

Assignment 5.1: Configure Hot Standby Router Protocol for Fault Tolerance

Keegan Heaton

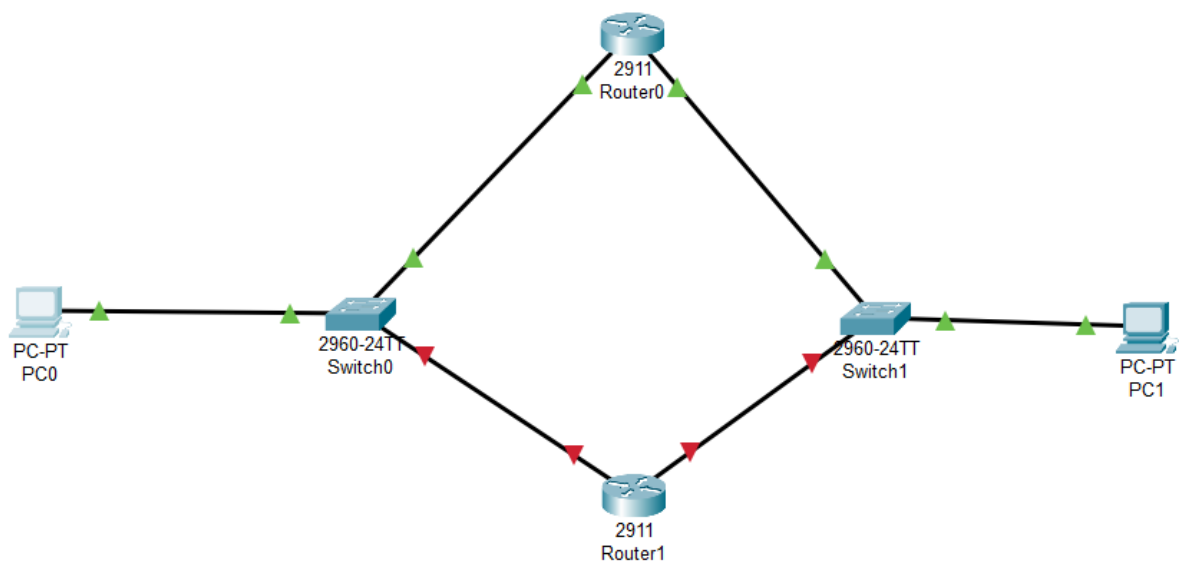
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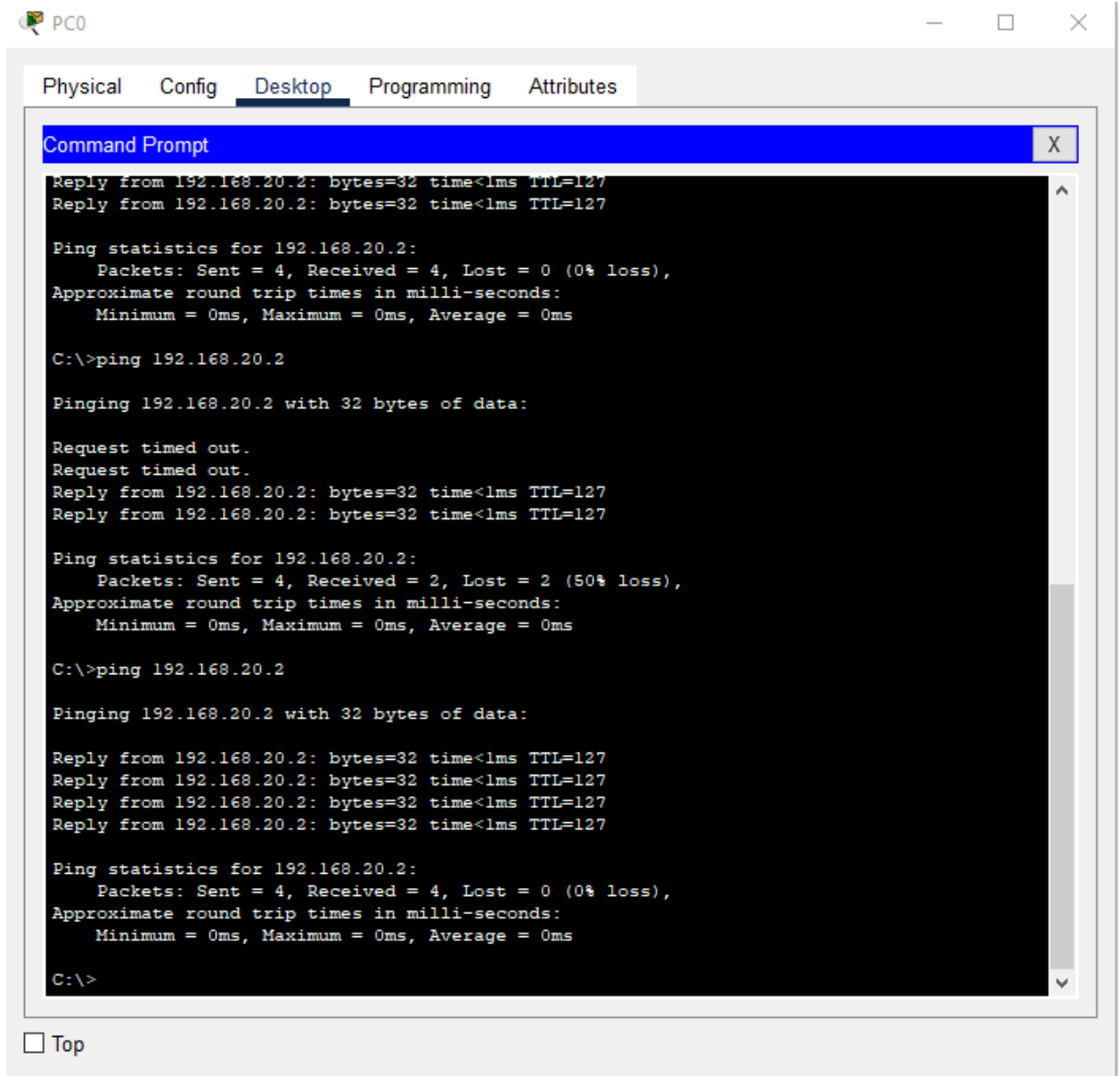
NTW103 - Fundamentals of Network Engineering II - OCT23113

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The screenshot shows a window titled "PC0" with tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows the results of a ping command to 192.168.20.2. The first ping attempt shows successful results with 0% loss. The second attempt shows a 50% loss (2 packets lost) and a "Request timed out" message. The third attempt shows successful results with 0% loss.

```

Reply from 192.168.20.2: bytes=32 time<1ms TTL=127
Reply from 192.168.20.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Request timed out.
Request timed out.
Reply from 192.168.20.2: bytes=32 time<1ms TTL=127
Reply from 192.168.20.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Reply from 192.168.20.2: bytes=32 time<1ms TTL=127
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Reply from 192.168.20.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>

```

At the bottom of the window, there is a checkbox labeled "Top".

A virtual (standby) interface is a logical interface that provides redundancy for a physical interface, ensuring a connection even if the physical interface stops operation. Fault tolerance, the capability of a system to continue operating despite a failure, is often achieved through redundancy like multiple routers or links. Hot Standby Router Protocol (HSRP) prevents risk by selecting an active router to standby and forward traffic so other

routers can take over if an active router fails, reducing disruption and creating better load balancing.