# Computer Networks

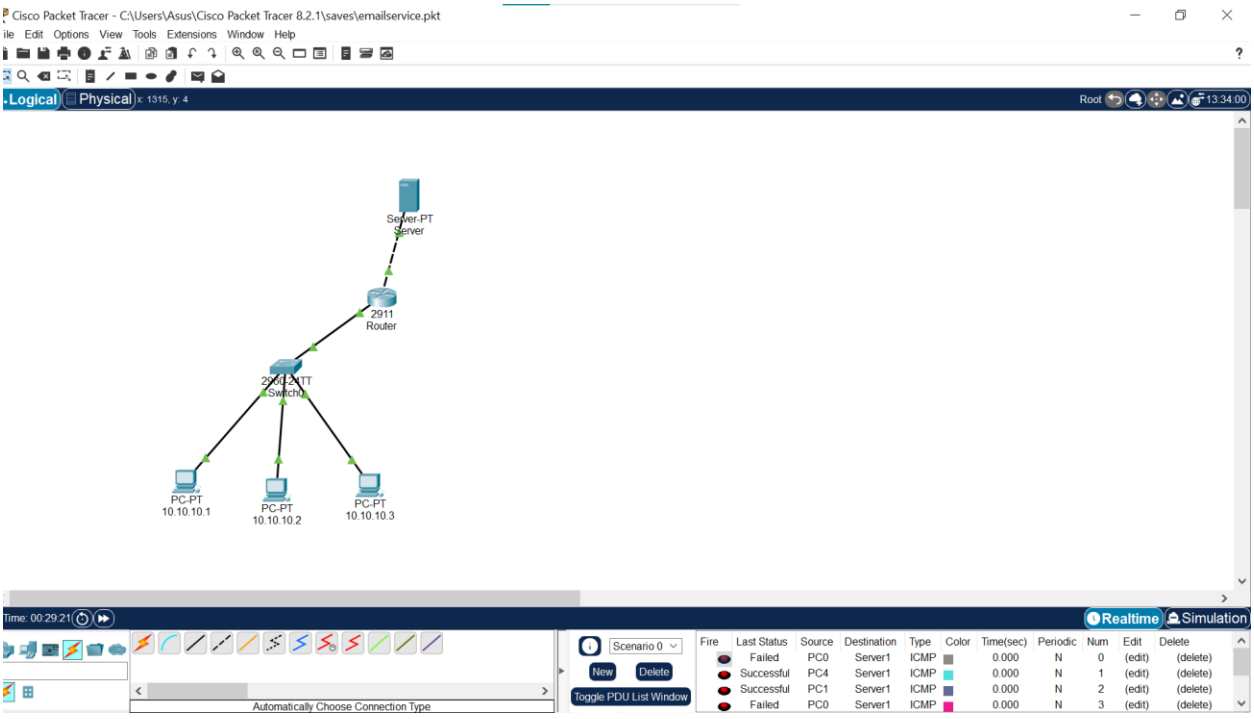
## CS361 Lab4

## Name: Dipean Dasgupta ID:202151188

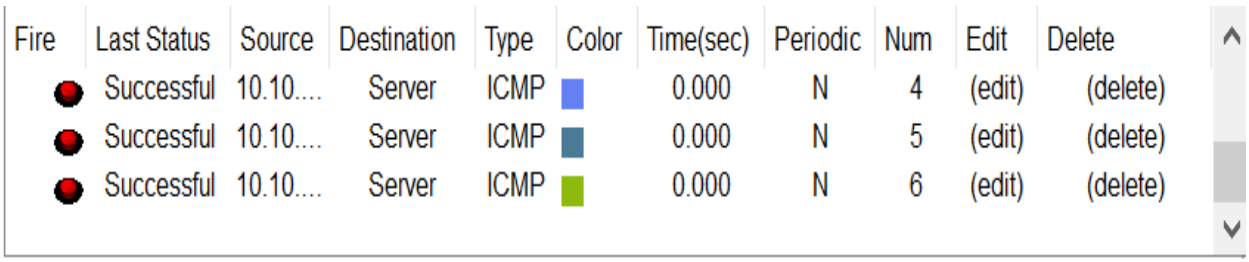
**CPT experiment file link:**
https://drive.google.com/drive/folders/10s1hzK7XaJzeYiOVeLJAr1ivrN8JbfB_?usp=sharing

**Task1: Design a small network using a PC, switch, and router; send mail from one PC to another using a server.**

### Creating Network



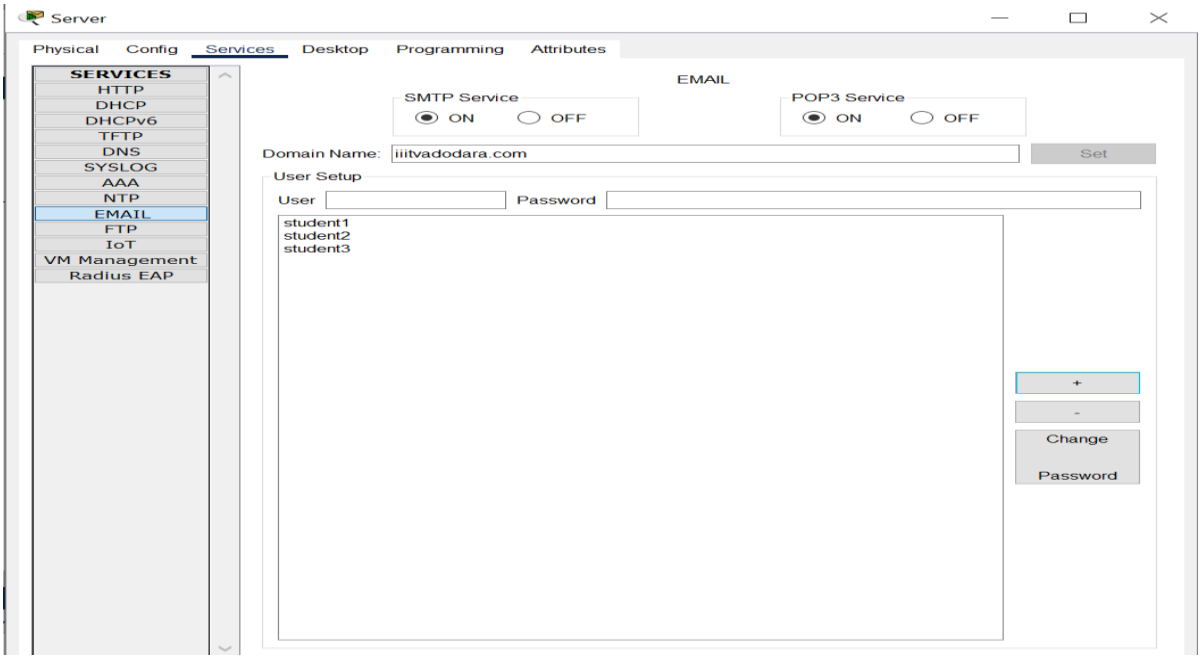

### Checking connection...



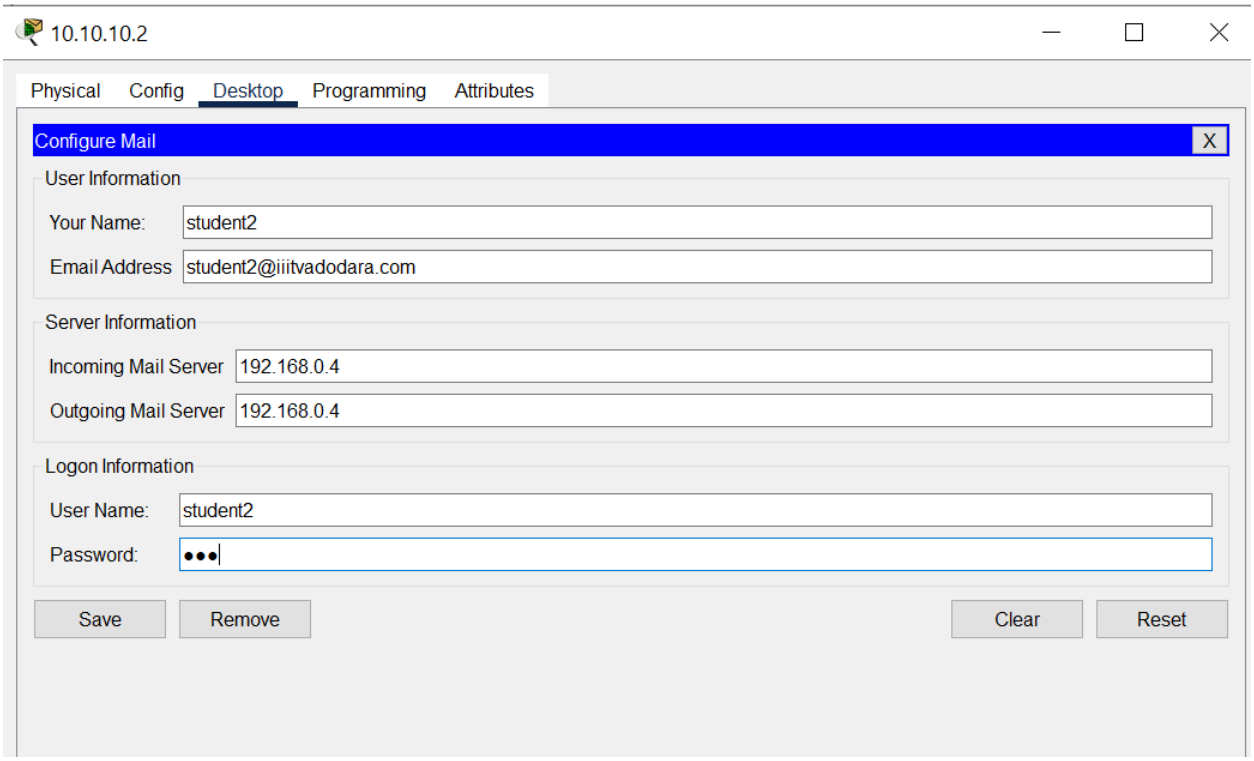
| Fire | Last Status | Source | Destination | Type | Color | Time(sec) | Periodic | Num | Edit | Delete |
|---|---|---|---|---|---|---|---|---|---|---|
| | Successful | 10.10.... | Server | ICMP | | 0.000 | N | 4 | (edit) | (delete) |
| | Successful | 10.10.... | Server | ICMP | | 0.000 | N | 5 | (edit) | (delete) |
| | Successful | 10.10.... | Server | ICMP | | 0.000 | N | 6 | (edit) | (delete) |

### Connection successful!

**Configuring email service...**

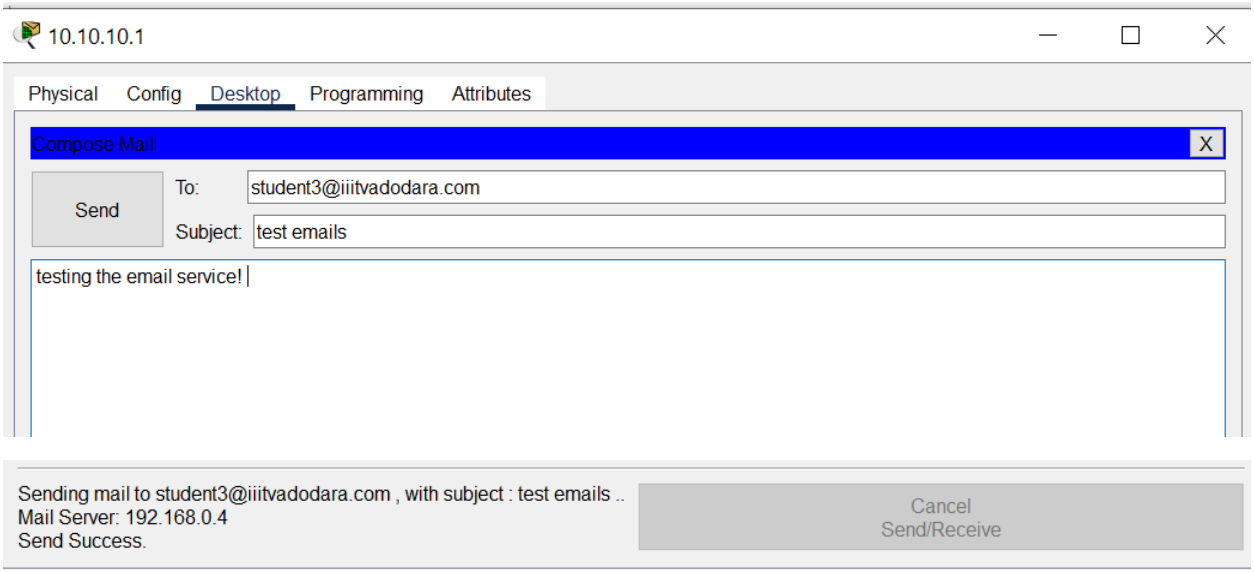



**Setting up pc email service...**

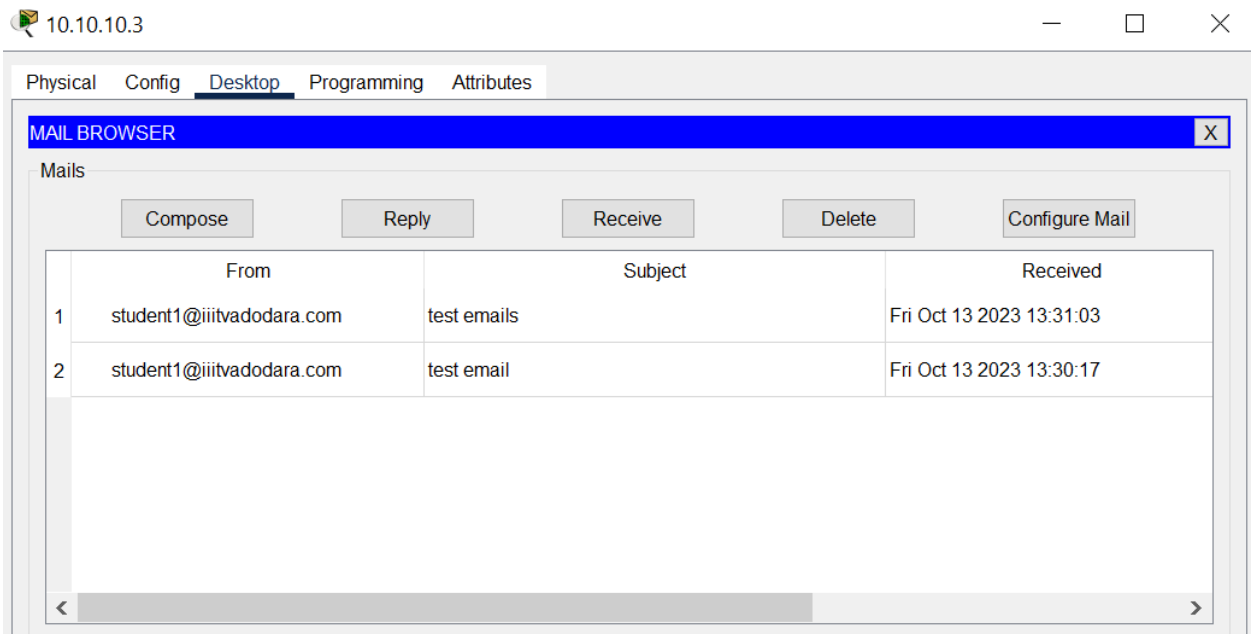



**Email configured!...**

**Sending test email...**




**Email send successful from student1**

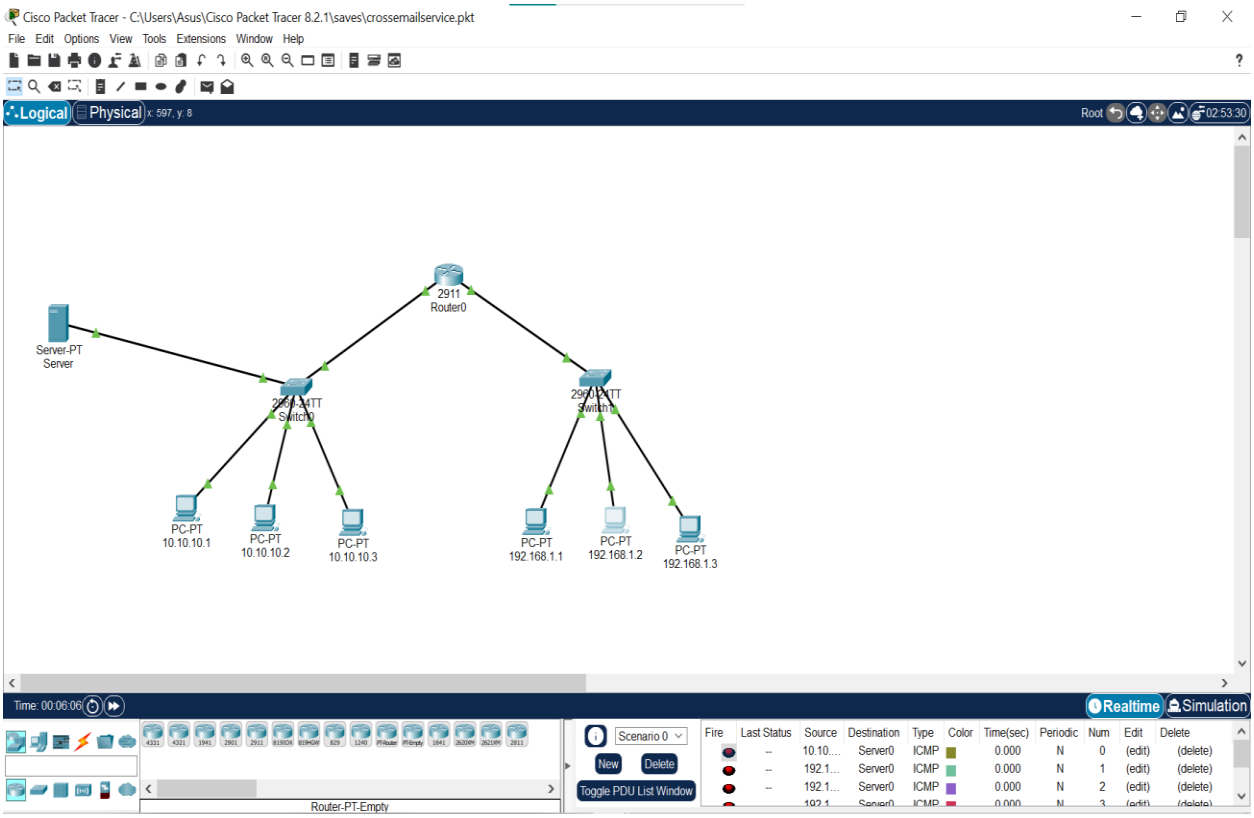



**Email successfully received by student3**

**Continued next page...**

**Task2:** Design a complex network with at least two different addresses (the network diagram shown in the laboratory). You can use many PCs, switches, and routers. Note that the PC used for sending and receiving mail should be connected to other network addresses this time.

## Creating network...

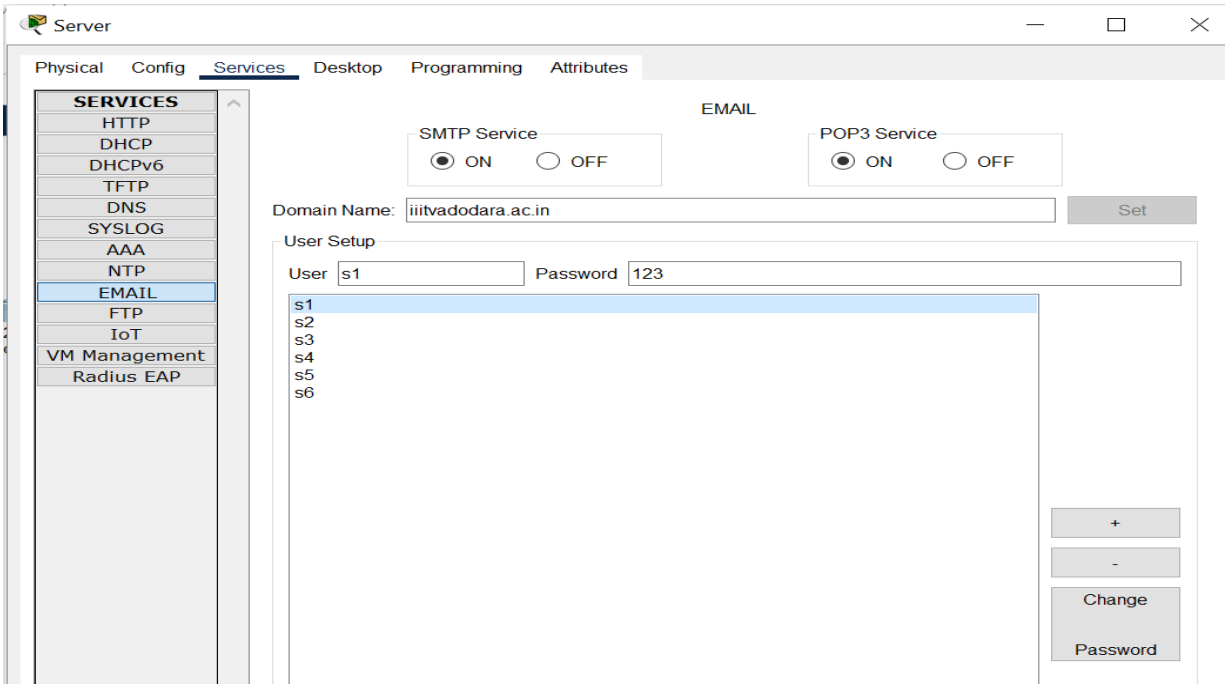



## Checking connection..

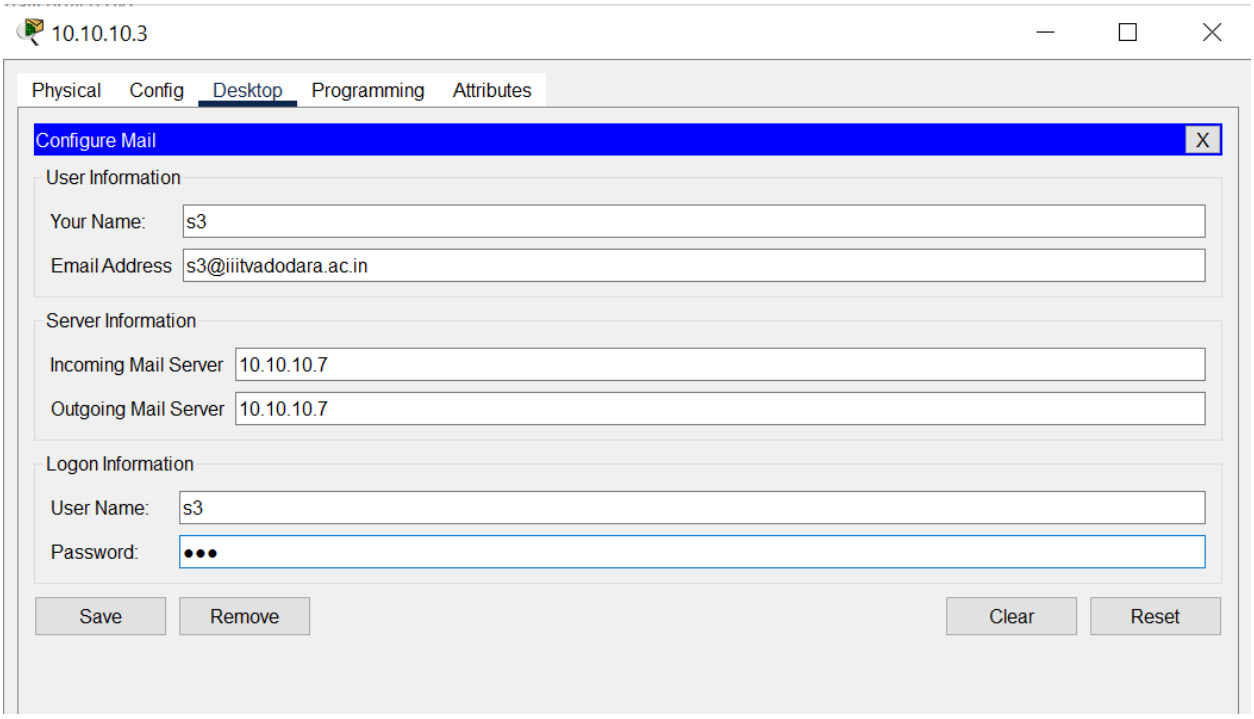
| Fire | Last Status | Source | Destination | Type | Color | Time(sec) | Periodic | Num | Edit | Delete |
|---|---|---|---|---|---|---|---|---|---|---|
| | Successful | 10.10.... | Server | ICMP | | 0.000 | N | 5 | (edit) | (delete) |
| | Successful | 192.1... | Server | ICMP | | 0.000 | N | 6 | (edit) | (delete) |
| | Successful | 10.10.... | Server | ICMP | | 0.000 | N | 7 | (edit) | (delete) |

## Connection successful!...

## Configuring email service...

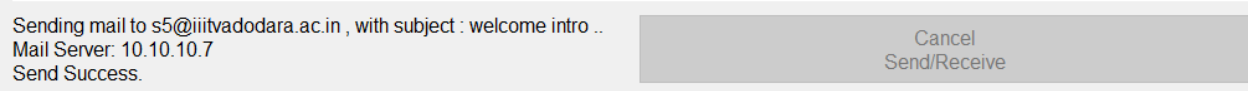



## Configuring pc email service...

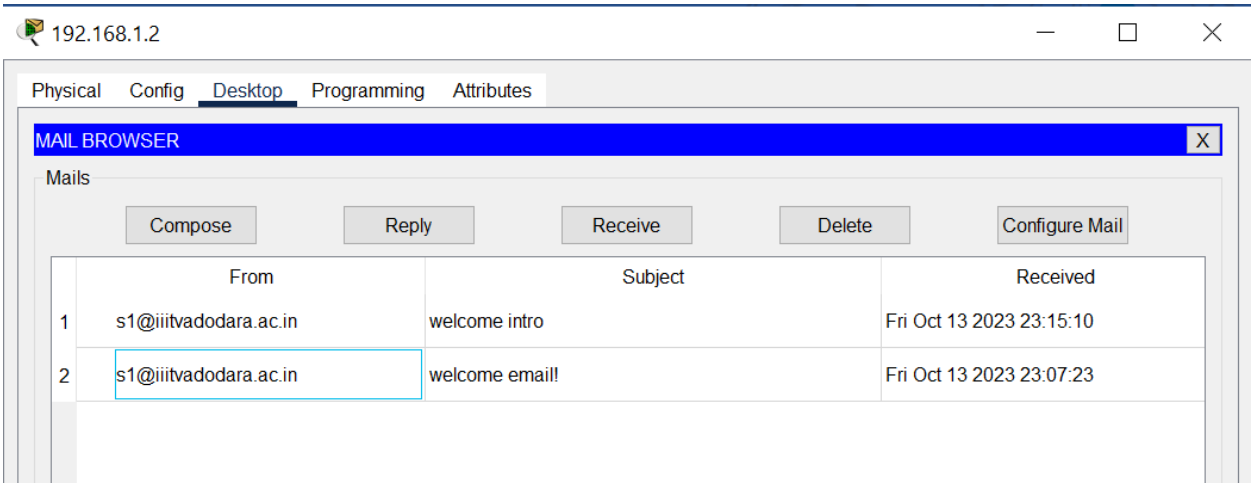



## Email configured!...

**Sending test email...**




**Email sent by pc s1 successfully!**




**Mail received by pc s5 succesfully!**

Here s1 is having IP 10.10.10.1 and pc s5 having 192.168.1.2. both are from different networks but are connected. The email is successfully sent from pc s1 to pc s5.

## Task3: Why do we use cross-over wire to connect a router and a server/PC?

Without the need of an intermediary equipment, such as a network switch or hub, crossover cables are used to link two identical devices directly. When both devices lacked auto-sensing ports, crossover cables had to be used to link a router and a server/PC in the past. The reasons include:

**Ethernet Cable Wiring:** Four pairs of wires make up an Ethernet cable's internal wiring. The wires on one end of a standard (straight-through) Ethernet cable are linked to the identical pins on the other end of the cable. Typically, this kind of cable is used to link several gadgets, such as a computer to a switch or router.

**Wiring of a Crossover Cable:** A Crossover Cable has some of these wires crossed, which means the data send wires are connected to the corresponding receive wires on each end. This is required when connecting two identical devices directly because the transmit and receive signals of one device must match for the second device to function.