Date: 06 / 08 / 24

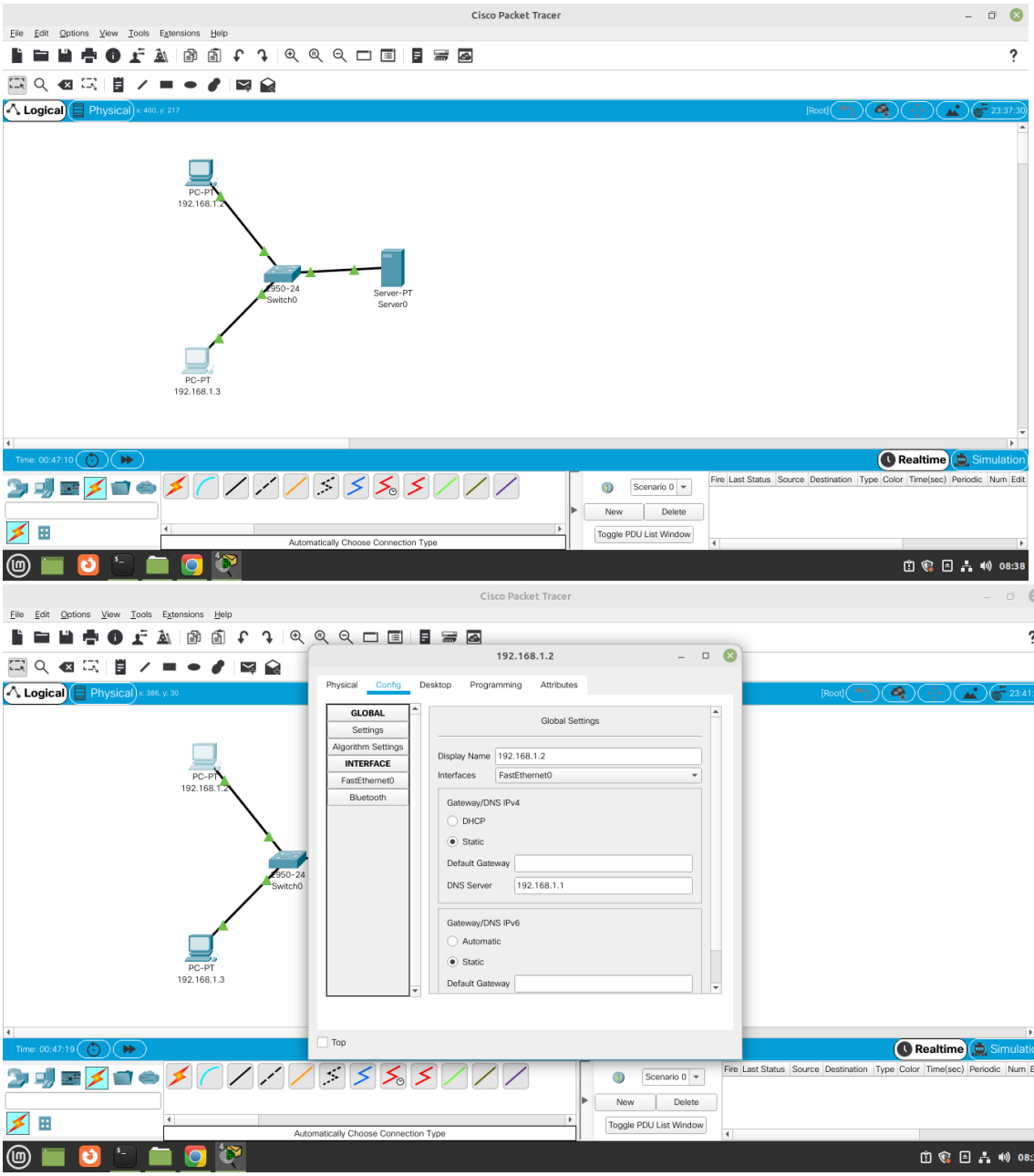
Lab Practical #06:

Study the application layer protocol DNS, DHCP, FTP.

Practical Assignment #06:

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

1. **DNS – Protocol Configuration :**



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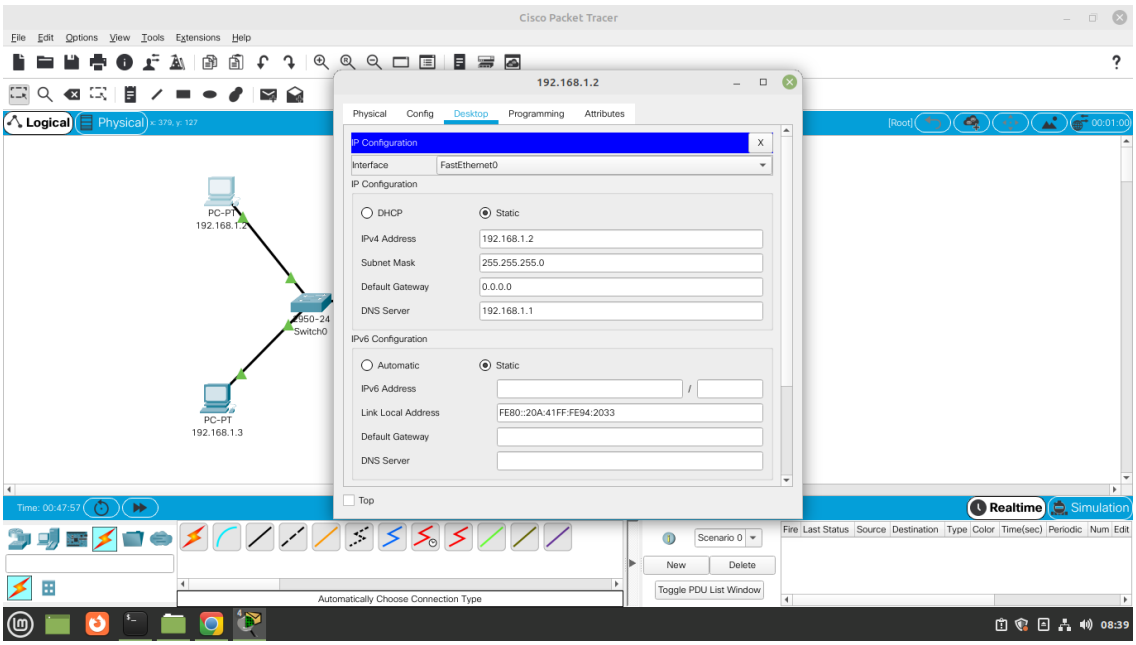
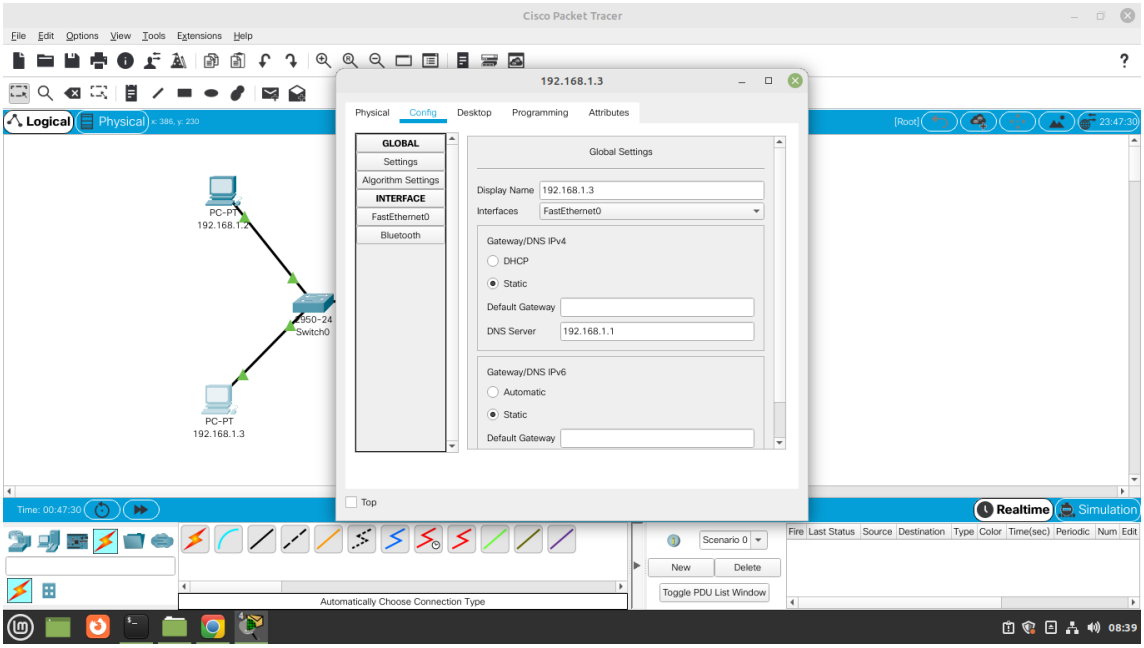

Cisco Packet Tracer
192.168.1.2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
DHCP
Static
IPv4 Address
192.168.1.2
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
192.168.1.1
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::20A:41FF:FE94:2033
Default Gateway
DNS Server
Top
PC-PT
192.168.1.2
2950-24
Switch0
PC-PT
192.168.1.3
Logical
Physical
Realtime
Simulation
Automatically Choose Connection Type
New
Delete
Toggle PDU List Window


Cisco Packet Tracer
192.168.1.3
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
Global Settings
Display Name
192.168.1.3
Interfaces
FastEthernet0
Gateway/DNS IPv4
DHCP
Static
Default Gateway
DNS Server
192.168.1.1
Gateway/DNS IPv6
Automatic
Static
Default Gateway
Top
PC-PT
192.168.1.2
2950-24
Switch0
PC-PT
192.168.1.3
Logical
Physical
Realtime
Simulation
Automatically Choose Connection Type
New
Delete
Toggle PDU List Window

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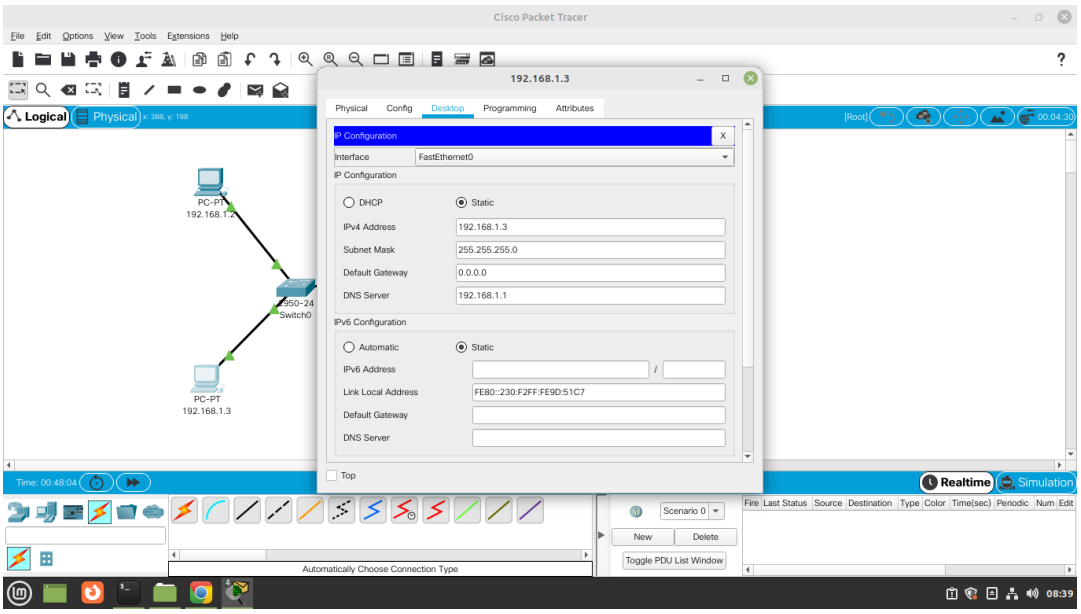
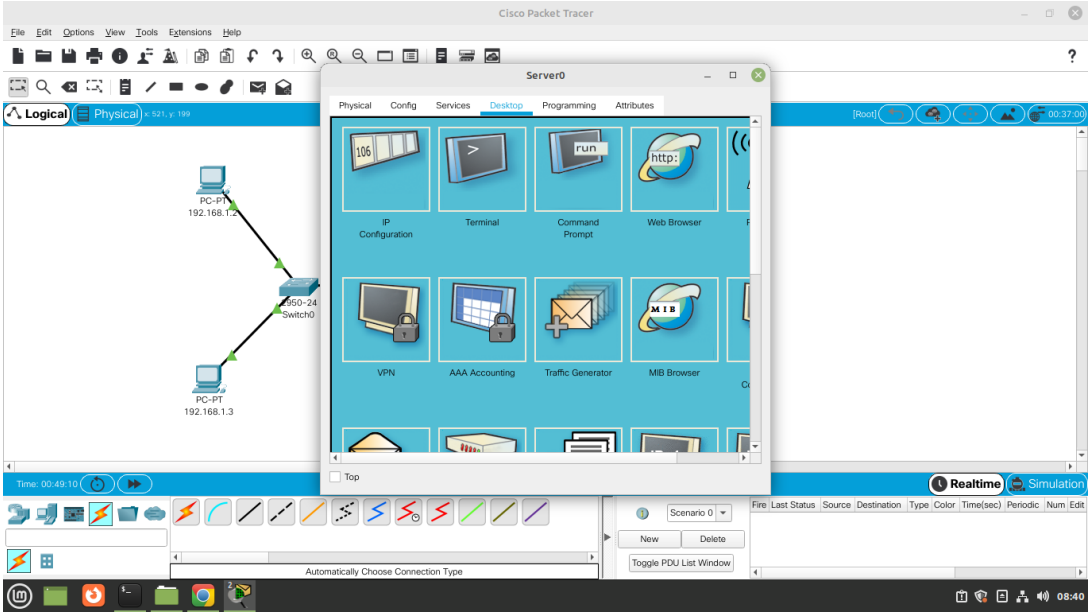
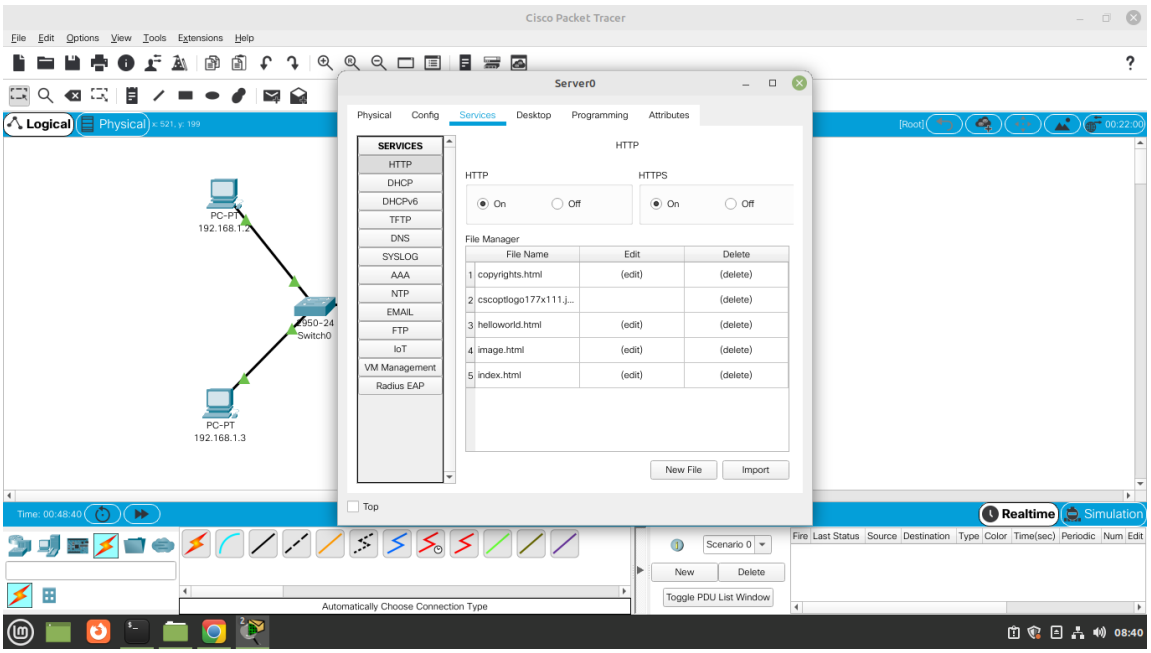
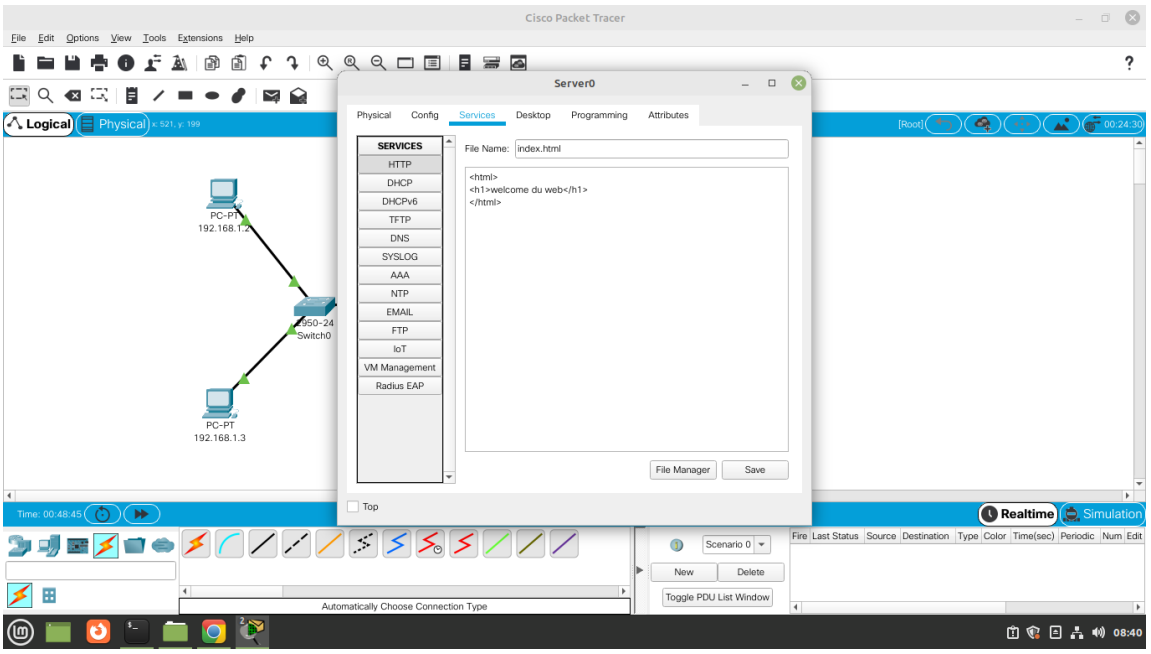

Cisco Packet Tracer
192.168.1.3
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
DHCP
Static
IPv4 Address
192.168.1.3
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
192.168.1.1
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::230:F2FF:FE9D:51C7
Default Gateway
DNS Server
Top
PC-PT
192.168.1.2
2950-24
Switch0
PC-PT
192.168.1.3
Logical
Physical
Realtime
Simulation
Automatically Choose Connection Type
Scenario 0
New
Delete
Toggle PDU List Window

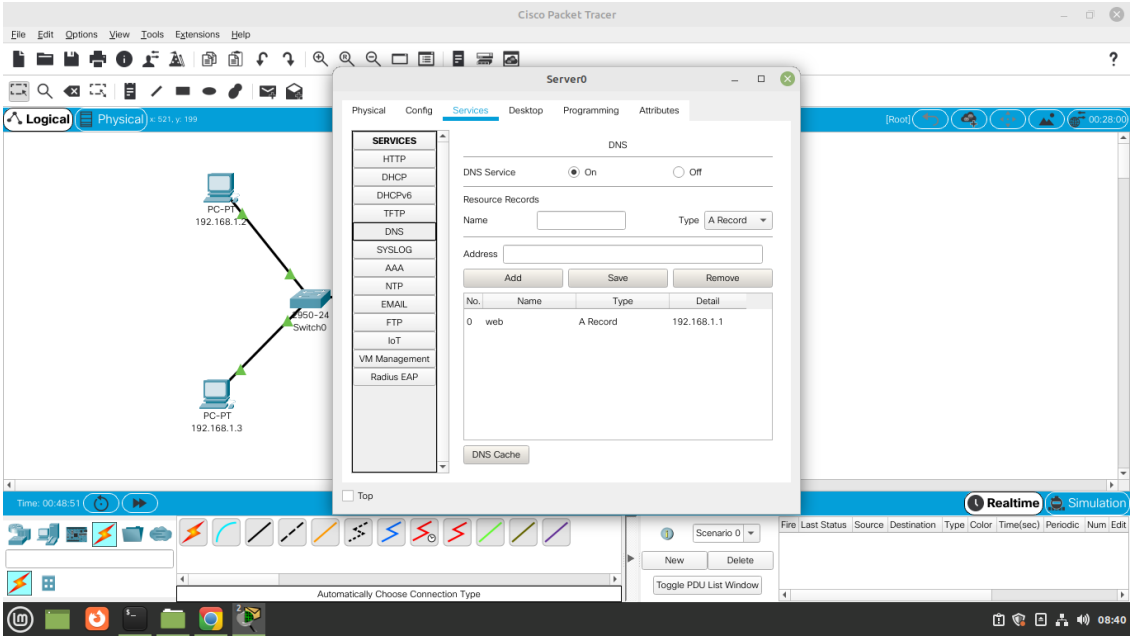

Cisco Packet Tracer
Server0
Physical
Config
Services
Desktop
Programming
Attributes
IP Configuration
Terminal
Command Prompt
Web Browser
VPN
AAA Accounting
Traffic Generator
MIB Browser
PC-PT
192.168.1.3
2950-24
Switch0
Logical
Physical
Realtime
Simulation
Automatically Choose Connection Type
Scenario 0
New
Delete
Toggle PDU List Window

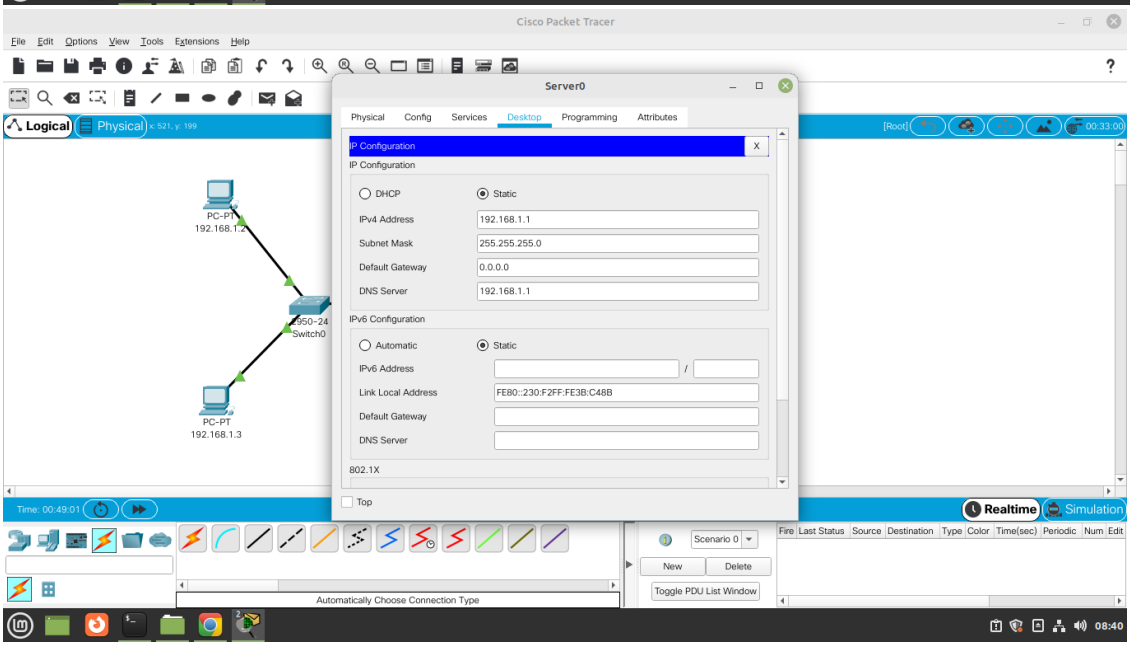
Date: 06 / 08 / 24


Cisco Packet Tracer
Server0
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
HTTP
HTTP
HTTPS
On
Off
On
Off
File Manager
File Name
Edit
Delete
1 copyrights.html (edit) (delete)
2 cscoptlogo177x111.j... (delete)
3 helloworld.html (edit) (delete)
4 image.html (edit) (delete)
5 index.html (edit) (delete)
New File
Import
Top
PC-PT
192.168.1.2
2950-24
Switch0
PC-PT
192.168.1.3
Realtime
Simulation
Automatically Choose Connection Type
New
Delete
Toggle PDU List Window

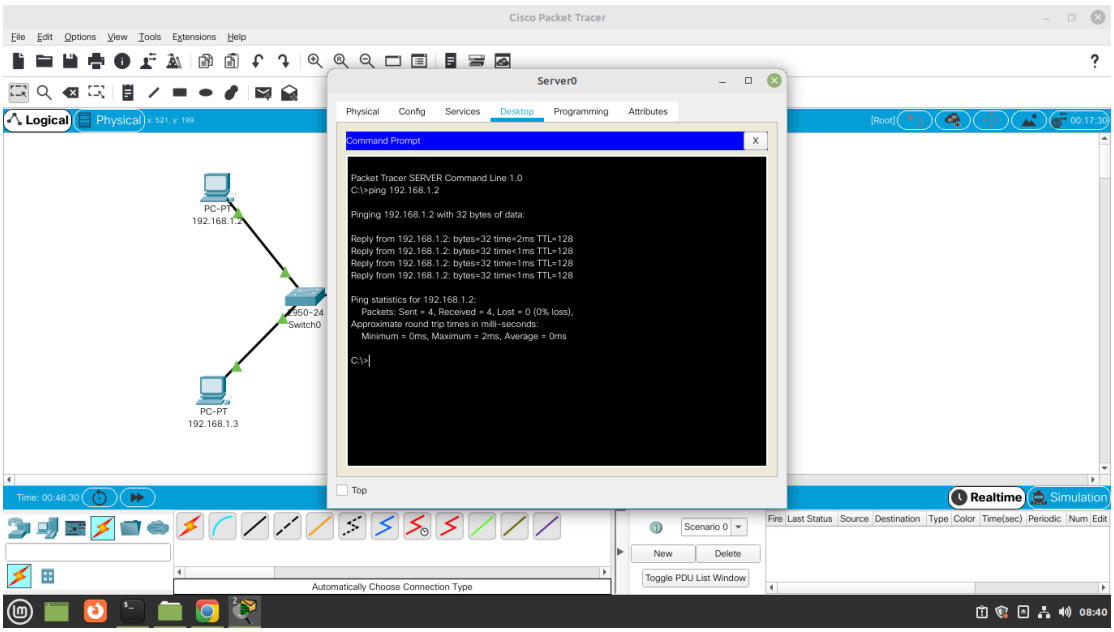

Cisco Packet Tracer
Server0
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
File Name: index.html
<html>
<h1>welcome du web</h1>
</html>
File Manager
Save
Top
PC-PT
192.168.1.2
2950-24
Switch0
PC-PT
192.168.1.3
Realtime
Simulation
Automatically Choose Connection Type
New
Delete
Toggle PDU List Window

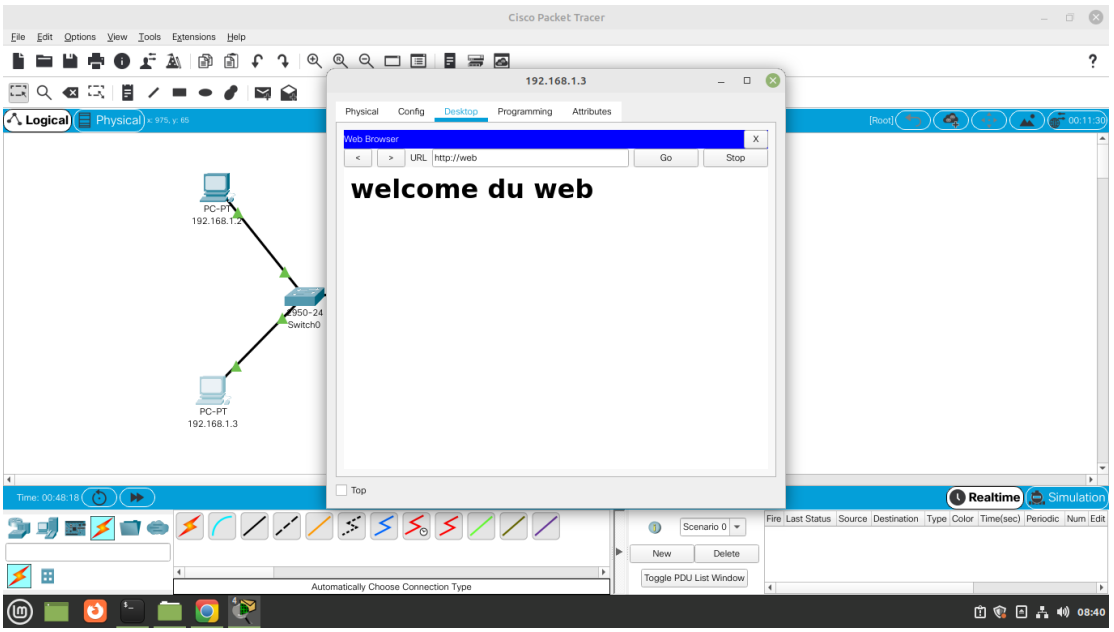
Date: 06 / 08 / 24


Cisco Packet Tracer
Server0
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
DNS
DNS Service
On
Off
Resource Records
Name
Type
A Record
Address
Add
Save
Remove
No.
Name
Type
Detail
0 web A Record 192.168.1.1
DNS Cache
PC-PT
192.168.1.2
2950-24
Switch0
PC-PT
192.168.1.3
Realtime
Simulation
Automatically Choose Connection Type
08:40

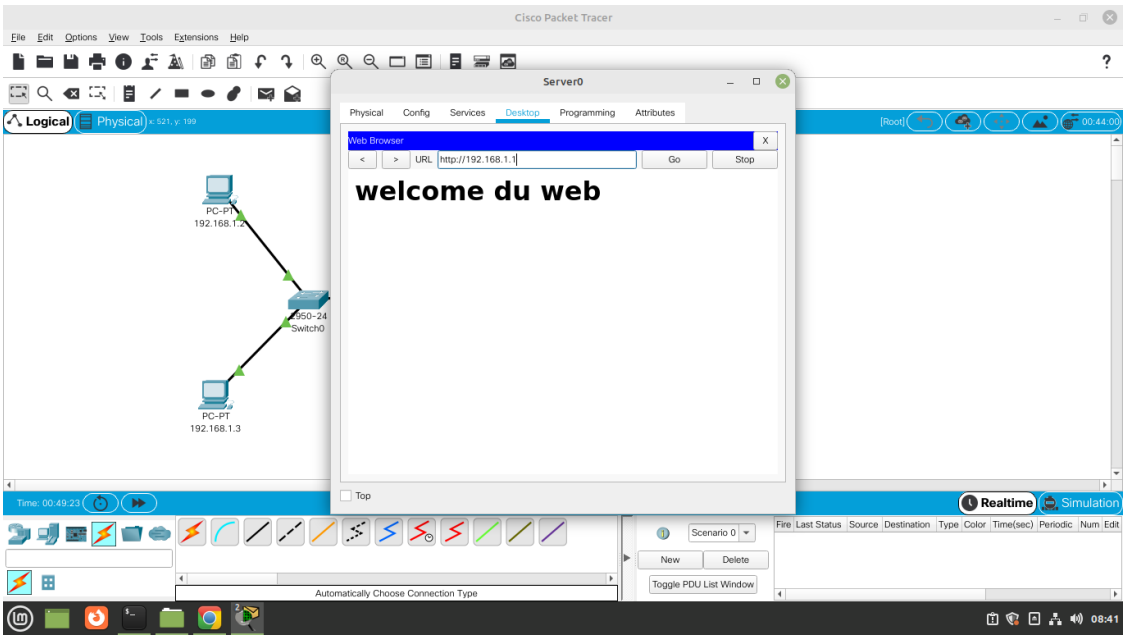

Cisco Packet Tracer
Server0
Physical
Config
Services
Desktop
Programming
Attributes
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.1
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
192.168.1.1
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::230:F2FF:FE3B:C48B
Default Gateway
DNS Server
802.1X
PC-PT
192.168.1.2
2950-24
Switch0
PC-PT
192.168.1.3
Realtime
Simulation
Automatically Choose Connection Type
08:40

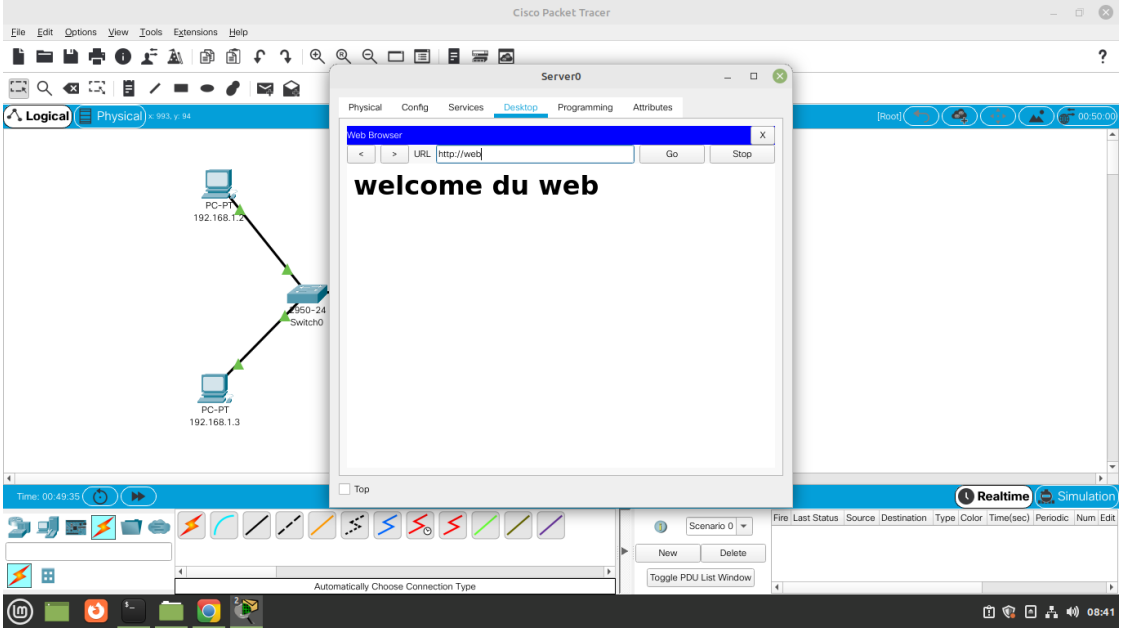
Date: 06 / 08 / 24


Cisco Packet Tracer
Server0
Physical
Config
Services
Desktop
Programming
Attributes
Command Prompt
Packet Tracer SERVER Command Line 1.0
C:\>ping 192.168.1.2
Pinging 192.168.1.2 with 32 bytes of data:
Reply from 192.168.1.2: bytes=32 time=2ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.1.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 2ms, Average = 0ms
C:\>
PC-PT
192.168.1.2
2950-24
Switch0
PC-PT
192.168.1.3
Logical
Physical
Realtime
Simulation
Automatically Choose Connection Type


Cisco Packet Tracer
192.168.1.3
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
http://web
Go
Stop
welcome du web
PC-PT
192.168.1.2
2950-24
Switch0
PC-PT
192.168.1.3
Logical
Physical
Realtime
Simulation
Automatically Choose Connection Type

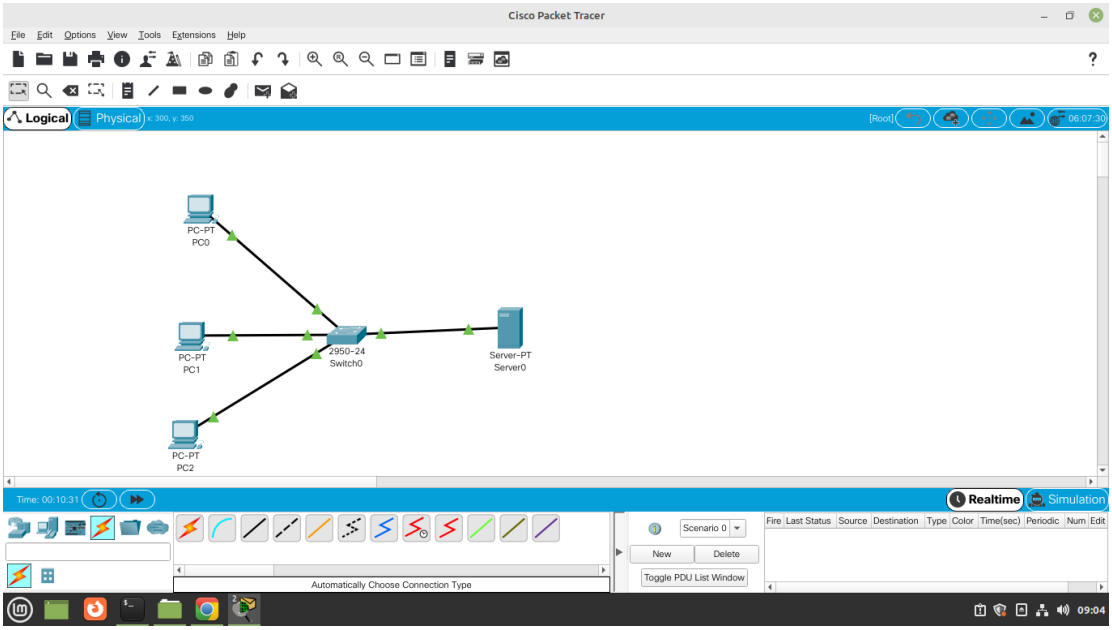
Date: 06 / 08 / 24

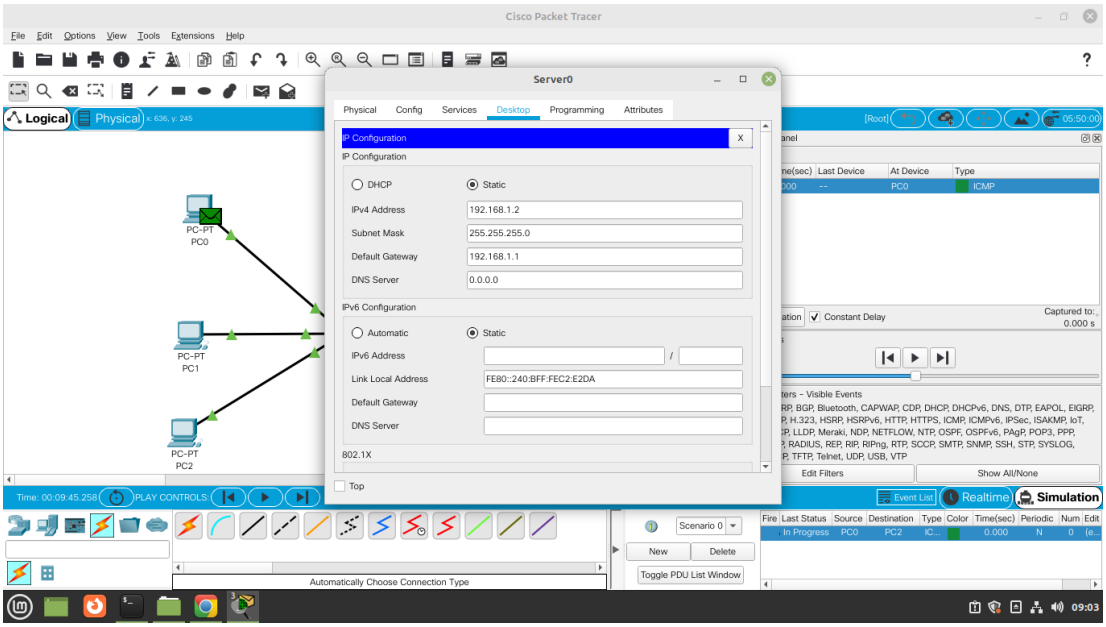

Cisco Packet Tracer
Server0
Physical
Config
Services
Desktop
Programming
Attributes
Web Browser
URL
http://192.168.1.1
Go
Stop
welcome du web
Logical
Physical
PC-PT
192.168.1.2
2950-24
Switch0
PC-PT
192.168.1.3
Realtime
Simulation
Automatically Choose Connection Type
New
Delete
Toggle PDU List Window


Cisco Packet Tracer
Server0
Physical
Config
Services
Desktop
Programming
Attributes
Web Browser
URL
http://web
Go
Stop
welcome du web
Logical
Physical
PC-PT
192.168.1.2
2950-24
Switch0
PC-PT
192.168.1.3
Realtime
Simulation
Automatically Choose Connection Type
New
Delete
Toggle PDU List Window

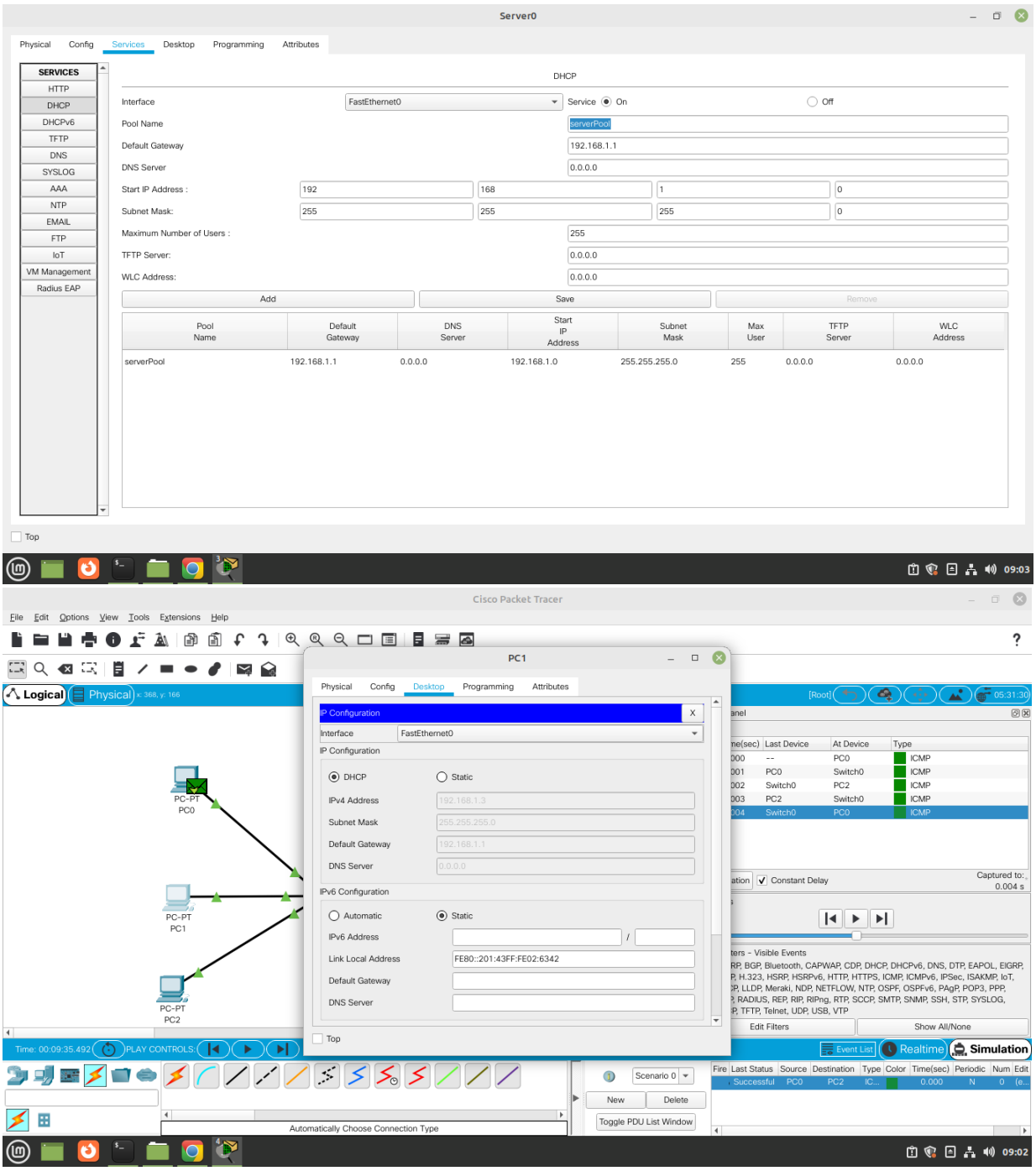
Date: 06 / 08 / 24

2. DHCP Configuration :

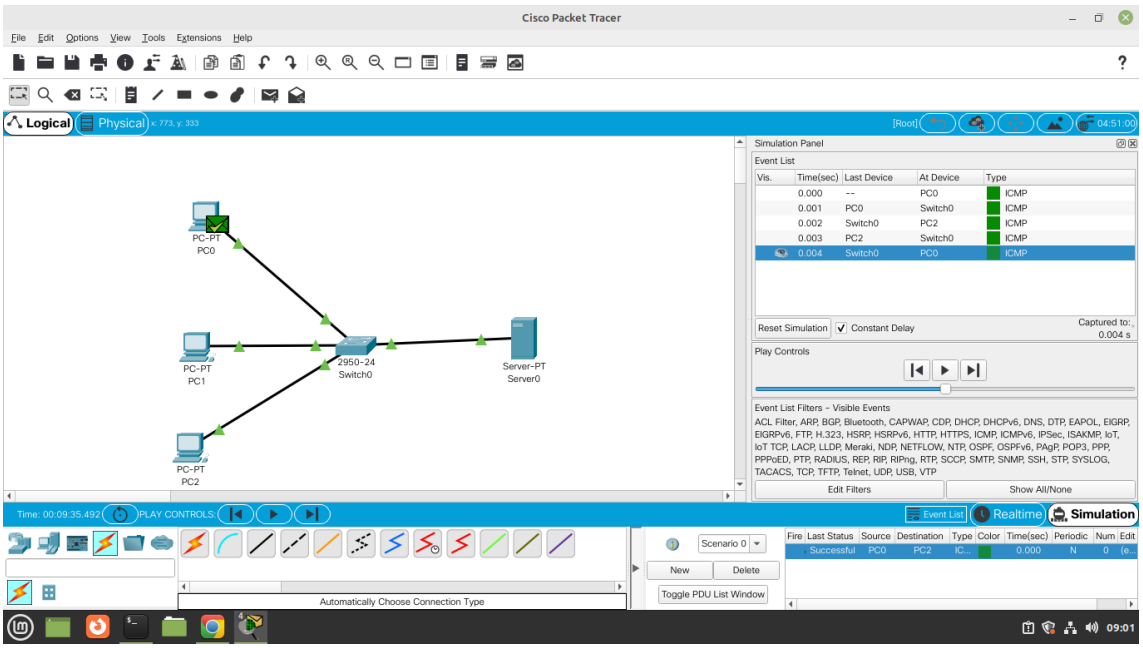


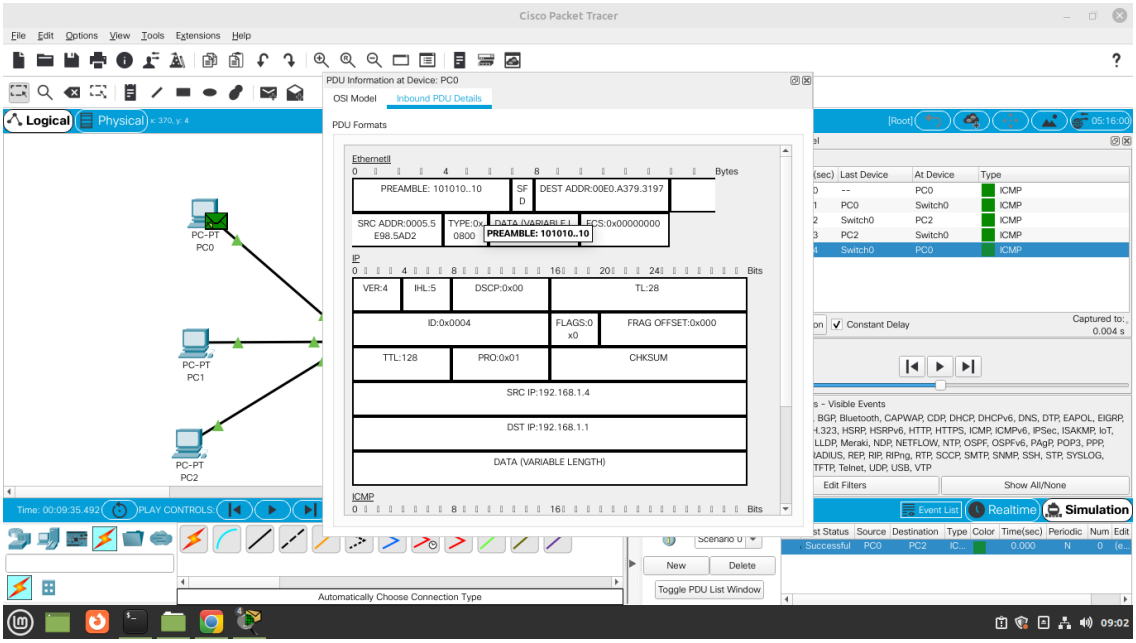


Date: 06 / 08 / 24


Server0
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
DHCP
Interface
FastEthernet0
Service
On
Off
Pool Name
serverPool
Default Gateway
192.168.1.1
DNS Server
0.0.0.0
Start IP Address :
192
168
1
0
Subnet Mask:
255
255
255
0
Maximum Number of Users :
255
TFTP Server:
0.0.0.0
WLC Address:
0.0.0.0
Add
Save
Remove
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
192.168.1.0
255.255.255.0
255
0.0.0.0
0.0.0.0
Top
09:03
Cisco Packet Tracer
File
Edit
Options
View
Tools
Extensions
Help
Logical
Physical
PC1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.3
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::201:43FF:FE02:6342
Default Gateway
DNS Server
Top
PC-PT PC0
PC-PT PC1
PC-PT PC2
Last Device
At Device
Type
PC0
Switch0
PC2
ICMP
Constant Delay
Captured to:
0.004 s
Edit Filters
Show All/None
Realtime
Simulation
Scenario 0
New
Delete
Toggle PDU List Window
Automatically Choose Connection Type
09:02

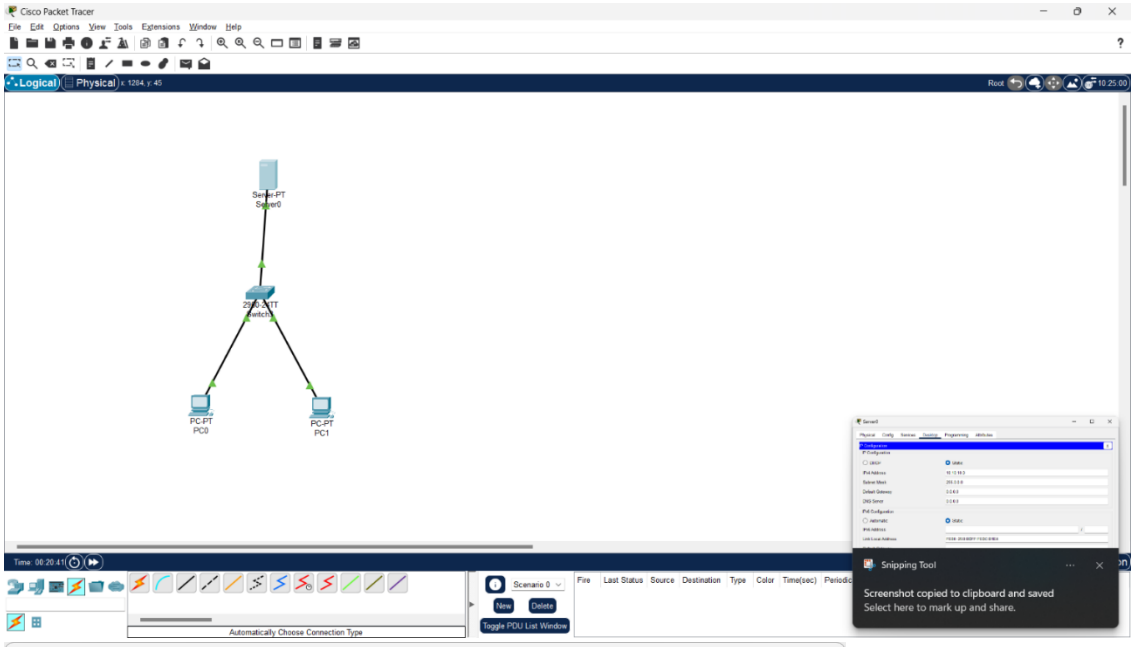
Date: 06 / 08 / 24

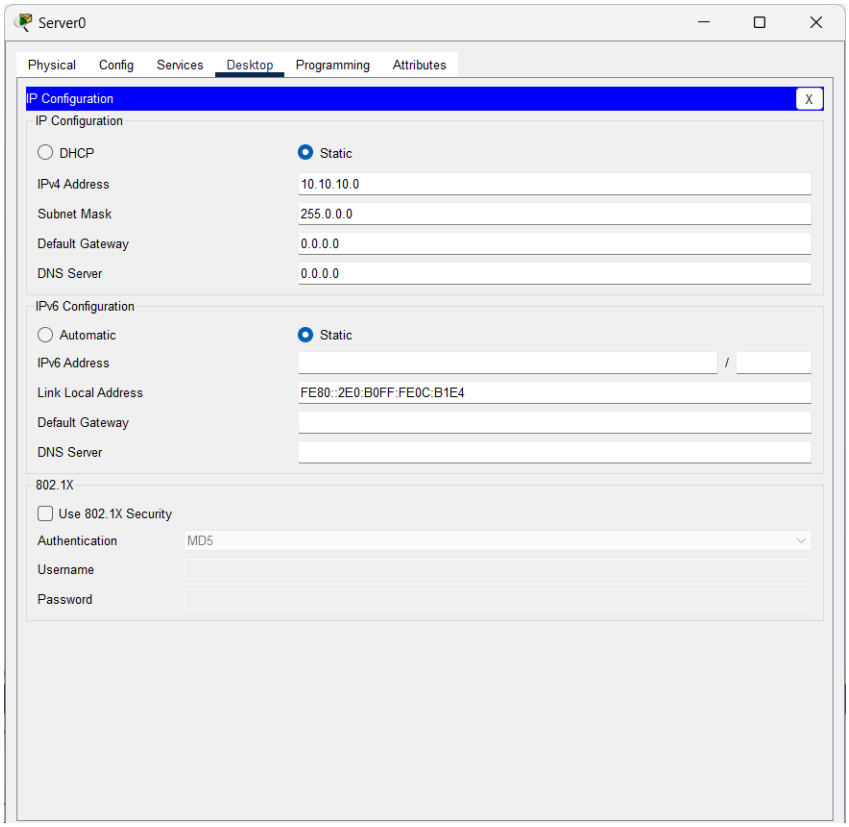

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
PC-PT PC0
PC-PT PC1
PC-PT PC2
2950-24 Switch0
Server-PT Server0
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- PC0 ICMP
0.001 PC0 Switch0 ICMP
0.002 Switch0 PC2 ICMP
0.003 PC2 Switch0 ICMP
0.004 Switch0 PC0 ICMP
Reset Simulation Constant Delay
Play Controls
Event List Filters - Visible Events
Edit Filters Show All/None
Realtime Simulation
Automatically Choose Connection Type
New Delete
Toggle PDU List Window
09:01


Cisco Packet Tracer
File Edit Options View Tools Extensions Help
PDU Information at Device: PC0
OSI Model Inbound PDU Details
PDU Formats
Ethernet II
PREAMBLE: 101010..10
DEST ADDR:00E0.A379.3197
SRC ADDR:0005.5E98.5AD2
PREAMBLE: 101010..10
IP
VER:4 IHL:5 DSCP:0x00 TL:28
ID:0x0004 FLAGS:0 x0 FRAG OFFSET:0x000
TTL:128 PRO:0x01 CHKSUM
SRC IP:192.168.1.4
DST IP:192.168.1.1
DATA (VARIABLE LENGTH)
ICMP
Logical Physical
PC-PT PC0
PC-PT PC1
PC-PT PC2
Realtime Simulation
Automatically Choose Connection Type
09:02

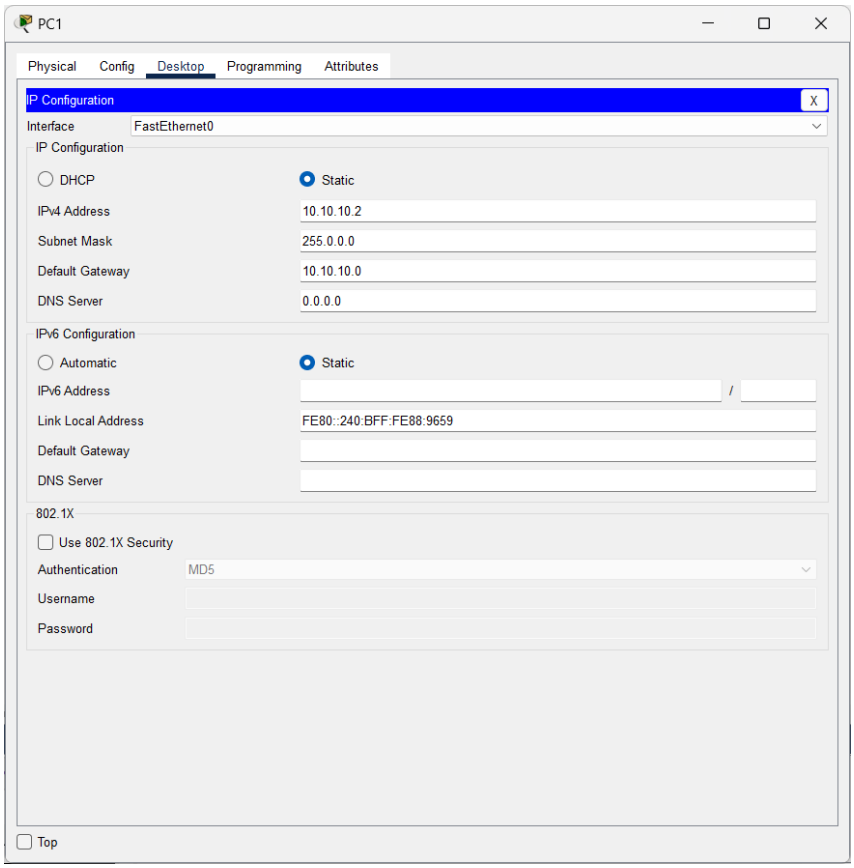
Date: 06 / 08 / 24

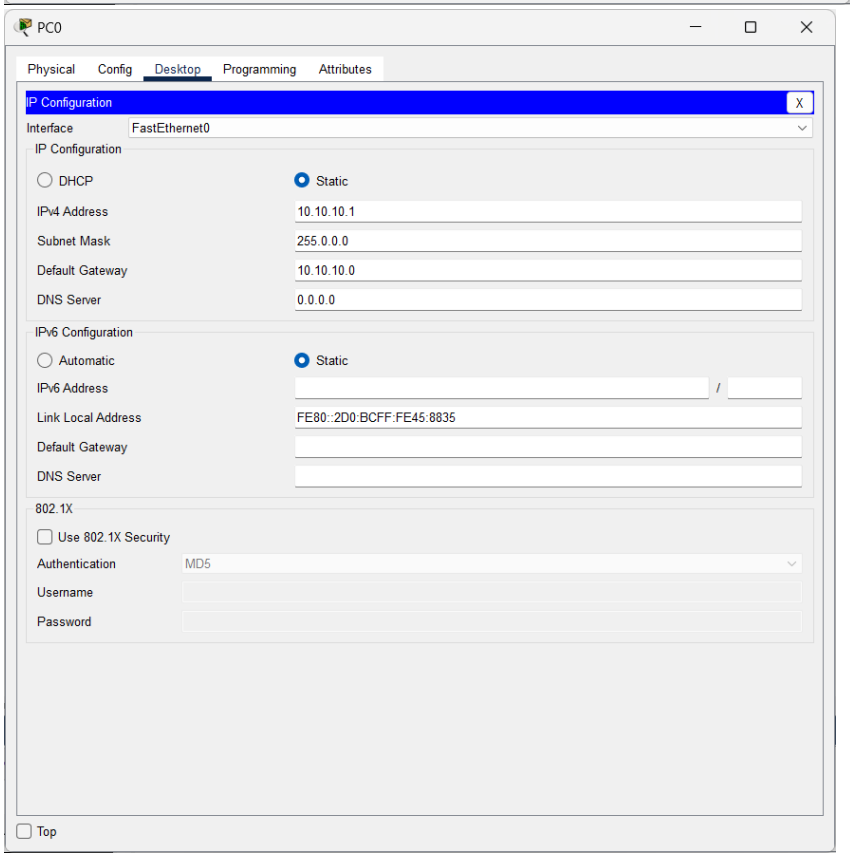
3. FTP Configuration :



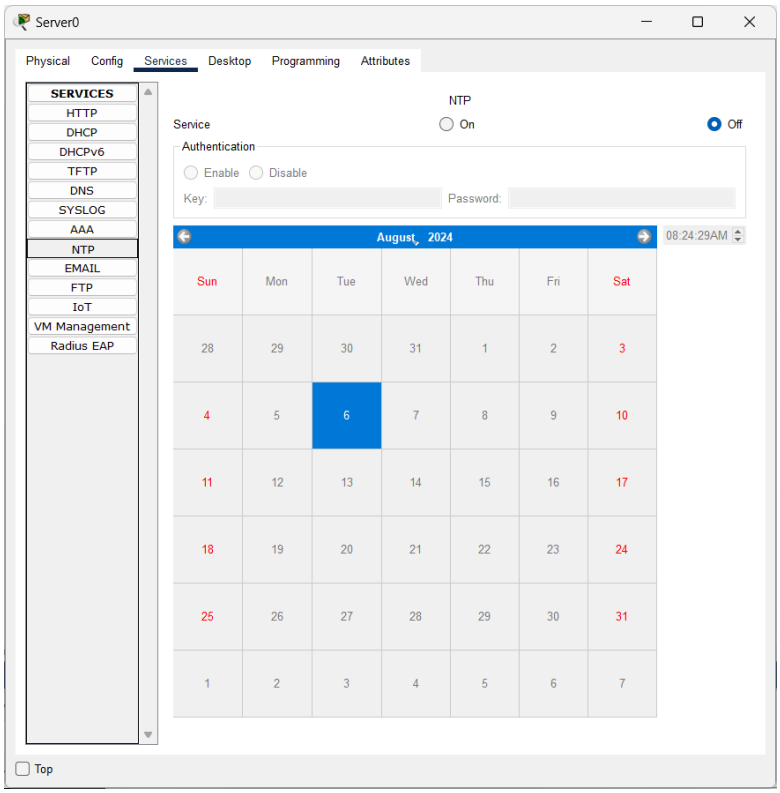


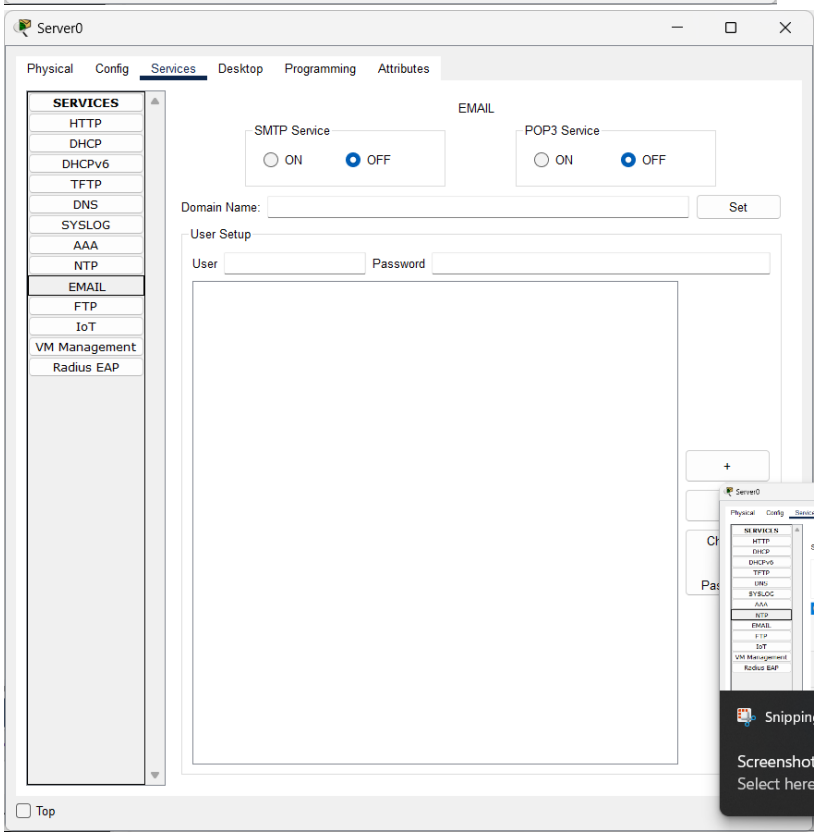
Date: 06 / 08 / 24


PC1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.10.10.2
Subnet Mask
255.0.0.0
Default Gateway
10.10.10.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::240:BFF:FE88:9659
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

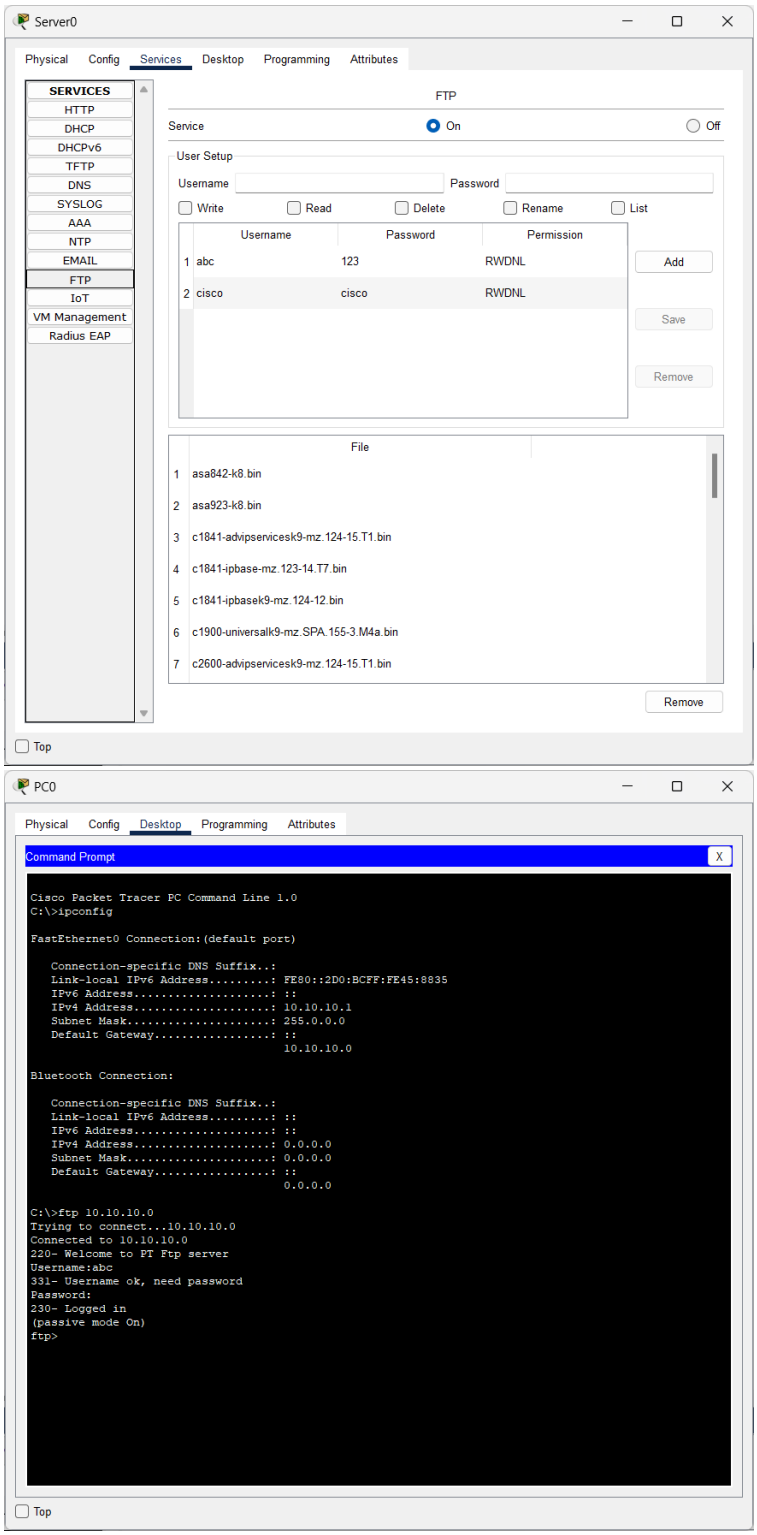

PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.10.10.1
Subnet Mask
255.0.0.0
Default Gateway
10.10.10.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::2D0:BCFF:FE45:8835
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

Date: 06 / 08 / 24

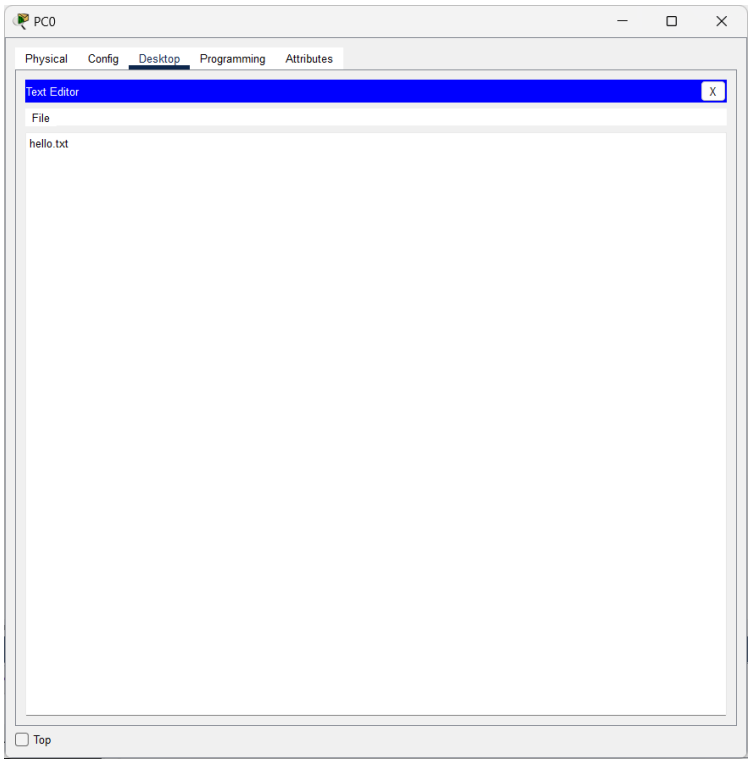

Server0
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
NTP
Service
On
Off
Authentication
Enable
Disable
Key:
Password:
August 2024
08:24:29AM
Sun
Mon
Tue
Wed
Thu
Fri
Sat
Top

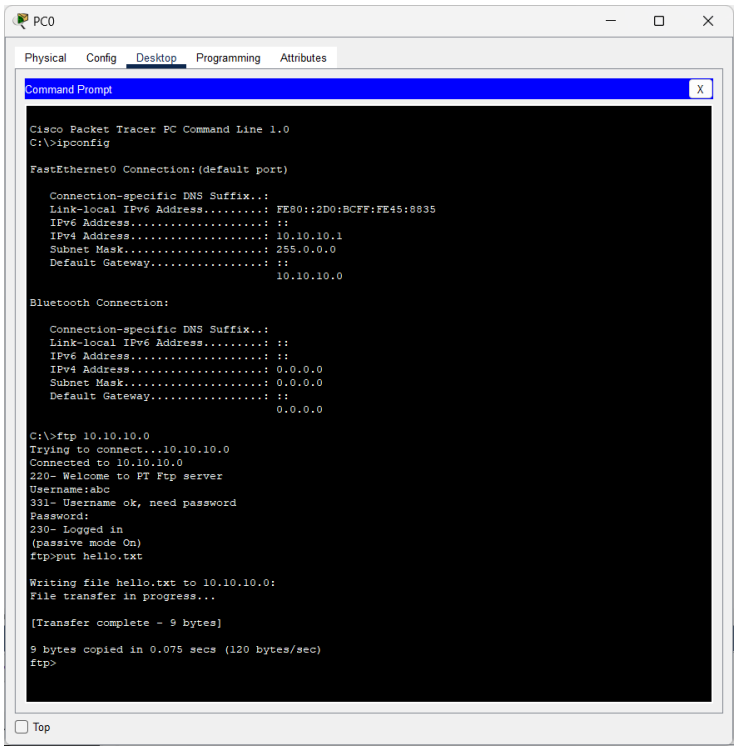

Server0
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
EMAIL
SMTP Service
ON
OFF
POP3 Service
ON
OFF
Domain Name:
Set
User Setup
User
Password
Top

Date: 06 / 08 / 24

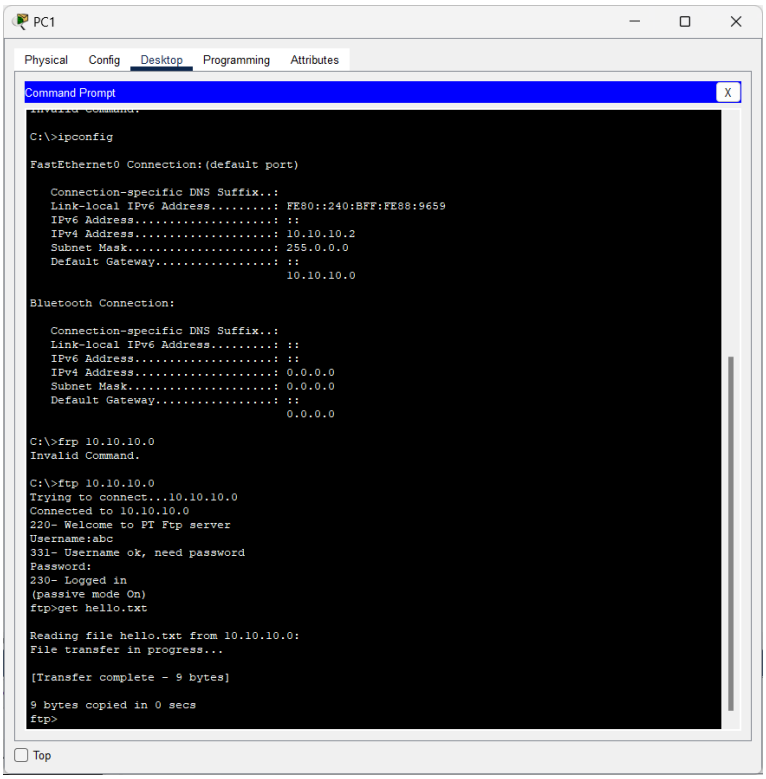

Server0
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
FTP
Service
On
Off
User Setup
Username
Password
Write
Read
Delete
Rename
List
Username
Password
Permission
1 abc 123 RWDNL
2 cisco cisco RWDNL
Add
Save
Remove
File
1 asa842-k8.bin
2 asa923-k8.bin
3 c1841-advipservicesk9-mz.124-15.T1.bin
4 c1841-ipbase-mz.123-14.T7.bin
5 c1841-ipbasek9-mz.124-12.bin
6 c1900-universalk9-mz.SPA.155-3.M4a.bin
7 c2600-advipservicesk9-mz.124-15.T1.bin
Remove
Top
PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: FE80::2D0:BCFF:FE45:8835
IPv6 Address.....: ::
IPv4 Address.....: 10.10.10.1
Subnet Mask.....: 255.0.0.0
Default Gateway.....: ::
10.10.10.0
Bluetooth Connection:
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
0.0.0.0
C:\>ftp 10.10.10.0
Trying to connect...10.10.10.0
Connected to 10.10.10.0
220- Welcome to PT Ftp server
Username:abc
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>
Top

Date: 06 / 08 / 24


PC0
Physical
Config
Desktop
Programming
Attributes
Text Editor
File
hello.txt
Top


PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: FE80::2D0:BCFF:FE45:8835
IPv6 Address.....: ::
IPv4 Address.....: 10.10.10.1
Subnet Mask.....: 255.0.0.0
Default Gateway.....: ::
10.10.10.0
Bluetooth Connection:
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
0.0.0.0
C:\>ftp 10.10.10.0
Trying to connect...10.10.10.0
Connected to 10.10.10.0
220- Welcome to PT Ftp server
Username:abc
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>put hello.txt
Writing file hello.txt to 10.10.10.0:
File transfer in progress...
[Transfer complete - 9 bytes]
9 bytes copied in 0.075 secs (120 bytes/sec)
ftp>
Top

Date: 06 / 08 / 24


PC1
Physical
Config
Desktop
Programming
Attributes
Command Prompt
C:\>ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: FE80::240:BFF:FE88:9659
IPv6 Address.....: ::
IPv4 Address.....: 10.10.10.2
Subnet Mask.....: 255.0.0.0
Default Gateway.....: ::
10.10.10.0
Bluetooth Connection:
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
0.0.0.0
C:\>frp 10.10.10.0
Invalid Command.
C:\>ftp 10.10.10.0
Trying to connect...10.10.10.0
Connected to 10.10.10.0
220- Welcome to PT Ftp server
Username:abc
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>get hello.txt
Reading file hello.txt from 10.10.10.0:
File transfer in progress...
[Transfer complete - 9 bytes]
9 bytes copied in 0 secs
ftp>
Top