NATIONAL UNIVERSITY OF COMPUTER & EMERGING SCIENCE
Computer Network Lab (CL-3001)
Lab Session 06

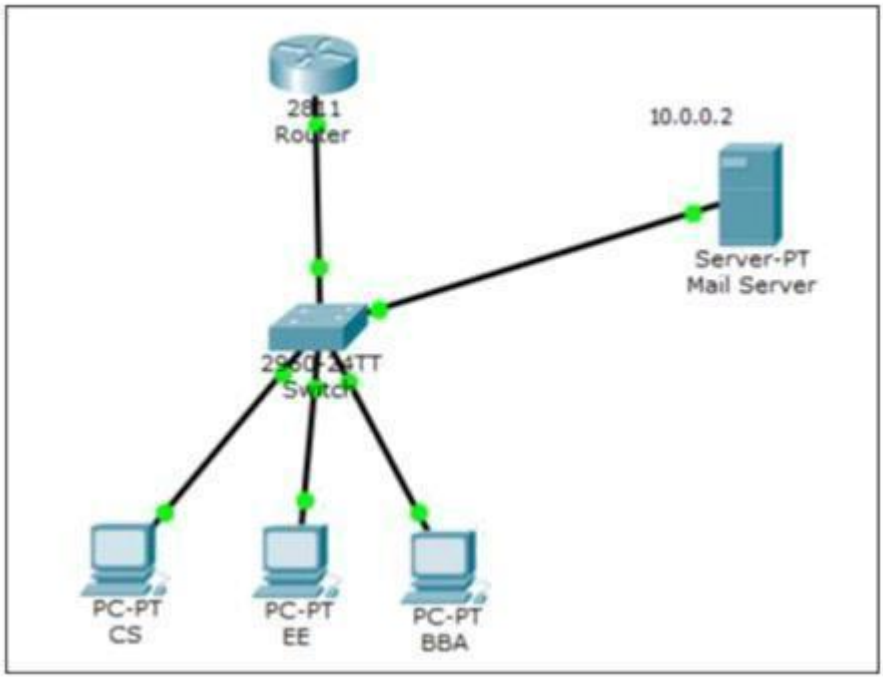
OBJECTIVE: To understand and implement Simple Mail Transfer Protocol (SMTP) and File Transfer Protocol (FTP) in Cisco Packet Tracer.

SMTP:

Simple Mail Transfer Protocol (SMTP) is an Internet standard for electronic mail (email) transmission. First defined by RFC 821 in 1982, it was last updated in 2008 with Extended SMTP additions by RFC 5321, which is the protocol in widespread use today. Although electronic mail servers and other mail transfer agents use SMTP to send and receive mail messages, user-level client mail applications typically use SMTP only for sending messages to a mail server for relaying. For retrieving messages, client applications usually use either IMAP or POP3.

SMTP communication between mail servers uses port 25. Mail clients on the other hand, often submit the outgoing emails to a mail server on port 587. Despite being deprecated, mail providers sometimes still permit the use of nonstandard port 465 for this purpose.

TOPOLOGY:



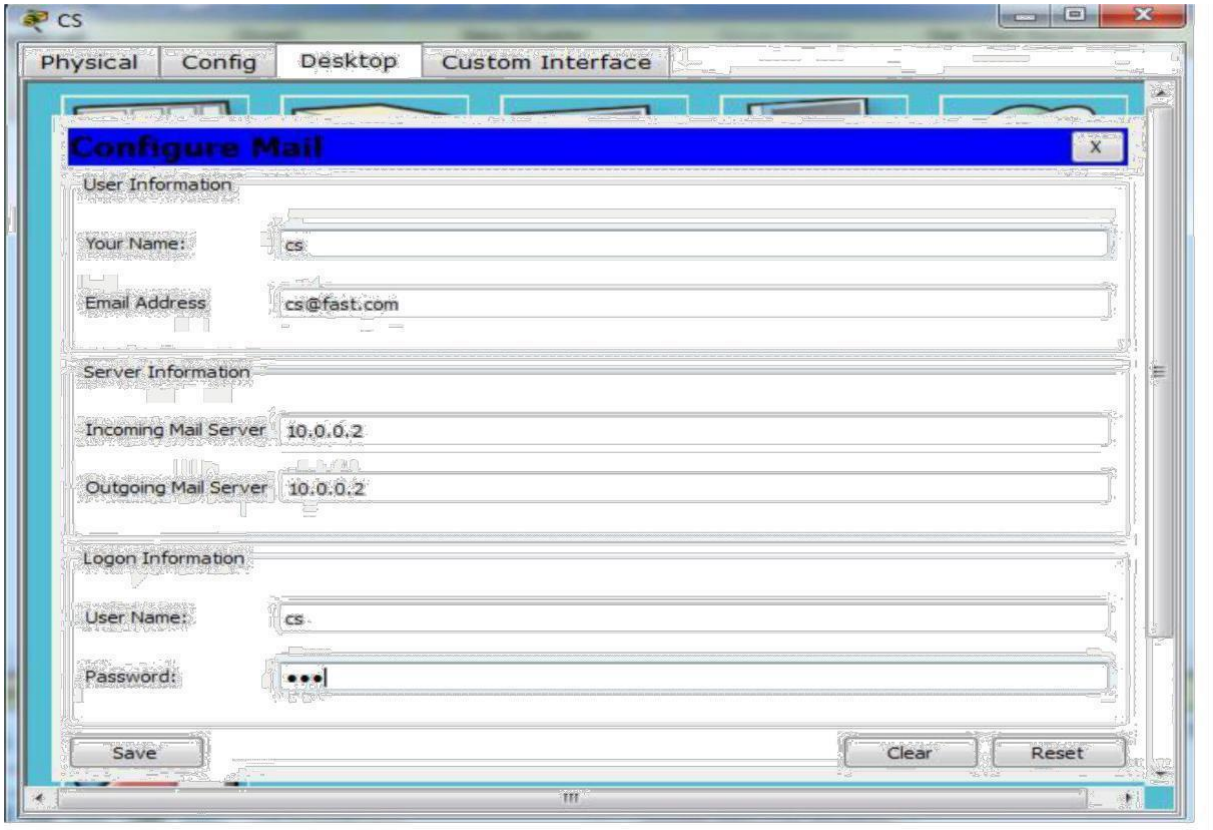
Objectives: Configure and Verify Email Services

Click on Mail server → services → EMAIL Enable SMTP & POP3 Service Set Domain Name:fast.com Add users

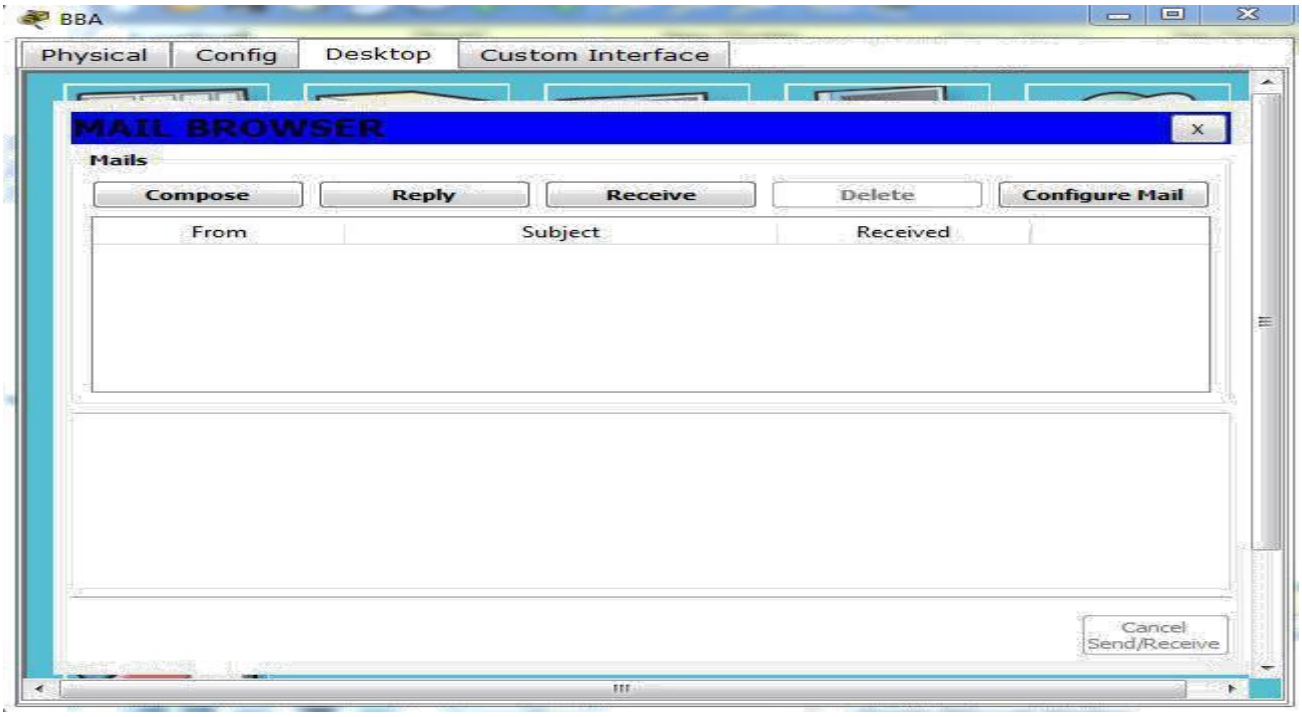
Username	Password
cs	123
ee	123
bba	123

Now configuring user email account.

Go to pc desktop Email

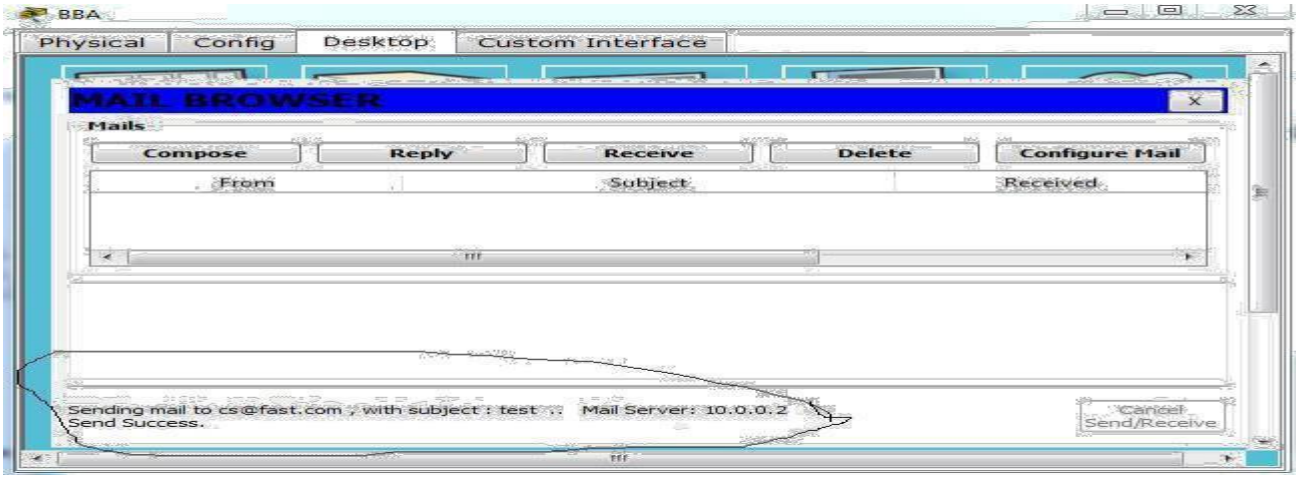


Click “Save” to save the configurations and do the same for EE and BBA.



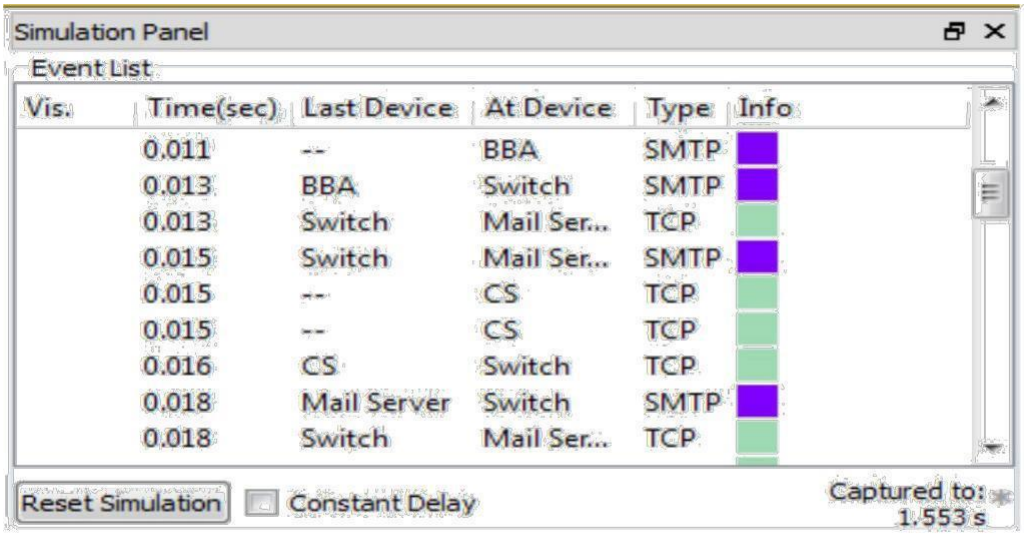
Now compose email **cs@fast.com**

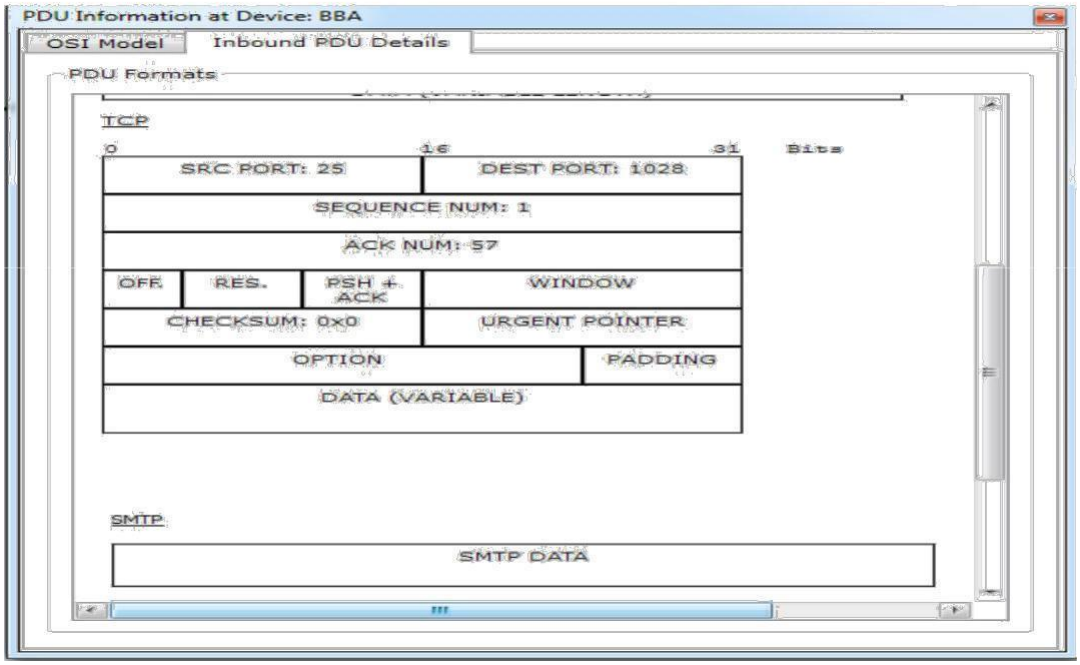
Click on “Send” to send the email.

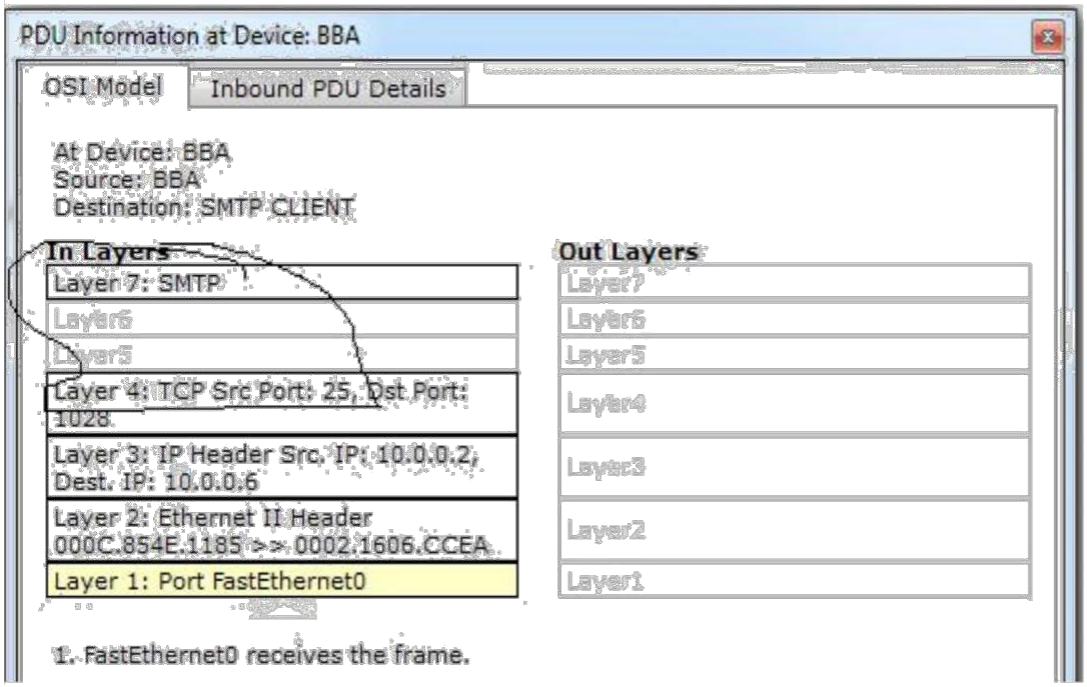


SIMULATION

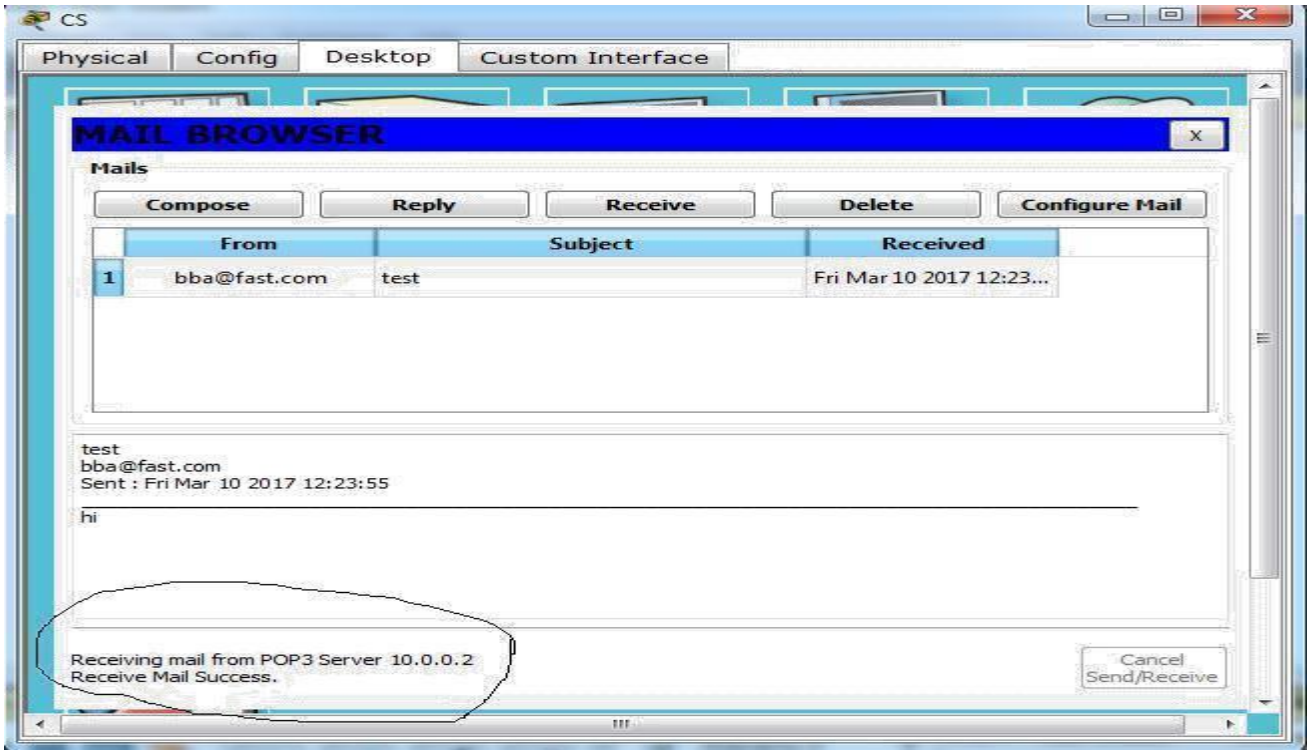
Now to note the POP3 header format information go to simulation mode → edit filters and click on SMTP &POP3 check box then click on capture/forward button. Now see how mail server works.







Now, go to CS record and click Receive:



File Transfer Protocol

The File Transfer Protocol (FTP) is a standard network protocol used to transfer computer files between a client and server on a computer network. FTP is built on client-server model architecture and uses separate control and data connections between the client and the server.

Objectives: In this activity, you will configure FTP services.

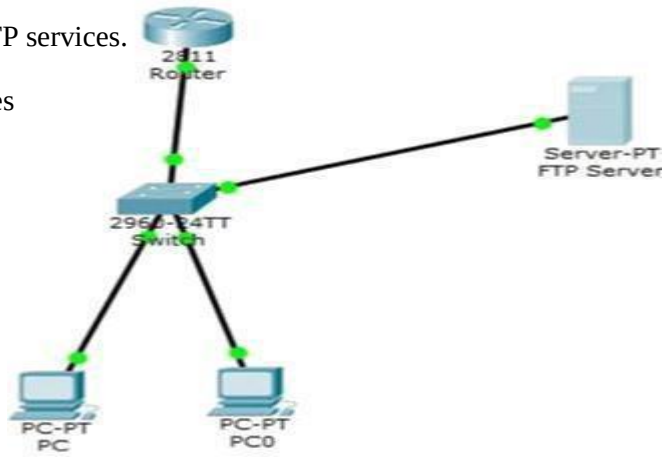
You will then use the FTP services to transfer files

between clients and the server.

Part 1: Configure FTP Services on Servers

Part 2: Upload a File to the FTP Server

Part 3: Download a File from the FTP Server



Part 1: Configure FTP Services on Servers

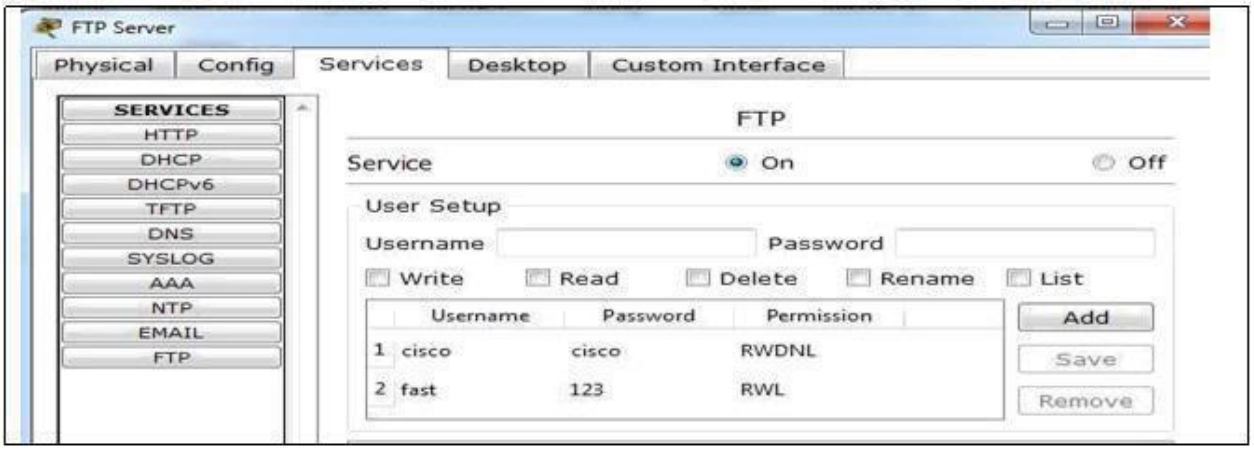
Step 1: Configure the FTP service on Server.

a. Click Server > Config tab > FTP.

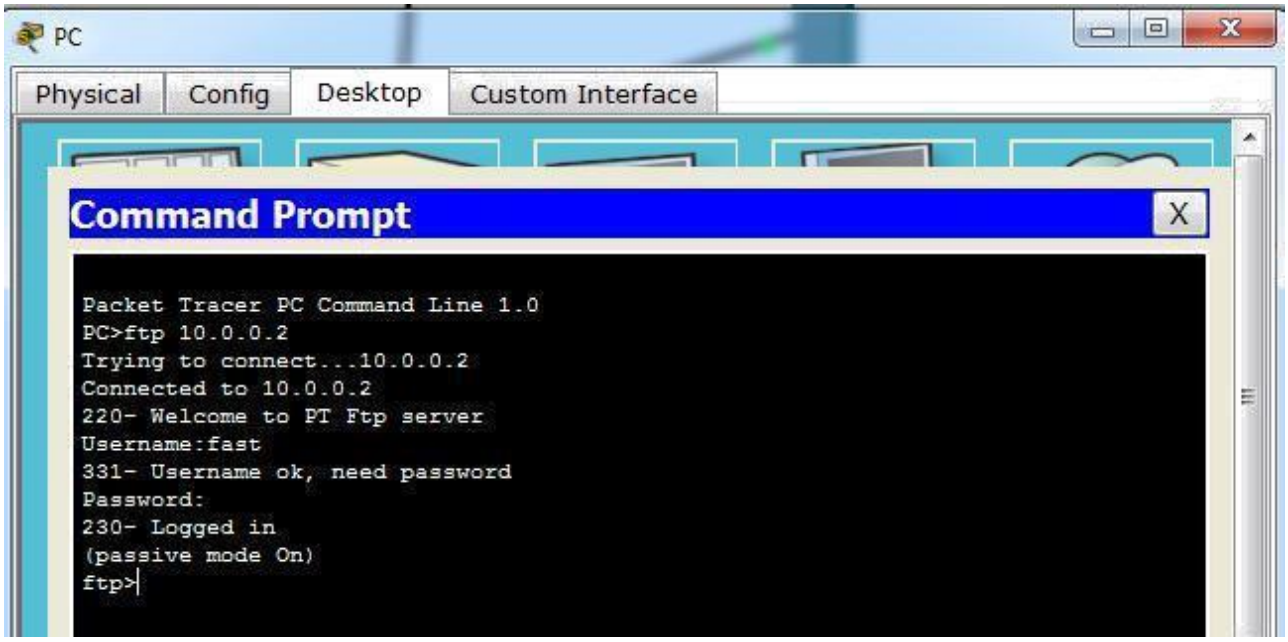
b. Click On to enable FTP service.

c. In User Setup, create the following user accounts. Click the + button to add the account:

Username	Password	Permissions
fast	123	limited to Read, write and List

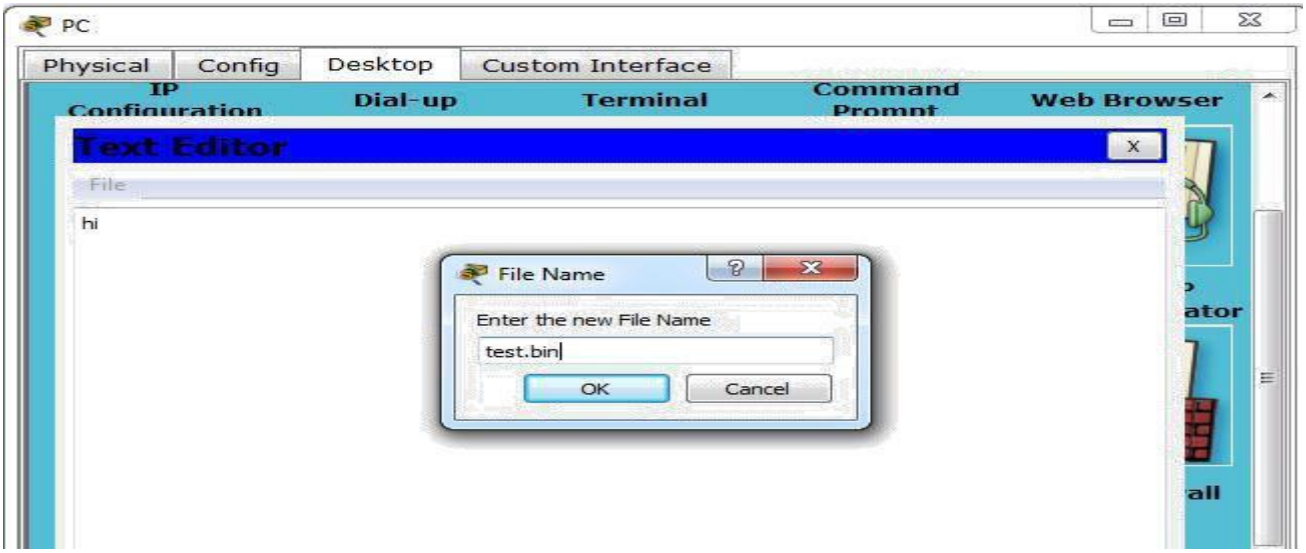


Now go to PC Desktop command prompt

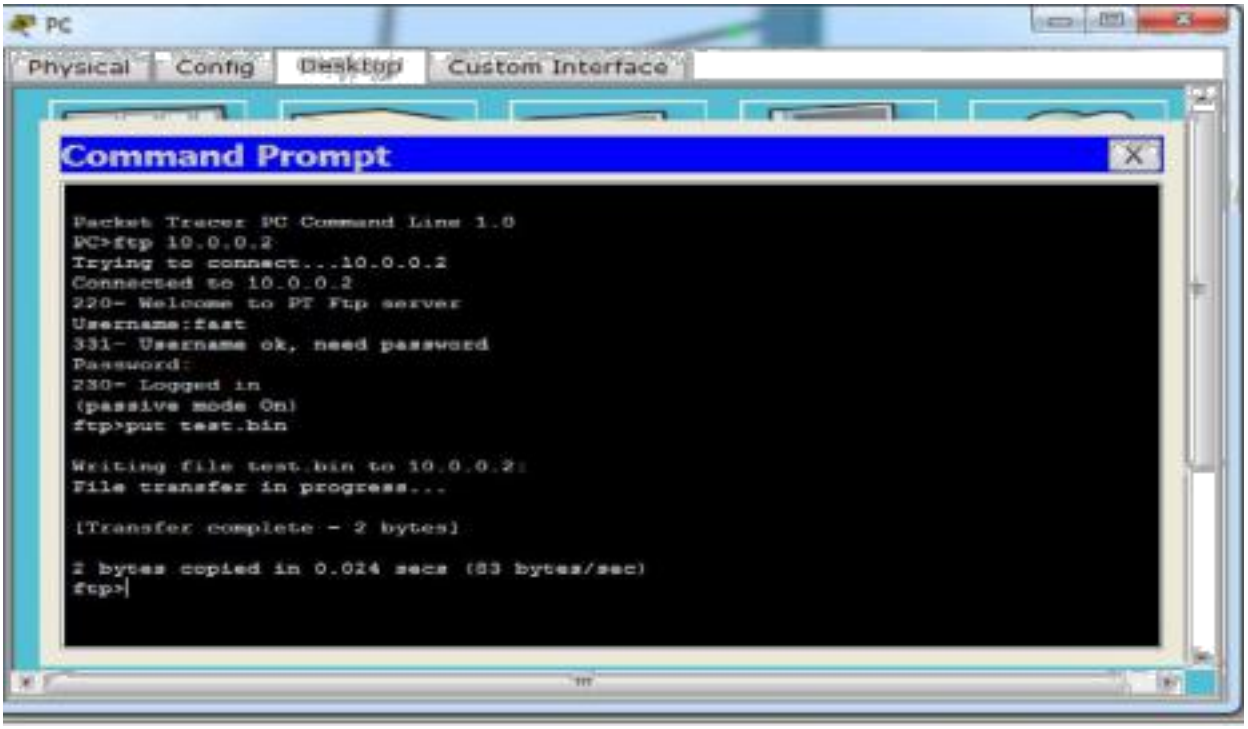


Part 2: Upload a File to the FTP Server

Now go to PC Desktop text editor create file named test.bin

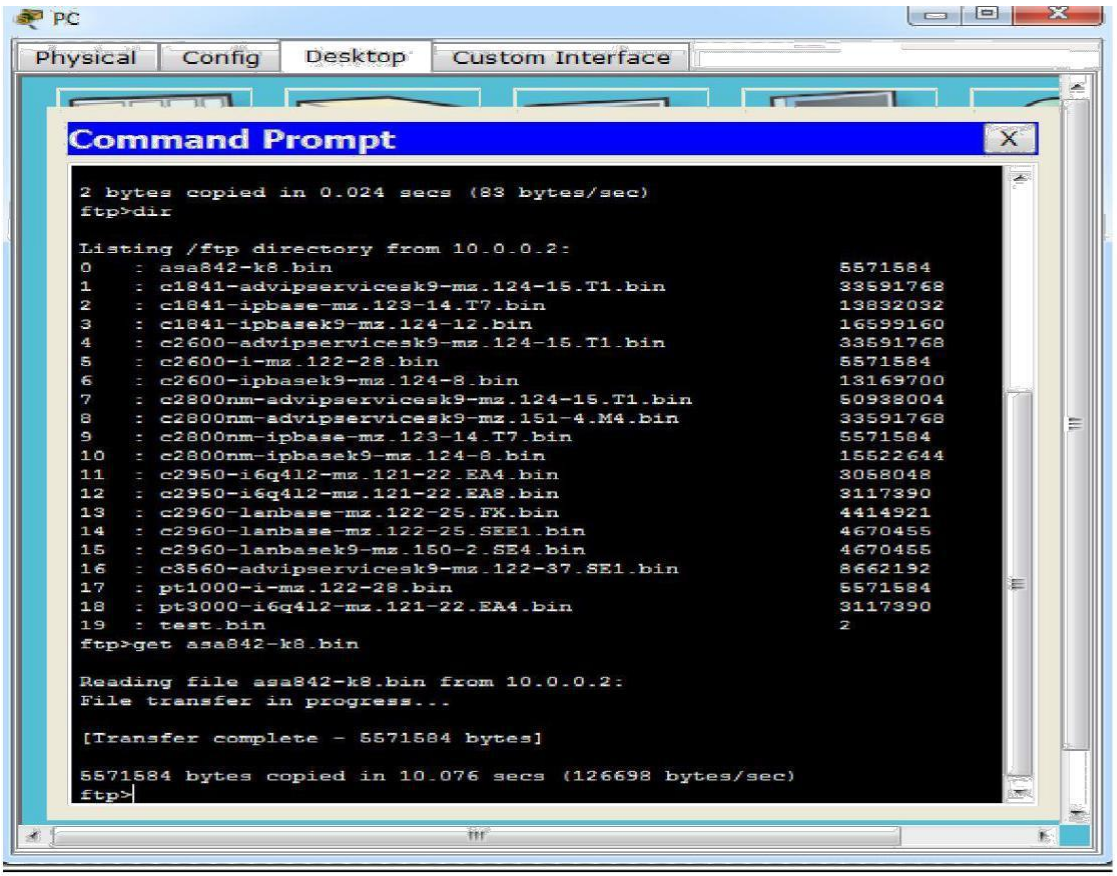


Now go to PC Desktop command prompt

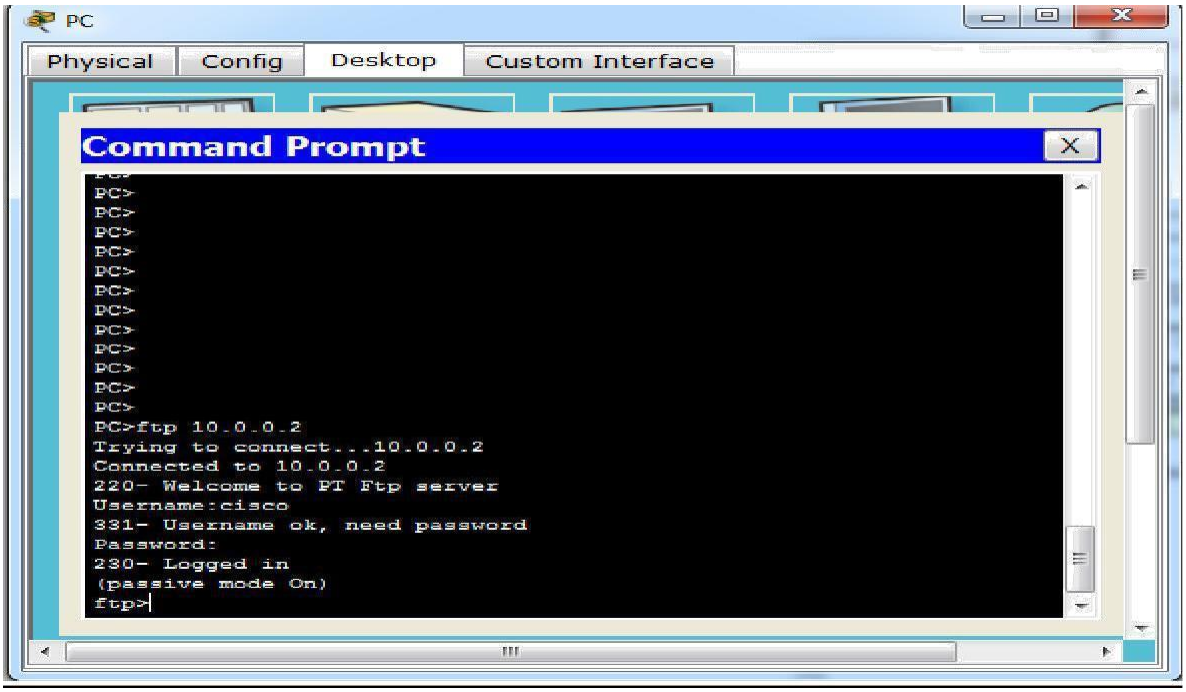


Part 3: Download a File from the FTP Server

Now go to PC Desktop command prompt

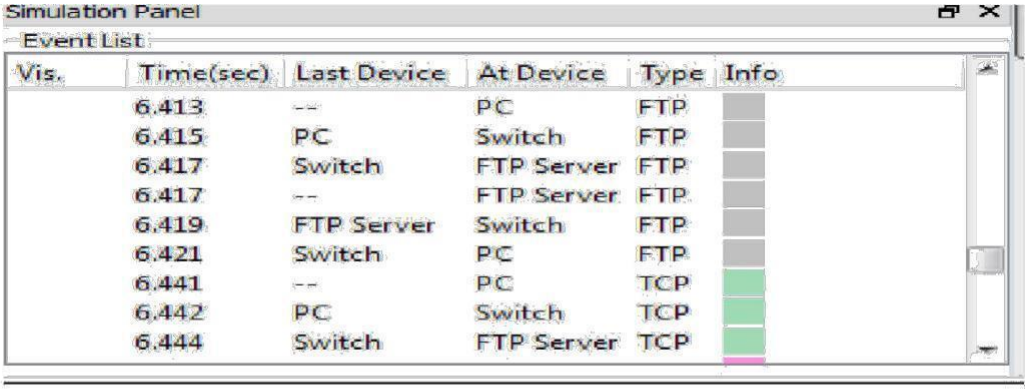


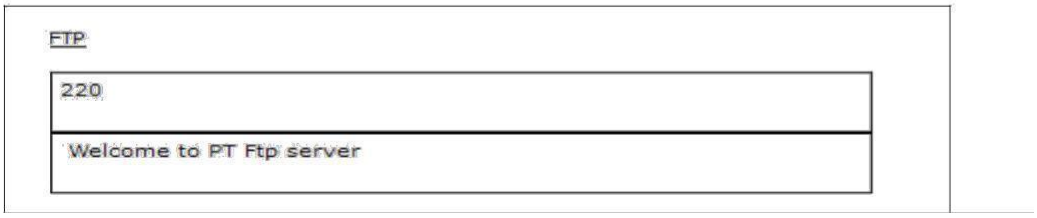
SIMULATION: Now click on PC and go to Desktop command prompt. Now type ftp 10.0.0.2

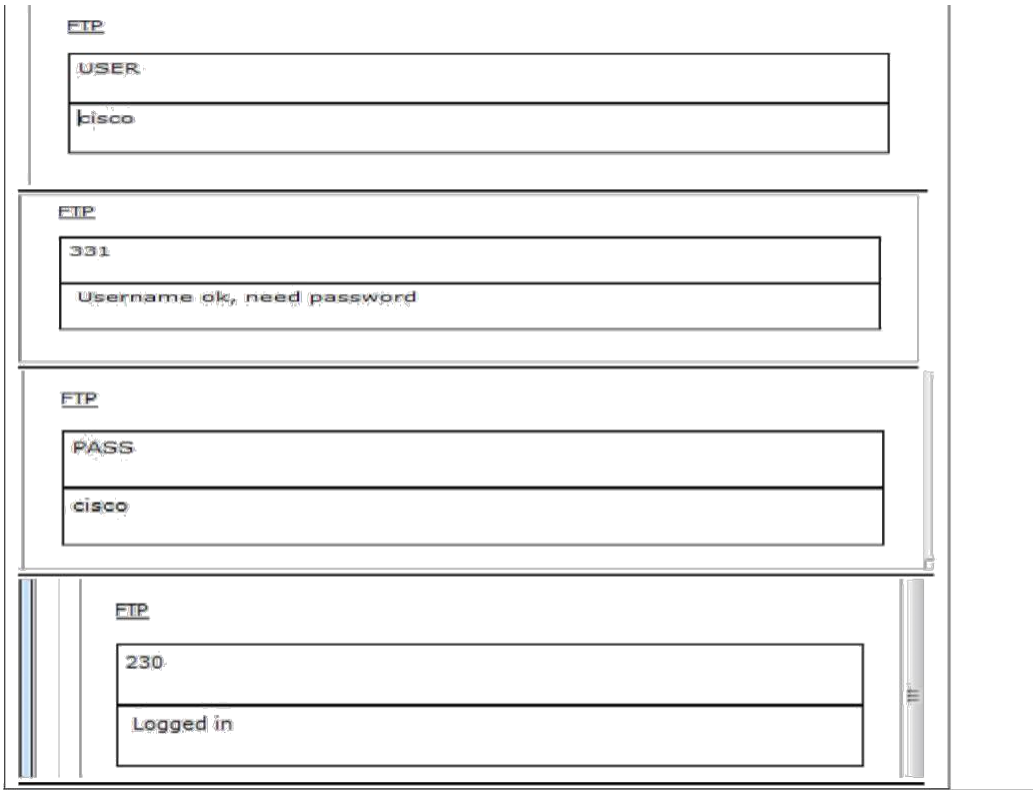


Now to note the FTP header format information go to simulation mode edit filters and click on FTP check box then click on capture/forward button.

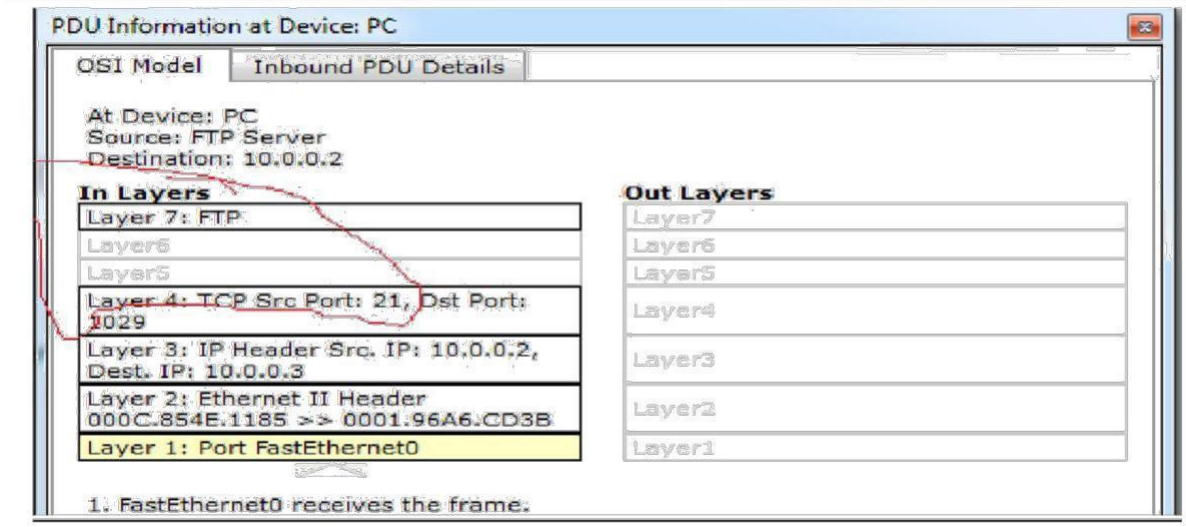
How FTP server resolve the login request.



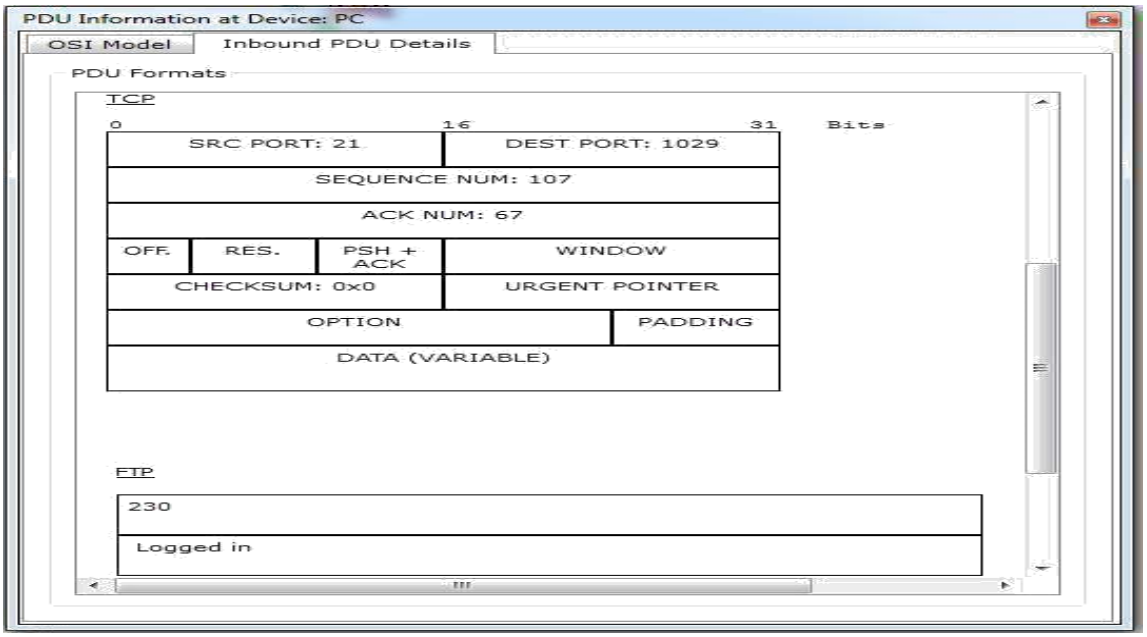




Now click on the FTP packet, you can note that the destination port is 21.



Now scroll the Outbound PDU Details, you can see the FTP PDU.



TASK

Q. Let's suppose your organization need to create it's on small server (for provide some services) based network. With below mentioned topology and instructions:

a. Configure SMTP (create account with your last name) send mail from PC-A to PC-B.
b. Configure FTP server create account with your first name, password with your roll number and file name with your last name (.bin extension) show all connection results.
c. Use wireshark to acquire the traffic details of SMTP and FTP individually by applying the filters for both.