

Name :

Abubaker Attique

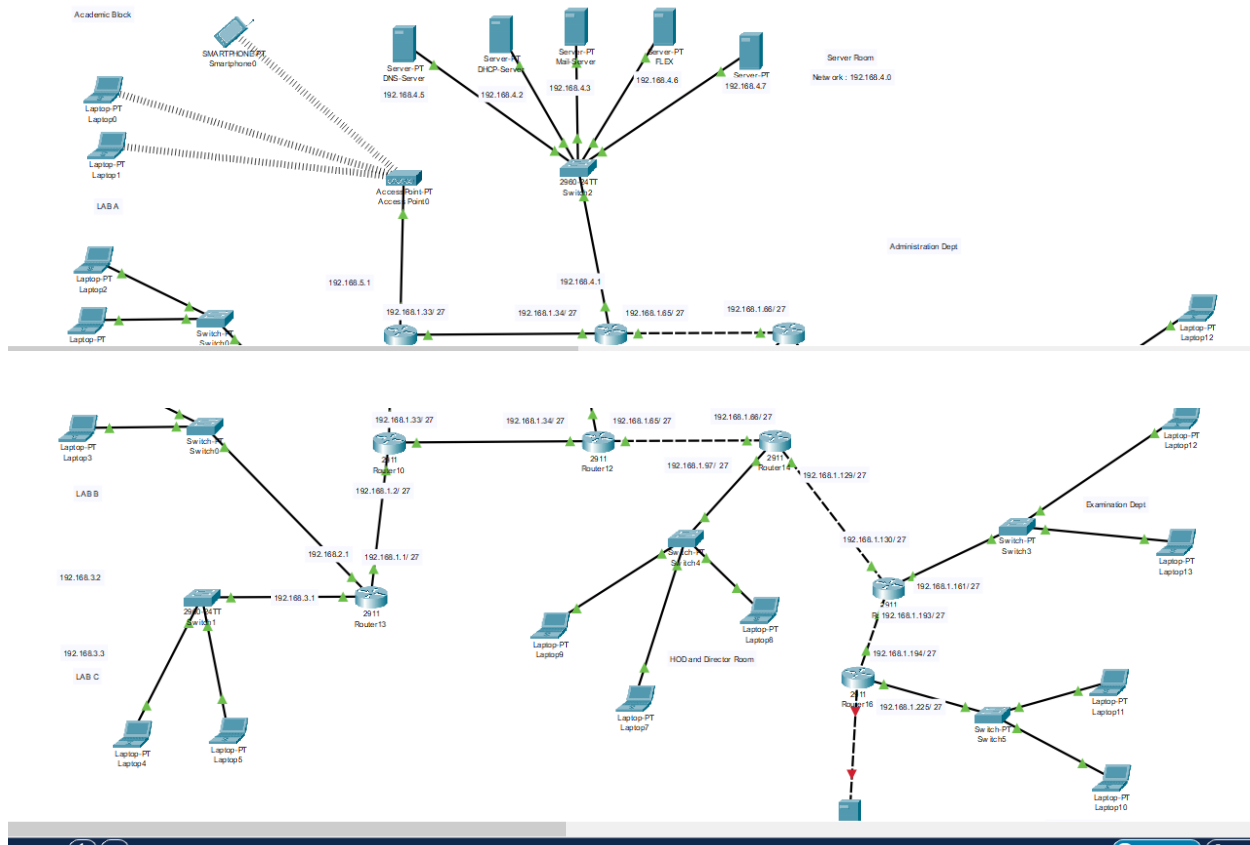
Roll num :

P20-0560

Section :

BCs 5A

Lab : 14 (FAST NETWORK) :

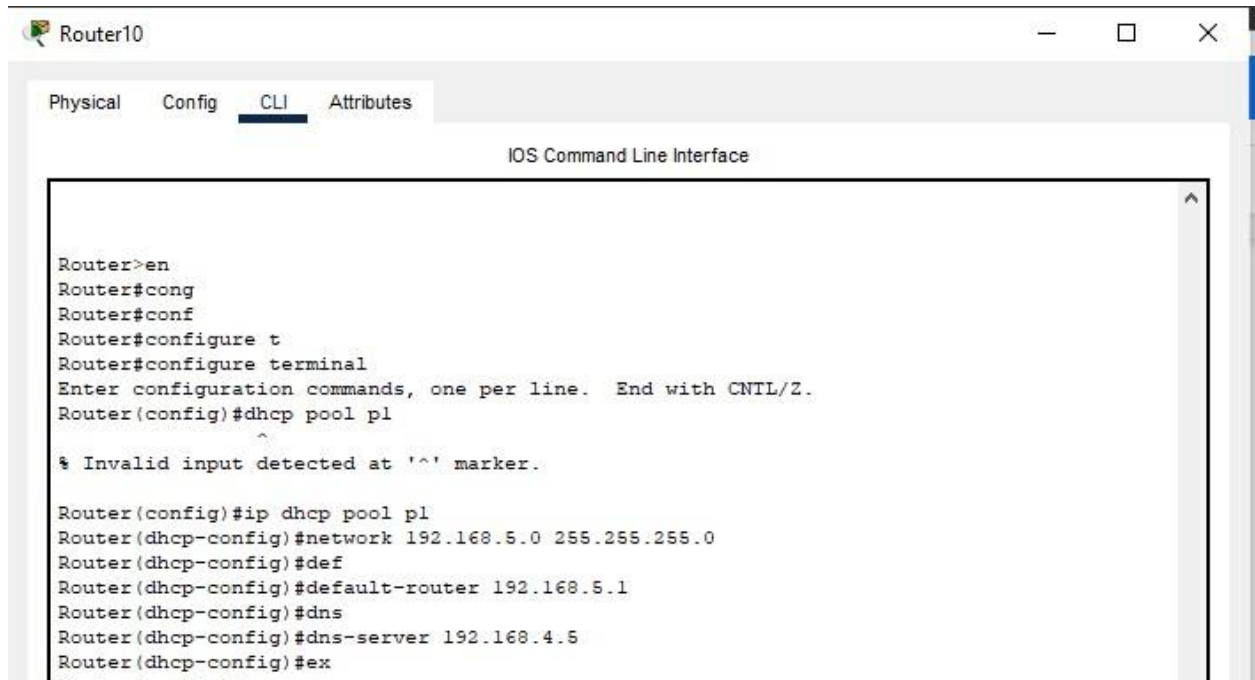


Academic Block :

Lab A configuration :

In lab A we use a wireless switch for connection between PC's and Router. The Network for this lab is **192.168.5.0/24**. We assign ip's dynamically to PC's by creating a pool on the router.

DHCP Router Configuration:



Router10

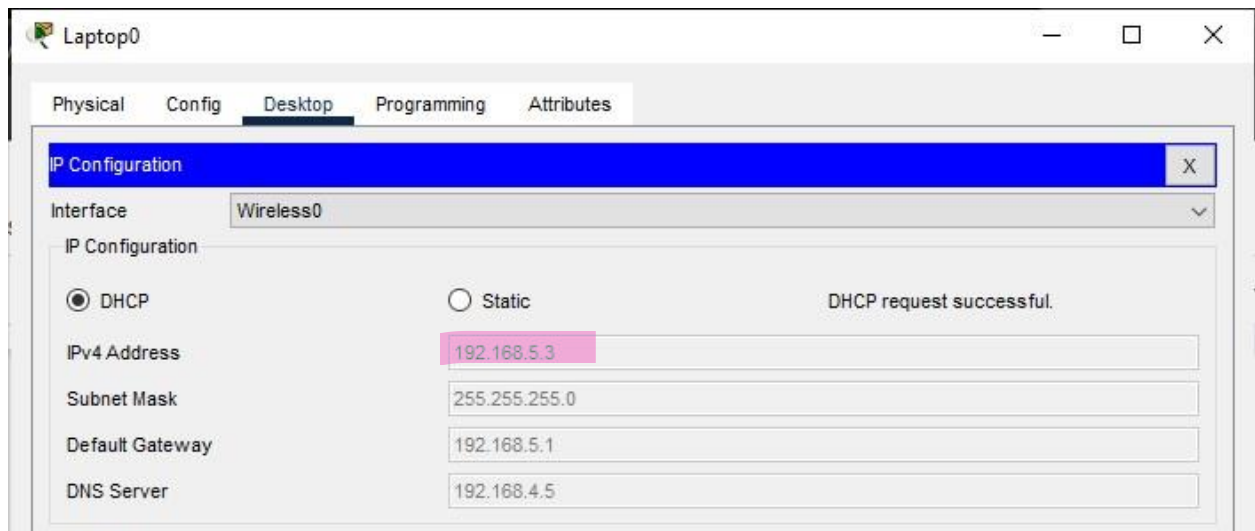
Physical Config CLI Attributes

IOS Command Line Interface

```
Router>en
Router#cong
Router#conf
Router#configure t
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#dhcp pool pl
      ^
% Invalid input detected at '^' marker.

Router(config)#ip dhcp pool pl
Router(dhcp-config)#network 192.168.5.0 255.255.255.0
Router(dhcp-config)#def
Router(dhcp-config)#default-router 192.168.5.1
Router(dhcp-config)#dns
Router(dhcp-config)#dns-server 192.168.4.5
Router(dhcp-config)#ex
```

Assigning IP's to Laptops using DHCP Router:



Laptop0

Physical Config Desktop Programming Attributes

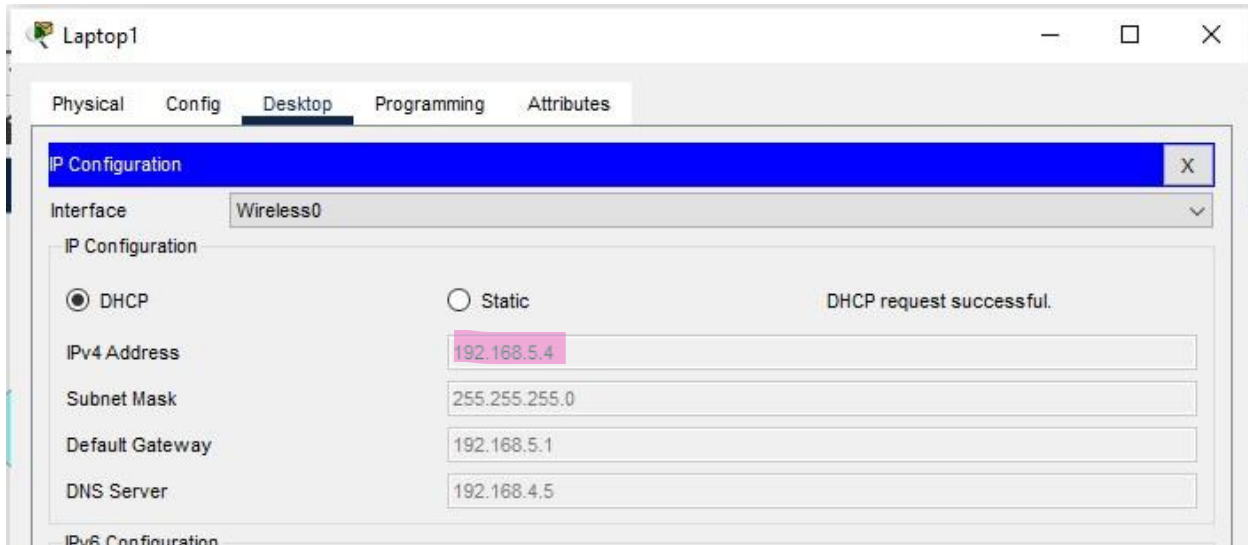
IP Configuration

Interface: Wireless0

IP Configuration

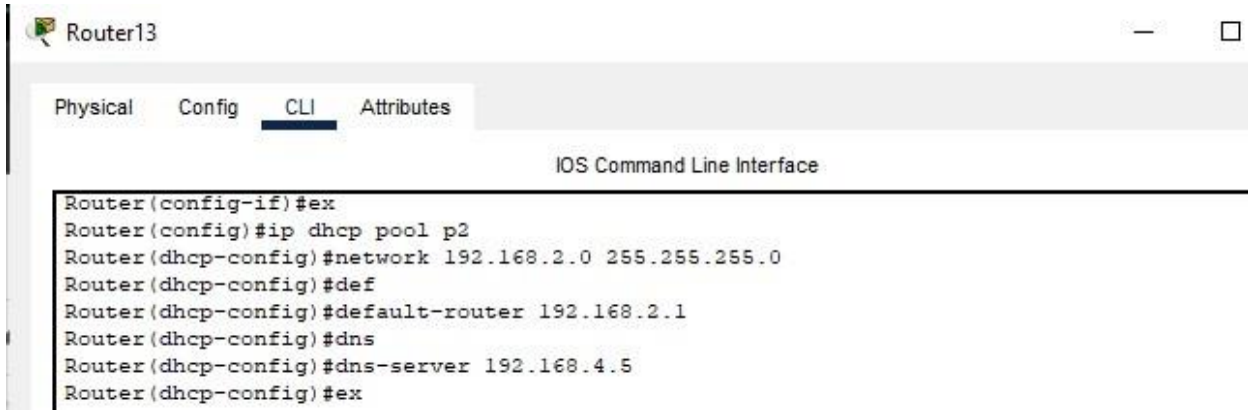
☒ DHCP ☐ Static DHCP request successful.

IPv4 Address	192.168.5.3
Subnet Mask	255.255.255.0
Default Gateway	192.168.5.1
DNS Server	192.168.4.5

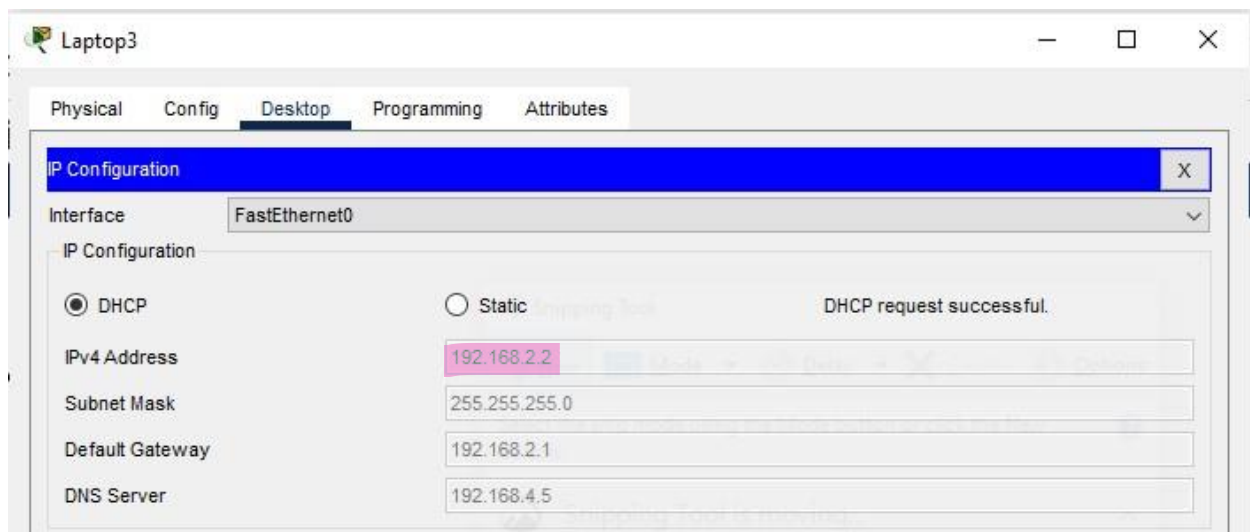
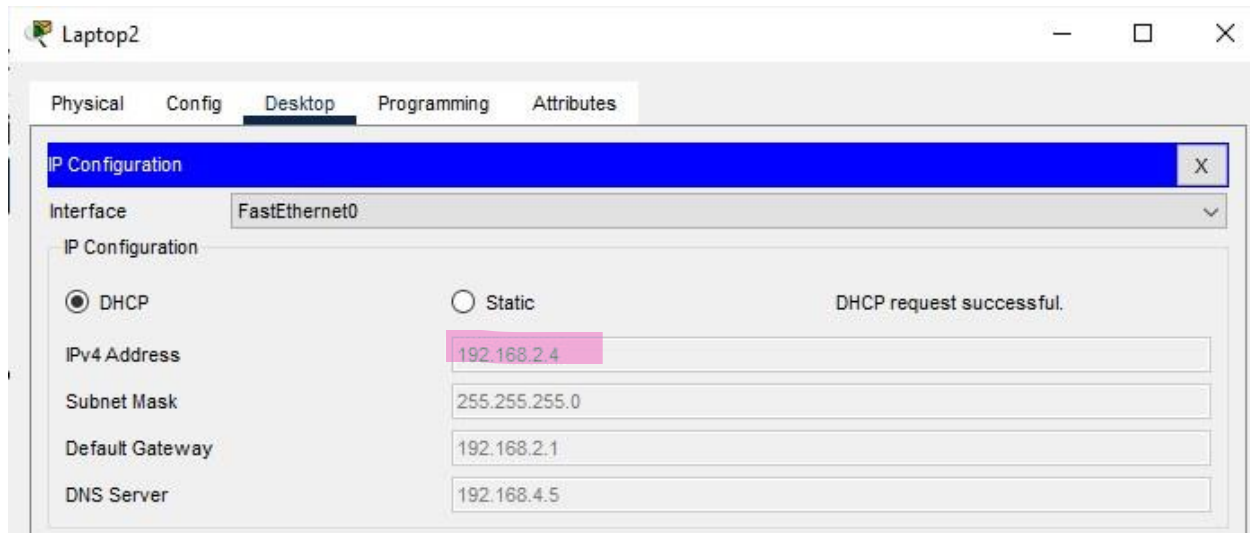


Lab B configuration :

In this lab we use a simple Switch for Connection. The Network for this lab is **192.168.2.0/24**. Here we assign ip's also dynamically to PC's by creating a pool 'P2' on the router.

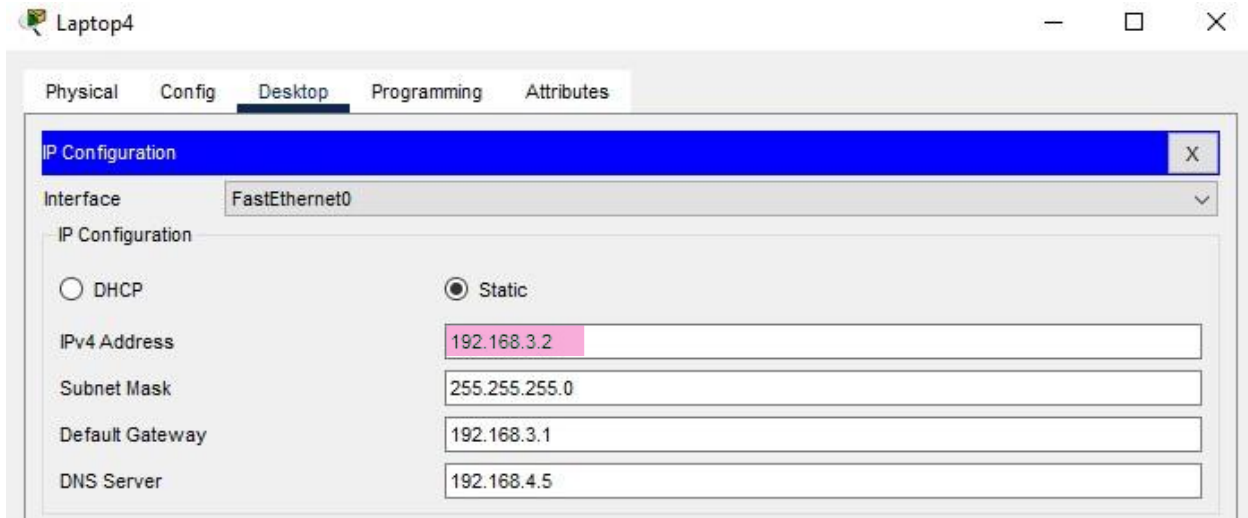


Assigning IP's to Laptops using DHCP Router:



Lab C configuration :

The Network for this lab is **192.168.3.0/24**. Here we assign ip's Statically to PC's.

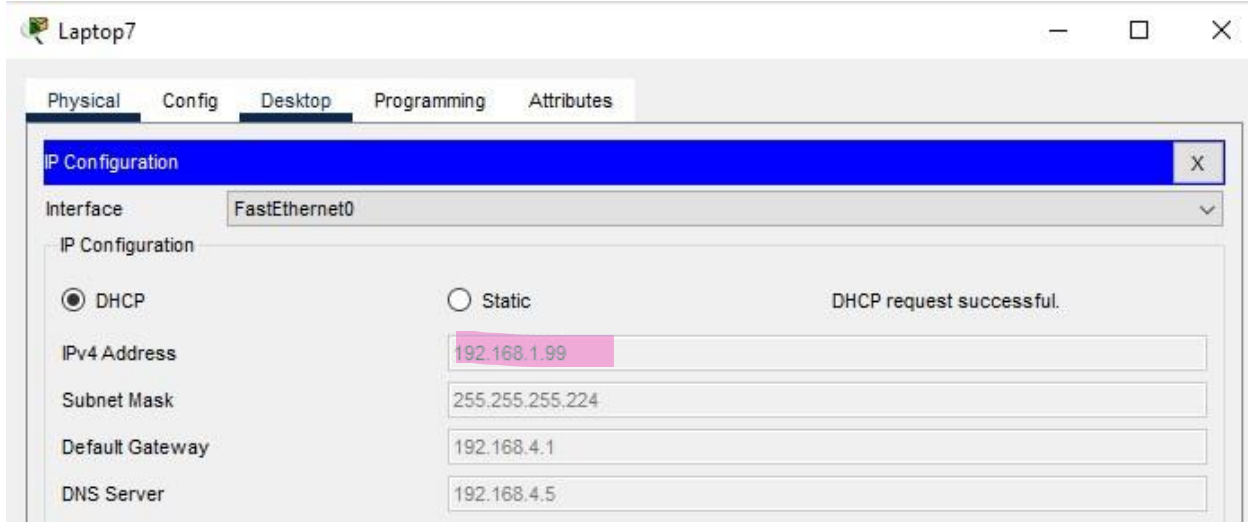


Administration Block:

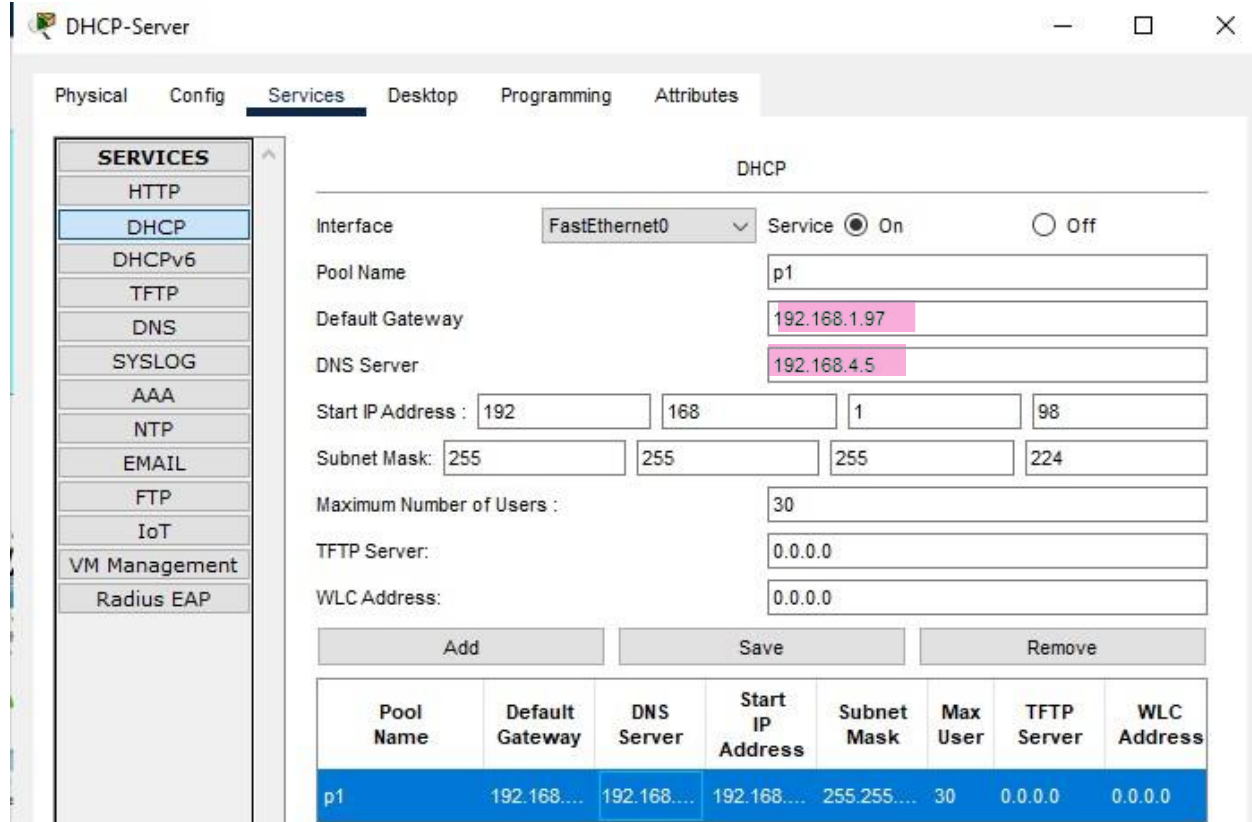
In Administration Block we have three Main blocks

1. Director & HOD's portion:

In this block the network we use is a subnetted one (**192.168.1.96/27**). We use the DHCP Server to assign IP's dynamically to the PC's.

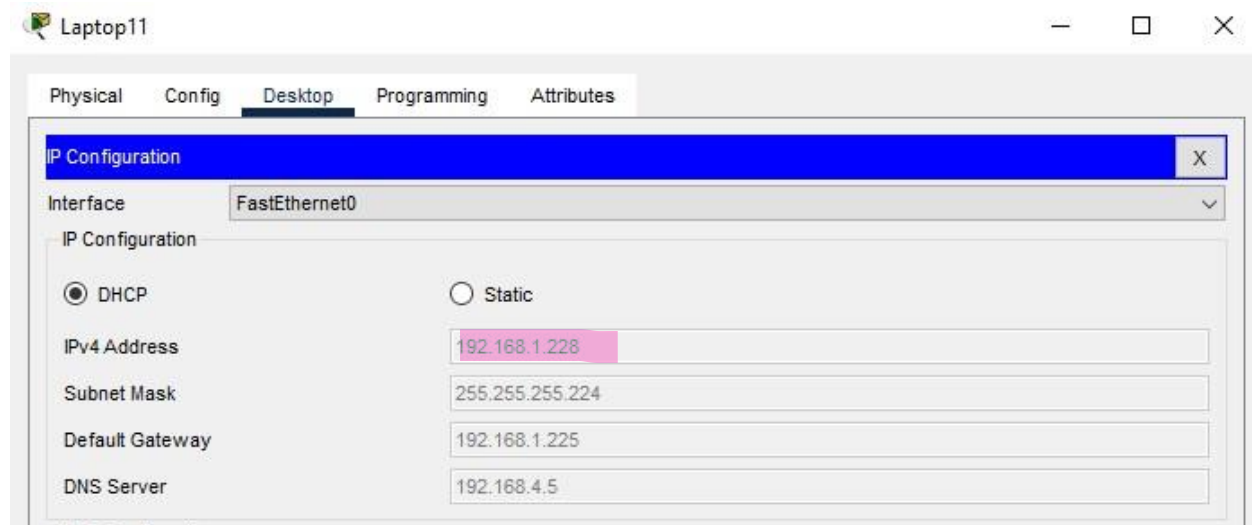


For this Network we created a pool in the DHCP server.



2. Finance Dept:

In this portion the network we use is also a subnetted one (**192.168.1.224/27**). We also use the DHCP Server to assign IP's dynamically to the PC's.



For this Network we also created a pool in the DHCP server.

DHCP-Server

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: 192.168.1.225

DNS Server: 192.168.4.5

Start IP Address: 192 168 1 226

Subnet Mask: 255 255 255 224

Maximum Number of Users: 30

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	192.168....	192.168....	192.168....	255.255....	30	0.0.0.0	0.0.0.0
serverPool	192.168....	192.168....	192.168....	255.255....	30	0.0.0.0	0.0.0.0

3. Examination Dept:

In this portion the network we use is also a subnetted one (192.168.1.160/27). We assign ip's dynamically to the PC's by creating a pool on the router.

Laptop12

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface: FastEthernet0

IP Configuration

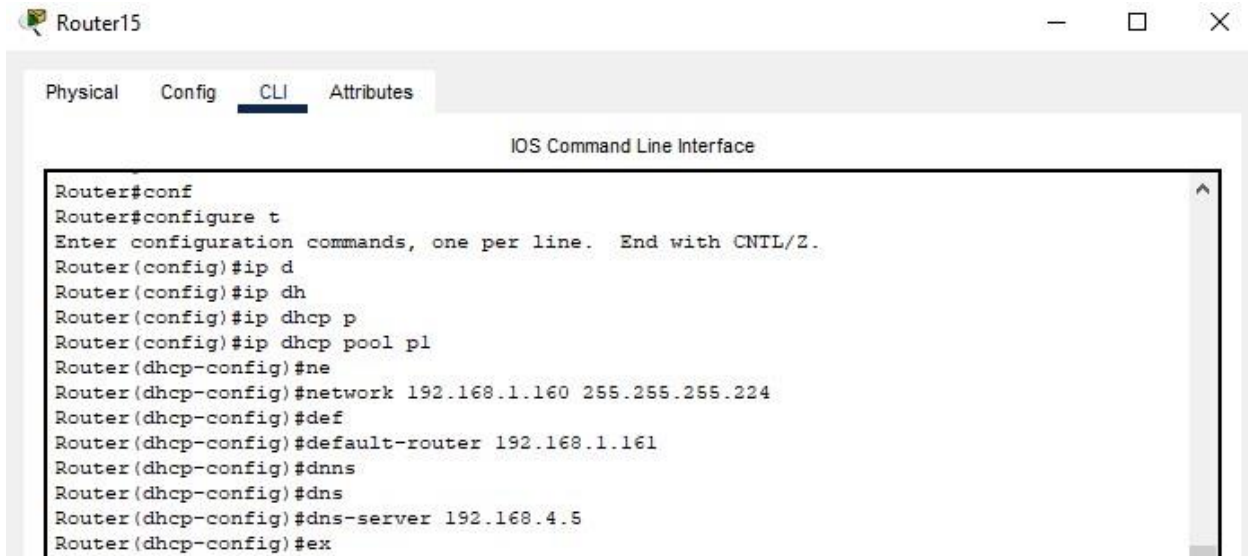
☒ DHCP ☐ Static DHCP request successful.

IPv4 Address: 192.168.1.163

Subnet Mask: 255.255.255.224

Default Gateway: 192.168.1.161

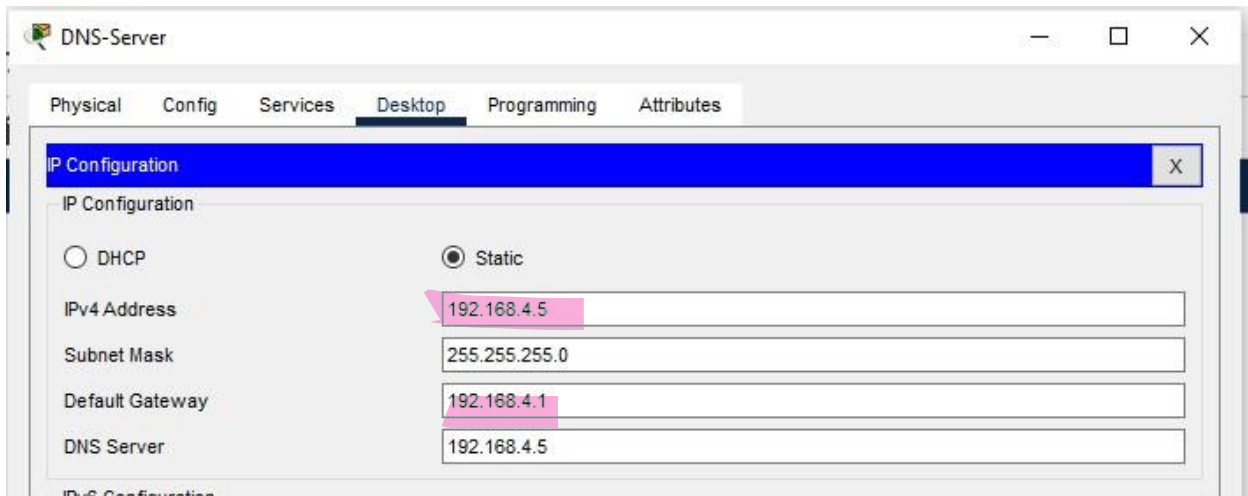
DNS Server: 192.168.4.5



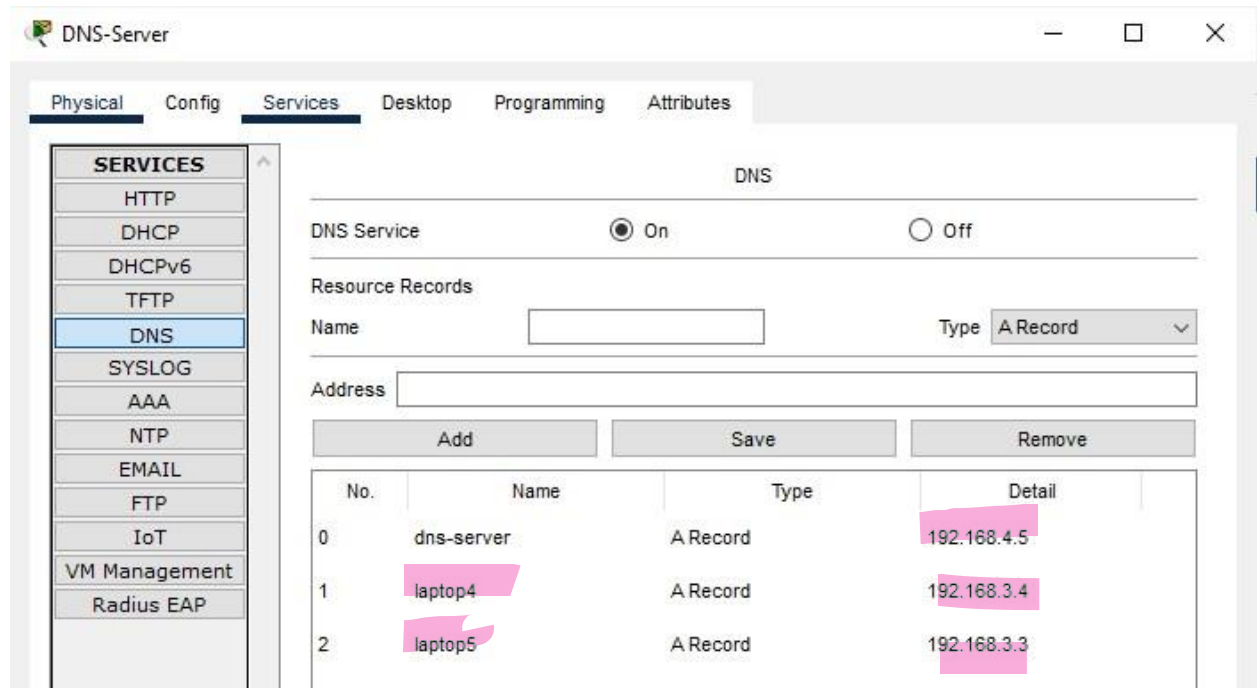
Server Room Configuration:

DNS Server :

Assigning static IP to the DNS server.

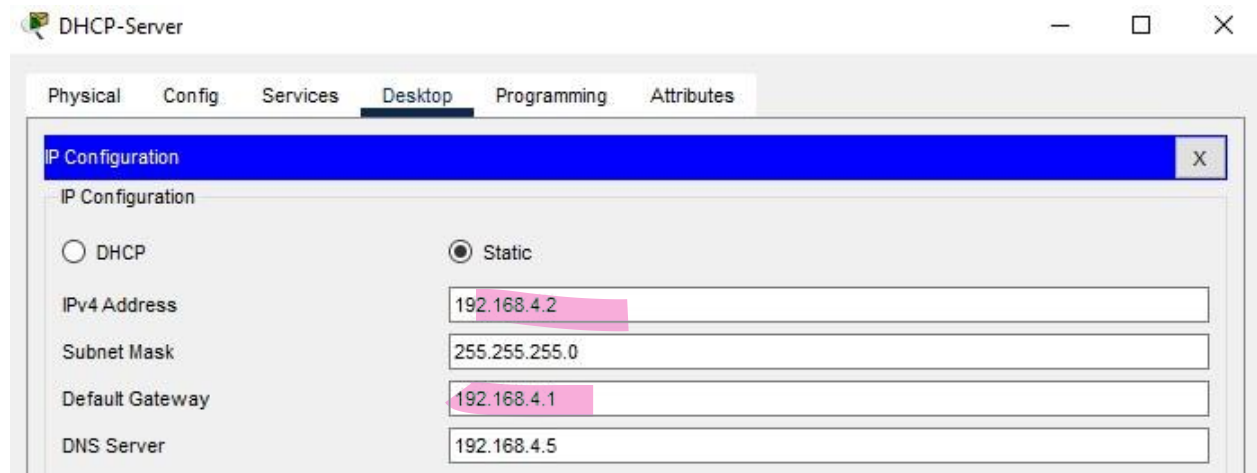


Activating DNS services



DHCP Server :

Assigning static IP to the DHCP server.



Activating DHCP services by creating Poolsfor different Networks Used In topology.

DHCP-Server

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: 192.168.1.225

DNS Server: 192.168.4.5

Start IP Address: 192 168 1 226

Subnet Mask: 255 255 255 224

Maximum Number of Users: 30

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
serverPool	192.168....	192.168....	192.168....	255.255....	30	0.0.0.0	0.0.0.0
p1	192.168....	192.168....	192.168....	255.255....	30	0.0.0.0	0.0.0.0

FLEX server:

Assigning static IP to Flex server.

FLEX

Physical Config Services **Desktop** Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

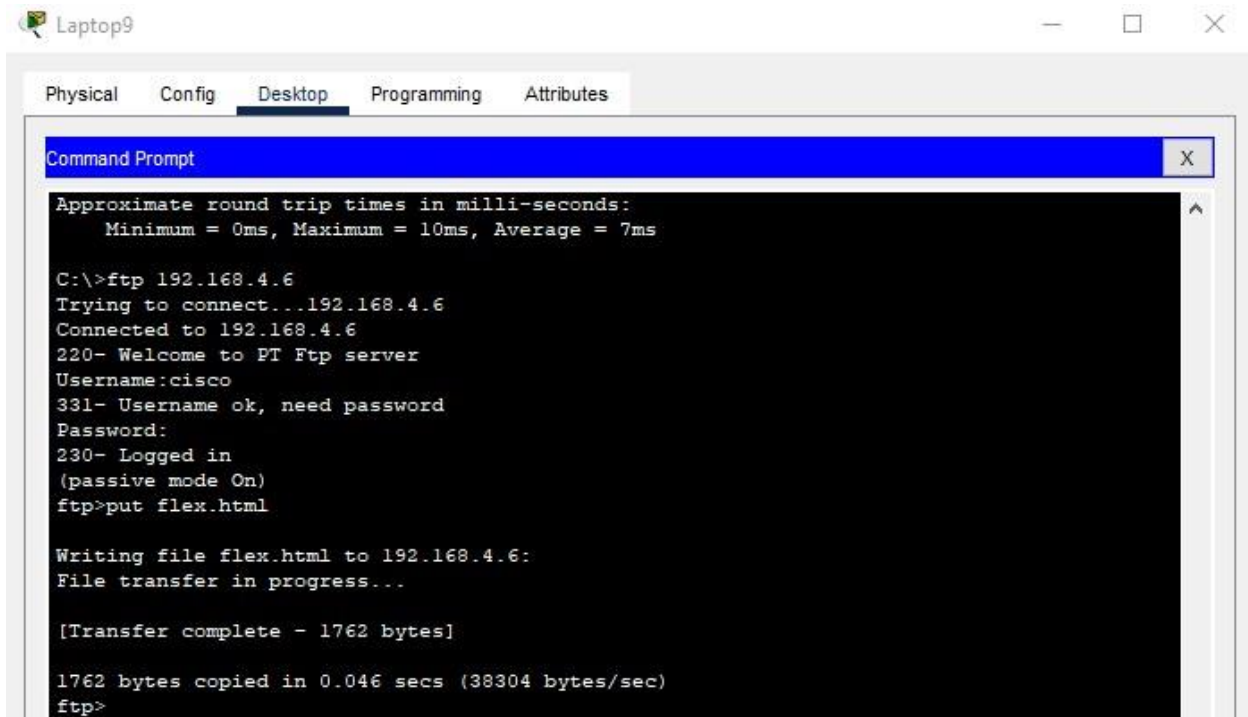
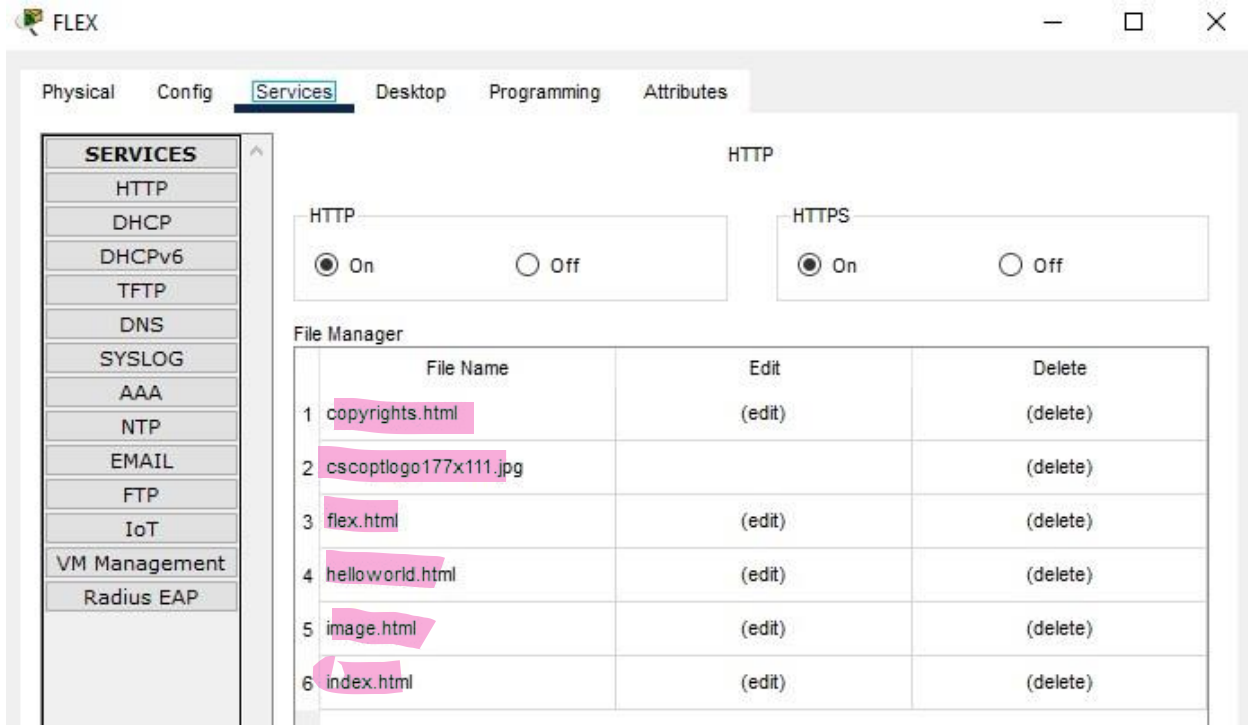
IPv4 Address: 192.168.4.6

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.4.1

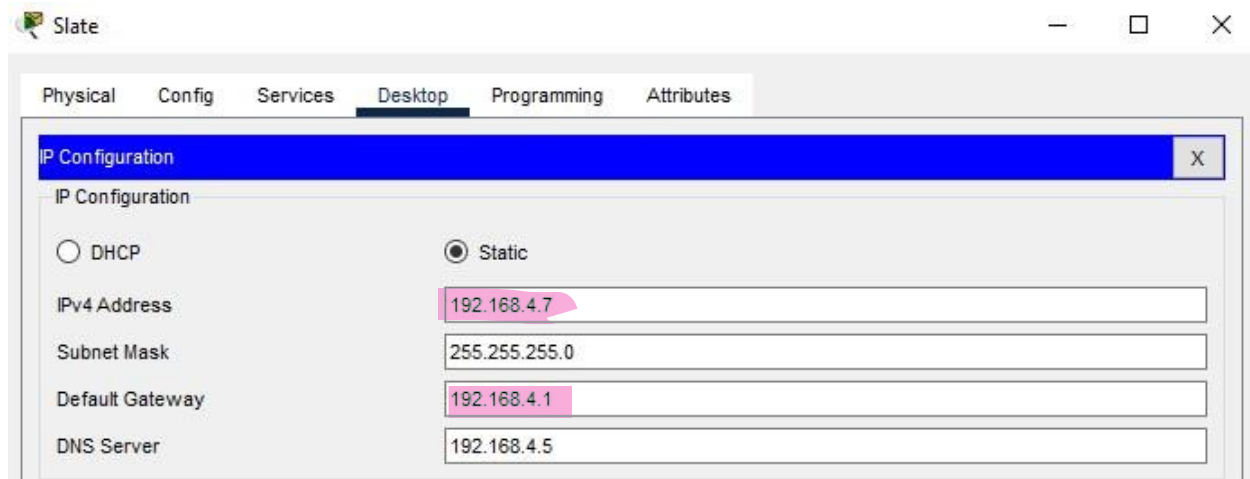
DNS Server: 192.168.4.5

Activating HTTP services and creating "Flex.html" file and uploading it to server using FT.



Slate server:

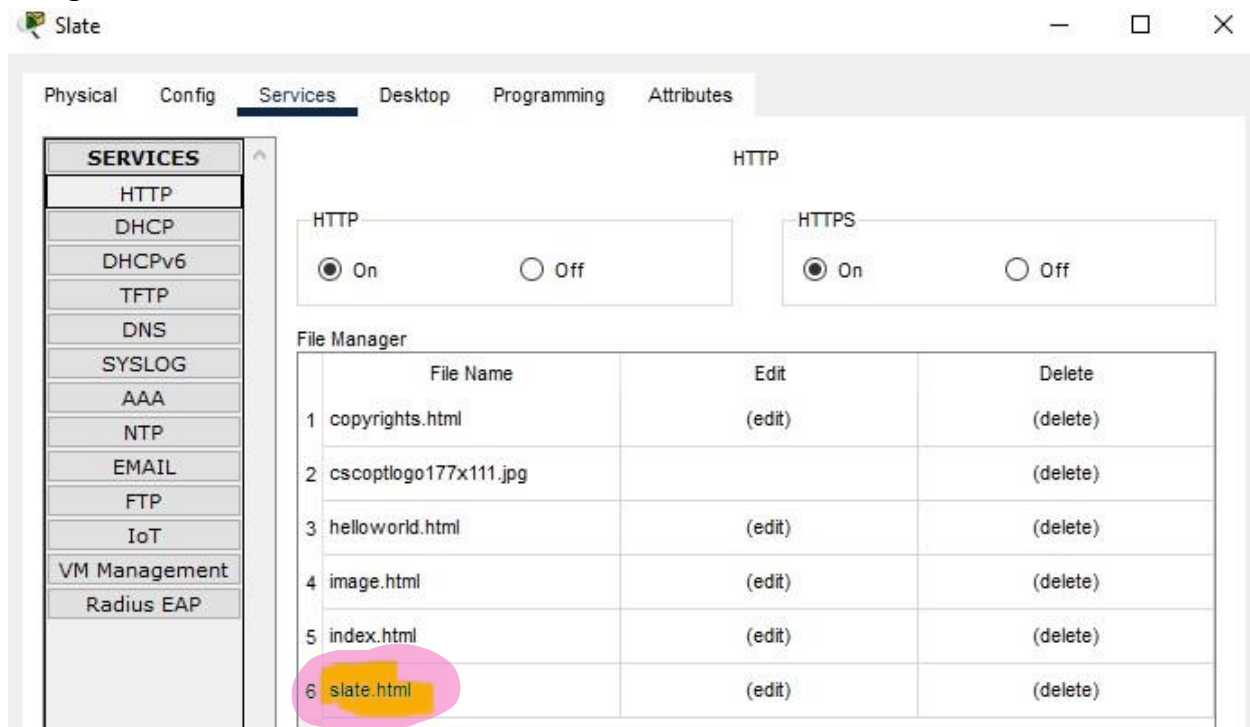
Assigning static IP to Slate server.



The screenshot shows the 'Slate' application window with the 'Desktop' tab selected. The 'IP Configuration' sub-tab is active, displaying a form for network settings. The 'Static' radio button is selected, and the following fields are filled: IPv4 Address (192.168.4.7), Subnet Mask (255.255.255.0), Default Gateway (192.168.4.1), and DNS Server (192.168.4.5). The 'DHCP' radio button is unselected.

Field	Value
IPv4 Address	192.168.4.7
Subnet Mask	255.255.255.0
Default Gateway	192.168.4.1
DNS Server	192.168.4.5

Activating HTTP services and creating "Slate.html" file and uploading it to server using FTP.



The screenshot shows the 'Slate' application window with the 'Services' tab selected. The 'HTTP' service is turned 'On'. The 'File Manager' table lists several files, with 'slate.html' highlighted in pink.

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)
6 slate.html	(edit)	(delete)

Router Configuration:

We have a total of Six routers used in this topology. Here i used **Network Subnetting Concept** because the network between the Routers require only two ip's, So for reducing the Wastage i used the Network **192.168.1.0/27** and subnetted it in to **8** different networks and used all these networks in the p;ace where ip requirement is less.

Router 10:

Configuration :

SWITCHING	IP Configuration
VLAN Database	IPv4 Address 192.168.5.1
INTERFACE	Subnet Mask 255.255.255.0
GigabitEthernet0/0	

SWITCHING	IP Configuration
VLAN Database	IPv4 Address 192.168.1.33
INTERFACE	Subnet Mask 255.255.255.224
GigabitEthernet0/0	
GigabitEthernet0/1	
	Tx Ring Limit 10

VLAN Database	IPv4 Address 192.168.1.2
INTERFACE	Subnet Mask 255.255.255.224
GigabitEthernet0/0	
GigabitEthernet0/1	
GigabitEthernet0/2	
	Tx Ring Limit 10

Static Routes of Router 10:

Network Address
192.168.4.0/24 via 192.168.1.34
192.168.3.0/24 via 192.168.1.1
192.168.2.0/24 via 192.168.1.1
192.168.1.64/27 via 192.168.1.34

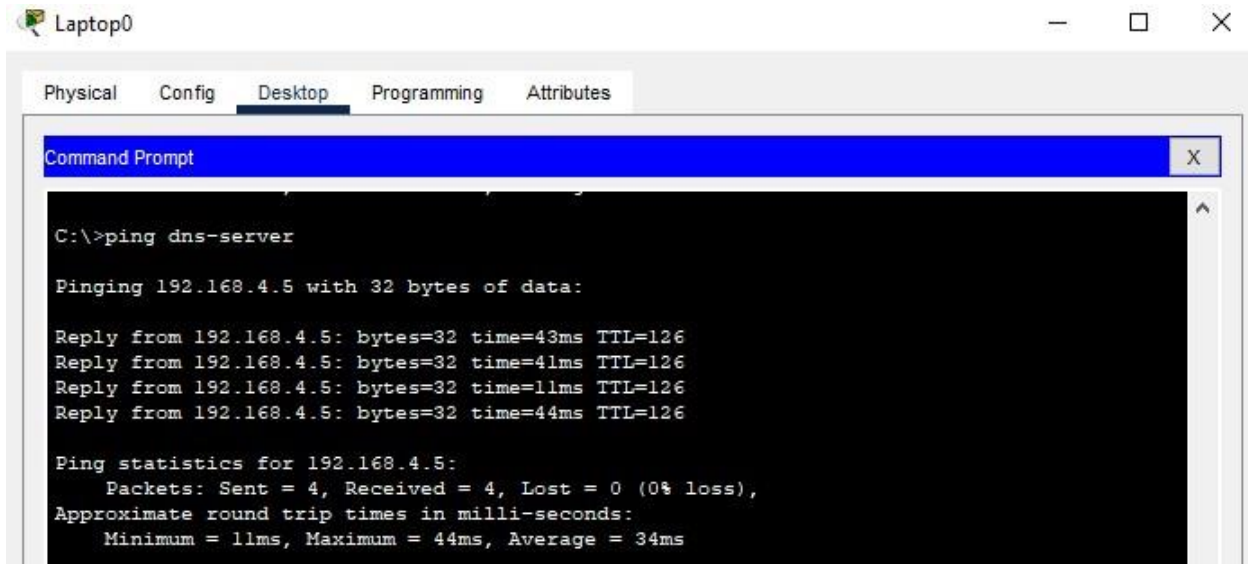
Network Address
192.168.1.96/27 via 192.168.1.34
192.168.1.128/27 via 192.168.1.34
192.168.1.160/27 via 192.168.1.34
192.168.1.192/27 via 192.168.1.34

Network Address
192.168.1.128/27 via 192.168.1.34
192.168.1.160/27 via 192.168.1.34
192.168.1.192/27 via 192.168.1.34
192.168.1.224/27 via 192.168.1.34

The same process is repeated for all the Routers. The networks and the static routes are given in the Packet tracer File.

Checking Connectivity: Servers :

Accessing Dns server from a PC in Academic block:



```

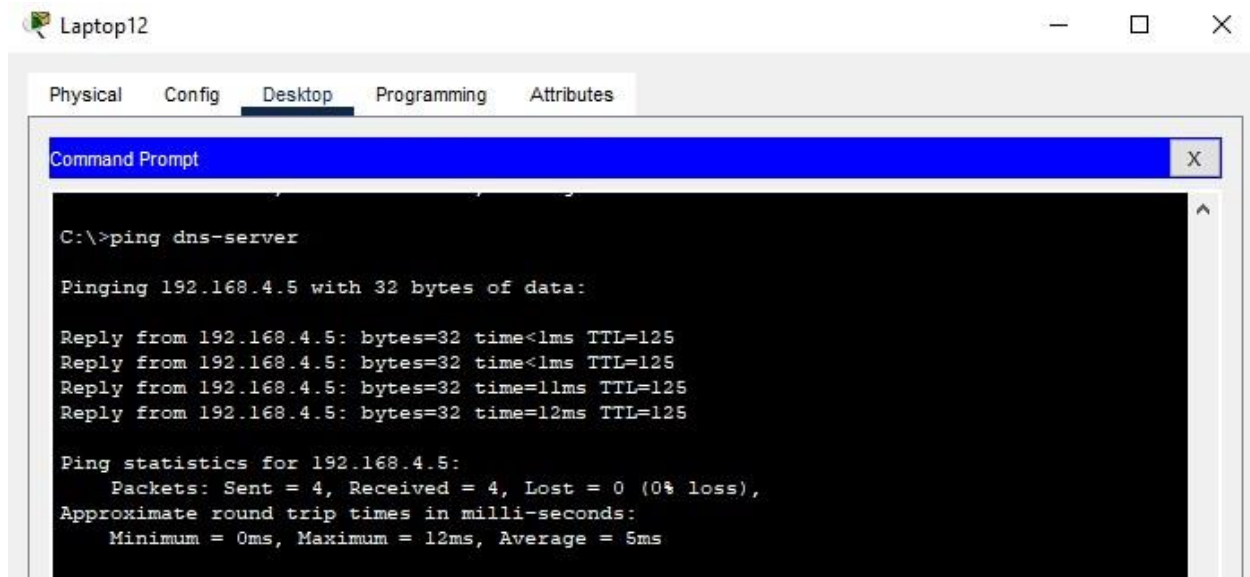
C:\>ping dns-server

Pinging 192.168.4.5 with 32 bytes of data:

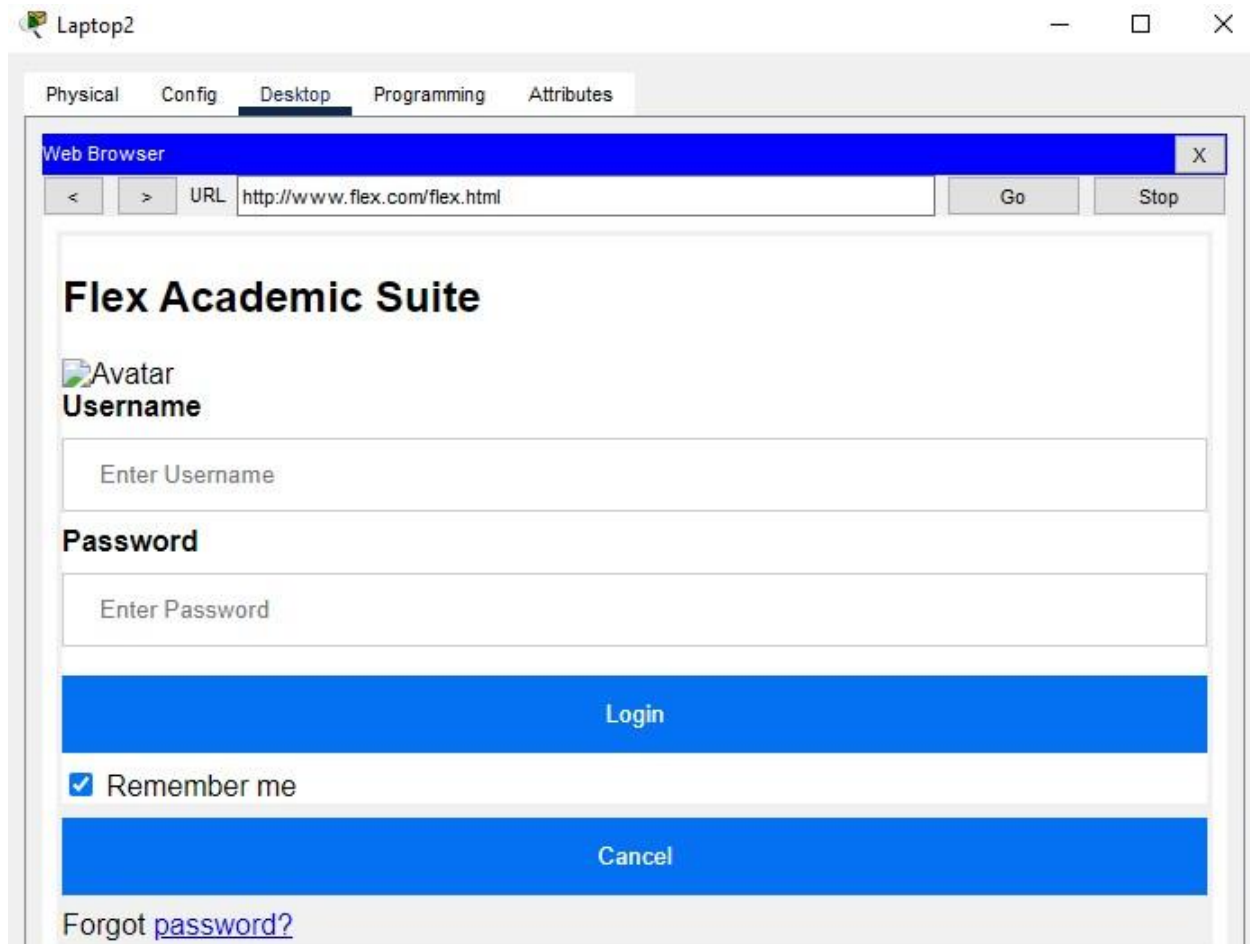
Reply from 192.168.4.5: bytes=32 time=43ms TTL=126
Reply from 192.168.4.5: bytes=32 time=41ms TTL=126
Reply from 192.168.4.5: bytes=32 time=11ms TTL=126
Reply from 192.168.4.5: bytes=32 time=44ms TTL=126

Ping statistics for 192.168.4.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 44ms, Average = 34ms
  
```


Accessing Dns-server from Administration Block:

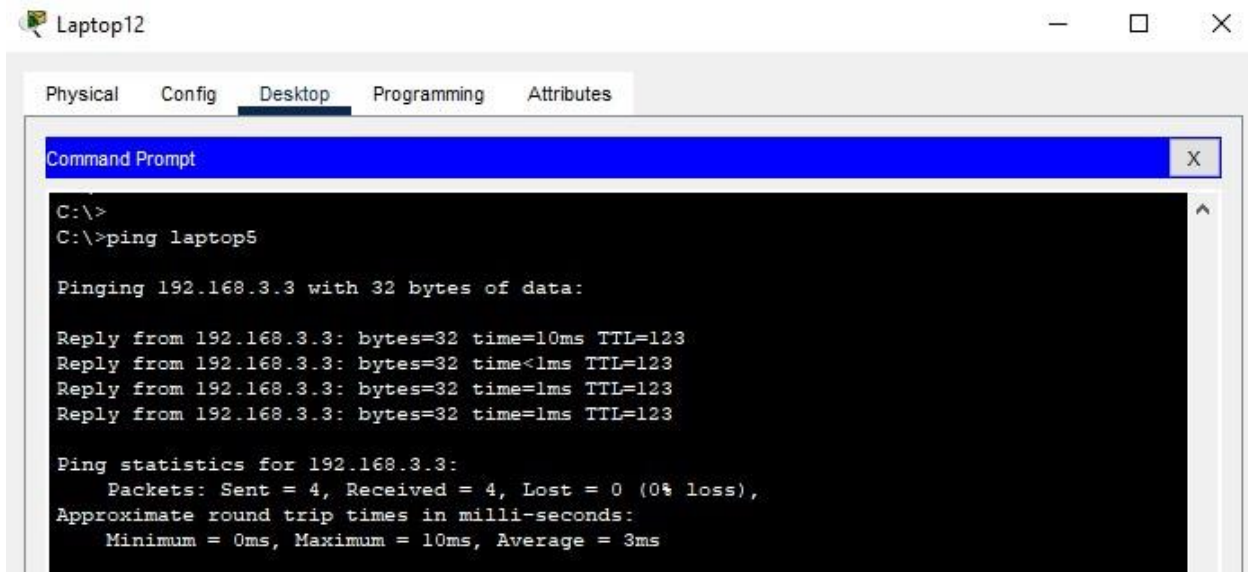


Accessing FLEX Server from Academic Block:



PC's :

Accessing an Academic PC from Examination Dept of Administration:



The screenshot shows a Windows XP desktop with a taskbar at the top. The taskbar includes a Start button, a search bar, and several icons. The desktop background is a light blue gradient. A window titled 'Laptop12' is open, displaying a 'Physical' tab. Within this tab, a 'Command Prompt' window is active, showing the results of a ping command. The Command Prompt window has a blue title bar and a black background with white text. The text in the Command Prompt is as follows:

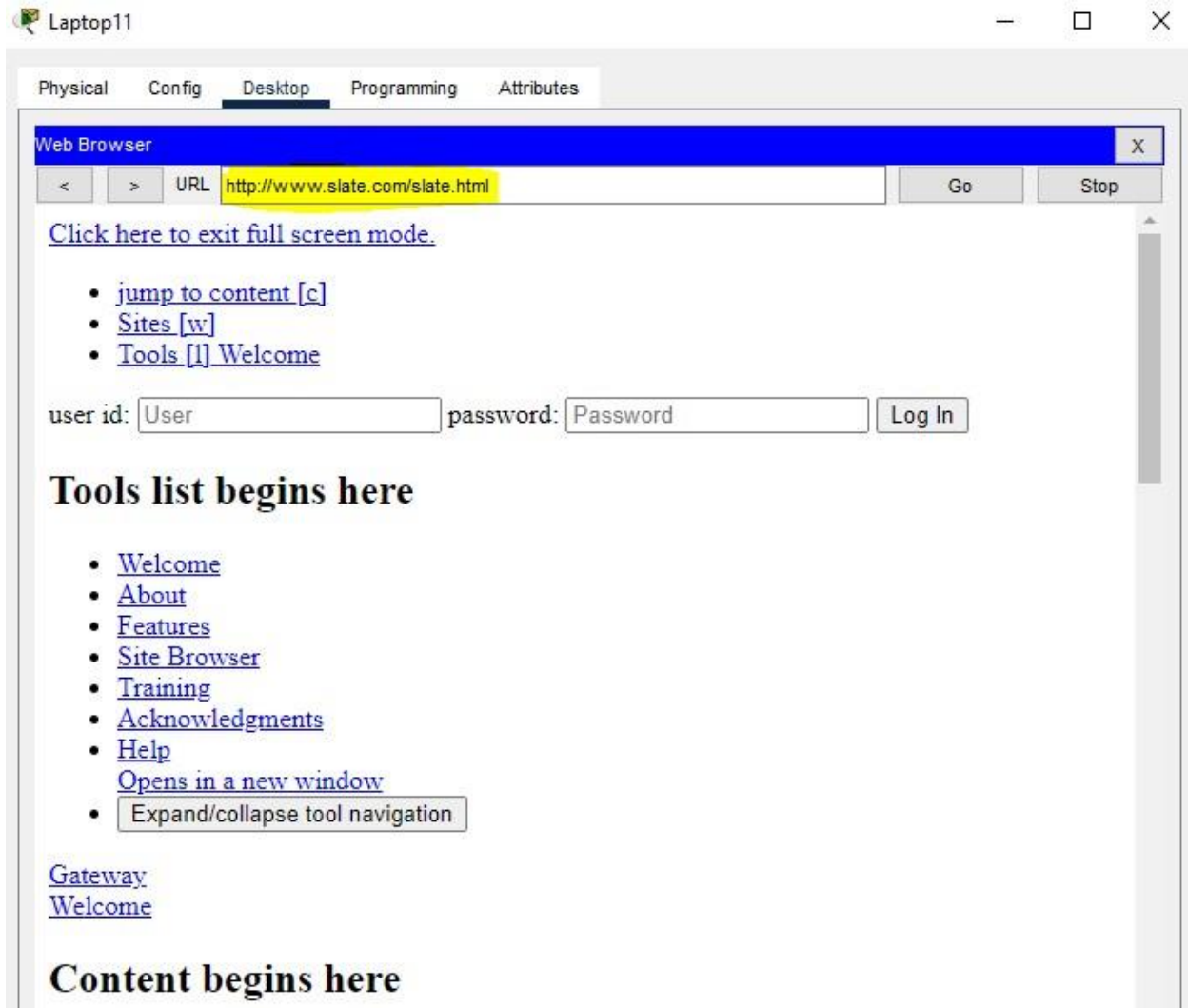
```
C:\>
C:\>ping laptop5

Pinging 192.168.3.3 with 32 bytes of data:

Reply from 192.168.3.3: bytes=32 time=10ms TTL=123
Reply from 192.168.3.3: bytes=32 time<1ms TTL=123
Reply from 192.168.3.3: bytes=32 time=1ms TTL=123
Reply from 192.168.3.3: bytes=32 time=1ms TTL=123

Ping statistics for 192.168.3.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 10ms, Average = 3ms
```

Accessing Slate server from Administration Block :



PC's :

Accessing an Academic PC from Examination Dept:

Physical Config Desktop Programming Attributes

Command Prompt X

```
C:\>
C:\>ping laptop5

Pinging 192.168.3.3 with 32 bytes of data:

Reply from 192.168.3.3: bytes=32 time=10ms TTL=123
Reply from 192.168.3.3: bytes=32 time<1ms TTL=123
Reply from 192.168.3.3: bytes=32 time=1ms TTL=123
Reply from 192.168.3.3: bytes=32 time=1ms TTL=123

Ping statistics for 192.168.3.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 10ms, Average = 3ms
```