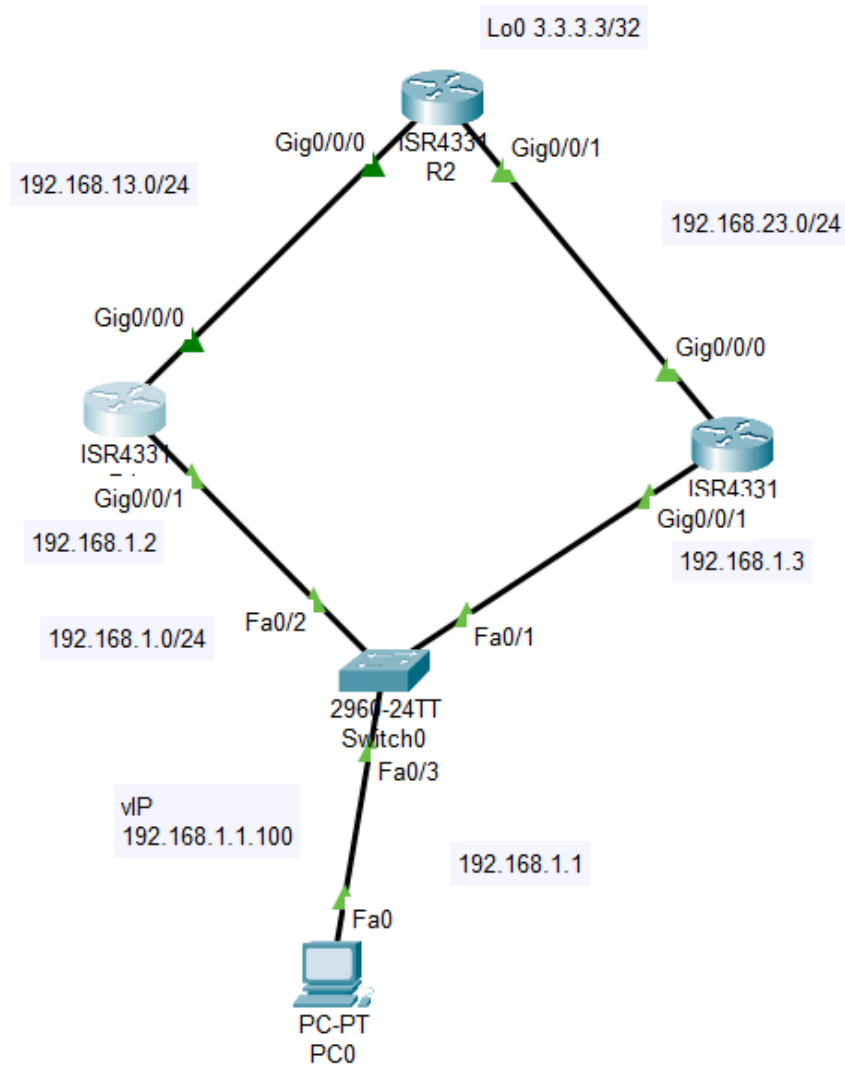


## Hot Standby Router Protocol (HSRP) Topology



```
R2
Physical Config CLI Attributes
IOS Command Line Interface

R2>enable
R2#config t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#interface gig0/0/0
R2(config-if)#ip address 192.168.13.1 255.255.255.0
R2(config-if)#no shutdown

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up

R2(config-if)#exit
R2(config)#interface gig0/0/1
R2(config-if)#ip address 192.168.23.1 255.255.255.0
R2(config-if)#no shutdown

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/1, changed state to up

R2(config-if)#exit
R2(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/1, changed state to up

R2(config)#interface loopback0

R2(config-if)#
%LINK-5-CHANGED: Interface Loopback0, changed state to up
```

```
R2
Physical Config CLI Attributes
IOS Command Line Interface

R2(config-if)#
%LINK-5-CHANGED: Interface Loopback0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up

R2(config-if)#ip address 3.3.3.3 255.255.255.255
R2(config-if)#exit
R2(config)#router eigrp 100
R2(config-router)#network 192.168.13.0 0.0.0.255
R2(config-router)#network 192.168.23.0 0.0.0.255
R2(config-router)#network 3.3.3.3 0.0.0.0
R2(config-router)#no auto-summary
R2(config-router)#exit
R2(config)#
%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 192.168.23.2 (GigabitEthernet0/0/1) is up: new adjacency

%DUAL-5-NBRCHANGE: IP-EIGRP 100: Neighbor 192.168.23.2 (GigabitEthernet0/0/1) is resync: graceful restart

R2 con0 is now available
```

## Ping commands

```
PC0
Physical Config Desktop Programming Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=255
Reply from 192.168.1.2: bytes=32 time<1ms TTL=255
Reply from 192.168.1.2: bytes=32 time<1ms TTL=255
Reply from 192.168.1.2: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time<1ms TTL=255
Reply from 192.168.1.3: bytes=32 time<1ms TTL=255
Reply from 192.168.1.3: bytes=32 time<1ms TTL=255
Reply from 192.168.1.3: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
C:\>ping 3.3.3.3

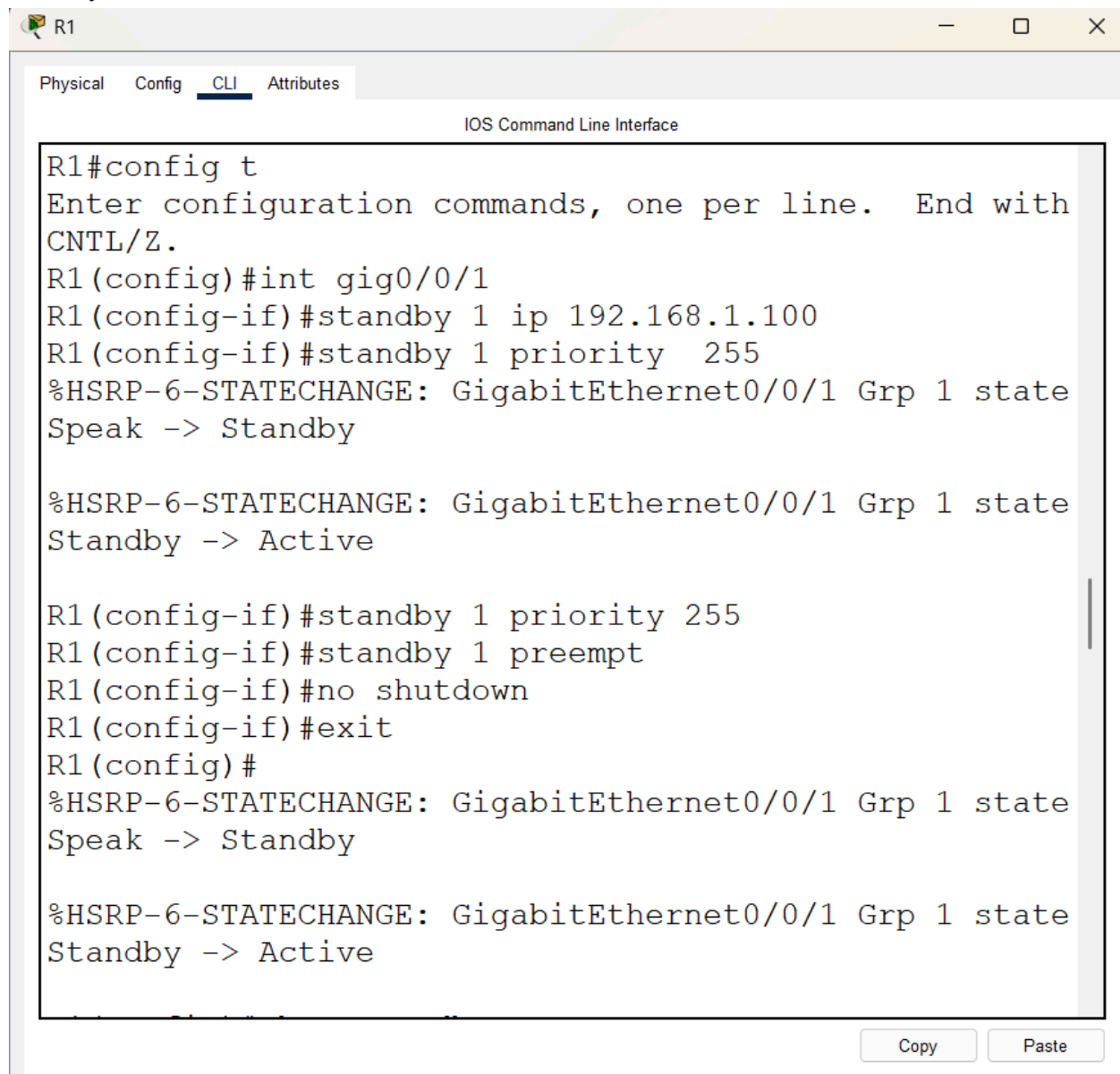
Pinging 3.3.3.3 with 32 bytes of data:

Reply from 3.3.3.3: bytes=32 time<1ms TTL=254
Reply from 3.3.3.3: bytes=32 time<1ms TTL=254
Reply from 3.3.3.3: bytes=32 time=1ms TTL=254
Reply from 3.3.3.3: bytes=32 time<1ms TTL=254

Ping statistics for 3.3.3.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

## Standby commands



The screenshot shows a network simulator window for a device named 'R1'. The window has tabs for 'Physical', 'Config', 'CLI', and 'Attributes', with 'CLI' being the active tab. The title bar of the CLI window reads 'IOS Command Line Interface'. The terminal output shows the following sequence of commands and responses:

```
R1#config t
Enter configuration commands, one per line.  End with
CNTL/Z.
R1(config)#int gig0/0/1
R1(config-if)#standby 1 ip 192.168.1.100
R1(config-if)#standby 1 priority 255
%HSRP-6-STATECHANGE: GigabitEthernet0/0/1 Grp 1 state
Speak -> Standby

%HSRP-6-STATECHANGE: GigabitEthernet0/0/1 Grp 1 state
Standby -> Active

R1(config-if)#standby 1 priority 255
R1(config-if)#standby 1 preempt
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#
%HSRP-6-STATECHANGE: GigabitEthernet0/0/1 Grp 1 state
Speak -> Standby

%HSRP-6-STATECHANGE: GigabitEthernet0/0/1 Grp 1 state
Standby -> Active
```

At the bottom right of the window, there are two buttons: 'Copy' and 'Paste'.

## Show standby

```
R1#show standby
GigabitEthernet0/0/1 - Group 1
  State is Active
    10 state changes, last state change 00:53:25
  Virtual IP address is 192.168.1.100
  Active virtual MAC address is 0000.0C07.AC01
  Local virtual MAC address is 0000.0C07.AC01 (v1
default)
  Hello time 3 sec, hold time 10 sec
  Next hello sent in 1.948 secs
  Preemption enabled
  Active router is local
  Standby router is 192.168.1.3
  Priority 255 (configured 255)
  Group name is hsrp-Gig0/0/1-1 (default)
R1#
```

Copy

Paste

IUS Command Line Interface

```
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#interface gig0/0/1
R3(config-if)#standby 1 ip 192.168.1.100
R3(config-if)#standby 1 priority 254
R3(config-if)#standby
%HSRP-6-STATECHANGE: GigabitEthernet0/0/1 Grp 1 state Speak -> Standby

% Incomplete command.
R3(config-if)#standby 1 preempt
R3(config-if)#exit
R3(config)#
R3#
%SYS-5-CONFIG_I: Configured from console by console

R3#show standby
GigabitEthernet0/0/1 - Group 1
  State is Standby
    3 state changes, last state change 01:06:00
  Virtual IP address is 192.168.1.100
  Active virtual MAC address is 0000.0C07.AC01
  Local virtual MAC address is 0000.0C07.AC01 (v1 default)
  Hello time 3 sec, hold time 10 sec
  Next hello sent in 0.936 secs
  Preemption enabled
  Active router is 192.168.1.2
  Standby router is local
  Priority 254 (configured 254)
  Group name is hsrp-Gig0/0/1-1 (default)
```

R1

Physical Config CLI Attributes

IOS Command Line Interface

```
!  
!  
interface GigabitEthernet0/0/0  
 ip address 192.168.12.1 255.255.255.0  
 duplex auto  
 speed auto  
!  
interface GigabitEthernet0/0/1  
 ip address 192.168.1.2 255.255.255.0  
 duplex auto  
 speed auto  
 standby 1 ip 192.168.1.100  
 standby 1 priority 255  
 standby 1 preempt  
!  
interface GigabitEthernet0/0/2  
 no ip address  
 duplex auto  
 speed auto  
 shutdown  
!  
interface Vlan1  
 no ip address
```

Copy Paste

## Show ip route command

```
R1#show ip route  
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP  
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area  
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2  
        E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP  
        i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area  
        * - candidate default, U - per-user static route, o - ODR  
        P - periodic downloaded static route  
  
Gateway of last resort is not set  
  
    3.0.0.0/8 is variably subnetted, 2 subnets, 2 masks  
D       3.0.0.0/8 [90/133376] via 192.168.1.3, 01:19:46, GigabitEthernet0/0/1  
D       3.3.3.3/32 [90/133376] via 192.168.1.3, 01:19:46, GigabitEthernet0/0/1  
    192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks  
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0/1  
L       192.168.1.2/32 is directly connected, GigabitEthernet0/0/1  
    192.168.12.0/24 is variably subnetted, 2 subnets, 2 masks  
C       192.168.12.0/24 is directly connected, GigabitEthernet0/0/0  
L       192.168.12.1/32 is directly connected, GigabitEthernet0/0/0  
D       192.168.13.0/24 [90/5632] via 192.168.1.3, 01:19:46, GigabitEthernet0/0/1  
D       192.168.23.0/24 [90/5376] via 192.168.1.3, 01:16:47, GigabitEthernet0/0/1
```

R1#

Copy Paste