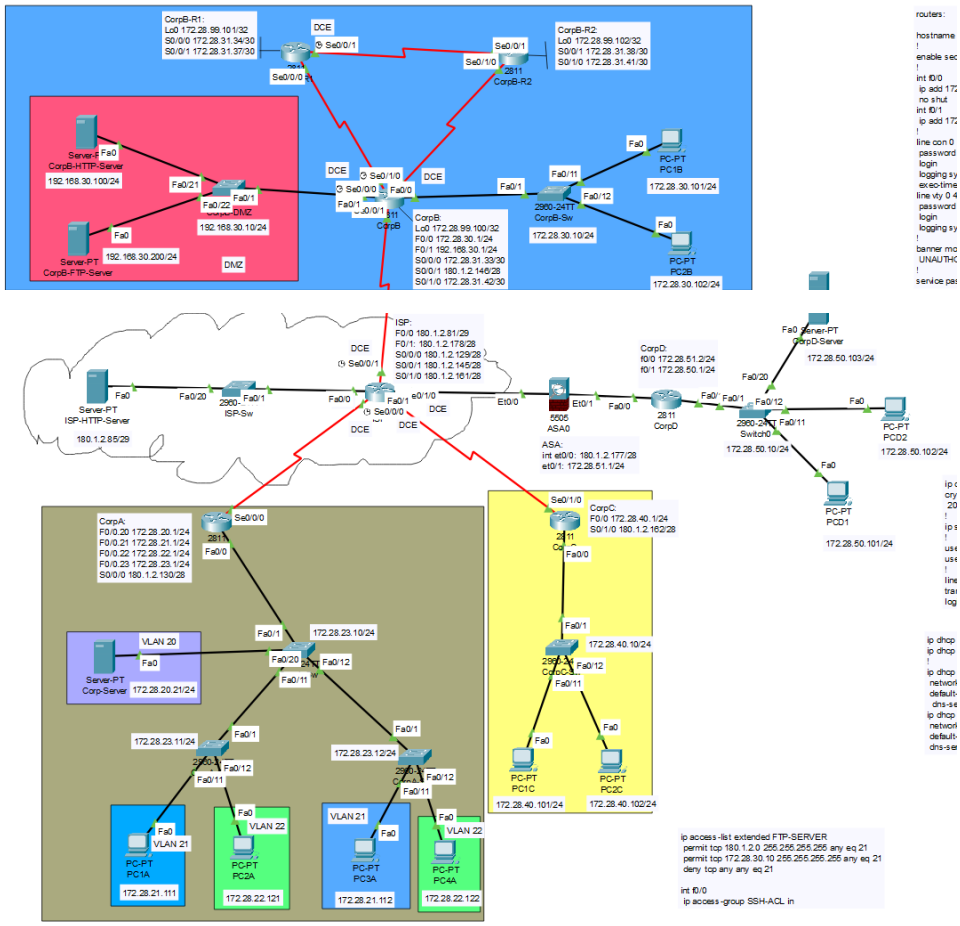
Dan MacCarthy

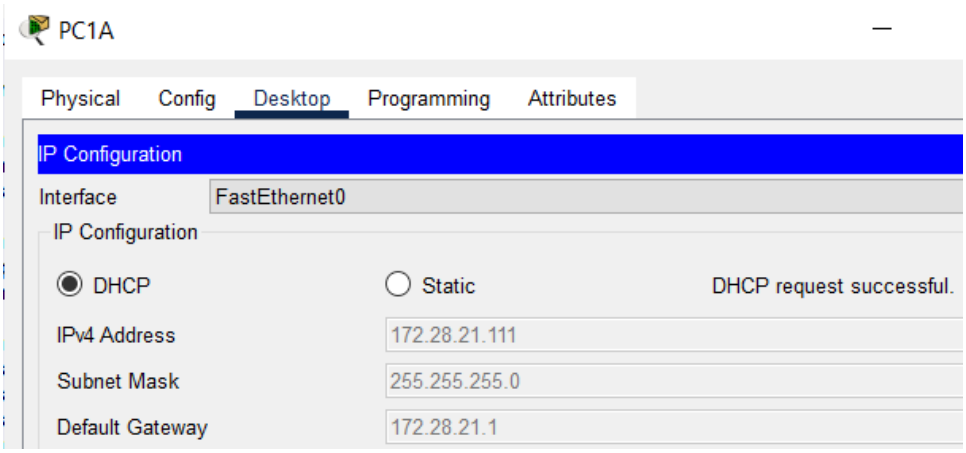
CMPT 420

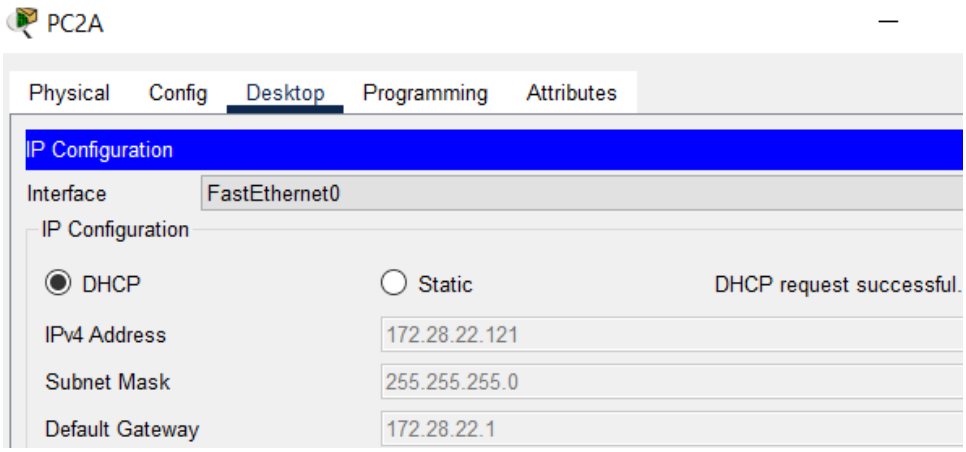
May, 13, 2022

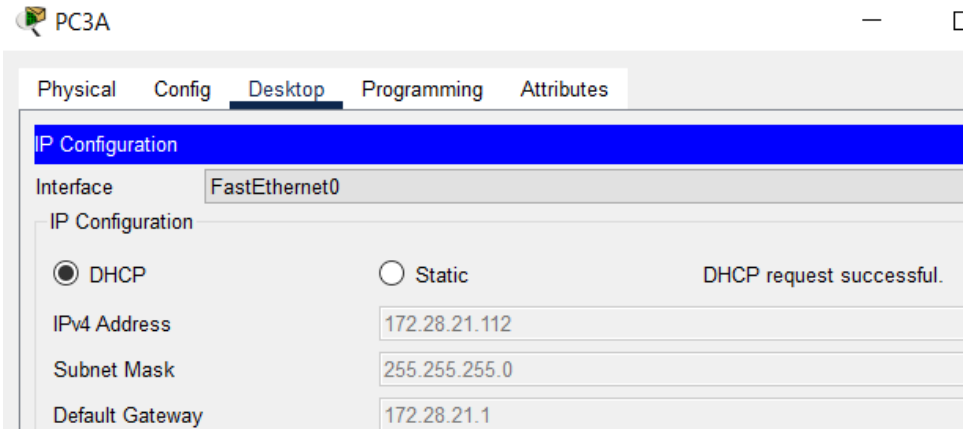
**TOPOLOGY:**

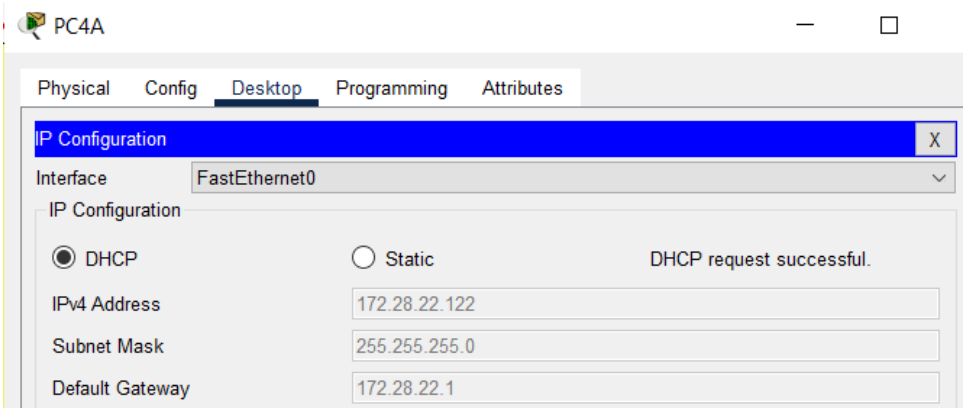


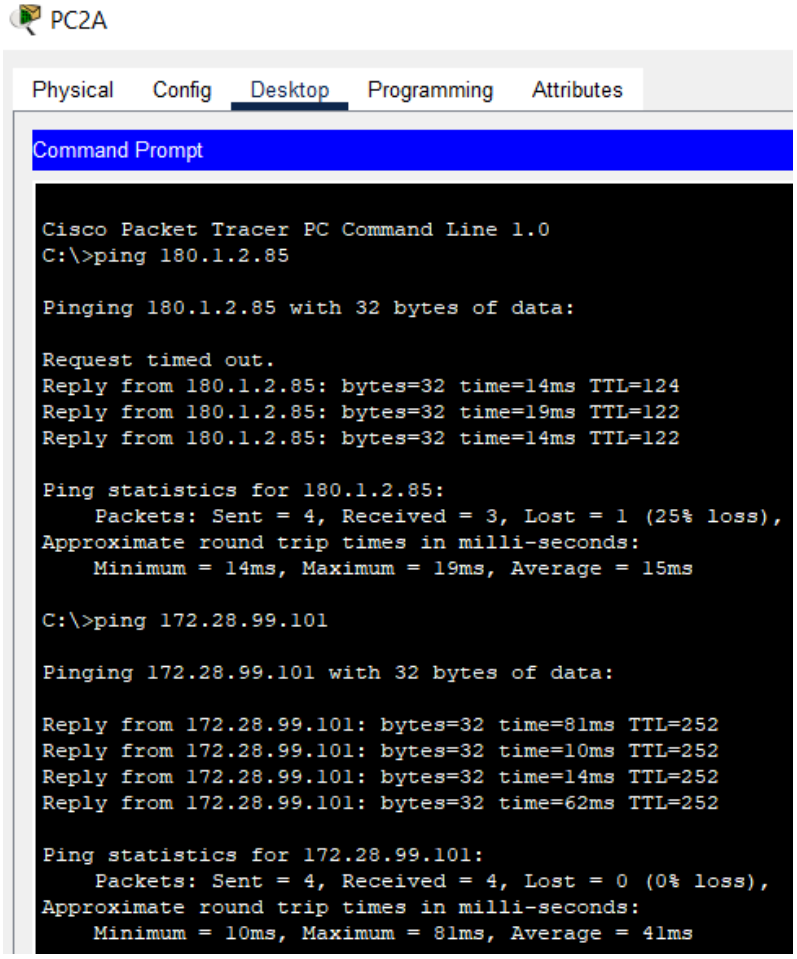
1. **Hosts:**


PC1A
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
DHCP request successful.
IPv4 Address
172.28.21.111
Subnet Mask
255.255.255.0
Default Gateway
172.28.21.1


PC2A
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
DHCP request successful.
IPv4 Address
172.28.22.121
Subnet Mask
255.255.255.0
Default Gateway
172.28.22.1


PC3A
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
DHCP request successful.
IPv4 Address
172.28.21.112
Subnet Mask
255.255.255.0
Default Gateway
172.28.21.1


PC4A
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
DHCP request successful.
IPv4 Address
172.28.22.122
Subnet Mask
255.255.255.0
Default Gateway
172.28.22.1


PC2A
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 180.1.2.85
Pinging 180.1.2.85 with 32 bytes of data:
Request timed out.
Reply from 180.1.2.85: bytes=32 time=14ms TTL=124
Reply from 180.1.2.85: bytes=32 time=19ms TTL=122
Reply from 180.1.2.85: bytes=32 time=14ms TTL=122
Ping statistics for 180.1.2.85:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 14ms, Maximum = 19ms, Average = 15ms
C:\>ping 172.28.99.101
Pinging 172.28.99.101 with 32 bytes of data:
Reply from 172.28.99.101: bytes=32 time=81ms TTL=252
Reply from 172.28.99.101: bytes=32 time=10ms TTL=252
Reply from 172.28.99.101: bytes=32 time=14ms TTL=252
Reply from 172.28.99.101: bytes=32 time=62ms TTL=252
Ping statistics for 172.28.99.101:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 10ms, Maximum = 81ms, Average = 41ms

PC1A

Physical Config Desktop Programming Attributes

Command Prompt

```
Approximate round trip times in milli-seconds:
    Minimum = 5ms, Maximum = 12ms, Average = 9ms

C:\>ping 192.168.30.100

Pinging 192.168.30.100 with 32 bytes of data:

Request timed out.
Reply from 192.168.30.100: bytes=32 time=103ms TTL=125
Reply from 192.168.30.100: bytes=32 time=10ms TTL=125
Reply from 192.168.30.100: bytes=32 time=5ms TTL=125

Ping statistics for 192.168.30.100:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 5ms, Maximum = 103ms, Average = 39ms

C:\>ping 172.28.22.122

Pinging 172.28.22.122 with 32 bytes of data:

Request timed out.
Reply from 172.28.22.122: bytes=32 time=2ms TTL=127
Reply from 172.28.22.122: bytes=32 time=1ms TTL=127
Reply from 172.28.22.122: bytes=32 time<1ms TTL=127

Ping statistics for 172.28.22.122:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 1ms
```

## 2. VLANs:

CorpA-Sw

```
VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/2, Fa0/3, Fa0/4, Fa0/5
                                                 Fa0/6, Fa0/7, Fa0/8, Fa0/9
                                                 Fa0/10, Fa0/13, Fa0/14,
Fa0/15
                                                 Fa0/16, Fa0/17, Fa0/18,
Fa0/19
                                                 Fa0/21, Fa0/22, Fa0/23,
Fa0/24
                                                 Gig0/1, Gig0/2
20   PURPLE                            active    Fa0/20
21   BLUE                              active
22   GREEN                             active
23   ADMIN                             active
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
```

## 3. STP:

```
VLAN0023
  Spanning tree enabled protocol ieee
  Root ID     Priority    24599
              Address     0006.2A05.3748
              This bridge is the root
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID   Priority    24599  (priority 24576 sys-id-ext 23)
              Address     0006.2A05.3748
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  20

Interface        Role Sts Cost      Prio.Nbr Type
---------------- ---- --- --------- -------- --------------------------------
Fa0/1            Desg FWD 19        128.1    P2p
Fa0/11           Desg FWD 19        128.11   P2p
Fa0/12           Desg FWD 19        128.12   P2p
```

4. **IEEE 802.1Q Trunking:**

```
CorpA-Sw#sh int trunk
Port        Mode         Encapsulation  Status        Native vlan
Fa0/1       on           802.1q         trunking      23
Fa0/11      on           802.1q         trunking      23
Fa0/12      on           802.1q         trunking      23

Port        Vlans allowed on trunk
Fa0/1       20-23
Fa0/11      20-23
Fa0/12      20-23

Port        Vlans allowed and active in management domain
Fa0/1       20,21,22,23
Fa0/11      20,21,22,23
Fa0/12      20,21,22,23

Port        Vlans in spanning tree forwarding state and not pruned
Fa0/1       20,21,22,23
Fa0/11      20,21,22,23
Fa0/12      20,21,22,23
```

## 5. Default Static Routing:

CorpB

```
Gateway of last resort is 180.1.2.145 to network 0.0.0.0

     172.28.0.0/16 is variably subnetted, 10 subnets, 3 masks
C       172.28.30.0/24 is directly connected, FastEthernet0/0
L       172.28.30.1/32 is directly connected, FastEthernet0/0
C       172.28.31.32/30 is directly connected, Serial0/0/0
L       172.28.31.33/32 is directly connected, Serial0/0/0
O       172.28.31.36/30 [110/128] via 172.28.31.34, 00:00:07, Serial0/0/0
                        [110/128] via 172.28.31.41, 00:00:07, Serial0/1/0
C       172.28.31.40/30 is directly connected, Serial0/1/0
L       172.28.31.42/32 is directly connected, Serial0/1/0
C       172.28.99.100/32 is directly connected, Loopback0
O       172.28.99.101/32 [110/65] via 172.28.31.34, 00:00:07, Serial0/0/0
O       172.28.99.102/32 [110/65] via 172.28.31.41, 00:00:07, Serial0/1/0
     180.1.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       180.1.2.144/28 is directly connected, Serial0/0/1
L       180.1.2.146/32 is directly connected, Serial0/0/1
     192.168.30.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.30.0/24 is directly connected, FastEthernet0/1
L       192.168.30.1/32 is directly connected, FastEthernet0/1
S*   0.0.0.0/0 [1/0] via 180.1.2.145
```

CorpA

```
Gateway of last resort is 180.1.2.129 to network 0.0.0.0

     172.28.0.0/16 is variably subnetted, 8 subnets, 2 masks
C       172.28.20.0/24 is directly connected, FastEthernet0/0.20
L       172.28.20.1/32 is directly connected, FastEthernet0/0.20
C       172.28.21.0/24 is directly connected, FastEthernet0/0.21
L       172.28.21.1/32 is directly connected, FastEthernet0/0.21
C       172.28.22.0/24 is directly connected, FastEthernet0/0.22
L       172.28.22.1/32 is directly connected, FastEthernet0/0.22
C       172.28.23.0/24 is directly connected, FastEthernet0/0.23
L       172.28.23.1/32 is directly connected, FastEthernet0/0.23
     180.1.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       180.1.2.128/28 is directly connected, Serial0/0/0
L       180.1.2.130/32 is directly connected, Serial0/0/0
S*   0.0.0.0/0 [1/0] via 180.1.2.129
```

CorpC

```
Gateway of last resort is 180.1.2.161 to network 0.0.0.0

     172.28.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.28.40.0/24 is directly connected, FastEthernet0/0
L       172.28.40.1/32 is directly connected, FastEthernet0/0
     180.1.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       180.1.2.160/28 is directly connected, Serial0/1/0
L       180.1.2.162/32 is directly connected, Serial0/1/0
S*   0.0.0.0/0 [1/0] via 180.1.2.161
```

## 6. Dynamic routing:

CorpB

```
Gateway of last resort is 180.1.2.145 to network 0.0.0.0

     172.28.0.0/16 is variably subnetted, 10 subnets, 3 masks
C       172.28.30.0/24 is directly connected, FastEthernet0/0
L       172.28.30.1/32 is directly connected, FastEthernet0/0
C       172.28.31.32/30 is directly connected, Serial0/0/0
L       172.28.31.33/32 is directly connected, Serial0/0/0
O       172.28.31.36/30 [110/128] via 172.28.31.34, 00:00:07, Serial0/0/0
                        [110/128] via 172.28.31.41, 00:00:07, Serial0/1/0
C       172.28.31.40/30 is directly connected, Serial0/1/0
L       172.28.31.42/32 is directly connected, Serial0/1/0
C       172.28.99.100/32 is directly connected, Loopback0
O       172.28.99.101/32 [110/65] via 172.28.31.34, 00:00:07, Serial0/0/0
O       172.28.99.102/32 [110/65] via 172.28.31.41, 00:00:07, Serial0/1/0
     180.1.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       180.1.2.144/28 is directly connected, Serial0/0/1
L       180.1.2.146/32 is directly connected, Serial0/0/1
     192.168.30.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.30.0/24 is directly connected, FastEthernet0/1
L       192.168.30.1/32 is directly connected, FastEthernet0/1
S*   0.0.0.0/0 [1/0] via 180.1.2.145

CorpB(config)#int s0/1/0
CorpB(config-if)# ip ospf message-digest-key 1 md5 cisco
CorpB(config-if)# ip ospf authentication message-digest
CorpB(config-if)#int s0/0/0
CorpB(config-if)# ip ospf message-digest-key 1 md5 cisco
CorpB(config-if)# ip ospf authentication message-digest
CorpB(config-if)#
00:30:05: %OSPF-5-ADJCHG: Process 1, Nbr 172.28.99.101 on Serial0/0/0 from
LOADING to FULL, Loading Done

CorpB(config-if)#
00:30:07: %OSPF-5-ADJCHG: Process 1, Nbr 172.28.99.102 on Serial0/1/0 from
LOADING to FULL, Loading Done
```

CorpB-R1

```
Gateway of last resort is not set

     172.28.0.0/16 is variably subnetted, 8 subnets, 2 masks
C       172.28.31.32/30 is directly connected, Serial0/0/0
L       172.28.31.34/32 is directly connected, Serial0/0/0
C       172.28.31.36/30 is directly connected, Serial0/0/1
L       172.28.31.37/32 is directly connected, Serial0/0/1
O       172.28.31.40/30 [110/128] via 172.28.31.33, 00:03:42, Serial0/0/0
                        [110/128] via 172.28.31.38, 00:03:42, Serial0/0/1
O       172.28.99.100/32 [110/65] via 172.28.31.33, 00:03:42, Serial0/0/0
C       172.28.99.101/32 is directly connected, Loopback0
O       172.28.99.102/32 [110/65] via 172.28.31.38, 00:09:21, Serial0/0/1
O    192.168.30.0/24 [110/65] via 172.28.31.33, 00:03:42, Serial0/0/0

00:24:28: %OSPF-5-ADJCHG: Process 1, Nbr 172.28.99.102 on Serial0/0/1 from
LOADING to FULL, Loading Done

CorpB-R1(config-if)#
00:30:05: %OSPF-5-ADJCHG: Process 1, Nbr 172.28.99.100 on Serial0/0/0 from
LOADING to FULL, Loading Done
```

CorpB-R2

```
Gateway of last resort is not set

     172.28.0.0/16 is variably subnetted, 8 subnets, 2 masks
O       172.28.31.32/30 [110/128] via 172.28.31.37, 00:04:42, Serial0/0/1
                        [110/128] via 172.28.31.42, 00:04:42, Serial0/1/0
C       172.28.31.36/30 is directly connected, Serial0/0/1
L       172.28.31.38/32 is directly connected, Serial0/0/1
C       172.28.31.40/30 is directly connected, Serial0/1/0
L       172.28.31.41/32 is directly connected, Serial0/1/0
O       172.28.99.100/32 [110/65] via 172.28.31.42, 00:04:42, Serial0/1/0
O       172.28.99.101/32 [110/65] via 172.28.31.37, 00:10:21, Serial0/0/1
C       172.28.99.102/32 is directly connected, Loopback0
O    192.168.30.0/24 [110/65] via 172.28.31.42, 00:04:42, Serial0/1/0

CorpB-R2(config)#int s0/1/0
CorpB-R2(config-if)# ip ospf message-digest-key 1 md5 cisco
CorpB-R2(config-if)# ip ospf authentication message-digest
CorpB-R2(config-if)#int s0/0/1
CorpB-R2(config-if)# ip ospf message-digest-key 1 md5 cisco
CorpB-R2(config-if)# ip ospf authentication message-digest
CorpB-R2(config-if)#
00:24:28: %OSPF-5-ADJCHG: Process 1, Nbr 172.28.99.101 on Serial0/0/1 from
LOADING to FULL, Loading Done

CorpB-R2(config-if)#
00:30:07: %OSPF-5-ADJCHG: Process 1, Nbr 172.28.99.100 on Serial0/1/0 from
LOADING to FULL, Loading Done
```

## 7. Default Routing Injection:

CorpB-R1

```
Gateway of last resort is 172.28.31.33 to network 0.0.0.0

     172.28.0.0/16 is variably subnetted, 8 subnets, 2 masks
C       172.28.31.32/30 is directly connected, Serial0/0/0
L       172.28.31.34/32 is directly connected, Serial0/0/0
C       172.28.31.36/30 is directly connected, Serial0/0/1
L       172.28.31.37/32 is directly connected, Serial0/0/1
O       172.28.31.40/30 [110/128] via 172.28.31.33, 00:07:40, Serial0/0/0
                        [110/128] via 172.28.31.38, 00:07:40, Serial0/0/1
O       172.28.99.100/32 [110/65] via 172.28.31.33, 00:07:40, Serial0/0/0
C       172.28.99.101/32 is directly connected, Loopback0
O       172.28.99.102/32 [110/65] via 172.28.31.38, 00:13:19, Serial0/0/1
O    192.168.30.0/24 [110/65] via 172.28.31.33, 00:07:40, Serial0/0/0
O*E2 0.0.0.0/0 [110/1] via 172.28.31.33, 00:00:01, Serial0/0/0
```

CorpB-R2

```
Gateway of last resort is 172.28.31.42 to network 0.0.0.0

     172.28.0.0/16 is variably subnetted, 8 subnets, 2 masks
O       172.28.31.32/30 [110/128] via 172.28.31.37, 00:08:42, Serial0/0/1
                        [110/128] via 172.28.31.42, 00:08:42, Serial0/1/0
C       172.28.31.36/30 is directly connected, Serial0/0/1
L       172.28.31.38/32 is directly connected, Serial0/0/1
C       172.28.31.40/30 is directly connected, Serial0/1/0
L       172.28.31.41/32 is directly connected, Serial0/1/0
O       172.28.99.100/32 [110/65] via 172.28.31.42, 00:08:42, Serial0/1/0
O       172.28.99.101/32 [110/65] via 172.28.31.37, 00:14:21, Serial0/0/1
C       172.28.99.102/32 is directly connected, Loopback0
O    192.168.30.0/24 [110/65] via 172.28.31.42, 00:08:42, Serial0/1/0
O*E2 0.0.0.0/0 [110/1] via 172.28.31.42, 00:01:03, Serial0/1/0
```

## 8. DMZ Access Control Lists:

```
CorpB(config-if)#do sh access-list
Standard IP access list 20
    10 deny host 192.168.30.100 (8 match(es))
    20 deny host 192.168.30.200 (4 match(es))
    30 permit any (16 match(es))
Standard IP access list 10
    10 permit host 172.28.30.10 (15 match(es))
    20 permit host 172.28.30.101 (8 match(es))
    30 permit host 172.28.30.102 (8 match(es))
    40 deny any
```

## 9. SSH:

```
C:\>ssh -l cisco 172.28.30.10

Password:


 UNAUTHORIZED ACCESS STRICTLY PROHIBITED!!!

CorpB-Sw>
```

```
CorpB-Sw(config-if-range)#do sh ssh
Connection      Version Mode Encryption  Hmac State            Username
2               1.99    IN   aes128-cbc      hmac-sha1     Session Started
cisco
2               1.99    OUT  aes128-cbc      hmac-sha1     Session Started
cisco
```

```
Extended IP access list SSH-ACL
    10 permit tcp host 172.28.21.111 any eq 22
    20 permit tcp host 172.28.22.121 any eq 22
    30 permit tcp host 172.28.30.102 any eq 22
    40 permit tcp host 172.28.40.101 any eq 22
    50 permit tcp any any eq 22
    60 deny tcp any any eq 22
```

PC3A

Physical Config Desktop Programming Attributes

Command Prompt X

```
Pinging 172.28.30.10 with 32 bytes of data:

Reply from 172.28.30.10: bytes=32 time=3ms TTL=252
Reply from 172.28.30.10: bytes=32 time=45ms TTL=252
Reply from 172.28.30.10: bytes=32 time=46ms TTL=252
Reply from 172.28.30.10: bytes=32 time=50ms TTL=252

Ping statistics for 172.28.30.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 3ms, Maximum = 50ms, Average = 36ms

C:\>ssh -l 172.28.21.1
Invalid Command.

C:\>ssh -l cisco 172.28.21.1

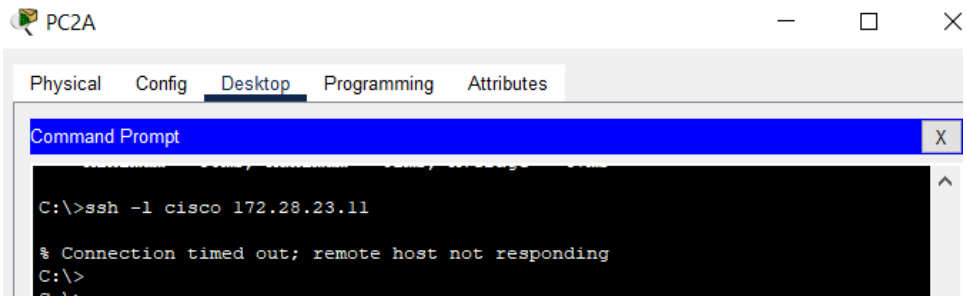
Password:
% Login invalid


Password:
% Login invalid


Password:


 UNAUTHORIZED ACCESS STRICTLY PROHIBITED!!!

CorpA>
```


PC2A
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
C:\>ssh -l cisco 172.28.23.11
% Connection timed out; remote host not responding
C:\>

## 10. DHCP:

```
 Subnet size (first/next)        : 0 / 0
 Total addresses                 : 254
 Leased addresses                : 2
 Excluded addresses              : 2
 Pending event                   : none

 1 subnet is currently in the pool
 Current index        IP address range                    Leased/Excluded/
Total
 172.28.21.1          172.28.21.1      - 172.28.21.254     2    / 2     / 254

Pool GREEN-DHCP-POOL :
 Utilization mark (high/low)     : 100 / 0
 Subnet size (first/next)        : 0 / 0
 Total addresses                 : 254
 Leased addresses                : 2
 Excluded addresses              : 2
 Pending event                   : none

 1 subnet is currently in the pool
 Current index        IP address range                    Leased/Excluded/
Total
 172.28.22.1          172.28.22.1      - 172.28.22.254     2    / 2     / 254
CorpA#sh ip dhcp bind
IP address       Client-ID/              Lease expiration        Type
                 Hardware address
172.28.21.111    0040.0BB2.A2B1           --                     Automatic
172.28.21.112    0090.213E.8CD1           --                     Automatic
172.28.22.121    0002.4ABD.9776           --                     Automatic
172.28.22.122    0000.0CC2.429C           --                     Automatic

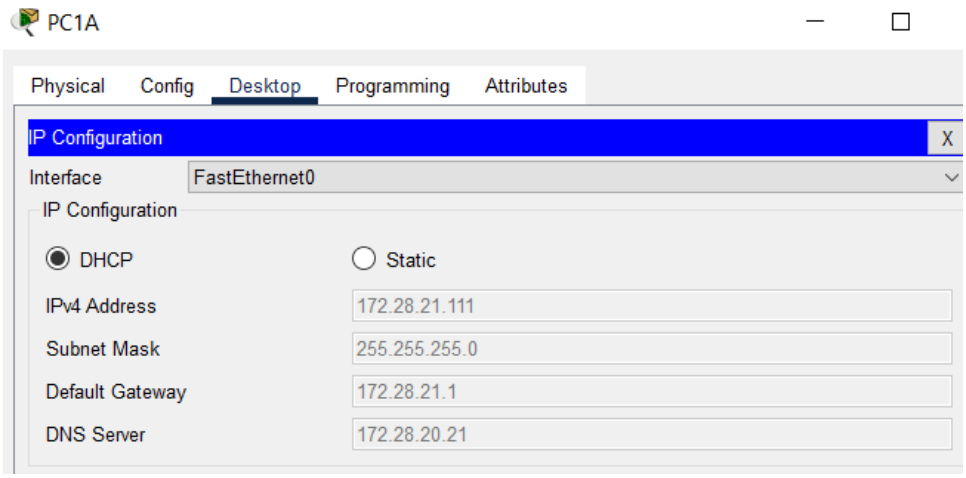
CorpA#sh ip dhcp pool

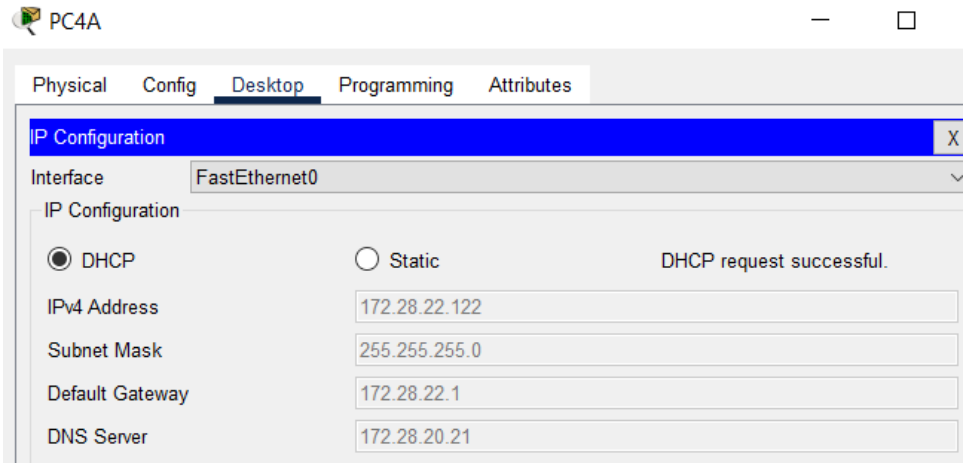
Pool BLUE-DHCP-POOL :
 Utilization mark (high/low)     : 100 / 0
 Subnet size (first/next)        : 0 / 0
 Total addresses                 : 254
 Leased addresses                : 2
 Excluded addresses              : 2
 Pending event                   : none

 1 subnet is currently in the pool
 Current index        IP address range                    Leased/Excluded/
Total
 172.28.21.1          172.28.21.1      - 172.28.21.254     2    / 2     / 254

Pool GREEN-DHCP-POOL :
 Utilization mark (high/low)     : 100 / 0
 Subnet size (first/next)        : 0 / 0
 Total addresses                 : 254
 Leased addresses                : 2
 Excluded addresses              : 2
 Pending event                   : none

 1 subnet is currently in the pool
 Current index        IP address range                    Leased/Excluded/
Total
 172.28.22.1          172.28.22.1      - 172.28.22.254     2    / 2     / 254
```


PC1A
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
172.28.21.111
Subnet Mask
255.255.255.0
Default Gateway
172.28.21.1
DNS Server
172.28.20.21


PC4A
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
DHCP request successful.
IPv4 Address
172.28.22.122
Subnet Mask
255.255.255.0
Default Gateway
172.28.22.1
DNS Server
172.28.20.21

## 11. DNS:

| No. | Name | Type | Detail |
|---|---|---|---|
| 0 | corpb-ftp-server.inetsec-corpa.local | A Record | 192.168.30.200 |
| 1 | corp-server | CNAME | corp-server.inetsec-corpa.local |
| 2 | corp-server.inetsec-corpa.local | A Record | 172.28.20.21 |
| 3 | corpa | CNAME | corpa.inetsec-corpa.local |
| 4 | corpa-sw.inetsec-corpa.local | A Record | 172.28.23.10 |
| 5 | corpa-sw1.inetsec-corpa.local | A Record | 172.28.23.11 |
| 6 | corpa-sw2.inetsec-corpa.local | A Record | 172.28.23.12 |
| 7 | corpa.inetsec-corpa.local | A Record | 172.28.23.1 |
| 8 | corpb-dmz | CNAME | corpb-dmz.inetsec-corpa.local |
| 9 | corpb-dmz.inetsec-corpa.local | A Record | 192.168.30.10 |
| 10 | corpb-ftp-server | CNAME | corpb-ftp-server.inetsec-corpa.local |
| 11 | corpb-http-server.inetsec-corpa.local | A Record | 192.168.30.100 |
| 12 | corpb-r1.inetsec-corpa.local | A Record | 172.28.99.101 |
| 13 | corpb-r2.inetsec-corpa.local | A Record | 172.28.99.102 |
| 14 | corpb-sw.inetsec-corpa.local | A Record | 172.28.30.10 |
| 15 | corpc.inetsec-corpa.local | A Record | 172.28.40.1 |
| 16 | corpb.inetsec-corpa.local | A Record | 172.28.99.100 |
| 16 | corpb.inetsec-corpa.local | A Record | 172.28.99.100 |
| 17 | corpc-sw.inetsec-corpa.local | A Record | 172.28.40.10 |
| 18 | isp-http-server.inetsec-corpa.local | A Record | 180.1.2.85 |
| 19 | isp.inetsec-corpa.local | A Record | 180.1.2.81 |
| 20 | pc1a | CNAME | pc1a.inetsec-corpa.local |
| 21 | pc1a.inetsec-corpa.local | A Record | 172.28.21.111 |
| 22 | pc1b.inetsec-corpa.local | A Record | 172.28.30.101 |
| 23 | pc1c.inetsec-corpa.local | A Record | 172.28.40.101 |
| 24 | pc2a.inetsec-corpa.local | A Record | 172.28.22.121 |
| 25 | pc2b.inetsec-corpa.local | A Record | 172.28.30.102 |
| 26 | pc2c.inetsec-corpa.local | A Record | 172.28.40.102 |
| 27 | pc3a.inetsec-corpa.local | A Record | 172.28.21.112 |
| 28 | pc4a.inetsec-corpa.local | A Record | 172.28.22.122 |

## 12. PAT:

```
CorpA(config)#do sh ip nat stat
Total translations: 0 (0 static, 0 dynamic, 0 extended)
Outside Interfaces: Serial0/0/0
Inside Interfaces: FastEthernet0/0 , FastEthernet0/1
Hits: 0  Misses: 20
Expired translations: 0
Dynamic mappings:
-- Inside Source
access-list 90 pool GLOBAL refCount 0
 pool GLOBAL: netmask 255.255.255.224
       start 197.197.197.1 end 197.197.197.20
       type generic, total addresses 20 , allocated 0 (0%), misses 0
```

```
CorpB(config-if)#do sh ip nat tran
Pro  Inside global     Inside local       Outside local      Outside global
---  155.21.21.10      192.168.30.100     ---                ---

CorpB(config-if)#do sh ip nat tran
Pro  Inside global     Inside local       Outside local      Outside global
---  155.21.21.10      192.168.30.100     ---                ---
```

Despite following the commands what I think was perfectly I can never seem to get NAT and PAT t actually work for me, I think it actually broke some of my topology and that's annoying. I've spent way too long researching this and it makes no sense why it isn't working. I even tried removing it and it said the pool was in use and I can't remove it, but yet nothing still shows up. I tried changing the address pool, removing it and adding it back, reading the running-config file a million times, and even watching youtube videos on repeat of how to do this, and nothing has worked.

## 13. HTTP Server Static NAT:

```
CorpB(config-if)#do sh ip nat tran
Pro  Inside global     Inside local       Outside local      Outside global
---  155.21.21.10      192.168.30.100     ---                ---

CorpB(config-if)#do sh ip nat tran
Pro  Inside global     Inside local       Outside local      Outside global
---  155.21.21.10      192.168.30.100     ---                ---
```

PCA1

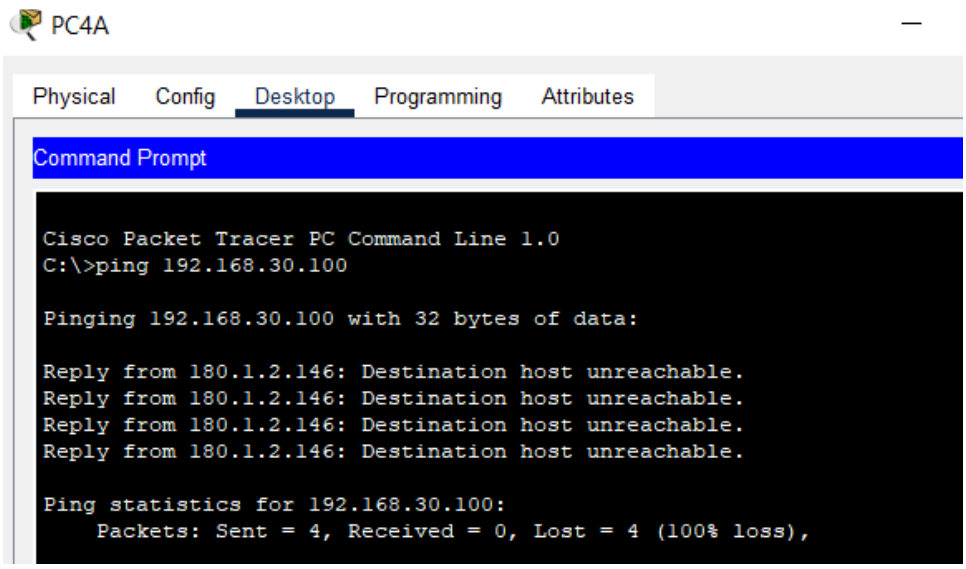
```
C:\>ping 192.168.30.100

Pinging 192.168.30.100 with 32 bytes of data:

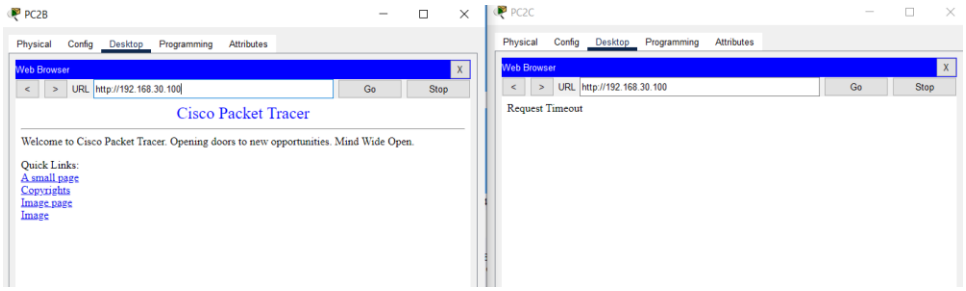
Reply from 180.1.2.146: Destination host unreachable.
Reply from 180.1.2.146: Destination host unreachable.
Reply from 180.1.2.146: Destination host unreachable.
Reply from 180.1.2.146: Destination host unreachable.

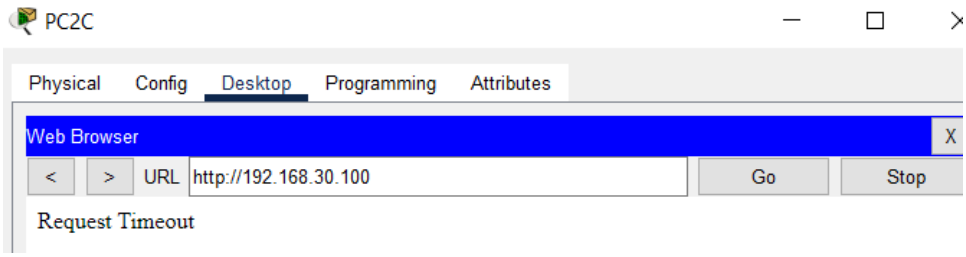
Ping statistics for 192.168.30.100:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

PC4A



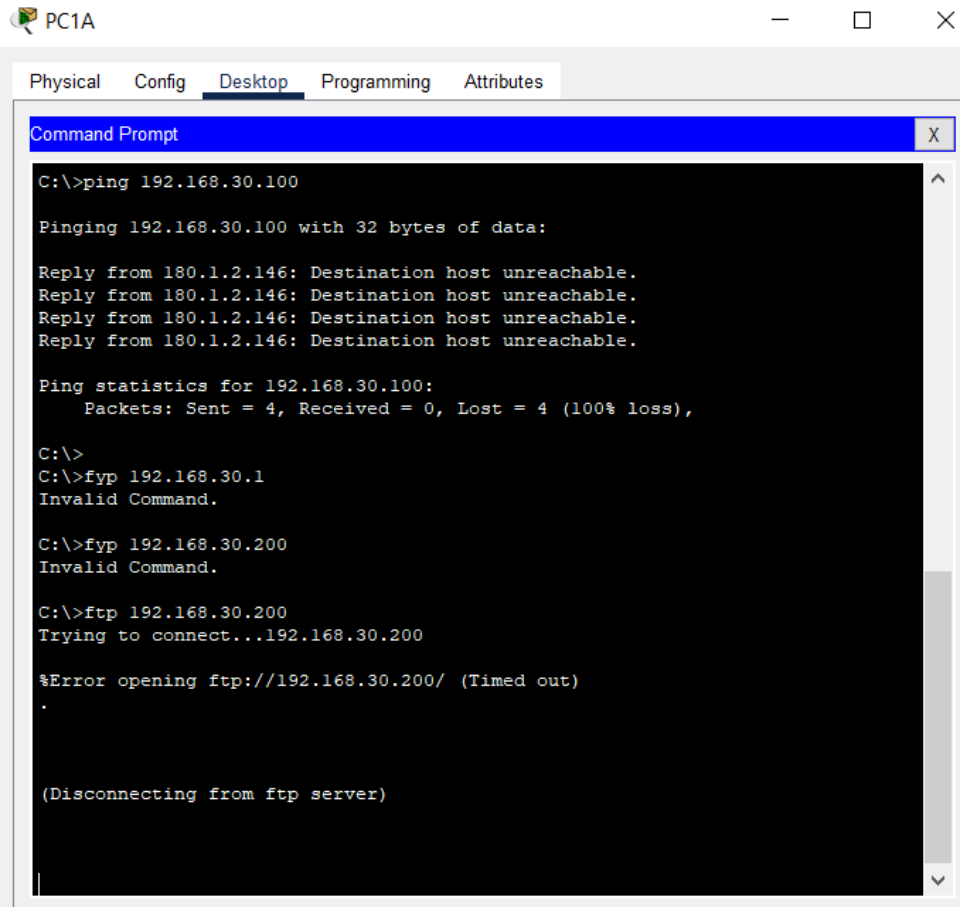

```
Extended IP access list HTP-SERVER
    10 permit tcp 0.0.0.0 255.255.255.0 any eq www
    20 permit tcp 0.0.0.10 255.255.255.0 any eq www
    30 deny tcp any any eq www
```


PC2B
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
http://192.168.30.100
Go
Stop
Cisco Packet Tracer
Welcome to Cisco Packet Tracer. Opening doors to new opportunities. Mind Wide Open.
Quick Links:
A small page
Copyrights
Image page
Image
PC2C
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
http://192.168.30.100
Go
Stop
Request Timeout


PC2C
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
http://192.168.30.100
Go
Stop
Request Timeout

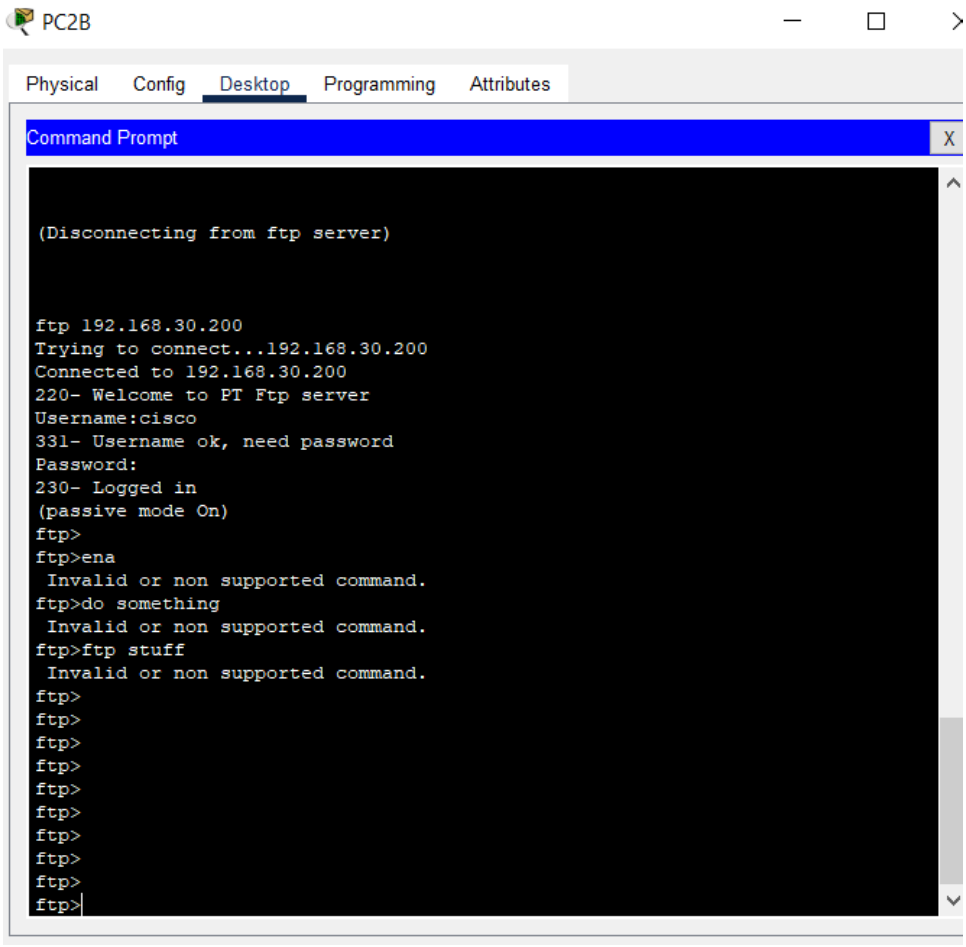
## 14. FTP Server Static NAT:

```
Extended IP access list FTP-SERVER
    10 permit tcp 0.0.0.0 255.255.255.0 any eq ftp
    20 permit tcp 0.0.0.10 255.255.255.0 any eq ftp
    30 deny tcp any any eq ftp
```




```
CorpB(config-if)#do sh ip nat trans
Pro  Inside global     Inside local       Outside local      Outside global
---  155.21.21.10      192.168.30.100     ---                ---
---  155.21.21.20      192.168.30.200     ---                ---

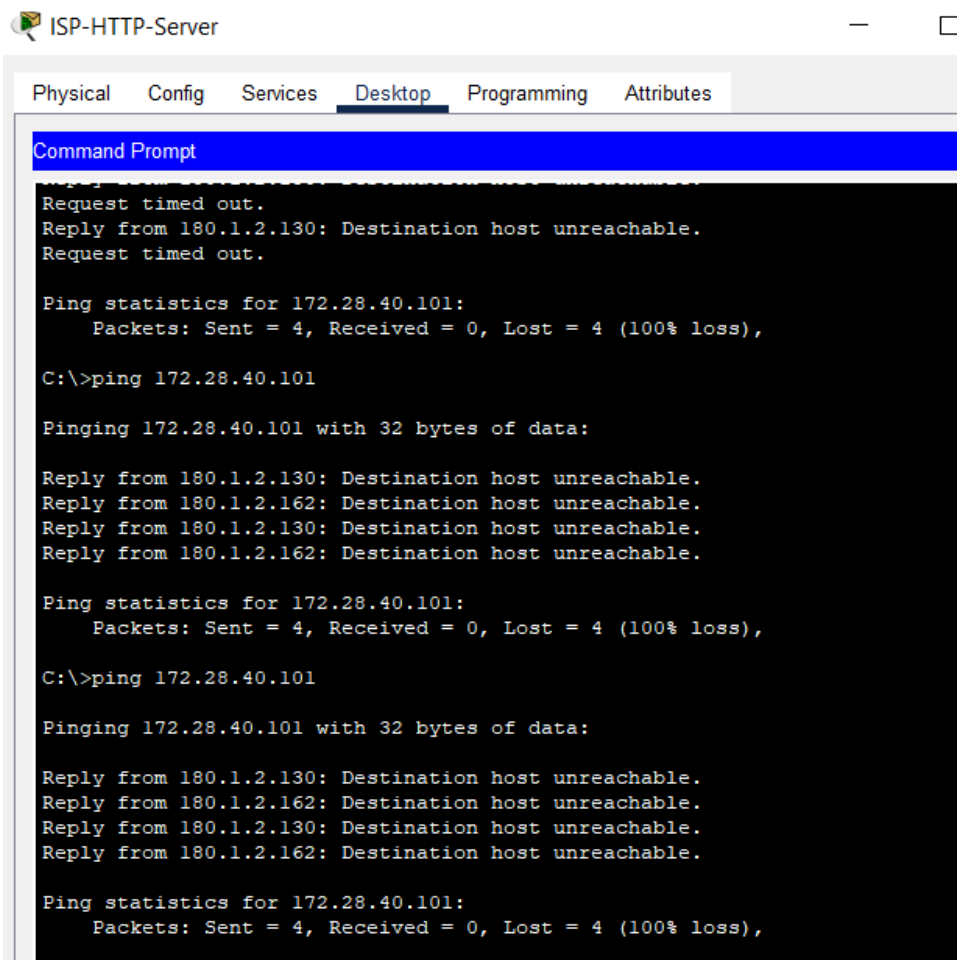
CorpB(config-if)#do sh ip nat sta
Total translations: 2 (2 static, 0 dynamic, 0 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: FastEthernet0/0 , Serial0/0/0 , Serial0/1/0
Hits: 0  Misses: 183
Expired translations: 0
Dynamic mappings:
-- Inside Source
access-list 90 pool GLOBAL refCount 0
 pool GLOBAL: netmask 255.255.255.224
       start 197.197.196.1 end 197.197.196.20
       type generic, total addresses 20 , allocated 0 (0%), misses 0
```


PC2B
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
(Disconnecting from ftp server)
ftp 192.168.30.200
Trying to connect...192.168.30.200
Connected to 192.168.30.200
220- Welcome to PT Ftp server
Username:cisco
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>
ftp>ena
Invalid or non supported command.
ftp>do something
Invalid or non supported command.
ftp>ftp stuff
Invalid or non supported command.
ftp>
ftp>
ftp>
ftp>
ftp>
ftp>
ftp>
ftp>
ftp>
ftp>

## 15. Primitive Firewall:

```
Standard IP access list 40
    10 permit 172.28.20.0 0.0.3.255 (16 match(es)
    20 deny any

CorpC(config)#do sh ip access
Standard IP access list 50
    10 deny 180.1.0.0 0.0.3.255 (7 match(es))
    20 permit any (4 match(es))
```



## 16. Zone-Based Firewall:

```
CorpB#sh policy-map type inspect zone-pair sessions

policy exists on zp TO-OUTSIDE-PMAP
 Zone-pair: TO-OUTSIDE-PMAP

  Service-policy inspect : TO-OUTSIDE-PMAP

    Class-map: IN-CORPB-CLASS-MAP (match-all)
      Match: access-group 101
      Inspect

    Class-map: class-default (match-any)
      Match: any
      Drop (default action)
        0 packets, 0 bytes
```

I really thought I was better at this but somewhere along the line all connectivity broke down. Nothing can go through the CorpB router and no matter what I try to do to fix it it doesn't want to work. I have tried removing every ACL, every NAT/PAT pool and for some reason tracert shows it just stopping at CorpB.

**17: Local AAA:**

```
 UNAUTHORIZED ACCESS STRICTLY PROHIBITED!!!

User Access Verification

Username: user1
Password:
CorpC>

CorpC#show aaa sessions
Total sessions since last reload: 1
Session Id:1
           Unique Id:1
           User Name:user1
           IP Address:0.0.0.0
           Idle Time: 0
           CT Call Handle: 0

User Access Verification

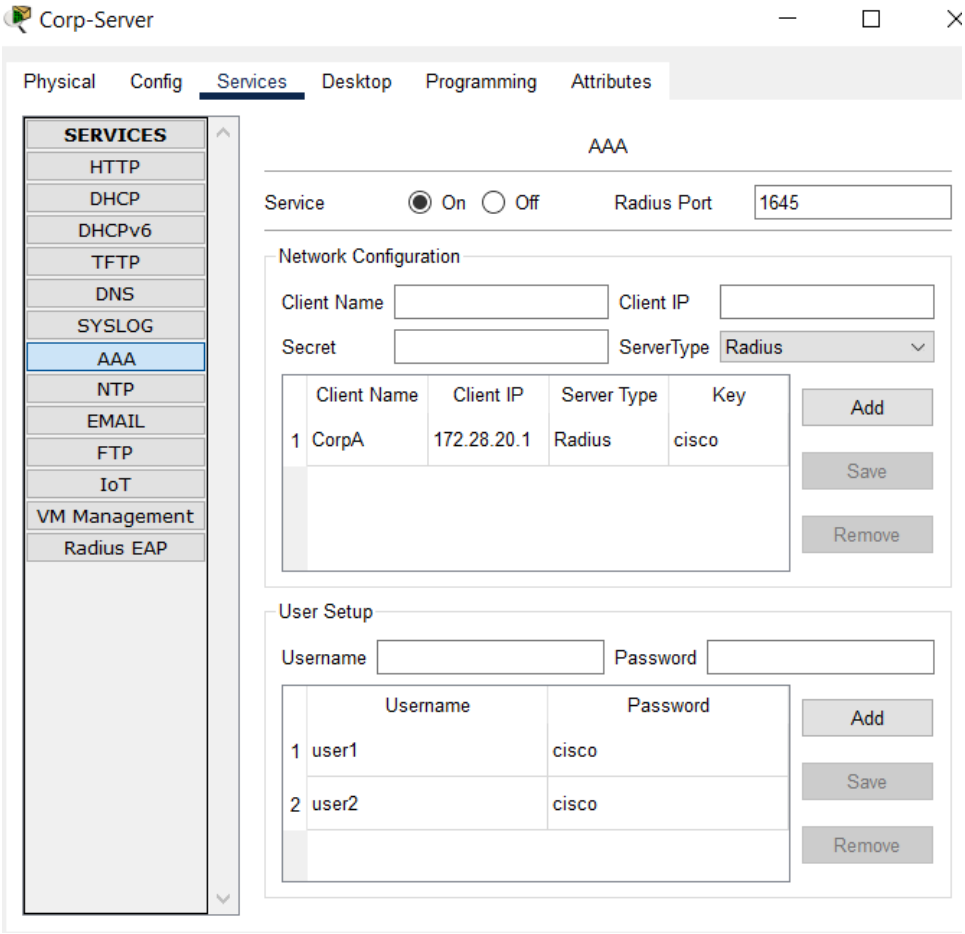
Username: user2
Password:
CorpC>ena
Password:
CorpC#sh privilege
Current privilege level is 15
CorpC#
```

```
 UNAUTHORIZED ACCESS STRICTLY PROHIBITED!!!

User Access Verification

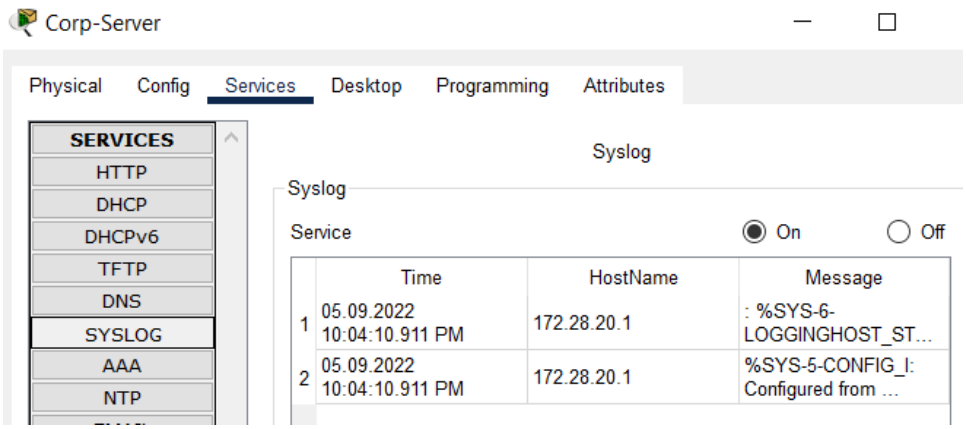
Username: user1
Password:
CorpC>sh privile
Current privilege level is 1
```

## 18: Server-Based AAA:



```
Unique id 4 is currently in use.
Accounting:
log=0x18001
Events recorded :
          CALL START
          INTERIM START
          INTERIM STOP
update method(s) :
          NONE
update interval = 0
Outstanding Stop Records : 0
Dynamic attribute list:
          47B2AC48 0 00000001 connect-progress(52) 4 Term Serv Auth
          47B2AC58 0 00000001 pre-session-time(268) 4 814(32E)
          47B2AC68 0 00000001 elapsed_time(338) 4 0(0)
          47B2AC78 0 00000001 pre-bytes-in(264) 4 0(0)
          47B2AC88 0 00000001 pre-bytes-out(265) 4 0(0)
          47B2AC98 0 00000001 pre-paks-in(266) 4 0(0)
          47B2ACA8 0 00000001 pre-paks-out(267) 4 0(0)
          No data for type EXEC
          No data for type CONN
          NET: Username=(n/a)
                    Session Id=000004 Unique Id=000006
                    Start Sent=0 Stop Only=N
                    stop_has_been_sent=N
                    Method List=0
                    Attribute list:
          47B2AC48 0 00000001 session-id(336) 4 6(6)
```

## 19: Syslog:




```
Enter configuration commands, one per line.  End with CNTL/Z.
CorpA(config)#logging host 172.28.20.21
CorpA(config)#end
CorpA#
*May 09, 22:04:10.044: SYS-5-CONFIG_I: Configured from console by console
*May 09, 22:04:10.044:  %SYS-6-LOGGINGHOST_STARTSTOP: Logging to host
172.28.20.21 port 514 started - CLI initiated

CorpA#sh logging
Syslog logging: enabled (0 messages dropped, 0 messages rate-limited,
          0 flushes, 0 overruns, xml disabled, filtering disabled)

No Active Message Discriminator.


No Inactive Message Discriminator.

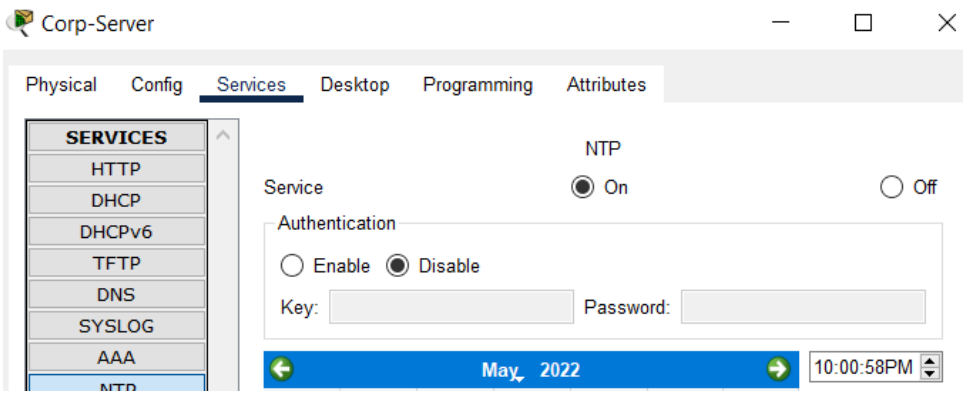

    Console logging: level debugging, 11 messages logged, xml disabled,
          filtering disabled
    Monitor logging: level debugging, 11 messages logged, xml disabled,
          filtering disabled
    Buffer logging:  disabled, xml disabled,
          filtering disabled

    Logging Exception size (4096 bytes)
    Count and timestamp logging messages: disabled
    Persistent logging: disabled

No active filter modules.

ESM: 0 messages dropped
    Trap logging: level informational, 11 message lines logged
        Logging to 172.28.20.21  (udp port 514,  audit disabled,
             authentication disabled, encryption disabled, link up),
             2 message lines logged,
             0 message lines rate-limited,
             0 message lines dropped-by-MD,
```

## 20. NTP:




```
CorpA#sh clock detail
*0:27:22.661 UTC Mon Mar 1 1993
Time source is hardware calendar
CorpA#sh clock detail
22:0:46.652 UTC Mon May 9 2022
Time source is NTP

CorpA#
*May 09, 22:02:43.022: SYS-5-CONFIG_I: Configured from console by console
CorpA#sh ntp status
Clock is synchronized, stratum 2, reference is 172.28.20.21
nominal freq is 250.0000 Hz, actual freq is 249.9990 Hz, precision is 2**24
reference time is E5FC80DF.00000394 (22:2:7.916 UTC Mon May 9 2022)
clock offset is 0.00 msec, root delay is 1.00  msec
root dispersion is 10.57 msec, peer dispersion is 0.12 msec.
loopfilter state is 'CTRL' (Normal Controlled Loop), drift is - 0.000001193
s/s system poll interval is 4, last update was 7 sec ago.
```

## 21. InterVLAN Routing:

```
20   PURPLE                           active
21   BLUE                             active
22   GREEN                            active
23   NetMgmt                          active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
CorpA-Sw(config-vlan)#
```

```
CorpA-Sw#sh int trunk
Port        Mode         Encapsulation  Status        Native vlan
Fa0/1       on           802.1q         trunking      23
Fa0/11      on           802.1q         trunking      23
Fa0/12      on           802.1q         trunking      23

Port        Vlans allowed on trunk
Fa0/1       20-23
Fa0/11      20-23
Fa0/12      20-23

Port        Vlans allowed and active in management domain
Fa0/1       20,21,22,23
Fa0/11      20,21,22,23
Fa0/12      20,21,22,23

Port        Vlans in spanning tree forwarding state and not pruned
Fa0/1       20,21,22,23
Fa0/11      20,21,22,23
Fa0/12      20,21,22,23
```

## 22. IPSec VPN:

```
 Crypto map tag: VPN-MAP, local addr 180.1.2.130

protected vrf: (none)
local  ident (addr/mask/prot/port): (172.28.20.0/255.255.255.0/0/0)
remote  ident (addr/mask/prot/port): (172.28.40.0/255.255.255.0/0/0)
current_peer 180.1.2.162 port 500
 PERMIT, flags={origin_is_acl,}
#pkts encaps: 0, #pkts encrypt: 0, #pkts digest: 0
#pkts decaps: 0, #pkts decrypt: 0, #pkts verify: 0
#pkts compressed: 0, #pkts decompressed: 0
#pkts not compressed: 0, #pkts compr. failed: 0
#pkts not decompressed: 0, #pkts decompress failed: 0
#send errors 0, #recv errors 0

  local crypto endpt.: 180.1.2.130, remote crypto endpt.:180.1.2.162
  path mtu 1500, ip mtu 1500, ip mtu idb Serial0/0/0
  current outbound spi: 0x0(0)

  inbound esp sas:

  inbound ah sas:

  inbound pcp sas:

  outbound esp sas:

  outbound ah sas:

  outbound pcp sas:
```

I am 100 percent certain that I configured this correctly but, somehow I broke my connectivity and I still don't know how. Nothing I do can fix and I would contemplate starting over completely but I am too far in. Even with the removal of my acls and making new ones to replace them nothing wants to work.

## 23. VTP:

CorpA-Sw

```
VTP Version capable             : 1 to 2
VTP version running             : 1
VTP Domain Name                 : INETSEC
VTP Pruning Mode                : Disabled
VTP Traps Generation            : Disabled
Device ID                       : 0000.0CE5.7400
Configuration last modified by 0.0.0.0 at 3-1-93 00:20:16
Local updater ID is 172.28.23.10 on interface V123 (lowest numbered VLAN
interface found)

Feature VLAN :
--------------
VTP Operating Mode                : Server
Maximum VLANs supported locally   : 255
Number of existing VLANs          : 9
Configuration Revision            : 9
MD5 digest                        : 0x2D 0x9D 0xA7 0x66 0x09 0x94 0x97 0x3B
                                    0xD4 0x90 0xDD 0xFE 0xC1 0x08 0xC6 0xFE
```

CorpA-Sw1

```
CorpA-Sw1#sh vtp status
VTP Version capable             : 1 to 2
VTP version running             : 1
VTP Domain Name                 : INETSEC
VTP Pruning Mode                : Disabled
VTP Traps Generation            : Disabled
Device ID                       : 0002.1763.8700
Configuration last modified by 0.0.0.0 at 3-1-93 00:20:16

Feature VLAN :
--------------
VTP Operating Mode                : Client
Maximum VLANs supported locally   : 255
Number of existing VLANs          : 9
Configuration Revision            : 9
MD5 digest                        : 0x2D 0x9D 0xA7 0x66 0x09 0x94 0x97 0x3B
                                    0xD4 0x90 0xDD 0xFE 0xC1 0x08 0xC6 0xFE
```

CorpA-Sw2

```
CorpA-Sw2(config)#end
CorpA-Sw2#
%SYS-5-CONFIG_I: Configured from console by console

CorpA-Sw2#sh vtp status
VTP Version capable             : 1 to 2
VTP version running             : 1
VTP Domain Name                 : INETSEC
VTP Pruning Mode                : Disabled
VTP Traps Generation            : Disabled
Device ID                       : 00E0.F984.1100
Configuration last modified by 0.0.0.0 at 3-1-93 00:20:16

Feature VLAN :
--------------
VTP Operating Mode                : Client
Maximum VLANs supported locally   : 255
Number of existing VLANs          : 9
Configuration Revision            : 9
MD5 digest                        : 0x2D 0x9D 0xA7 0x66 0x09 0x94 0x97 0x3B
                                    0xD4 0x90 0xDD 0xFE 0xC1 0x08 0xC6 0xFE
```

## 24. Layer2 Interface Security Mitigation Techniques:

```
CorpA-Sw1#sh spanning-tree su
Switch is in pvst mode
Root bridge for: default PURPLE BLUE GREEN
Extended system ID           is enabled
Portfast Default             is disabled
PortFast BPDU Guard Default  is enabled
Portfast BPDU Filter Default is disabled
Loopguard Default            is disabled
```

```
CorpA-Sw(config)#do sh spanning-tree sum
Switch is in pvst mode
Root bridge for: NetMgmt
Extended system ID           is enabled
Portfast Default             is disabled
PortFast BPDU Guard Default  is enabled
Portfast BPDU Filter Default is disabled
Loopguard Default            is disabled
```

```
CorpA-Sw1#sh port-security int f0/11
Port Security               : Enabled
Port Status                 : Secure-up
Violation Mode              : Shutdown
Aging Time                  : 0 mins
Aging Type                  : Absolute
SecureStatic Address Aging  : Disabled
Maximum MAC Addresses       : 3
Total MAC Addresses         : 1
Configured MAC Addresses    : 0
Sticky MAC Addresses        : 1
Last Source Address:Vlan    : 0040.0BB2.A2B1:21
Security Violation Count    : 0
```

```
CorpA-Sw1#sh port-security address
              Secure Mac Address Table
------------------------------------------------------------------------
Vlan    Mac Address       Type                          Ports   Remaining Age
                                                                    (mins)
----    -----------       ----                          -----   -------------
  21    0040.0BB2.A2B1    SecureSticky                  Fa0/11       -
  22    0002.4ABD.9776    SecureSticky                  Fa0/12       -
------------------------------------------------------------------------
Total Addresses in System (excluding one mac per port)     : 0
Max Addresses limit in System (excluding one mac per port) : 1024
```

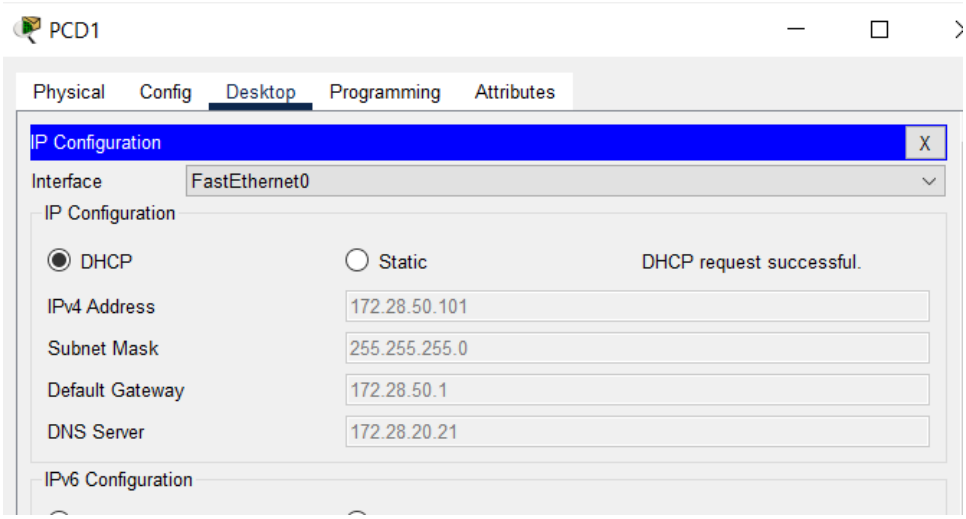
## 25. Other Protocols:

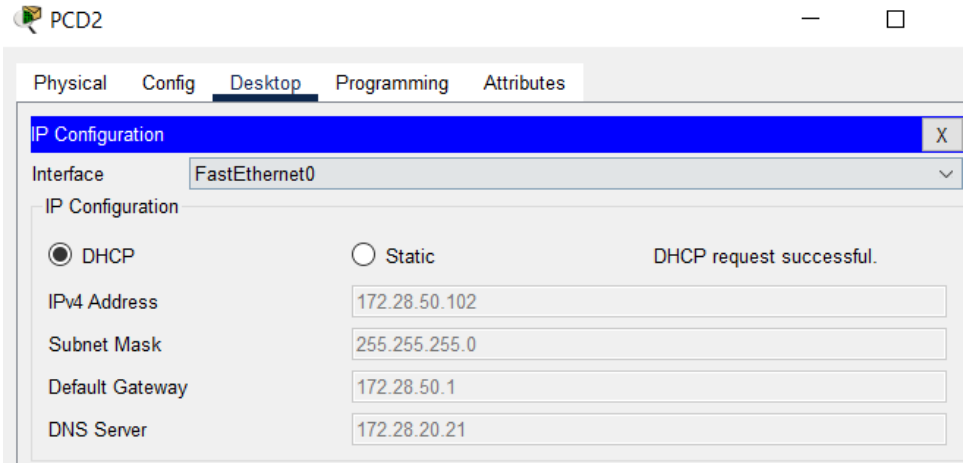
```
CorpA(config)#do sh ip int brie
Interface              IP-Address      OK? Method Status
Protocol
FastEthernet0/0        unassigned      YES unset  up                    up
FastEthernet0/0.20     172.28.20.1     YES manual up                    up
FastEthernet0/0.21     172.28.21.1     YES manual up                    up
FastEthernet0/0.22     172.28.22.1     YES manual up                    up
FastEthernet0/0.23     172.28.23.1     YES manual up                    up
FastEthernet0/1        unassigned      YES unset  administratively down down
Serial0/0/0            180.1.2.130     YES manual up                    up
Serial0/0/1            unassigned      YES unset  administratively down down
Serial0/1/0            unassigned      YES unset  administratively down down
Serial0/1/1            unassigned      YES unset  administratively down down
Vlan1                  unassigned      YES unset  administratively down down
```

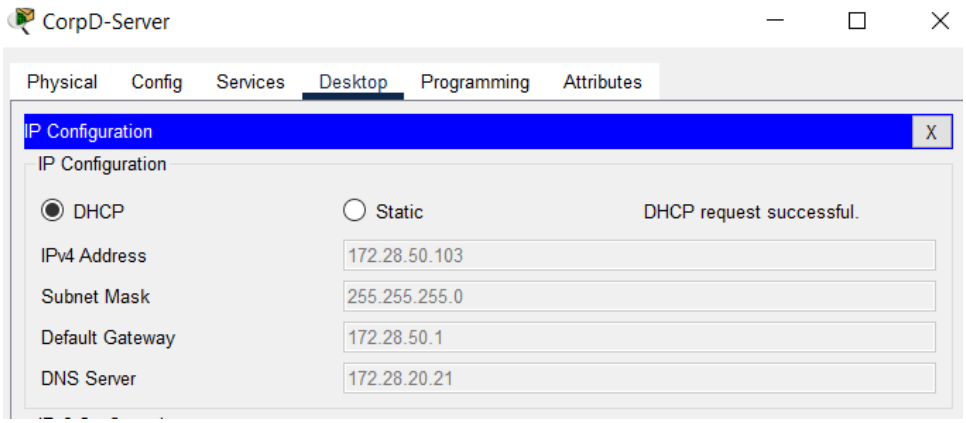
```
CorpA-Sw(config-if-range)#do sh ip int brief
Interface              IP-Address      OK? Method Status
Protocol
FastEthernet0/1        unassigned      YES manual up                    up
FastEthernet0/2        unassigned      YES manual administratively down down
FastEthernet0/3        unassigned      YES manual administratively down down
FastEthernet0/4        unassigned      YES manual administratively down down
FastEthernet0/5        unassigned      YES manual administratively down down
FastEthernet0/6        unassigned      YES manual administratively down down
FastEthernet0/7        unassigned      YES manual administratively down down
FastEthernet0/8        unassigned      YES manual administratively down down
FastEthernet0/9        unassigned      YES manual administratively down down
FastEthernet0/10       unassigned      YES manual administratively down down
FastEthernet0/11       unassigned      YES manual up                    up
FastEthernet0/12       unassigned      YES manual up                    up
FastEthernet0/13       unassigned      YES manual administratively down down
FastEthernet0/14       unassigned      YES manual administratively down down
FastEthernet0/15       unassigned      YES manual administratively down down
FastEthernet0/16       unassigned      YES manual administratively down down
FastEthernet0/17       unassigned      YES manual administratively down down
FastEthernet0/18       unassigned      YES manual administratively down down
FastEthernet0/19       unassigned      YES manual administratively down down
FastEthernet0/20       unassigned      YES manual up                    up
FastEthernet0/21       unassigned      YES manual administratively down down
FastEthernet0/22       unassigned      YES manual administratively down down
FastEthernet0/23       unassigned      YES manual administratively down down
FastEthernet0/24       unassigned      YES manual administratively down down
GigabitEthernet0/1     unassigned      YES manual administratively down down
GigabitEthernet0/2     unassigned      YES manual administratively down down
Vlan1                  unassigned      YES manual administratively down down
```

```
Protocol
FastEthernet0/1        unassigned      YES manual up                    up
FastEthernet0/2        unassigned      YES manual administratively down down
FastEthernet0/3        unassigned      YES manual administratively down down
FastEthernet0/4        unassigned      YES manual administratively down down
FastEthernet0/5        unassigned      YES manual administratively down down
FastEthernet0/6        unassigned      YES manual administratively down down
FastEthernet0/7        unassigned      YES manual administratively down down
FastEthernet0/8        unassigned      YES manual administratively down down
FastEthernet0/9        unassigned      YES manual administratively down down
FastEthernet0/10       unassigned      YES manual administratively down down
FastEthernet0/11       unassigned      YES manual up                    up
FastEthernet0/12       unassigned      YES manual up                    up
FastEthernet0/13       unassigned      YES manual administratively down down
FastEthernet0/14       unassigned      YES manual administratively down down
FastEthernet0/15       unassigned      YES manual administratively down down
FastEthernet0/16       unassigned      YES manual administratively down down
FastEthernet0/17       unassigned      YES manual administratively down down
FastEthernet0/18       unassigned      YES manual administratively down down
FastEthernet0/19       unassigned      YES manual administratively down down
FastEthernet0/20       unassigned      YES manual administratively down down
FastEthernet0/21       unassigned      YES manual administratively down down
FastEthernet0/22       unassigned      YES manual administratively down down
FastEthernet0/23       unassigned      YES manual administratively down down
FastEthernet0/24       unassigned      YES manual administratively down down
GigabitEthernet0/1     unassigned      YES manual administratively down down
GigabitEthernet0/2     unassigned      YES manual administratively down down
Vlan1                  unassigned      YES manual administratively down down
Vlan30                 172.28.30.10    YES manual up                    up
CorpB-Sw(config-if-range)#
```

## 26: ASA:

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    10 permit 172.28.50.0 0.0.0.255
    20 deny any
```