

1. Attempt to ping from PC1 to 8.8.8.8. Does the ping work?

2. Configure static NAT on R1.

- **Configure the appropriate inside/outside interfaces**
- **Map the IP addresses of PC1, PC2, and PC3 to 100.0.0.x/24**

3. Ping 8.8.8.8 from PC1 again. Does the ping work?

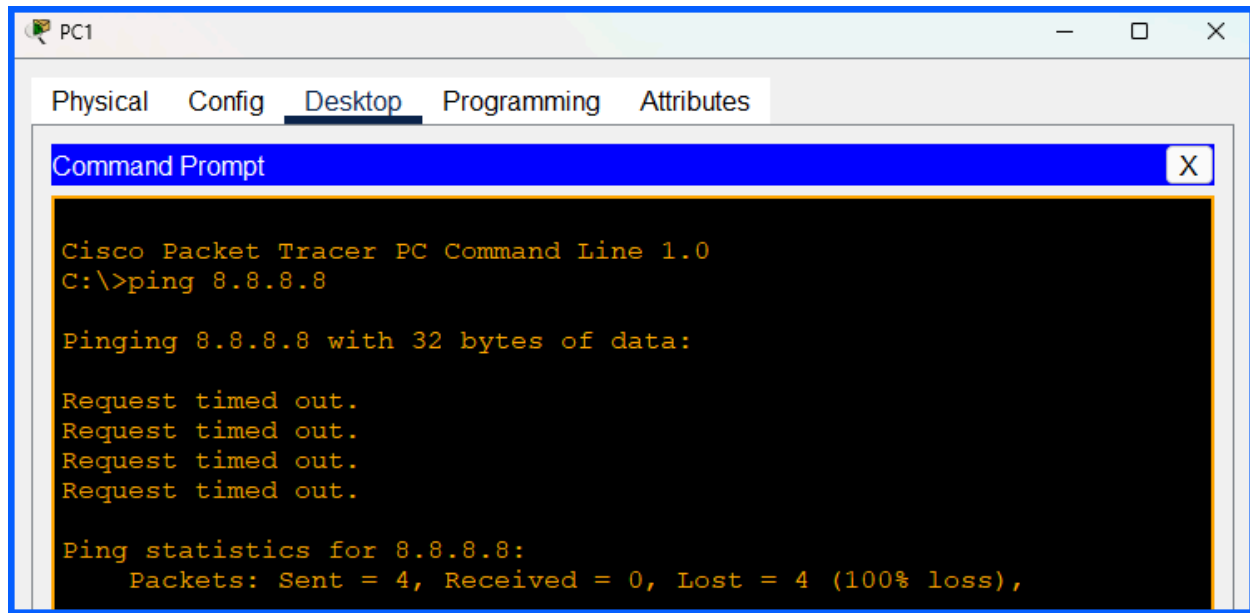
4. Ping google.com from each PC, and then check the NAT translations on R1.

5. Clear the NAT translations on R1. Which entries remain?

Task 1. Attempt to ping from PC1 to 8.8.8.8. Does the ping work?

On PC1

- ping 8.8.8.8



The ping did not work: The Request Timed Out

Task 2. Configure static NAT on R1.

- Task 2A: Configure the appropriate inside/outside interfaces
- Task 2B: Map the IP addresses of PC1, PC2, and PC3 to 100.0.0.x/24

Task 2A Configure the appropriate inside/outside interfaces

Configure R1

Enter Global Config mode:

- enable
- configure terminal

Note the 172.16.0.0/24 LAN is connected to R1 G0/1 interface and R1 G0/0 is connected to the internet

Configure R1 G0/1 as inside:

- interface G0/1
- ip nat inside

Configure R1 G0/0 as inside:

- interface G0/0
- ip nat outside
- exit

Task 2B: Map the IP addresses of PC1, PC2, and PC3 to 100.0.0.x/24

Configure Static NAT for PC1 - 3

- ip nat inside source static 172.16.0.1 100.0.0.1
- ip nat inside source static 172.16.0.2 100.0.0.2
- ip nat inside source static 172.16.0.3 100.0.0.3

Verify:

- show ip nat translations

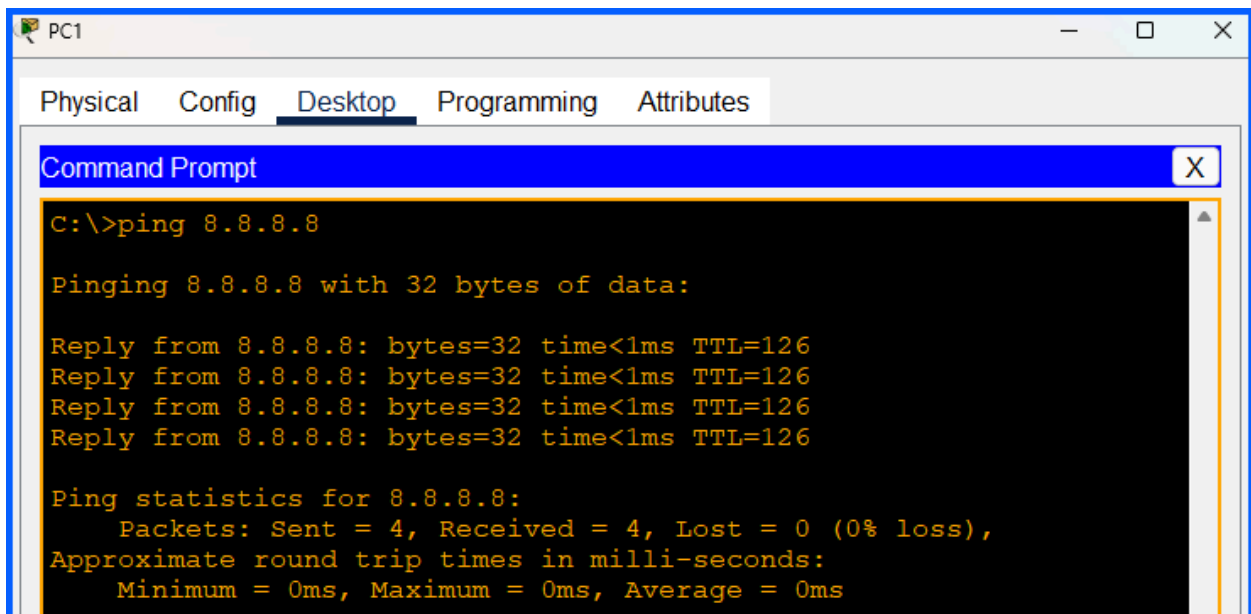
```
R1#show ip nat translations
Pro  Inside global    Inside local      Outside local      Outside global
---  ---              ---              ---              ---
---  100.0.0.1        172.16.0.1       ---              ---
---  100.0.0.2        172.16.0.2       ---              ---
---  100.0.0.3        172.16.0.3       ---              ---
```

Note: There's no translation yet because I haven't access a service over the internet

Task 3. Ping 8.8.8.8 from PC1 again. Does the ping work?

On PC1:

- ping 8.8.8.8



The screenshot shows a PC1 desktop environment with a taskbar at the top. The 'Desktop' tab is selected in the window title bar. A Command Prompt window is open, displaying the results of a ping command to 8.8.8.8. The output shows four successful replies with 0% loss and 0ms round trip times.

```
PC1
Physical  Config  Desktop  Programming  Attributes
Command Prompt
C:\>ping 8.8.8.8

Pinging 8.8.8.8 with 32 bytes of data:

Reply from 8.8.8.8: bytes=32 time<1ms TTL=126
Reply from 8.8.8.8: bytes=32 time<1ms TTL=126
Reply from 8.8.8.8: bytes=32 time<1ms TTL=126
Reply from 8.8.8.8: bytes=32 time<1ms TTL=126

Ping statistics for 8.8.8.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

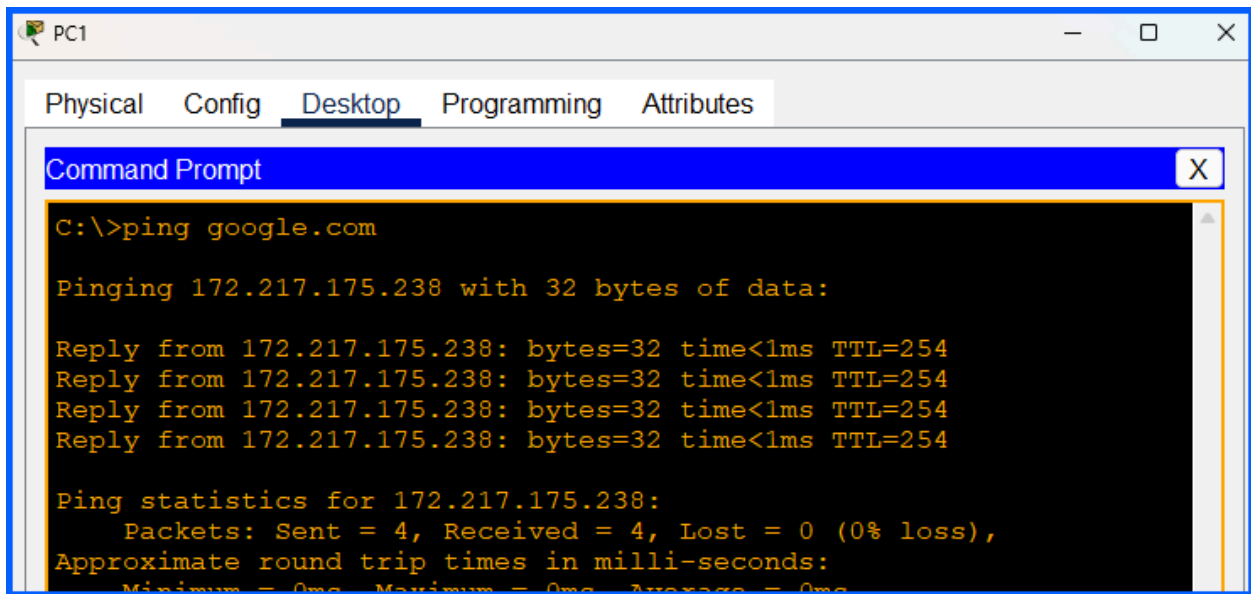
The ping was successful

Task 4. Ping google.com from each PC, and then check the NAT translations on R1.

On PC1 2 and 3

- ping google.com

PC1 ping success



The screenshot shows a window titled 'PC1' with tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The command prompt shows the execution of 'ping google.com', which results in pinging the IP address 172.217.175.238. Four successful replies are shown, each with a time of less than 1ms and a TTL of 254. The ping statistics indicate that 4 packets were sent and received, with 0% loss.

```
C:\>ping google.com

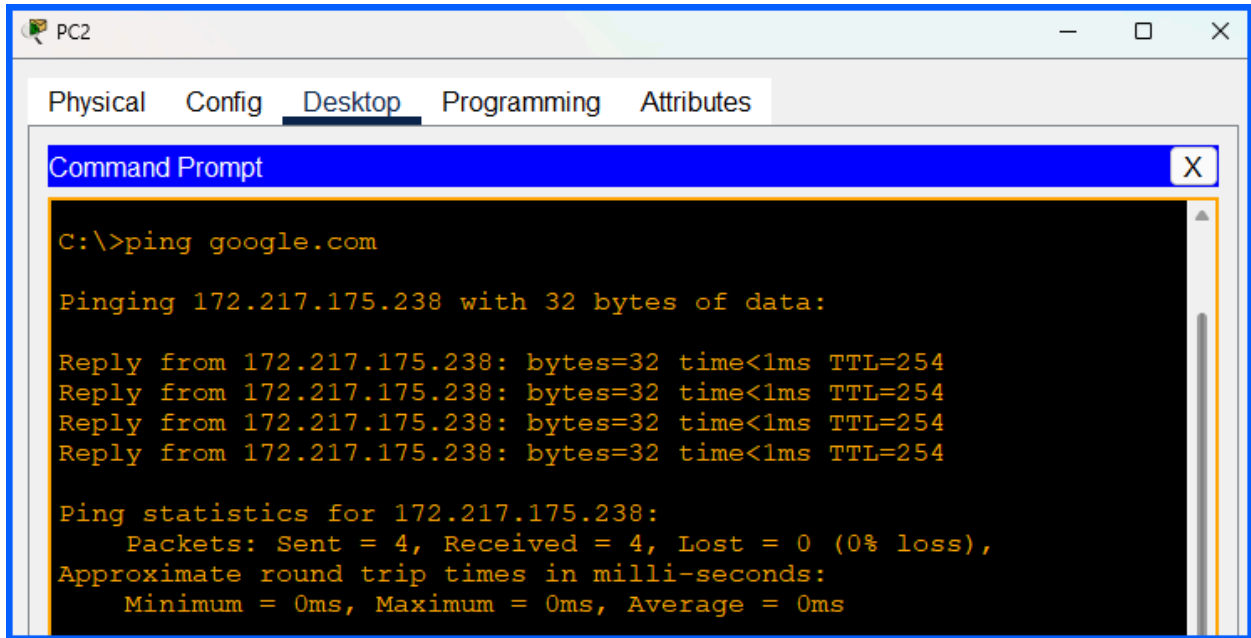
Pinging 172.217.175.238 with 32 bytes of data:

Reply from 172.217.175.238: bytes=32 time<1ms TTL=254
Reply from 172.217.175.238: bytes=32 time<1ms TTL=254
Reply from 172.217.175.238: bytes=32 time<1ms TTL=254
Reply from 172.217.175.238: bytes=32 time<1ms TTL=254

Ping statistics for 172.217.175.238:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

PC2 ping success

PC1 ping success



The screenshot shows a window titled 'PC2' with tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The command prompt shows the execution of 'ping google.com', which results in four successful replies from 172.217.175.238 with 32 bytes of data, all with a time of <1ms and TTL=254. The ping statistics show 4 packets sent, 4 received, 0% loss, and round trip times of 0ms.

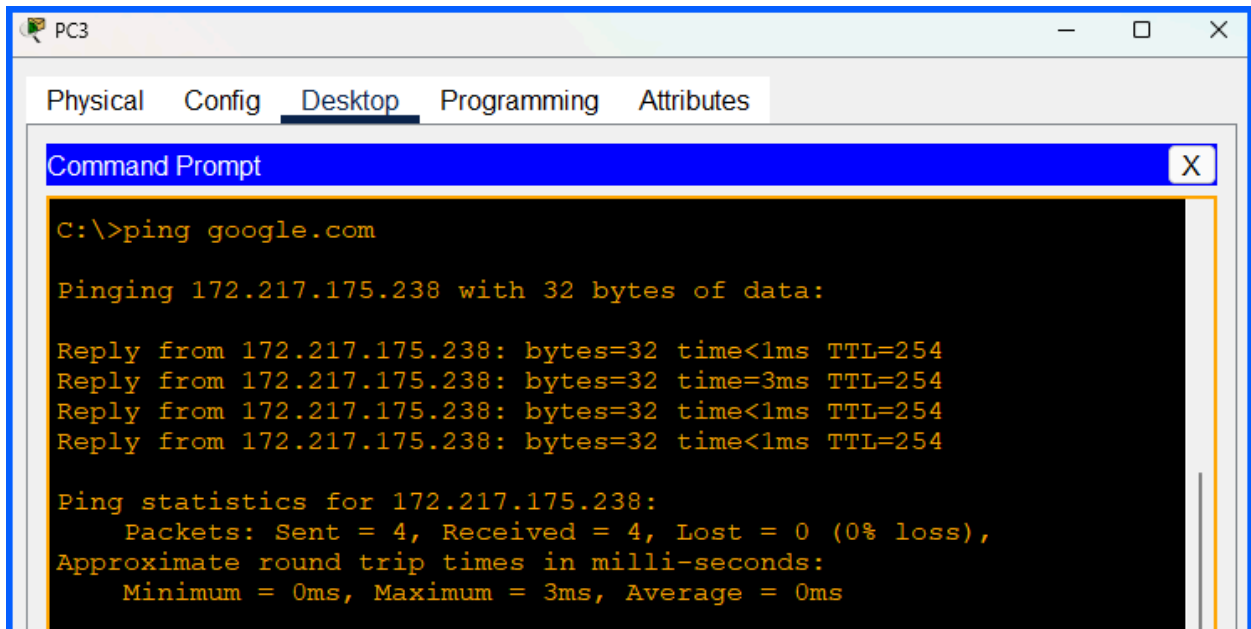
```
C:\>ping google.com

Pinging 172.217.175.238 with 32 bytes of data:

Reply from 172.217.175.238: bytes=32 time<1ms TTL=254
Reply from 172.217.175.238: bytes=32 time<1ms TTL=254
Reply from 172.217.175.238: bytes=32 time<1ms TTL=254
Reply from 172.217.175.238: bytes=32 time<1ms TTL=254

Ping statistics for 172.217.175.238:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

PC3 ping success



The screenshot shows a window titled 'PC3' with tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The command prompt shows the execution of 'ping google.com', which results in four successful replies from 172.217.175.238 with 32 bytes of data. The first reply has a time of <1ms, the second 3ms, and the next two <1ms, all with TTL=254. The ping statistics show 4 packets sent, 4 received, 0% loss, and round trip times of 0ms.

```
C:\>ping google.com

Pinging 172.217.175.238 with 32 bytes of data:

Reply from 172.217.175.238: bytes=32 time<1ms TTL=254
Reply from 172.217.175.238: bytes=32 time=3ms TTL=254
Reply from 172.217.175.238: bytes=32 time<1ms TTL=254
Reply from 172.217.175.238: bytes=32 time<1ms TTL=254

Ping statistics for 172.217.175.238:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 3ms, Average = 0ms
```

Check the NAT translations on R1

In privileged EXEC mode:

- show ip nat translations

```

R1#show ip nat translations
Pro  Inside global      Inside local      Outside local     Outside global
---  100.0.0.1           172.16.0.1       ---              ---
---  100.0.0.2           172.16.0.2       ---              ---
---  100.0.0.3           172.16.0.3       ---              ---
udp  100.0.0.1:1025     172.16.0.1:1025  8.8.8.8:53       8.8.8.8:53
udp  100.0.0.1:1026     172.16.0.1:1026  8.8.8.8:53       8.8.8.8:53
udp  100.0.0.1:1027     172.16.0.1:1027  8.8.8.8:53       8.8.8.8:53
udp  100.0.0.1:1028     172.16.0.1:1028  8.8.8.8:53       8.8.8.8:53
udp  100.0.0.2:1025     172.16.0.2:1025  8.8.8.8:53       8.8.8.8:53
udp  100.0.0.2:1026     172.16.0.2:1026  8.8.8.8:53       8.8.8.8:53
udp  100.0.0.2:1027     172.16.0.2:1027  8.8.8.8:53       8.8.8.8:53
udp  100.0.0.3:1025     172.16.0.3:1025  8.8.8.8:53       8.8.8.8:53
udp  100.0.0.3:1026     172.16.0.3:1026  8.8.8.8:53       8.8.8.8:53
udp  100.0.0.3:1027     172.16.0.3:1027  8.8.8.8:53       8.8.8.8:53
udp  100.0.0.3:1028     172.16.0.3:1028  8.8.8.8:53       8.8.8.8:53

```

Task 5. Clear the NAT translations on R1. Which entries remain?

In privileged EXEC mode:

- clear ip nat translations *

View NAT translations once again:

- show ip nat translations

Even though I only configured static NAT, not dynamic NAT, every time the static NAT entries were used, dynamic entries were added to the NAT translation table for those translations.

After clearing the translations only the Static Nat entries remained