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Roll No : 20P-0180

Section: BCS-5B

Course Name: Computer Networks LAB

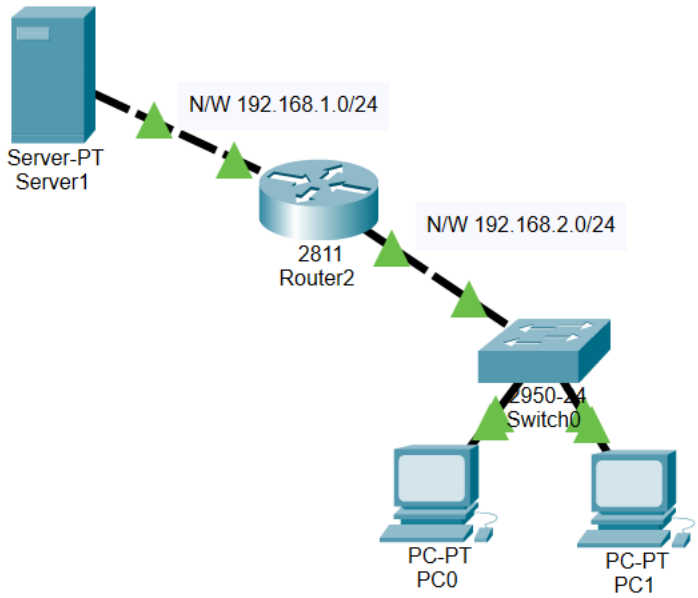
Submitted to : Mam Hurmat Hidayat

Submitted on : 9/20/2022

TASK 1:

Step 1:

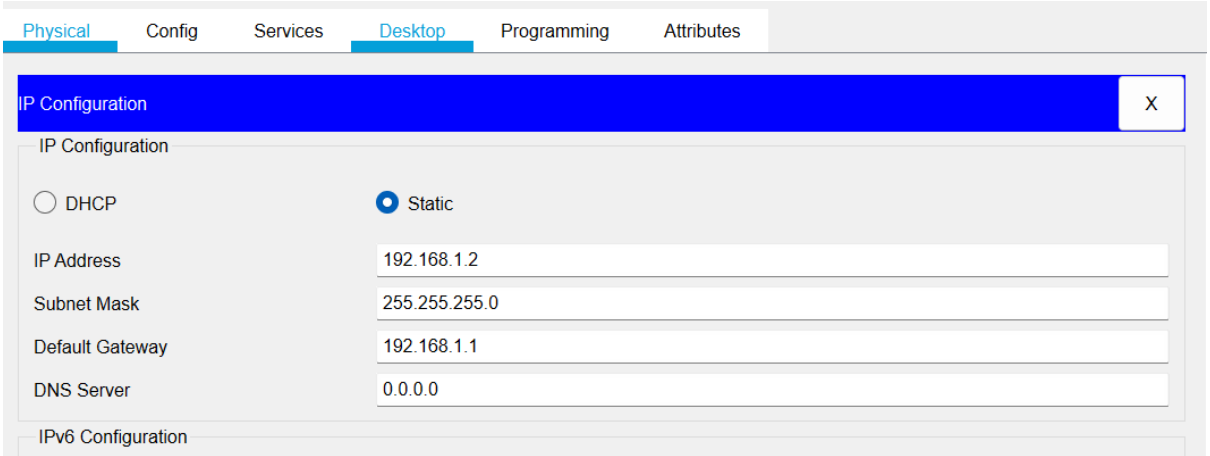
Build a network topology.



step 2:

Assign a static IP address to the server.

IP address: 192.168.1.2 Subnet mask: 255.255.255.0 Default gateway: 192.168.1.1



Step 3:

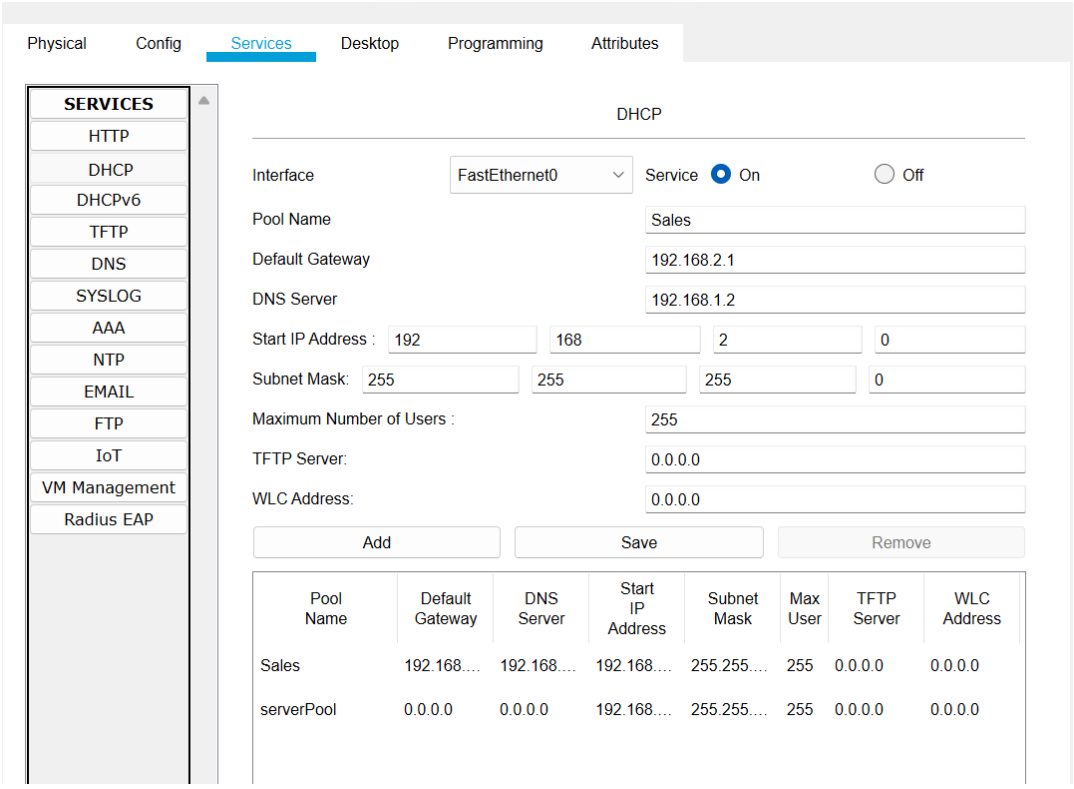
Configuring the router interface.

```
Router>
Router>en
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fa 0/0
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown

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)#interface 192.168.1.1  255.255.255.0
                   ^
% Invalid input detected at '^' marker.

Router(config-if)#interface fa 0/1
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
```

Ctrl+F6 to exit CLI focus Copy Paste

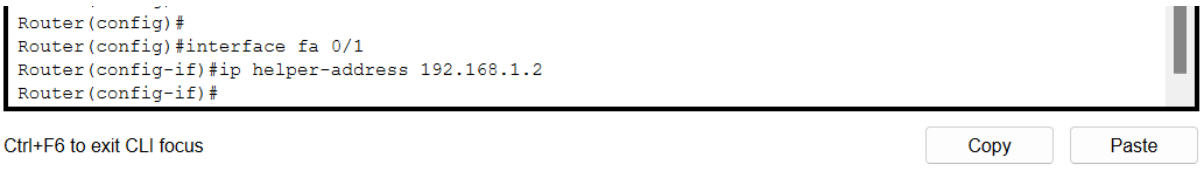
Step 4:

We will configure the DHCP server pool and will name the pool Sales.



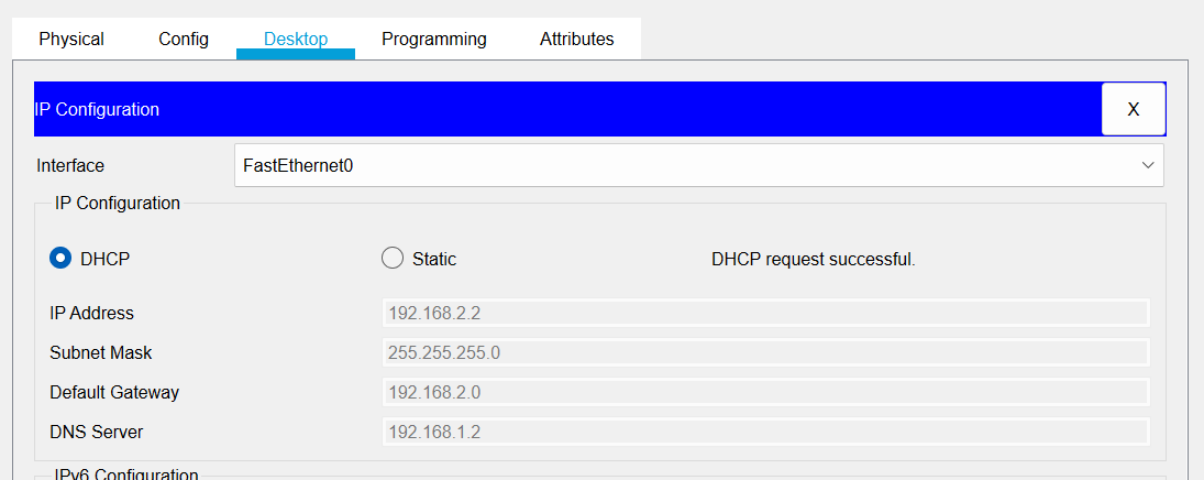
Step 5:

We will add command ip helper address on interface configuration mode of fa 0/0 of router.



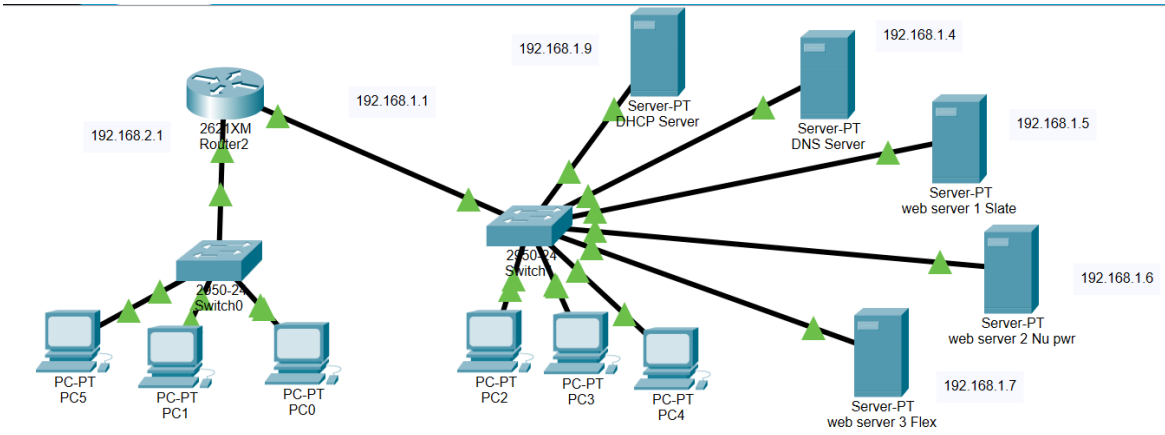
Step 6:

We will enable DHCP on PCs in Sales lane.

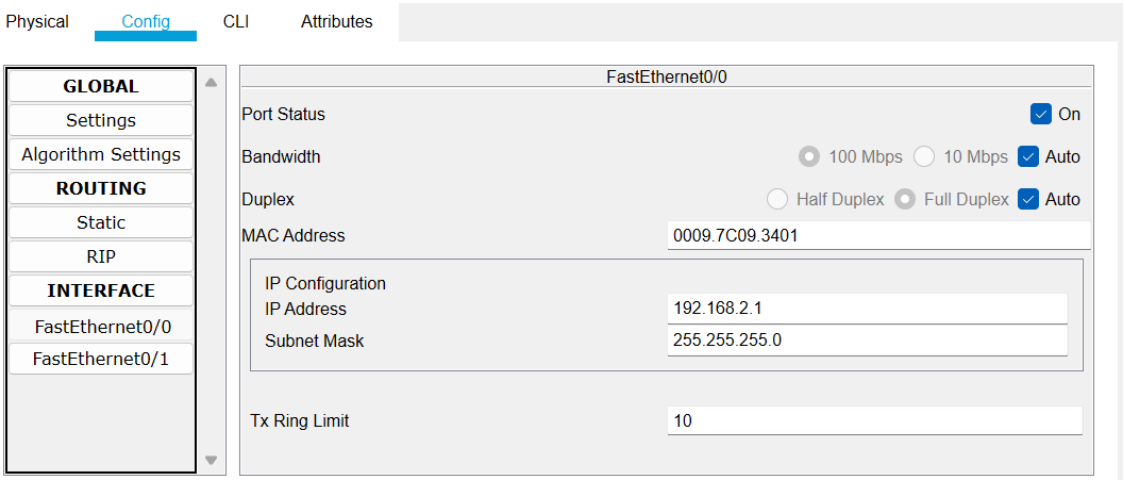


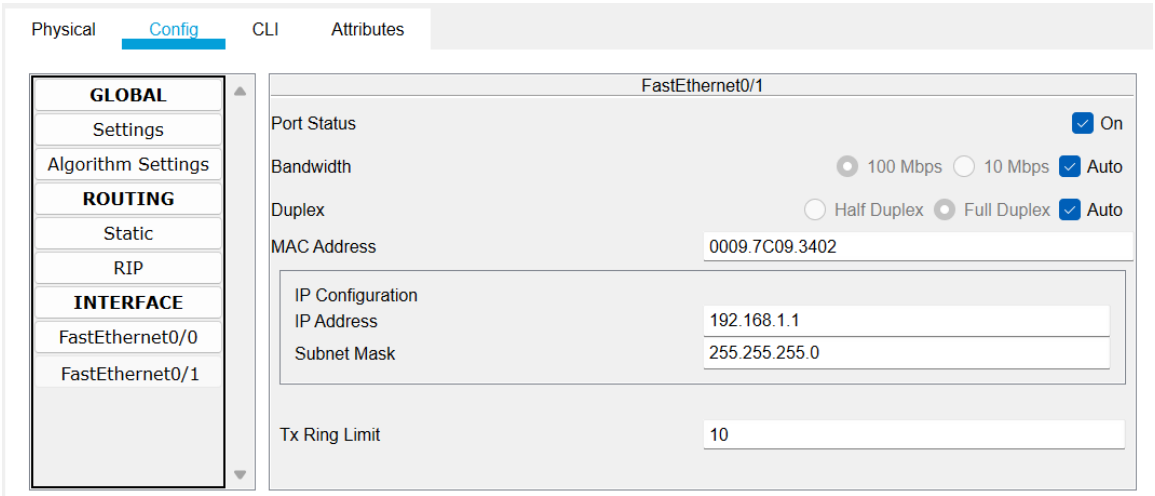
TASK 2:

Step 1: Build a network topology.

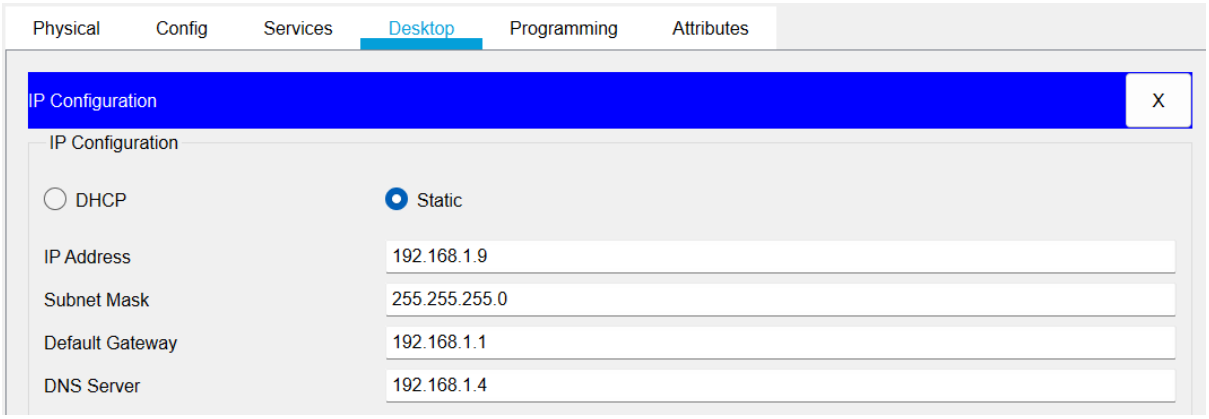


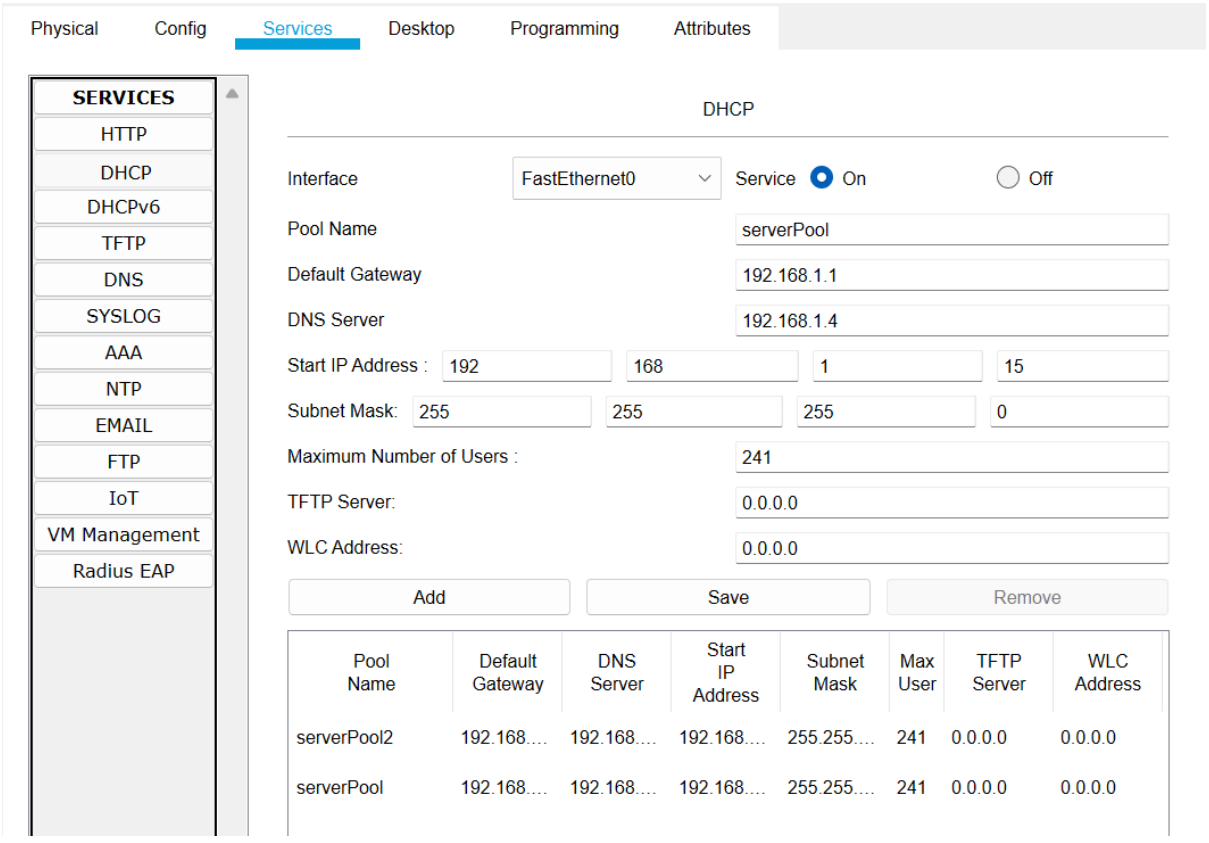
Step 2: Then we will configure both interfaces of router



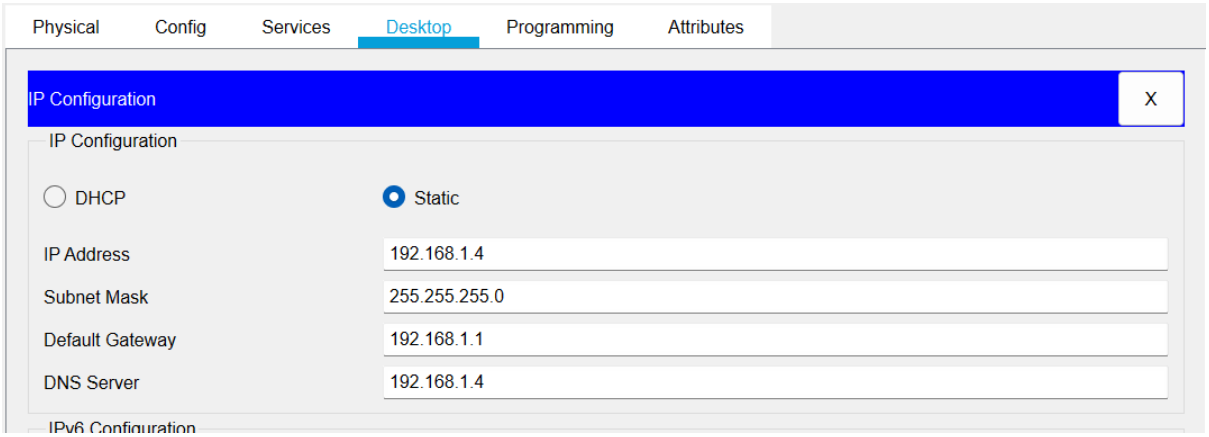


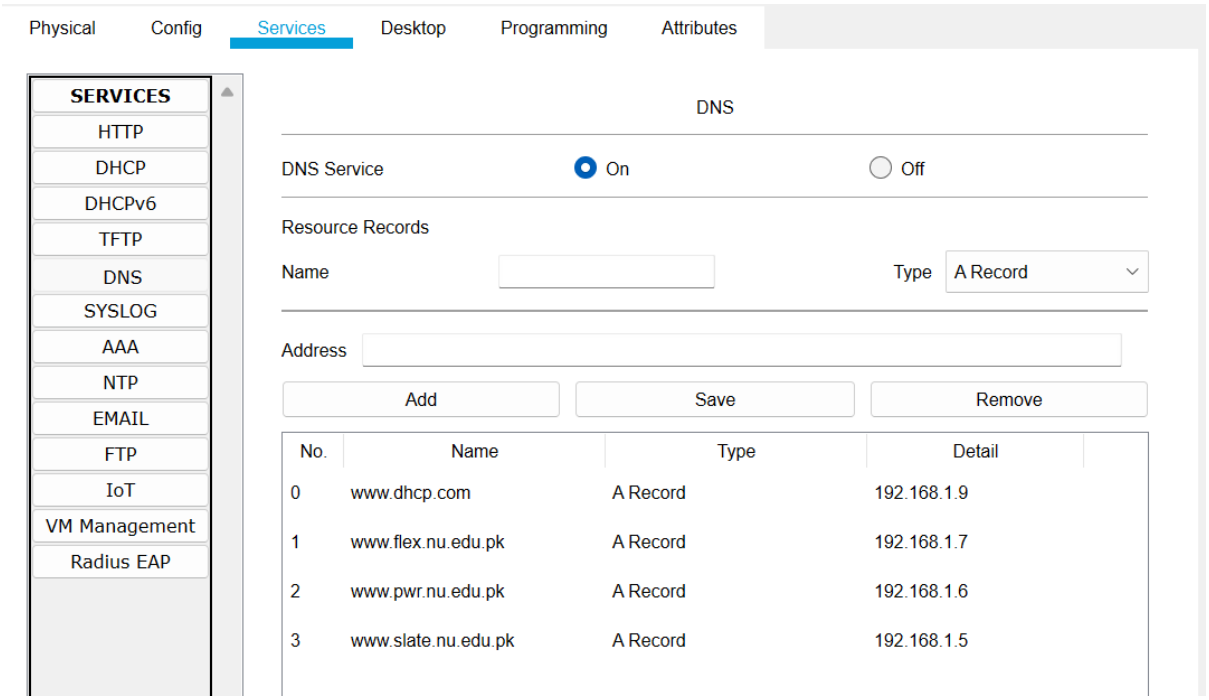
Step 3: We will configure the DHCP server and add IP pools in it.



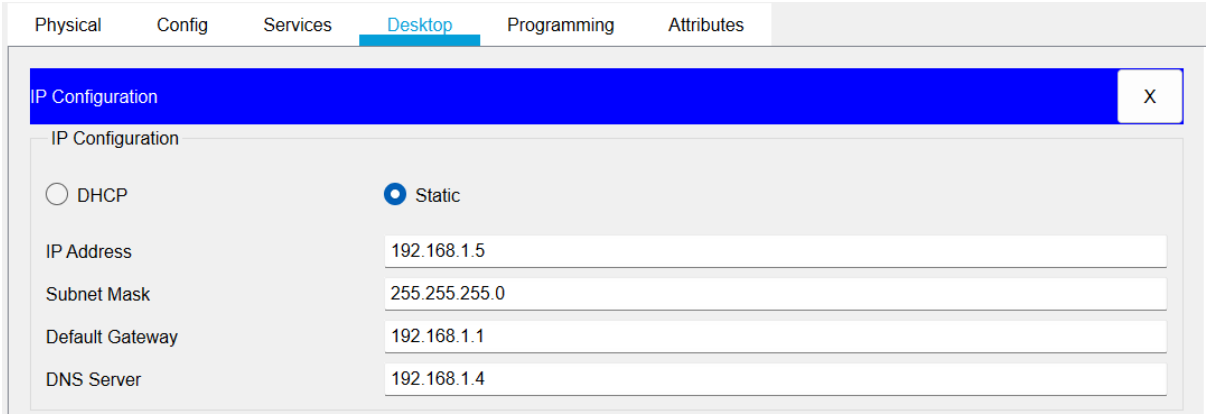


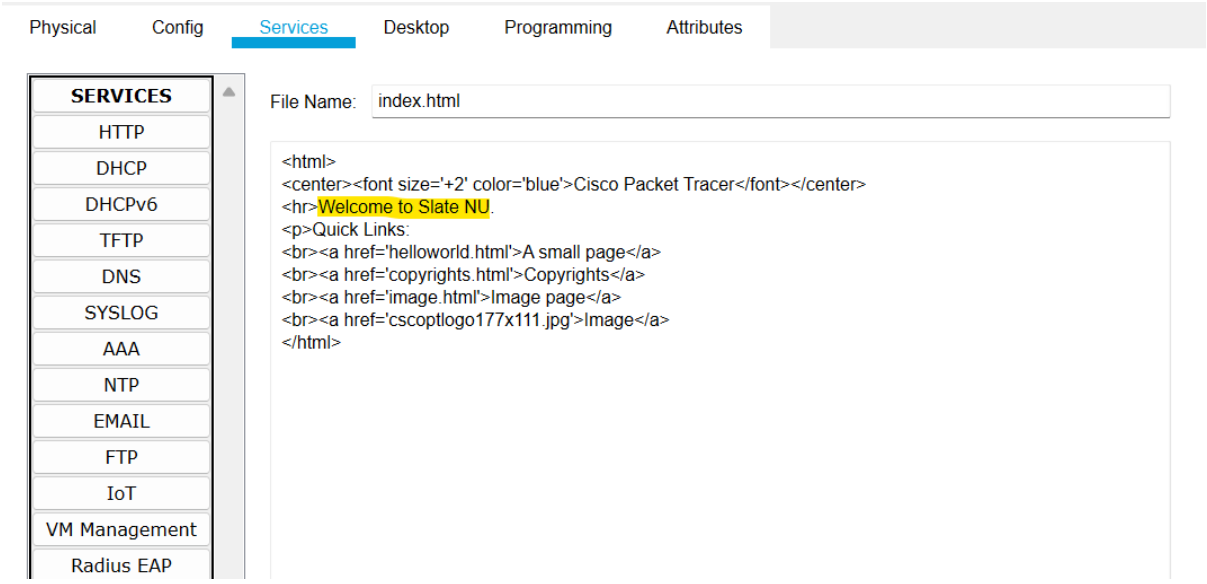
Step 4: Then we will configure DNS server and add Domain names in the DNS.

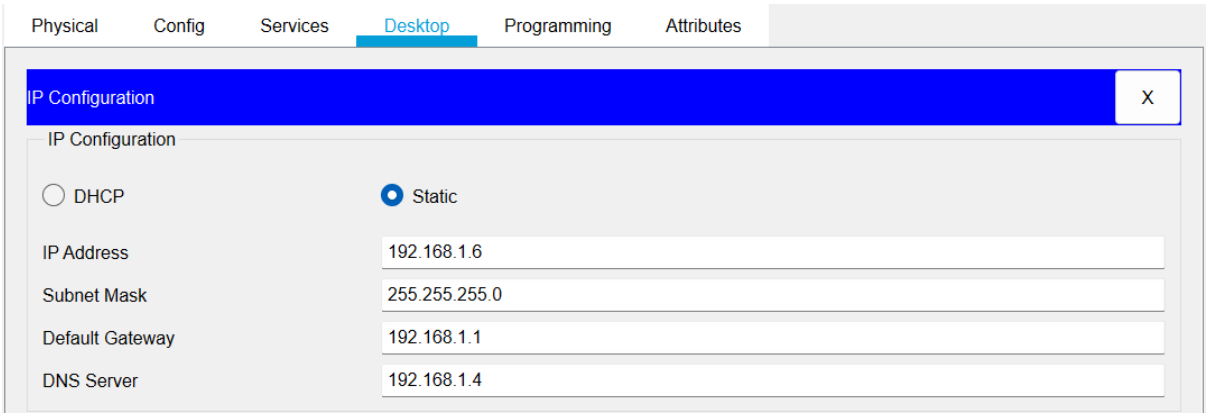


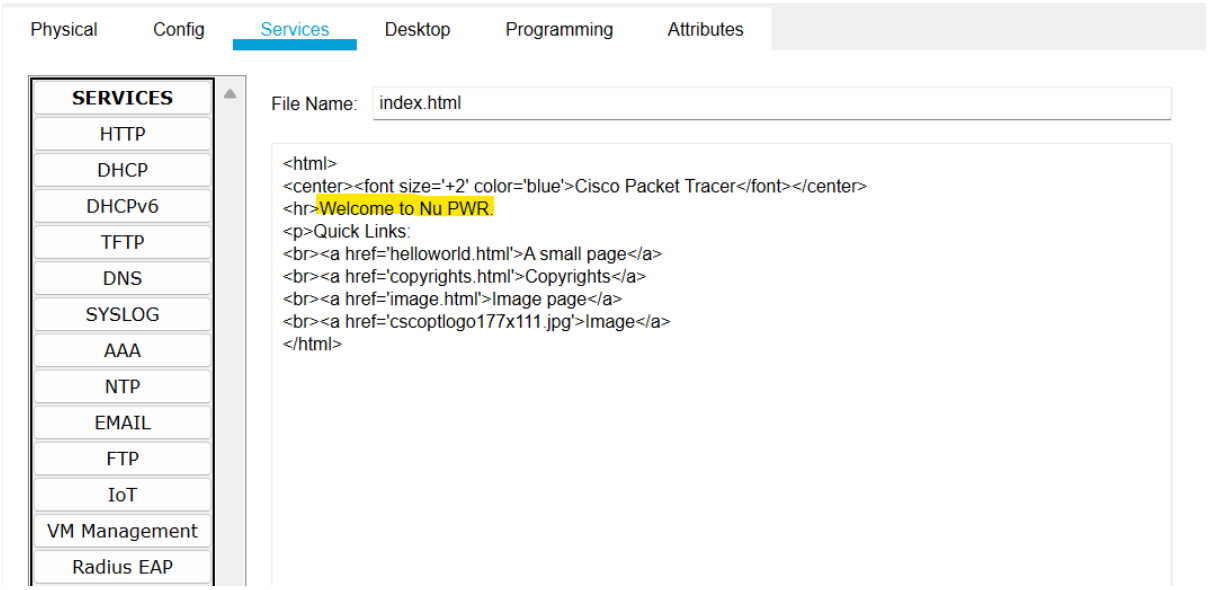


Step 5: we will store each website on separate server configure web servers and we will edit the index.html file of every server.






Physical
Config
Services
Desktop
Programming
Attributes
IP Configuration
X
IP Configuration
DHCP
Static
IP Address
192.168.1.6
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
192.168.1.4

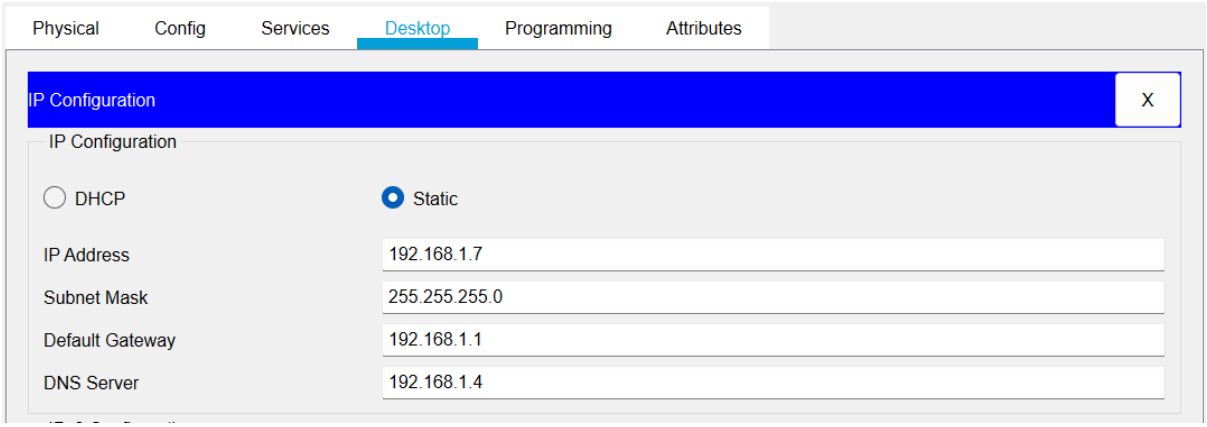

Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
File Name:
index.html
<html>
Cisco Packet Tracer
<hr>Welcome to Nu PWR.
<p>Quick Links:

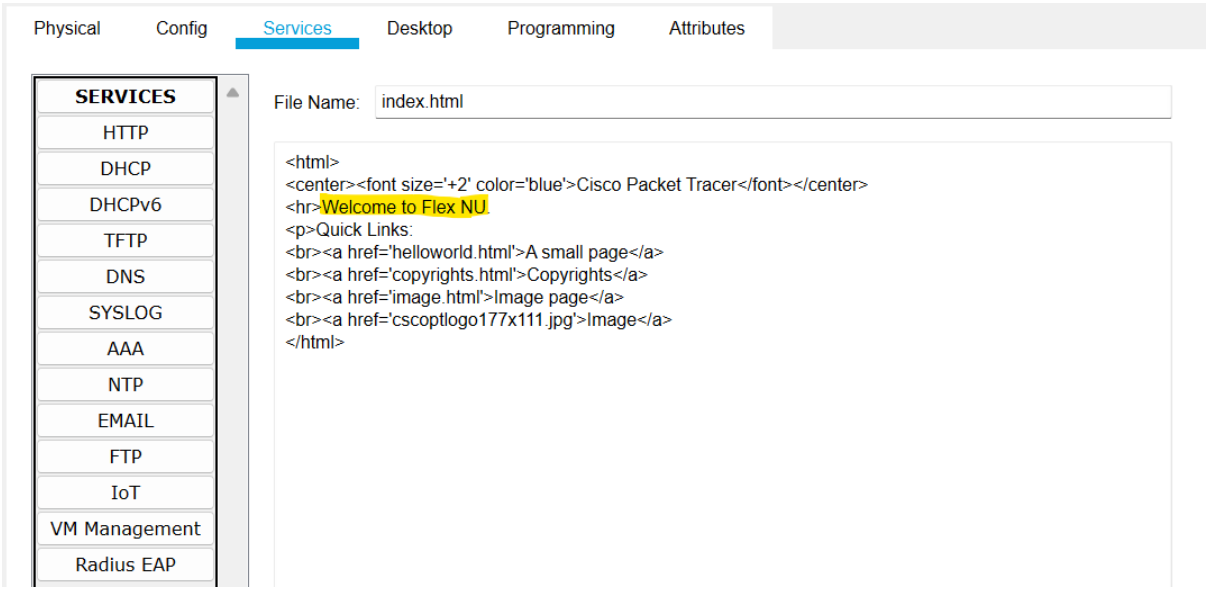
A small page

Copyrights

Image page

Image
</html>

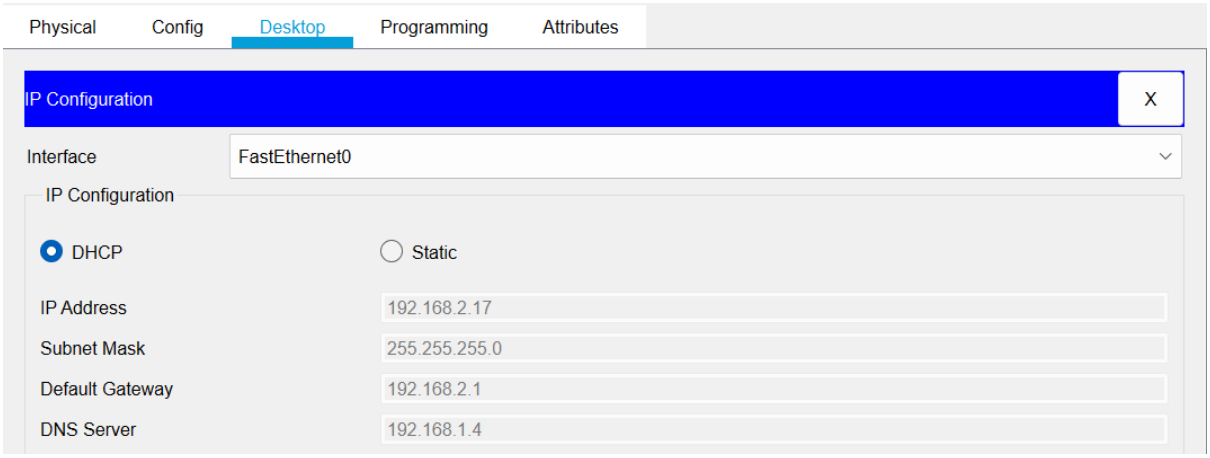


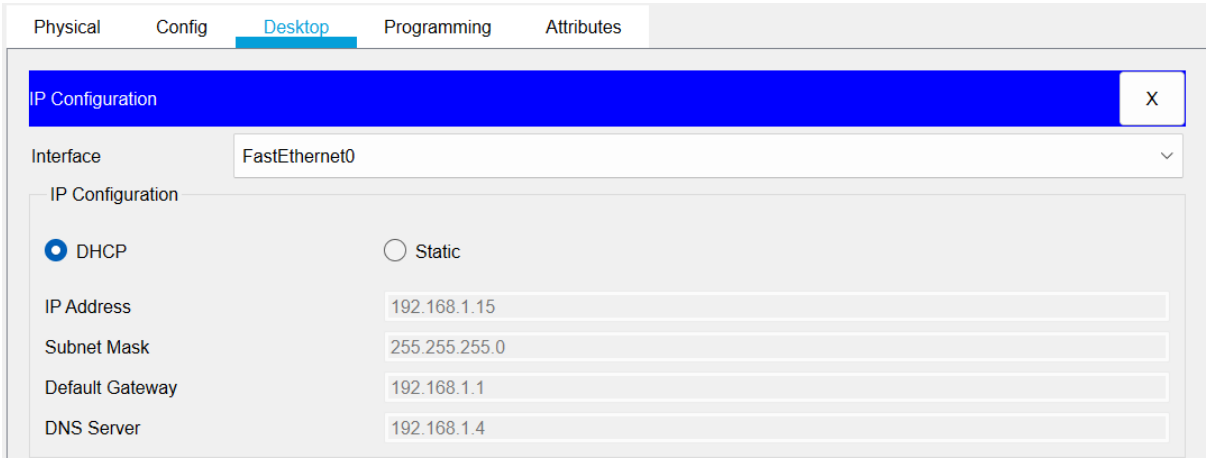


Step 6: we will add ip helper-address in router interface which is on other network.

```
Router>en
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fa 0/0
Router(config-if)#ip helper-address 192.168.1.9
Router(config-if)#ip helper-address 192.168.1.4
Router(config-if)#
```

Step 7: Finally we will enable DHCP on PCs and it will successfully work.





Step 8: we will check by pinging PCs of one LAB (network) to PCs of other LAB (network) and with the servers through there domain name.

```
C:\>ping 192.168.1.15

Pinging 192.168.1.15 with 32 bytes of data:

Reply from 192.168.1.15: bytes=32 time=2ms TTL=127
Reply from 192.168.1.15: bytes=32 time<1ms TTL=127
Reply from 192.168.1.15: bytes=32 time=1ms TTL=127
Reply from 192.168.1.15: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.1.15:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 1ms

C:\>
```

```
C:\>ping www.flex.nu.edu.pk

Pinging 192.168.1.7 with 32 bytes of data:

Reply from 192.168.1.7: bytes=32 time<1ms TTL=127
Reply from 192.168.1.7: bytes=32 time<1ms TTL=127
Reply from 192.168.1.7: bytes=32 time<1ms TTL=127
Reply from 192.168.1.7: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.1.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```