



Computer Science & Engineering
CSE3501 – Information Security Analysis and Audit

LAB FAT

Submitted to **Prof. RAJA SP**

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SLOT: L39+L40

DATE: 07/12/2021

Question

Implement the following server configuration using CISCO packet tracer (assign Class C IP address for the end devices)

- a) **Firewall configuration**
- b) **DNS**
- c) **FTP**
- d) **SMTP**
- e) **HTTP**

Write the aim, and provide necessary screenshots with neat explanations to showcase the procedure followed to build and test the given problem.

Solution

NAME: PUNIT MIDDHA
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LAB FAT

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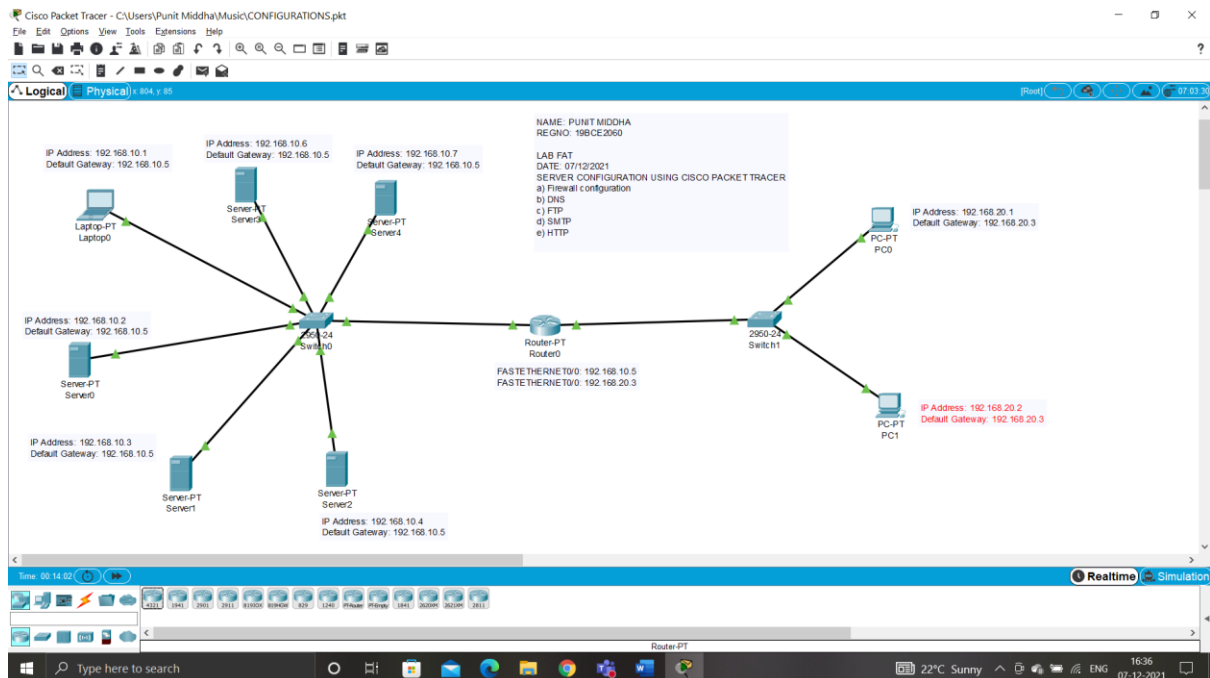
SERVER CONFIGURATION USING CISCO PACKET TRACER

AIM:

We have to implement the server configuration using CISCO packet tracer with the constraint that we only have to use C class IP Addresses i.e., 192.0.0.0 to 223.255.255.255 with Default Subnet Mask is 255.255.255.0. We have to implement Firewall Configuration, DNS, FTP, SMTP, HTTP.

Procedure with Screenshot:

1. Go to end devices and place 1 Router, 5 servers, 2 PC's, 2 Switches, 1 Laptop.
2. Now, go to connections and choose Copper-Straight Through cable and connect as in screenshot given below.
 - Connect Switch0 with 5 Servers and 1 laptop i.e., Server0, Server1, Server2, Server3, Server4, Laptop0.
 - Connect switch0 with router's FastEthernet0/0, and Switch1 with router's FastEthernet1/0.
 - Connect 2 PC's with Switch1



3. After completing the connection procedure, go to **Desktop → IP Configuration** and set the IP Addresses for each and every end device
 - **Server0:**
IP Address: 192.168.10.2
Default Gateway: 192.168.10.5
 - **Server1:**
IP Address: 192.168.10.3
Default Gateway: 192.168.10.5
 - **Server2:**
IP Address: 192.168.10.4
Default Gateway: 192.168.10.5
 - **Server3:**
IP Address: 192.168.10.6
Default Gateway: 192.168.10.5
 - **Server4:**
IP Address: 192.168.10.7
Default Gateway: 192.168.10.5
 - **Laptop0:**
IP Address: 192.168.10.1
Default Gateway: 192.168.10.5
 - **PC0:**

IP Address: 192.168.20.1
Default Gateway: 192.168.20.3

- **PC1:**

IP Address: 192.168.20.2
Default Gateway: 192.168.20.3

All the connections are configured.

a) Firewall configuration

IP configuration and Default Gateway of Server4

The screenshot shows the 'Server4' configuration window with the 'Desktop' tab selected. The 'IP Configuration' section is active, showing static IP settings. Below it, the 'IPv6 Configuration' section is also visible, showing static IPv6 settings. The '802.1X' section is partially visible at the bottom.

IP Configuration

☐ DHCP ☒ Static

IP Address: 192.168.10.7

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.10.5

DNS Server: 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::206:2AFF:FEEB:C76B

IPv6 Gateway:

IPv6 DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

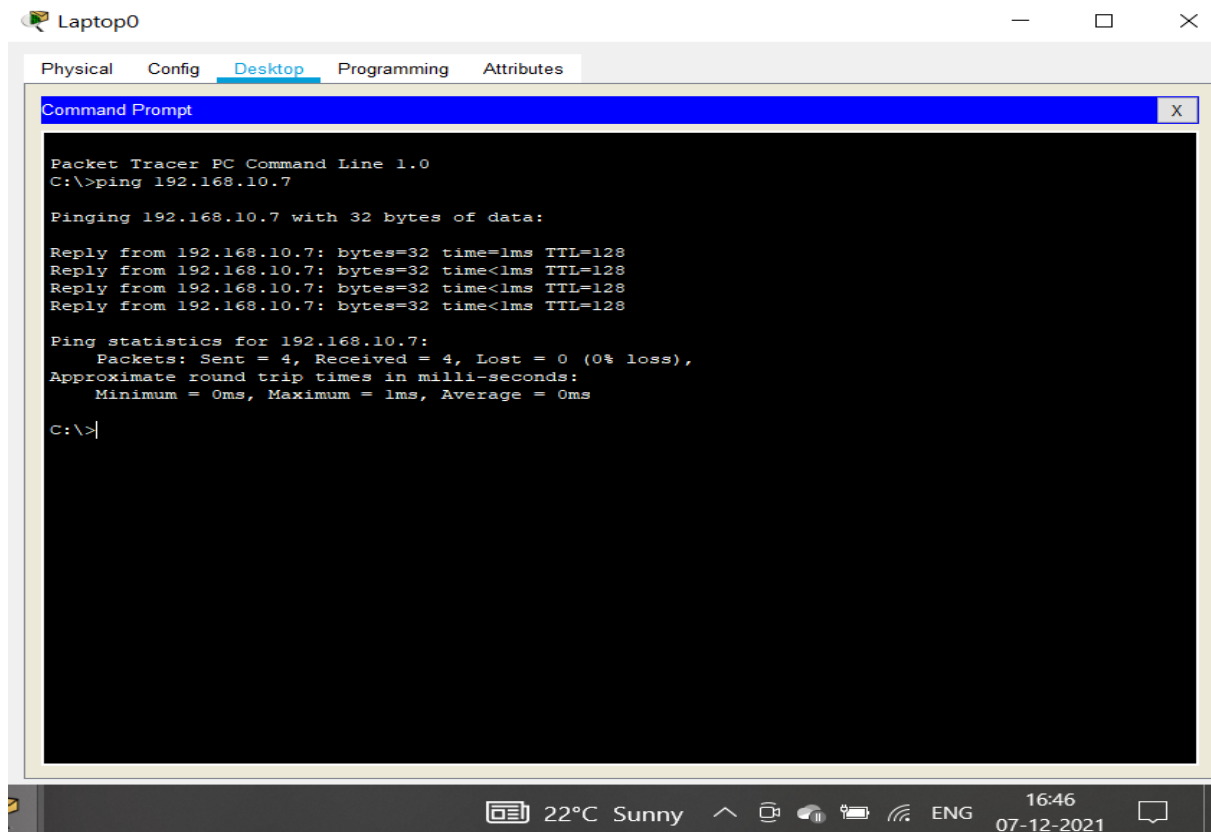
Username:

Password:

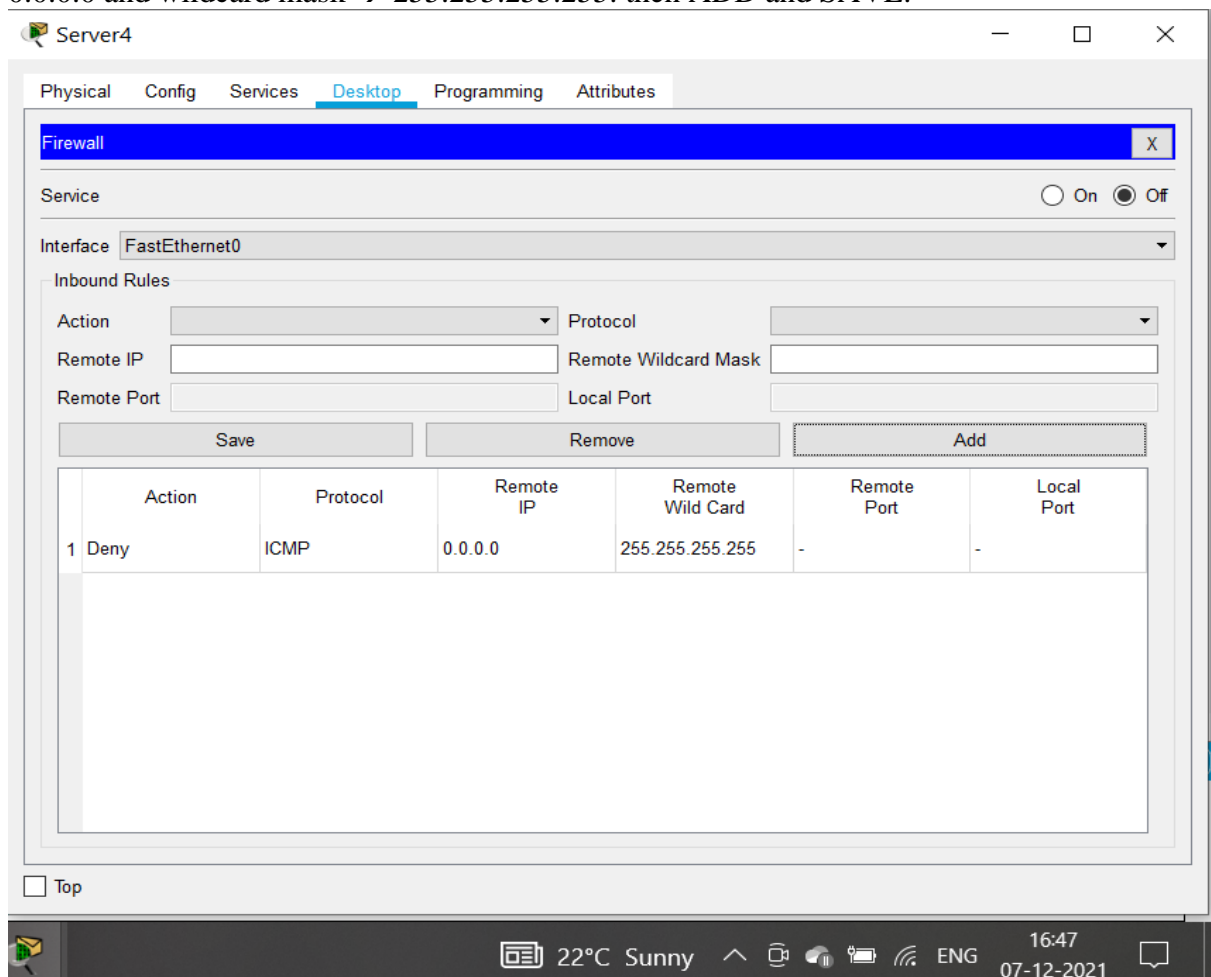
☐ Top

System tray: 22°C Sunny 16:44 07-12-2021

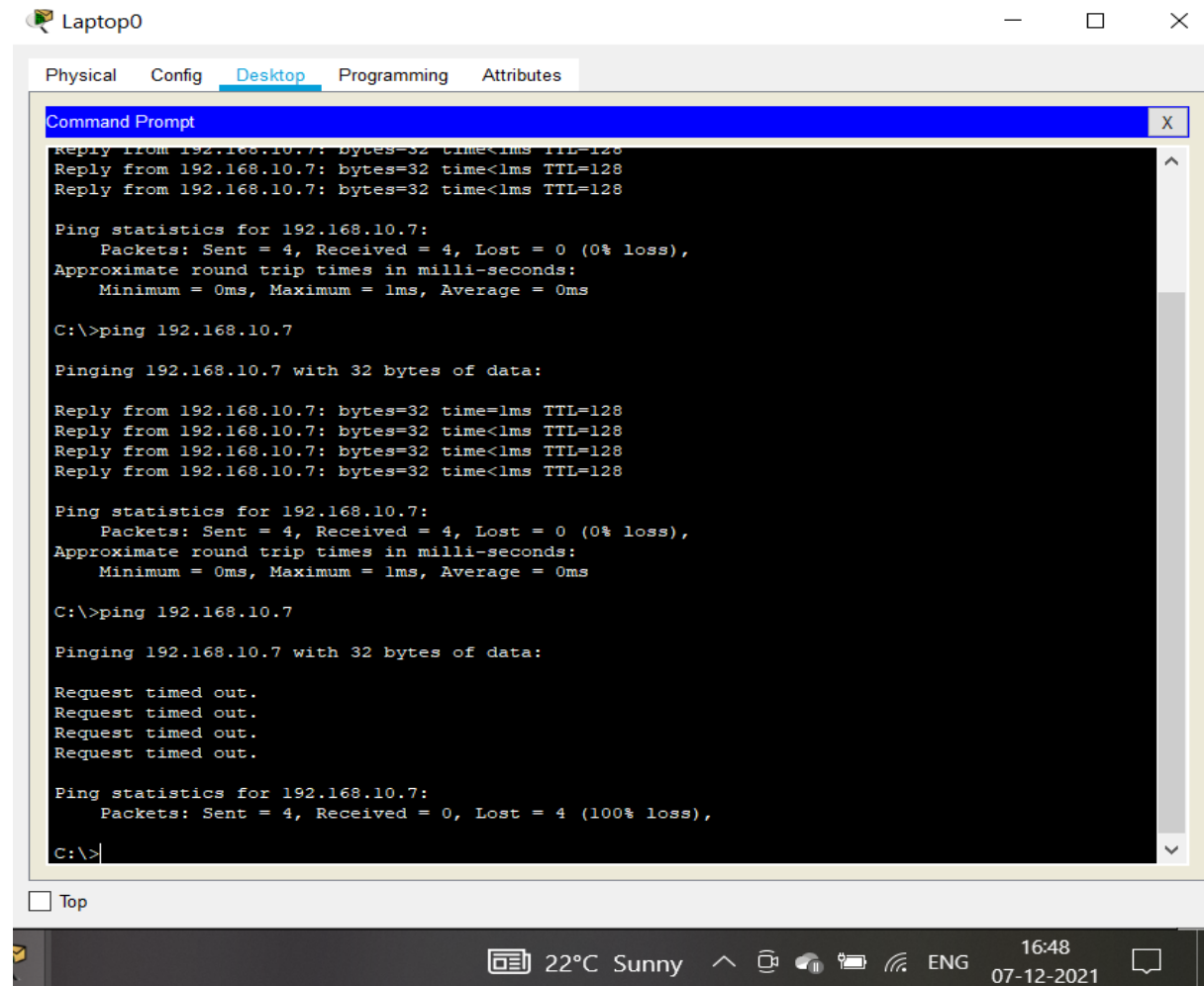
Before Configuring the Firewall, ping the server from Laptop0 i.e., ping 192.168.10.7



After the Ping command that is executed successfully, now for configuring the Firewall. Go to Server4 → Desktop → Firewall. Set Action → Deny, Protocol → ICMP, remote → 0.0.0.0 and wildcard mask → 255.255.255.255. then ADD and SAVE.



Pinging the Server0 from Laptop0, we can now see that ping command is not working and hence we can say Firewall configuration is working properly on server4.



```
Command Prompt
Reply from 192.168.10.7: bytes=32 time<1ms TTL=128
Reply from 192.168.10.7: bytes=32 time<1ms TTL=128
Reply from 192.168.10.7: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.10.7

Pinging 192.168.10.7 with 32 bytes of data:

Reply from 192.168.10.7: bytes=32 time=1ms TTL=128
Reply from 192.168.10.7: bytes=32 time<1ms TTL=128
Reply from 192.168.10.7: bytes=32 time<1ms TTL=128
Reply from 192.168.10.7: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.10.7

Pinging 192.168.10.7 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.10.7:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

b) DNS

Ip config of server1

Server1

Physical Config Services **Desktop** Programming Attributes

IP Configuration X

IP Configuration

☐ DHCP ☒ Static

IP Address

Subnet Mask

Default Gateway

DNS Server

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication

Username

Password

☐ Top

22°C Sunny 17:10 07-12-2021

Go to services and add the name type and address

Server1

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

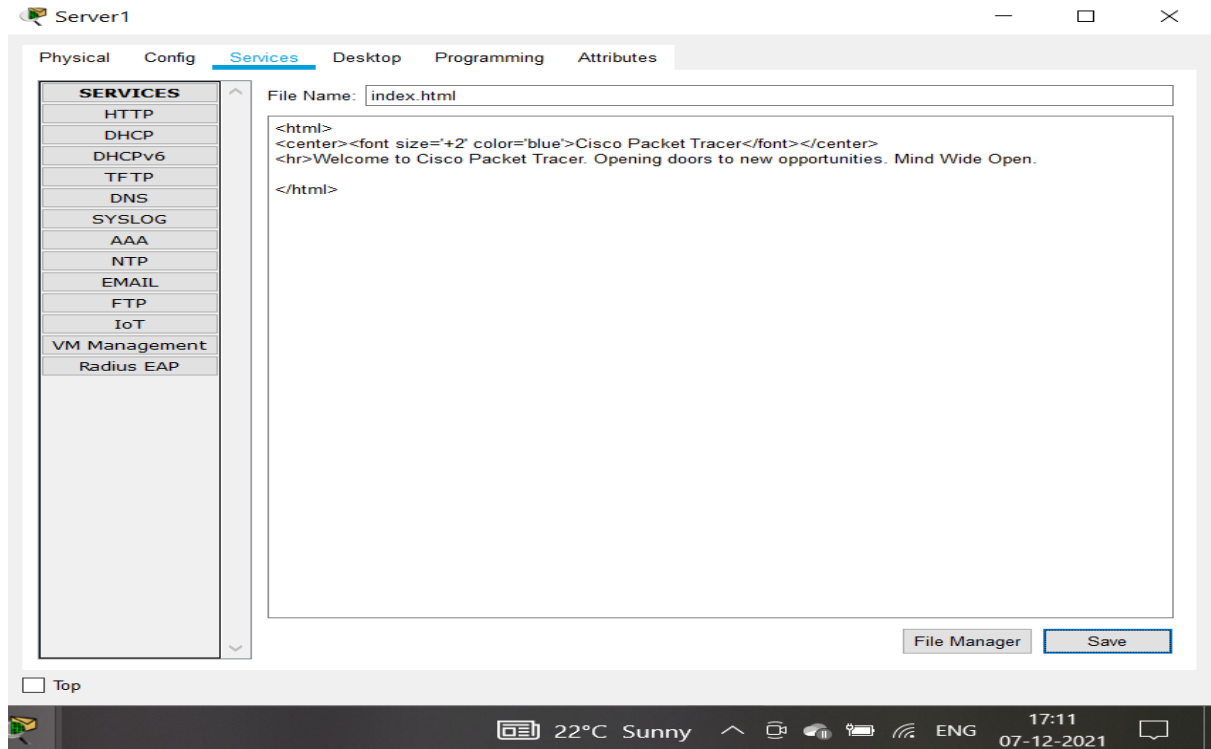
Address

No.	Name	Type	Detail
0	www.labfat_punit.com	A Record	192.168.10.3

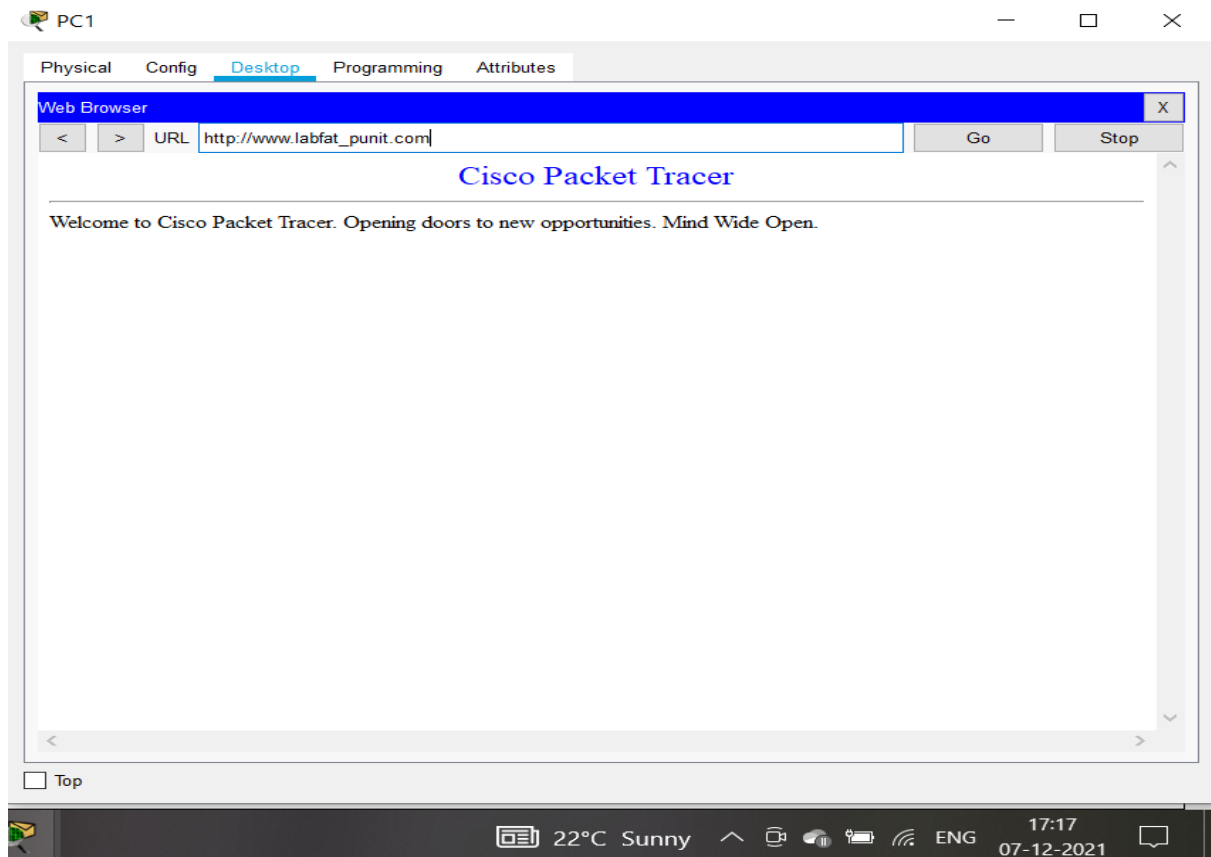
☐ Top

22°C Sunny 17:12 07-12-2021

File to access the DNS

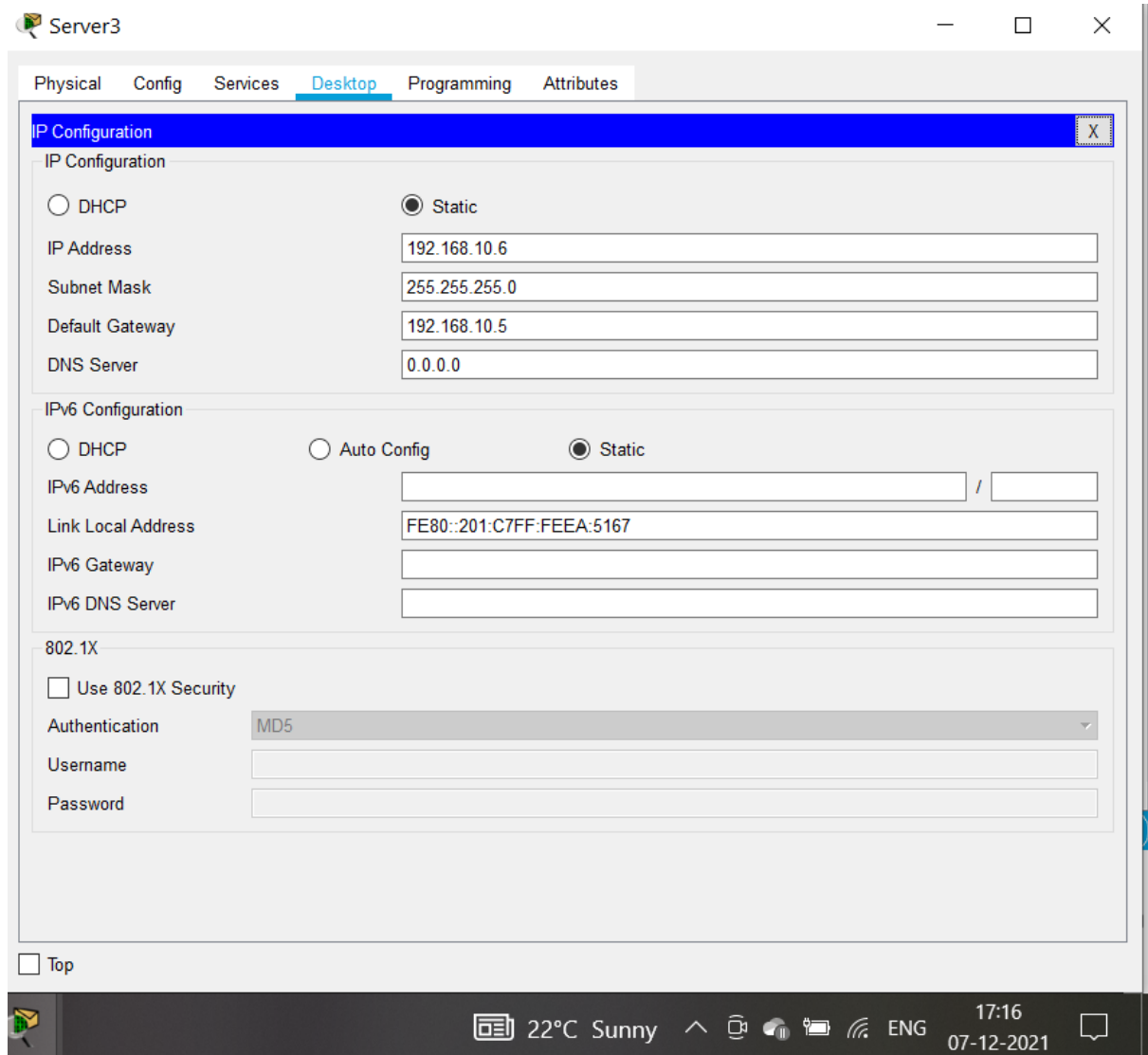


Accessing the file from PC1

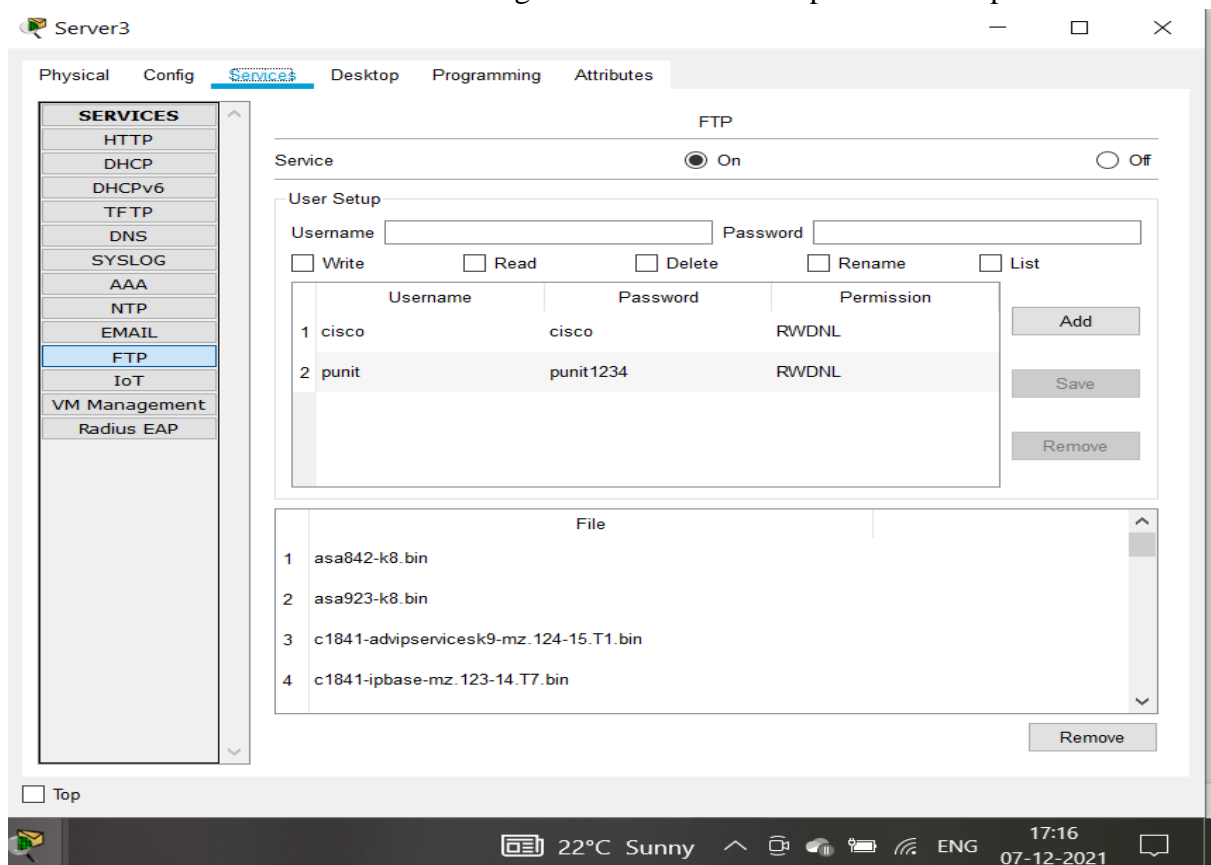


c) FTP

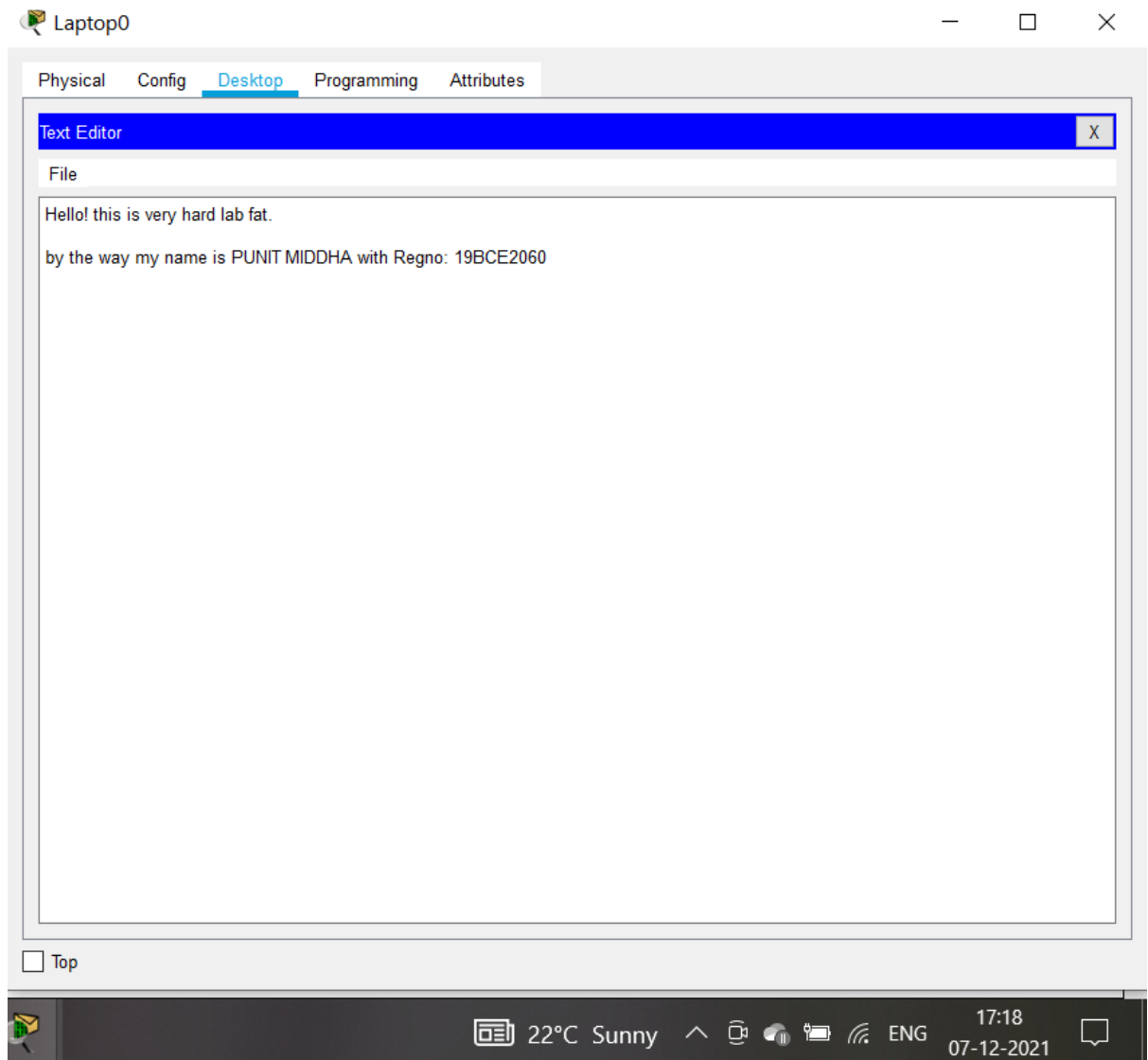
Ip Config of server3



Go to services and on the FTP services give the username and pass with full permission

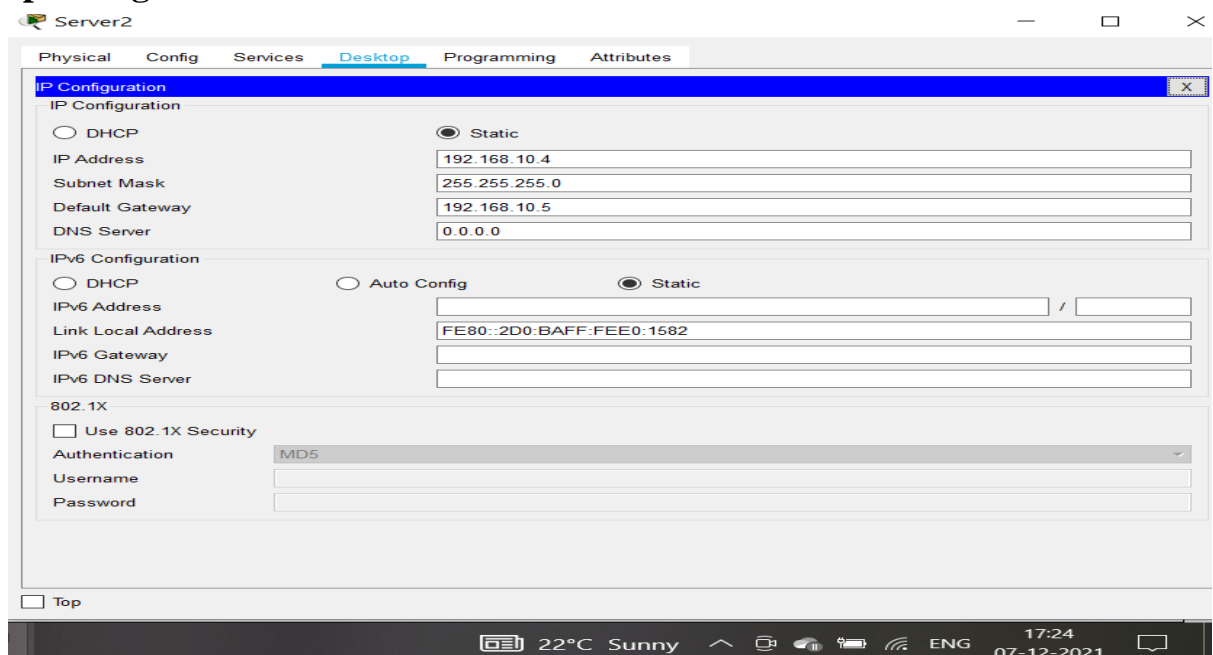


File that we get from Server named punit_labfat.txt

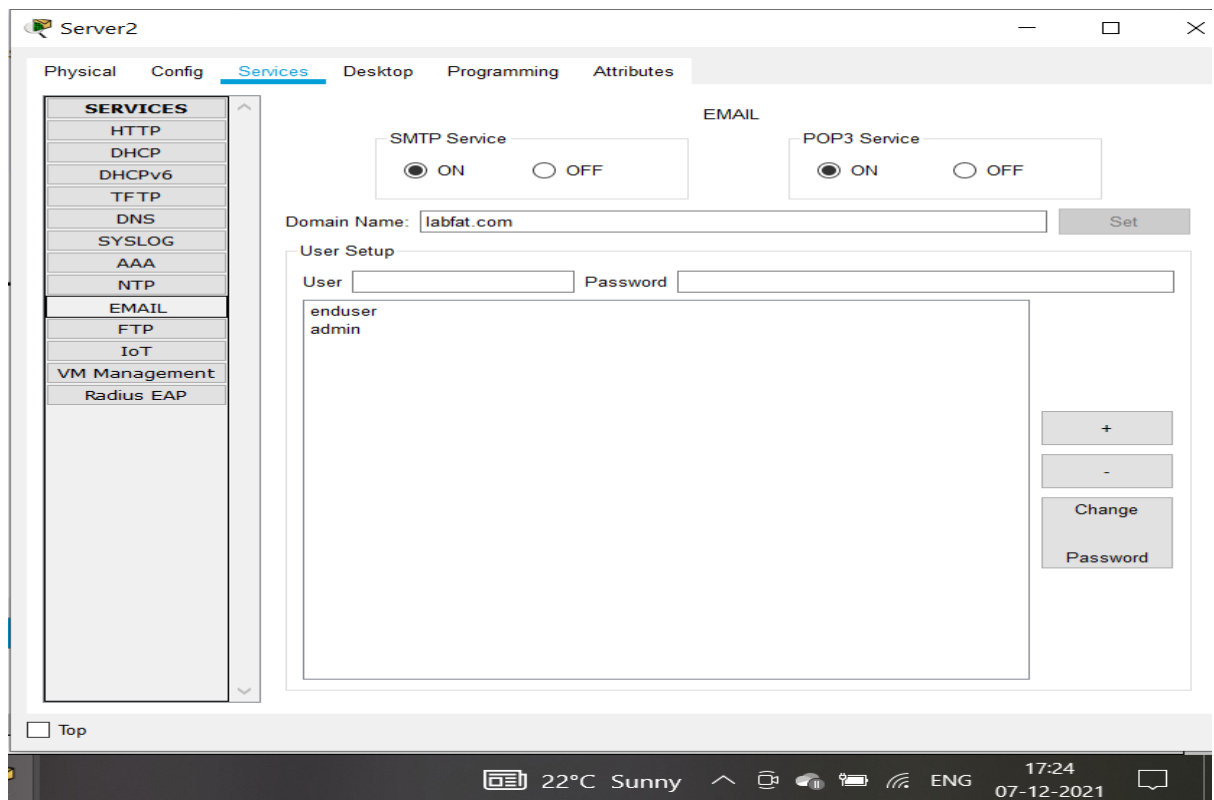


d) SMTP

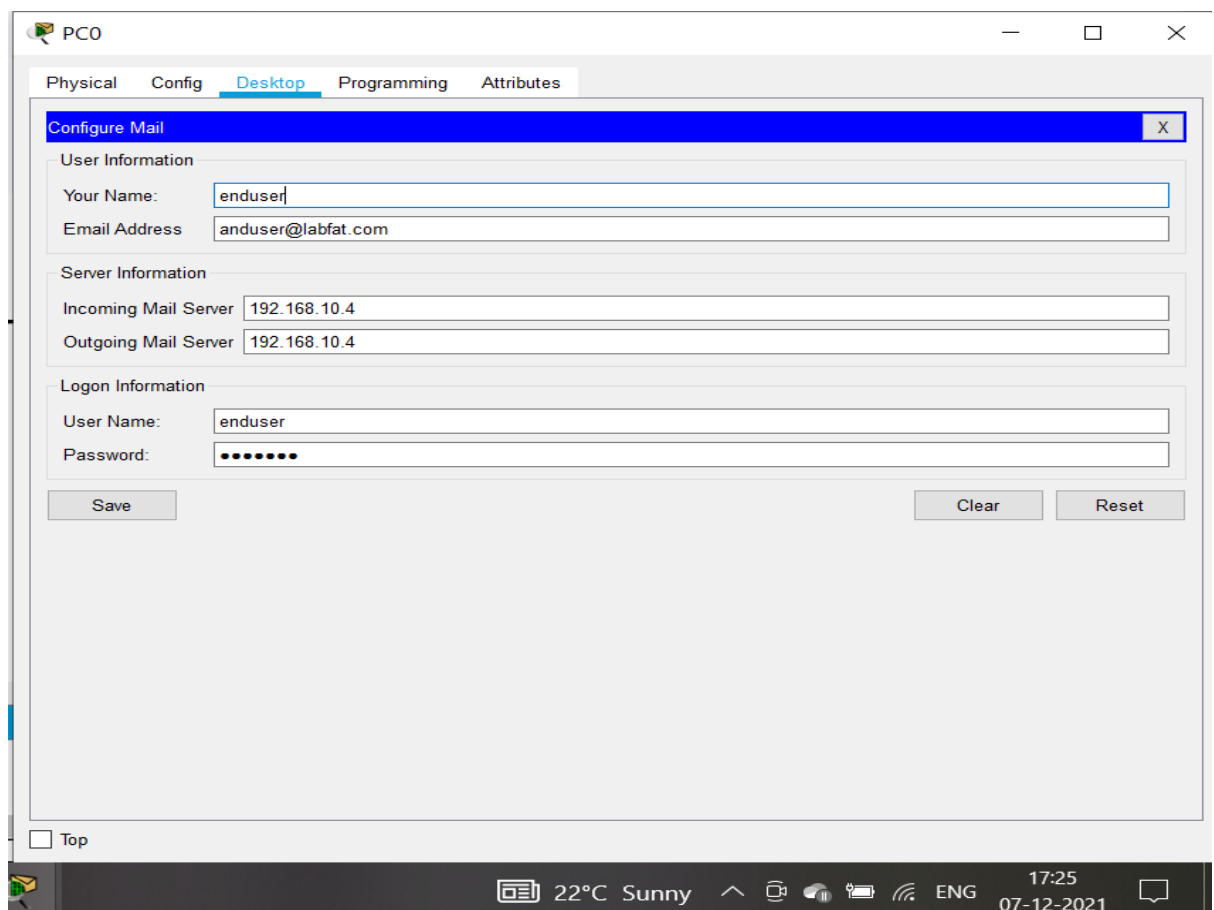
Ip config of server2



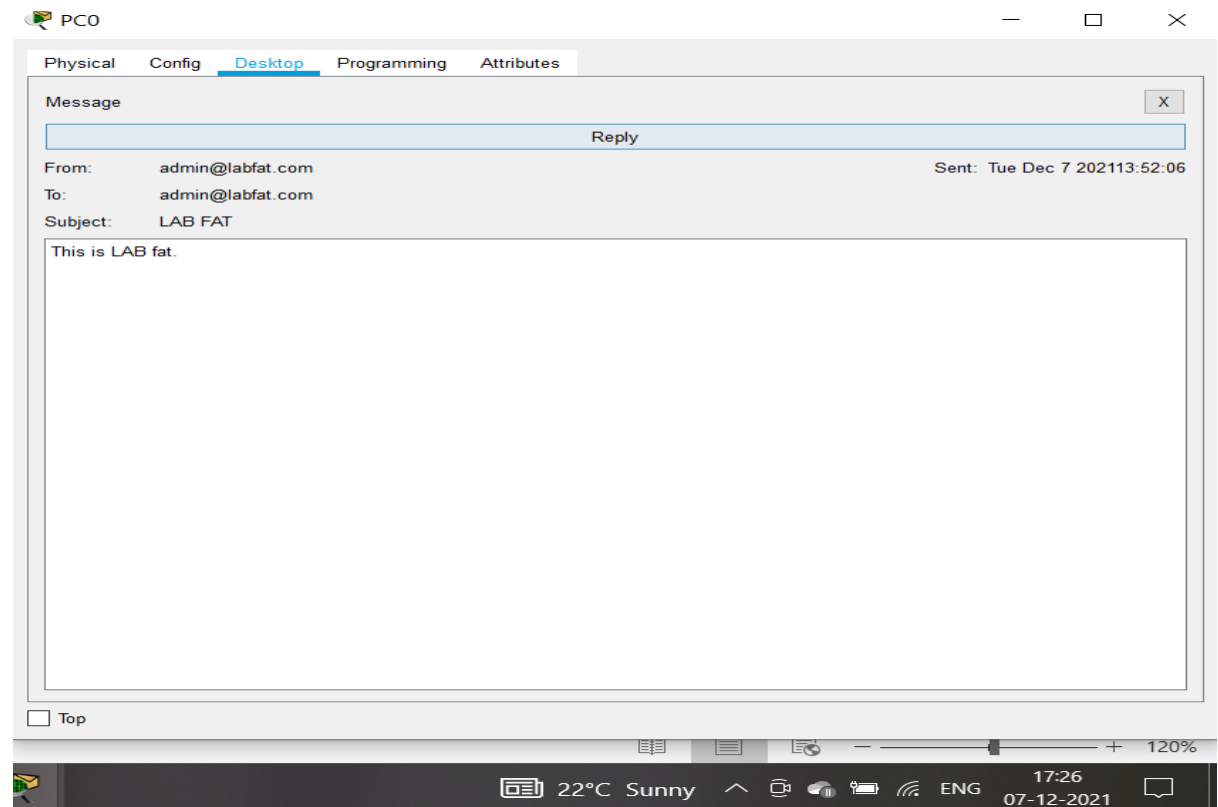
Go to services and on the email services give domain name username and password



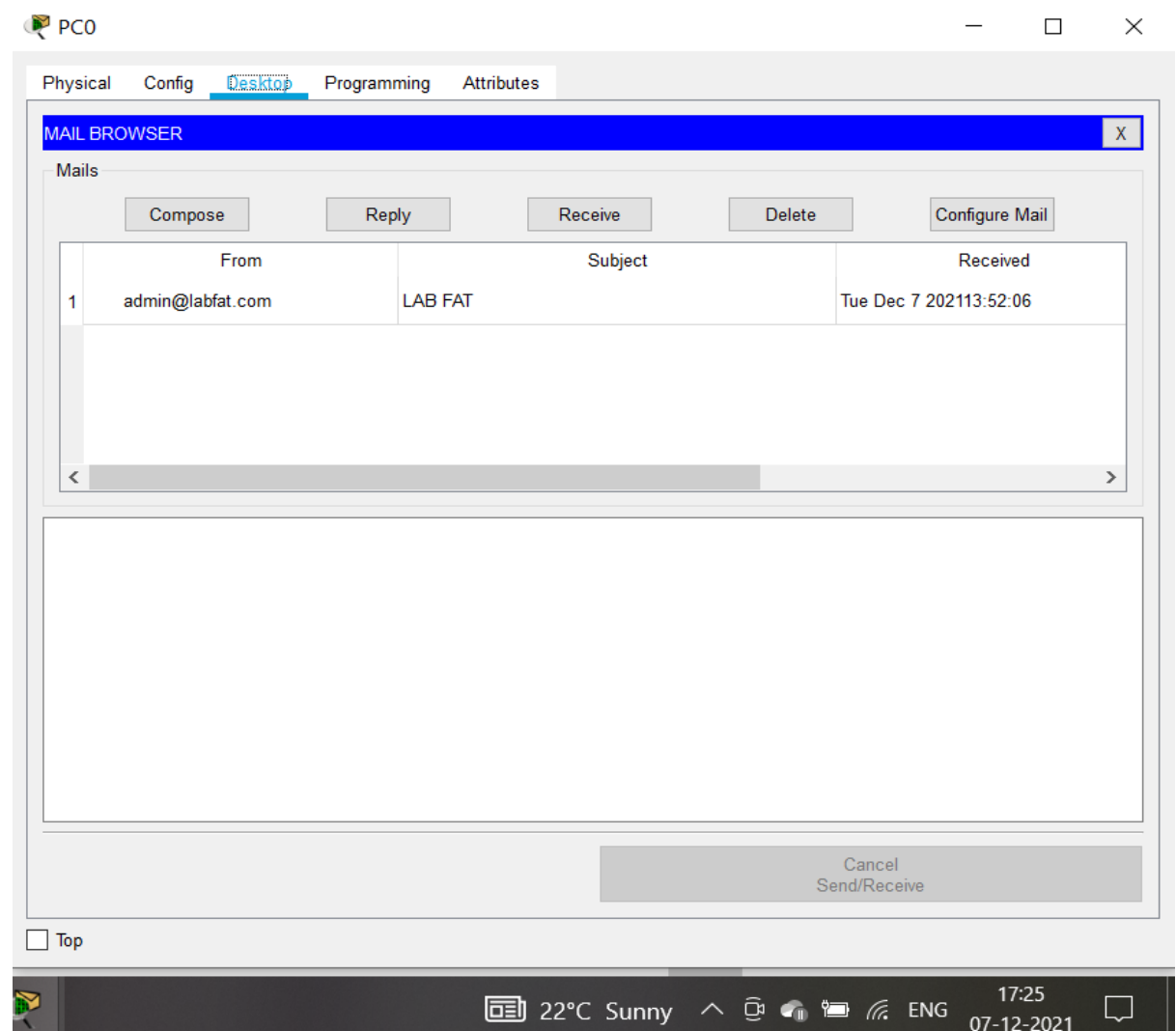
Configuring the email



The mail that I have send from admin to enduser



Received mail to enduser



e) HTTP

IP configuration of Server0 is given below

The screenshot shows the 'Server0' configuration window with the 'Desktop' tab selected. The 'IP Configuration' section is expanded, showing the following settings:

- IP Configuration:**
 - ☐ DHCP
 - ☒ Static
 - IP Address: 192.168.10.2
 - Subnet Mask: 255.255.255.0
 - Default Gateway: 192.168.10.5
 - DNS Server: 0.0.0.0
- IPv6 Configuration:**
 - ☐ DHCP
 - ☐ Auto Config
 - ☒ Static
 - IPv6 Address: [empty]
 - Link Local Address: FE80::2D0:BCFF:FED2:4DCD
 - IPv6 Gateway: [empty]
 - IPv6 DNS Server: [empty]
- 802.1X:**
 - ☐ Use 802.1X Security
 - Authentication: MD5
 - Username: [empty]
 - Password: [empty]

At the bottom of the window, there is a 'Top' button and a system tray showing '22°C Sunny', 'ENG', and the date '07-12-2021'.

Now, to configure the HTTP, go to Server0 → Services → HTTP.

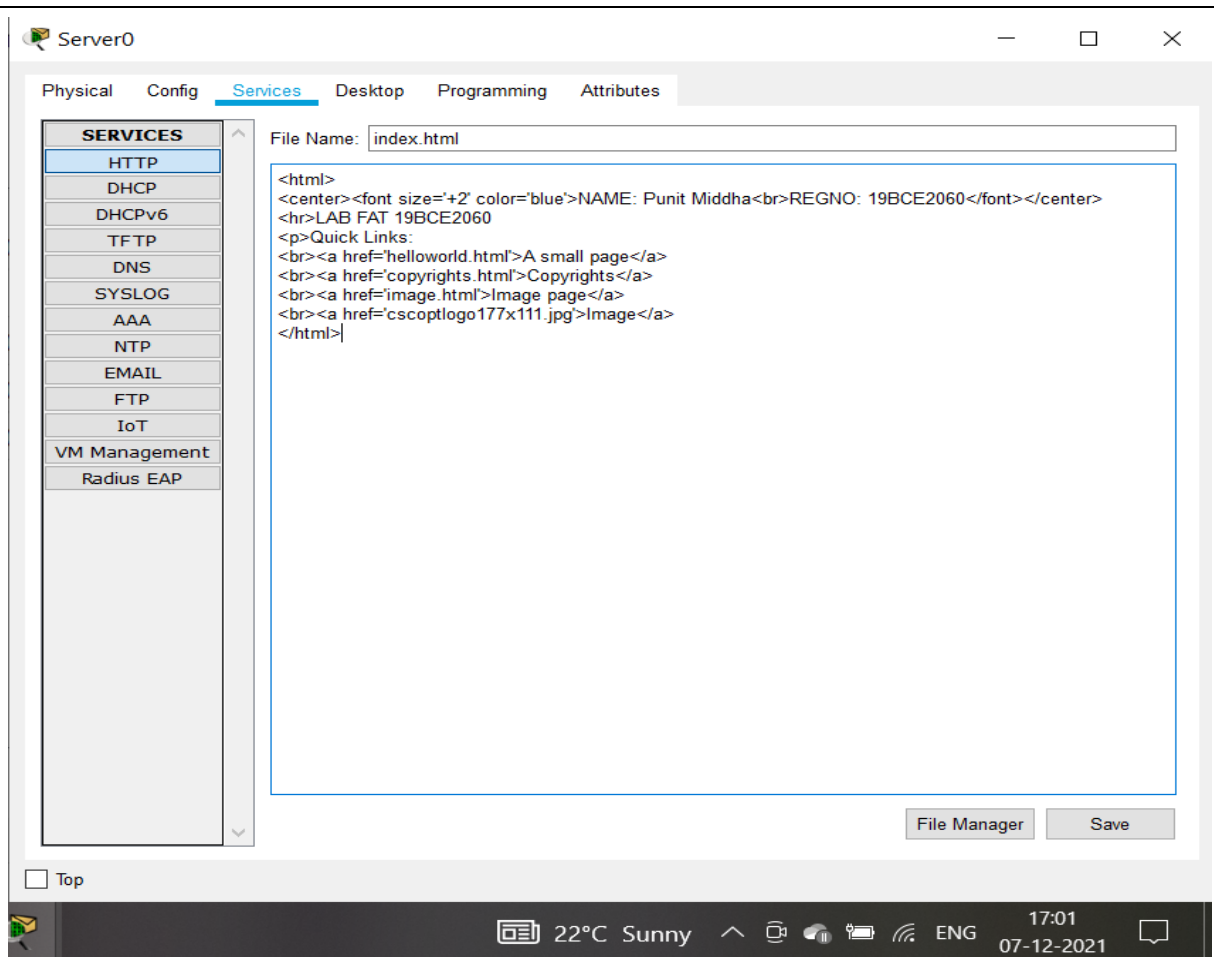
Set the HTTP and HTTPS to be “ON”. And change the Index.html file.

The screenshot shows the 'Server0' configuration window with the 'Services' tab selected. The 'HTTP' and 'HTTPS' settings are both set to 'On'. Below these settings is a 'File Manager' table showing the contents of the file system.

	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)

At the bottom of the window, there is a 'Top' button and a system tray showing '22°C Sunny', 'ENG', and the date '07-12-2021'.

Index.html file is Shown Below



Accessing the Server0 from PC0 using HTTP protocol i.e., <http://192.168.10.2>

