3

user@R3>configure
[edit]
user@R3#edit interfaces ge-0/0/0 unit 0 family inet
[edit interfaces ge-0/0/0 unit 0 family inet]
user@R3#set dhcp
[edit interfaces ge-0/0/0 unit 0 family inet]
user@R3#exit
[edit]
user@R3#commit
commit complete
[edit]
user@R3#exit
user@R3>show system services dhcp client

```
Logical Interface Name : ge-0/0/0
Hardware address      :  00A0.c914.e:b8
Client Status         :  bound
Vendor Identifier     :  ether
Server Address        :  192.168.1.2
Address obtained      :  192.168.1.4
Update server         :  enabled
Lease Obtained at     :  1428700
Lease Expires at      :  2356210

DHCP Options
          Name Server       : 192.168.1.2
          Server Identifier : 192.168.1.1
          Router            : 192.168.1.1
          Domain-Name       : sample.com
```

On R1

user@R1>show system services dhcp binding

```
Allocated Address   MAC Address     Binding Type   Lease expires at
192.168.1.3         00A0.c914.d5b7  Dynamic        2356210
192.168.1.4         00A0.c914.a7d8  Dynamic        2356210
```

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Juniper® Lab Exercises Exam Notes : Configuring Management Ip Address On Ex Series Switch

14. Configuring management IP address on EX series switch

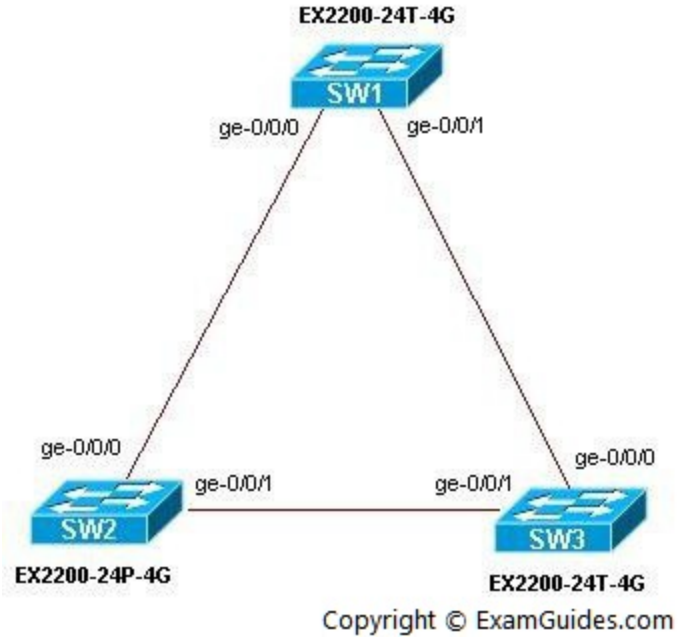
Description: This exercise demonstrates configuring management IP address on a EX-Series Switch.

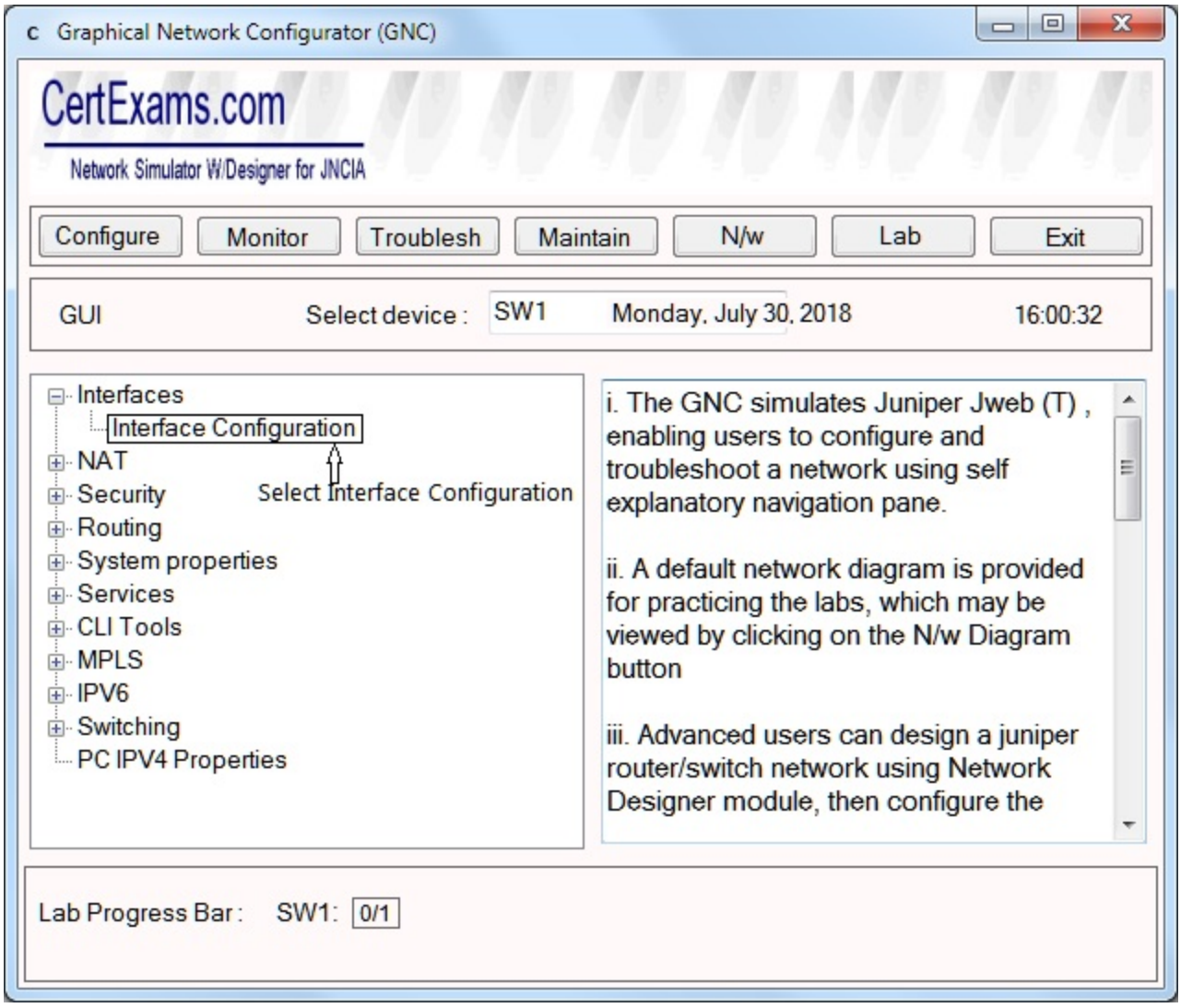
Network Diagram :

Instructions:

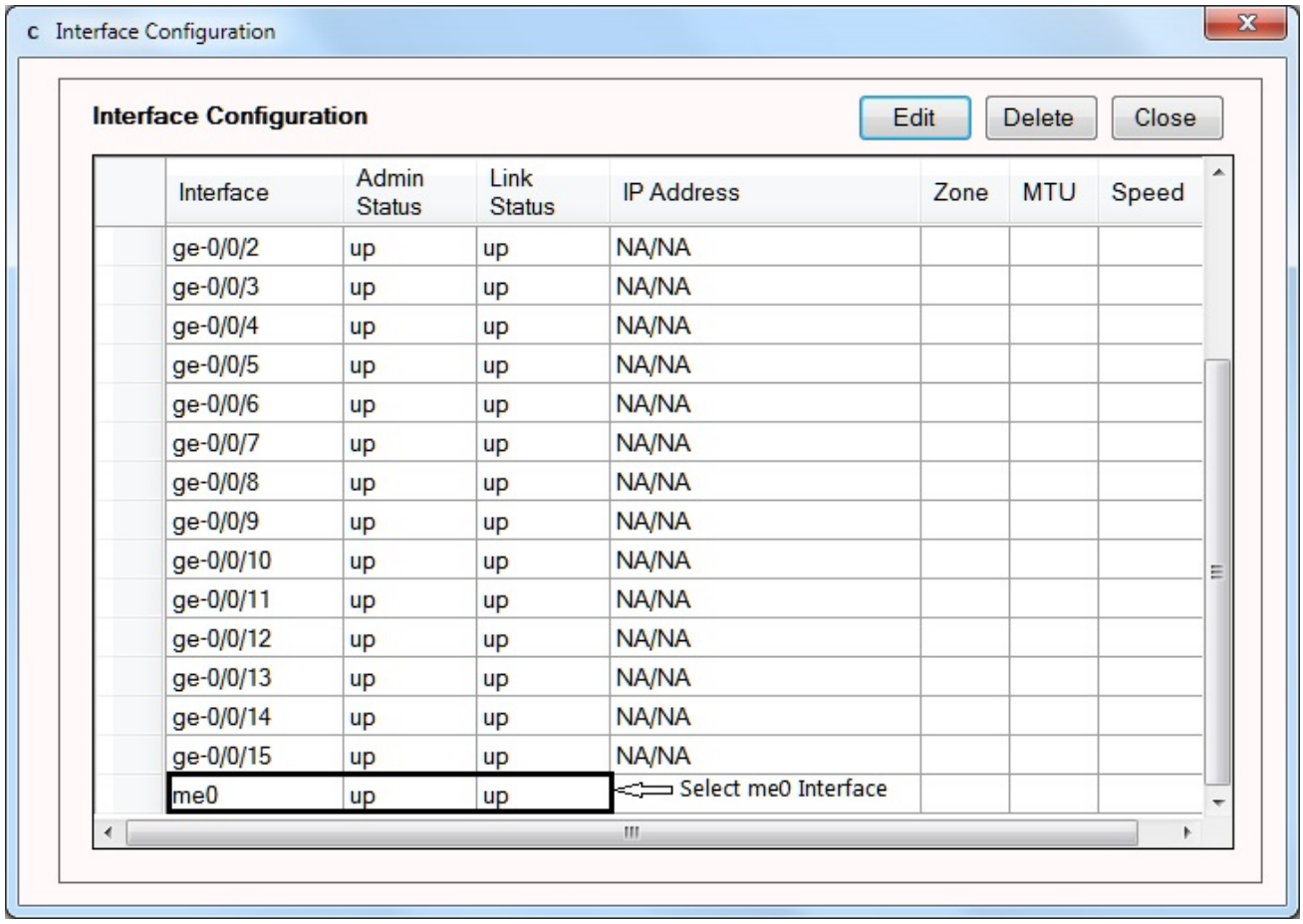
1. Select device SW1 from Select device drop down and click Configure button.

2. From left navigation pane select Interfaces > Interface Configuration

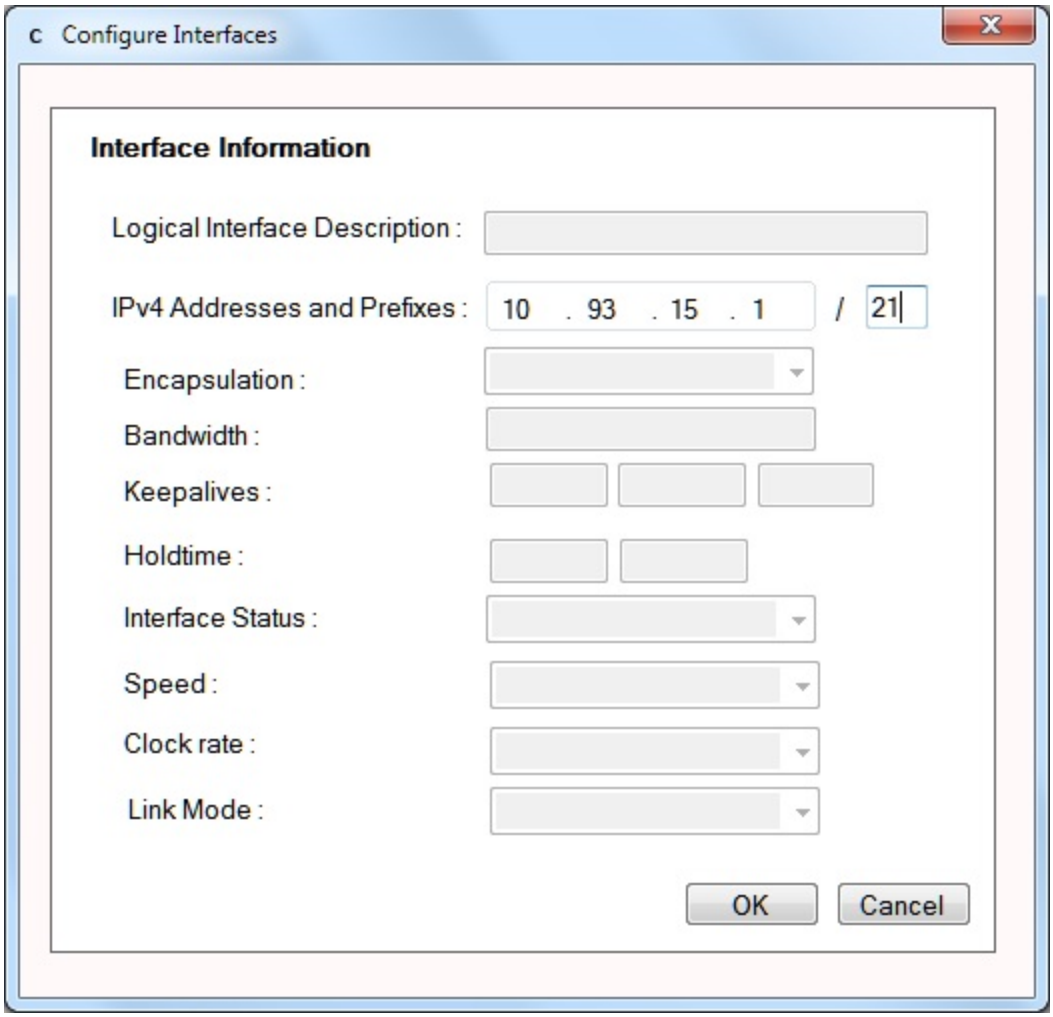




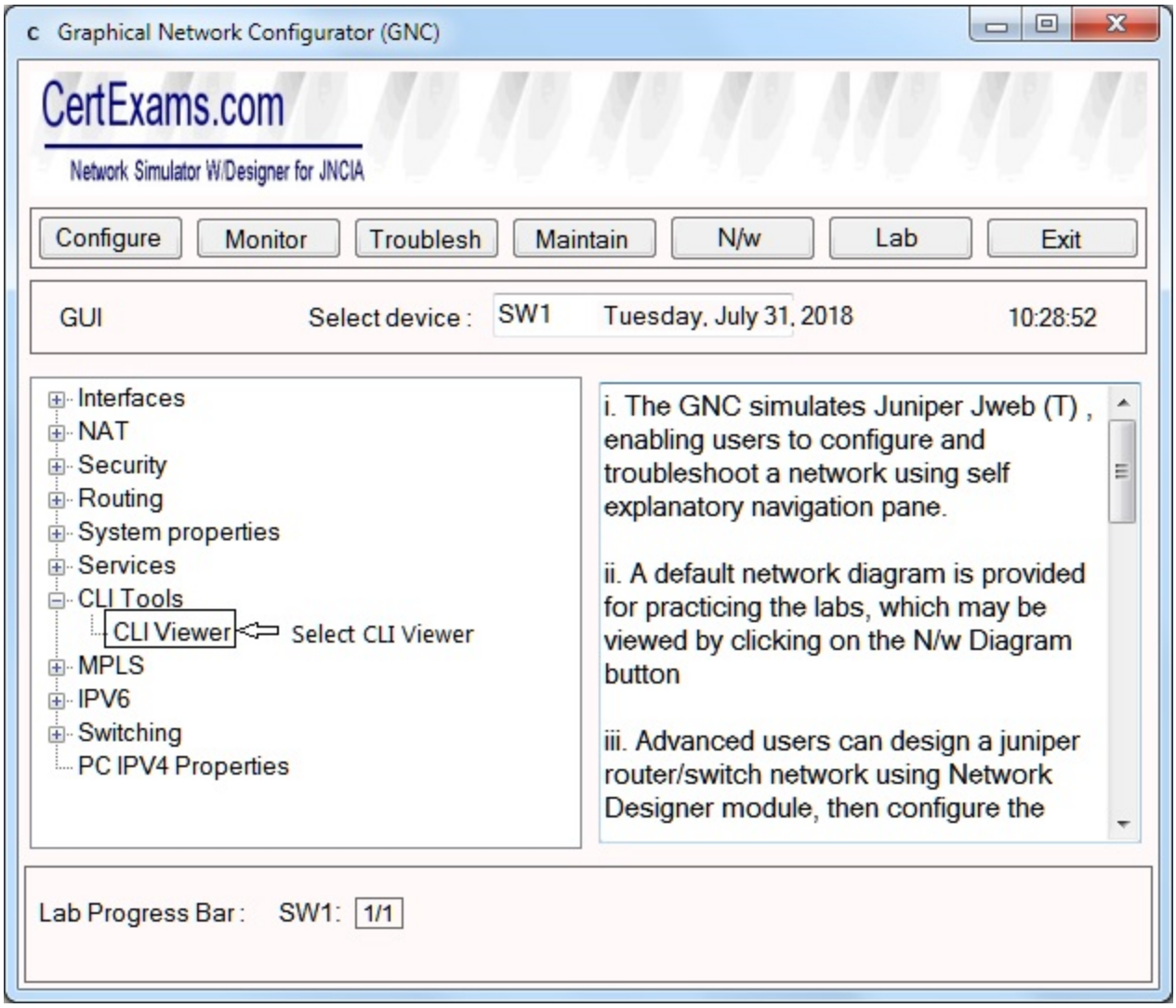
3. In Interface Configuration screen select me0 interface and click Edit button

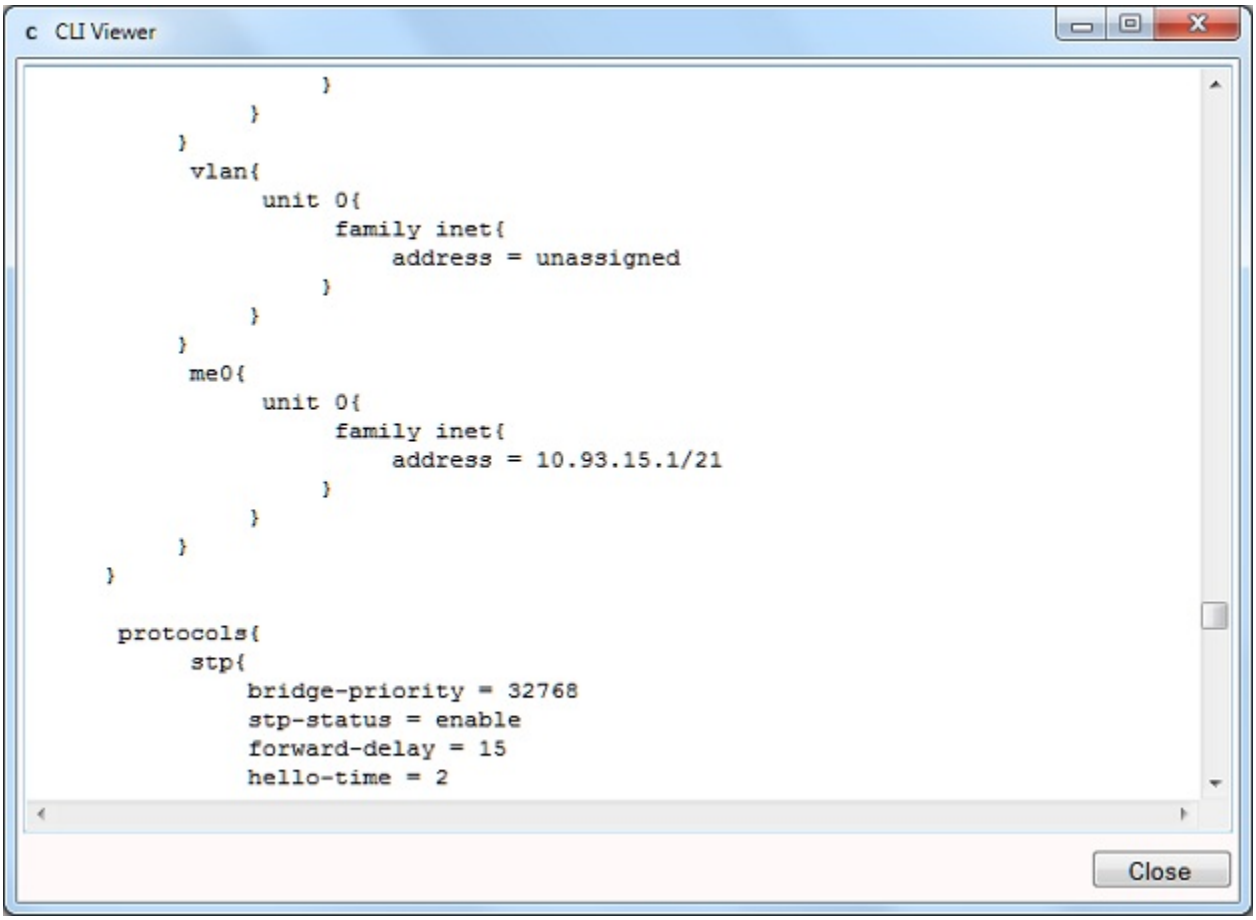


4. In Configure Interfaces screen enter 10.93.15.1 as ip address and prefix as 21 and click OK button



5. Select CLI Viewer under CLi Tools


c Graphical Network Configurator (GNC)
CertExams.com
Network Simulator W/Designer for JNCIA
Configure
Monitor
Troublesh
Maintain
N/w
Lab
Exit
GUI
Select device :
SW1
Tuesday, July 31, 2018
10:28:52
Interfaces
NAT
Security
Routing
System properties
Services
CLI Tools
CLI Viewer
Select CLI Viewer
MPLS
IPV6
Switching
PC IPV4 Properties
i. The GNC simulates Juniper Jweb (T) , enabling users to configure and troubleshoot a network using self explanatory navigation pane.
ii. A default network diagram is provided for practicing the labs, which may be viewed by clicking on the N/w Diagram button
iii. Advanced users can design a juniper router/switch network using Network Designer module, then configure the
Lab Progress Bar :
SW1:
1/1



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- 2. Configuring Root Password
- 3. Router Interface address Configuration
- 4. Basic gigabit ethernet configuration on a J-series router
- 5. Configuring Static Routes
- 6. Connectivity check between Router and workstations
- 7. RIP Configuration
- 8. OSPF Configuration and Verification
- 9. Configuring MPLS using OSPF
- 10. Configuring IPV6 static routes
- 11. Configuring and Verifying firewall filter Lab Scenario
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- 13. Configuring two DHCP clients and DHCP verification commands
- 14. Configuring the management IP address on EX series switch
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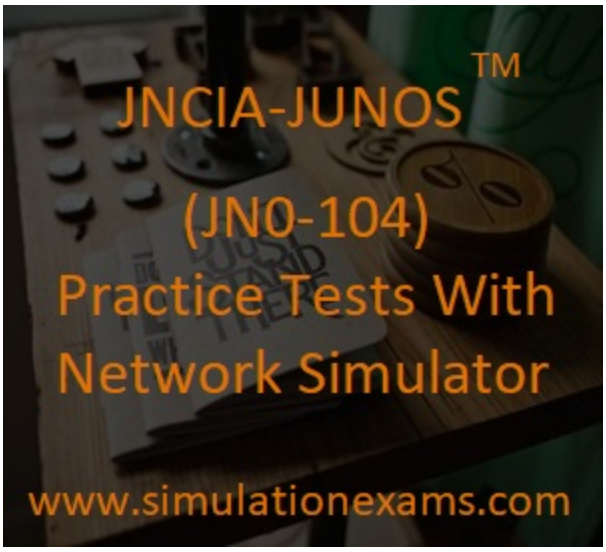
- 16. Verifying STP

1. Juniper JNCIA Exam Download
2. Juniper w/ NetSim Download
3. Cisco CCNA Exam Download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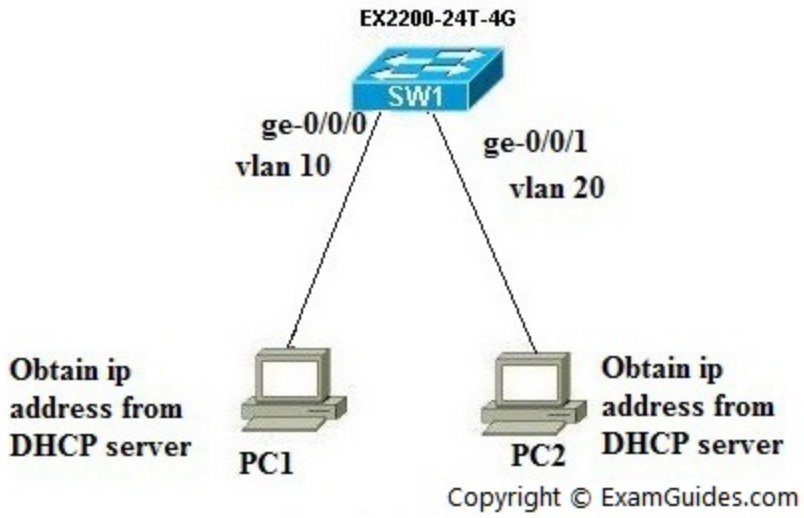
Juniper® Lab Exercises Exam Notes : Routing Between Vlans And Ping Test

15. Routing between vlans and ping test

Description: Lab Exercise explains routing between multiple vlans

Network Diagram :



Instructions:

1. Choose device SW1 from network diagram and exit

2. Enter into configuration mode of SW1

3. Create two vlans by name test1 and test2 with vlan id 10 and vlan id 20 respectively

4. Make the interfaces ge-0/0/0 as member of test1

5. Make the interface ge-0/0/1 as member of test2

6. Configure layer 3 interface and assign ip address for each vlan interface

7. Create DHCP services on the EX switch by creating a DHCP pool for vlan 10 first

8. Associate l3 interface for created vlan 10

9. Create DHCP services on the EX switch by creating a DHCP pool for vlan 20

10. Associate l3 interface for created vlan 20

11.To assign ip address to PC1 click network diagram button and in network diagram window click PC1 icon from the diagram and type ip dhcp command to obtain ip address via dhcp server

12. To assign ip address to PC2 click network diagram button and in network diagram window click PC2 icon from the diagram and type ip dhcp command to obtain ip address via dhcp server

13. Now ping PC2 from PC1 or PC1 from PC2 and see that it is successful.

user@SW1>configure
[edit]
user@SW1#set vlans test1 vlan-id 10
[edit]
user@SW1#set vlans test2 vlan-id 20
[edit]
user@SW1#set interfaces ge-0/0/0 unit 0 family ethernet-switching vlan members test1
[edit]
user@SW1#set interfaces ge-0/0/1 unit 0 family ethernet-switching vlan members test2
[edit]
user@SW1#set interfaces vlan unit 10 family inet address 192.168.10.1/24
[edit]
user@SW1#set interfaces vlan unit 20 family inet address 192.168.20.1/24
[edit]
user@SW1#edit system services dhcp
[edit system services dhcp]
user@SW1#set pool 192.168.10.0/24 address-range low 192.168.10.1
[edit system services dhcp]
user@SW1#set pool 192.168.10.0/24 address-range high 192.168.10.50
[edit system services dhcp]
user@SW1#set pool 192.168.10.0/24 domain-name sample.com
[edit system services dhcp]
user@SW1#set pool 192.168.10.0/24 name-server 192.168.10.1
[edit system services dhcp]
user@SW1#set pool 192.168.10.0/24 router 192.168.10.1
[edit system services dhcp]
user@SW1#set pool 192.168.10.0/24 default-lease-time 23456
[edit system services dhcp]

user@SW1#exit
[edit]
user@SW1#set vlans test1 l3-interface vlan.10
[edit]
user@SW1#commit
commit complete
[edit]
user@SW1#edit system services dhcp
[edit system services dhcp]
user@SW1#set pool 192.168.20.0/24 address-range low 192.168.20.1
[edit system services dhcp]
user@SW1#set pool 192.168.20.0/24 address-range high 192.168.20.50
[edit system services dhcp]
user@SW1#set pool 192.168.20.0/24 domain-name xyz.com
[edit system services dhcp]
user@SW1#set pool 192.168.20.0/24 name-server 192.168.20.1
[edit system services dhcp]
user@SW1#set pool 192.168.20.0/24 router 192.168.20.1
[edit system services dhcp]
user@SW1#set pool 192.168.20.0/24 default-lease-time 54631
[edit system services dhcp]
user@SW1#exit
[edit]
user@SW1#set vlans test2 l3-interface vlan.20
[edit]
user@SW1#commit
commit complete
[edit]

Obtain ip address automatically via DHCP server for PC1 and PC2

PC1>ip dhcp

PC2>ip dhcp

PC1>show ip

```
Name :PC1
IP/Mask     : 192.168.10.2/24
Gateway     : 192.168.10.1
DNS         : 192.168.10.1
DHCP Server : 192.168.10.1
DHCP lease  : 23456
MAC         : 00A0.c914.f3f3
```

PC2>show ip

```
Name :PC2
IP/Mask     : 192.168.20.2/24
Gateway     : 192.168.20.1
DNS         : 192.168.20.1
DHCP Server : 192.168.20.1
DHCP lease  : 54631
MAC         : 00A0.c914.d0a8
```

user@SW1>show system services dhcp binding

```
Allocated Address   MAC Address     Binding Type   Lease expires at
192.168.10.2        00A0.c914.f3f3  Dynamic        23456
192.168.20.2        00A0.c914.d0a8  Dynamic        23456
```

user@SW1>show system services dhcp pool

```
Pool Name             Low Address         High Address        Excluded Address
192.168.10.0/24       192.168.10.1        192.168.10.50       -
192.168.20.0/24       192.168.20.1        192.168.20.50       -
```

PC1>ping PC2

```
PING 192.168.20.2:  56 data byte
64 bytes from 192.168.20.2 :  icmp_seq=0 ttl=253 time=1.028 ms
```

PC2>ping PC1

```
PING 192.168.10.2:  56 data byte
64 bytes from 192.168.10.2 :  icmp_seq=0 ttl=253 time=1.028 ms
```

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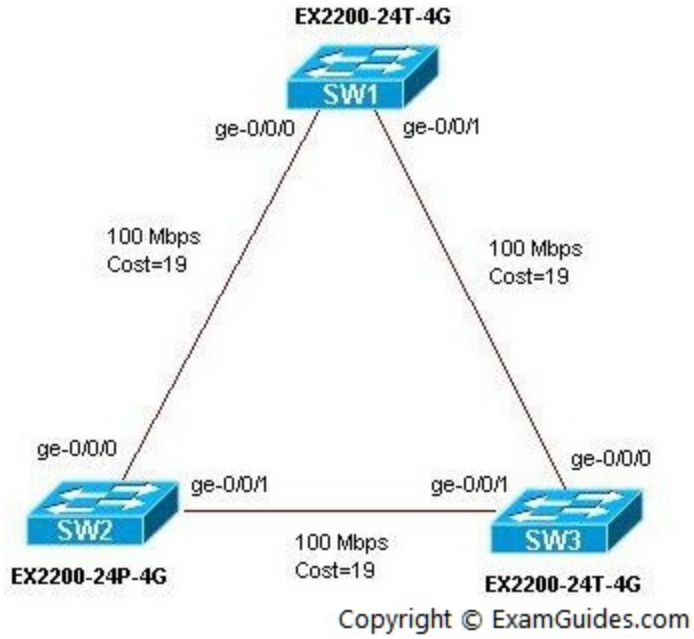
Juniper® Lab Exercises Exam Notes : Verifying Stp

16. Verifying STP

Description: This lab exercise demonstrates the various show commands to verify spanning-tree protocol.

Network Diagram :

Instructions:



1. Enter into configuration mode and commit on any one of the switch for the spanning tree protocol algorithm to be saved on the switches.

2. Issue show commands to verify spanning tree protocol:

To display the configured or calculated interface-level STP parameters.

show spanning-tree interface-Display brief STP interface information.

brief | detail- Display the specified level of output.

user@SW1>configure
[edit]
user@SW1#commit
[edit]
user@SW1#exit

user@SW1>show spanning-tree interface

```
Spanning tree interface parameters for instance 0

Interface    Port ID  Designated port ID  Designated bridge ID  Port Cost  State
Role
ge-0/0/0.0   128      128                 00A0.c914.b2d9        19         FWD    RP
ge-0/0/1.0   128      128                 00A0.c914.b2d9        19         FWD
DESG
```

user@SW1>show spanning-tree interface detail

```
Spanning tree interface parameters for instance 0

Interface Name           : ge-0/0/0.0
Port Identifier          : 128
Designated port ID       : 128
Port cost                : 19
Port state               : Forwarding
Designated bridge ID     : 00A0.c914.b2d9
Port role                : Root Port
Link type                : Pt-Pt/EDGE
Boundary port            : NA
Interface Name           : ge-0/0/1.0
Port Identifier          : 128
Designated port ID       : 128
Port cost                : 19
Port state               : Forwarding
Designated bridge ID     : 00A0.c914.b2d9
Port role                : Designated Port
Link type                : Pt-Pt/EDGE
Boundary port            : NA
```

user@SW2>show spanning-tree interface

```
Spanning tree interface parameters for instance 0

Interface    Port ID  Designated port ID  Designated bridge ID  Port Cost  State
Role
ge-0/0/0.0   128      128                 00A0.c914.a0b9        19         FWD
DESG
ge-0/0/1.0   128      128                 00A0.c914.a0b9        19         FWD
DESG
```

user@SW2>show spanning-tree interface detail

```
Spanning tree interface parameters for instance 0

Interface Name           : ge-0/0/0.0
Port Identifier          : 128
Designated port ID       : 128
Port cost                : 19
Port state               : Forwarding
Designated bridge ID     : 00A0.c914.a0b9
Port role                : Designated Port
Link type                : Pt-Pt/EDGE
Boundary port            : NA
Interface Name           : ge-0/0/1.0
Port Identifier          : 128
Designated port ID       : 128
Port cost                : 19
Port state               : Forwarding
Designated bridge ID     : 00A0.c914.a0b9
Port role                : Designated Port
Link type                : Pt-Pt/EDGE
Boundary port            : NA
```

user@SW3>show spanning-tree interface

```
Spanning tree interface parameters for instance 0

Interface    Port ID  Designated port ID  Designated bridge ID  Port Cost  State
Role
ge-0/0/1.0   128      128                 00A0.c914.e1d1        19         FWD    RP
ge-0/0/0.0   128      128                 00A0.c914.e1d1        19         BLK    DIS
```

user@SW3>show spanning-tree interface detail

```
Spanning tree interface parameters for instance 0

Interface Name           : ge-0/0/1.0
Port Identifier          : 128
Designated port ID       : 128
Port cost                : 19
Port state               : Forwarding
Designated bridge ID     : 00A0.c914.e1d1
Port role                : Root Port
Link type                : Pt-Pt/EDGE
Boundary port            : NA

Interface Name           : ge-0/0/0.0
Port Identifier          : 128
Designated port ID       : 128
Port cost                : 19
Port state               : Blocking
Designated bridge ID     : 00A0.c914.e1d1
Port role                : Disabled
Link type                : Pt-Pt/EDGE
Boundary port            : NA
```

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