

**Ex No: 10**

**Date:**

## **SIMULATION OF TCP CLIENT SERVER MODEL FOR MAIL TRANSFER APPLICATION**

**Aim:**

To study the simulation of client server model for mail transfer application using TCP, in CISCO PACKET TRACER simulator .

**Theory:**

- Sockets in computer networks are used for allowing the transmission of information between two processes of the same machines or different machines in the network.
- The socket is the combination of IP address and software port number used for communication between multiple processes.

### **Socket Programming in TCP**

TCP stands for Transmission Control Protocol. TCP is a reliable connection-oriented protocol of the transport layer. TCP establishes the connection before data transmission. Steps for TCP socket programming for establishing TCP socket at the client-side:

- The first step is to create a socket and use the socket() function to create a socket.
- Use the connect() function for connecting the socket to the server address.
- Transmit data between two communicating parties using read() and write() functions.
- After data transmission completion close the connection using close() function.

```
sequenceDiagram
    participant Client as TCP Client
    participant Server as TCP Server

    Client->>Client: Socket()
    Client->>Client: connect()
    Client->>Client: write()
    Client->>Client: read()
    Client->>Client: close()

    Server->>Server: Socket()
    Server->>Server: bind()
    Server->>Server: listen()
    Server->>Server: accept()
    Server->>Server: read()
    Server->>Server: write()
    Server->>Server: read()
    Server->>Server: close()

    Client->>Server: TCP connection establishment
    Server->>Client: data (request)
    Client->>Server: data (reply)
    Server->>Client: EOF notification
```

## EMAIL SERVICES:

Web Client

PhysicalConfigDesktopProgrammingAttributes

Configure Mail

User Information

Your Name:

Suryakiran

Email Address

suryakiran@gmail.com

Server Information

Incoming Mail Server

192.168.1.5

Outgoing Mail Server

192.168.1.5

Logon Information

User Name:

suryakiran

Password:

....

Save

Remove

Clear

Reset

☐ Top

Email Client

PhysicalConfigDesktopProgrammingAttributes

Configure Mail

X

User Information

Your Name:

Sreesanth

Email Address

sreesanth@gmail.com

Server Information

Incoming Mail Server

192.168.1.5

Outgoing Mail Server

192.168.1.5

Logon Information

User Name:

sreesanth

Password:

....

Save

Remove

Clear

Reset

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Server0

PhysicalConfigServicesDesktopProgrammingAttributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

EMAIL

SMTP Service

☒ ON☐ OFF

POP3 Service

☒ ON☐ OFF

Domain Name: gmail.com

Set

User Setup

User

Password

suryakiran

sreesanth

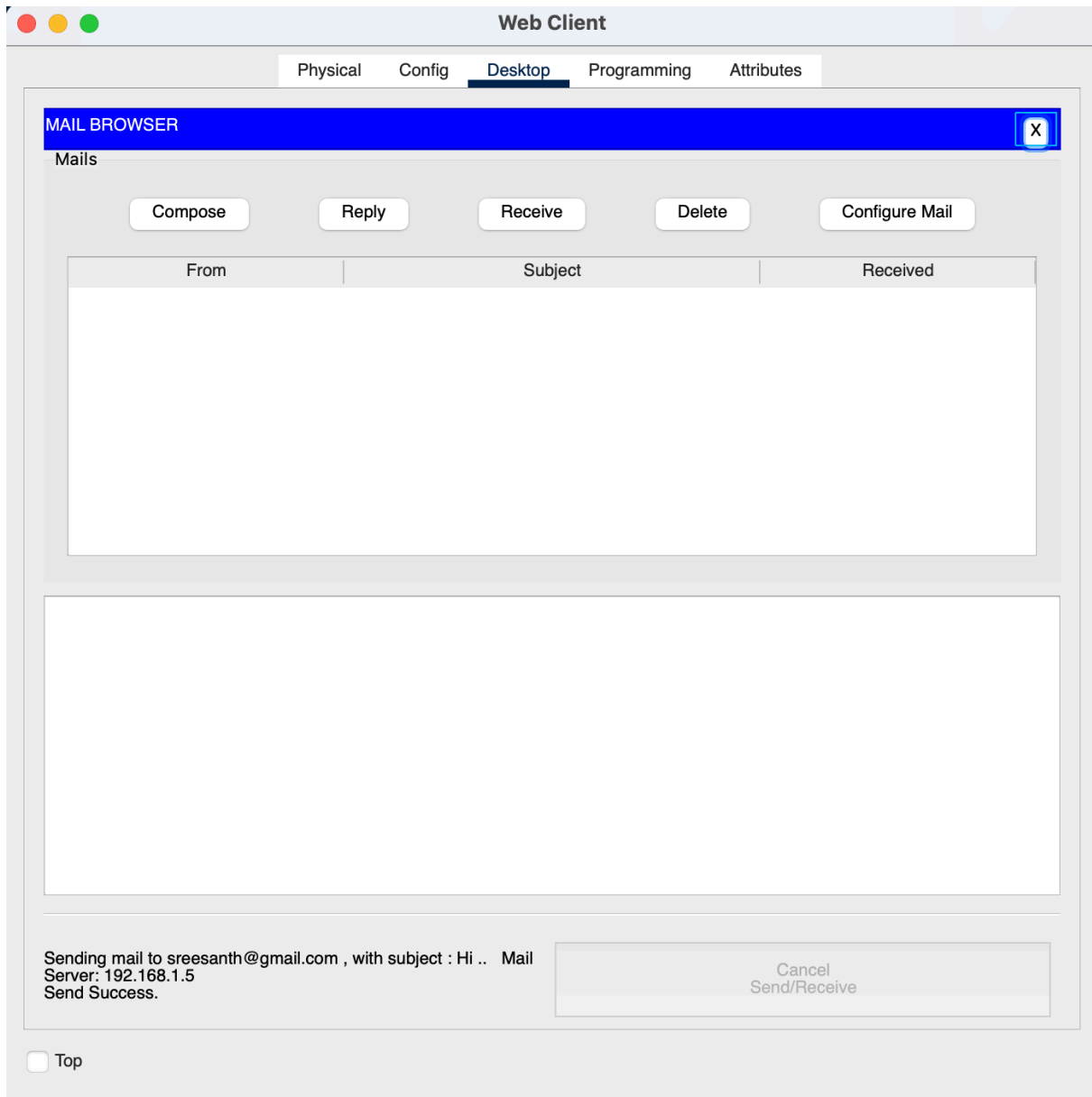
+

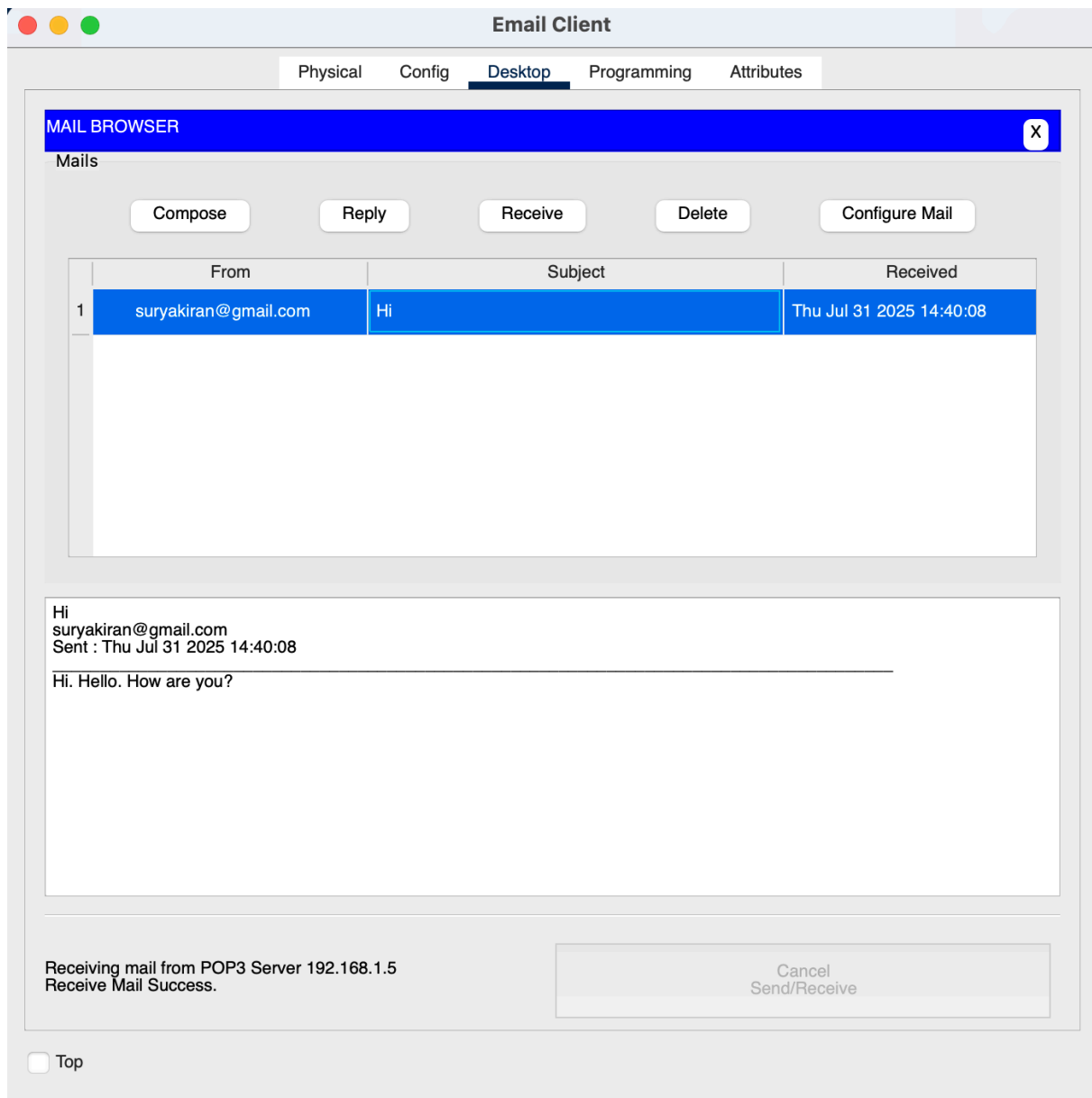
-

Change

Password

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**Result:**

Thus the client server model for mail transfer application using TCP, was successfully simulated in CISCO PACKET TRACER simulator.