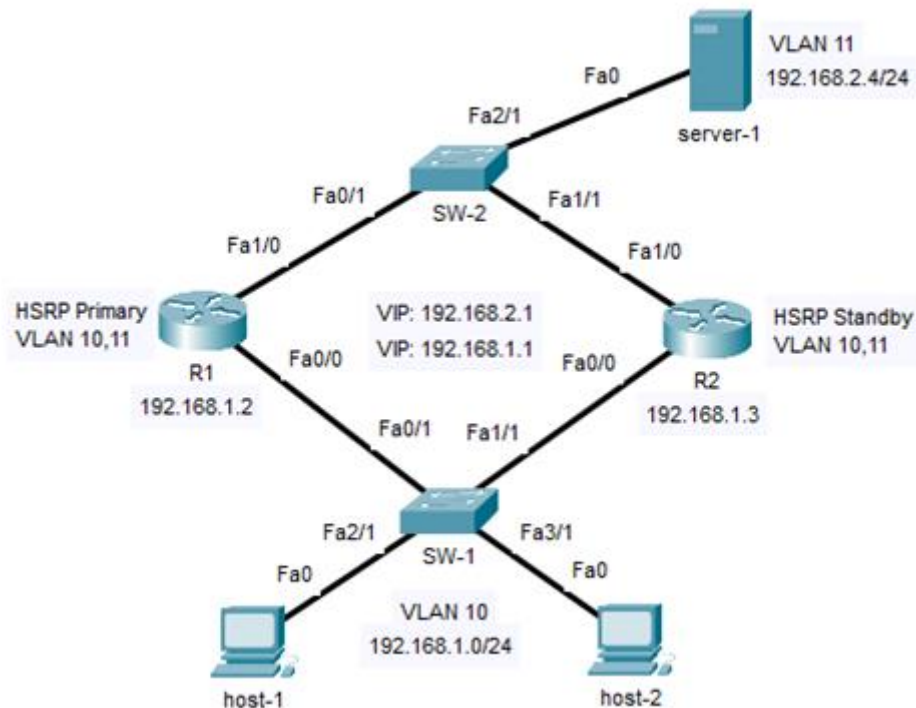


Hot Standby Router Protocol (HSRP)

Lab Summary

Configure HSRP on R1 as primary gateway and R2 as standby (failover) to enable default gateway redundancy for VLAN 10 and VLAN 11.

Figure 1 Lab Topology



Lab Configuration

Start Packet Tracer File: **hsrcp.pkt**

Click on *R1* icon and select *CLI* folder.

Step 1: Enter global configuration mode

```
R1> enable
R1# configure terminal
```

Step 2: Enable HSRP on R1 interface FastEthernet0/0 and assign as primary gateway for VLAN 10 (subnet 192.168.1.0/24). Configure the virtual IP address as 192.168.1.1/24 for VLAN 10.

```
R1(config)# interface Fa0/0
R1(config-if)# ip address 192.168.1.2 255.255.255.0
```

```
R1(config-if)# standby version 2  
R1(config-if)# standby 1 ip 192.168.1.1  
R1(config-if)# standby 1 priority 110  
R1(config-if)# standby 1 preempt  
R1(config-if)# no shutdown  
R1(config-if)# exit
```

Step 3: Enable HSRP on R1 interface FastEthernet1/0 and assign it as primary gateway for server-1 assigned to VLAN 11 (192.168.2.0/24). Configure the virtual IP address as 192.168.2.1/24 for VLAN 11.

```
R1(config)# interface Fa1/0  
R1(config-if)# ip address 192.168.2.2 255.255.255.0  
R1(config-if)# standby version 2  
R1(config-if)# standby 1 ip 192.168.2.1  
R1(config-if)# standby 1 priority 110  
R1(config-if)# standby 1 preempt  
R1(config-if)# no shutdown  
R1(config-if)# end  
R1# copy running-config startup-config
```

Click on *R2* icon and select *CLI* folder.

Step 4: Enter global configuration mode

```
R2> enable  
R2# configure terminal
```

Step 5: Enable HSRP on R2 interface FastEthernet0/0 and assign it as failover gateway for VLAN 10 (subnet 192.168.1.0/24). In addition, configure the virtual IP address as 192.168.1.1/24 for VLAN 10.

```
R2(config)# interface Fa0/0  
R2(config-if)# ip address 192.168.1.3 255.255.255.0  
R2(config-if)# standby version 2  
R2(config-if)# standby 1 ip 192.168.1.1  
R2(config-if)# standby 1 preempt  
R2(config-if)# no shutdown  
R2(config-if)# exit
```

Step 6: Enable HSRP on R2 interface FastEthernet1/0 and assign it as failover gateway for server-1 assigned to VLAN 11 (subnet 192.168.2.0/24). In addition, configure the virtual IP address as 192.168.2.1/24 for VLAN 11.

```
R2(config)# interface Fa1/0  
R2(config-if)# ip address 192.168.2.3 255.255.255.0
```

```
R2(config-if)# standby version 2  
R2(config-if)# standby 1 ip 192.168.2.1  
R2(config-if)# standby 1 preempt  
R2(config-if)# no shutdown  
R2(config-if)# end  
R2# copy running-config startup-config
```

Step 7: Verify Lab

Verify the configuration is correct on each router. Confirm R1 is the HSRP primary (active) gateway and R2 is the HSRP standby gateway.

```
R1# show running-config
```

```
R2# show running-config
```

```
R1# show standby
```

FastEthernet0/0 - Group 1 (version 2)

State is Active

7 state changes, last state change 00:00:31

Virtual IP address is 192.168.1.1

Active virtual MAC address is 0000.0C9F.F001

Local virtual MAC address is 0000.0C9F.F001 (v2 default)

Hello time 3 sec, hold time 10 sec

Next hello sent in 2.709 secs

Preemption enabled

Active router is local

Standby router is 192.168.1.3, priority 100 (expires in 7 sec)

Priority 110 (configured 110)

Group name is hsrp-Fa0/0-1 (default)

FastEthernet1/0 - Group 1 (version 2)

State is Active

7 state changes, last state change 00:00:27

Virtual IP address is 192.168.2.1

Active virtual MAC address is 0000.0C9F.F001

Local virtual MAC address is 0000.0C9F.F001 (v2 default)

Hello time 3 sec, hold time 10 sec

Next hello sent in 1.56 secs

Preemption enabled

Active router is local

Standby router is 192.168.2.3

Priority 110 (configured 110)

Group name is hsrp-Fa1/0-1 (default)

R2# **show standby**

FastEthernet0/0 - Group 1 (version 2)

State is Standby

10 state changes, last state change 00:00:49

Virtual IP address is 192.168.1.1

Active virtual MAC address is 0000.0C9F.F001

Local virtual MAC address is 0000.0C9F.F001 (v2 default)

Hello time 3 sec, hold time 10 sec

Next hello sent in 1.709 secs

Preemption enabled

Active router is 192.168.1.2, priority 110 (expires in 9 sec)

MAC address is 0000.0C9F.F001

Standby router is local

Priority 100 (default 100)

Group name is hsrp-Fa0/0-1 (default)

FastEthernet1/0 - Group 1 (version 2)

State is Standby

9 state changes, last state change 00:00:39

Virtual IP address is 192.168.2.1

Active virtual MAC address is 0000.0C9F.F001

Local virtual MAC address is 0000.0C9F.F001 (v2 default)

Hello time 3 sec, hold time 10 sec

Next hello sent in 1.495 secs

Preemption enabled

Active router is 192.168.2.2

Standby router is local

Priority 100 (default 100)

Group name is hsrp-Fa1/0-1 (default)

Verify packet forwarding between host and server-1 is via R1 HSRP primary gateway (192.168.1.2).

host-1: c:\> **tracert 192.168.2.4** (yes)

Tracing route to 192.168.2.4 over a maximum of 30 hops:

1	0 ms	0 ms	0 ms	192.168.1.2
2	0 ms	0 ms	1 ms	192.168.2.4

Shutdown interface Fa0/0 and Fa1/0 on R1 with the following commands.

R1(config)# **interface Fa0/0**

R1(config-if)# **shutdown**

```
R1(config-if)# interface Fa1/0
```

```
R1(config-if)# shutdown
```

Verify packet forwarding between host to server-1 is now via R2 HSRP standby gateway (192.168.1.3).

```
host-1: c:\> tracert 192.168.2.4
```

Tracing route to 192.168.2.4 over a maximum of 30 hops:

1	0 ms	0 ms	0 ms	192.168.1.3
2	0 ms	0 ms	0 ms	192.168.2.4