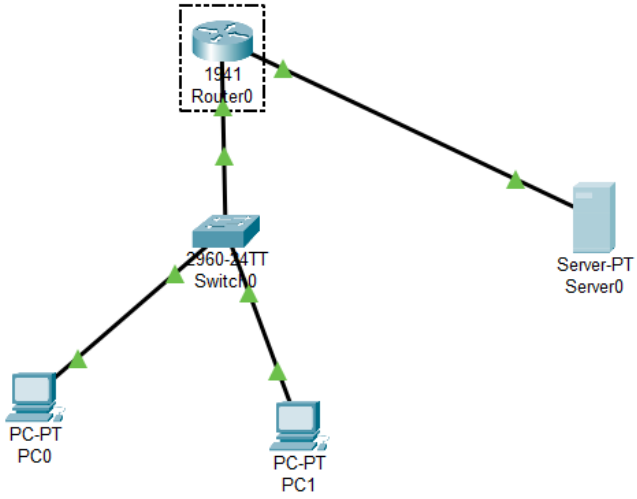
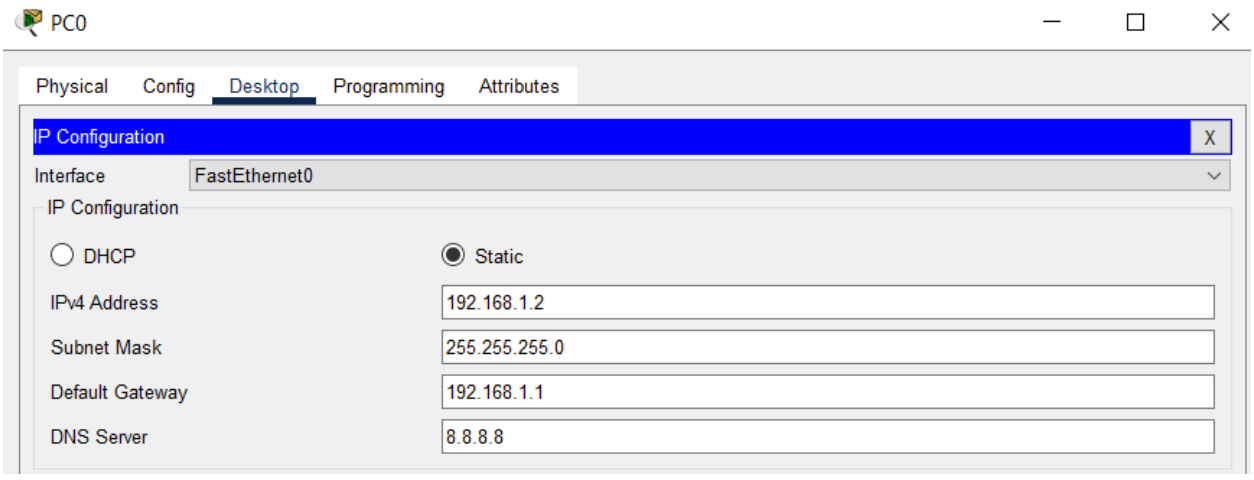
Q5) In Cisco Packet Tracer, configure NAT on a router to allow internal devices (192.168.1.x) to access the internet.

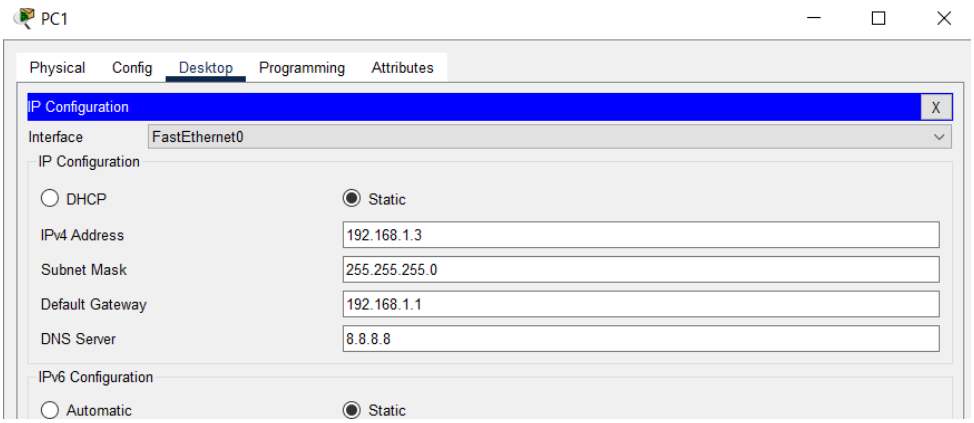
Test connectivity by pinging an external public IP.

Capture the traffic in Wireshark and analyze the source IP before and after NAT translation.

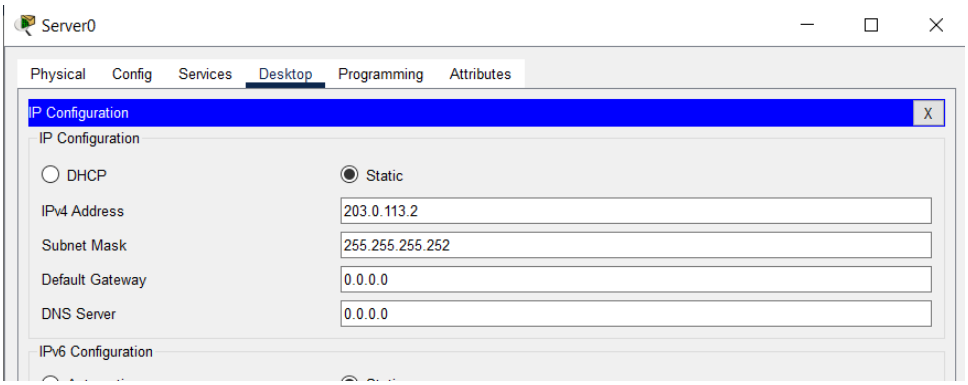
Setup:







Server Config:



Router Config:

```
Router#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 203.0.113.2 to network 0.0.0.0

     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0
L       192.168.1.1/32 is directly connected, GigabitEthernet0/0
     203.0.113.0/24 is variably subnetted, 2 subnets, 2 masks
C       203.0.113.0/30 is directly connected, GigabitEthernet0/1
L       203.0.113.1/32 is directly connected, GigabitEthernet0/1
S*   0.0.0.0/0 [1/0] via 203.0.113.2

Router#show ip nat translations
Pro  Inside global     Inside local       Outside local      Outside global
icmp 203.0.113.1:21    192.168.1.3:21     8.8.8.8:21         8.8.8.8:21
icmp 203.0.113.1:22    192.168.1.3:22     8.8.8.8:22         8.8.8.8:22
icmp 203.0.113.1:23    192.168.1.3:23     8.8.8.8:23         8.8.8.8:23
icmp 203.0.113.1:24    192.168.1.3:24     8.8.8.8:24         8.8.8.8:24

Router#show run | include nat
 ip nat inside
 ip nat outside
ip nat pool PUBLIC_POOL 203.0.113.1 203.0.113.1 netmask 255.255.255.252
ip nat inside source list 1 pool PUBLIC_POOL
Router#show access-list
Standard IP access list 1
    10 permit 192.168.1.0 0.0.0.255 (24 match(es))
```

```
Router#ping 203.0.113.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 203.0.113.2, timeout is 2 seconds:
!
ICMP: echo reply rcvd, src 203.0.113.2, dst 203.0.113.1
!
ICMP: echo reply rcvd, src 203.0.113.2, dst 203.0.113.1
!
ICMP: echo reply rcvd, src 203.0.113.2, dst 203.0.113.1
!
ICMP: echo reply rcvd, src 203.0.113.2, dst 203.0.113.1
!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms
```

PC1

Physical Config Desktop Programming Attributes

Command Prompt

```
C:\>ping 203.0.113.2

Pinging 203.0.113.2 with 32 bytes of data:

Reply from 203.0.113.2: bytes=32 time<1ms TTL=127
Reply from 203.0.113.2: bytes=32 time<1ms TTL=127
Reply from 203.0.113.2: bytes=32 time<1ms TTL=127
Reply from 203.0.113.2: bytes=32 time<1ms TTL=127

Ping statistics for 203.0.113.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```