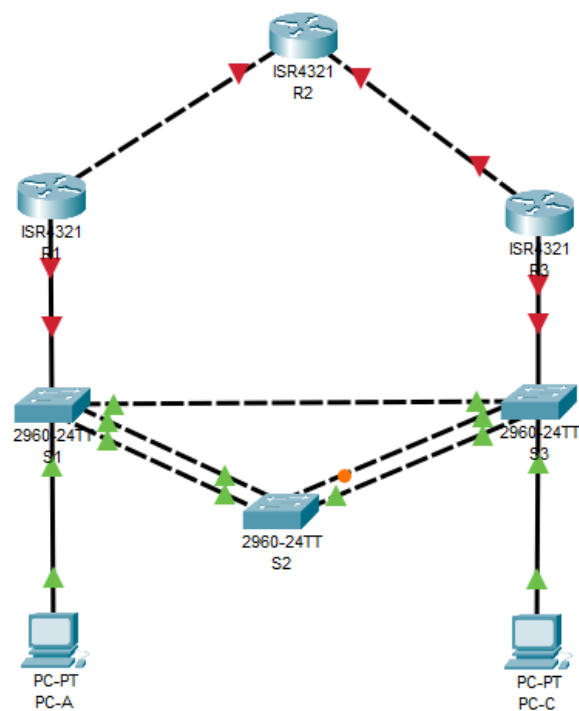


HSRP Redundancy



Available and Reliable Networks Exam

- Record your answers in this PDF File.
- Write your answers in **red color**. You may use the comment capabilities of the free Adobe reader.
- Upload the PDF file with your answers is Ilias.

Homework / Preparation

Part 1: Cisco IOS Basic Configuration Commands

- Work through SWRE chapters 5 – 9, and NP chapter 9
- Read the **Lab Instructions** of this Lab
- Check the **IOS Command List**, provided for the Labs and Review already used and new configuration commands.

Part 2: Cisco IOS PVST+ and Rapid PVST+

- What is the maximum default time for switch-over to redundant Ethernet links when using legacy IEEE 802.1D-1998 STP (PVST+)?

12 ms

- Set a switch to primary root for VLAN 10.

```
S1(config)# spanning-tree vlan 1 root primary
```

- Enable Rapid PVST+ on a switch.

```
S1(config)# spanning-tree mode rapid-pvst
```

- Sets PortFast mode and BPDUGuard on access port f0/1?

```
S1(config)# int f0/3
```

```
S1(. . .)# spanning-tree portfast
```

```
S1(. . .)# spanning-tree bpduguard enable
```

Part 3: EtherChannel

- Which requirements must be fulfilled to form an EtherChannel?

Allowed VLAN list, STP path cost, STP port priority, STP PortFast settings, EtherChannel groups

- What could prevent successful EtherChannel configuration?

- Create an EtherChannel channel-group 2 (Po2), mode active, for the interface range f0/1 – f0/2.

```
S1(config)# interface range f0/1-f0/2
```

```
S1(. . .)# channel-group 2 mode active
```

- d. Configure the EtherChannel interface port-channel 2 (Po2) as trunk, with Native VLAN 99, and allowed VLANs are 1, 100, 99.

```
S1 (config) # interface port-channel 2
S1 (. . . ) # switchport mode trunk
S1 (. . . ) # switchport trunk native vlan 99
S1 (. . . ) # switchport trunk allowed vlan 1,100,99
```

Part 4: FHRP and HSRP

- a. What makes it that critical, not to use only one router for the default gateway operation in a network?

static router

- b. Describe the following functions in FHRP.

Virtual Router: Virtual IP address is an IP address that does not correspond to an actual physical network interface. Uses for VIPs include network address translation (especially, one-to-many NAT), fault-tolerance, and mobility.

Virtual IP address:

Virtual MAC address is a floating entity shared by the primary and the secondary nodes in an HA setup

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Active Router:

The Active router is responsible for forwarding the traffic. If it fails, the Standby router takes up all the responsibilities of the active router and forwards the traffic

Standby Router:

In computer networking, the Hot Standby Router Protocol is a Cisco proprietary redundancy protocol for establishing a fault-tolerant default gateway.

- c. Create a virtual router with HSRP on router R1 (interface g0/1) and R2 (interface f0/3). Virtual IP address is 172.16.10.200 / 24. R1 is active router with priority 150. R2 is passive router.

```
R1 (config) # int g0/1
R1 (. . . ) # standby 1 ip 172.16.10.200
R1 (. . . ) # standby 1 priority 150
R1 (. . . ) # standby 1 preempt
```

```
R2 (config) # int f0/3
R2 (. . . ) # standby 1 ip 172.16.10.200
```

- d. What is the difference of HSRP and GLBP?

The main difference is that GLBP allows the load balancing of traffic among the master and standby routers while in HSRP (and VRRP) the standby routers do not help handle traffic. With GLBP, the single virtual IP address is associated with one virtual MAC address per GLBP member.