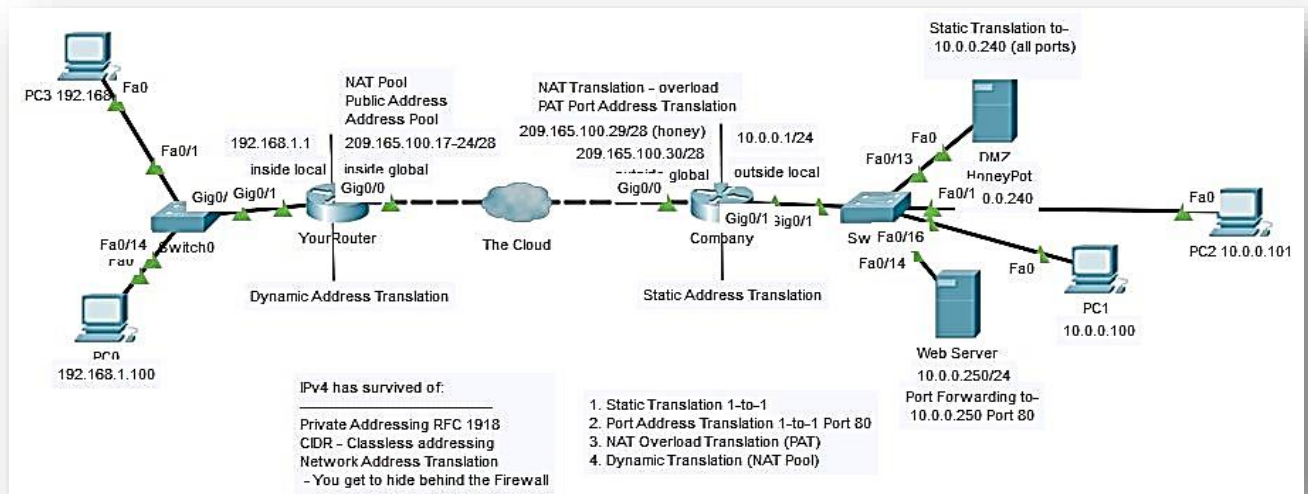


Scenario 12: Need of Network Address Translation (NAT) and Working



In Company Router go to CLI:

- Try to access DMZ server from PC0's web browser by using URL: `http:// 209.165.100.29` then you should **not be able to access** the DMZ Server webpages.

```
Conf t
int g0/0
ip nat out
int g0/1
ip nat inside
```

- Activity 1:** Static Translation from 1 public Ip to 1 private IP (Static 1-1 NAT)


```
ip nat inside source static 10.0.0.240 209.165.100.29
####exit (Config-if to config)
```
- Now try to access DMZ server from PC0's web browser by using URL: `http:// 209.165.100.29` then you should be **able to access** the DMZ Server webpages.
- Activity 2:** Static Translation from 1 public Ip with a specific port number (web server: port 80) to 1 private IP (Static 1-1 NAT with port mapping)

```
ip nat inside source static tcp 10.0.0.250 80 209.165.100.30 80
exit
```

```
company#show ip nat translation
Pro Inside global      Inside local      Outside local      Outside global
--- 209.165.100.29      10.0.0.240        ---                ---
tcp 209.165.100.29:80  10.0.0.240:80     192.168.1.100:1033 192.168.1.100:1033
tcp 209.165.100.29:80  10.0.0.240:80     192.168.1.100:1034 192.168.1.100:1034
tcp 209.165.100.30:80  10.0.0.250:80     ---                ---
tcp 209.165.100.30:80  10.0.0.250:80     192.168.1.100:1035 192.168.1.100:1035
```

- Now try to access Webserver from PC0's web browser by using URL: http://209.165.100.30:80 then you should be **able to access** the webpages in the webserver.
- **Activity 3:** To translate any private Ip address with in a network (say: 10.0.0.0) to a particular public IP Address over different port number (PAT/NAT Overloaded Translation)

Conf t

access-list 10 permit 10.0.0.0 0.0.0.255 (wild card)

Ip nat inside source ? displays (list static)

ip nat inside source list 10 interface g0/0 overload

Typ Ping command from PC1 to PC0

Exit or end

Company# show ip nat translation

```
company#show ip nat translation
Pro Inside global      Inside local      Outside local      Outside global
icmp 209.165.100.30:2  10.0.0.100:2      192.168.1.100:2    192.168.1.100:2
icmp 209.165.100.30:3  10.0.0.100:3      192.168.1.100:3    192.168.1.100:3
icmp 209.165.100.30:4  10.0.0.100:4      192.168.1.100:4    192.168.1.100:4
--- 209.165.100.29     10.0.0.240        ---                ---
tcp 209.165.100.29:80  10.0.0.240:80     192.168.1.100:1033 192.168.1.100:1033
tcp 209.165.100.29:80  10.0.0.240:80     192.168.1.100:1034 192.168.1.100:1034
tcp 209.165.100.30:80  10.0.0.250:80     ---                ---
tcp 209.165.100.30:80  10.0.0.250:80     192.168.1.100:1035 192.168.1.100:1035
company#
```

Add another PC to 10.0.0.0 network, assign Ip, gateway and Ping PC0

```
company#show ip nat translation
Pro Inside global      Inside local      Outside local      Outside global
icmp 209.165.100.30:2  10.0.0.100:2      192.168.1.100:2    192.168.1.100:2
icmp 209.165.100.30:3  10.0.0.100:3      192.168.1.100:3    192.168.1.100:3
icmp 209.165.100.30:4  10.0.0.100:4      192.168.1.100:4    192.168.1.100:4
--- 209.165.100.29     10.0.0.240        ---                ---
tcp 209.165.100.29:80  10.0.0.240:80     192.168.1.100:1033 192.168.1.100:1033
tcp 209.165.100.29:80  10.0.0.240:80     192.168.1.100:1034 192.168.1.100:1034
tcp 209.165.100.30:80  10.0.0.250:80     ---                ---
tcp 209.165.100.30:80  10.0.0.250:80     192.168.1.100:1035 192.168.1.100:1035
```

```
company#show ip nat translation
Pro Inside global      Inside local      Outside local      Outside global
icmp 209.165.100.30:1  10.0.0.101:1      192.168.1.100:1    192.168.1.100:1
icmp 209.165.100.30:2  10.0.0.101:2      192.168.1.100:2    192.168.1.100:2
icmp 209.165.100.30:3  10.0.0.101:3      192.168.1.100:3    192.168.1.100:3
icmp 209.165.100.30:4  10.0.0.101:4      192.168.1.100:4    192.168.1.100:4
--- 209.165.100.29     10.0.0.240        ---                ---
tcp 209.165.100.29:80  10.0.0.240:80     192.168.1.100:1033 192.168.1.100:1033
tcp 209.165.100.29:80  10.0.0.240:80     192.168.1.100:1034 192.168.1.100:1034
tcp 209.165.100.30:80  10.0.0.250:80     ---                ---
tcp 209.165.100.30:80  10.0.0.250:80     192.168.1.100:1035 192.168.1.100:1035
```

company#

- **Activity 4:** Configuration for Dynaic NAT on other router labelled your router

```

en
conf t
int g0/0
ip nat outside
int g0/1
ip nat inside
access-list 1 permit 192.168.1.0 0.0.0.255
ip nat ?
ip nat pool OURSOIS 209.165.100.17 209.165.100.24 ?
ip nat pool OURSOIS 209.165.100.17 209.165.100.24 netmask
255.255.255.240
ip nat inside source list 1 pool OURSOIS overload

```

now from PC0 access DMZ server from browser

now router cli to see IP translation

exit or end or clt+C

show ip nat translations

```

YourRouter#show ip nat translation
Pro Inside global      Inside local      Outside local      Outside global
tcp 209.165.100.17:1036 192.168.1.100:1036 209.165.100.29:80 209.165.100.29:80
YourRouter#

```

- Add another PC to 192.168.101 network, assign Ip, gateway and browse web server 209.165.100.30

```

YourRouter#show ip nat translation
Pro Inside global      Inside local      Outside local      Outside global
tcp 209.165.100.17:1036 192.168.1.100:1036 209.165.100.29:80 209.165.100.29:80

YourRouter#
YourRouter#show ip nat translation
Pro Inside global      Inside local      Outside local      Outside global
tcp 209.165.100.17:1025 192.168.1.101:1025 209.165.100.30:80 209.165.100.30:80
tcp 209.165.100.17:1036 192.168.1.100:1036 209.165.100.29:80 209.165.100.29:80
YourRouter#

```