

Date: 23/07/2025

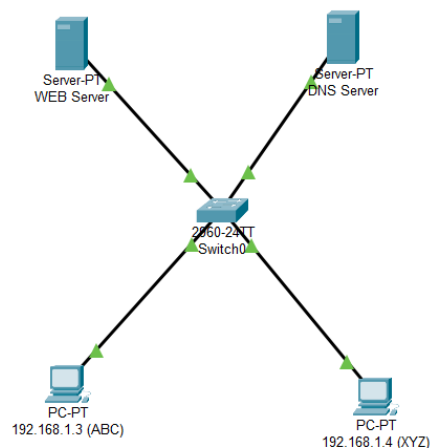
Lab Practical #07:

Study the application layer protocol DNS, DHCP, FTP.

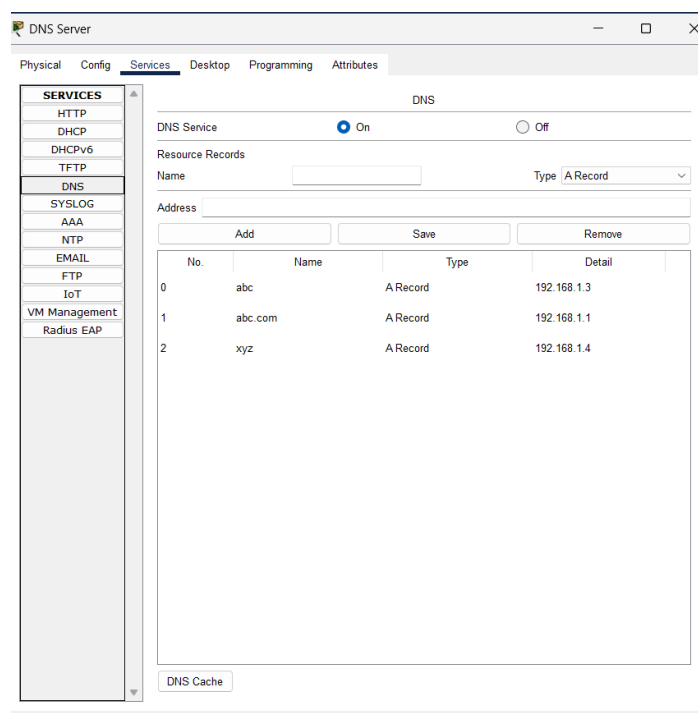
Practical Assignment #07:

1. Implement the application layer protocol DNS, DHCP, and FTP. Also check connectivity between them using ping command or PDU utility.

1. DNS

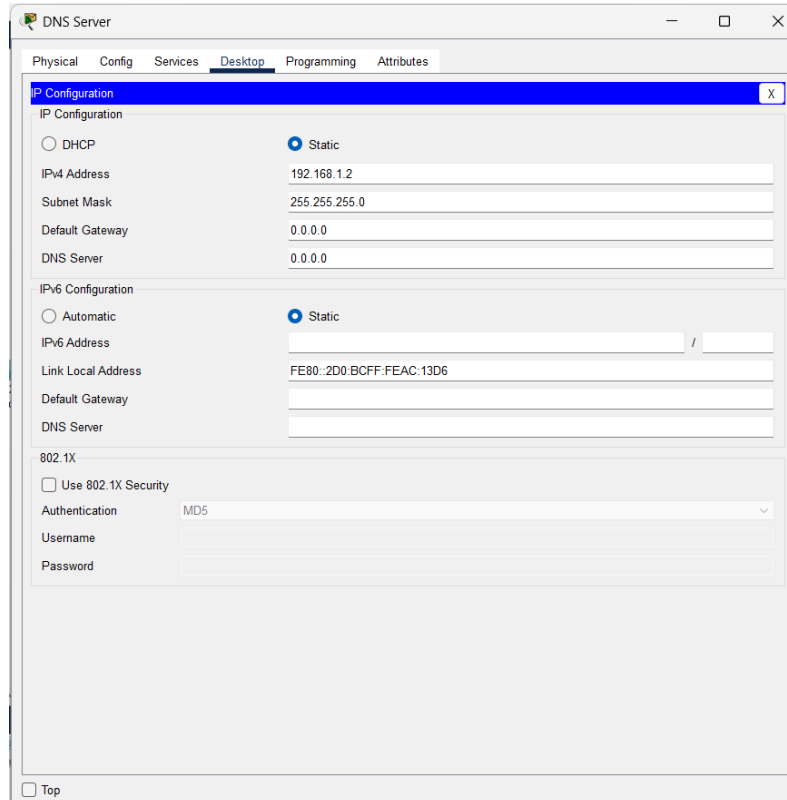


1.1 Circuit Design of DNS



1.2 DNS Server Service

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The screenshot shows the 'DNS Server' configuration window with the 'Desktop' tab selected. The 'IP Configuration' section is active, showing 'Static' IP configuration. The IPv4 Address is set to 192.168.1.2, Subnet Mask to 255.255.255.0, Default Gateway to 0.0.0.0, and DNS Server to 0.0.0.0. The IPv6 Configuration section shows 'Static' configuration with a Link Local Address of FE80::2D0:BCFF:FEAC:13D6. The 802.1X section shows 'Use 802.1X Security' unchecked, Authentication set to MD5, and Username and Password fields empty.

IP Configuration	
<input type="radio"/> DHCP	<input checked="" type="radio"/> Static
IPv4 Address	192.168.1.2
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	
Link Local Address	FE80::2D0:BCFF:FEAC:13D6
Default Gateway	
DNS Server	

802.1X

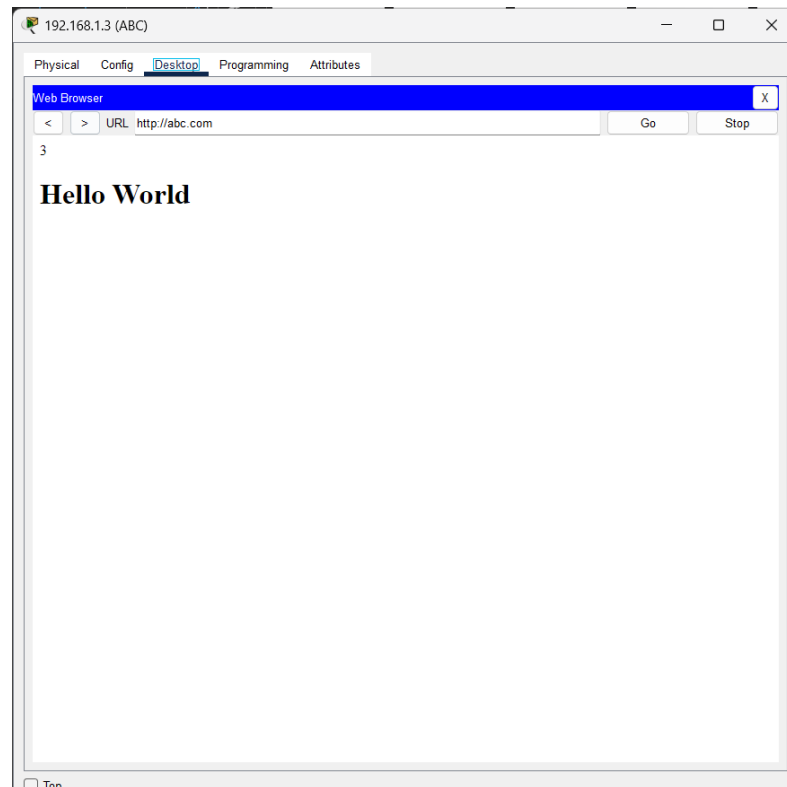
☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

1.3 DNS Server IP Configuration



The screenshot shows a 'Web Browser' window with the address bar set to 'http://abc.com'. The page content displays 'Hello World'.

URL: http://abc.com

Go Stop

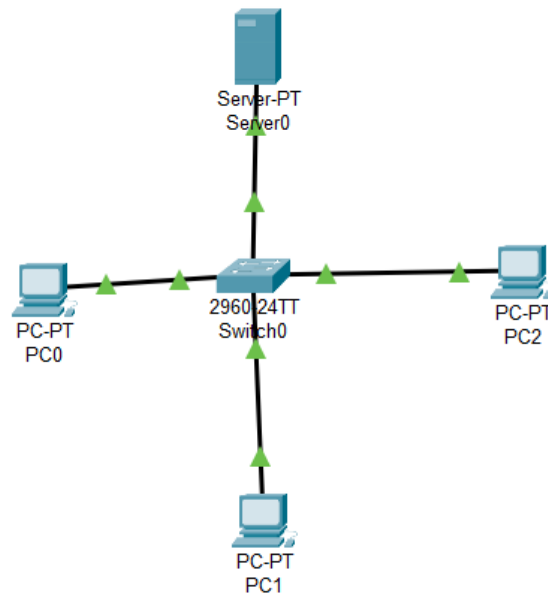
3

Hello World

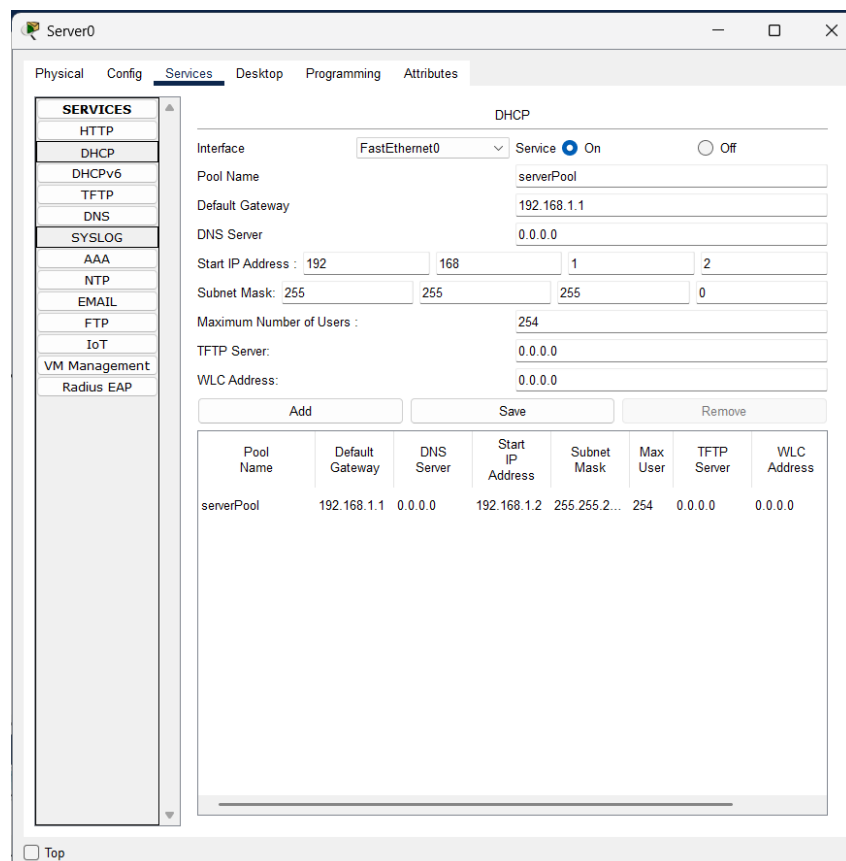
1.4 Domain Name through access site

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2. DHCP



2.1 Circuit Design of DHCP

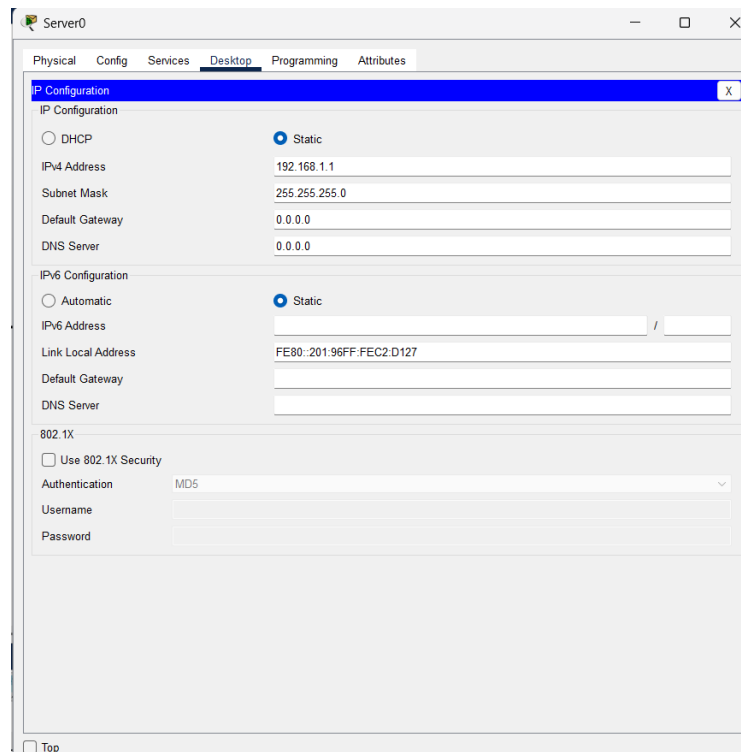


The screenshot shows the configuration interface for Server0, specifically the DHCP service settings. The 'Services' tab is active, and the DHCP service is enabled for the FastEthernet0 interface. The configuration includes a pool named 'serverPool' with a default gateway of 192.168.1.1, a DNS server of 0.0.0.0, and a start IP address of 192.168.1.2. The subnet mask is 255.255.255.0, and the maximum number of users is 254. The TFTP server and WLC address are both set to 0.0.0.0. A table at the bottom lists the configured pool.

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	192.168.1.1	0.0.0.0	192.168.1.2	255.255.255.0	254	0.0.0.0	0.0.0.0

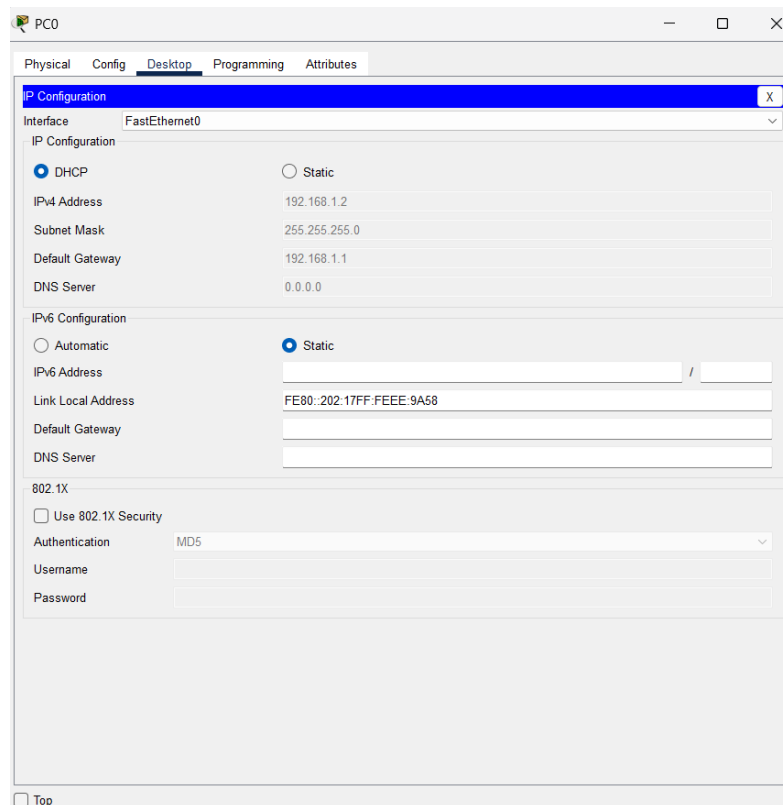
2.2 DHCP Server Service

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The screenshot shows the 'IP Configuration' window for 'Server0'. The 'Desktop' tab is selected. Under 'IP Configuration', the 'Static' radio button is selected. The fields are filled with: IPv4 Address: 192.168.1.1, Subnet Mask: 255.255.255.0, Default Gateway: 0.0.0.0, and DNS Server: 0.0.0.0. Under 'IPv6 Configuration', the 'Static' radio button is also selected. The fields are filled with: IPv6 Address: (empty), Link Local Address: FE80::201:96FF:FEC2:D127, Default Gateway: (empty), and DNS Server: (empty). At the bottom, there is a section for '802.1X' with a checkbox for 'Use 802.1X Security' (unchecked), a dropdown for 'Authentication' set to 'MD5', and fields for 'Username' and 'Password'.

2.3 DHCP Server IP Configuration

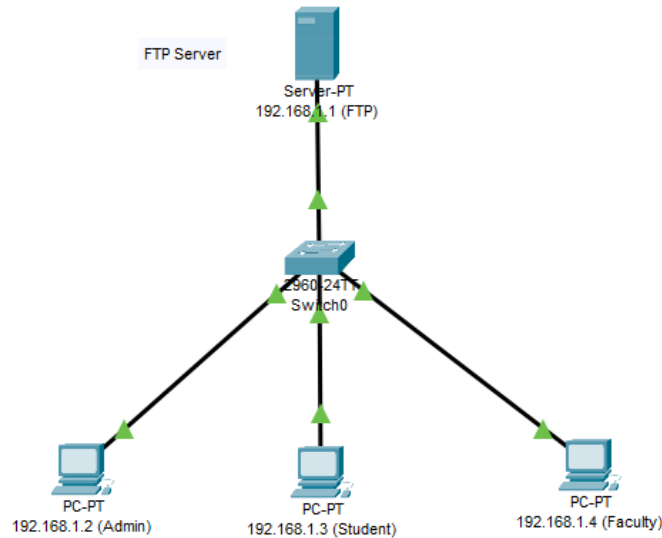


The screenshot shows the 'IP Configuration' window for 'PC0'. The 'Desktop' tab is selected. Under 'IP Configuration', the 'DHCP' radio button is selected. The fields are filled with: IPv4 Address: 192.168.1.2, Subnet Mask: 255.255.255.0, Default Gateway: 192.168.1.1, and DNS Server: 0.0.0.0. Under 'IPv6 Configuration', the 'Static' radio button is selected. The fields are filled with: IPv6 Address: (empty), Link Local Address: FE80::202:17FF:FEEE:9A58, Default Gateway: (empty), and DNS Server: (empty). At the bottom, there is a section for '802.1X' with a checkbox for 'Use 802.1X Security' (unchecked), a dropdown for 'Authentication' set to 'MD5', and fields for 'Username' and 'Password'.

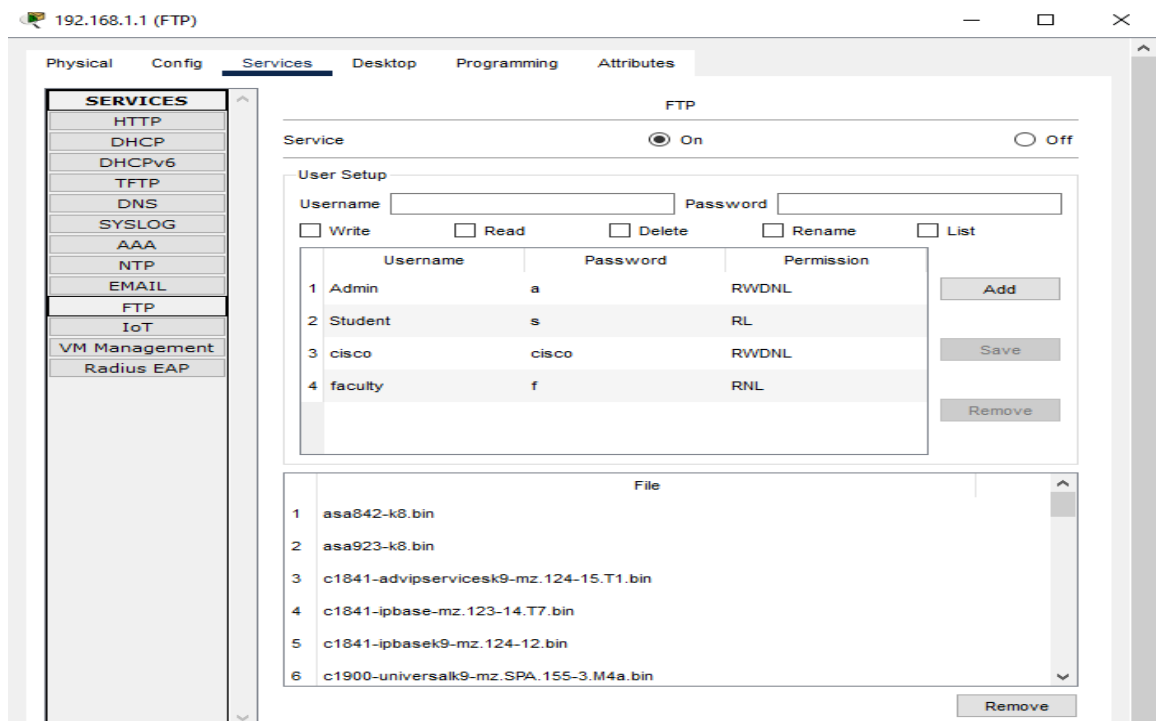
2.4 DHCP Devices IP Configuration

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3. FTP

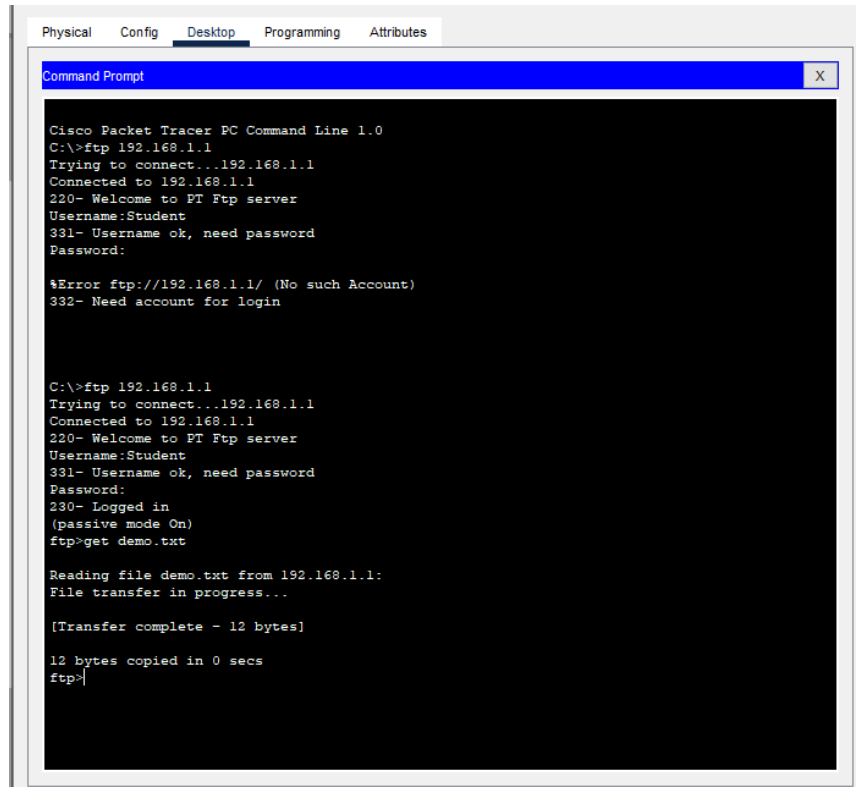


3.1 Circuit Design of DHCP



3.2 FTP Server Service

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```
Physical Config Desktop Programming Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ftp 192.168.1.1
Trying to connect...192.168.1.1
Connected to 192.168.1.1
220- Welcome to PT Ftp server
Username:Student
331- Username ok, need password
Password:

%Error ftp://192.168.1.1/ (No such Account)
332- Need account for login

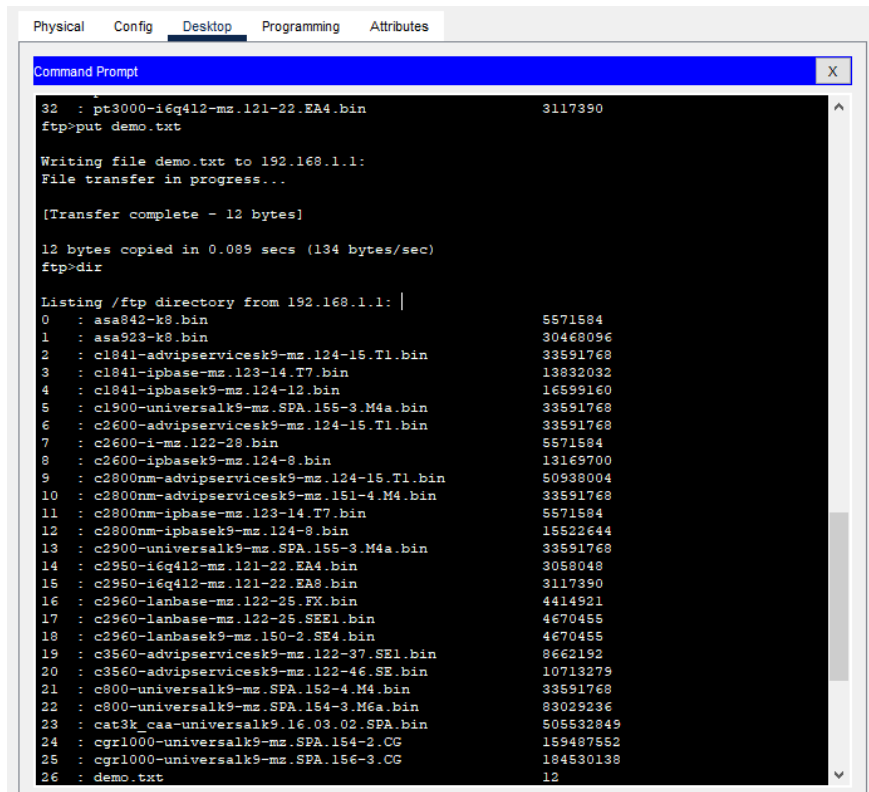
C:\>ftp 192.168.1.1
Trying to connect...192.168.1.1
Connected to 192.168.1.1
220- Welcome to PT Ftp server
Username:Student
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>get demo.txt

Reading file demo.txt from 192.168.1.1:
File transfer in progress...

[Transfer complete - 12 bytes]

12 bytes copied in 0 secs
ftp>|
```

3.3 Login User in FTP Server



```
Physical Config Desktop Programming Attributes
Command Prompt

32 : pt3000-i6q4l2-mz.121-22.EA4.bin 3117390
ftp>put demo.txt

Writing file demo.txt to 192.168.1.1:
File transfer in progress...

[Transfer complete - 12 bytes]

12 bytes copied in 0.089 secs (134 bytes/sec)
ftp>dir

Listing /ftp directory from 192.168.1.1: |
0 : asa842-k8.bin 5571584
1 : asa923-k8.bin 30468096
2 : c1841-advipservicesk9-mz.124-15.T1.bin 33591768
3 : c1841-ipbase-mz.123-14.T7.bin 13832032
4 : c1841-ipbasek9-mz.124-12.bin 16599160
5 : c1900-universalk9-mz.SPA.155-3.M4a.bin 33591768
6 : c2600-advipservicesk9-mz.124-15.T1.bin 33591768
7 : c2600-i-mz.122-28.bin 5571584
8 : c2600-ipbasek9-mz.124-8.bin 13169700
9 : c2800nm-advipservicesk9-mz.124-15.T1.bin 50938004
10 : c2800nm-advipservicesk9-mz.151-4.M4.bin 33591768
11 : c2800nm-ipbase-mz.123-14.T7.bin 5571584
12 : c2800nm-ipbasek9-mz.124-8.bin 15522644
13 : c2900-universalk9-mz.SPA.155-3.M4a.bin 33591768
14 : c2950-i6q4l2-mz.121-22.EA4.bin 3058049
15 : c2950-i6q4l2-mz.121-22.EA8.bin 3117390
16 : c2960-lanbase-mz.122-25.FX.bin 4414921
17 : c2960-lanbase-mz.122-25.SEE1.bin 4670455
18 : c2960-lanbasek9-mz.150-2.SE4.bin 4670455
19 : c3560-advipservicesk9-mz.122-37.SE1.bin 8662192
20 : c3560-advipservicesk9-mz.122-46.SE.bin 10713279
21 : c800-universalk9-mz.SPA.152-4.M4.bin 33591768
22 : c800-universalk9-mz.SPA.154-3.M6a.bin 83029236
23 : cat3k_caa-universalk9.16.03.02.SPA.bin 505532849
24 : cg1000-universalk9-mz.SPA.154-2.CG 159487552
25 : cg1000-universalk9-mz.SPA.156-3.CG 184530138
26 : demo.txt 12
```

3.4 Put and view Directory