DIGICAMP NETWORK

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Class:

2CS1

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PROJECT INFORMATION

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Name of Faculty : Mr. Tri Agus Riyadi, S.Kom, MT

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Date of Submission: April 13, 2024

CERTIFICATE OF ORIGINALITY

This is to certify that the project report titled "Digicamp Network" is an original work completed by Abdur Rashid Firdaus, Ahmad Maulana Ibrahim, and Ayunda Pramita Kurnia Hapsari. This project has been submitted in partial fulfillment of their course requirement at the National Institute of Information Technology (NIIT).

The project report has been prepared under our research and experiment, and it is ensured that the work presented in this report is the result of the individual efforts of the aforementioned students. The contents of this report have not been submitted to any other institution or organization for the award of any degree, diploma, or other similar recognition.

Authors acknowledge that the ideas, designs, and implementations presented in this project report are the intellectual properties of the students mentioned above. Any use or reproductionof this work must give proper credit to the original authors.

Authors hereby endorse the authenticity and originality of the work presented in this project report and confirm that it meets the academic standards and requirements set forth by the National Institute of Information Technology (NIIT).

Coordinator:

Mr. Tri Agus Riyadi, S.Kom, MT

ACKNOWLEDGEMENT

Author would like to acknowledge the completion of the insightful paper titled "Digicamp Network." This paper comprehensively discusses the simulation of network implementation of the Digicamp building.

The contents of this paper provide a detailed overview of the current state of residence gate systems and the potential benefits of incorporating such simulation. The authors have meticulously examined the various aspects of network features, such as static IP, DHCP, and web server. Furthermore, the paper explores the challenges and limitations associated with the implementation of the network, offering valuable insights for future research and development in this area.

Overall, the paper serves as a significant contribution to the growing body of knowledge on network implementation in the context of office or building network. It is evident that the implementation of IoT in residence gates has the potential to revolutionize the way author secure and manage our office, paving the way for a safer and more connected living environment.

Depok, 13 April 2024

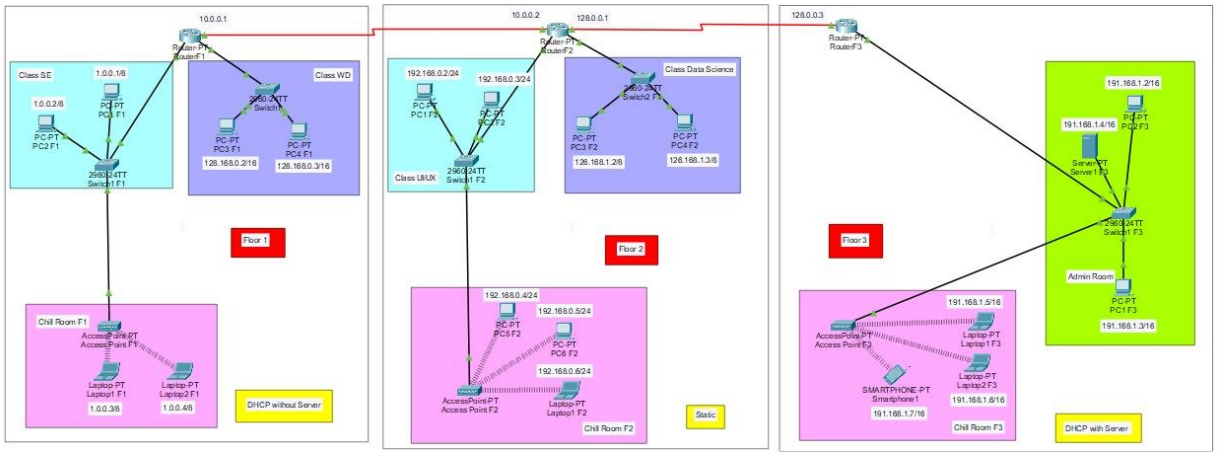
Authors

SYSTEM ANALYSIS

The paper delves into the simulation of network implemented in the Digicamp building, a course provider specializing in digital skills. The study aims to explore the potential benefits and challenges associated with the adoption of the network solutions.

The paper contains a comprehensive simulation of the network implementations, its applications, and its potential for revolutionizing residential security systems. The authors discuss the various components and features involved in the network, components include three routers, PC, three access points, five switches and one server, the features include static IP, DHCP, and Web server

NETWORK TOPOLOGY



SECTION	NETWORK ADDRESS	SUBNETMASK	STATUS
CLASS SE	1.168.0.1	255.0.0.0	DHCP
CLASS WD	128.168.0.1	255.255.0.0	DHCP
CHILL ROOM F1	172.200.1.0	255.255.255.224	DHCP
CLASS UI/UX	192.168.0.1	255.255.255.0	STATIC
CLASS DS	126.168.1.1	255.255.0.0	STATIC
CHILL ROOM F2	192.168.0.1	255.255.255.0	STATIC
ADMIN ROOM	191.168.1.1	255.255.0.0	DHCP
CHILL ROOM F3	191.168.1.1	255.255.0.0	DHCP

NETWORK DEVICES

FLOOR 1

Devices	Device Name	IP Address	Gateway	Features
Routers PT-Empty	Router F1	SE 0/0 1.168.0.1/6 WD 0/1 128.168.0.1	ISP IP	- RIP - DHCP Pool
Switch	Switch F1	-	-	-
PC	PC1 F1	1.0.0.1 (DHCP)	1.168.0.1	- Browser - CMD
PC	PC2 F1	1.0.0.2 (DHCP)	1.168.0.1	- Browser - CMD
PC	PC3 F1	128.168.0.2 (DHCP)	128.168.0.1	- Browser - CMD
PC	PC4 F1	128.168.0.3 (DHCP)	128.168.0.1	- Browser - CMD
Access Point-PT	AP F1	-	1.168.0.1	-
Laptop	LP 1 F1	1.0.0.3 (DHCP)	1.168.0.1	- Browser - CMD
Laptop	LP 2 F1	1.0.0.4 (DHCP)	1.168.0.1	- Browser - CMD

NETWORK DEVICES

FLOOR 2

Devices	Device Name	IP Address	Gateway	Features
Routers PT-Empty	Router F2	UI/UX 0/0 192.168.0.1 DS 0/1 126.168.1.1	ISP IP	- RIP
Switch	Switch F2	-	-	-
PC	PC1 F2	192.168.0.2	192.168.0.1	- Browser - CMD
PC	PC2 F2	192.168.0.3	192.168.0.1	- Browser - CMD
PC	PC3 F2	126.168.1.2	126.168.1.1	- Browser - CMD
PC	PC4 F2	126.168.1.3	126.168.1.1	- Browser - CMD
Access Point-PT	AP F2	-	192.168.0.1	-
PC	PC5 F2	192.168.0.4	192.168.0.1	- Browser - CMD
PC	PC5 F2	192.168.0.5	192.168.0.1	- Browser - CMD
Laptop	LP 1 F2	192.168.0.6	192.168.0.1	- Browser - CMD

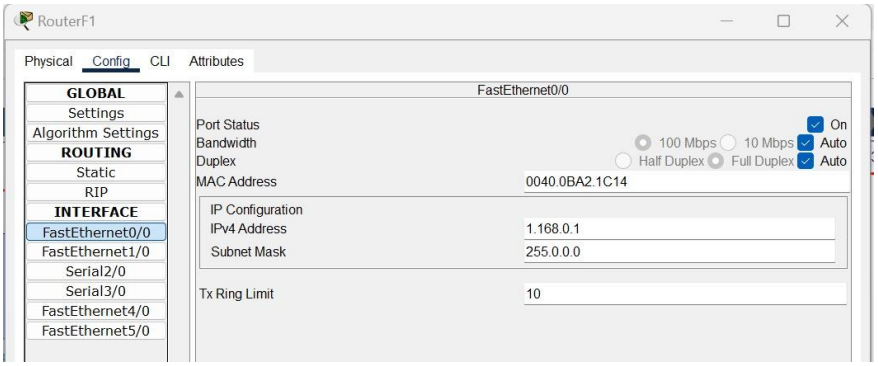
NETWORK DEVICES

FLOOR 3

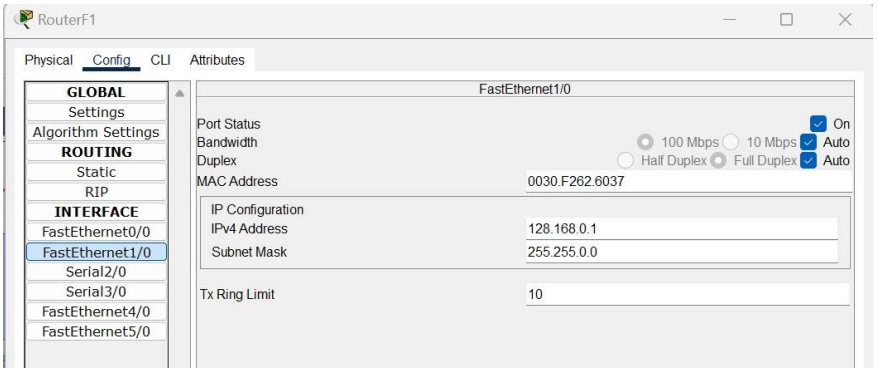
Devices	Device Name	IP Address	Gateway	Features
Routers PT-Empty	Router F3	SE 0/0 1.168.0.1/6 WD 0/1 128.168.0.1	ISP IP	- RIP - DHCP Pool
Switch	Switch F3	-	-	-
PC	PC1 F3	191.168.1.2	191.168.1.1	- Browser - CMD
PC	PC2 F3	191.168.1.3	191.168.1.1	- Browser - CMD
Server	Server1 F3	191.168.1.4	191.168.1.1	- Web Server - DHCP
Access Point-PT	AP F3	-	191.168.1.1	-
Laptop	LP 1 F3	191.168.1.5	191.168.1.1	- Browser - CMD
Laptop	LP 2 F3	191.168.1.6	191.168.1.1	- Browser - CMD
Smartphone	SP 1	191.168.1.7	191.168.1.1	- Browser

FLOOR 1 CONFIGURATION

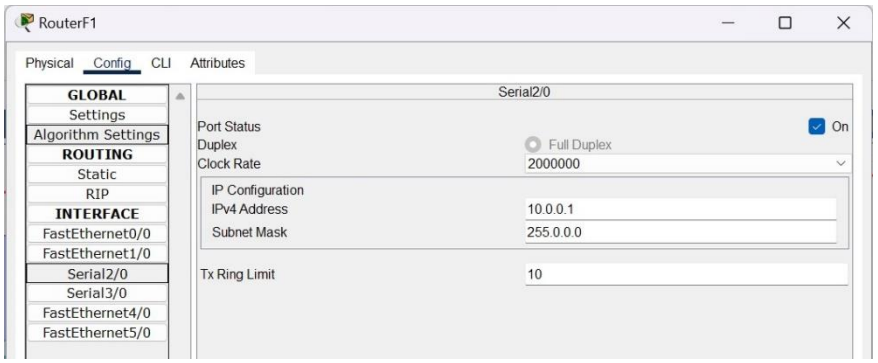
Router IP 1 Configuration



Router IP 2 Configuration

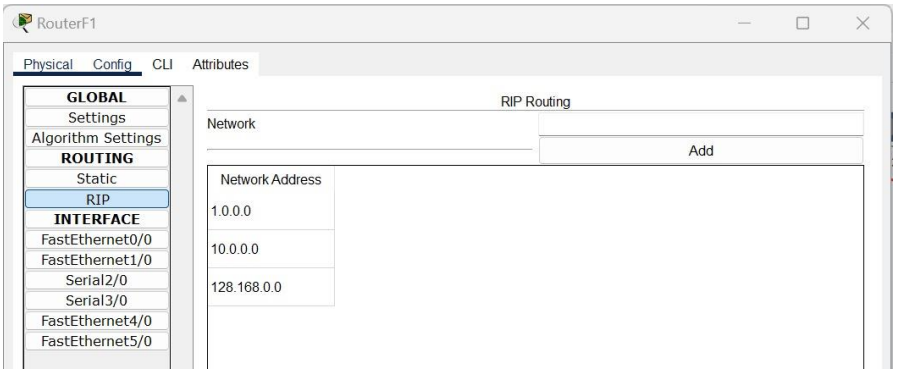


Router Serial Port Configuration

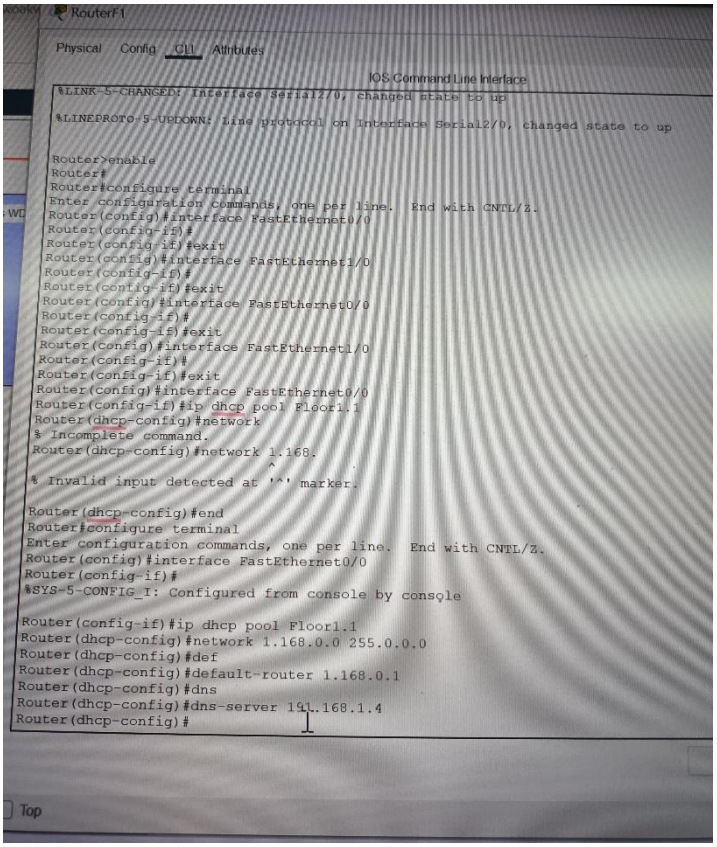


FLOOR 1 CONFIGURATION

Router Rooting RIP

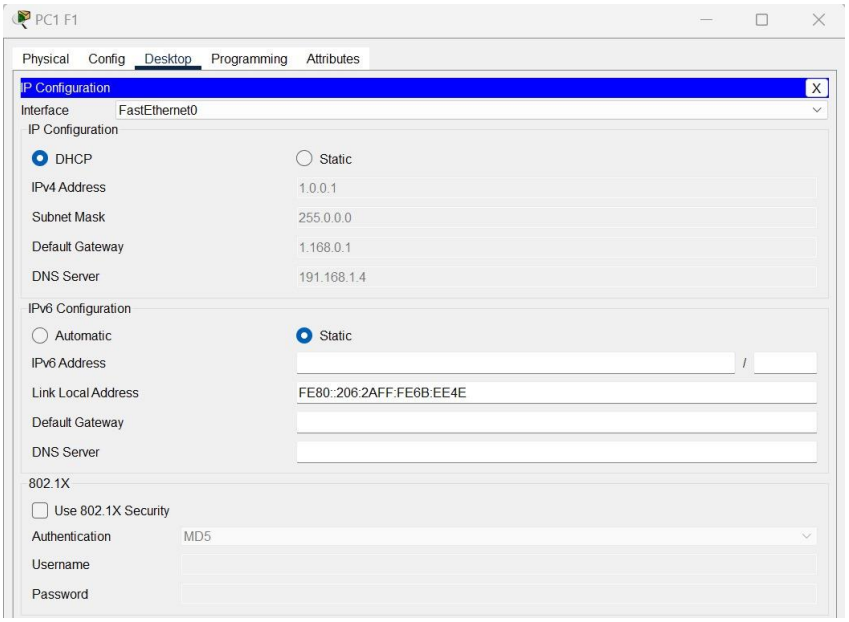


CLI Turning F1 IP to DHCP without server



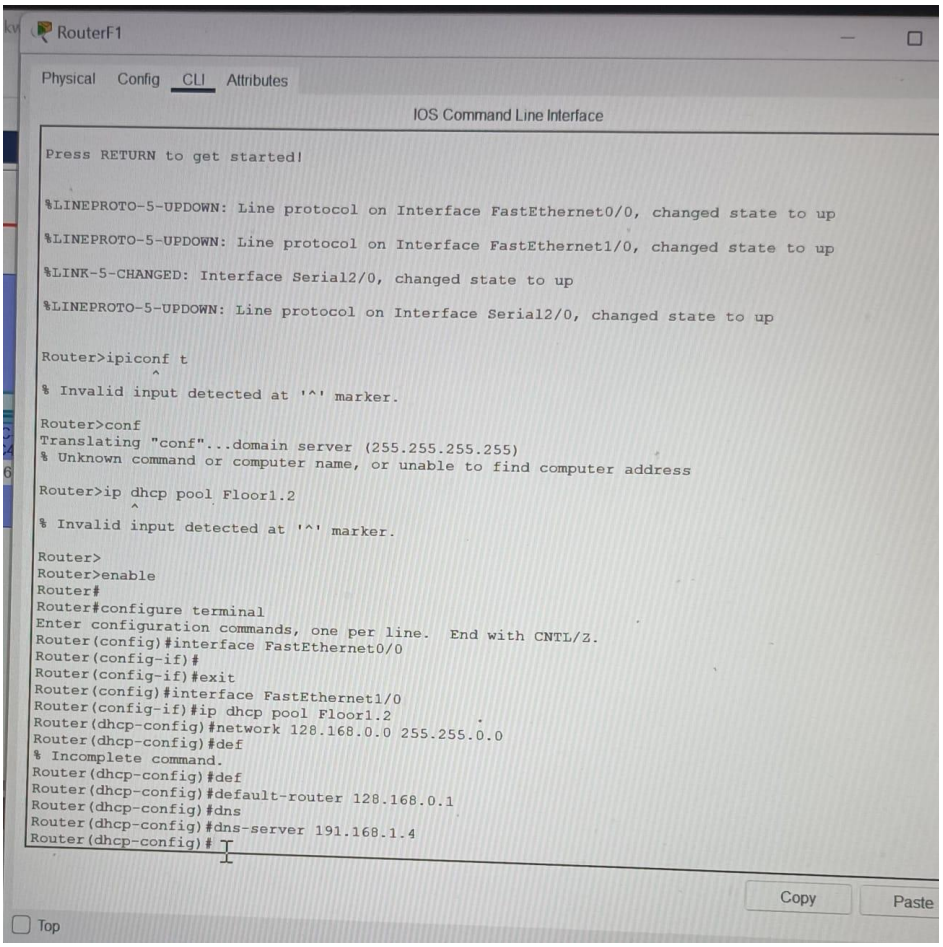
FLOOR 1 CONFIGURATION

PC 1 DHCP IP 1 Configuration



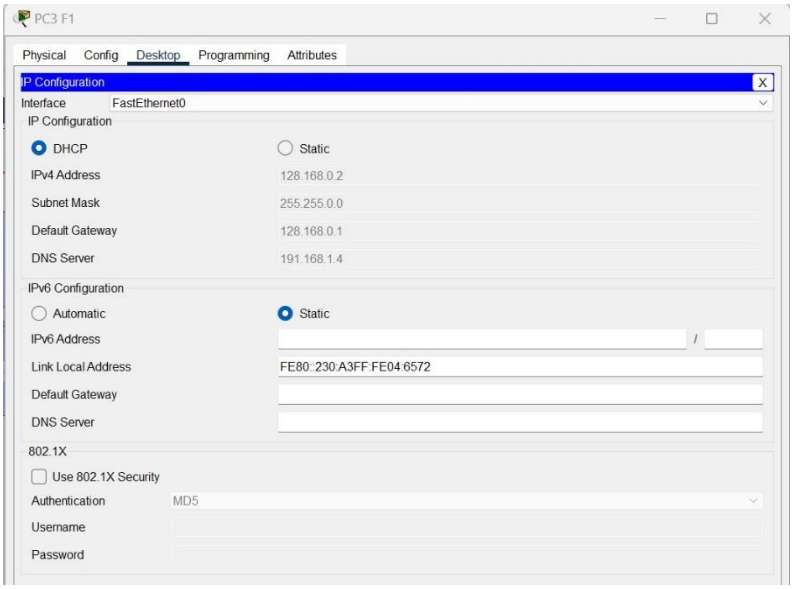
FLOOR 1 CONFIGURATION

CLI Turning IP 2 to DHCP without server

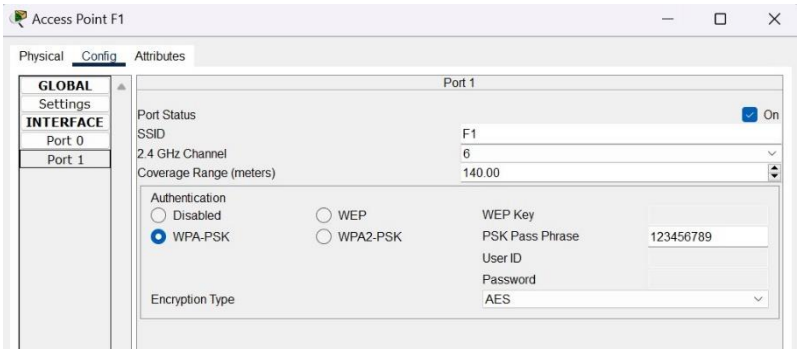


FLOOR 1 CONFIGURATION

PC F1 IP 2 Configuration



Access Point IP Configuration



FLOOR 1 SIMULATION

Ping PC SE Class to WD

```
C:\>ping 128.168.0.2

Pinging 128.168.0.2 with 32 bytes of data:

Reply from 128.168.0.2: bytes=32 time<1ms TTL=127
Reply from 128.168.0.2: bytes=32 time<1ms TTL=127
Reply from 128.168.0.2: bytes=32 time<1ms TTL=127
Reply from 128.168.0.2: bytes=32 time<1ms TTL=127

Ping statistics for 128.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Ping SE Class to UI/UX

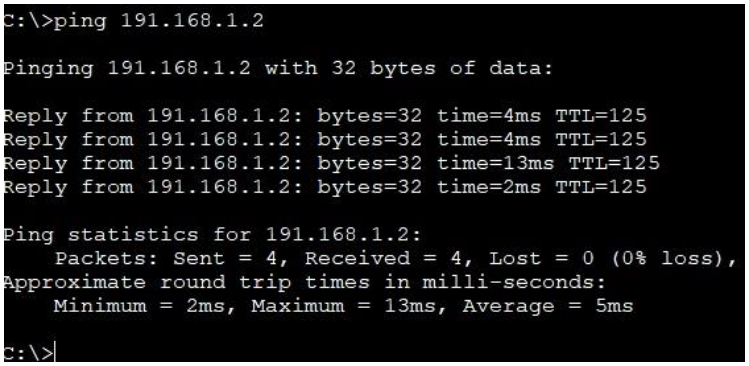
```
Pinging 192.168.0.2 with 32 bytes of data:

Reply from 192.168.0.2: bytes=32 time=1ms TTL=126
Reply from 192.168.0.2: bytes=32 time=1ms TTL=126
Reply from 192.168.0.2: bytes=32 time=21ms TTL=126
Reply from 192.168.0.2: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 21ms, Average = 6ms
```

Ping SE Class to Data Science

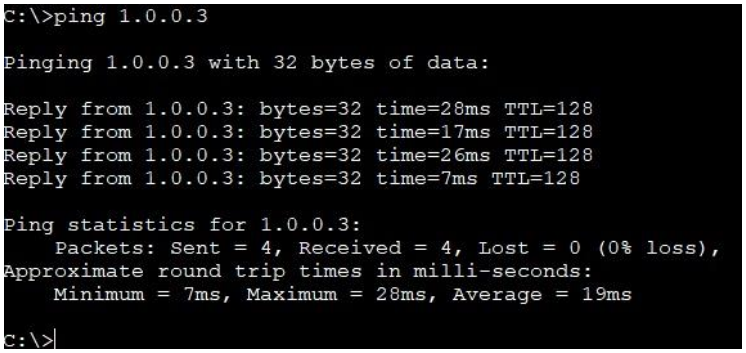
```
Pinging 126.168.1.2 with 32 bytes of data:

Reply from 126.168.1.2: bytes=32 time=16ms TTL=126
Reply from 126.168.1.2: bytes=32 time=2ms TTL=126
Reply from 126.168.1.2: bytes=32 time=1ms TTL=126
Reply from 126.168.1.2: bytes=32 time=2ms TTL=126

Ping statistics for 126.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 16ms, Average = 5ms

C:\>
```

FLOOR 1 SIMULATION

Ping SE Class to Admin Room

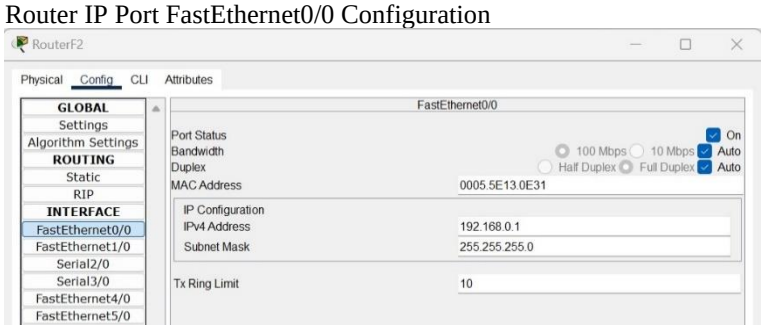


Ping SE Class to Chill Room

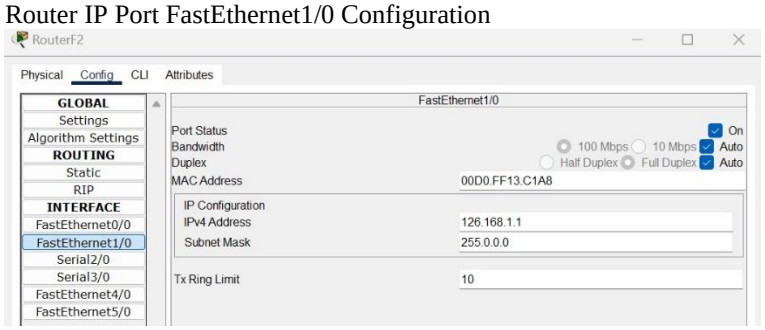


FLOOR 2 CONFIGURATION

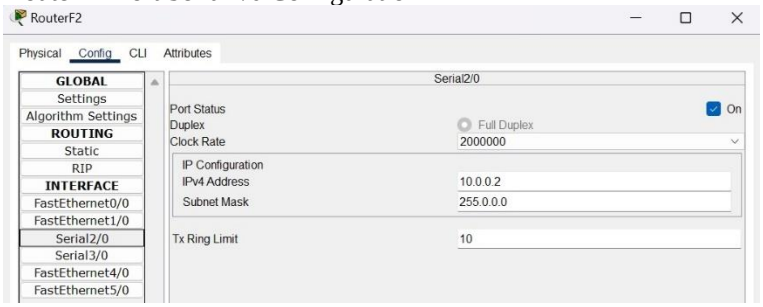
Router IP Port FastEthernet0/0 Configuration



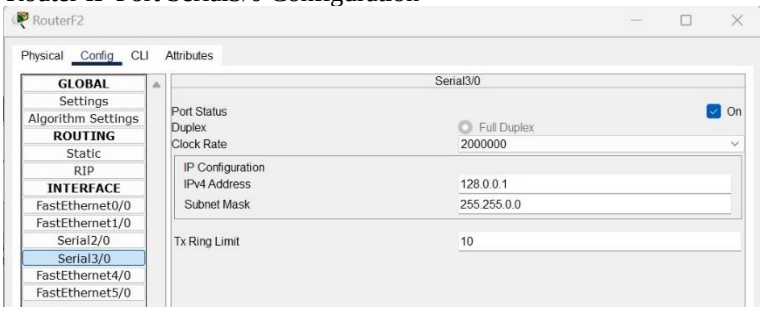
Router IP Port FastEthernet1/0 Configuration



Router IP Port Serial2/0 Configuration

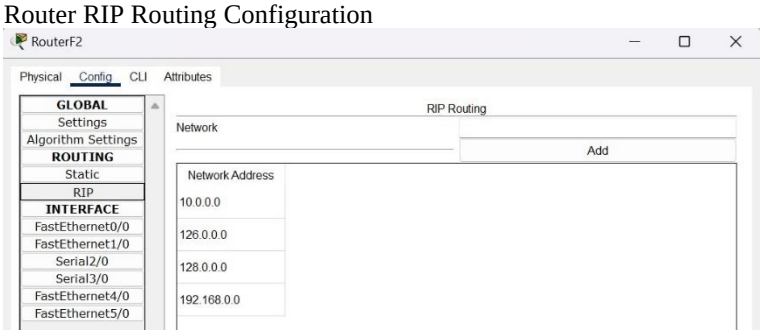


Router IP Port Serial3/0 Configuration

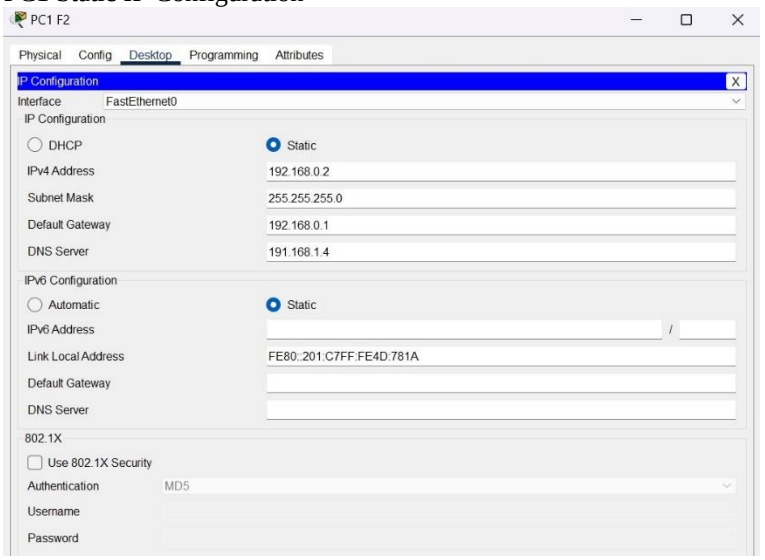


FLOOR 2 CONFIGURATION

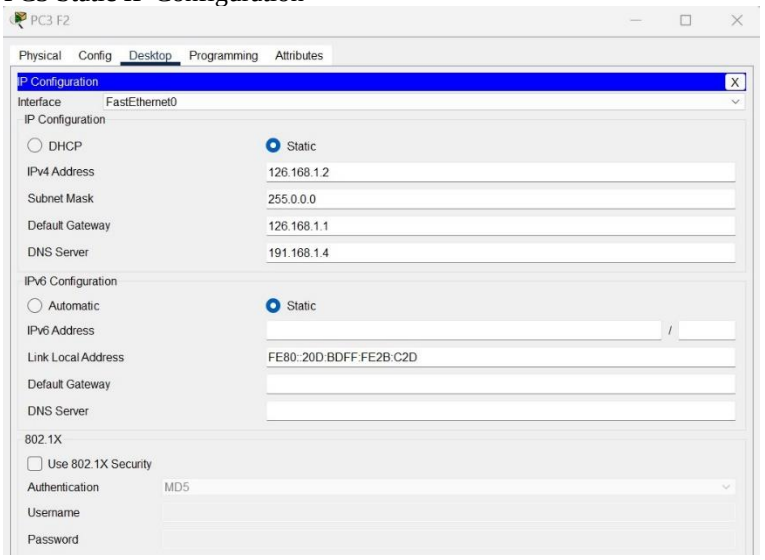
Router RIP Routing Configuration



PC1 Static IP Configuration

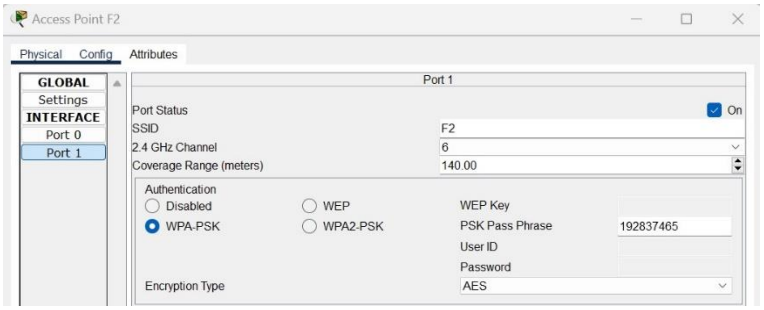


PC3 Static IP Configuration



FLOOR 2 CONFIGURATION

Access Point Configuration



FLOOR 2 SIMULATION

Ping from UI/UX PC to SE PC

```
C:\>ping 1.0.0.2

Pinging 1.0.0.2 with 32 bytes of data:

Reply from 1.0.0.2: bytes=32 time=1ms TTL=126
Reply from 1.0.0.2: bytes=32 time=28ms TTL=126
Reply from 1.0.0.2: bytes=32 time=1ms TTL=126
Reply from 1.0.0.2: bytes=32 time=1ms TTL=126

Ping statistics for 1.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 28ms, Average = 7ms
```

Ping from UI/UX PC to WD PC

```
C:\>ping 128.168.0.2

Pinging 128.168.0.2 with 32 bytes of data:

Reply from 128.168.0.2: bytes=32 time=16ms TTL=126
Reply from 128.168.0.2: bytes=32 time=10ms TTL=126
Reply from 128.168.0.2: bytes=32 time=22ms TTL=126
Reply from 128.168.0.2: bytes=32 time=7ms TTL=126

Ping statistics for 128.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 7ms, Maximum = 22ms, Average = 13ms
```

Ping from UI/UX PC to DS PC

```
C:\>ping 126.168.1.2

Pinging 126.168.1.2 with 32 bytes of data:

Reply from 126.168.1.2: bytes=32 time<1ms TTL=127
Reply from 126.168.1.2: bytes=32 time<1ms TTL=127
Reply from 126.168.1.2: bytes=32 time<1ms TTL=127
Reply from 126.168.1.2: bytes=32 time<1ms TTL=127

Ping statistics for 126.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

FLOOR 2 SIMULATION

Ping from UI/UX PC to Admin Room PC

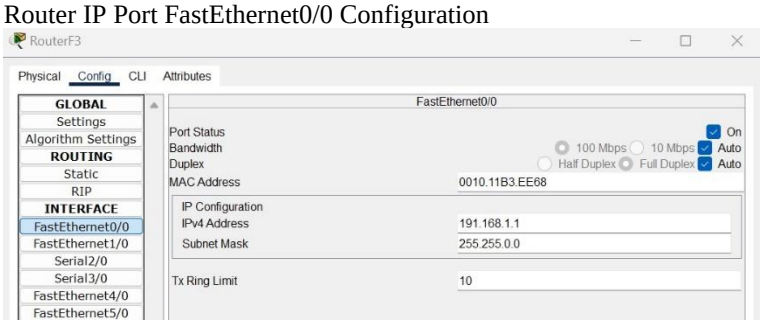
```
C:\>ping 191.168.1.2

Pinging 191.168.1.2 with 32 bytes of data:

Reply from 191.168.1.2: bytes=32 time=14ms TTL=126
Reply from 191.168.1.2: bytes=32 time=13ms TTL=126
Reply from 191.168.1.2: bytes=32 time=2ms TTL=126
Reply from 191.168.1.2: bytes=32 time=1ms TTL=126

Ping statistics for 191.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 14ms, Average = 7ms

C:\>
```

Ping from UI/UX PC to Chill Room PC

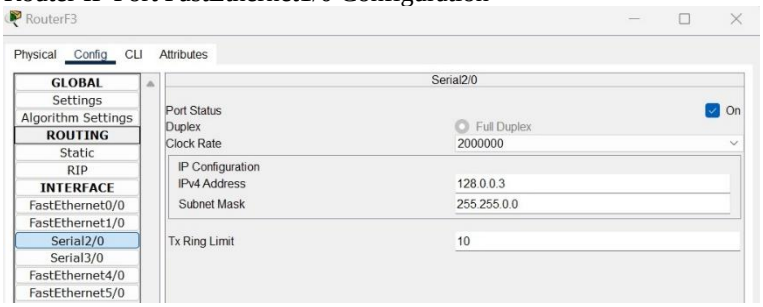
```
C:\>ping 1.0.0.3

Pinging 1.0.0.3 with 32 bytes of data:

Reply from 1.0.0.3: bytes=32 time=29ms TTL=126
Reply from 1.0.0.3: bytes=32 time=28ms TTL=126
Reply from 1.0.0.3: bytes=32 time=23ms TTL=126
Reply from 1.0.0.3: bytes=32 time=5ms TTL=126

Ping statistics for 1.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 5ms, Maximum = 29ms, Average = 21ms
```

FLOOR 3 CONFIGURATION

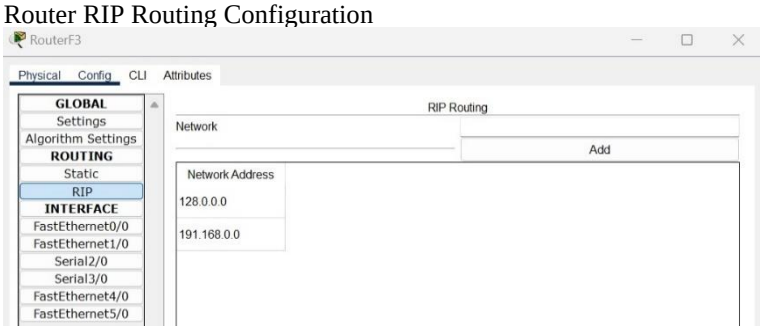
Router IP Port FastEthernet0/0 Configuration



Router IP Port FastEthernet1/0 Configuration

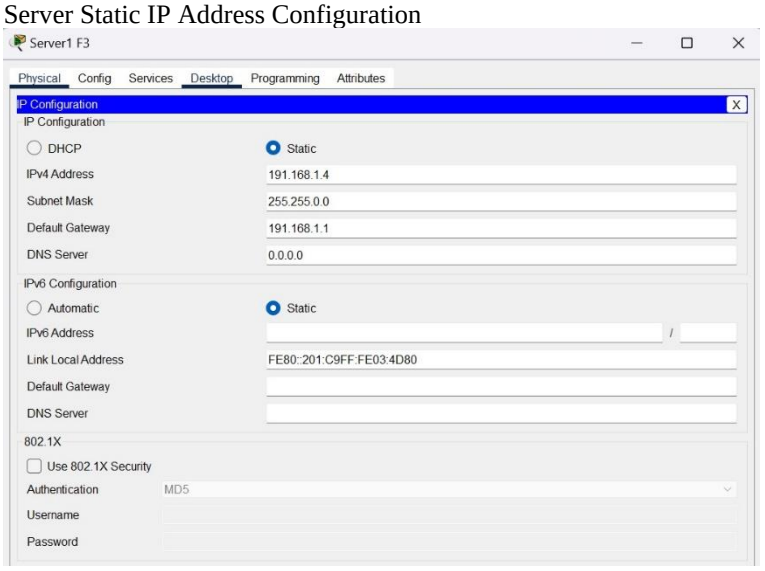


Router RIP Routing Configuration

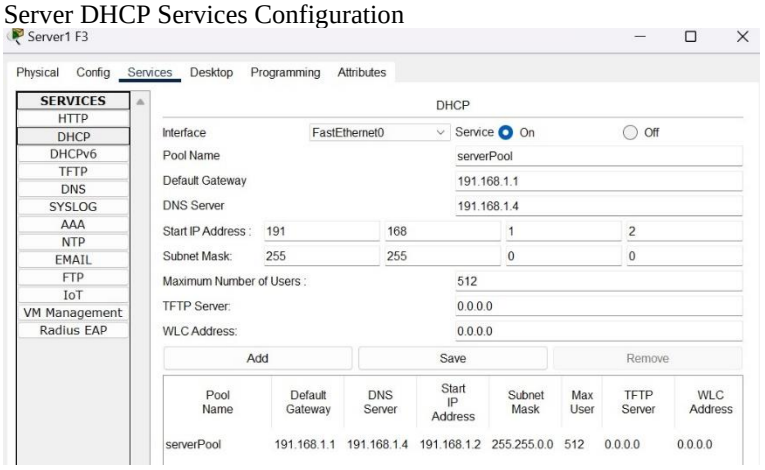


FLOOR 3 CONFIGURATION

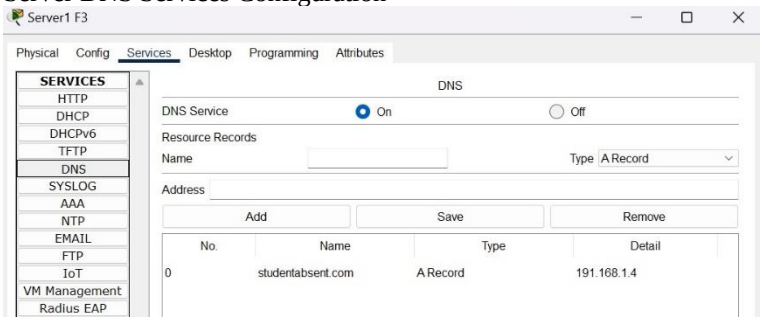
Server Static IP Address Configuration



Server DHCP Services Configuration

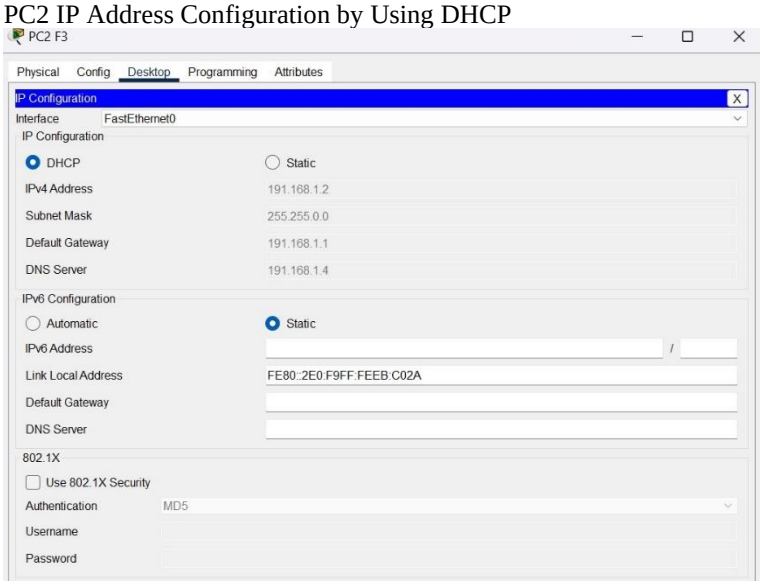


Server DNS Services Configuration

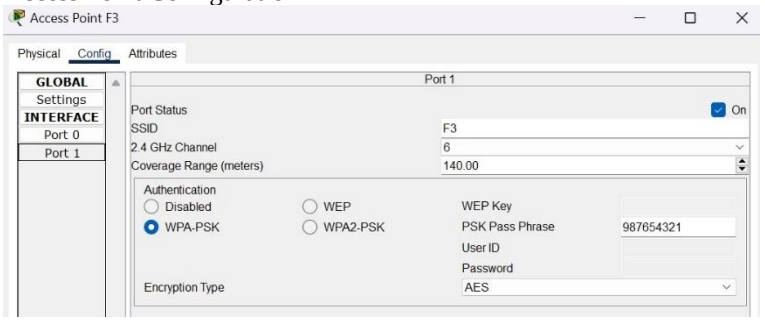


FLOOR 3 CONFIGURATION

PC2 IP Address Configuration by Using DHCP



Access Point Configuration



FLOOR 3 SIMULATION

Ping from Admin Room PC to SE Class PC

```
C:\>ping 1.0.0.2

Pinging 1.0.0.2 with 32 bytes of data:

Reply from 1.0.0.2: bytes=32 time=2ms TTL=125
Reply from 1.0.0.2: bytes=32 time=41ms TTL=125
Reply from 1.0.0.2: bytes=32 time=16ms TTL=125
Reply from 1.0.0.2: bytes=32 time=4ms TTL=125

Ping statistics for 1.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 41ms, Average = 15ms
```

Ping from Admin Room PC to WD Class PC

```
C:\>ping 128.168.0.2

Pinging 128.168.0.2 with 32 bytes of data:

Reply from 128.168.0.2: bytes=32 time=24ms TTL=125
Reply from 128.168.0.2: bytes=32 time=2ms TTL=125
Reply from 128.168.0.2: bytes=32 time=16ms TTL=125
Reply from 128.168.0.2: bytes=32 time=2ms TTL=125

Ping statistics for 128.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 24ms, Average = 11ms
```

FLOOR 3 SIMULATION

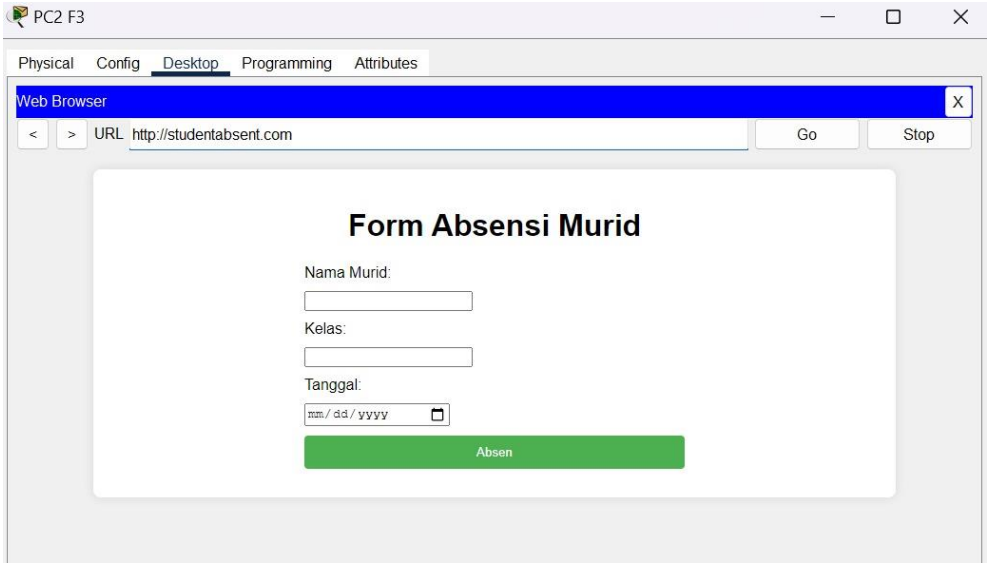
Ping from Admin Room PC to Chill Room PC

```
C:\>ping 192.168.0.5

Pinging 192.168.0.5 with 32 bytes of data:

Reply from 192.168.0.5: bytes=32 time=27ms TTL=126
Reply from 192.168.0.5: bytes=32 time=35ms TTL=126
Reply from 192.168.0.5: bytes=32 time=22ms TTL=126
Reply from 192.168.0.5: bytes=32 time=11ms TTL=126

Ping statistics for 192.168.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 11ms, Maximum = 35ms, Average = 23ms

C:\>
```

Ping from Admin Room PC to UI/UX Class PC

```
C:\>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Reply from 192.168.0.3: bytes=32 time=2ms TTL=126
Reply from 192.168.0.3: bytes=32 time=1ms TTL=126
Reply from 192.168.0.3: bytes=32 time=2ms TTL=126
Reply from 192.168.0.3: bytes=32 time=2ms TTL=126

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 2ms, Average = 1ms
```

DNS Server Test



REQUIREMENTS

Hardware :

1. ASUS Vivobook

Operating System :

1. Windows 11 64-bit

Software :

1. Cisco Packet Tracer
2. Ms. Word
3. Google Drive

PROJECT FILE DETAILS

No	Filename	Remarks
1	Grup 2 Project 1.pdf	Paper File
2	Project 1.pkt	Packet Tracer File
3	Project 1 Presentation.pptx	Presentation