

**COMERCIAL MAILING SERVICE**

**A COURSE PROJECT REPORT**

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**FACULTY OF ENGINEERING AND TECHNOLOGY**

**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY**

**Kattankulathur, Chenpalattu District**

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# **SRM INSTITUTE OF SCIENCE AND TECHNOLOGY**

**(Under Section 3 of UGC Act, 1956)**

## **BONAFIDE CERTIFICATE**

Certified that this mini project report "**Commercial Mailing Service** " is the bonafide work of **Aniket Bada Panda (RA2011033010053)**, **Garv Jaiswal (RA2011033010035)**, **Vaibhav Kumar Jha (RA2011033010058)** and **Nilay (RA2011033010056)** who carried out the project work under my supervision.

### **SIGNATURE**

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## **ABSTRACT**

A network has to be designed for a small business organization which has 100 users. The organization hosts an e-commerce application on a server which is accessible to internet users using https and with a public IP address.

A network for the same was designed using Cisco Packet Tracer version 8.0.0. The requirements were emulated and tested for connectivity. A server was setup, which is accessible only on port 443 with HTTPS connectivity. Internally, department routers are interconnected for unfiltered access to the server.

Switches are used to ensure optimal number of devices can be used with both the company network as well as the broadband network.

Pings were used to check the connectivity and the reachability of the systems and machines from all the network.

## ACKNOWLEDGEMENT

We express our heartfelt thanks to our honorable **Vice Chancellor Dr. C. MUTHAMIZHCHELVAN**, for being the beacon in all our endeavors.

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## **2. INTRODUCTION**

### **2.1 Scenario Description**

A network has to be designed to depicting the working of a commercial mailing service which has number of users. We have to setup a server which listens on Port 443 (HTTPS) only. The private IP address should be masked by NAT on the company router so that the external users will know only the public IP of the server. This will ensure added security for the server.

The employees in the organization will be able to use the server without any restriction since they are directly routed to the same network via the company router. The departments can also intercommunicate with one another without any restriction.

The public internet users will only know a public address of the company router to connect to the server. They can communicate with each other, since they are on a public network.

However, they cannot know the private addresses of the company devices.

### **3. REQUIREMENTS**

#### **3.1 Requirement Analysis**

From the given scenario, we draw the following requirements:

1. Identifying the appropriate hardware which would be used (Cisco Packet Tracer)
2. Users on the internet should have access only to the public IP address of the server and not the private IP address.
3. The users in the organization should have full access to the server.
4. TCP/IP Network design with IP addressing
5. Features and configuration required on the hardware with explanation.

#### **3.2 Hardware Requirement**

From the given scenario, we draw the following requirements:

3x Server – PT Primary Server for FTP, DNS, WEB

3x Router

5x Switches:

1x Internet Lab

1x Computer Department

1x Principal Room

1x IT Department

1x Primary Organization Switch

27x End Devices:

1x PC for Principal Room Representation

1x Laptop for Principal Room Representation

5x PCs for IT Department Representation

1x Printer for IT Department Representation

5x PCs for Computer Department Representation

1x Printer for Computer Department Representation

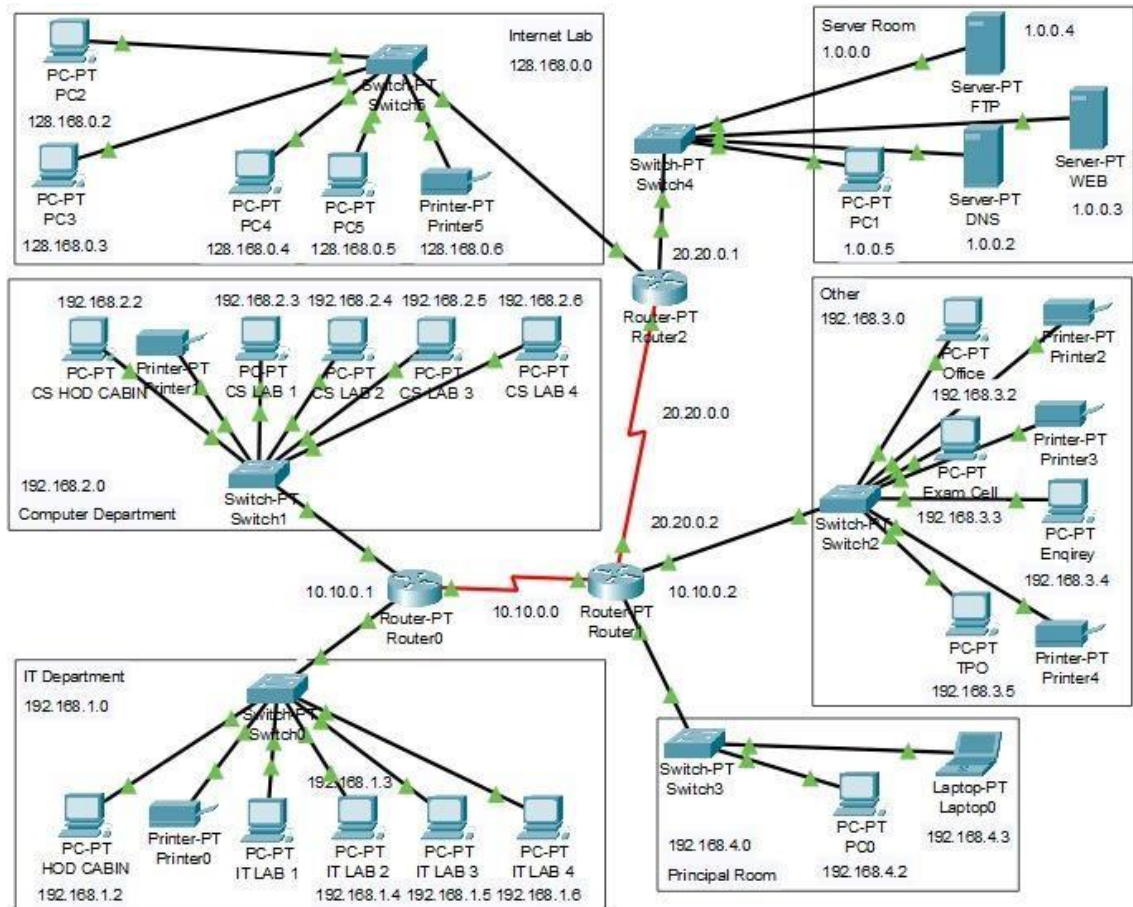
4x PCs for Internal Lab Representation

1x Printer for Internal Lab Representation

## 4. ARCHITECTURE AND DESIGN

### 4.1 Network Architecture

The network architecture is as follows:



The architecture consists of six major networks:

- Company Department
- IT Department
- Principal Room
- Internet Lab
- Server Room
- Other

These networks are interconnected with each other with varying degrees (discussed in the implementation chapter).



## 5. IMPLEMENTATION

### 5.1 Address Table

The address table is as follows:

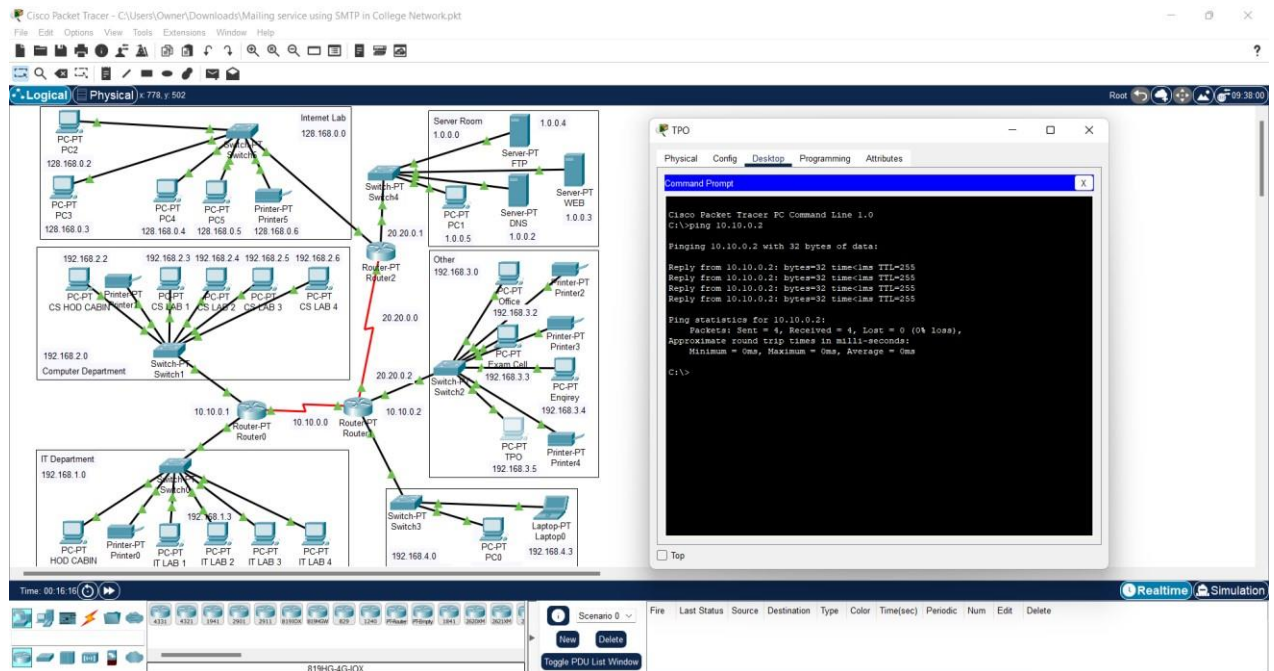
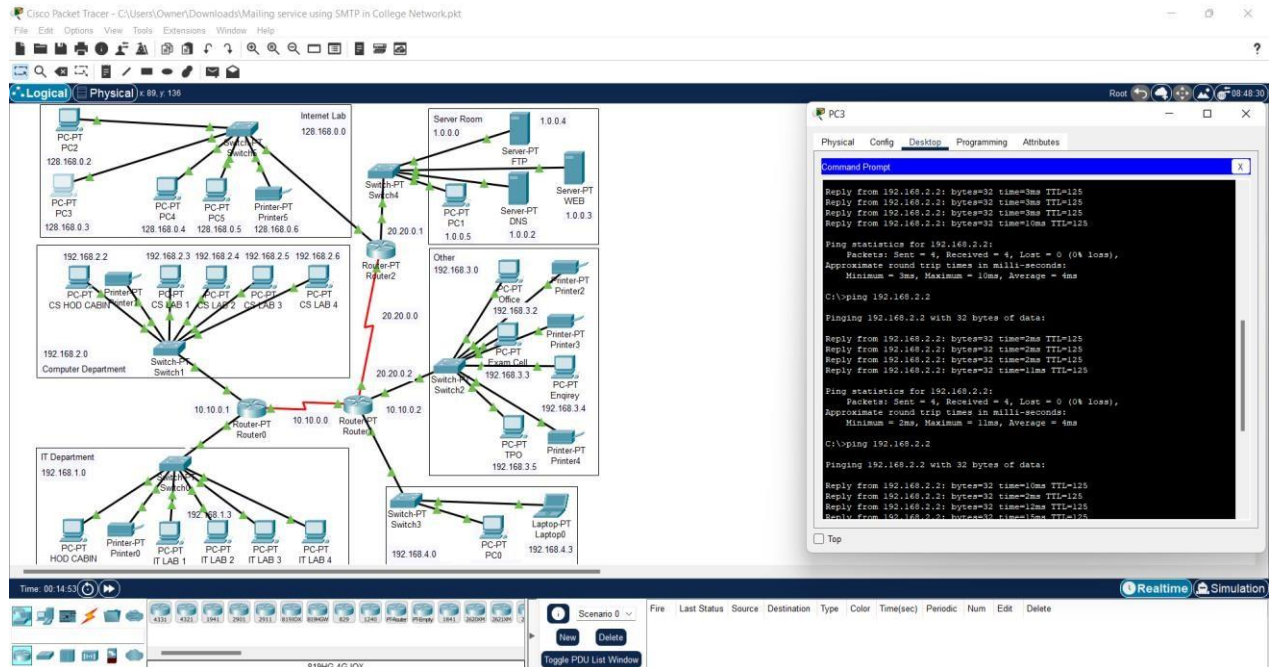
Device	Interface	Address
Router 0	Fa0/0	192.168.1.1
	Fa1/0	192.16.2.1
	Se2/0	10.10.0.1
Router 1	Fa0/0	192.168.3.1
	Fa1/0	192.16.4.1
	Se2/0	10.10.0.2
	Se3/0	20.20.0.1
Router 2	Fa0/0	1.0.0.1
	Fa1/0	128.168.0.1
	Se2/0	10.10.0.2
PC 0	Fa0/0	192.168.4.2
Laptop 0	Fa0/0	192.168.4.3
PC 1	Fa0/0	1.0.0.5
Server - FTP	Fa0	1.0.0.4
Server- DNS	Fa0	1.0.0.2
Server - WEB	Fa0	1.0.0.3
PC 2	Fa0/0	128.168.0.2
PC 3	Fa0/0	128.168.0.3
PC 4	Fa0/0	128.168.0.4
PC 5	Fa0/0	128.168.0.5
Printer 5	Fa0/0	128.168.0.6
PC CS HOD CABIN	Fa0/0	192.168.2.2
PC CS LAB 1	Fa0/0	192.168.2.3
PC CS LAB 2	Fa0/0	192.168.2.4

PC CS LAB 3	Fa0/0	192.168.2.5
PC CS LAB 4	Fa0/0	192.168.2.6
Printer 1	Fa0/0	192.168.2.7
PC IT HOD CABIN	Fa0/0	192.168.1.2
PC IT LAB 1	Fa0/0	192.168.1.3
PC IT LAB 2	Fa0/0	192.168.1.4
PC IT LAB 3	Fa0/0	192.168.1.5
PC IT LAB 4	Fa0/0	192.168.1.6
Printer 0	Fa0/0	192.168.1.7
PC EXAM CELL	Fa0/0	192.168.3.3
PC ENQUIRY	Fa0/0	192.168.3.4
PC OFFICE	Fa0/0	192.168.3.2
PC TPO	Fa0/0	192.168.3.5
Printer 2	Fa0/0	192.168.3.6
Printer 3	Fa0/0	192.168.3.7
Printer 4	Fa0/0	192.168.3.8

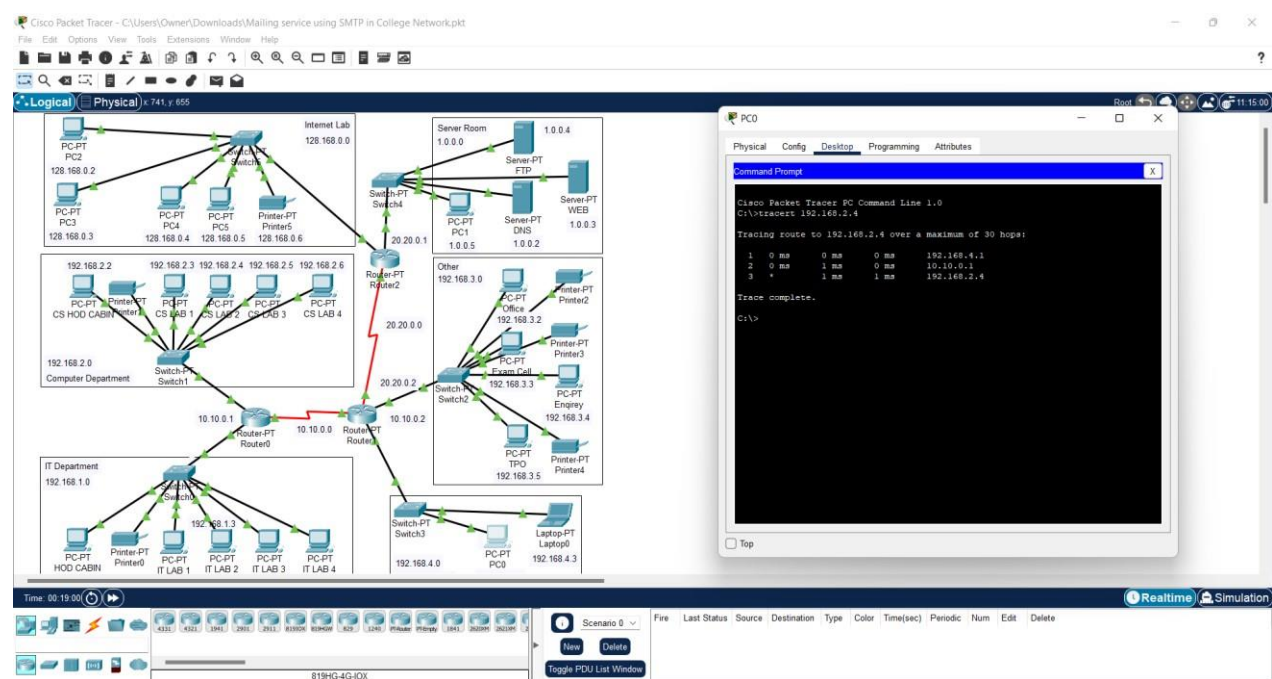
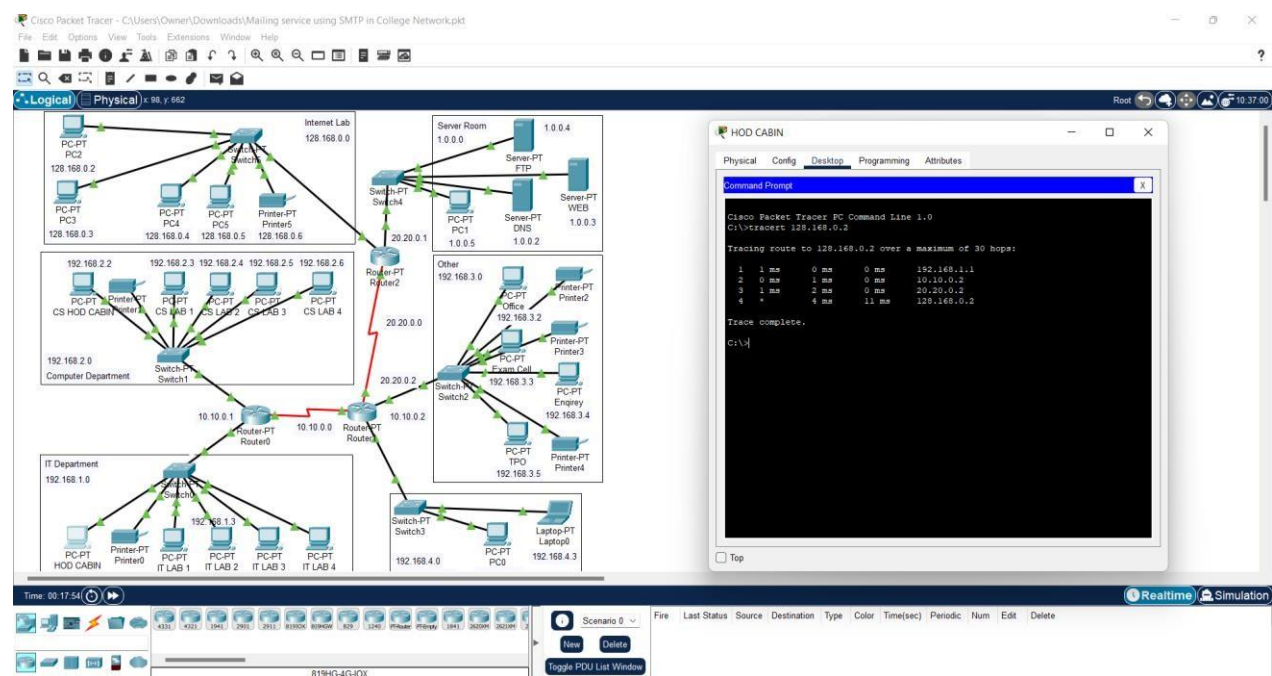
## 6. RESULTS AND DISCUSSION

### 6.1 Connection Check

The network connections were checked by ping requests:



6.2. The network routes were checked by tracert requests:



## **7. CONCLUSION AND FUTURE ENHANCEMENT**

Hence we have successfully depicted the working of a commercial mailing service. Our depiction won't be exactly the same when compared with the network interface of existing mail providing companies namely Google, Yahoo, Microsoft and many more, as what we have depicted is only the working of the mailing service but there are other devices that we are not aware of like the firewall , Honeypot, Databases , etc.

In the end we would like to conclude by thanking Hariharan Sir for giving us the opportunity to demonstrate our knowledge we gained during the semester with this mini project and we hope we will be able to demonstrate this knowledge in the industry with ease as well.

## 8. REFERENCES

We would not be able to complete our project if we didn't have these resources at our hands :

1. <https://learningnetwork.cisco.com/s/packet-tracer-alternative-lab-solutions>
2. <https://aws.amazon.com/console/>
3. <https://www.geeksforgeeks.org/simple-mail-transfer-protocol-smtp/>
4. [https://www.cisco.com/c/en/us/td/docs/ios/sw\\_upgrades/interlink/r2\\_0/user/ugsmtp.html](https://www.cisco.com/c/en/us/td/docs/ios/sw_upgrades/interlink/r2_0/user/ugsmtp.html)
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