CSE307: INTERNETWORKING ESSENTIALS

Name: Ayushman Behera

Registration Number: 12301257

Roll Number: 49

Section: K23UP

Group: 2

GitHub Link: https://github.com/ayubeh1513/Internet-Networking-CA-2

IP Addressing Calculations (VLSM)

VLSM Calculation

Floor 1 (9364 Hosts)

2^M = Host

Host bits = 9364 ≈ 16384 = 2^{14} = 14

Net bits = 32 - 14 = 18

[CLASS A Public]

SUBNET MASK: 255.255.192.000

Network Address - 12.0.0.0 /18

Usable IPs:

Router (Default Gateway) - 12.0.0.1 /18

PC1 - PC[illegible]7 - 12.0.0.2/18 - 12.0.0.[illegible]8/18

End Address (Broadcast Address) - 12.0.63.255/18

Floor 2 (564 Hosts)

2^M = Host

Host bits = 564 ≈ 1024 = 2^{10} = [illegible]10

Net bits = 32 - 10 = 22

[CLASS A Public]

SUBNET MASK: 255.255.252.000

Network Address - 12.0.64.0/22

Usable IPs:

Router (Default Gateway) - 12.0.64.1/22

PC1 - PC7 - 12.0.64.2/22 - 12.0.64.8/22

End Address (Broadcast Address) - 12.0.67.255

Floor 3 (36789 Hosts)

2^H = Host

Host Bits = 36789 ≈ 65536 = 2^{16} = 16

Network Bits = 32 - 16 = 16

SUBNET MASK
255.255.0.0

[Class A Private]

Network Address - 10.0.0.0/16

Usable IPs:

Router (Default Gateway) - 10.0.0.1/16

PC1 - PC7 - 10.0.0.2/16 - 10.0.0.8/16

End Address (Broadcast Address) - 10.0.255.255

Floor 4 (230 Hosts)

2^H = Host

Host Bits = 230 ≈ 256 = 2^8 = 8

Network Bits = 32 - 8 = 24

SUBNET MASK
255.255.255.0

[Class A Private]

Network Address - 10.1.0.0/24

Usable IPs:

Router (Default Gateway) - 10.1.0.1/24

PC1 - PC7 - 10.1.0.2/24 - 10.1.0.8/24

End Address (Broadcast Address) - 10.1.0.255/24

Floor 5 (45 Hosts)

2^H = Host

Host Bits = 45 ≈ 64 = 2^6 = 6

Network Bits = 32 - 6 = 26

[Class A Private]

SUBNET MASK
255.255.255.192

Network Address - 10.1.1.0/26

Usable IPs:

Router (Default Gateway) - 10.1.1.1/26

PC1 - PC7 - 10.1.1.2/26 - 10.1.1.8/26

End Address (Broadcast Adress) - 10.1.1.63/26

Servers:

DNS (Floor 1) - 12.0.0.0/18 - 255.255.192.0

FTP (Floor 3) - 10.0.0.0/16 - 255.255.0.0

DHCP (Floor 2) - 12.0.64.0/22 - 255.255.252.0

EMAIL [Floor 5] - 10.1.1.9/26 - 255.255.255.192

HTTP [Floor 5] - 10.1.1.10/26 - 255.255.255.192

Routers

Host - 2+2 (Network and Broadcast)

8 Host bits = 4 = 2^2 = 2

N/w bits = 32 - 30

[Class C Private]

Floor 1 - Floor 2

Network Address - 192.168.0.0

Router 1 - 192.168.0.1

Router 2 - 192.168.0.2

Broadcast Address - 192.168.0.3

Floor 2 - Floor 3

Network Address - 192.168.0.4

Router 2 - Router 3 : 192.168.0.5 - 192.168.0.6

Broadcast Address - 192.168.0.7

Floor 3 - Floor 4

Network Address - 192.168.0.8

Router 3 - Router 4 : 192.168.0.9 - 192.16.0.10

Broadcast Address : 192.168.0.11

Floor 4 - Floor 5

Network Address - 192.168.0.12

Router 4 - Router 5 : 192.168.0.13 - 192.168.0.14

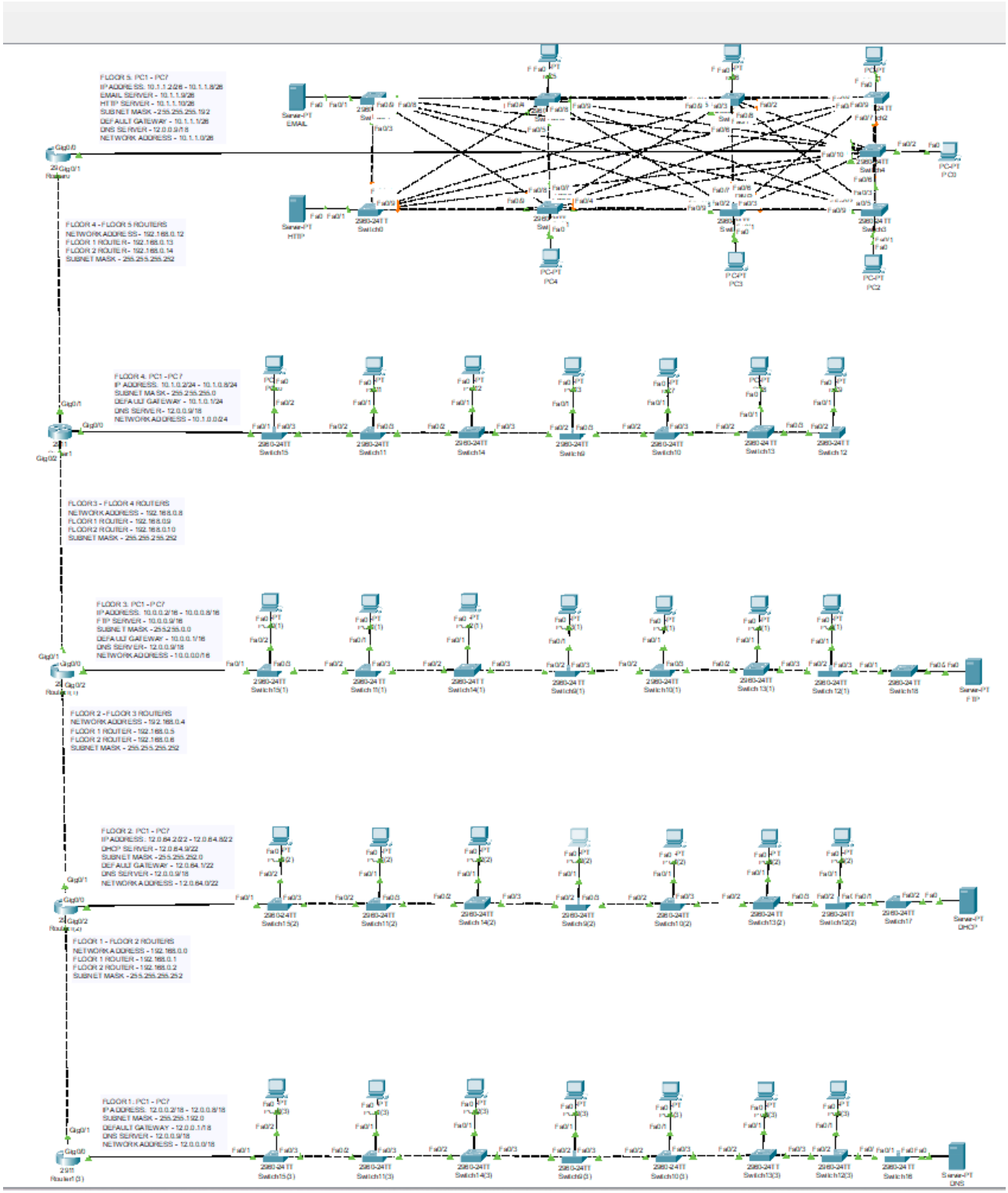
Broadcast Address : 192.168.0.15

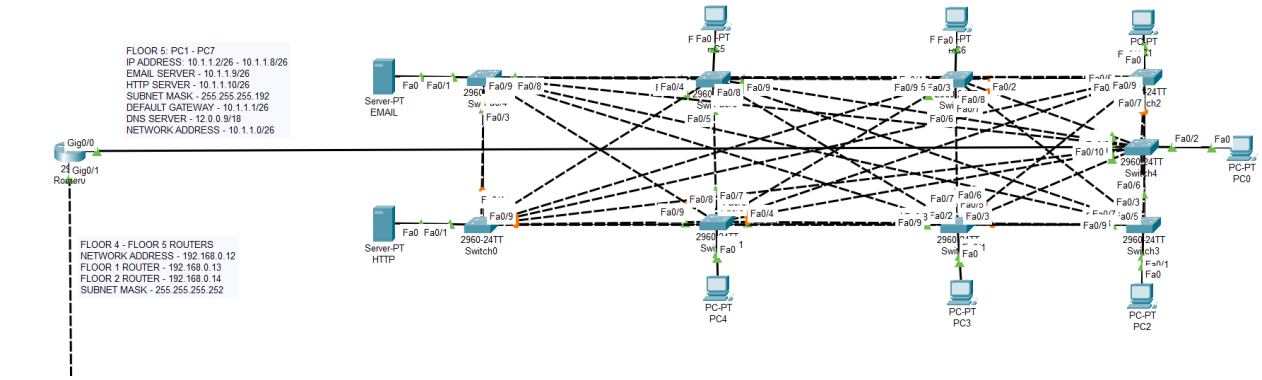
IP Address Allocation

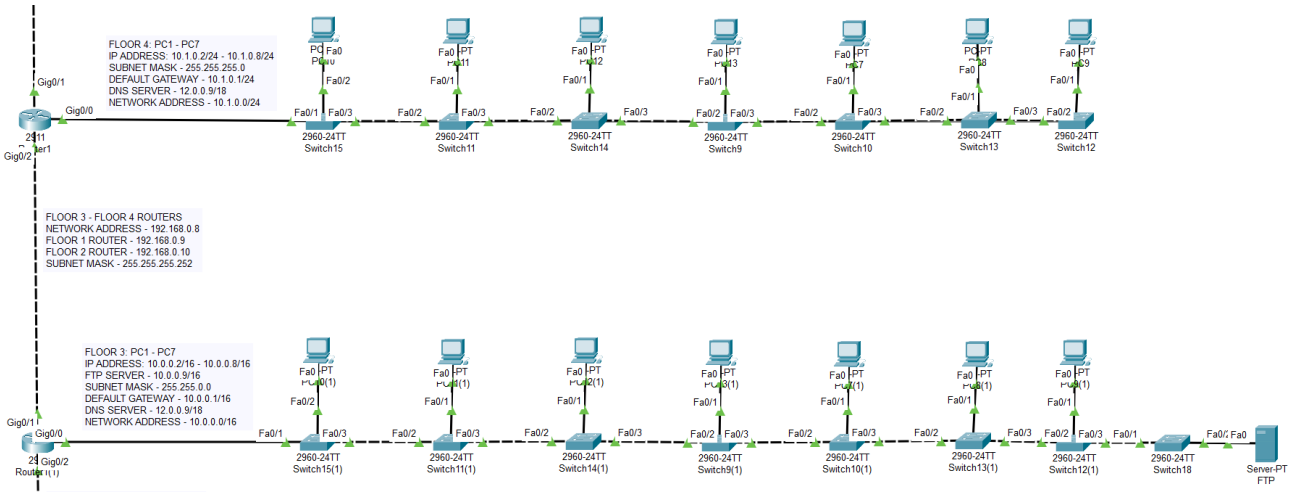
IP Addressing Details (VLSM)					
System Type/Name	Class	IP Address	Subnet Mask	Default Gateway	DNS Server
Floor 1 (9364 Hosts)					
Router	Class A Public	12.0.0.1 / 18	255.255.192.000		
PC1	Class A Public	12.0.0.2 / 18	255.255.192.000	12.0.0.1 / 18	12.0.0.9 /18
PC2	Class A Public	12.0.0.3 / 18	255.255.192.000	12.0.0.1 / 18	12.0.0.9 / 18
PC3	Class A Public	12.0.0.4 / 18	255.255.192.000	12.0.0.1 / 18	12.0.0.9 /18
PC4	Class A Public	12.0.0.5 / 18	255.255.192.000	12.0.0.1 / 18	12.0.0.9 /18
PC5	Class A Public	12.0.0.6 / 18	255.255.192.000	12.0.0.1 / 18	12.0.0.9 /18
PC6	Class A Public	12.0.0.7 / 18	255.255.192.000	12.0.0.1 / 18	12.0.0.9 /18
PC7	Class A Public	12.0.0.8 / 18	255.255.192.000	12.0.0.1 / 18	12.0.0.9 /18
DNS Server	Class A Public	12.0.0.9 / 18	255.255.192.000	12.0.0.1 / 18	12.0.0.9 /18
Floor 2 (564 Hosts)					
Router	Class A Public	12.0.64.1 / 22	255.255.252.000		
PC1	Class A Public	12.0.64.2 / 22	255.255.252.000	12.0.64.1 / 22	12.0.0.9 /18
PC2	Class A Public	12.0.64.3 / 22	255.255.252.000	12.0.64.1 / 22	12.0.0.9 /18
PC3	Class A Public	12.0.64.4 / 22	255.255.252.000	12.0.64.1 / 22	12.0.0.9 /18
PC4	Class A Public	12.0.64.5 / 22	255.255.252.000	12.0.64.1 / 22	12.0.0.9 /18
PC5	Class A Public	12.0.64.6 / 22	255.255.252.000	12.0.64.1 / 22	12.0.0.9 /18
PC6	Class A Public	12.0.64.7 / 22	255.255.252.000	12.0.64.1 / 22	12.0.0.9 /18
PC7	Class A Public	12.0.64.8 / 22	255.255.252.000	12.0.64.1 / 22	12.0.0.9 /18
DHCP Server	Class A Public	12.0.64.9 / 22	255.255.252.000	12.0.64.1 / 22	12.0.0.9 /18
Floor 3 (36789 Hosts)					
Router	Class A Private	10.0.0.1 / 16	255.255.000.000		
PC1	Class A Private	10.0.0.2 / 16	255.255.000.000	10.0.0.1 / 16	12.0.0.9 /18
PC2	Class A Private	10.0.0.3 / 16	255.255.000.000	10.0.0.1 / 16	12.0.0.9 /18
PC3	Class A Private	10.0.0.4 / 16	255.255.000.000	10.0.0.1 / 16	12.0.0.9 /18
PC4	Class A Private	10.0.0.5 / 16	255.255.000.000	10.0.0.1 / 16	12.0.0.9 /18
PC5	Class A Private	10.0.0.6 / 16	255.255.000.000	10.0.0.1 / 16	12.0.0.9 /18
PC6	Class A Private	10.0.0.7 / 16	255.255.000.000	10.0.0.1 / 16	12.0.0.9 /18
PC7	Class A Private	10.0.0.8 / 16	255.255.000.000	10.0.0.1 / 16	12.0.0.9 /18
FTP Server	Class A Private	10.0.0.9 / 16	255.255.000.000	10.0.0.1 / 16	12.0.0.9 /18
Floor 4 (230 Hosts)					
Router	Class A Private	10.1.0.1 / 24	255.255.255.000		
PC1	Class A Private	10.1.0.2 / 24	255.255.255.000	10.1.0.1 / 24	12.0.0.9 /18
PC2	Class A Private	10.1.0.3 / 24	255.255.255.000	10.1.0.1 / 24	12.0.0.9 /18
PC3	Class A Private	10.1.0.4 / 24	255.255.255.000	10.1.0.1 / 24	12.0.0.9 /18
PC4	Class A Private	10.1.0.5 / 24	255.255.255.000	10.1.0.1 / 24	12.0.0.9 /18

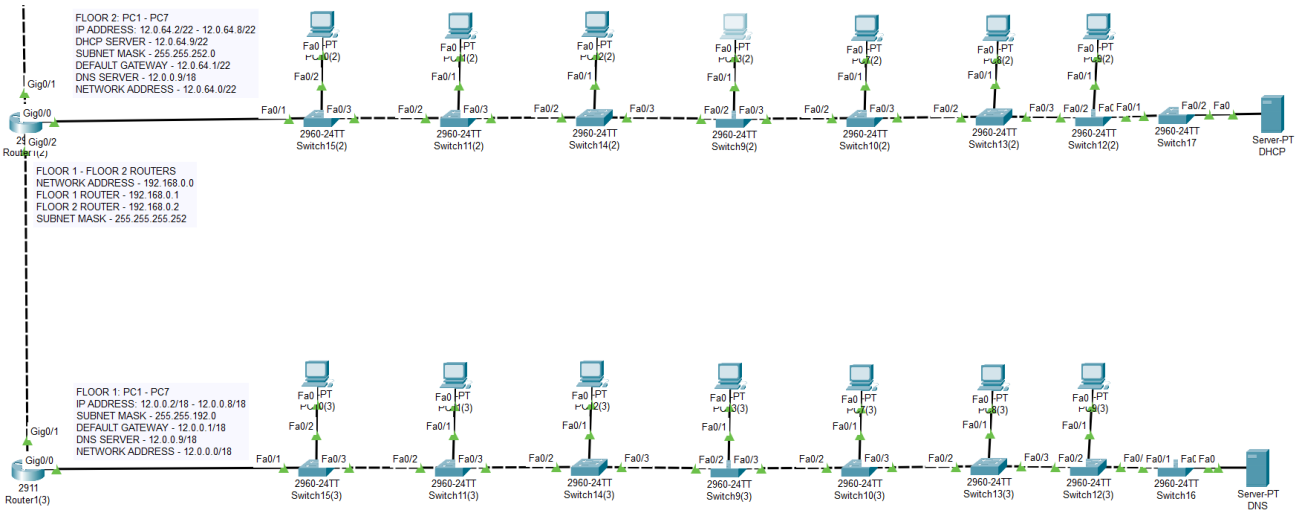
PC5	Class A Private	10.1.0.6 / 24	255.255.255.000	10.1.0.1 / 24	12.0.0.9 /18
PC6	Class A Private	10.1.0.7 / 24	255.255.255.000	10.1.0.1 / 24	12.0.0.9 /18
PC7	Class A Private	10.1.0.8 / 24	255.255.255.000	10.1.0.1 / 24	12.0.0.9 /18
Floor 5 (45 Hosts)					
Router	Class A Private	10.1.1.1 / 26	255.255.255.192		
PC1	Class A Private	10.1.1.2 / 26	255.255.255.192	10.1.1.1 / 26	12.0.0.9 /18
PC2	Class A Private	10.1.1.3 / 26	255.255.255.192	10.1.1.1 / 26	12.0.0.9 /18
PC3	Class A Private	10.1.1.4 / 26	255.255.255.192	10.1.1.1 / 26	12.0.0.9 /18
PC4	Class A Private	10.1.1.5 / 26	255.255.255.192	10.1.1.1 / 26	12.0.0.9 /18
PC5	Class A Private	10.1.1.6 / 26	255.255.255.192	10.1.1.1 / 26	12.0.0.9 /18
PC6	Class A Private	10.1.1.7 / 26	255.255.255.192	10.1.1.1 / 26	12.0.0.9 /18
PC7	Class A Private	10.1.1.8 / 26	255.255.255.192	10.1.1.1 / 26	12.0.0.9 /18
EMAIL Server	Class A Private	10.1.1.9 / 26	255.255.255.192	10.1.1.1 / 26	12.0.0.9 /18
HTTP Server	Class A Private	10.1.1.10 / 26	255.255.255.192	10.1.1.1 / 26	12.0.0.9 /18
Router 1 - Router 2					
Router 1	Class C Private	192.168.0.1	255.255.255.252		
Router 2	Class C Private	192.168.0.2	255.255.255.252		
Router 2 - Router 3					
Router 2	Class C Private	192.168.0.5	255.255.255.252		
Router 3	Class C Private	192.168.0.6	255.255.255.252		
Router 3 - Router 4					
Router 3	Class C Private	192.168.0.9	255.255.255.252		
Router 4	Class C Private	192.168.0.10	255.255.255.252		
Router 4 - Router 5					
Router 4	Class C Private	192.168.0.13	255.255.255.252		
Router 5	Class C Private	192.168.0.14	255.255.255.252		

Physical Scenario and Project Structure

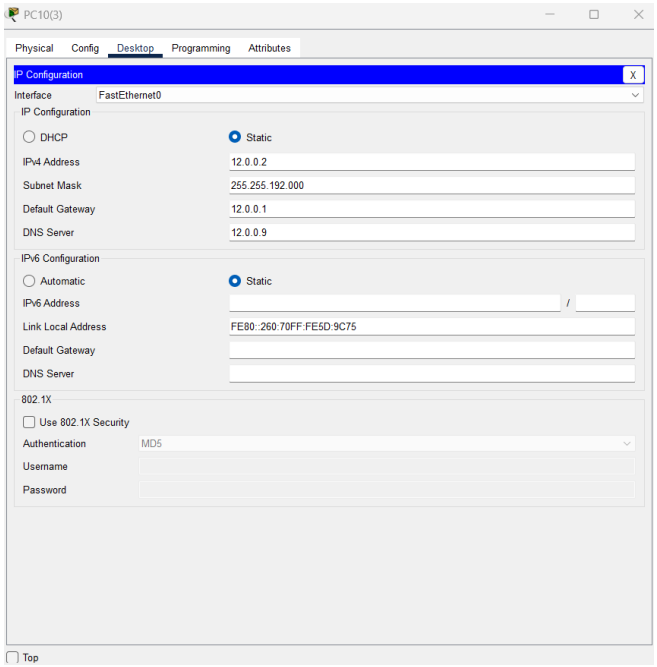


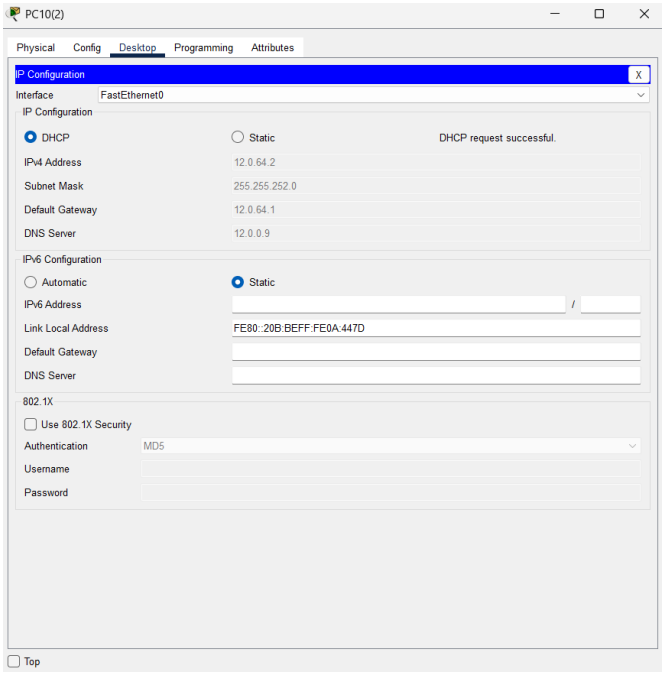

FLOOR 5: PC1 - PC7
IP ADDRESS: 10.1.1.2/26 - 10.1.1.8/26
EMAIL SERVER - 10.1.1.9/26
HTTP SERVER - 10.1.1.10/26
SUBNET MASK - 255.255.255.192
DEFAULT GATEWAY - 10.1.1.1/26
DNS SERVER - 12.0.0.9/18
NETWORK ADDRESS - 10.1.1.0/26
FLOOR 4 - FLOOR 5 ROUTERS
NETWORK ADDRESS - 192.168.0.12
FLOOR 1 ROUTER - 192.168.0.13
FLOOR 2 ROUTER - 192.168.0.14
SUBNET MASK - 255.255.255.252
Server-PT EMAIL
Server-PT HTTP
2960-24TT Switch0
PC-PT PC0
PC-PT PC2
PC-PT PC3
PC-PT PC4
Gig0/0
Gig0/1
Fa0/1
Fa0/2
Fa0/3
Fa0/4
Fa0/5
Fa0/6
Fa0/7
Fa0/8
Fa0/9
Fa0/10

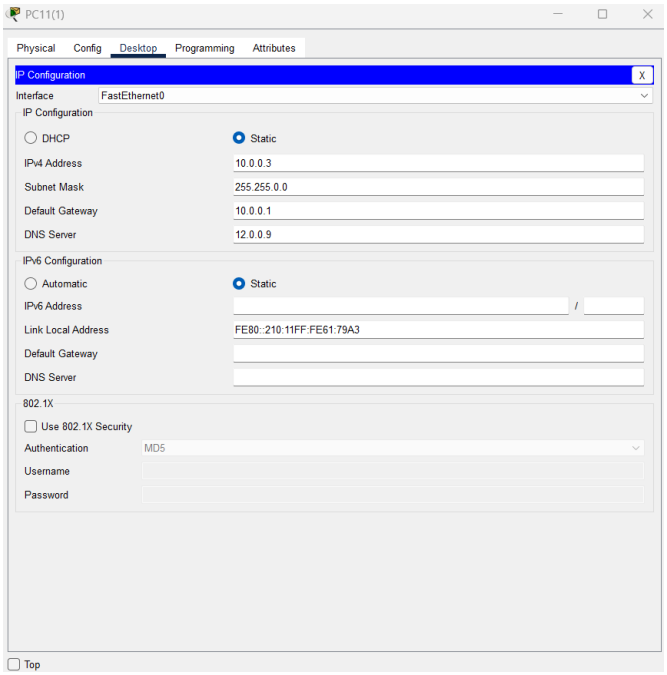

FLOOR 4: PC1 - PC7
IP ADDRESS: 10.1.0.2/24 - 10.1.0.8/24
SUBNET MASK - 255.255.255.0
DEFAULT GATEWAY - 10.1.0.1/24
DNS SERVER - 12.0.0.9/18
NETWORK ADDRESS - 10.1.0.0/24
FLOOR 3 - FLOOR 4 ROUTERS
NETWORK ADDRESS - 192.168.0.8
FLOOR 1 ROUTER - 192.168.0.9
FLOOR 2 ROUTER - 192.168.0.10
SUBNET MASK - 255.255.255.252
FLOOR 3: PC1 - PC7
IP ADDRESS: 10.0.0.2/16 - 10.0.0.8/16
FTP SERVER - 10.0.0.9/16
SUBNET MASK - 255.255.0.0
DEFAULT GATEWAY - 10.0.0.1/16
DNS SERVER - 12.0.0.9/18
NETWORK ADDRESS - 10.0.0.0/16
Server-PT FTP
2960-24TT Switch18
Gig0/0
Gig0/1
Gig0/2
Fa0/1
Fa0/2
Fa0/3

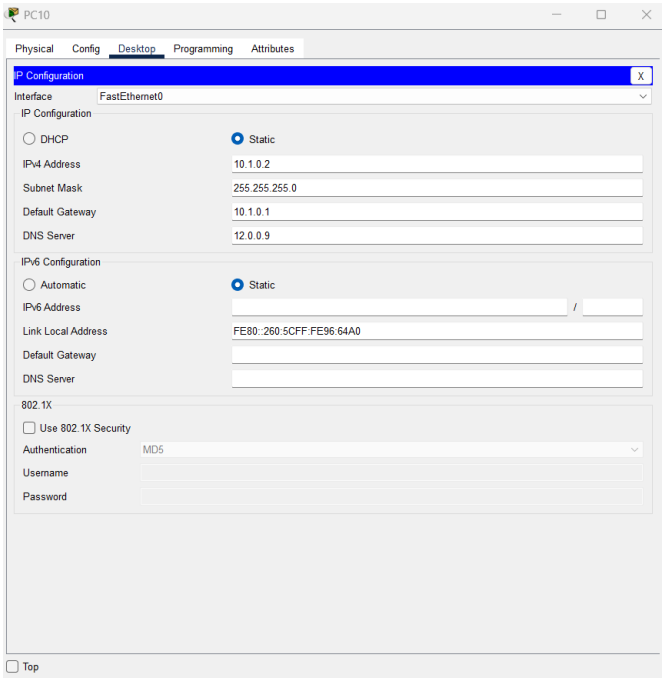

FLOOR 2: PC1 - PC7
IP ADDRESS: 12.0.64.2/22 - 12.0.64.8/22
DHCP SERVER - 12.0.64.9/22
SUBNET MASK - 255.255.252.0
DEFAULT GATEWAY - 12.0.64.1/22
DNS SERVER - 12.0.0.9/18
NETWORK ADDRESS - 12.0.64.0/22
FLOOR 1 - FLOOR 2 ROUTERS
NETWORK ADDRESS - 192.168.0.0
FLOOR 1 ROUTER - 192.168.0.1
FLOOR 2 ROUTER - 192.168.0.2
SUBNET MASK - 255.255.255.252
FLOOR 1: PC1 - PC7
IP ADDRESS: 12.0.0.2/18 - 12.0.0.8/18
SUBNET MASK - 255.255.192.0
DEFAULT GATEWAY - 12.0.0.1/18
DNS SERVER - 12.0.0.9/18
NETWORK ADDRESS - 12.0.0.0/18
Server-PT DHCP
2960-24TT Switch17
Server-PT DNS
2960-24TT Switch16
Gig0/0
Gig0/1
Gig0/2
Fa0/1
Fa0/2
Fa0/3

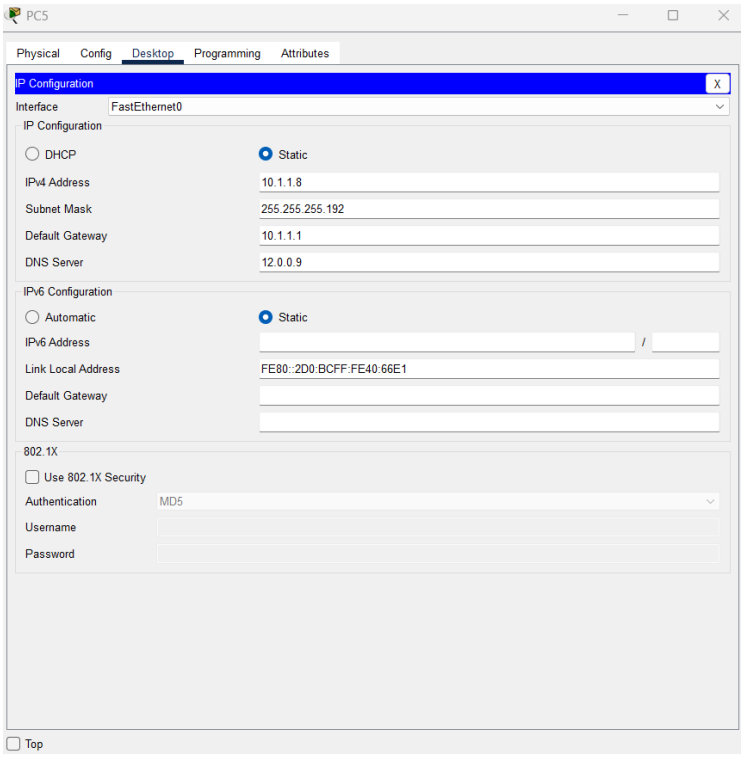
IP Address Allocation Snapshots

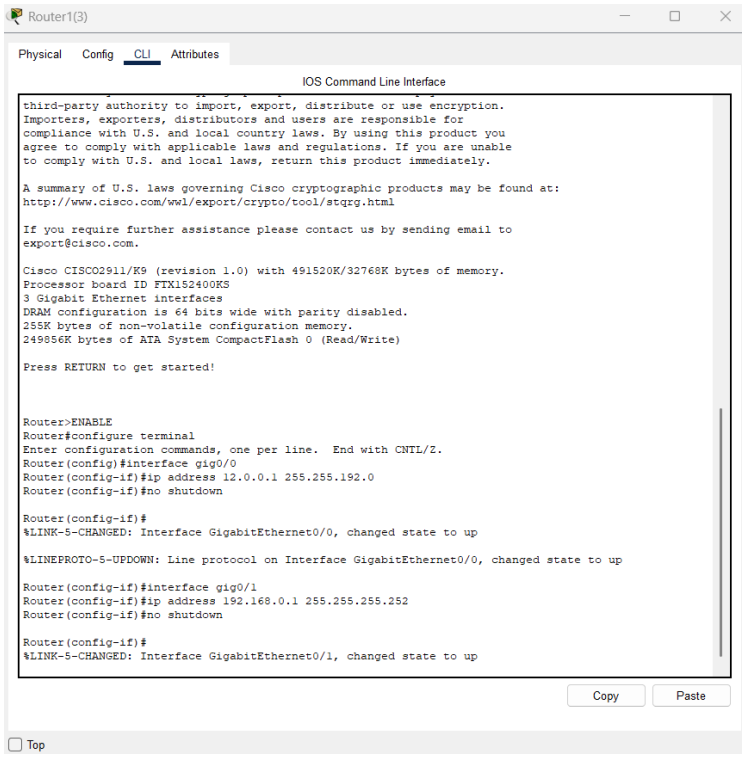


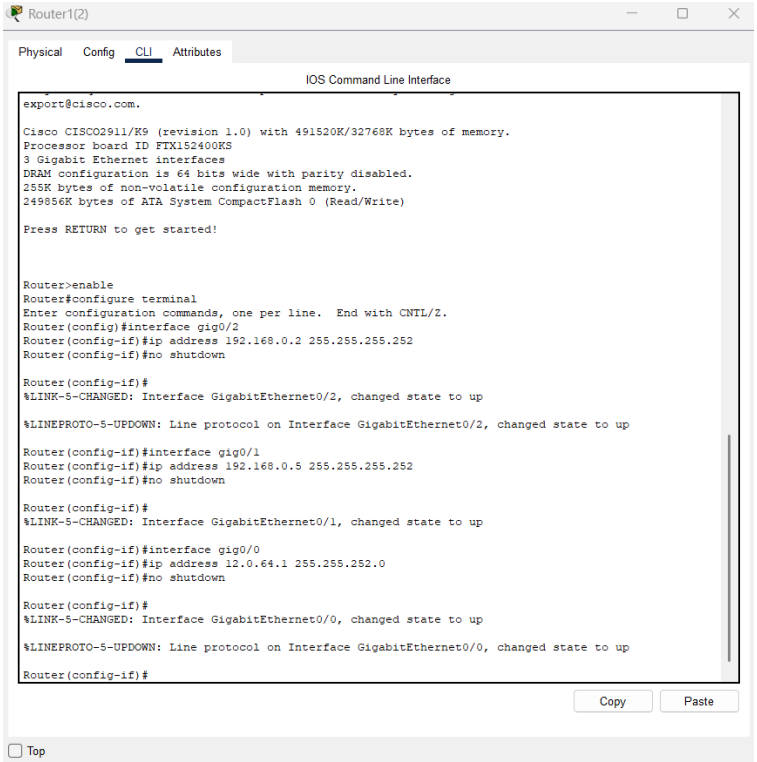


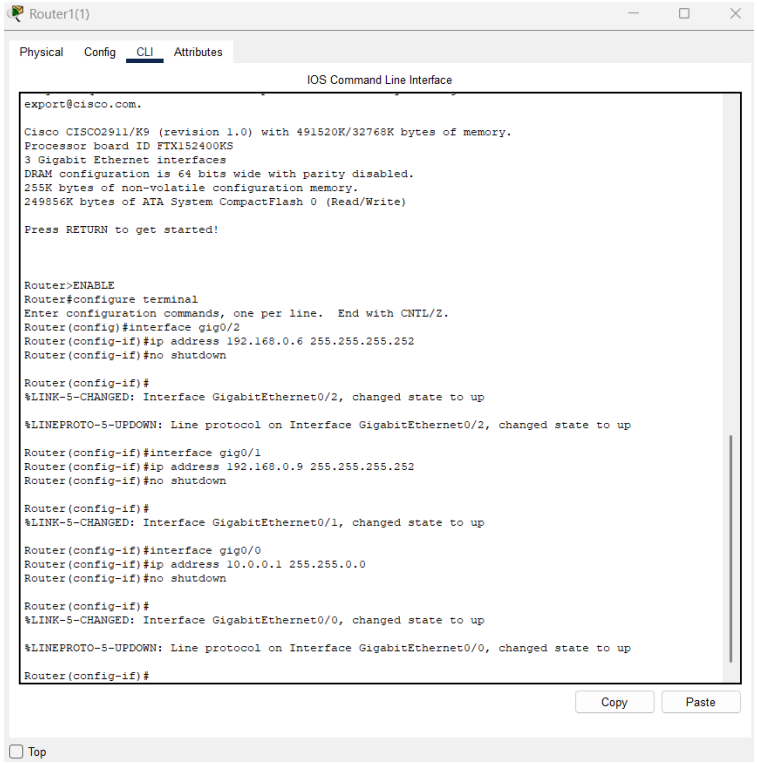





PC5
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.1.1.8
Subnet Mask
255.255.255.192
Default Gateway
10.1.1.1
DNS Server
12.0.0.9
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::2D0:BCFF:FE40:66E1
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top


Router1(3)
Physical
Config
CLI
Attributes
IOS Command Line Interface
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.
A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html
If you require further assistance please contact us by sending email to
export@cisco.com.
Cisco CISCO2911/K9 (revision 1.0) with 491520K/32768K bytes of memory.
Processor board ID FTX152400KS
3 Gigabit Ethernet interfaces
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)
Press RETURN to get started!
Router>ENABLE
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface gig0/0
Router(config-if)#ip address 12.0.0.1 255.255.192.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
Router(config-if)#interface gig0/1
Router(config-if)#ip address 192.168.0.1 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
Copy
Paste
Top


Router1(2)
Physical
Config
CLI
Attributes
IOS Command Line Interface
export@cisco.com.
Cisco CISCO2911/K9 (revision 1.0) with 491520K/32768K bytes of memory.
Processor board ID FTX152400KS
3 Gigabit Ethernet interfaces
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)
Press RETURN to get started!
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface gig0/2
Router(config-if)#ip address 192.168.0.2 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up
Router(config-if)#interface gig0/1
Router(config-if)#ip address 192.168.0.5 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
Router(config-if)#interface gig0/0
Router(config-if)#ip address 12.0.64.1 255.255.252.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
Router(config-if)#
Copy
Paste
Top


Router1(1)
Physical
Config
CLI
Attributes
IOS Command Line Interface
export@cisco.com.
Cisco CISCO2911/K9 (revision 1.0) with 491520K/32768K bytes of memory.
Processor board ID FTX152400KS
3 Gigabit Ethernet interfaces
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)
Press RETURN to get started!
Router>ENABLE
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface gig0/2
Router(config-if)#ip address 192.168.0.6 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up
Router(config-if)#interface gig0/1
Router(config-if)#ip address 192.168.0.9 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
Router(config-if)#interface gig0/0
Router(config-if)#ip address 10.0.0.1 255.255.0.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
Router(config-if)#
Copy
Paste
Top

Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
Cisco CISCO2911/K9 (revision 1.0) with 491520K/32768K bytes of memory.
Processor board ID FTX152400KS
3 Gigabit Ethernet interfaces
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)

Press RETURN to get started!


Router>ENABLE
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface gig0/2
Router(config-if)#ip address 192.168.0.10 255.255.255.252
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up

Router(config-if)#interface gig0/1
Router(config-if)#ip address 192.168.0.13 255.255.255.252
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

Router(config-if)#interface gig0/0
Router(config-if)#ip address 10.1.0.1 255.255.255.252
Router(config-if)#no ip address 10.1.0.1 255.255.255.252
Router(config-if)#ip address 10.1.0.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

Router(config-if)#
```

Copy Paste

Top

Router0

Physical Config CLI Attributes

IOS Command Line Interface

```
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

Cisco CISCO2911/K9 (revision 1.0) with 491520K/32768K bytes of memory.
Processor board ID FTX152400KS
3 Gigabit Ethernet interfaces
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)

Press RETURN to get started!


Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface gig0/1
Router(config-if)#ip address 192.168.0.14 255.255.255.252
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

Router(config-if)#interface gig0/0
Router(config-if)#ip address 10.1.1.1 255.255.255.192
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

Router(config-if)#
```

Copy Paste

Top

DNS

Physical Config Services Desktop Programming Attributes

IP Configuration X

IP Configuration

DHCP Static

IPv4 Address 12.0.0.9

Subnet Mask 255.255.192.000

Default Gateway 12.0.0.1

DNS Server 12.0.0.9

IPv6 Configuration

Automatic Static

IPv6 Address /

Link Local Address FE80::230:A3FF:FE06:12A7

Default Gateway

DNS Server

802.1X

Use 802.1X Security

Authentication MD5

Username

Password

Top

EMAIL

Physical Config Services Desktop Programming Attributes

IP Configuration X

IP Configuration

DHCP Static

IPv4 Address 10.1.1.9

Subnet Mask 255.255.255.192

Default Gateway 10.1.1.1

DNS Server 12.0.0.9

IPv6 Configuration

Automatic Static

IPv6 Address /

Link Local Address FE80::202:17FF:FE4B:1238

Default Gateway

DNS Server

802.1X

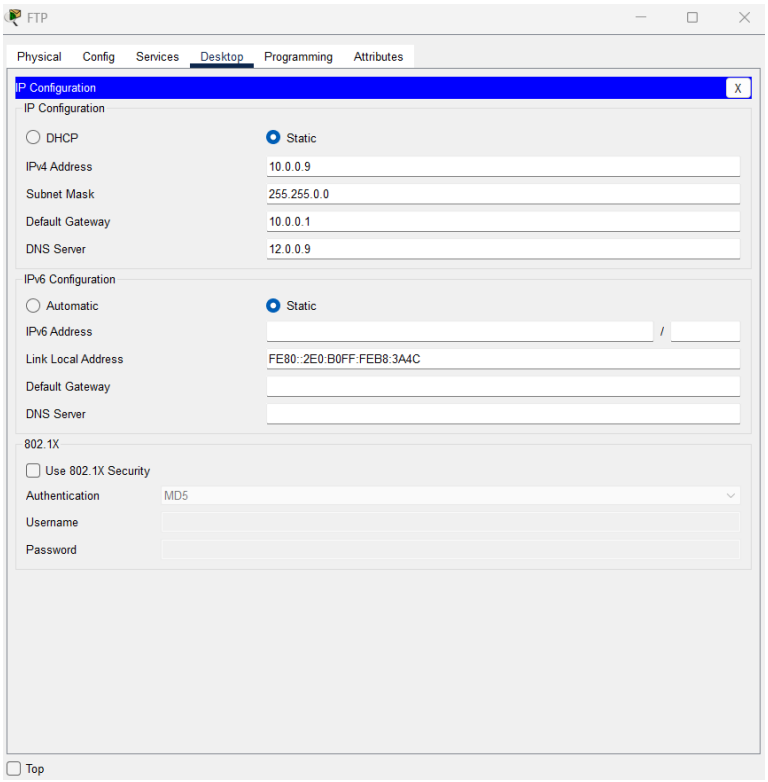
Use 802.1X Security

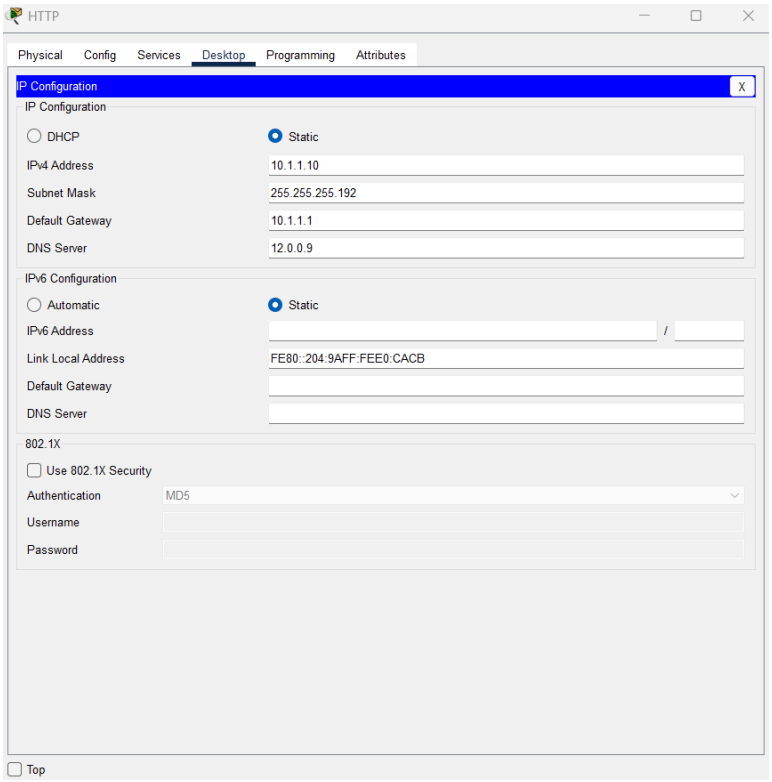
Authentication MD5

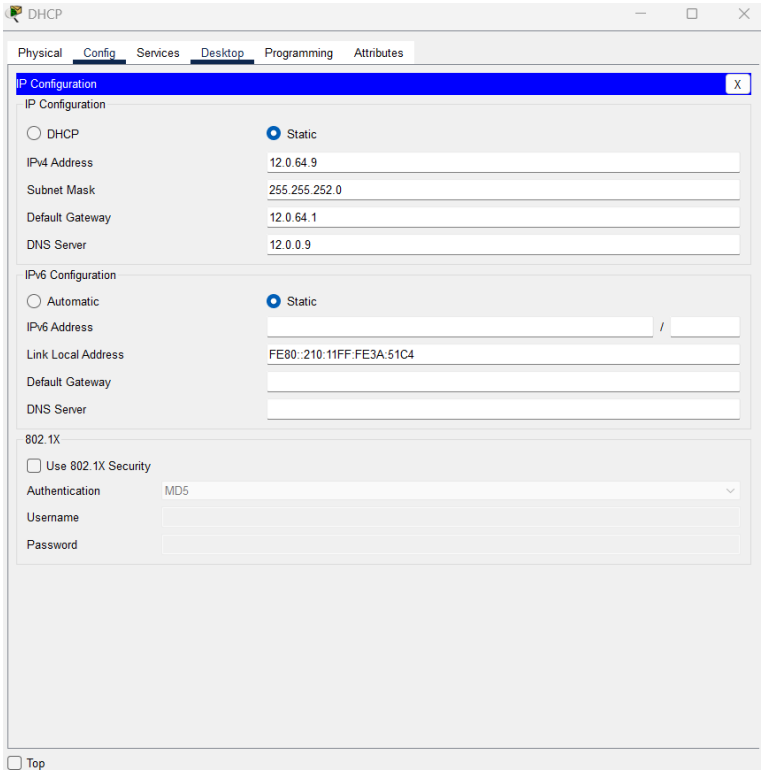
Username

Password

Top


FTP
Physical
Config
Services
Desktop
Programming
Attributes
IP Configuration
X
IP Configuration
DHCP
Static
IPv4 Address
10.0.0.9
Subnet Mask
255.255.0.0
Default Gateway
10.0.0.1
DNS Server
12.0.0.9
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::2E0:B0FF:FEB8:3A4C
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top


HTTP
Physical
Config
Services
Desktop
Programming
Attributes
IP Configuration
X
IP Configuration
DHCP
Static
IPv4 Address
10.1.1.10
Subnet Mask
255.255.255.192
Default Gateway
10.1.1.1
DNS Server
12.0.0.9
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::204:9AFF:FEE0:CACB
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top


DHCP
Physical
Config
Services
Desktop
Programming
Attributes
IP Configuration
X
IP Configuration
DHCP
Static
IPv4 Address
12.0.64.9
Subnet Mask
255.255.252.0
Default Gateway
12.0.64.1
DNS Server
12.0.0.9
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::210:11FF:FE3A:51C4
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

Routing (Dynamic)

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#no auto-summary
Router(config-router)#network 12.0.0.0
Router(config-router)#network 192.168.0.0
Router(config-router)#exit
Router(config)#
```

Copy Paste

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#no auto-summary
Router(config-router)#network 12.0.64.0
Router(config-router)#network 192.168.0.0
Router(config-router)#network 192.168.0.4
Router(config-router)#exit
Router(config)#
```

Copy Paste

```
Router>ENABLE
Router#CONFIGURE TERMINAL
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ROUTER RIP
Router(config-router)#VERSION 2
Router(config-router)#NO AUTO-SUMMARY
Router(config-router)#NETWORK 192.168.0.4
Router(config-router)#NETWORK 192.168.0.8
Router(config-router)#NETWORK 10.0.0.0
Router(config-router)#EXIT
Router(config)#
```

Copy Paste

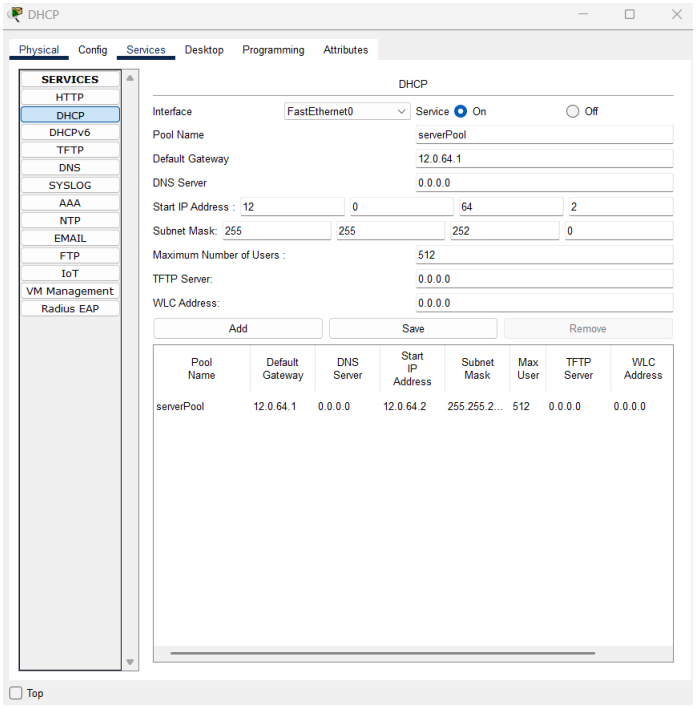
```
Router>ENABLE
Router#CONFIGURE TERMINAL
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ROUTER RIP
Router(config-router)#VERSION 2
Router(config-router)#NO AUTO-SUMMARY
Router(config-router)#IP ADDRESS 10.1.0.0
                     ^
% Invalid input detected at '^' marker.

Router(config-router)#NETWORK 10.1.0.0
Router(config-router)#NETWORK 192.168.0.8
Router(config-router)#NETWORK 192.168.0.12
Router(config-router)#EXIT
Router(config)#
```

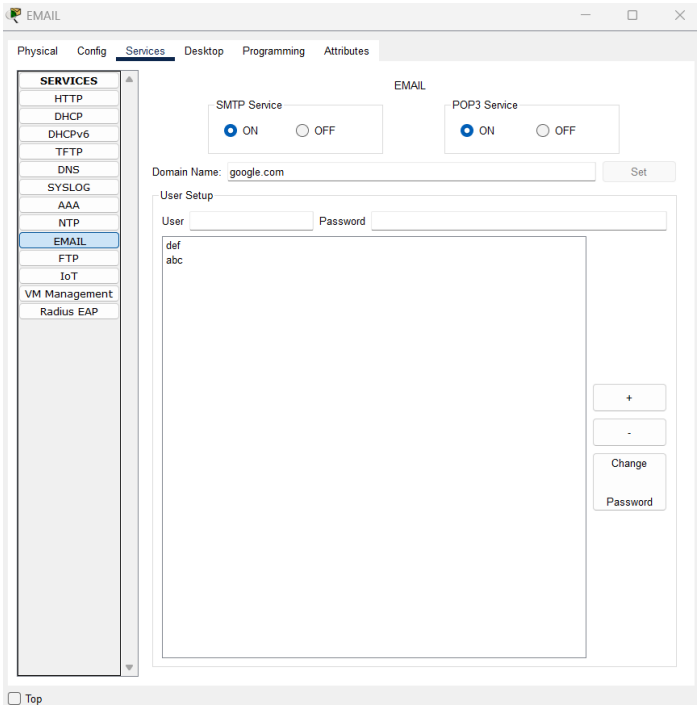
Copy Paste

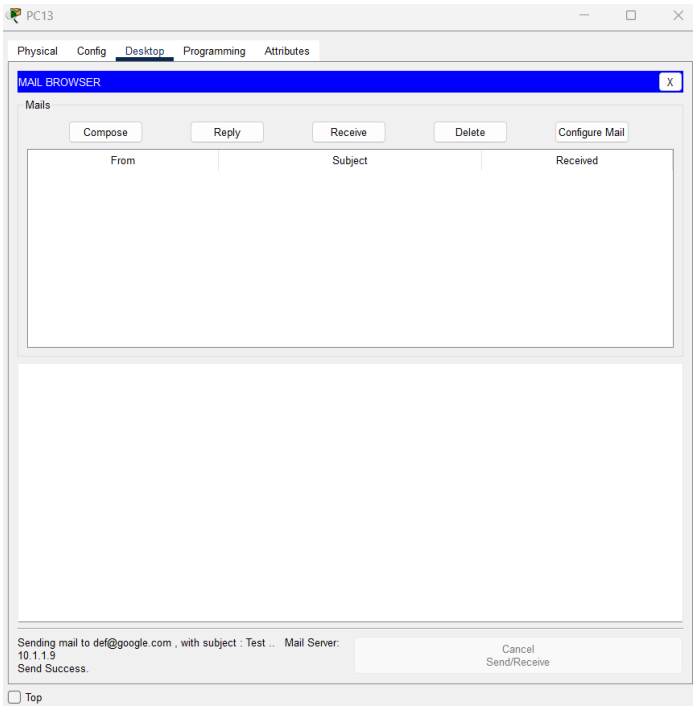
```
Router>ENABLE
Router#CONFIGURE TERMINAL
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ROUTER RIP
Router(config-router)#VERSION 2
Router(config-router)#NO AUTO-SUMMARY
Router(config-router)#NETWORK 192.168.0.12
Router(config-router)#NETWORK 10.1.1.0
Router(config-router)#EXIT
Router(config)#
```

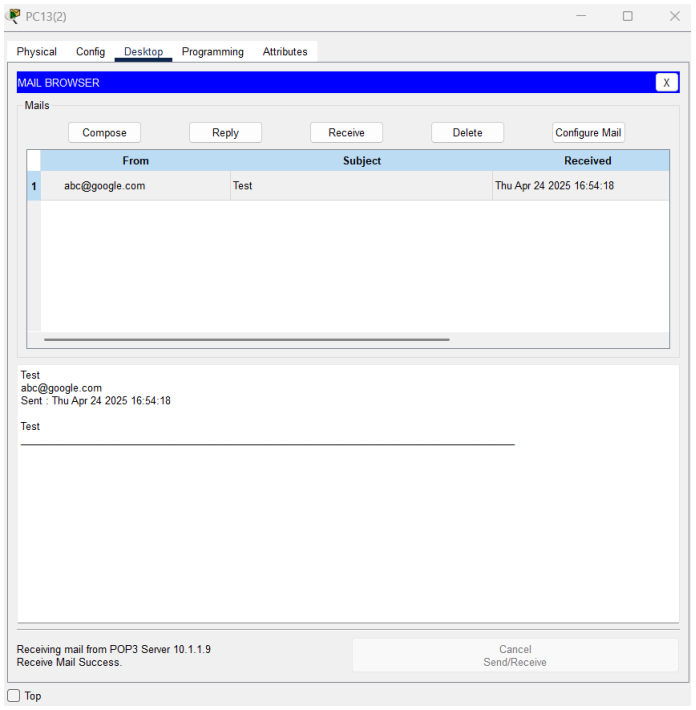
Copy Paste

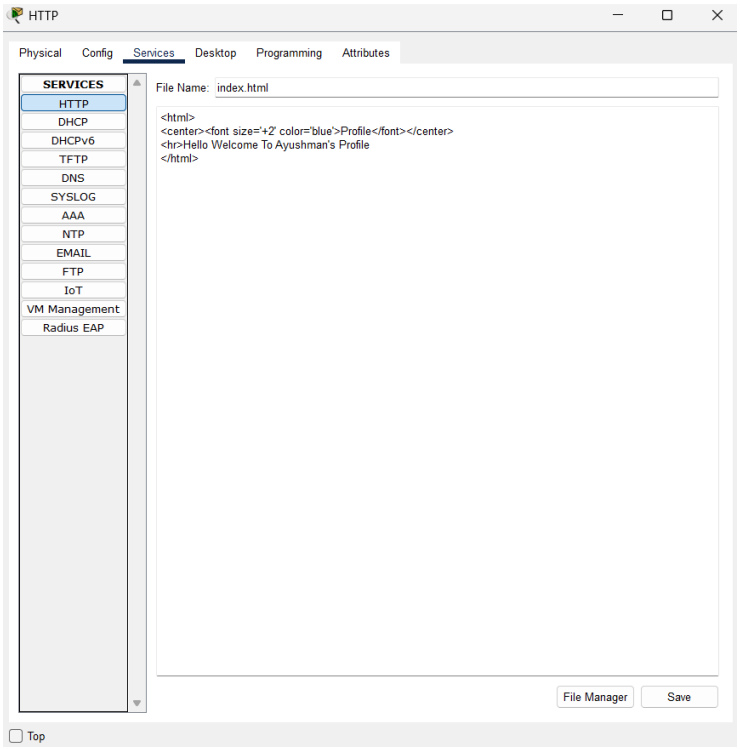
Working of Servers

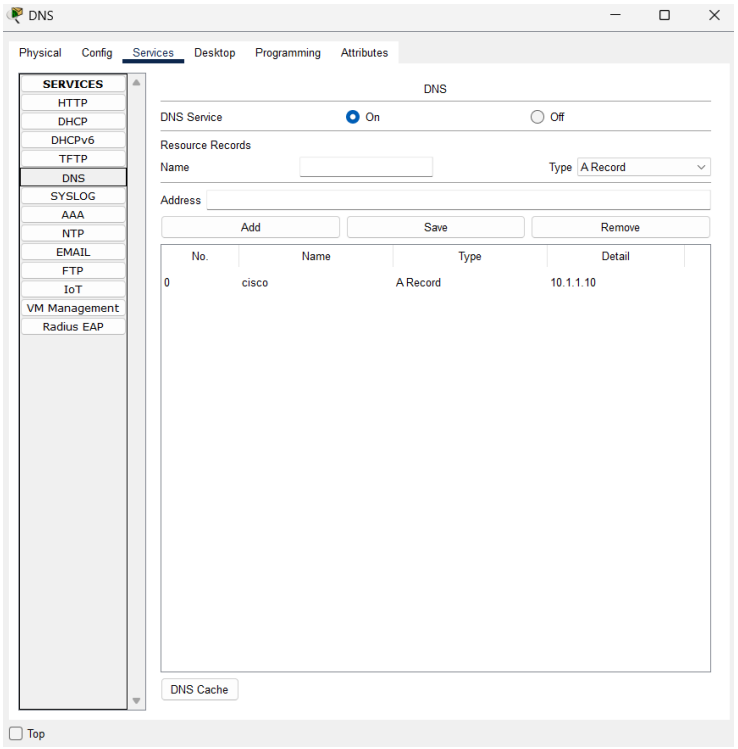


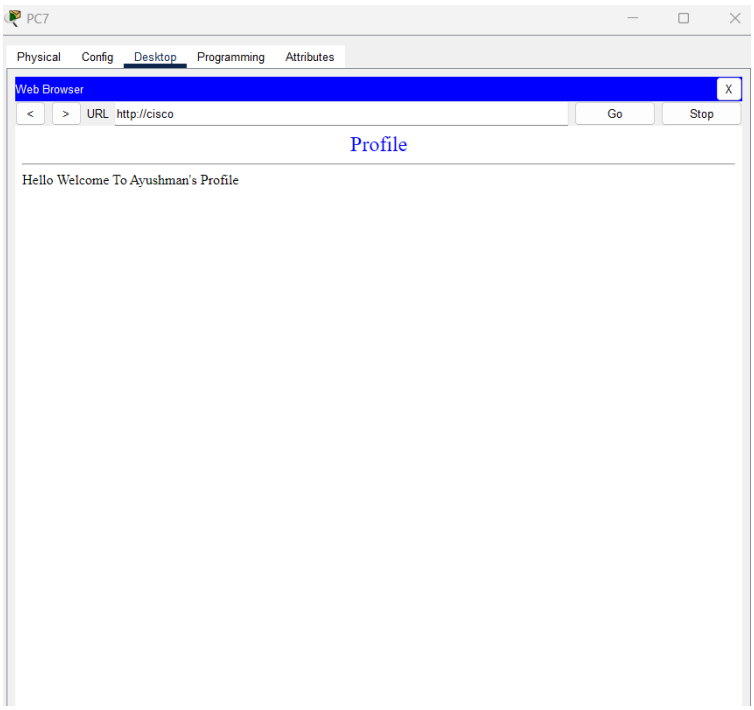


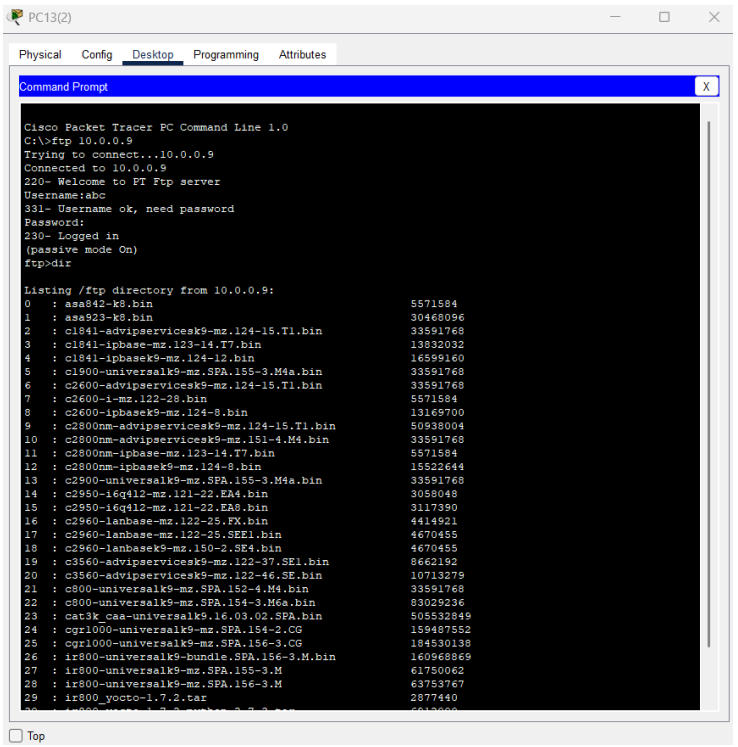





HTTP
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
File Name: index.html
<html>
Profile
<hr>Hello Welcome To Ayushman's Profile
</html>
File Manager
Save
Top


DNS
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
cisco
A Record
10.1.1.10
DNS Cache
Top


PC7
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL http://cisco
Go
Stop
Profile
Hello Welcome To Ayushman's Profile


PC13(2)
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ftp 10.0.0.9
Trying to connect...10.0.0.9
Connected to 10.0.0.9
220- Welcome to PT Ftp server
Username:abc
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>dir
Listing /ftp directory from 10.0.0.9:
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-i6q412-mz.121-22.EA4.bin 3058048
15 : c2950-i6q412-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 : cgr1000-universalk9-mz.SPA.154-2.CG 159487552
25 : cgr1000-universalk9-mz.SPA.156-3.CG 184530138
26 : ir800-universalk9-bundle.SPA.156-3.M.bin 160968869
27 : ir800-universalk9-mz.SPA.155-3.M 61750062
28 : ir800-universalk9-mz.SPA.156-3.M 63753767
29 : ir800_yocto-1.7.2.tar 2877440
Top

Ping Table (For Checking Communication)

Test Number	From	To	Result
1	LAN1	LAN 2	**Success**
2	LAN1	LAN 3	**Success**
3	LAN1	LAN 4	**Success**
4	LAN1	LAN 5	**Success**
5	LAN 2	LAN 3	**Success**
6	LAN 2	LAN 4	**Success**
7	LAN 2	LAN 5	**Success**
8	LAN 3	LAN 4	**Success**
9	LAN3	LAN 5	**Success**
10	LAN 4	LAN 5	**Success**
11	DNS SERVER	LAN 2	**Success**
12	DNS SERVER	LAN 3	**Success**
13	DNS SERVER	LAN 4	**Success**
14	DNS SERVER	LAN 5	**Success**
15	FTP SERVER	LAN 1	**Success**
16	FTP SERVER	LAN 2	**Success**
17	FTP SERVER	LAN 4	**Success**
18	FTP SERVER	LAN 5	**Success**
19	EMAIL SERVER	LAN 1	**Success**
20	EMAIL SERVER	LAN 2	**Success**
21	EMAIL SERVER	LAN 3	**Success**
22	EMAIL SERVER	LAN 4	**Success**
23	HTTP SERVER	LAN 1	**Success**
24	HTTP SERVER	LAN 2	**Success**
25	HTTP SERVER	LAN 3	**Success**
26	HTTP SERVER	LAN 4	**Success**