

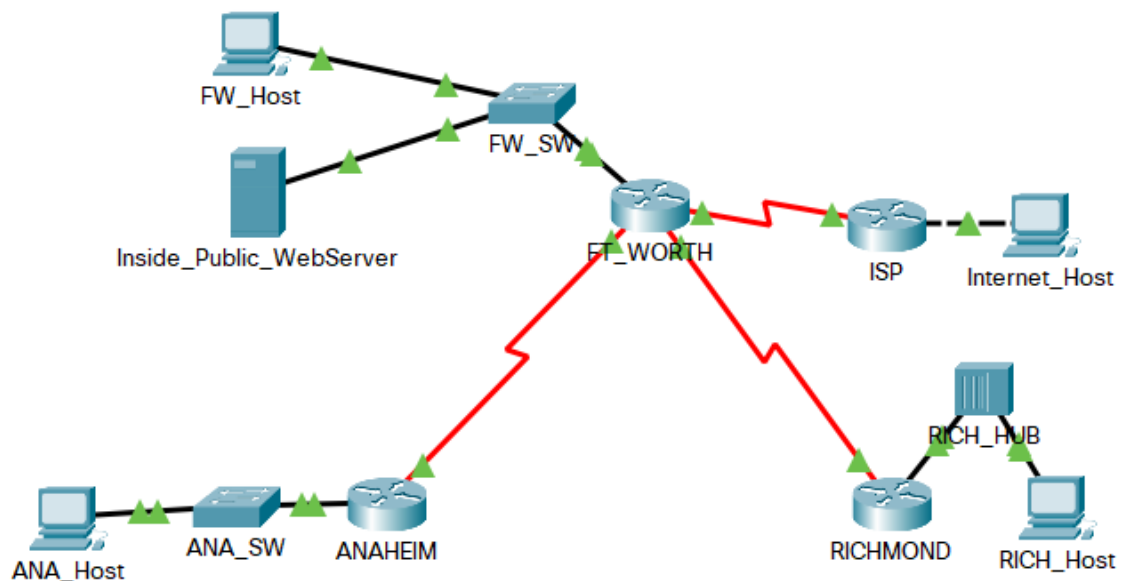
МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ  
Федеральное государственное автономное образовательное учреждение  
высшего образования  
«КРЫМСКИЙ ФЕДЕРАЛЬНЫЙ УНИВЕРСИТЕТ им. В. И. ВЕРНАДСКОГО»  
ФИЗИКО-ТЕХНИЧЕСКИЙ ИНСТИТУТ  
Кафедра компьютерной инженерии и моделирования

**Dynamic and Static NAT Configuration**

Отчет по лабораторной работе № 13  
по дисциплине «Компьютерные сети»  
студента 2 курса группы ИВТ-б-о-202(1)  
Шор Константина Александровича

Направления подготовки 09.03.01 «Информатика и вычислительная техника»

Симферополь, 2022



#### Step 4 Dynamic and Static NAT Configuration

Using the following specifications, configure the **FT\_WORTH** router as a NAT firewall for packets routed to and from **ISP**.

1. Configure an ACL so that addresses in the 192.168.0.0/21 address space are translated. Number the ACL 1. The wildcard mask should cover addresses 192.168.0.0 through 192.168.7.255.

```
FT_WORTH(config)#access-list 1 permit 192.168.0.0 0.0.7.255
FT_WORTH(config)#
```

2. Configure NAT to statically map the **Inside\_Public\_Webserver** IP address 192.168.3.254 to the public IP address 137.38.39.40.

```
FT_WORTH(config)#ip nat ?
    inside    Inside address translation
    outside   Outside address translation
    pool      Define pool of addresses
FT_WORTH(config)#ip nat in
FT_WORTH(config)#ip nat inside ?
    source    Source address translation
FT_WORTH(config)#ip nat inside sou
FT_WORTH(config)#ip nat inside source ?
    list      Specify access list describing local addresses
    static    Specify static local->global mapping
FT_WORTH(config)#ip nat inside source static ?
    A.B.C.D   Inside local IP address
    tcp       Transmission Control Protocol
    udp       User Datagram Protocol
FT_WORTH(config)#ip nat inside source static 192.168.3.254 ?
    A.B.C.D   Inside global IP address
FT_WORTH(config)#ip nat inside source static 192.168.3.254 137.38.39.40
FT_WORTH(config)#
```

3. Configure a NAT pool named **CNAP** for the address range 137.38.39.41 through 137.38.39.47 with /29 mask.

```
FT_WORTH(config)#ip nat pool ?
WORD Pool name
FT_WORTH(config)#ip nat pool CNAP ?
A.B.C.D Start IP address
FT_WORTH(config)#ip nat pool CNAP 137.38.39.41 ?
A.B.C.D End IP address
FT_WORTH(config)#ip nat pool CNAP 137.38.39.41 137.38.39.47 ?
netmask Specify the network mask
FT_WORTH(config)#ip nat pool CNAP 137.38.39.41 137.38.39.47 netmask ?
A.B.C.D Network mask
FT_WORTH(config)#ip nat pool CNAP 137.38.39.41 137.38.39.47 netmask 255.255.255.248
FT_WORTH(config)#
```

4. Configure NAT to use ACL 1 with the **CNAP** pool. Also, configure Port Address Translation.

```
FT_WORTH(config)#ip nat ?
inside Inside address translation
outside Outside address translation
pool Define pool of addresses
FT_WORTH(config)#ip nat inside ?
source Source address translation
FT_WORTH(config)#ip nat inside so
FT_WORTH(config)#ip nat inside source ?
list Specify access list describing local addresses
static Specify static local->global mapping
FT_WORTH(config)#ip nat inside source list ?
<1-199> Access list number for local addresses
WORD Access list name for local addresses
FT_WORTH(config)#ip nat inside source list 1 ?
interface Specify interface for global address
pool Name pool of global addresses
FT_WORTH(config)#ip nat inside source list 1 pool CNAP ?
overload Overload an address translation
<cr>
FT_WORTH(config)#ip nat inside source list 1 pool CNAP ov
FT_WORTH(config)#ip nat inside source list 1 pool CNAP overload
FT_WORTH(config)#
```

---

5. Correctly configure all of the interfaces on **FT\_WORTH** to participate in NAT.

```

FT_WORTH(config)#interface FastEthernet0/0
FT_WORTH(config-if)#ip nat
FT_WORTH(config-if)#ip nat in
FT_WORTH(config-if)#ip nat inside
FT_WORTH(config-if)#
FT_WORTH(config-if)#exit
FT_WORTH(config)#interface FastEthernet0/0
FT_WORTH(config-if)#
FT_WORTH(config-if)#exit
FT_WORTH(config)#interface Serial1/0
FT_WORTH(config-if)#ip nat ou
FT_WORTH(config-if)#ip nat outside
FT_WORTH(config-if)#
FT_WORTH(config-if)#exit
FT_WORTH(config)#interface Serial1/0
FT_WORTH(config-if)#
FT_WORTH(config-if)#exit
FT_WORTH(config)#interface Serial2/0
FT_WORTH(config-if)#ip nat in
FT_WORTH(config-if)#ip nat inside
FT_WORTH(config-if)#
FT_WORTH(config-if)#exit
FT_WORTH(config)#interface Serial2/0
FT_WORTH(config-if)#
FT_WORTH(config-if)#exit
FT_WORTH(config)#interface Serial2/0
FT_WORTH(config-if)#
FT_WORTH(config-if)#exit
FT_WORTH(config)#interface Serial3/0
FT_WORTH(config-if)#ip nat ou
FT_WORTH(config-if)#ip nat in
FT_WORTH(config-if)#ip nat inside
FT_WORTH(config-if)#

```

### Test Configuration:

Click the **Check Results** icon to verify all assessed items are successfully completed. All inside hosts should now be able to ping **Internet\_Host**.

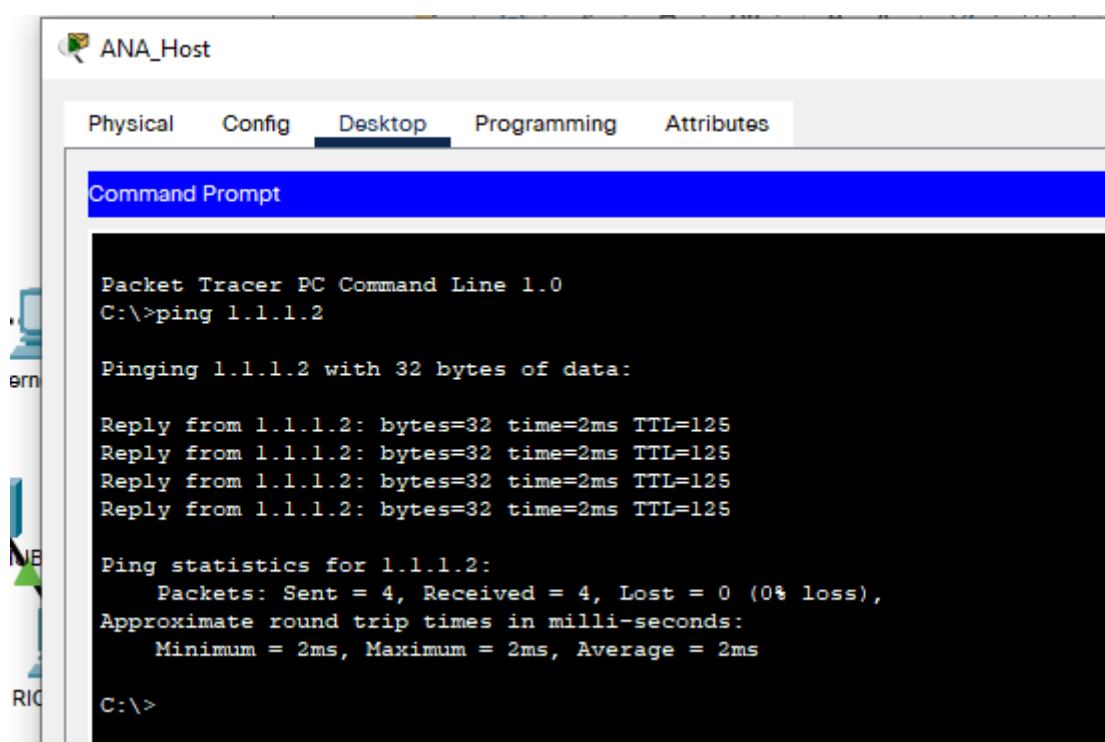
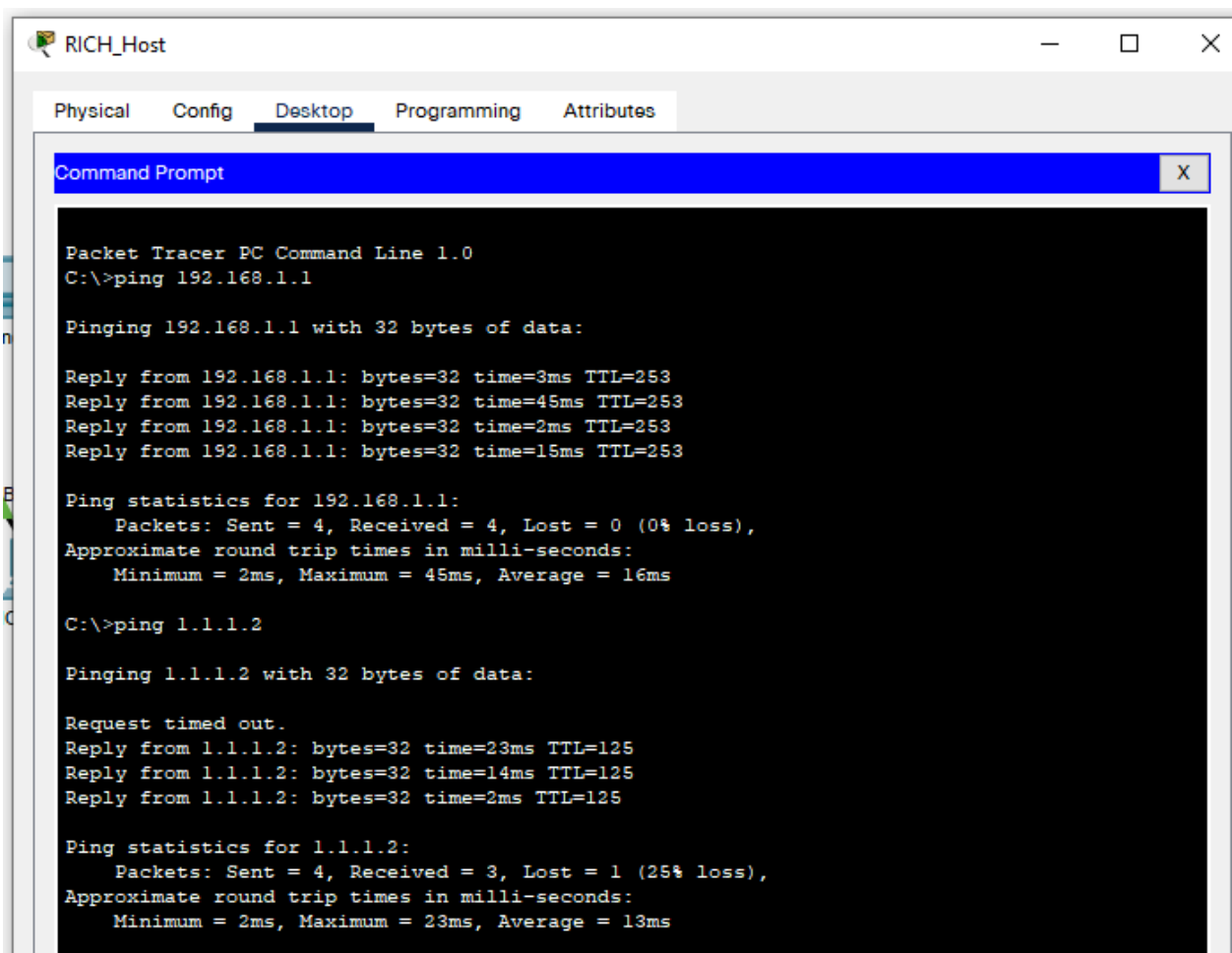
Congratulations Guest! You completed the activity.

Overall Feedback

Assessment Items

Connectivity Tests

Congratulations on completing this activity!



Physical Config **Desktop** Programming Attributes

Command Prompt

```
Packet Tracer PC Command Line 1.0
C:\>ping 1.1.1.2

Pinging 1.1.1.2 with 32 bytes of data:

Reply from 1.1.1.2: bytes=32 time=1ms TTL=126
Reply from 1.1.1.2: bytes=32 time=1ms TTL=126
Reply from 1.1.1.2: bytes=32 time=2ms TTL=126
Reply from 1.1.1.2: bytes=32 time=1ms TTL=126

Ping statistics for 1.1.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms
```