***786***

**N**ame: Muhammad Sherjeel Akhtar

**R**oll No: 20p-0101

**S**ubject: Computer Networks Lab

**T**ask No: 4

**S**ubmitted **T**o **R**espect Ma'am: **Miss Hurmat Hidayat**

**S**ection: B

# Task 1: DNS Server Configuration In Packet Tracer

**Answer:**

**Step 1:** First of all we will create a Topology.
**Step 2:** Place a server.
**Step 3:** Place a Switch
**Step 4:** Connect the Switch with the Server using a Copper-Cross-Over Cable.
**Step 5:** Place two Computers.
**Step 6:** Connect these two Computers with the Switch using a Straight-Through-Cables.
**Step 7**: Now first of all open the DNS-Server and go to its IP Configuration.
**Step 8:** Assign the following to the DNS-Server.

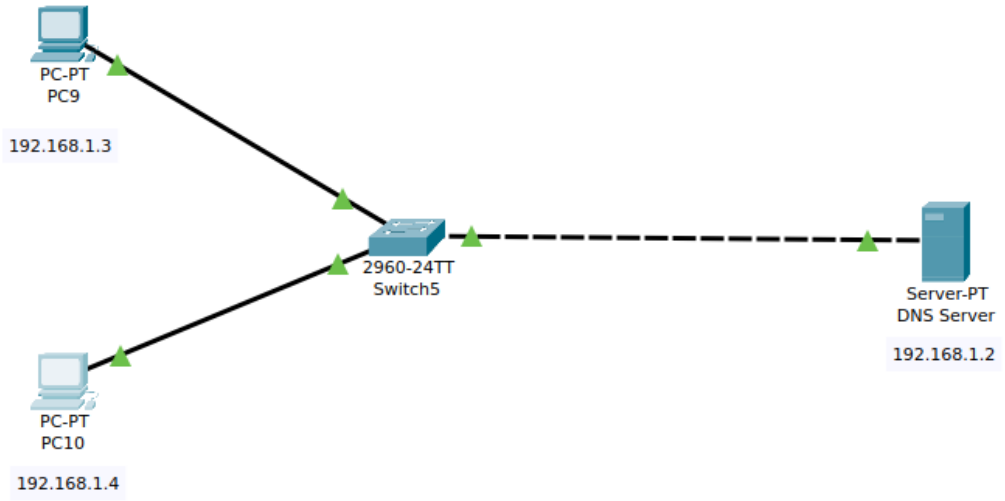
- ***Static IP Address (192.168.1.2)***
- ***Subnet Mask***
- ***Default Gateway***
- ***DNS Server***

**Step 9:** Now open the two PC's one by one and assign the following to them.

- ***Static IP Address (192.168.1.3)(192.168.1.4)***
- ***Subnet Mask***
- ***Default Gateway***
- ***DNS Server***

**Step 10:** Now Configure DNS-Service on the generic Server.
**Step 11:** Open the DNS-Server.
**Step 12:** Go to the Services Tab.
**Step 13:** Then go to the DNS Tab.
**Step 14:** At there, do the specific DNS entries for both of the PC's and the DNS-Server itself.
**Step 15:** Now perform a Ping Test from one PC to the other using the Domain Name.

## Visual Demonstration:
## Topology:

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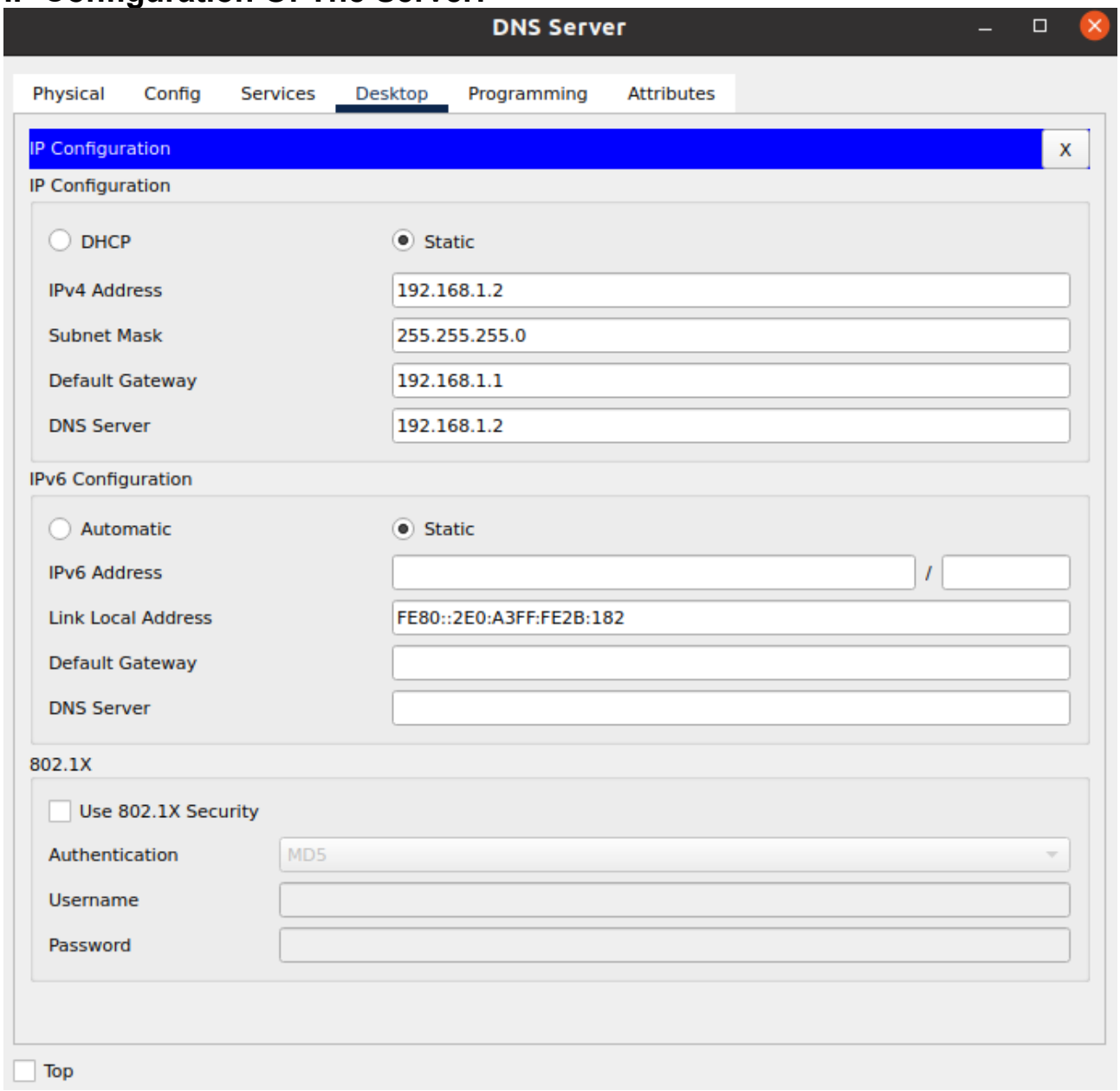
## IP Configuration Of The Server:

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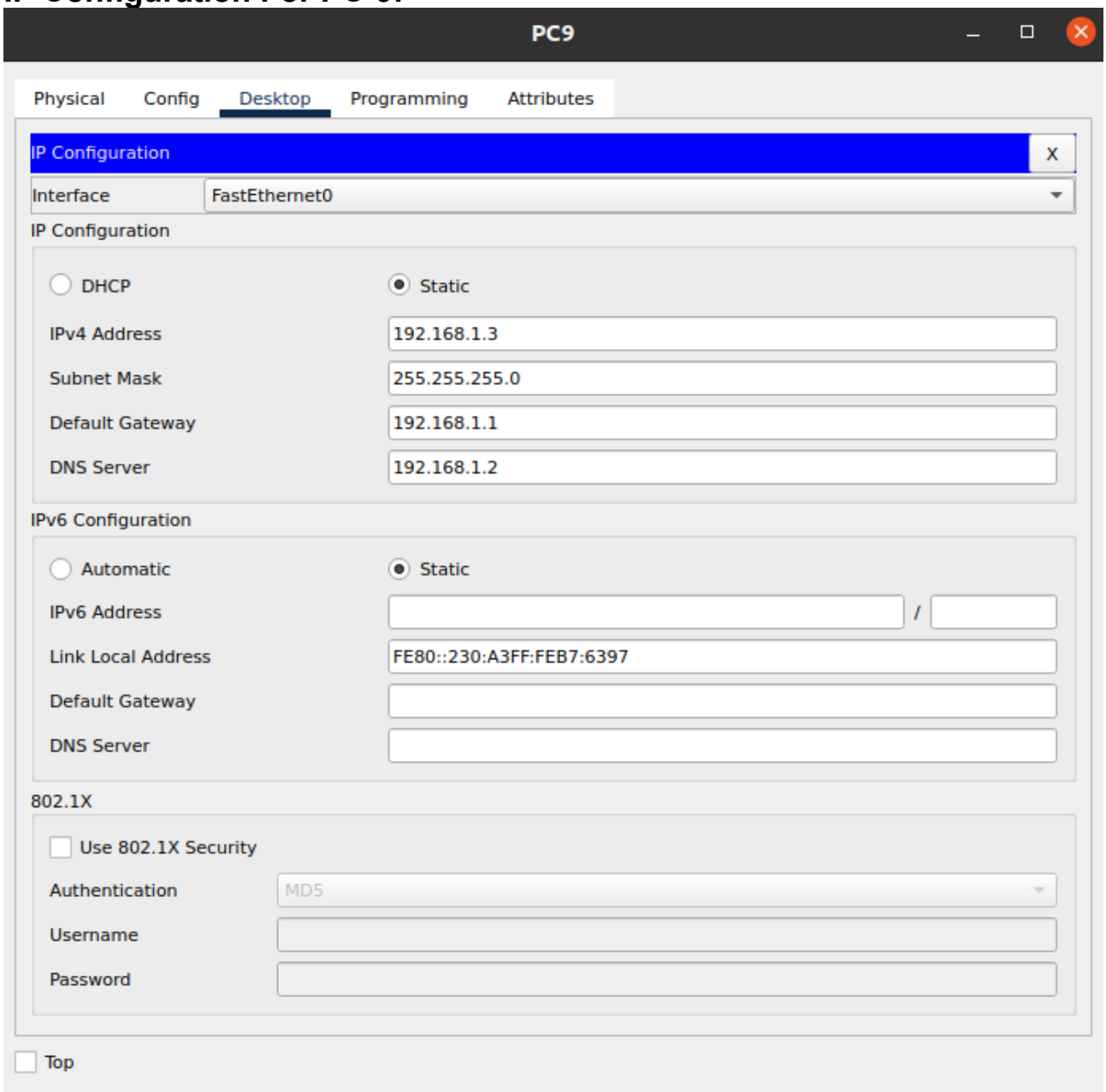
## IP Configuration For PC-9:

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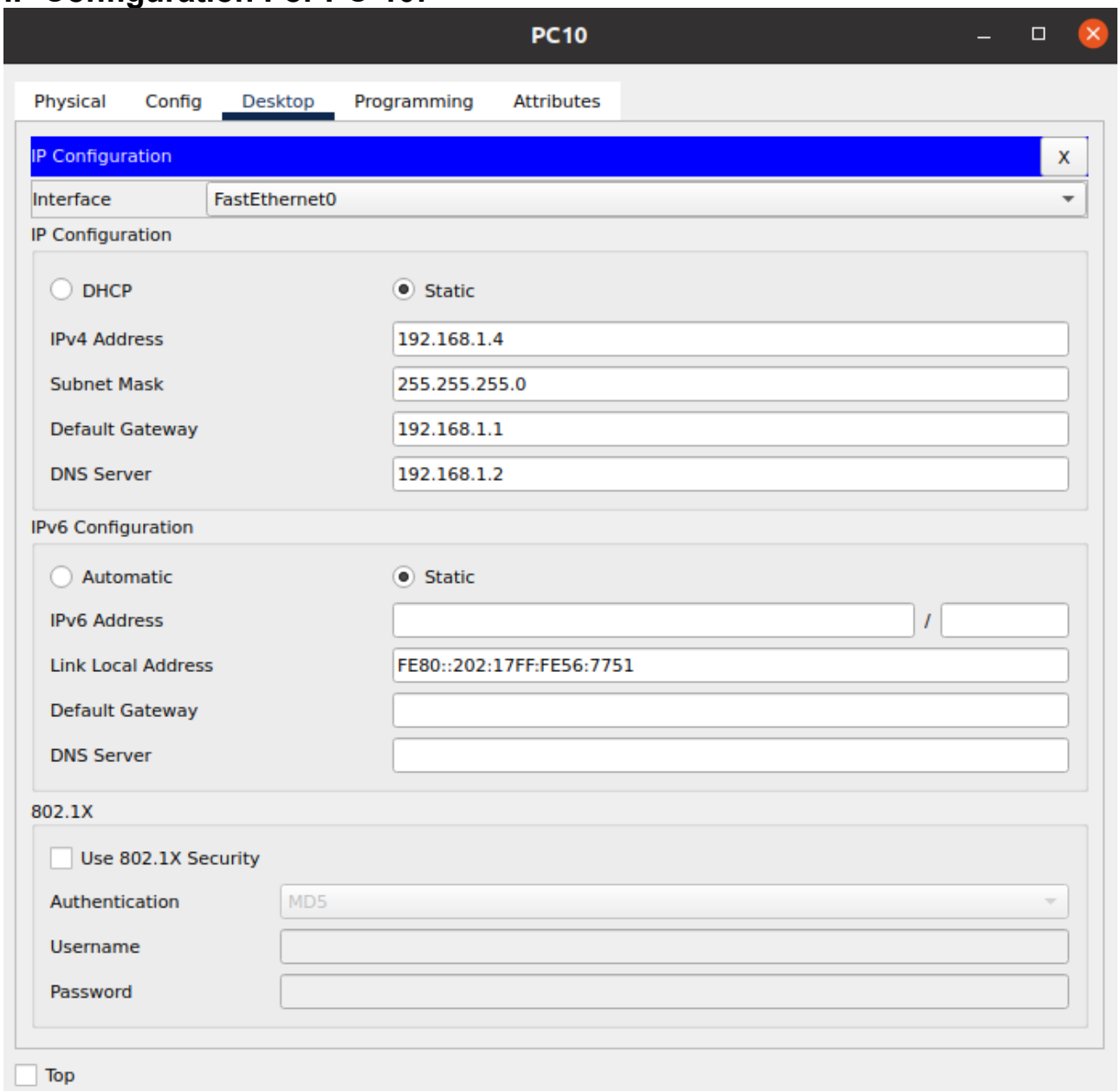
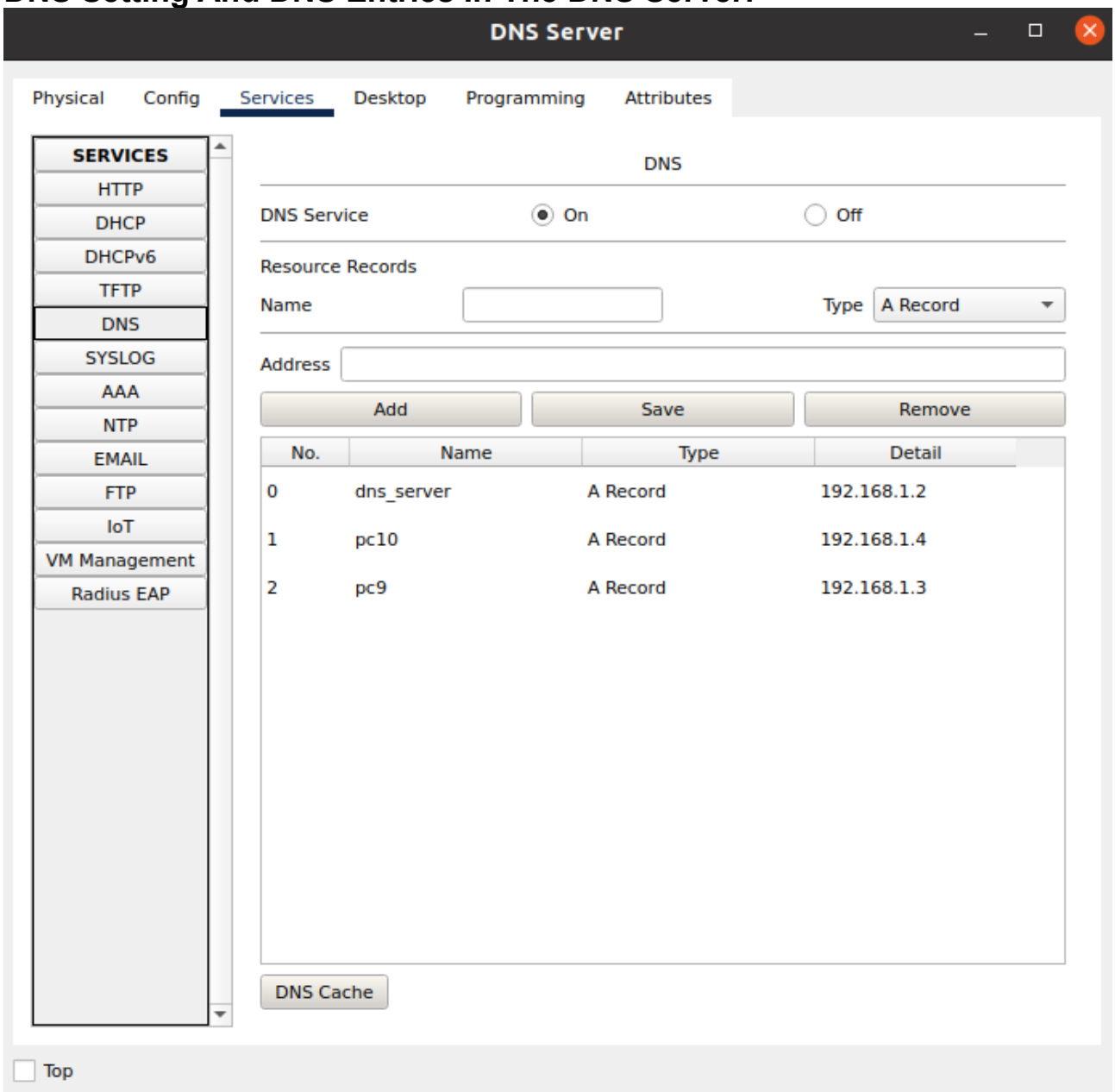
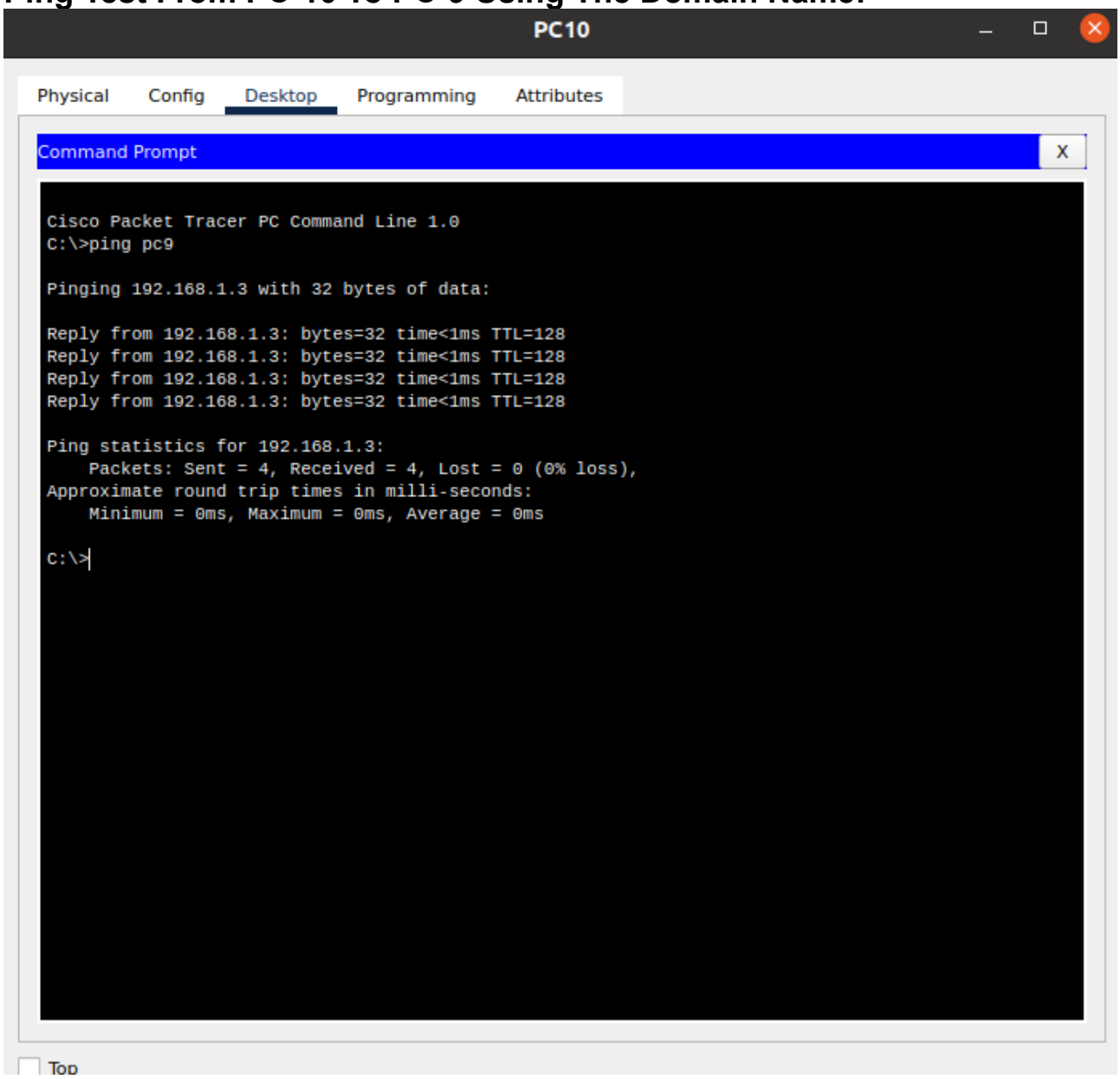
## IP Configuration For PC-10:



## DNS Setting And DNS Entries In The DNS Server:



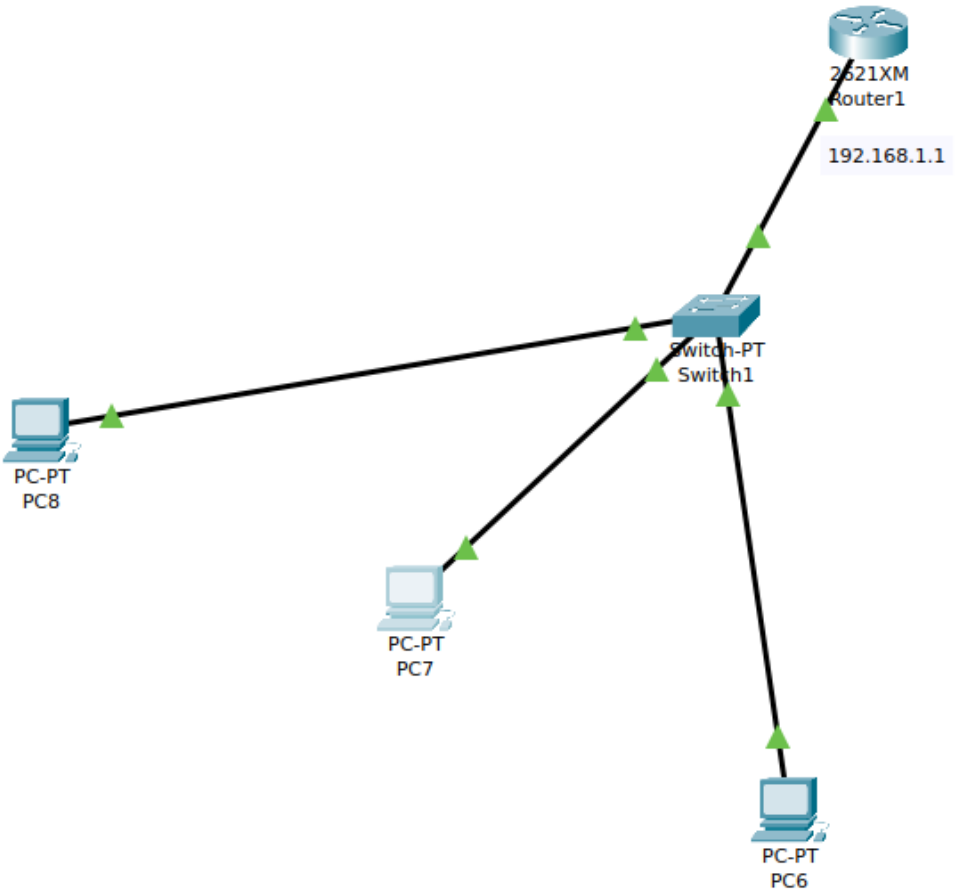
## Ping Test From PC-10 To PC-9 Using The Domain Name:



# Task 2: Configuring DHCP Server On A Router

**Answer:**
**Step 1:** First of all we will build a topology.
**Step 2:** Place 3 Computer Devices and connect them with a switch.
**Step 3:** Place a router **2621XM** and connect this router with switch.
**Step 4:** Now our topology for this task is completed.
**Step 5:** In this task, we will configure a DHCP server on a Router.
**Step 6:** On the router, we will configure interface fa0/0 to act as the default gateway.
**Step 7:** We will configure the router as a DHCP server using Command Line Interface.
**Step 8:** Open the CLI in the router by simply clicking on the router and going into the CLI Tab.
**Step 9:** Now write the following chain of commands on the router.
**Chain Of Commands:**
***Command 1:*** *Router>enable*
***Command 2:*** *Router#configure terminal*
***Command 3:*** *Router(config)#interface FastEthernet0/0*
***Command 4:*** *Router(config-if)#ip address 192.168.1.1 255.255.255.0*
***Command 5:*** *Router(config-if)#no shutdown*
***Command 6:*** *Router(config-if)#ex*
***Command 7:*** *Router(config)#ip dhcp pool P1*
***Command 8:*** *Router(dhcp-config)#network 192.168.1.1 255.255.255.0*
***Command 9:*** *Router(dhcp-config)#default-router 192.168.1.1*
***Command 10:*** *Router(dhcp-config)#dns-server 192.168.1.10*
***Command 11:*** *Router(dhcp-config)#ex*
***Command 12:*** *Router(config)#ip dhcp excluded-address 192.168.1.1 192.168.1.10*
***Command 13:*** *Now go to every Computer separately and open IP Configuration.*
***Command 14:*** *For every PC. Click for DHCP Option in the IP Configuration menu.*

**Visual Demonstration:**
**Topology:**

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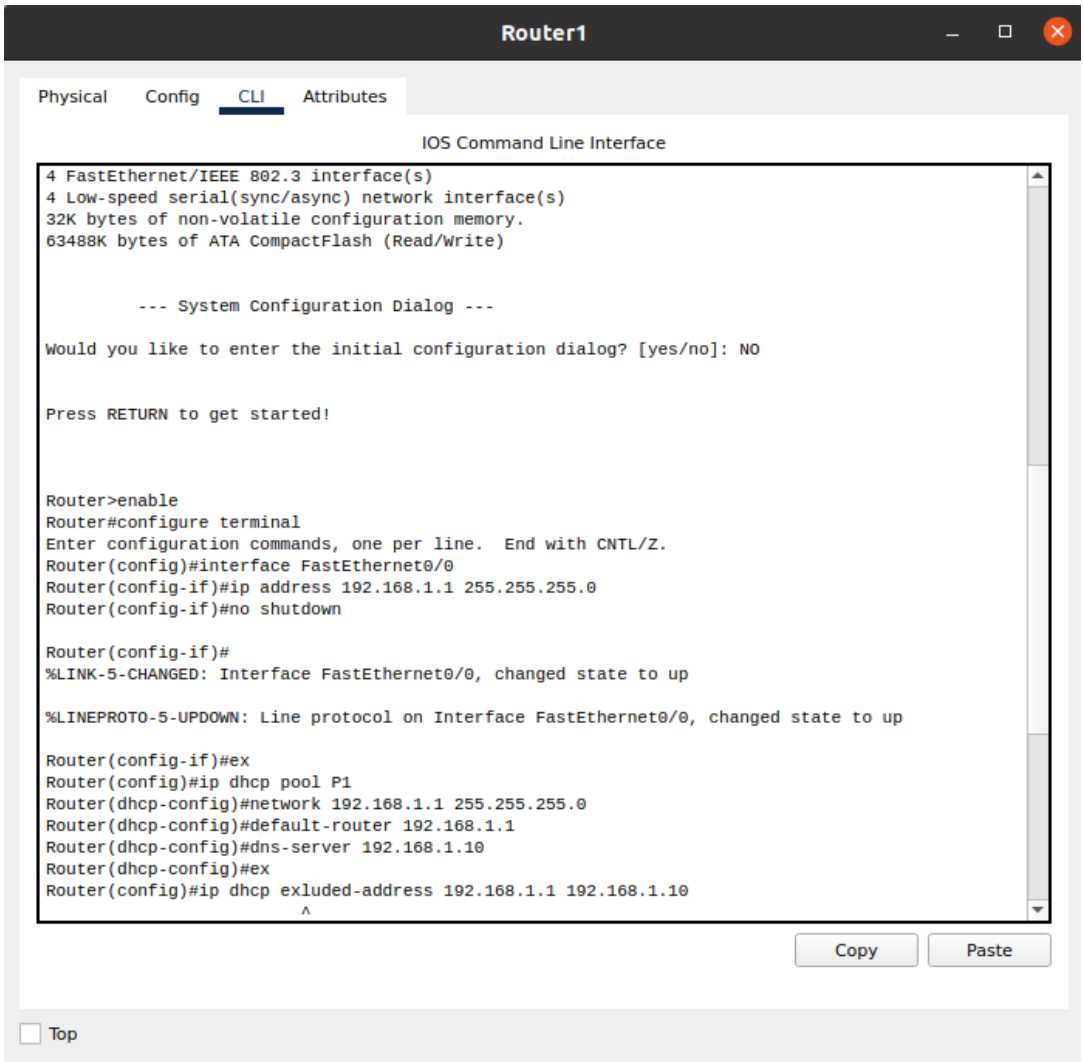
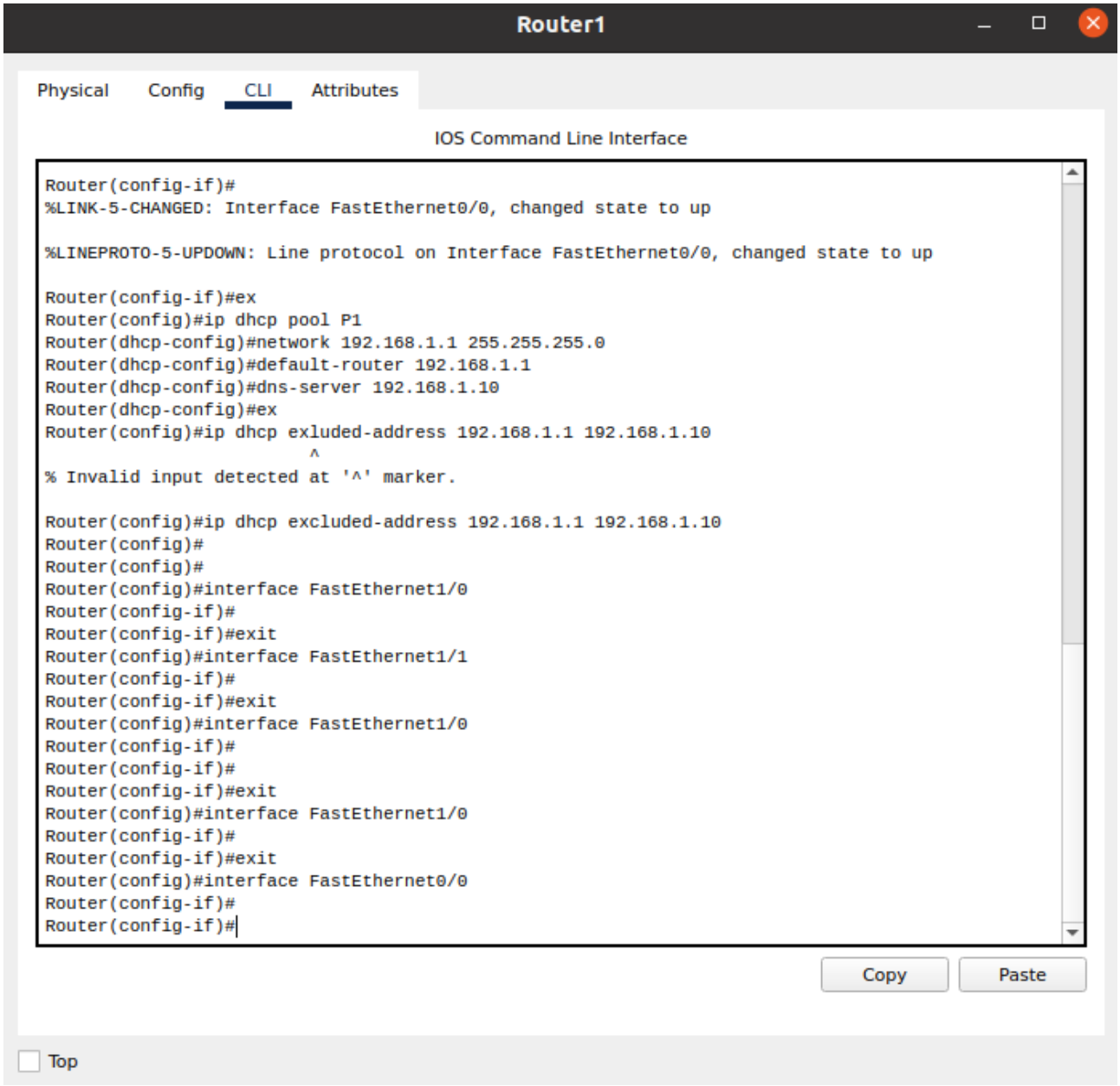
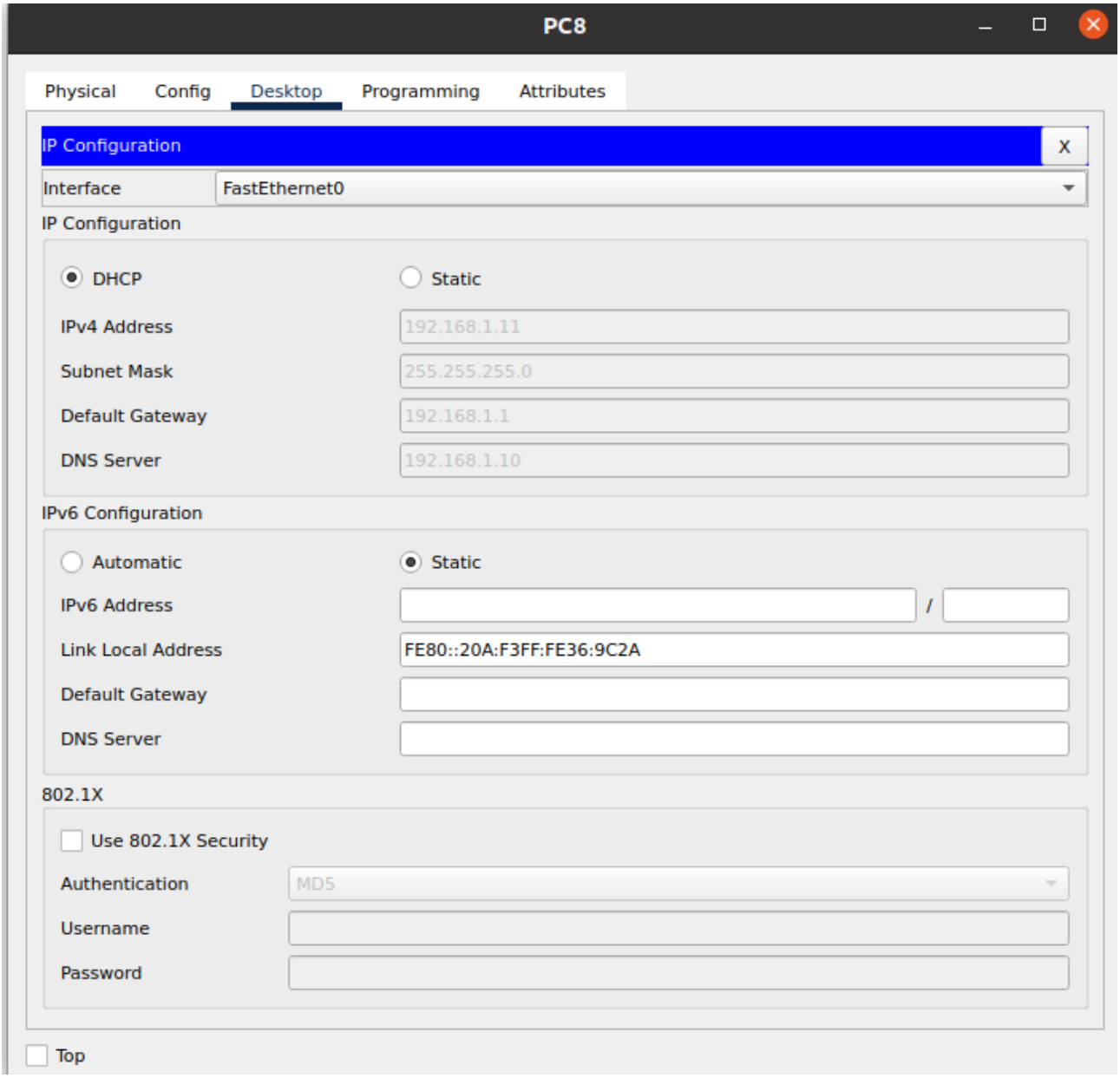
## Router Configuration:




Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
Router(config-if)#ex
Router(config)#ip dhcp pool P1
Router(dhcp-config)#network 192.168.1.1 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.1
Router(dhcp-config)#dns-server 192.168.1.10
Router(dhcp-config)#ex
Router(config)#ip dhcp exluded-address 192.168.1.1 192.168.1.10
^
% Invalid input detected at '^' marker.
Router(config)#ip dhcp excluded-address 192.168.1.1 192.168.1.10
Router(config)#
Router(config)#
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#
Copy
Paste
Top

.

## DHCP In IP Configuration On PC's:
## PC-8:

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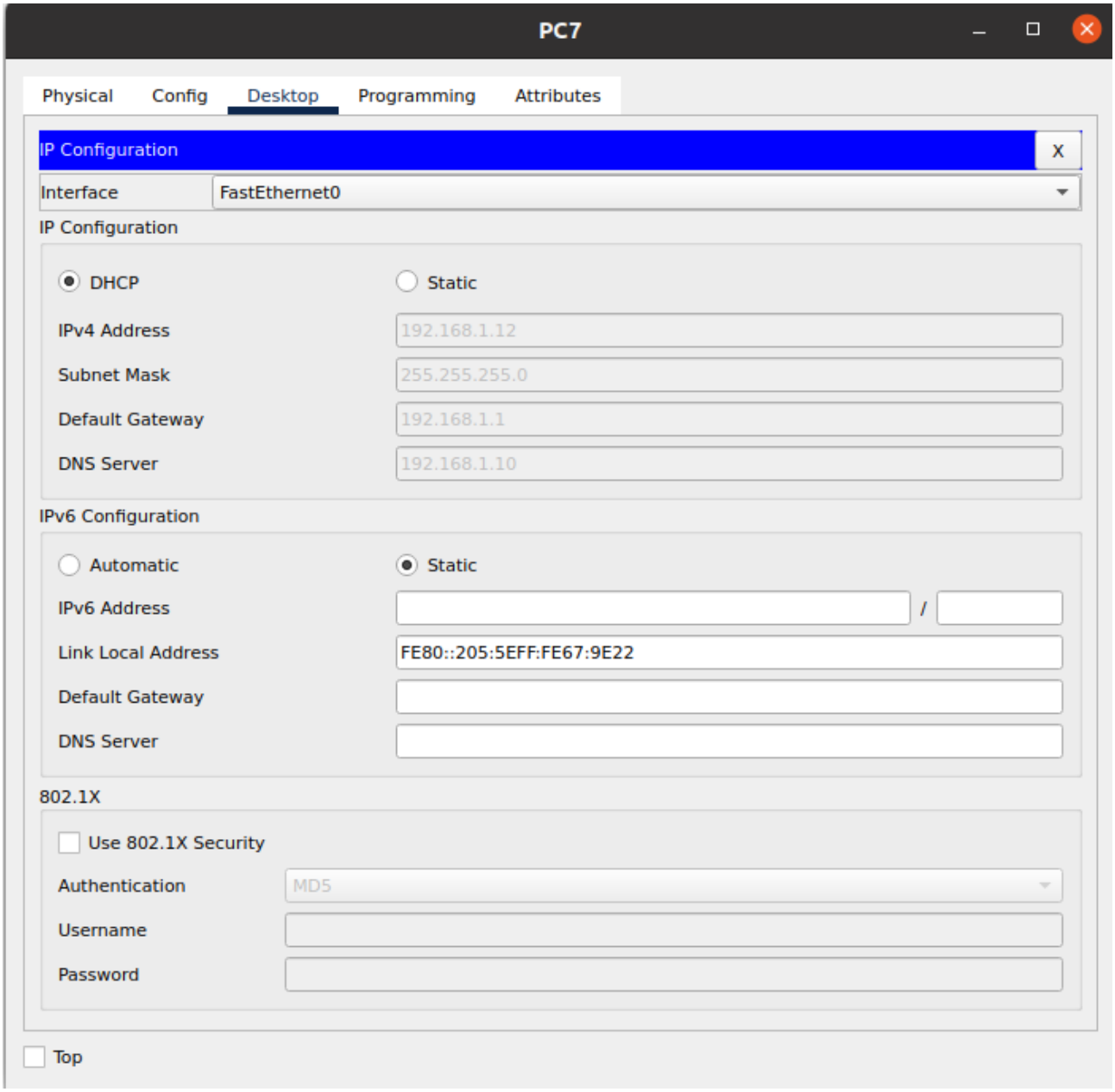
## PC-7:


PC7
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.12
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
192.168.1.10
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::205:5EFF:FE67:9E22
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

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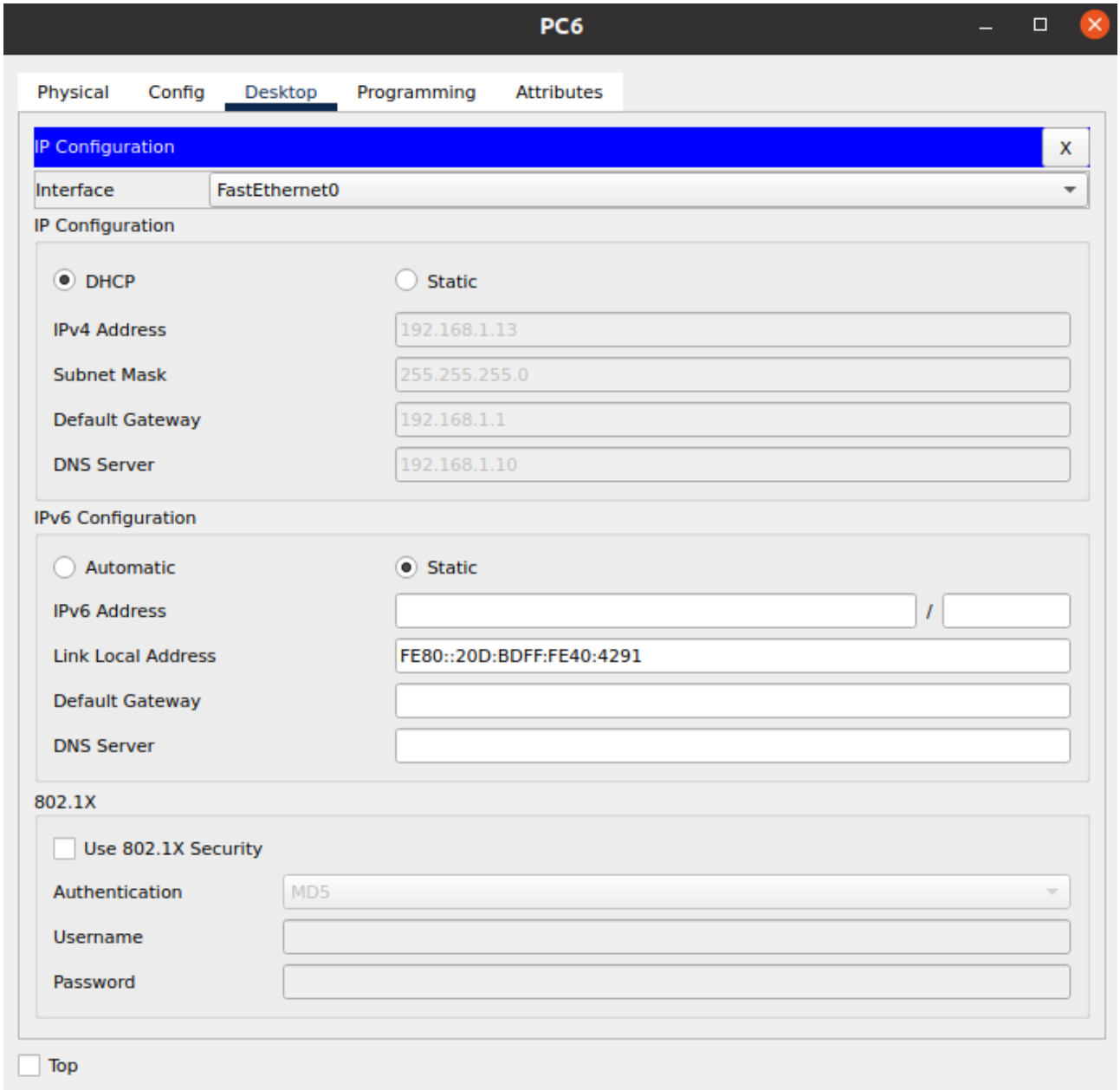
## PC-6:


PC6
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.13
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
192.168.1.10
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::20D:BDFF:FE40:4291
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

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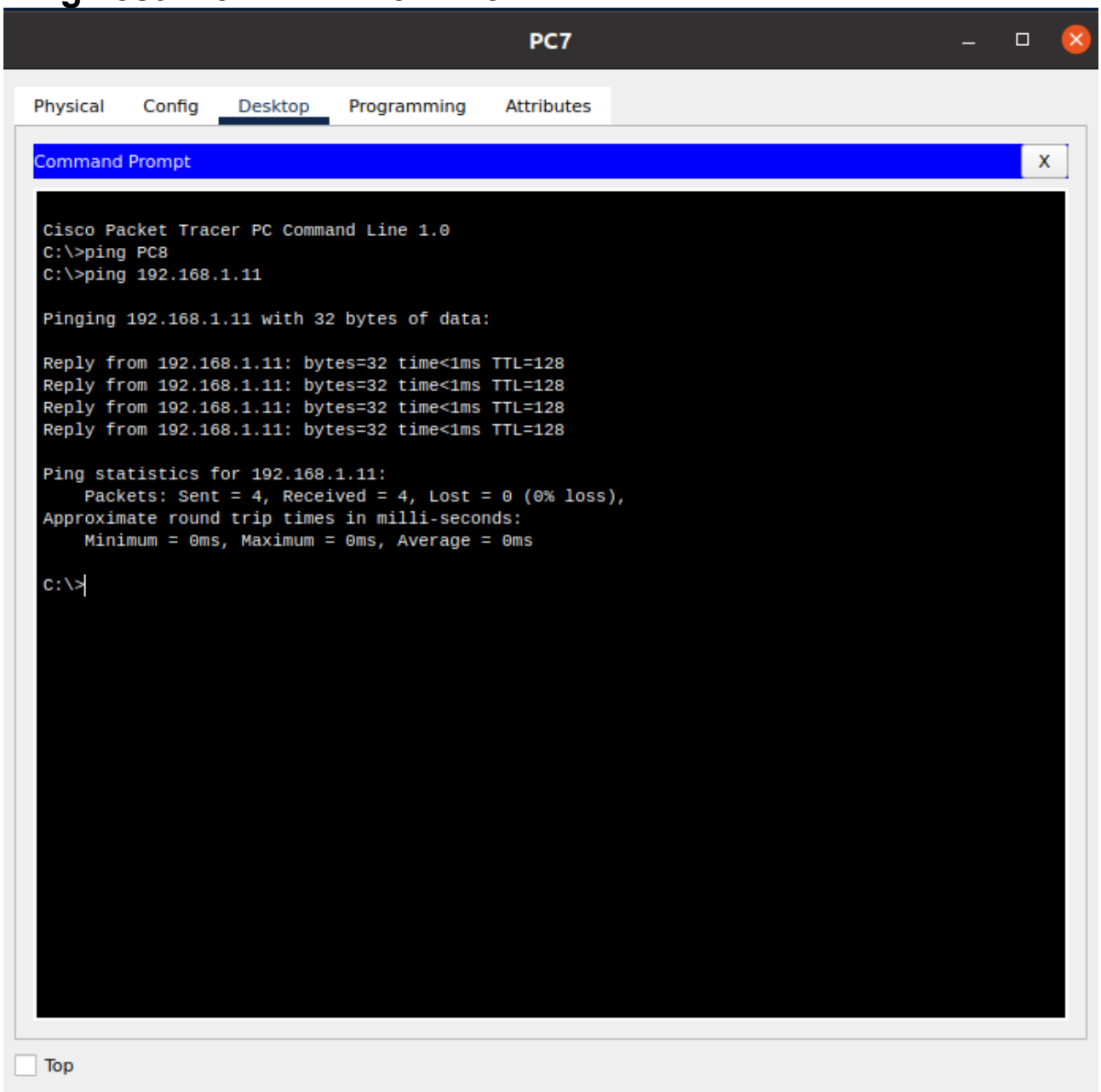
## Ping Test From PC-7 To PC-8:

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# Task 3: Configuring DHCP service on a generic server

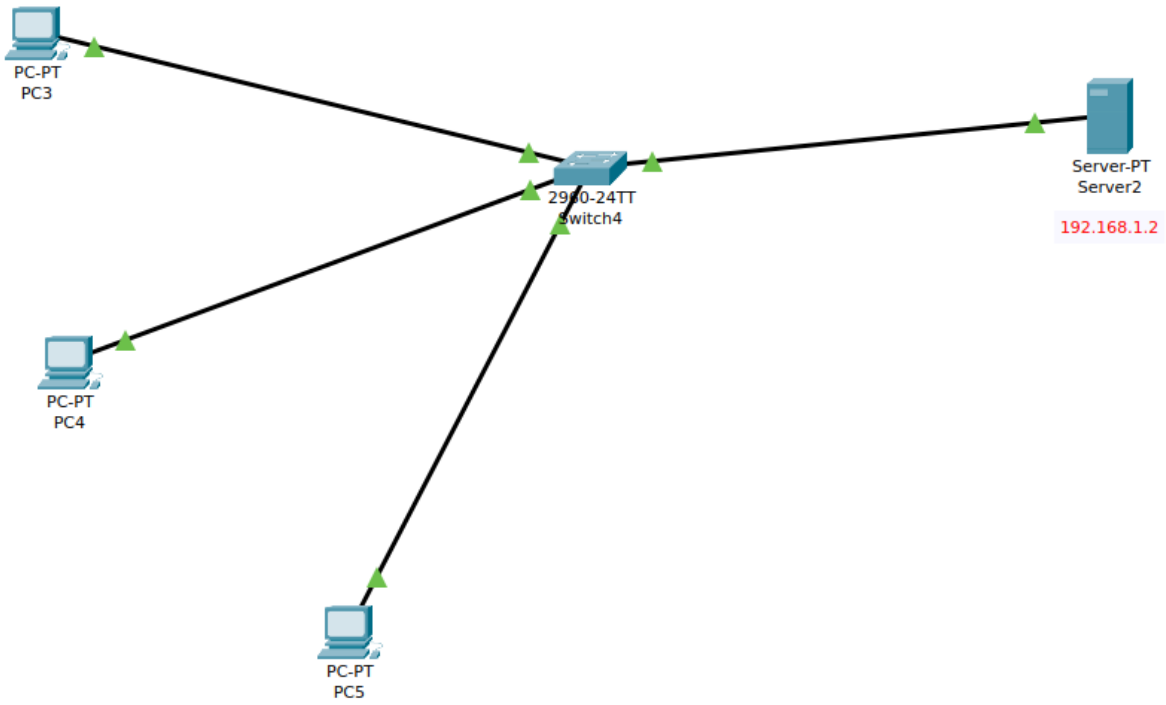
**Answer:**

**Step 1:** First of all we will build a topology.
**Step 2:** Place 3 Computer Devices and connect them with a switch.
**Step 3:** Place a server “Server-PT” and connect this server with switch.
**Step 4:** Now our topology for this task is completed.
**Step 5:** In this task, we will configure a DHCP service on a generic server.
**Step 6:** First of all we will configure a static IP address on the server.
**Step 7:** Then we will configure a DHCP service on the generic server.
**Step 8:** For this purpose, click on the server. Then click on the Services Tab. We will pick DHCP on the menu.
**Step 9:** We will set the DHCP Perimeters according to our need.

**Setting Perimeters:**

***Pool name:*** *serverPool*
***Default Gateway:*** *192.168.1.1*
***DNS Server:*** *192.168.1.10*
***Start IP Address:*** *192.168.1.0*
***Subnet Mask:*** *255.255.255.0*
***Maximum Number of users:*** *255*

## Visual Demonstration:
## Topology:

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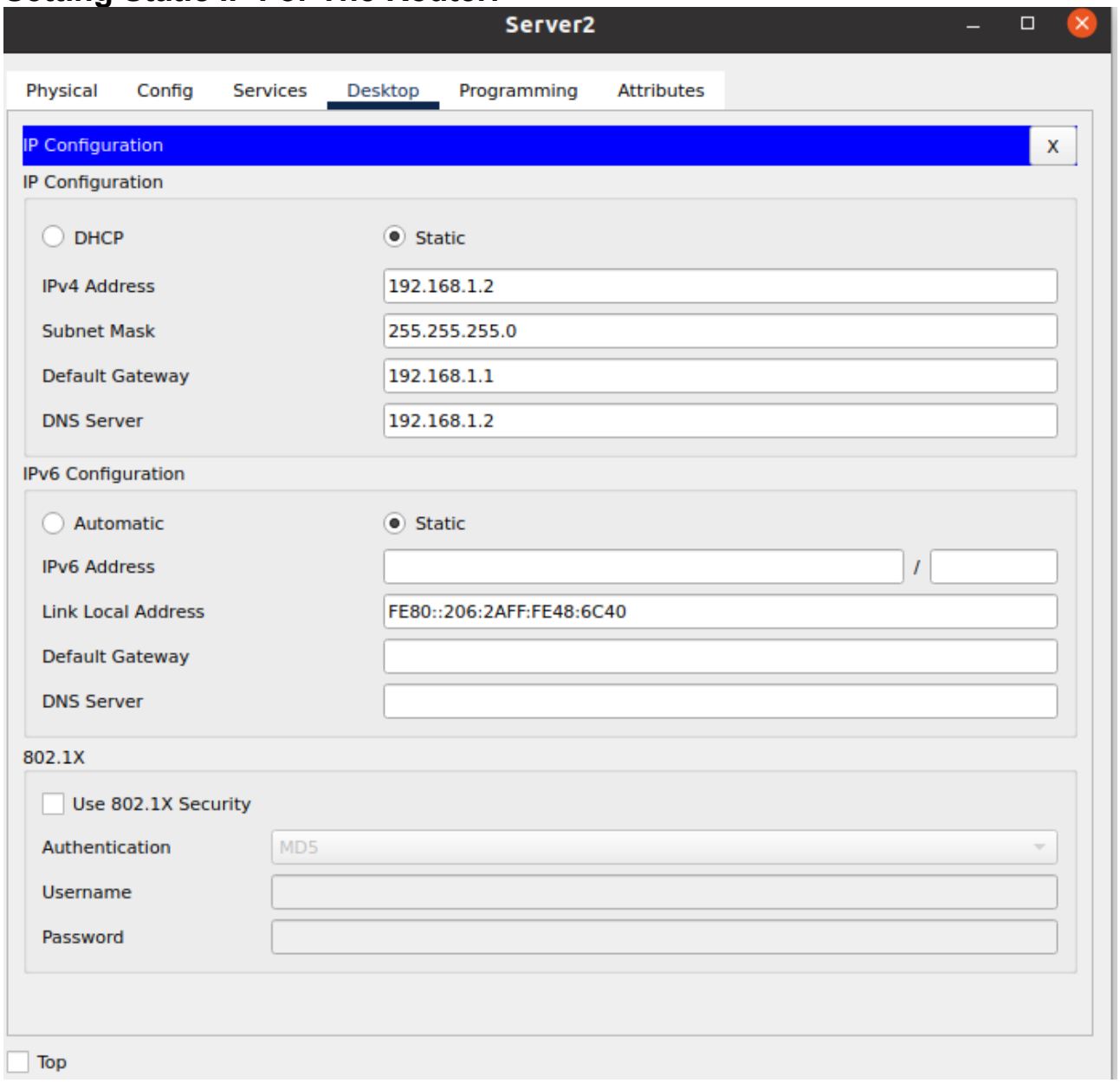
## Setting Static IP For The Router:

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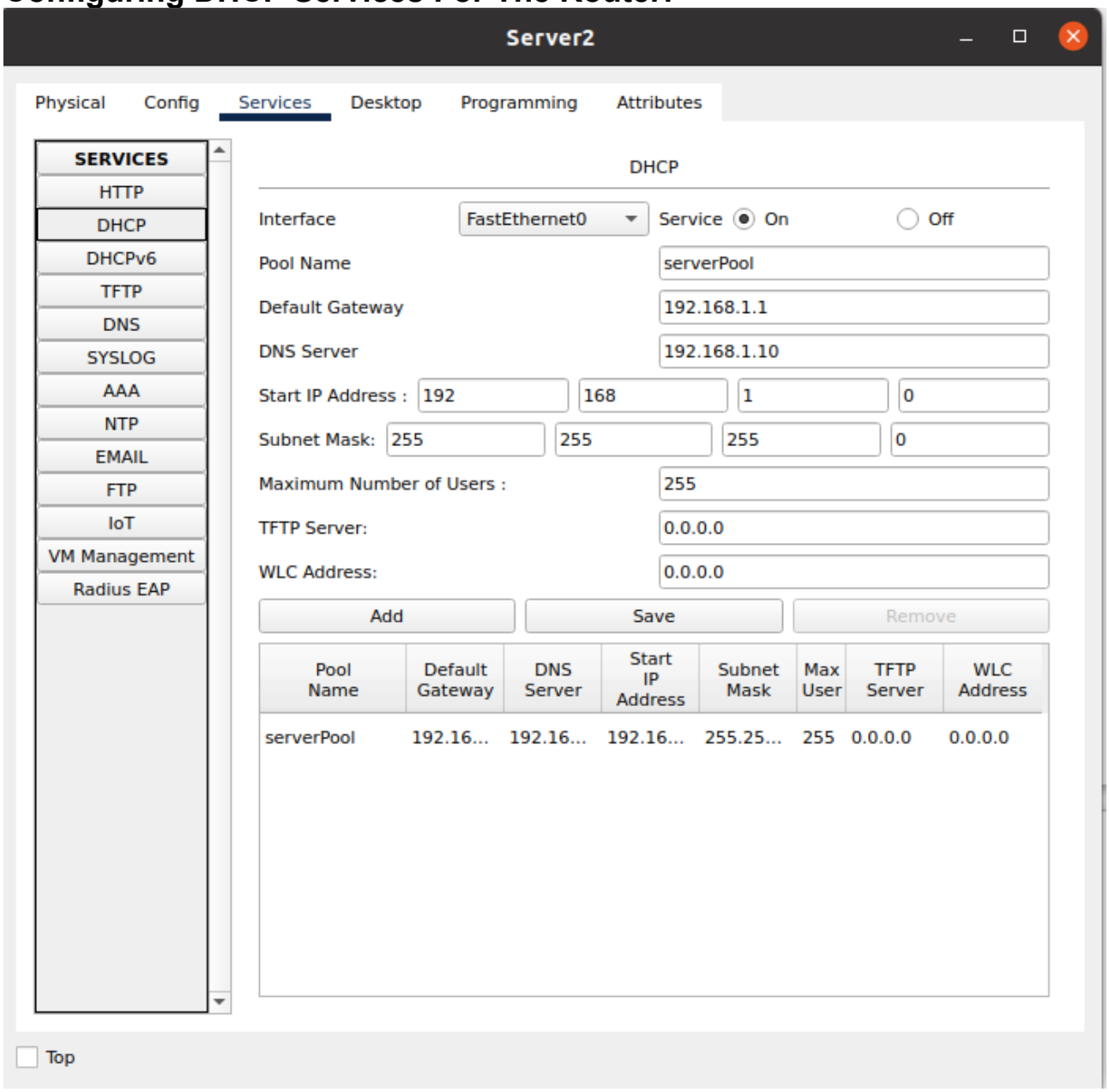
## Configuring DHCP Services For The Router:

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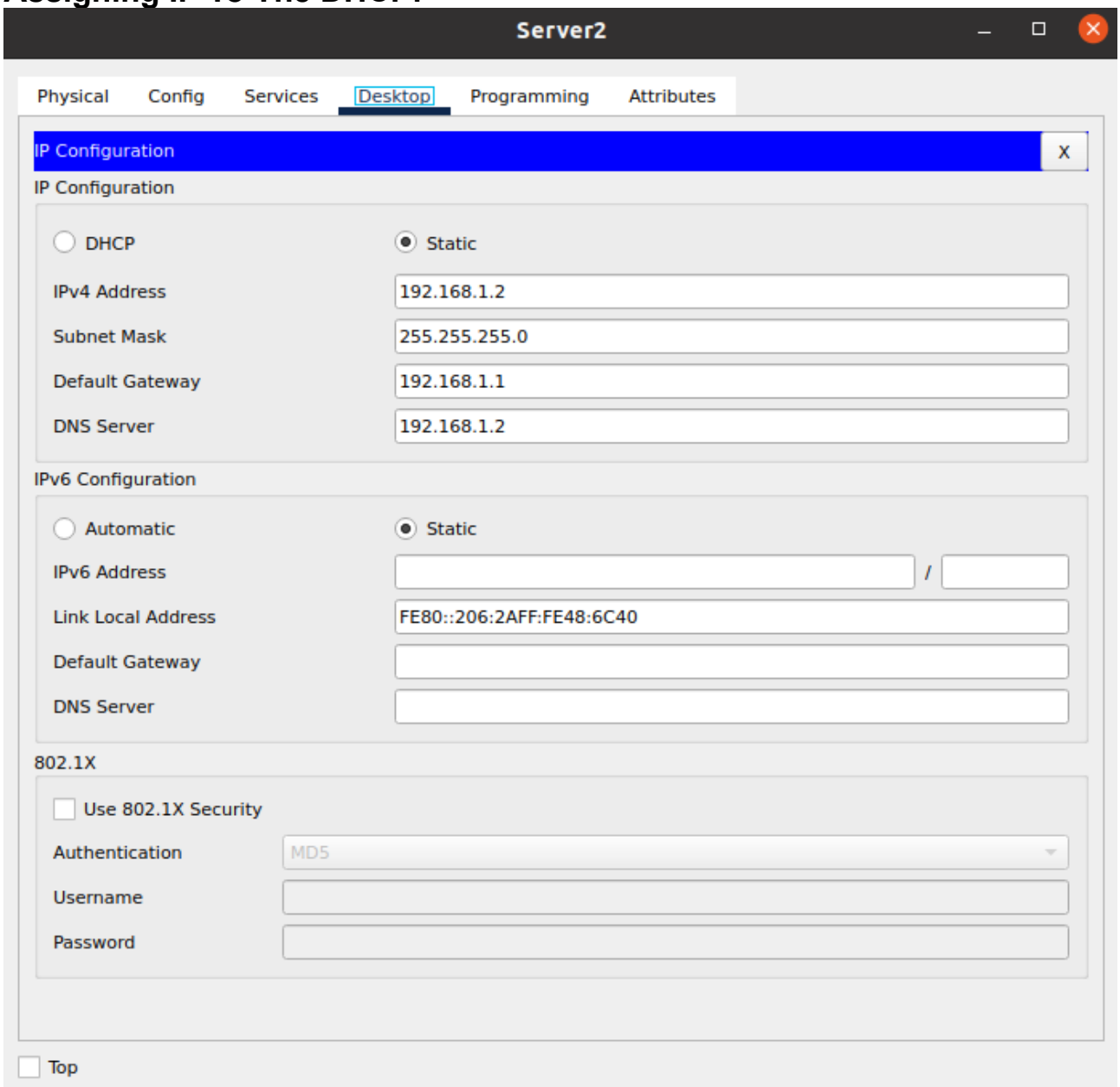
## Assigning IP To The DHCP:

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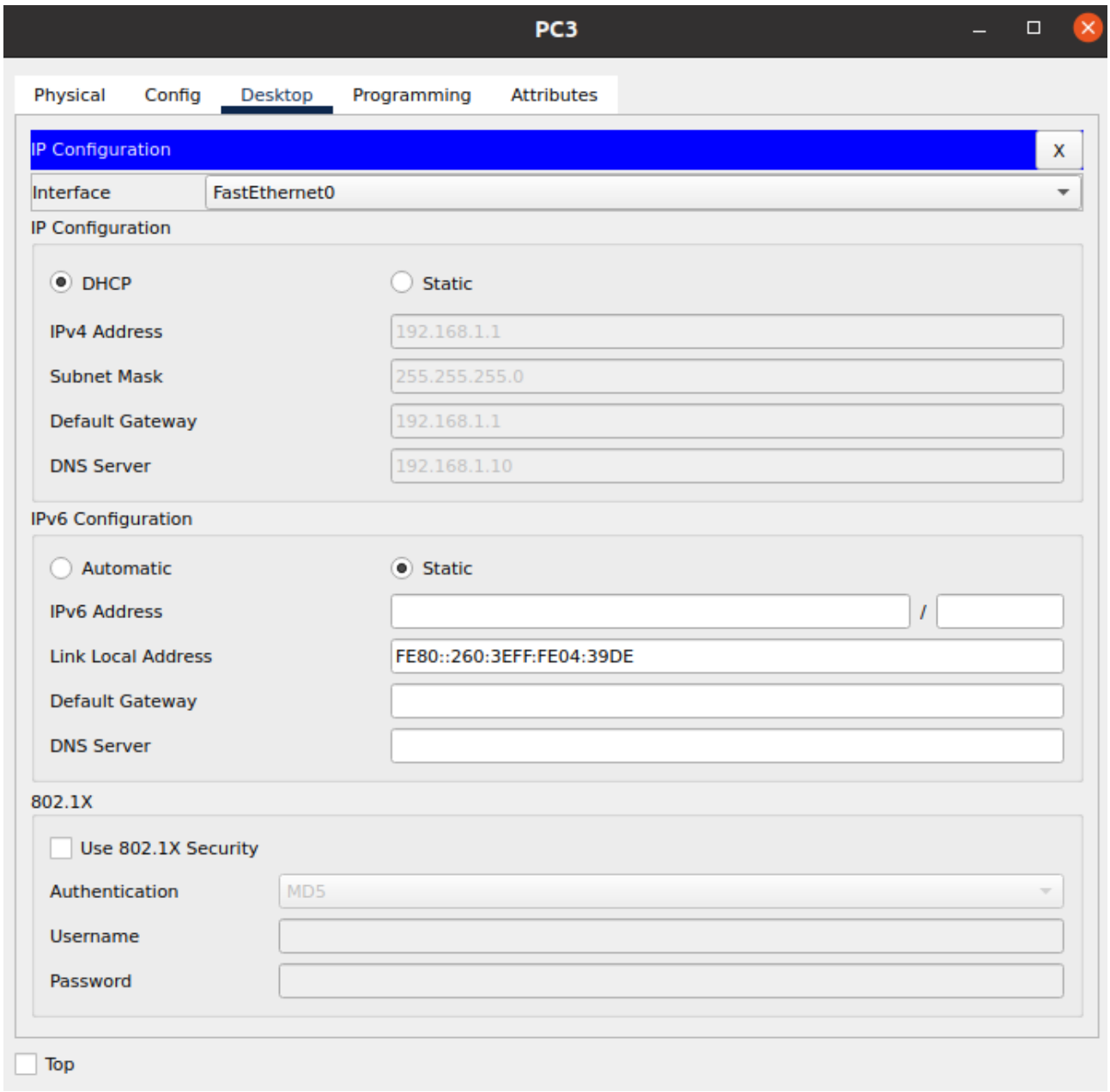
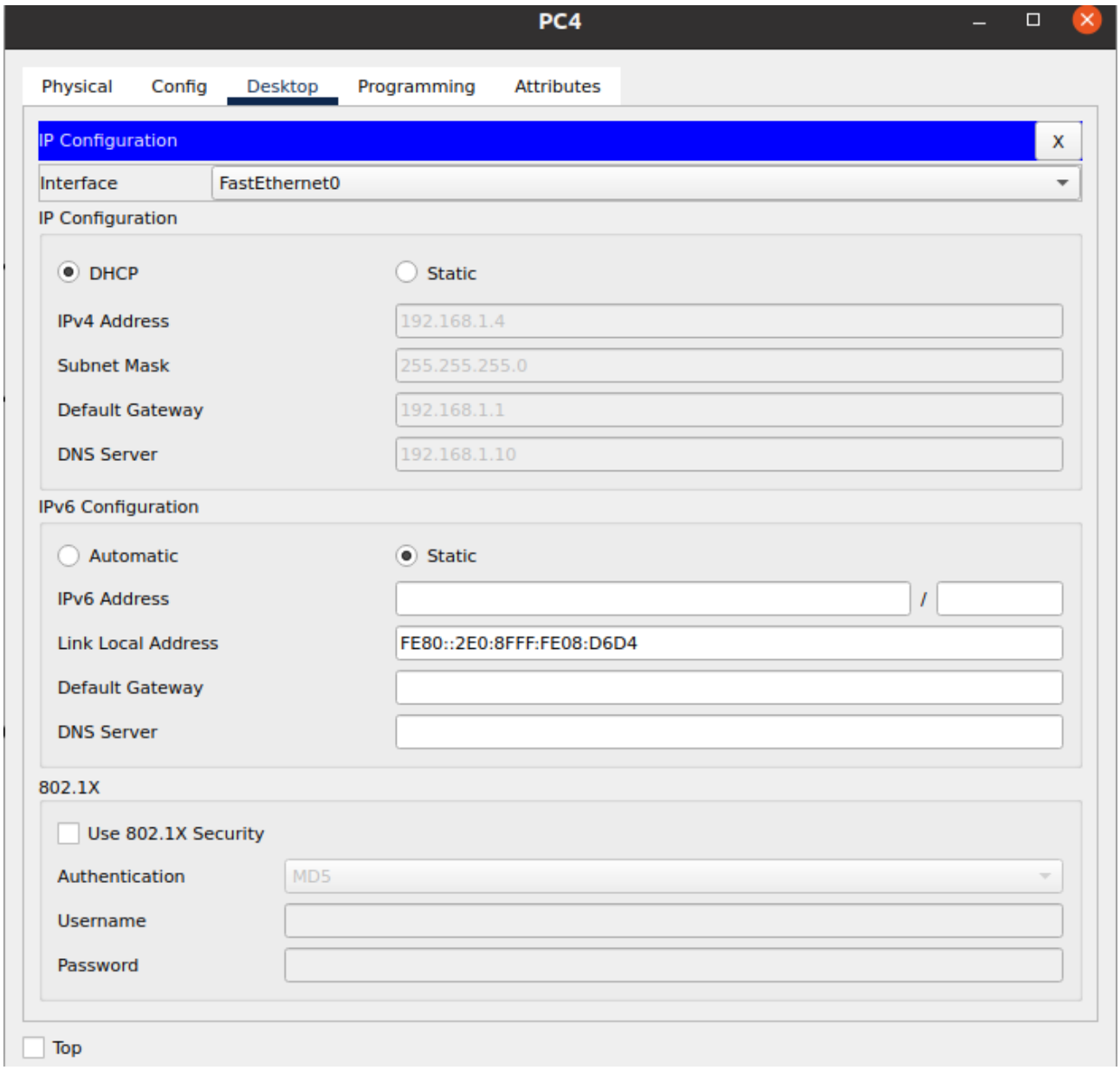
**Enabling DHCP On Every Single PC:**
**PC-3:**


PC3
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.1
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
192.168.1.10
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::260:3EFF:FE04:39DE
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

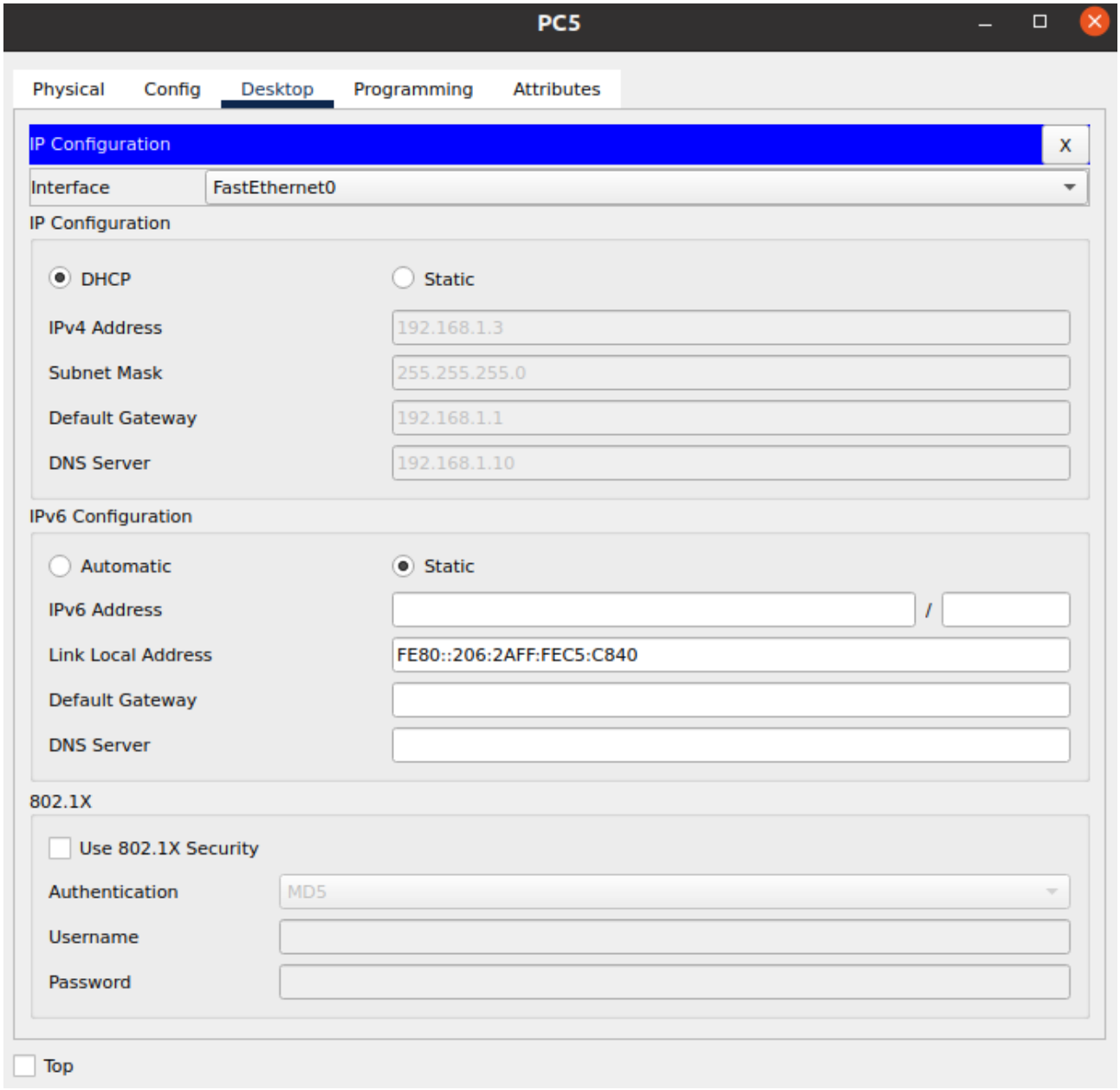
.

## PC-4:


PC4
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.4
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
192.168.1.10
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::2E0:8FFF:FE08:D6D4
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

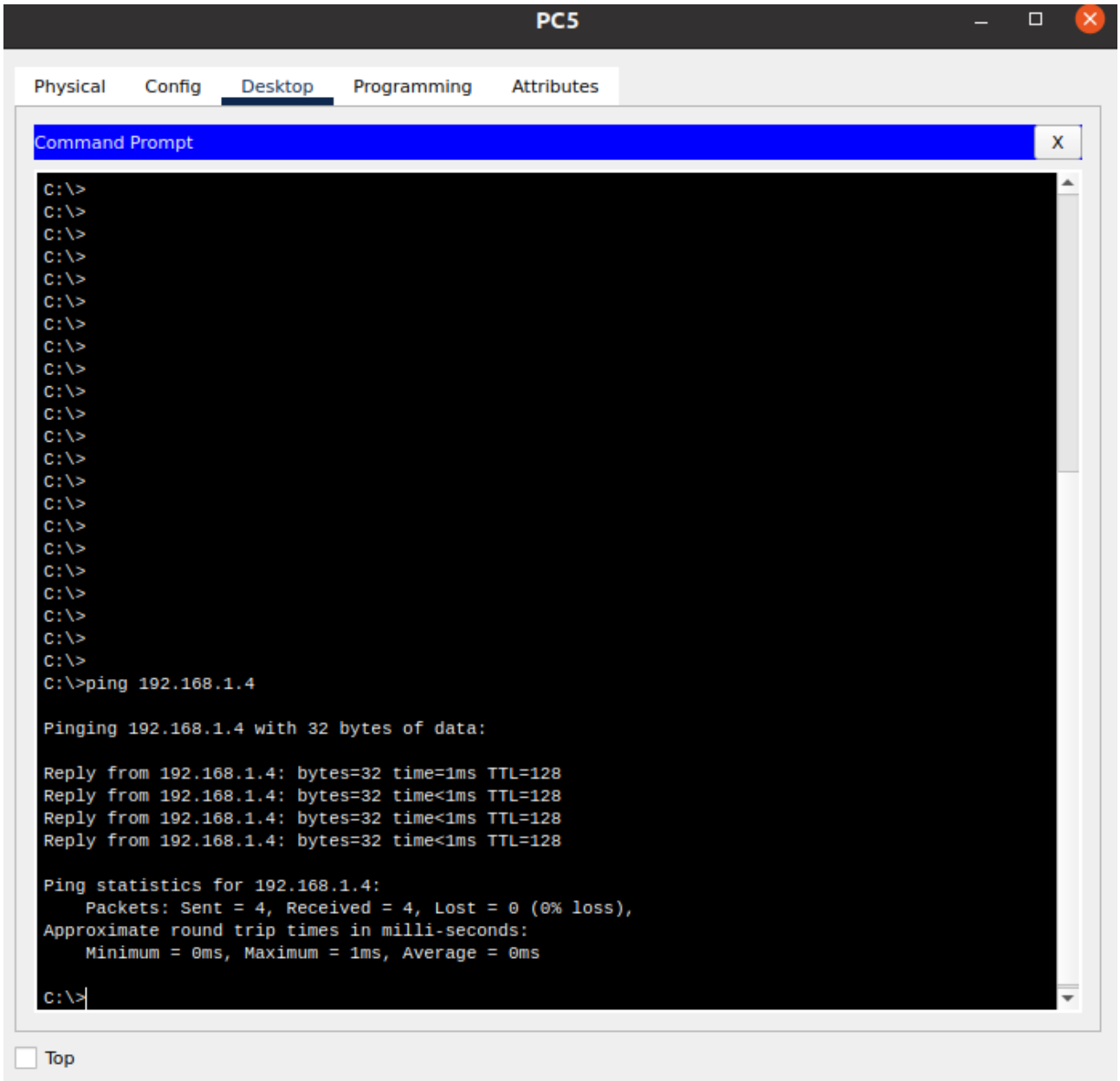
.

## PC-5:


PC5
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.3
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
192.168.1.10
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::206:2AFF:FEC5:C840
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

.

## Pinging From PC-5 To PC-4:

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# Task 4: Configuring DHCP, DNS and Web Server Configuration In Cisco Packet Tracer

**Answer:**

**Step 1:** Creating the Topology

**Step 2:** Place 3 servers,

- ***DHCP***
- ***DNS***
- ***Web-Server***

**Step 3:** Place a Switch

**Step 4:** Connect all three servers with this switch

**Step 5:** Connect 2 PC's with this server too.

**Step 6:** Now Place a router.

**Step 7:** Connect this Switch with the router.

**Step 8:** Now place another Switch

**Step 9:** Connect this newly placed Switch with the router.

**Step 10:** Place two PC's and connect them with the newly placed Switch.

***Key Point: The connect b/w all of these devices should be made with the COPPER-STRAIGHT-THROUGH cable.***

**Step 11:** Open the router and configure the interface F0/0 to act as a default gateway for our LAN.

**Step 12:** Assign the IP Addresses to the F0/0 and F0/1 of the router.

**Step 13:** Apply the commands in the configuration mode on the Router.

**Chain Of Commands:**

```
ip dhcp pool P1
network 192.168.1.0 255.255.255.0
default-router 192.168.1.2
ip dhcp pool P2
network 192.168.2.0 255.255.255.0
default-router 192.168.2.2
```

**Step 14:** Now open the DHCP server and go to its IP Configuration tab.

**Step 15:** Assign the following in the IP Configuration Tab.

- ***IP Address***
- ***Subnet Mask***
- ***Default Gateway***
- ***DNS Server***

**Step 16:** Now go to the Services tab.

**Step 17:** Then go to the DHCP tab in the services tab.

**Step 18:** In the DHCP Settings  add Pool P1 and Pool P2 with their respective IP Addresses.

**Step 19:** Then open the DNS server and go to its IP Configuration tab.

**Step 20:** Assign the following in the IP Configuration Tab.

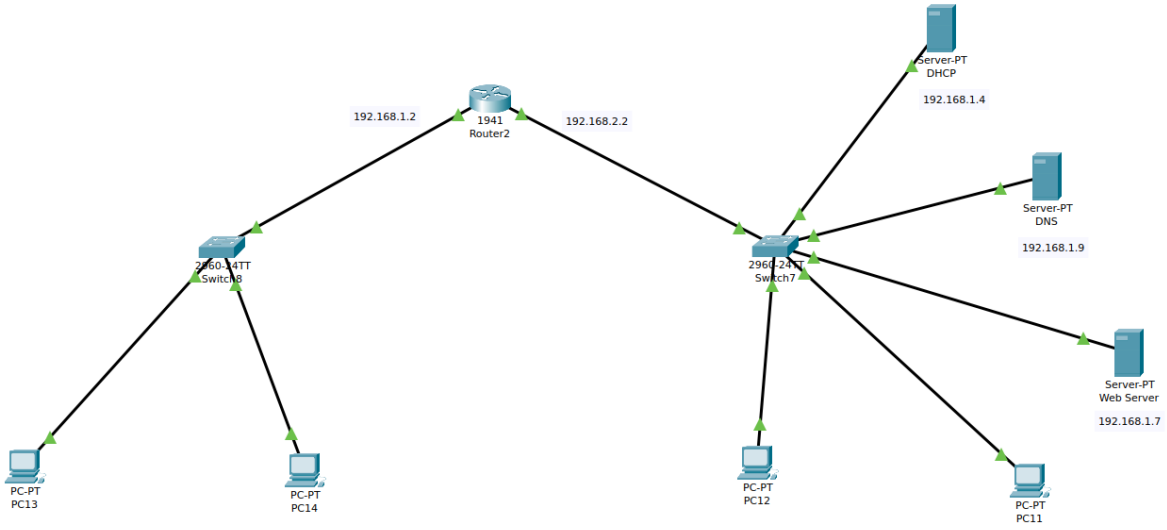
- ***IP Address***
- ***Subnet Mask***
- ***Default Gateway***
- ***DNS Server***

**Step 21:** Go to the Services tab of DNS-Server.
**Step 22:** Then to go the DNS-Tab in the Services.
**Step 23:** Turn on the DNS-Services in the DNS-Tab.
**Step 24:** At there, add two IP Addresses with the following names.
***www.dhcp.com 192.168.1.4***
***www.webserver.com 192.168.1.7***
**Step 25:** Go to the Web-Server and go to its IP Configuration tab.
**Step 26:** Assign the following in the IP Configuration Tab.

- ***IP Address***
- ***Subnet Mask***
- ***Default Gateway***
- ***DNS Server***

**Step 27:** Then go to the Services Tab.
**Step 28:** In the Services, open the HTTP Tab.
**Step 29:** At there, enable the HTTP and HTTPS services.
**Step 30:** Then edit the Index.html and update the data in it.
**Step 31:** Now open every PC of this whole connect and enable DHCP in each one by going in the IP Configuration of them separately.
**Step 32:** Perform a ping test b/w PC’s

## Visual Demonstration:
## Topology:

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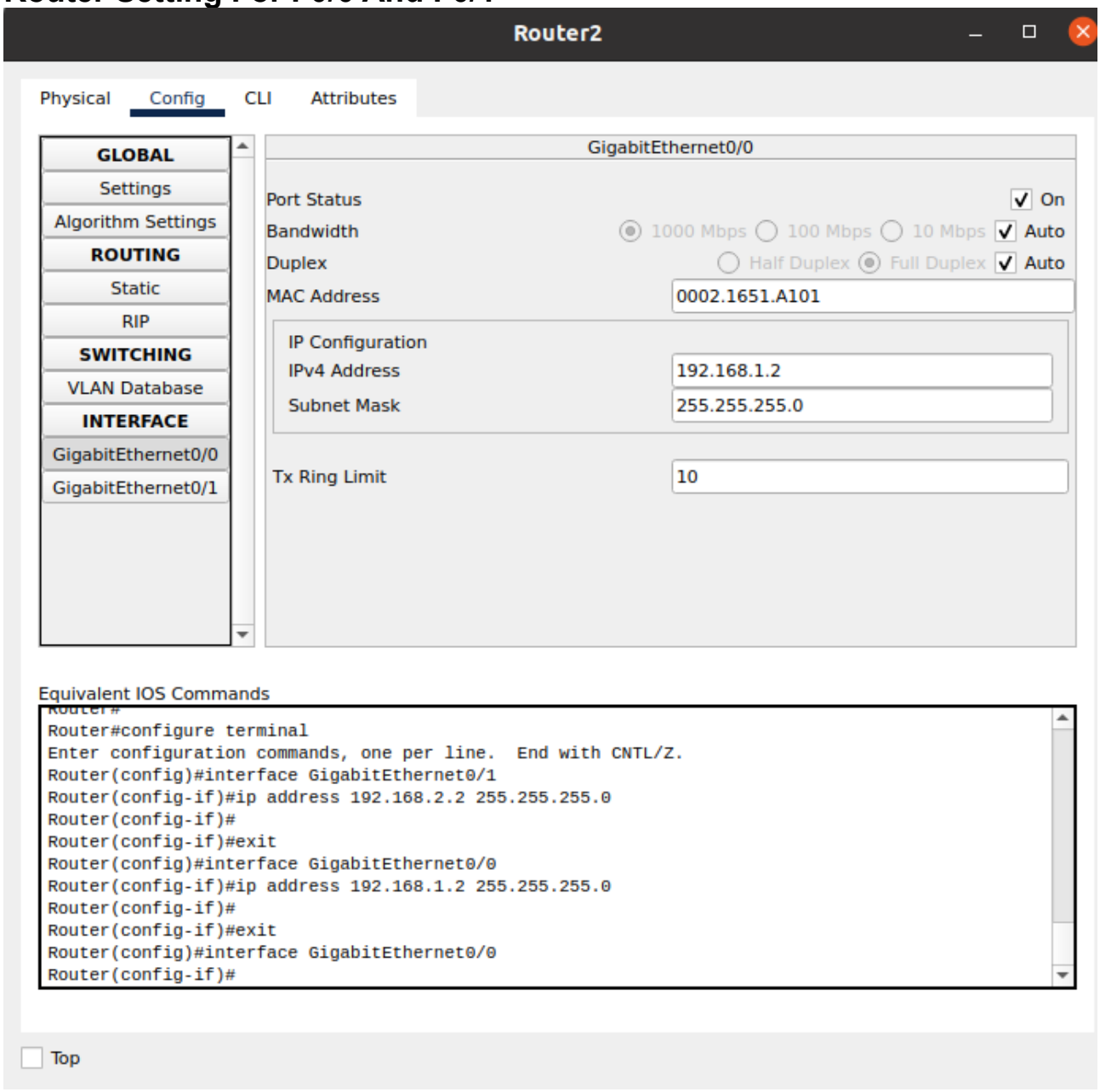
## Router Setting For F0/0 And F0/1

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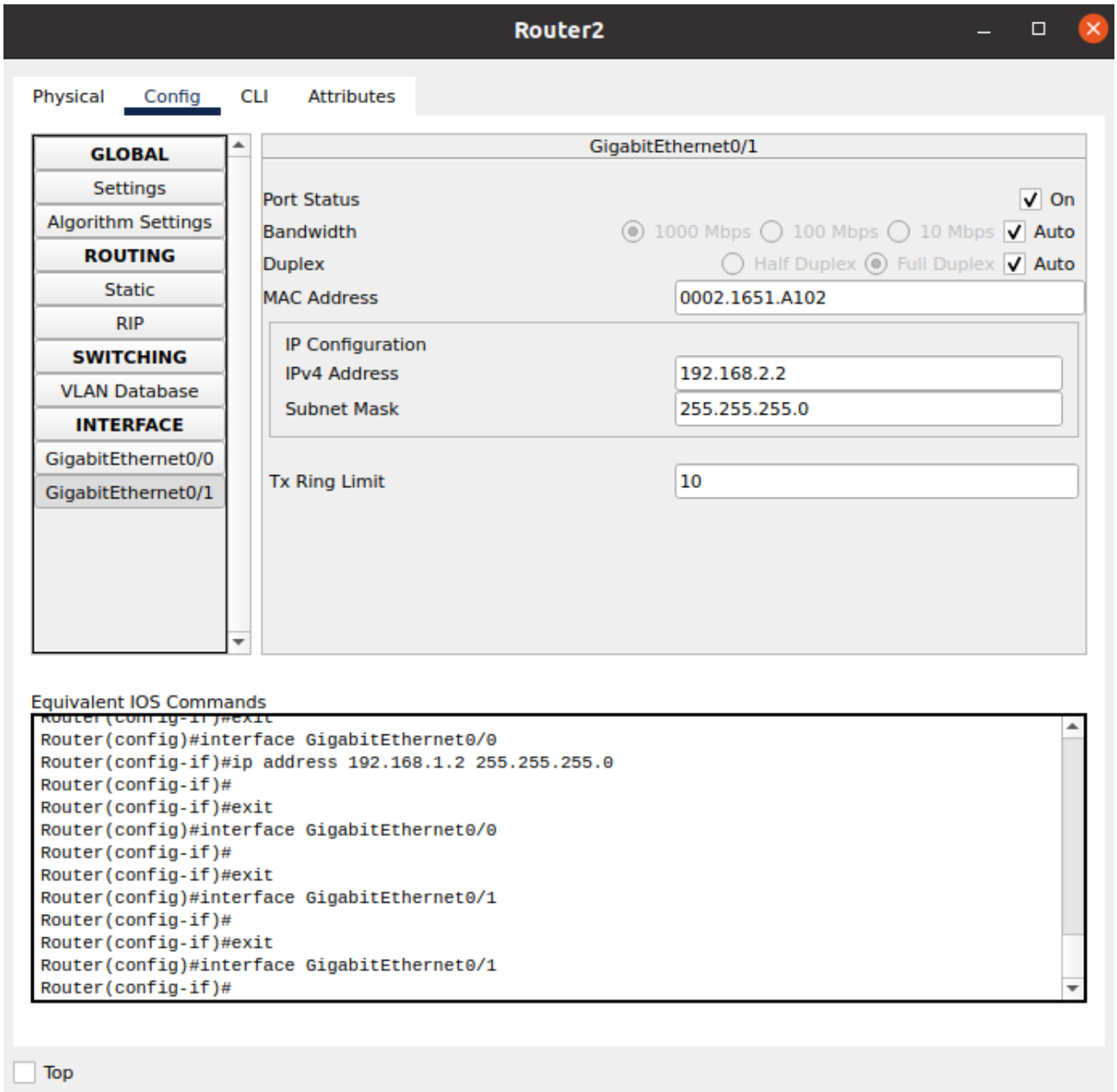
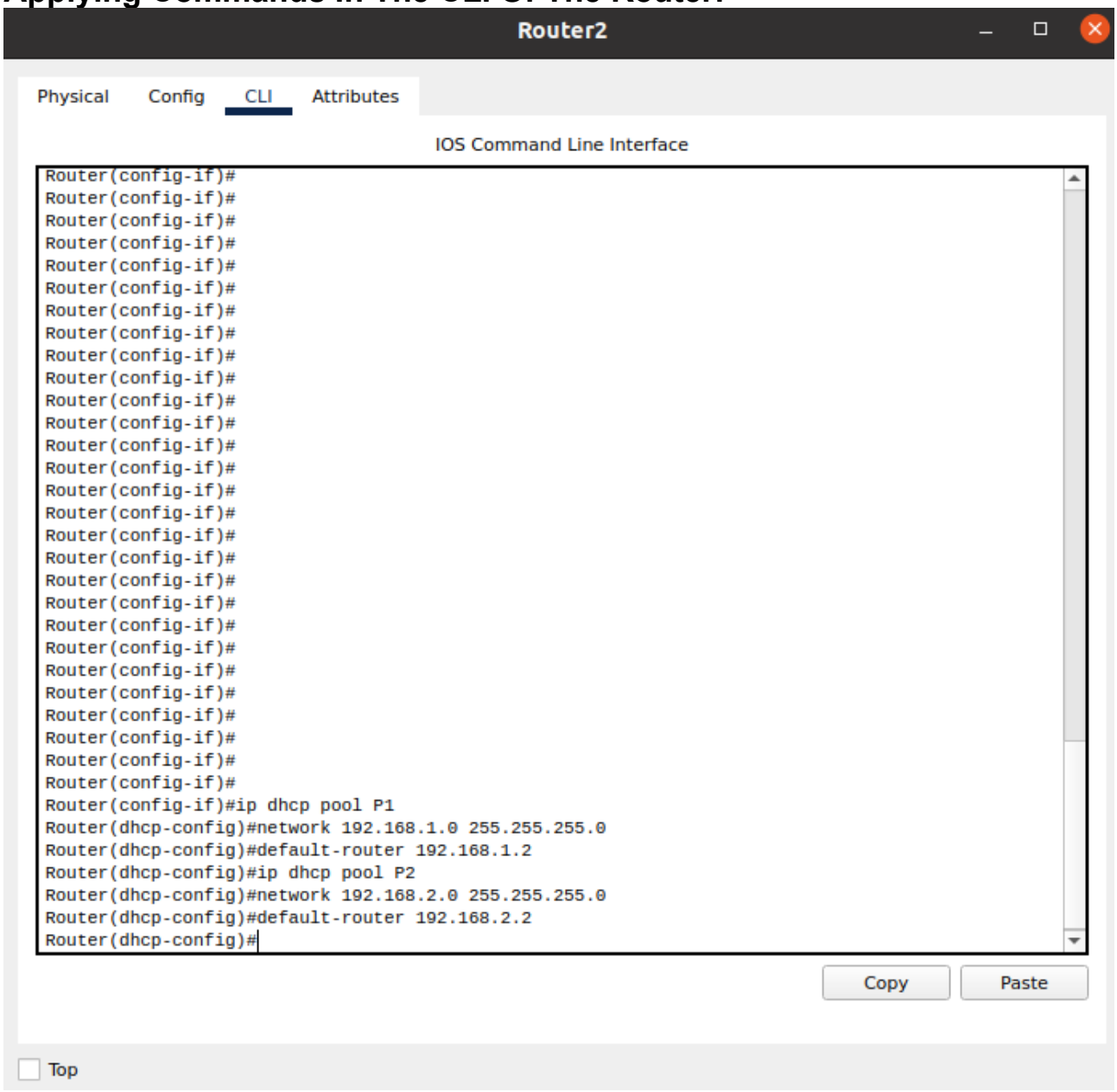

Router2
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0
GigabitEthernet0/1
GigabitEthernet0/1
Port Status
On
Bandwidth
1000 Mbps
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0002.1651.A102
IP Configuration
IPv4 Address
192.168.2.2
Subnet Mask
255.255.255.0
Tx Ring Limit
10
Equivalent IOS Commands
Router(config)#interface GigabitEthernet0/0
Router(config-if)#ip address 192.168.1.2 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
Top

.

## Applying Commands In The CLI Of The Router:

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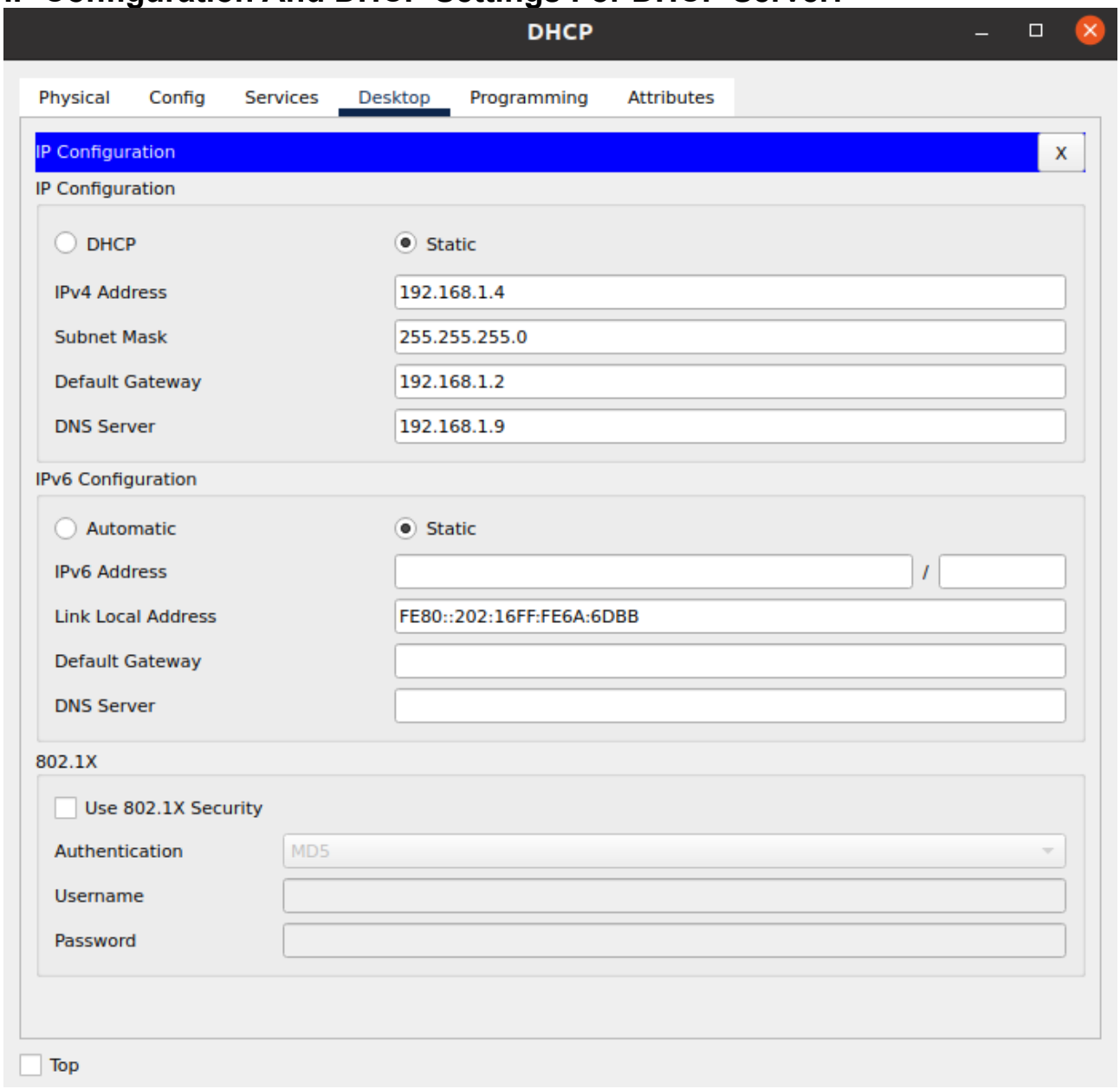
## IP Configuration And DHCP Settings For DHCP Server:

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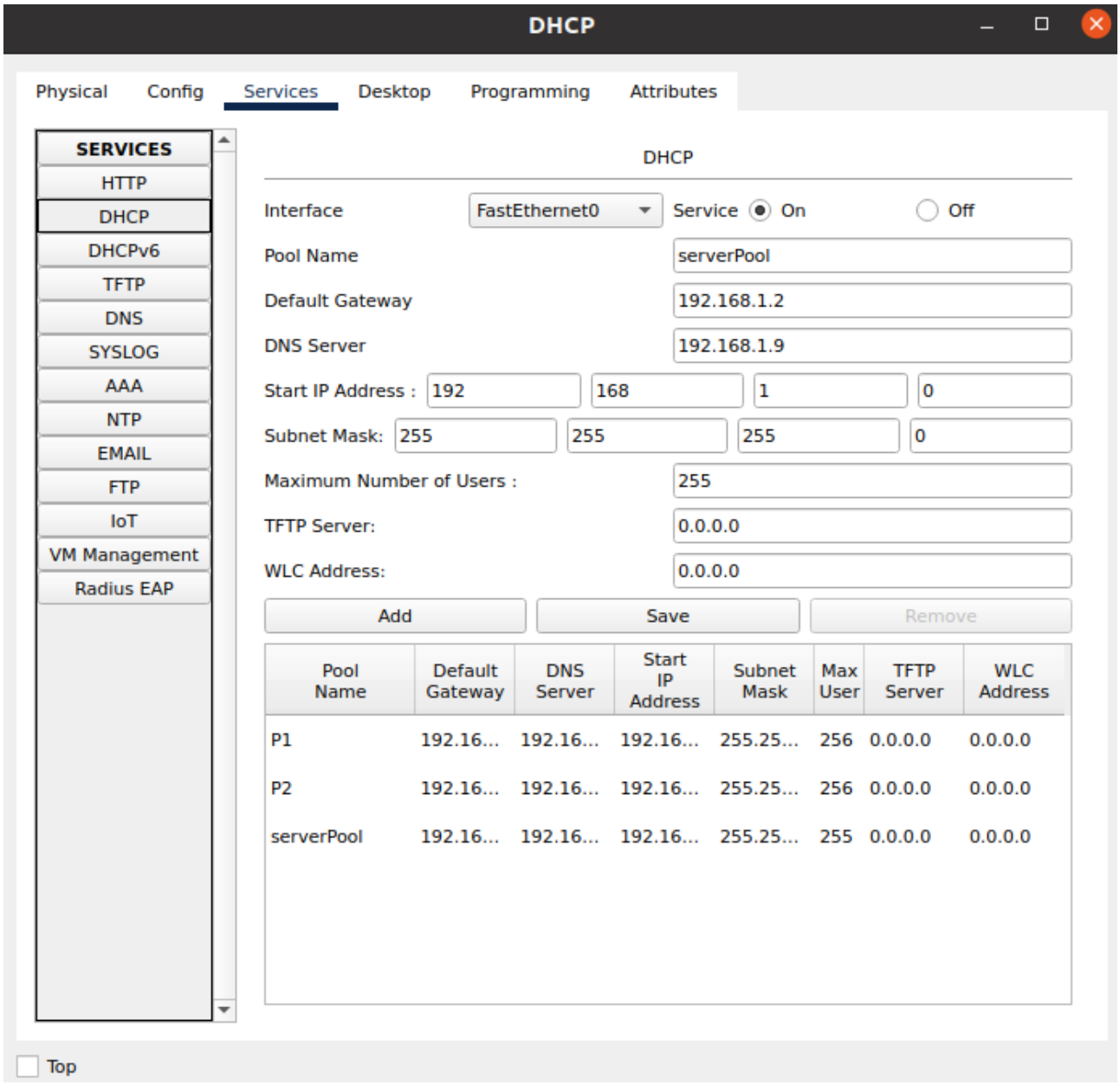
DHCP
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
DHCP
Interface
FastEthernet0
Service
On
Off
Pool Name
serverPool
Default Gateway
192.168.1.2
DNS Server
192.168.1.9
Start IP Address :
192
168
1
0
Subnet Mask:
255
255
255
0
Maximum Number of Users :
255
TFTP Server:
0.0.0.0
WLC Address:
0.0.0.0
Add
Save
Remove
Pool Name
Default Gateway
DNS Server
Start IP Address
Subnet Mask
Max User
TFTP Server
WLC Address
P1
192.16...
192.16...
192.16...
255.25...
256
0.0.0.0
0.0.0.0
P2
192.16...
192.16...
192.16...
255.25...
256
0.0.0.0
0.0.0.0
serverPool
192.16...
192.16...
192.16...
255.25...
255
0.0.0.0
0.0.0.0
Top

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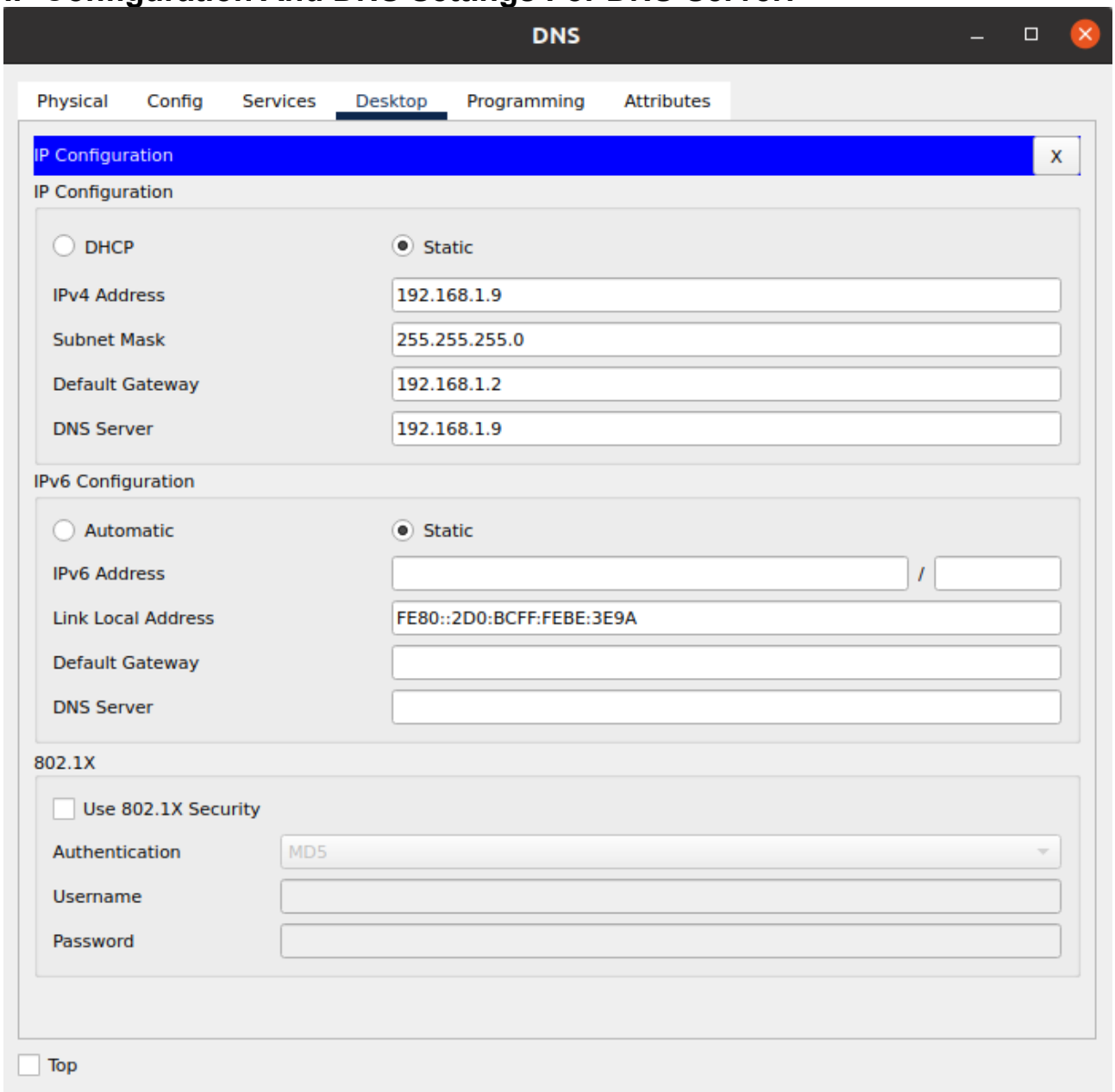
## IP Configuration And DNS Settings For DNS-Server:

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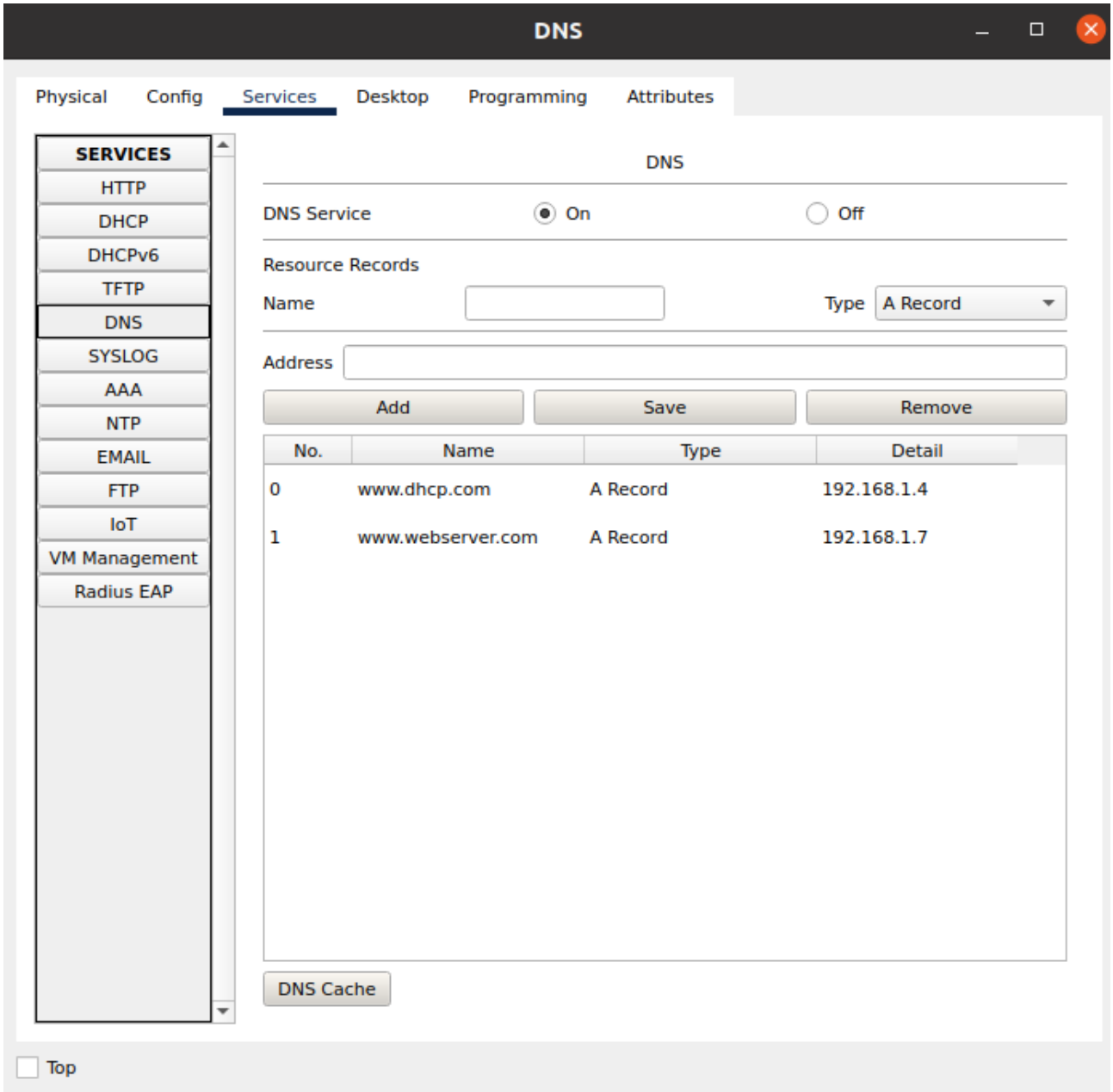
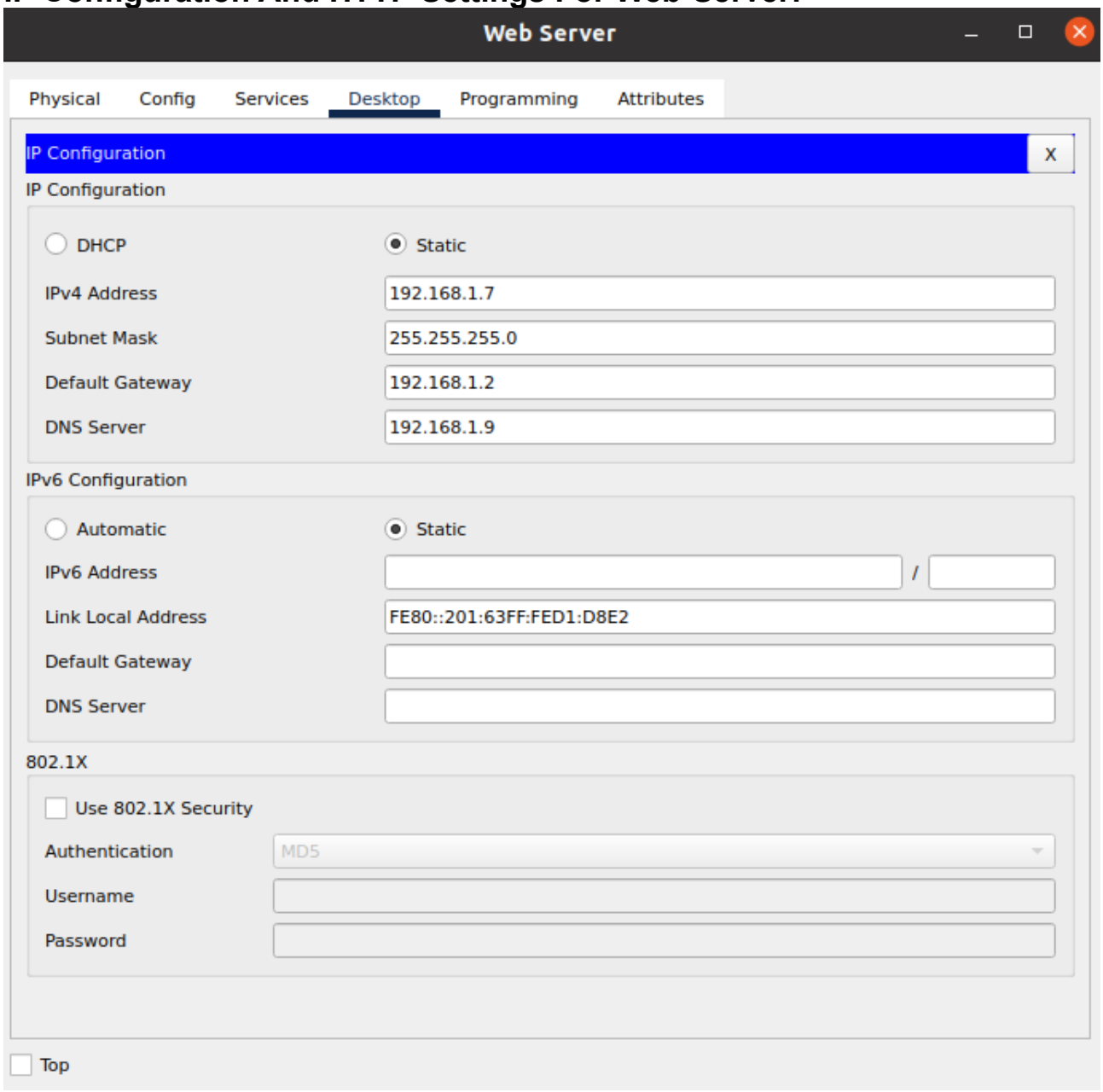

DNS
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
DNS
DNS Service
On
Off
Resource Records
Name
Type
A Record
Address
Add
Save
Remove
No.
Name
Type
Detail
0
www.dhcp.com
A Record
192.168.1.4
1
www.webserver.com
A Record
192.168.1.7
DNS Cache
Top

.

## IP Configuration And HTTP Settings For Web-Server:

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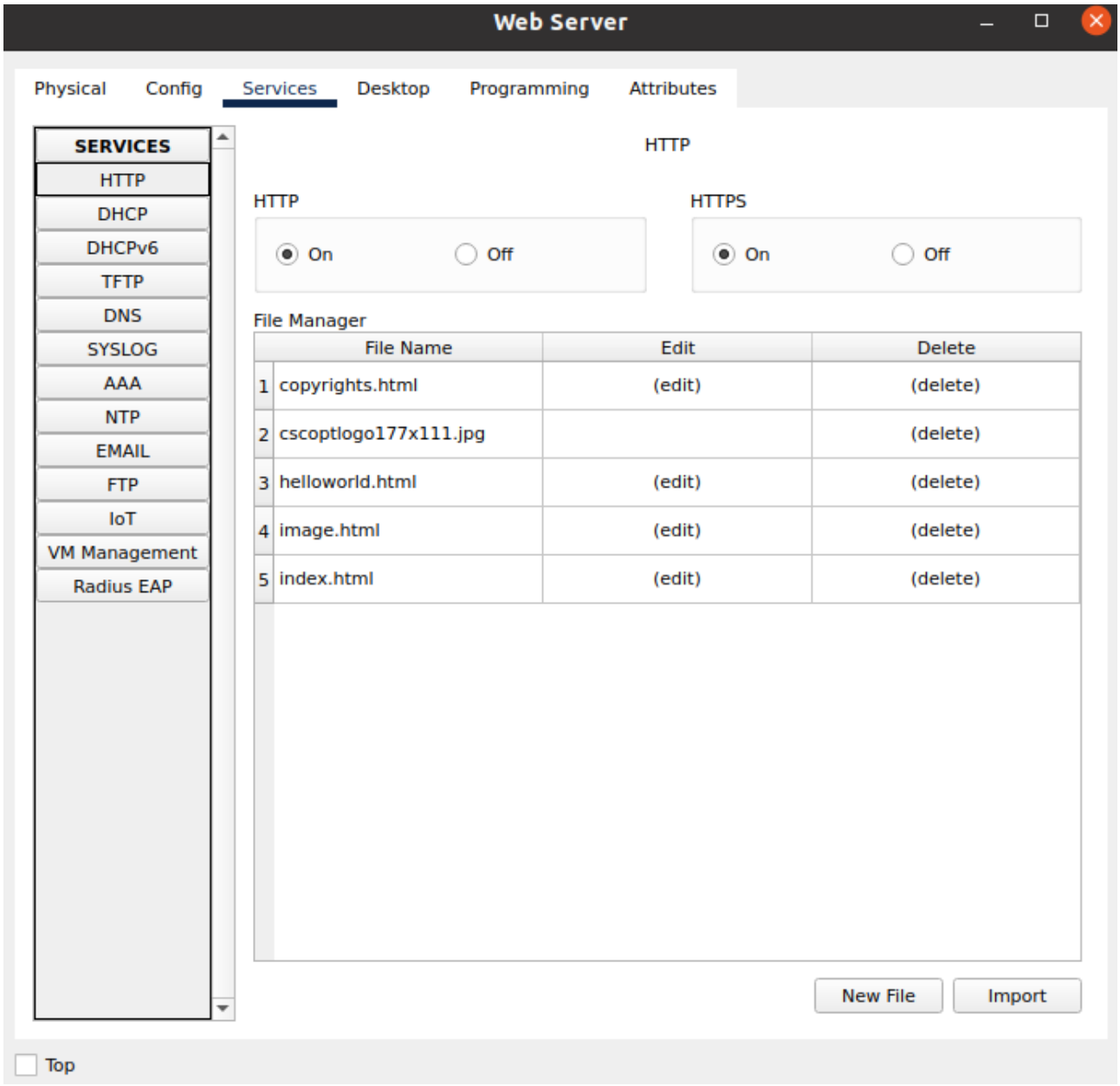
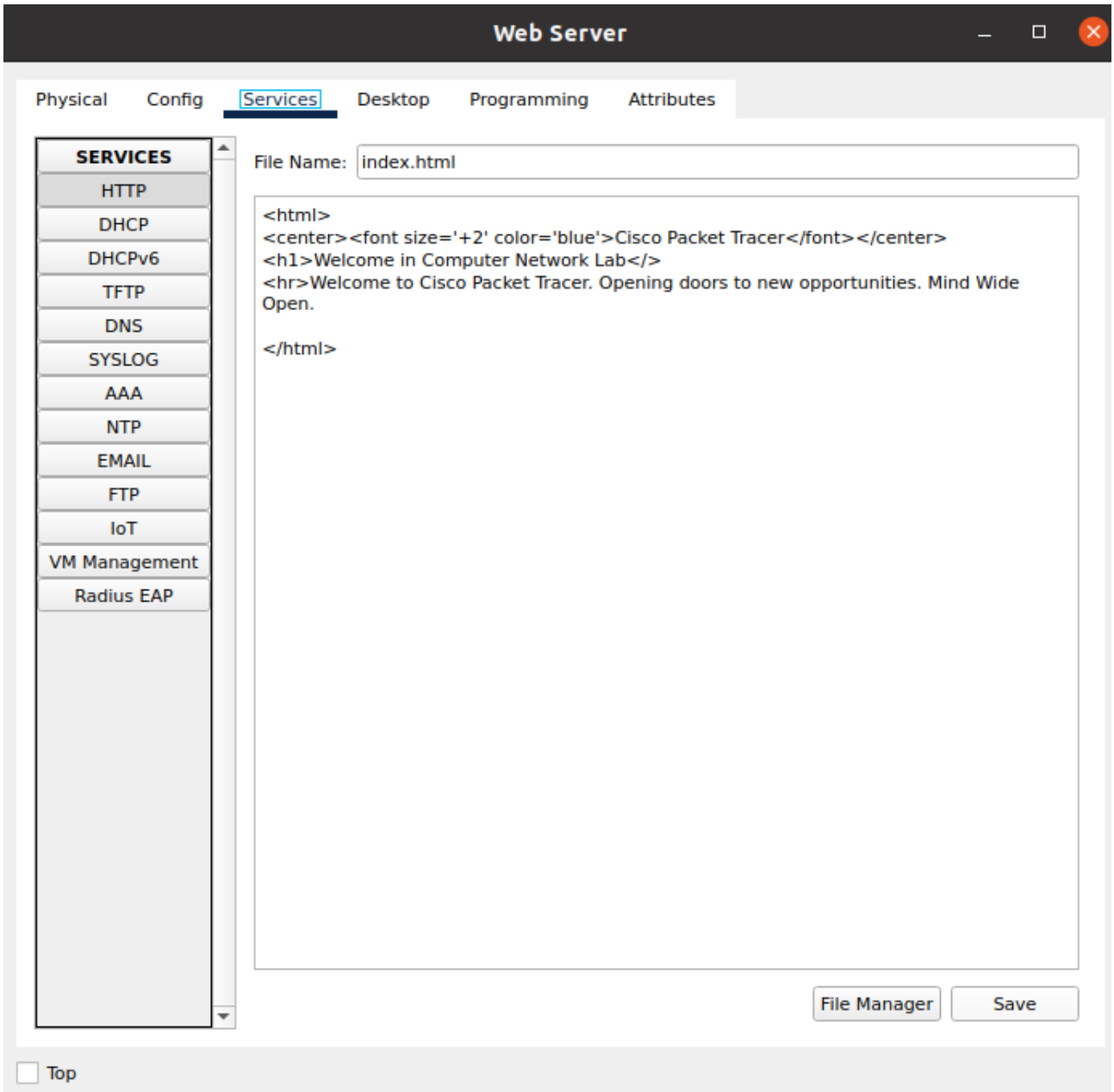
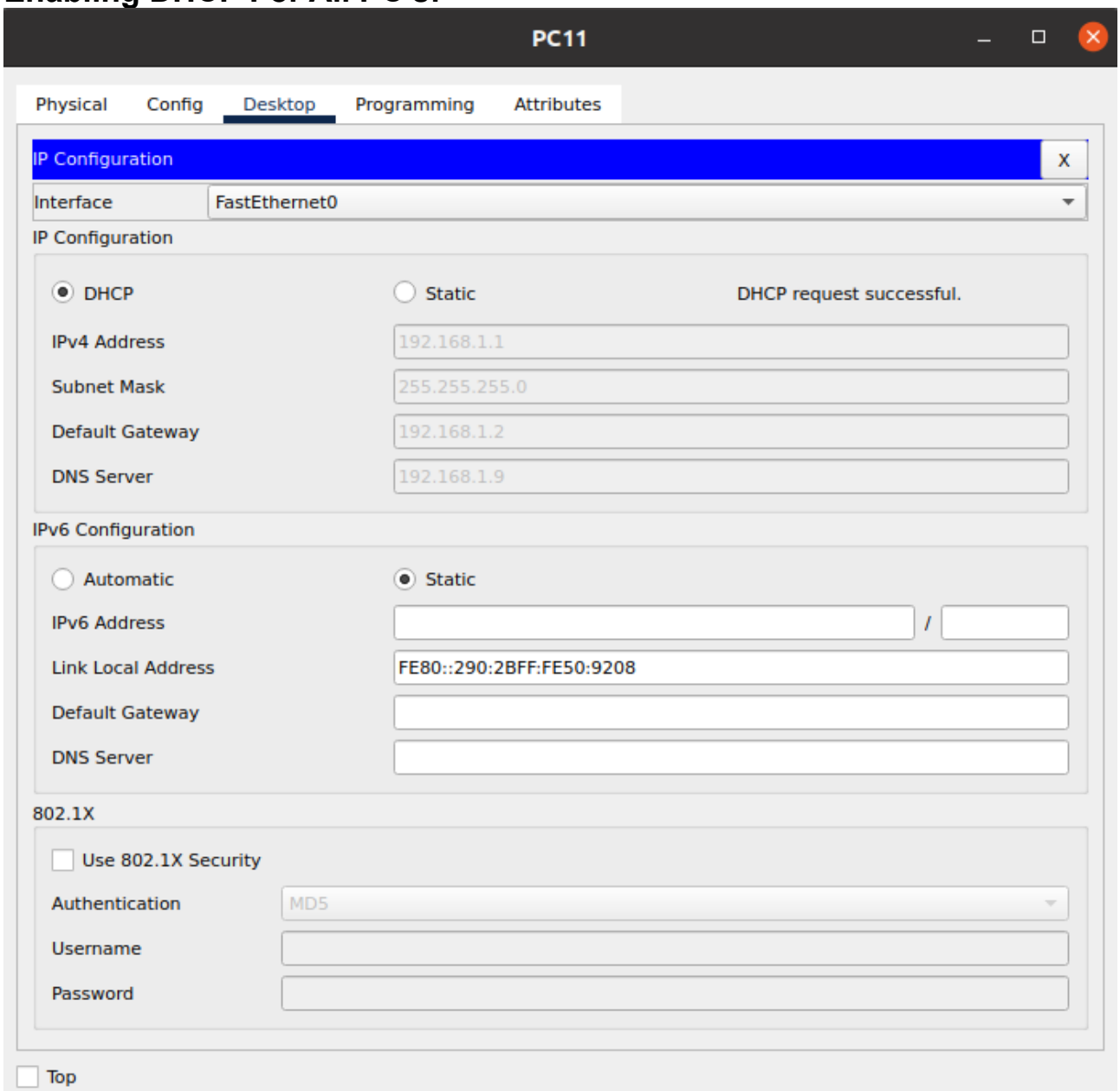

Web Server
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
HTTP
HTTP
On
Off
HTTPS
On
Off
File Manager
File Name
Edit
Delete
1 copyrights.html (edit) (delete)
2 cscoptlogo177x111.jpg (delete)
3 helloworld.html (edit) (delete)
4 image.html (edit) (delete)
5 index.html (edit) (delete)
New File
Import
Top

.


Web Server
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
File Name:
index.html
<html>
<font size='+2' color='blue'>Cisco Packet Tracer</font>
<h1>Welcome in Computer Network Lab</>
<hr>Welcome to Cisco Packet Tracer. Opening doors to new opportunities. Mind Wide Open.
</html>
File Manager
Save
Top

.

## Enabling DHCP For All PC's:

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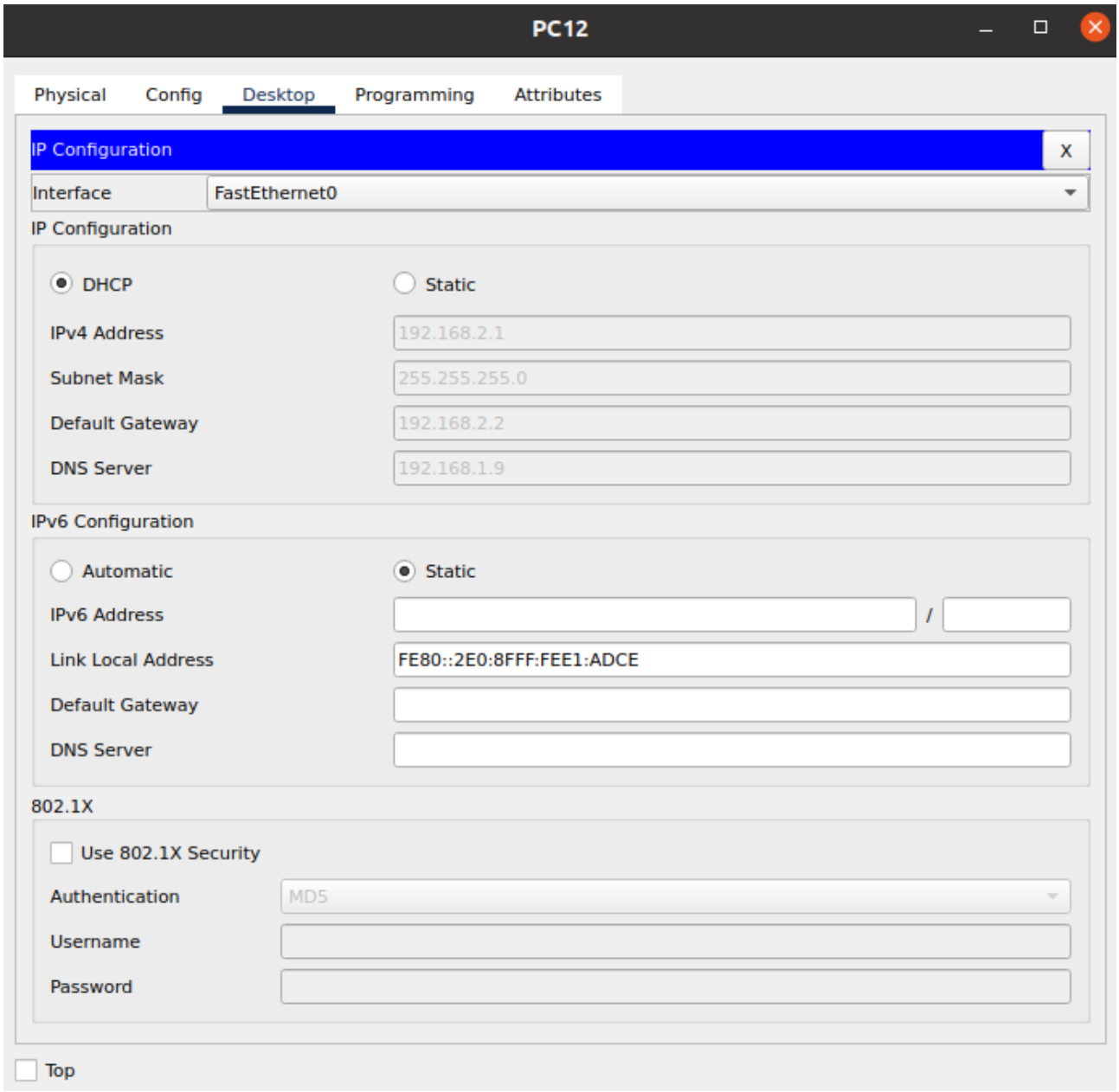
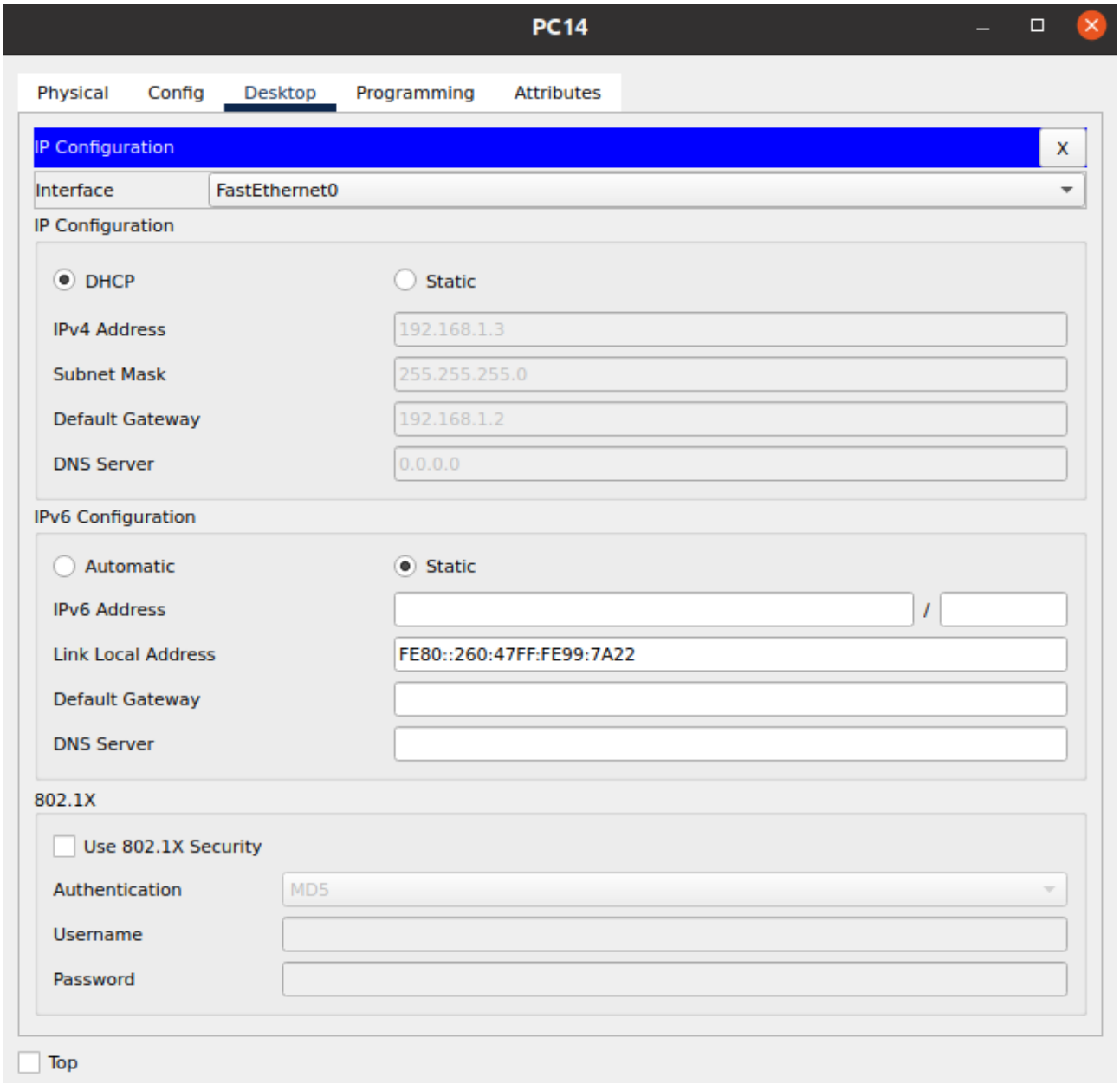
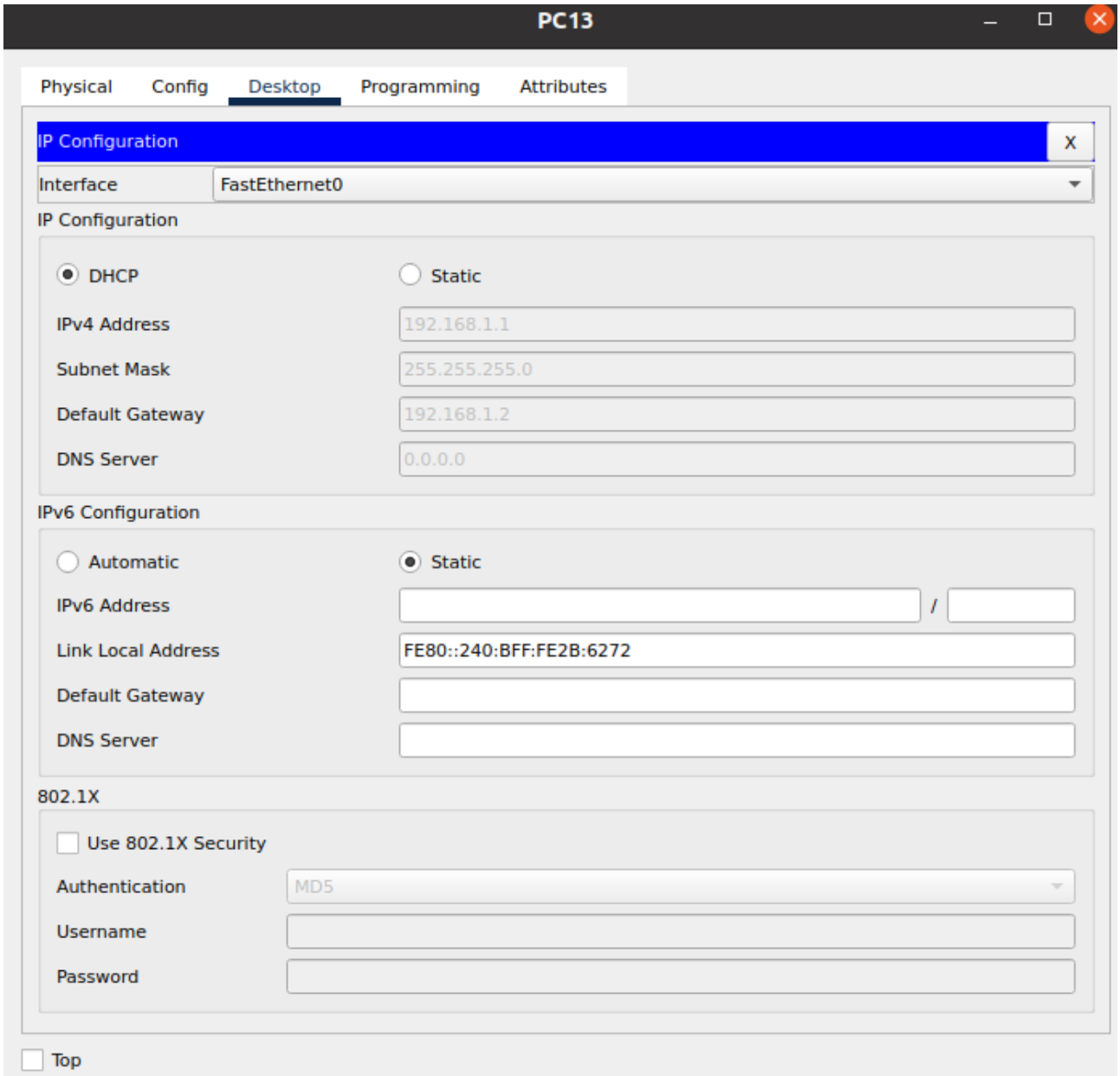

PC12
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.2.1
Subnet Mask
255.255.255.0
Default Gateway
192.168.2.2
DNS Server
192.168.1.9
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::2E0:8FFF:FEE1:ADCE
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

.

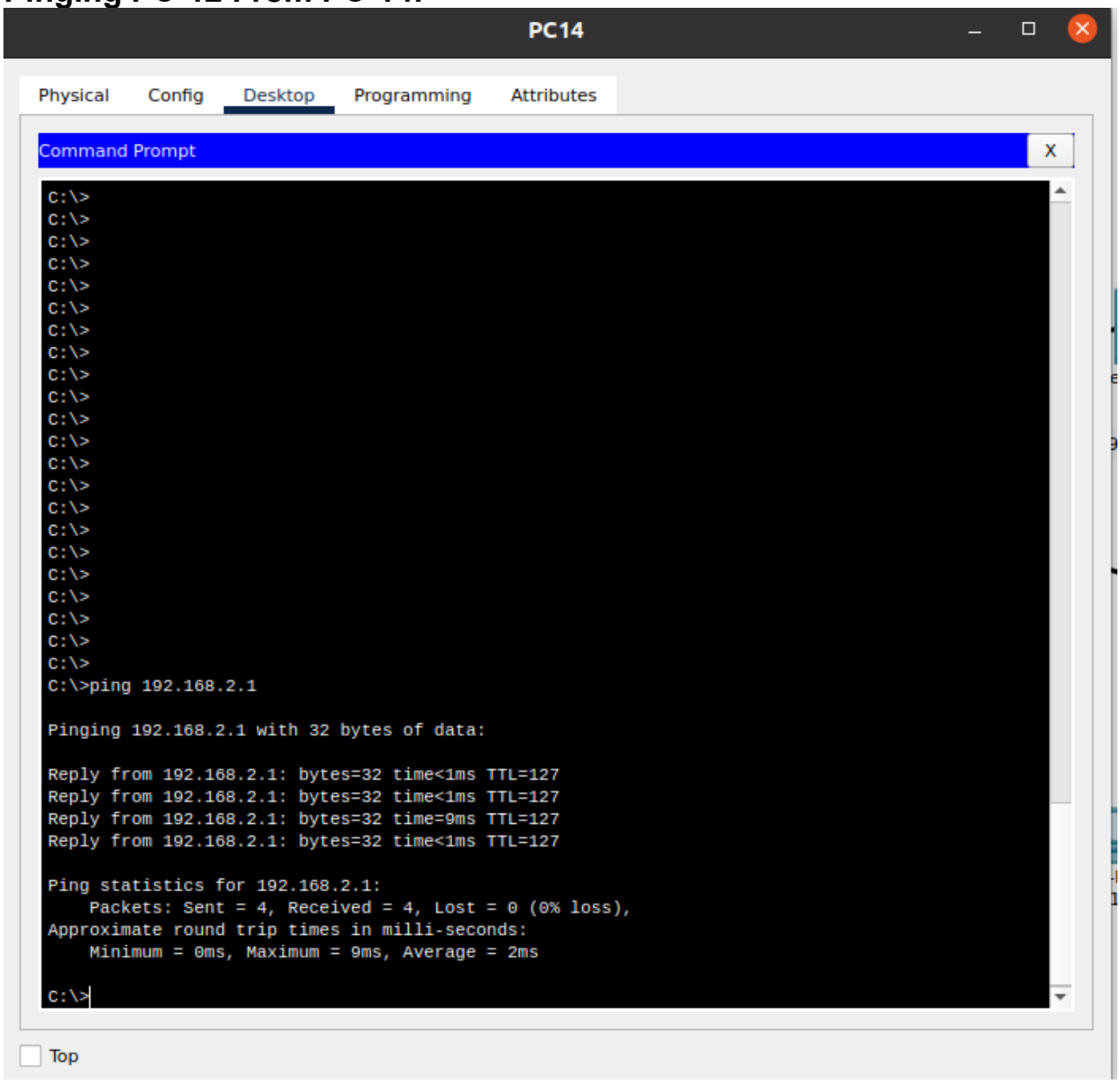

PC14
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.3
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.2
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::260:47FF:FE99:7A22
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

.


PC13
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.1
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.2
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::240:BFF:FE2B:6272
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

.

## Pinging PC-12 From PC-14:

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*FIN.*