

PRAKTIKUM JARINGAN KOMPUTER

Tugas Persiapan UAS Jaringan Komputer

2022/2023



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F

TEKNIK INFORMATIKA

FAKULTAS KOMUNIKASI DAN INFORMATIKA

UNIVERSITAS MUHAMMADIYAH SURAKARTA

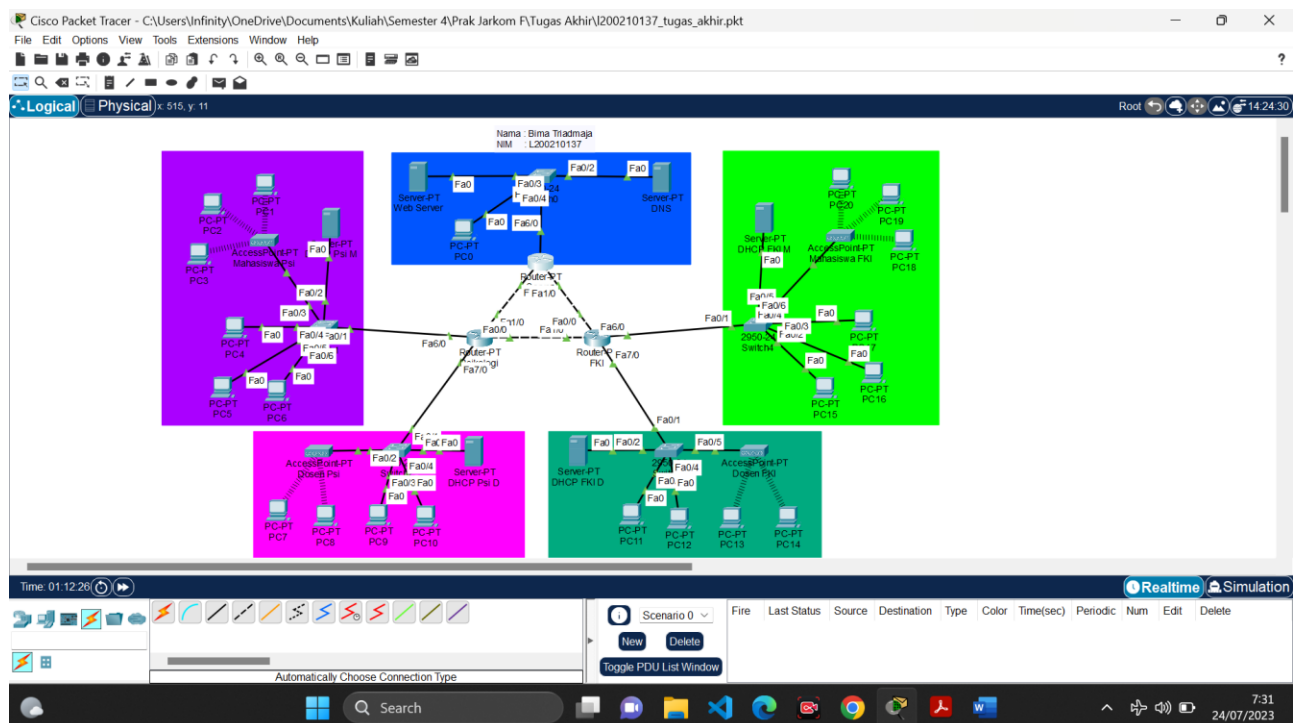
2022/2023

Buatlah topologi jaringan yang terdapat :

- 3 Router
- 1 Web Server dan 1 DNS Server
- 4 Access Point
- 5 Switch
- 4 DHCP Server
- Beberapa PC

Kembangkan jaringan diatas sesuai dengan spesifikasi berikut:

1. Topologi diatas terdiri dari:
 - a. Setiap gedung FKIP, FKI, Ekonomi, dan Teknik terdapat router, switch, access point, DHCP Server, dan beberapa PC yg sudah ditentukan.
 - b. Perangkat yang terpasang pada setiap gedung terdapat 3 PC yang terhubung pada jaringan mahasiswa menggunakan media wireless dan 3 PC menggunakan jaringan kabel.
 - c. Pada ruang dosen 2 PC terhubung dengan jaringan kabel dan 2 PC terhubung dengan jaringan wireless.
 - d. Pada gedung Server terdapat PC server, web server, dan DNS server.
 - *Dokumentasikan hasil topologi kalian.*



2. Konfigurasi IP masing-masing perangkat (router, server, PC) agar bisa memenuhi client dibawah ini :

a. DHCP - Gedung Psikologi (200 mhs) (20 dosen)

b. DHCP - Gedung FKI (100 mahasiswa)(10 dosen)

c. Manual – Gedung server

- ***Dokumentasikan pemberian alamat IP pada router.***

Router Server

Device Name: Server				
Device Model: Router-PT				
Hostname: Router				
Port	Link	IP Address	IPv6 Address	MAC Address
FastEthernet0/0	Up	10.1.0.0/8	<not set>	0007.EC62.E597
FastEthernet1/0	Up	11.1.0.0/8	<not set>	00D0.9714.596E
Serial2/0	Down	<not set>	<not set>	<not set>
Serial3/0	Down	<not set>	<not set>	<not set>
FastEthernet4/0	Down	<not set>	<not set>	0001.4393.1BC1
FastEthernet5/0	Down	<not set>	<not set>	0090.0CE8.661B
FastEthernet6/0	Up	13.1.1.1/8	<not set>	000C.8564.A739
Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > Server				

Router Psikologi

Device Name: Psikologi				
Device Model: Router-PT				
Hostname: Router				
Port	Link	IP Address	IPv6 Address	MAC Address
FastEthernet0/0	Up	12.2.0.0/8	<not set>	00D0.BC9D.8DC8
FastEthernet1/0	Up	10.2.0.0/8	<not set>	00D0.FF32.C8AD
Serial2/0	Down	<not set>	<not set>	<not set>
Serial3/0	Down	<not set>	<not set>	<not set>
FastEthernet4/0	Down	<not set>	<not set>	000D.BD44.7894
FastEthernet5/0	Down	<not set>	<not set>	00E0.F7E9.08B2
FastEthernet6/0	Up	14.1.1.1/8	<not set>	00E0.8F0B.693C
FastEthernet7/0	Up	15.1.1.1/8	<not set>	00D0.5844.0E46
Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > Psikologi				

Router FKI

Device Name: FKI				
Device Model: Router-PT				
Hostname: Router				
Port	Link	IP Address	IPv6 Address	MAC Address
FastEthernet0/0	Up	11.2.0.0/8	<not set>	000C.CF6A.ADA1
FastEthernet1/0	Up	12.1.0.0/8	<not set>	0001.C758.E91A
Serial2/0	Down	<not set>	<not set>	<not set>
Serial3/0	Down	<not set>	<not set>	<not set>
FastEthernet4/0	Down	<not set>	<not set>	0002.1752.50E5
FastEthernet5/0	Down	<not set>	<not set>	000A.4166.A00D
FastEthernet6/0	Up	17.1.1.1/8	<not set>	0060.479C.3D79
FastEthernet7/0	Up	16.1.1.1/8	<not set>	00E0.F74B.D6B1
Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > FKI				

- **Dokumentasikan pemberian alamat IP pada jaringan server.**

Web server

Device Name: Web Server				
Device Model: Server-PT				
Port	Link	IP Address	IPv6 Address	MAC Address
FastEthernet0	Up	13.1.1.2/8	<not set>	0060.3E81.EAC1
Gateway: 13.1.1.1				
DNS Server: <not set>				
Line Number: <not set>				
Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > Web Server				

DNS server

Device Name: DNS				
Device Model: Server-PT				
Port	Link	IP Address	IPv6 Address	MAC Address
FastEthernet0	Up	13.1.1.3/8	<not set>	0002.4AD5.C404
Gateway: 13.1.1.1				
DNS Server: <not set>				
Line Number: <not set>				
Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > DNS				

PC server

Device Name: PC0				
Device Model: PC-PT				
Port	Link	IP Address	IPv6 Address	MAC Address
FastEthernet0	Up	13.1.1.4/8	<not set>	000A.4169.BE2D
Bluetooth	Down	<not set>	<not set>	000A.41E4.1011
Gateway: 13.1.1.1				
DNS Server: 13.1.1.3				
Line Number: <not set>				
Physical Location: Intercity > Home City > Corporate Office > PC0				

- **Dokumentasikan konfigurasi setiap DHCP server dan hasil pemberian IP pada masing-masing PC.**

Jaringan Mahasiswa Psikologi :

DHCP Mahasiswa Psikologi (Server)

Device Name: DHCP Psi M				
Device Model: Server-PT				
Port	Link	IP Address	IPv6 Address	MAC Address
FastEthernet0	Up	14.1.1.2/8	<not set>	0060.47B4.2131
Gateway: 14.1.1.1				
DNS Server: <not set>				
Line Number: <not set>				
Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > DHCP Psi M				

DHCP Psi M

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: 14.1.1.1

DNS Server: 13.1.1.3

Start IP Address: 14.1.1.1

Subnet Mask: 255.0.0.0

Maximum Number of Users: 200

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	14.1.1.1	13.1.1.3	14.1.1.1	255.0.0.0	200	0.0.0.0	0.0.0.0

☐ Top

Hasil pemberian IP pada masing-masing PC

PC1

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface: Wireless0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address: 14.1.1.4

Subnet Mask: 255.0.0.0

Default Gateway: 14.1.1.1

DNS Server: 13.1.1.3

IPv6 Configuration

☒ Automatic ☐ Static ipv6 request failed.

IPv6 Address: /

Link Local Address: FE80::207:ECFF:FEC6:D102

Default Gateway: /

DNS Server: /

☐ Top

PC2

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface: Wireless0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address: 14.1.1.3

Subnet Mask: 255.0.0.0

Default Gateway: 14.1.1.1

DNS Server: 13.1.1.3

IPv6 Configuration

☒ Automatic ☐ Static ipv6 request failed.

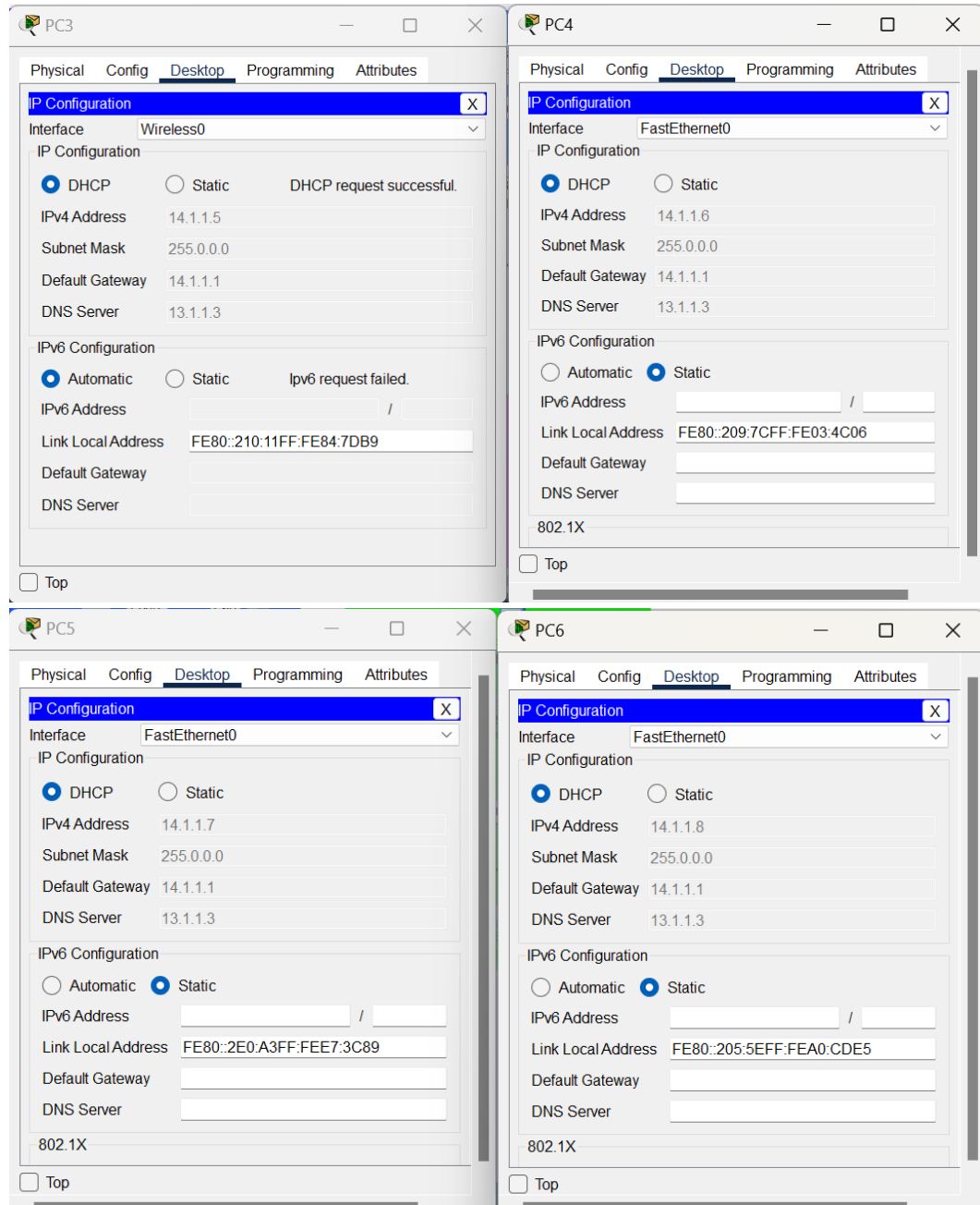
IPv6 Address: /

Link Local Address: FE80::230:F2FF:FE5D:95B0

Default Gateway: /

DNS Server: /

☐ Top



Jaringan Dosen Psikologi :

DHCP Dosen Psikologi (Server)

Device Name: DHCP Psi D
Device Model: Server-PT

Port	Link	IP Address	IPv6 Address	MAC Address
FastEthernet0	Up	15.1.1.2/8	<not set>	0090.0C77.9405

Gateway: 15.1.1.1
DNS Server: <not set>
Line Number: <not set>

Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > DHCP Psi D

DHCP Psi D

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

15.1.1.1

DNS Server

13.1.1.3

Start IP Address :

15

1

1

3

Subnet Mask:

255

0

0

0

Maximum Number of Users :

20

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	15.1.1.1	13.1.1.3	15.1.1.3	255.0.0.0	20	0.0.0.0	0.0.0.0

Top

Hasil pemberian IP pada masing-masing PC

The image displays four screenshots of network configuration windows for different PCs, arranged in a 2x2 grid. Each window shows the 'Desktop' tab with 'IP Configuration' selected. The configurations are as follows:

PC	Interface	IP Type	IPv4 Address	Subnet Mask	Default Gateway	DNS Server	IPv6 Address	Link Local Address
PC7	Wireless0	DHCP	15.1.1.4	255.0.0.0	15.1.1.1	13.1.1.3		FE80::20B:BEFF:FE80:CB61
		Static						
PC8	Wireless0	DHCP	15.1.1.3	255.0.0.0	15.1.1.1	13.1.1.3		FE80::230:A3FF:FE54:91DE
		Static						
PC9	FastEthernet0	DHCP	15.1.1.5	255.0.0.0	15.1.1.1	13.1.1.3		FE80::202:17FF:FED8:6120
		Static						
PC10	FastEthernet0	DHCP	15.1.1.6	255.0.0.0	15.1.1.1	13.1.1.3		FE80::240:BFF:FE26:1CE5
		Static						

Jaringan Dosen FKI :
DHCP Dosen FKI (Server)

Device Name: DHCP FKI D
Device Model: Server-PT

Port	Link	IP Address	IPv6 Address	MAC Address
FastEthernet0	Up	16.1.1.2/8	<not set>	0001.C70E.824A

Gateway: 16.1.1.1
DNS Server: <not set>
Line Number: <not set>

Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > DHCP FKI D

DHCP FKI D

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP**
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DHCP

InterfaceFastEthernet0Service☒ On☐ Off

Pool NameserverPool

Default Gateway16.1.1.1

DNS Server13.1.1.3

Start IP Address : 16113

Subnet Mask: 255000

Maximum Number of Users :10

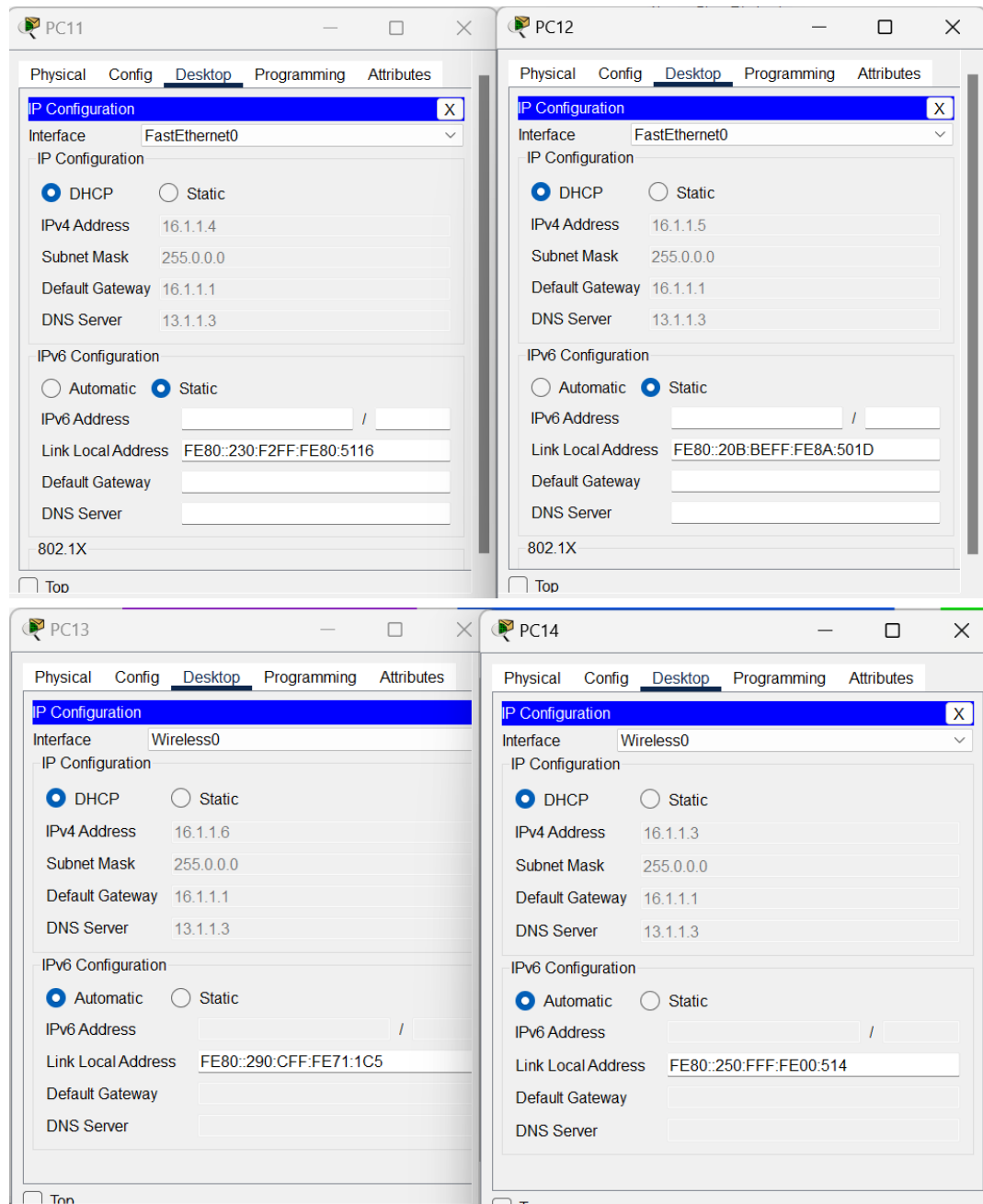
TFTP Server:0.0.0.0

WLC Address:0.0.0.0

AddSaveRemove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	16.1.1.1	13.1.1.3	16.1.1.3	255.0....	10	0.0.0.0	0.0.0.0

Hasil pemberian IP pada masing-masing PC



Jaringan Mahasiswa FKI :

DHCP Mahasiswa FKI (Server)

Device Name: DHCP FKI M				
Device Model: Server-PT				
Port	Link	IP Address	IPv6 Address	MAC Address
FastEthernet0	Up	17.1.1.2/8	<not set>	0001.6357.C63E
Gateway: 17.1.1.1				
DNS Server: <not set>				
Line Number: <not set>				
Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > DHCP FKI M				

DHCP FKI M

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: 17.1.1.1

DNS Server: 13.1.1.3

Start IP Address: 17 1 1 3

Subnet Mask: 255 0 0 0

Maximum Number of Users: 100

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	17.1.1.1	13.1.1.3	17.1.1.3	255.0.0.0	100	0.0.0.0	0.0.0.0

☐ Top

Hasil pemberian IP pada masing-masing PC

PC15

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address: 17.1.1.4

Subnet Mask: 255.0.0.0

Default Gateway: 17.1.1.1

DNS Server: 13.1.1.3

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::201:96FF:FE01:86BD

Default Gateway: /

DNS Server: /

802.1X

☐ Top

PC16

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address: 17.1.1.5

Subnet Mask: 255.0.0.0

Default Gateway: 17.1.1.1

DNS Server: 13.1.1.3

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::2E0:B0FF:FE68:CB71

Default Gateway: /

DNS Server: /

802.1X

☐ Top

PC17

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address 17.1.1.6

Subnet Mask 255.0.0.0

Default Gateway 17.1.1.1

DNS Server 13.1.1.3

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::201:64FF:FE91:DD79

Default Gateway

DNS Server

802.1X

Top

PC18

Physical Config Desktop Programming Attributes

IP Configuration

Interface Wireless0

IP Configuration

☒ DHCP ☐ Static

IPv4 Address 17.1.1.3

Subnet Mask 255.0.0.0

Default Gateway 17.1.1.1

DNS Server 13.1.1.3

IPv6 Configuration

☒ Automatic ☐ Static

IPv6 Address /

Link Local Address FE80::2D0:BAFF:FE56:A5CD

Default Gateway

DNS Server

Top

PC19

Physical Config Desktop Programming Attributes

IP Configuration

Interface Wireless0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address 17.1.1.7

Subnet Mask 255.0.0.0

Default Gateway 17.1.1.1

DNS Server 13.1.1.3

IPv6 Configuration

☒ Automatic ☐ Static Ipv6 request failed.

IPv6 Address /

Link Local Address FE80::202:16FF:FE74:2D1B

Default Gateway

DNS Server

Top

PC20

Physical Config Desktop Programming Attributes

IP Configuration

Interface Wireless0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address 17.1.1.8

Subnet Mask 255.0.0.0

Default Gateway 17.1.1.1

DNS Server 13.1.1.3

IPv6 Configuration

☒ Automatic ☐ Static Ipv6 request failed.

IPv6 Address /

Link Local Address FE80::201:97FF:FE56:916

Default Gateway

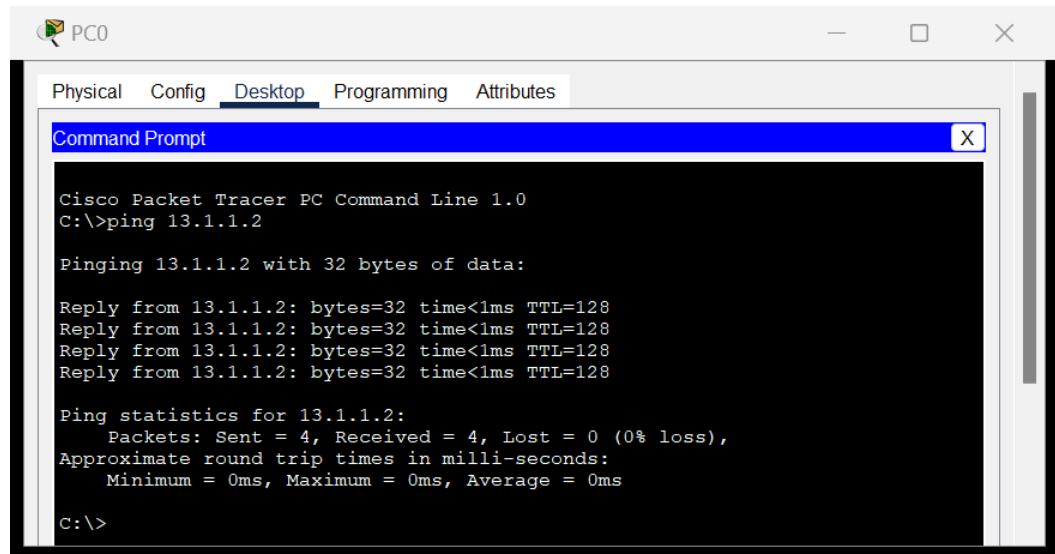
DNS Server

Top

- *Dokumentasikan percobaan ping dari satu jaringan yang sama. Pastikan semua PC dapat terkoneksi satu sama lain menggunakan media wireless maupun wired.*

Jaringan Server

Ping PC 0 → web server



```

PC0
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 13.1.1.2

Pinging 13.1.1.2 with 32 bytes of data:

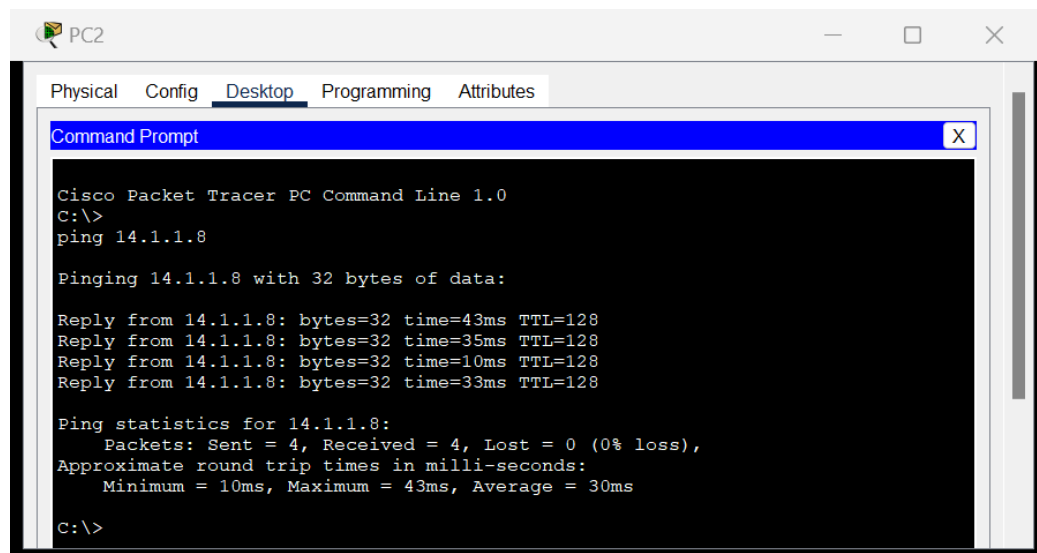
Reply from 13.1.1.2: bytes=32 time<1ms TTL=128
Reply from 13.1.1.2: bytes=32 time<1ms TTL=128
Reply from 13.1.1.2: bytes=32 time<1ms TTL=128
Reply from 13.1.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 13.1.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
  
```

Jaringan Mahasiswa Psikologi

Ping PC 2 (wireless) → PC 6 (wired)



```

PC2
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 14.1.1.8

Pinging 14.1.1.8 with 32 bytes of data:

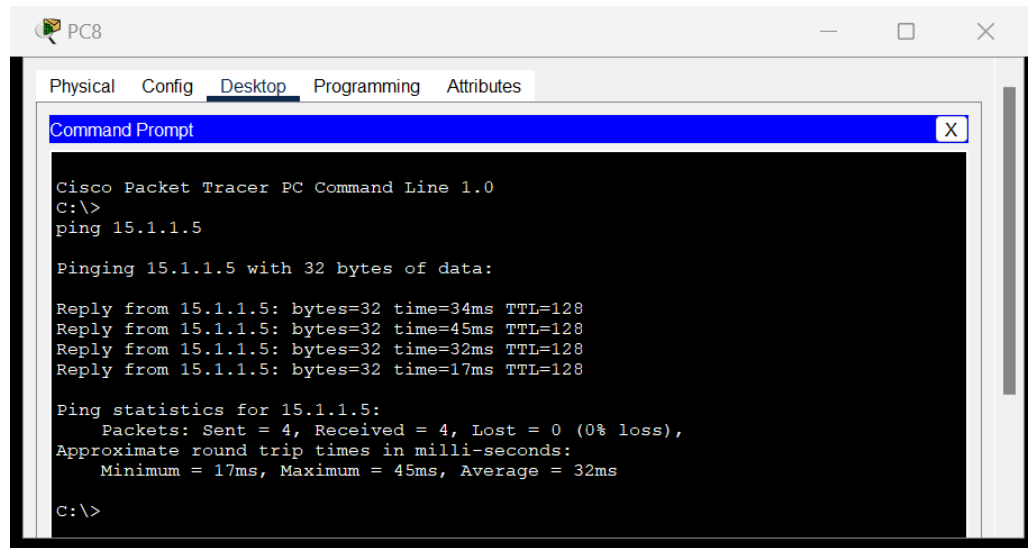
Reply from 14.1.1.8: bytes=32 time=43ms TTL=128
Reply from 14.1.1.8: bytes=32 time=35ms TTL=128
Reply from 14.1.1.8: bytes=32 time=10ms TTL=128
Reply from 14.1.1.8: bytes=32 time=33ms TTL=128

Ping statistics for 14.1.1.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 10ms, Maximum = 43ms, Average = 30ms

C:\>
  
```

Jaringan Dosen Psikologi

Ping PC 8 (wireless) → PC 9 (wired)



The screenshot shows a Cisco Packet Tracer PC Command Line window for PC8. The window has tabs for Physical, Config, Desktop, Programming, and Attributes, with Desktop selected. The Command Prompt shows the following text:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>
ping 15.1.1.5

Pinging 15.1.1.5 with 32 bytes of data:

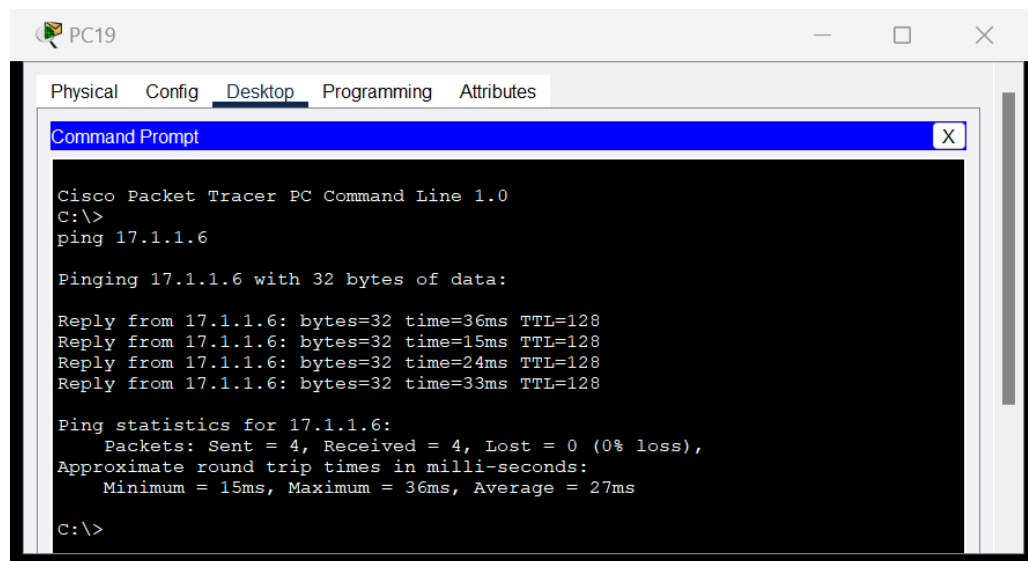
Reply from 15.1.1.5: bytes=32 time=34ms TTL=128
Reply from 15.1.1.5: bytes=32 time=45ms TTL=128
Reply from 15.1.1.5: bytes=32 time=32ms TTL=128
Reply from 15.1.1.5: bytes=32 time=17ms TTL=128

Ping statistics for 15.1.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 17ms, Maximum = 45ms, Average = 32ms

C:\>
```

Jaringan Mahasiswa FKI

Ping PC 19 (wireless) → PC 17 (wired)



The screenshot shows a Cisco Packet Tracer PC Command Line window for PC19. The window has tabs for Physical, Config, Desktop, Programming, and Attributes, with Desktop selected. The Command Prompt shows the following text:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>
ping 17.1.1.6

Pinging 17.1.1.6 with 32 bytes of data:

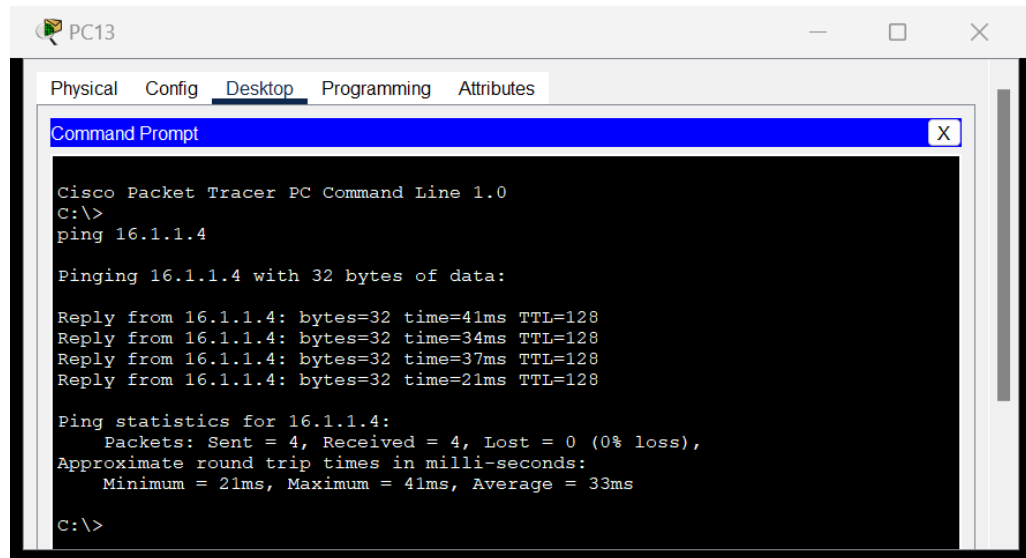
Reply from 17.1.1.6: bytes=32 time=36ms TTL=128
Reply from 17.1.1.6: bytes=32 time=15ms TTL=128
Reply from 17.1.1.6: bytes=32 time=24ms TTL=128
Reply from 17.1.1.6: bytes=32 time=33ms TTL=128

Ping statistics for 17.1.1.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 15ms, Maximum = 36ms, Average = 27ms

C:\>
```

Jaringan Dosen FKI

Ping PC 13 (wireless) → PC 11 (wired)



The screenshot shows a Cisco Packet Tracer PC Command Line window for PC13. The command prompt displays the results of a ping command to 16.1.1.4. The output shows four successful replies with varying times and a 0% loss rate.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>
ping 16.1.1.4

Pinging 16.1.1.4 with 32 bytes of data:

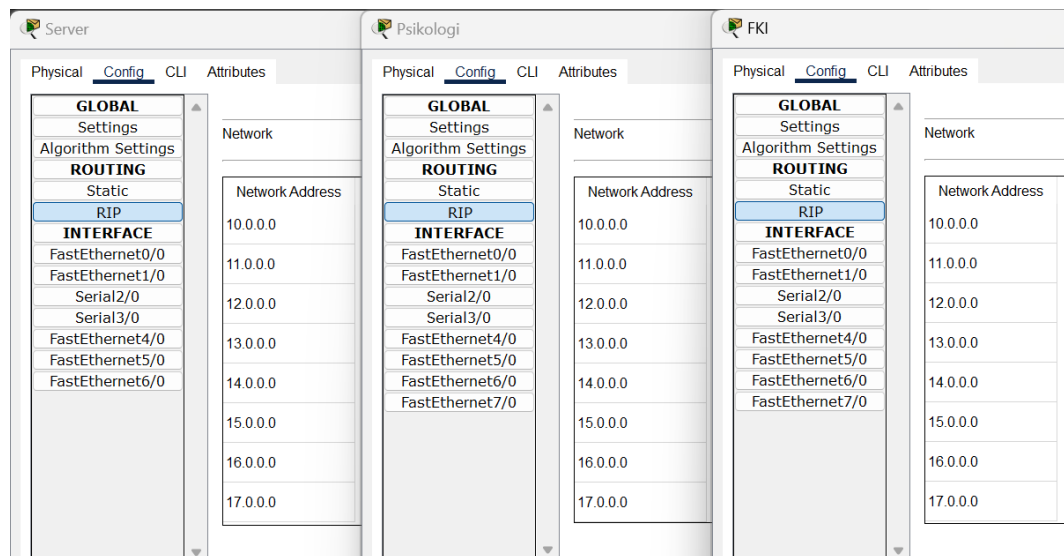
Reply from 16.1.1.4: bytes=32 time=41ms TTL=128
Reply from 16.1.1.4: bytes=32 time=34ms TTL=128
Reply from 16.1.1.4: bytes=32 time=37ms TTL=128
Reply from 16.1.1.4: bytes=32 time=21ms TTL=128

Ping statistics for 16.1.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 21ms, Maximum = 41ms, Average = 33ms

C:\>
```

3. Buatlah konfigurasi routing dinamis pada setiap router

- *Dokumentasikan konfigurasi routing setiap router*

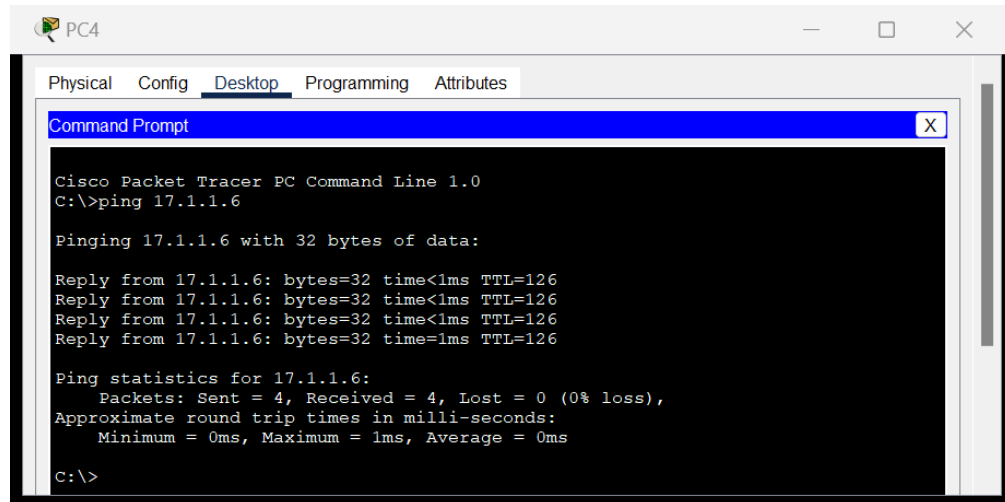


The image displays three side-by-side screenshots of Cisco Packet Tracer router configuration windows for three different routers: Server, Psikologi, and FKI. Each window shows the 'Config' tab with the 'ROUTING' section expanded, specifically the 'RIP' protocol configuration. The 'INTERFACE' list on the left shows various FastEthernet and Serial interfaces. The 'Network Address' table on the right lists the IP addresses for each interface.

Router	Interface	Network Address
Server	FastEthernet0/0	10.0.0.0
	FastEthernet1/0	11.0.0.0
	Serial2/0	12.0.0.0
	FastEthernet4/0	13.0.0.0
	FastEthernet5/0	14.0.0.0
	FastEthernet6/0	15.0.0.0
	FastEthernet7/0	16.0.0.0
Psikologi	FastEthernet0/0	10.0.0.0
	FastEthernet1/0	11.0.0.0
	Serial2/0	12.0.0.0
	FastEthernet4/0	13.0.0.0
	FastEthernet5/0	14.0.0.0
	FastEthernet6/0	15.0.0.0
	FastEthernet7/0	16.0.0.0
FKI	FastEthernet0/0	10.0.0.0
	FastEthernet1/0	11.0.0.0
	Serial2/0	12.0.0.0
	FastEthernet4/0	13.0.0.0
	FastEthernet5/0	14.0.0.0
	FastEthernet6/0	15.0.0.0
	FastEthernet7/0	16.0.0.0

- *Dokumentasikan hasil percobaan ping dari pc Psi ke FKI, Psi ke server, dan FKI ke server.*

Ping Psikologi (PC 4) → FKI (PC 17)



The screenshot shows a Cisco Packet Tracer PC Command Line window for PC4. The 'Desktop' tab is selected, and the 'Command Prompt' application is open. The command 'ping 17.1.1.6' has been entered and executed. The output shows four successful replies from 17.1.1.6 with a time of less than 1ms and TTL of 126. The ping statistics indicate 4 packets sent, 4 received, and 0% loss.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 17.1.1.6

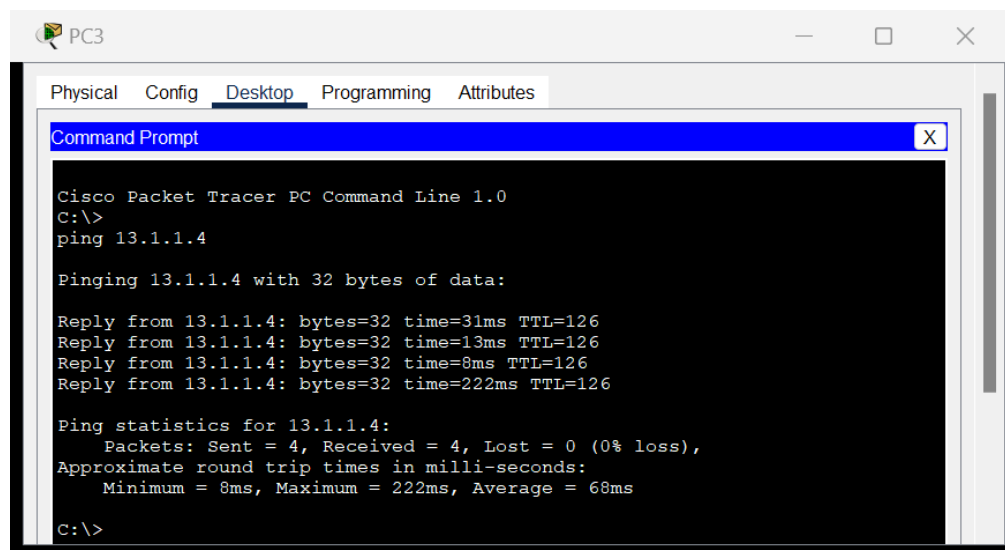
Pinging 17.1.1.6 with 32 bytes of data:

Reply from 17.1.1.6: bytes=32 time<1ms TTL=126
Reply from 17.1.1.6: bytes=32 time<1ms TTL=126
Reply from 17.1.1.6: bytes=32 time<1ms TTL=126
Reply from 17.1.1.6: bytes=32 time=1ms TTL=126

Ping statistics for 17.1.1.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

Ping Psikologi (PC 3) → Server (PC 0)



The screenshot shows a Cisco Packet Tracer PC Command Line window for PC3. The 'Desktop' tab is selected, and the 'Command Prompt' application is open. The command 'ping 13.1.1.4' has been entered and executed. The output shows four successful replies from 13.1.1.4 with times of 31ms, 13ms, 8ms, and 222ms, all with a TTL of 126. The ping statistics indicate 4 packets sent, 4 received, and 0% loss, with an average round trip time of 68ms.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 13.1.1.4

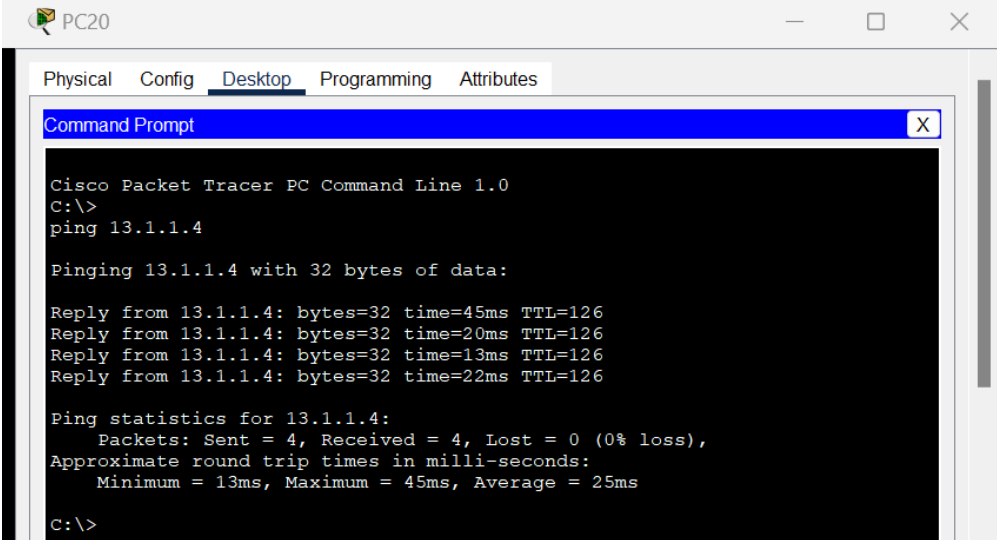
Pinging 13.1.1.4 with 32 bytes of data:

Reply from 13.1.1.4: bytes=32 time=31ms TTL=126
Reply from 13.1.1.4: bytes=32 time=13ms TTL=126
Reply from 13.1.1.4: bytes=32 time=8ms TTL=126
Reply from 13.1.1.4: bytes=32 time=222ms TTL=126

Ping statistics for 13.1.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 8ms, Maximum = 222ms, Average = 68ms

C:\>
```


Ping FKI (PC 20) → Server (PC 0)



The screenshot shows a Cisco Packet Tracer PC Command Line window for PC20. The window has tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, showing a Command Prompt. The text in the Command Prompt is as follows:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>
ping 13.1.1.4

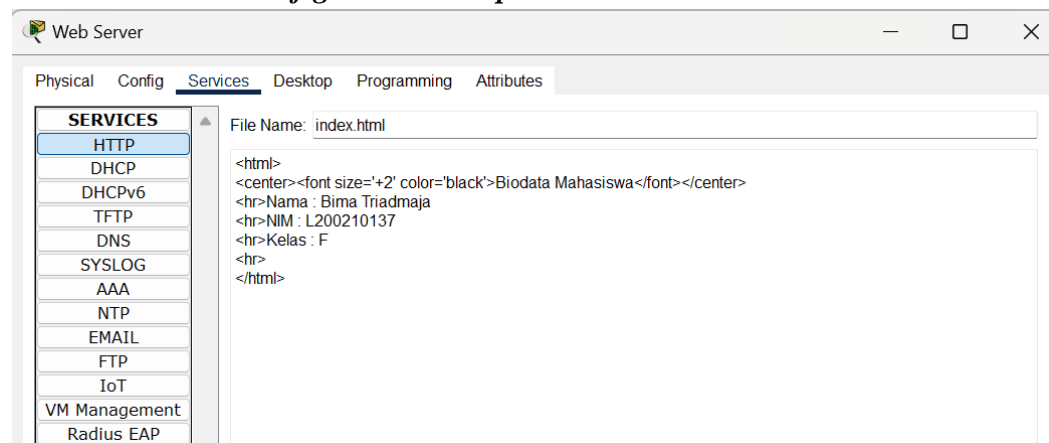
Pinging 13.1.1.4 with 32 bytes of data:

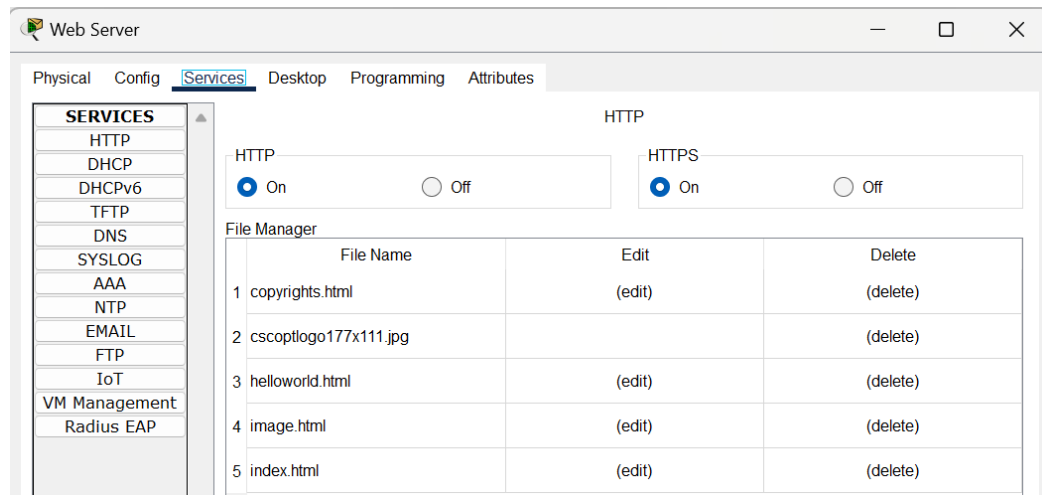
Reply from 13.1.1.4: bytes=32 time=45ms TTL=126
Reply from 13.1.1.4: bytes=32 time=20ms TTL=126
Reply from 13.1.1.4: bytes=32 time=13ms TTL=126
Reply from 13.1.1.4: bytes=32 time=22ms TTL=126

Ping statistics for 13.1.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 13ms, Maximum = 45ms, Average = 25ms

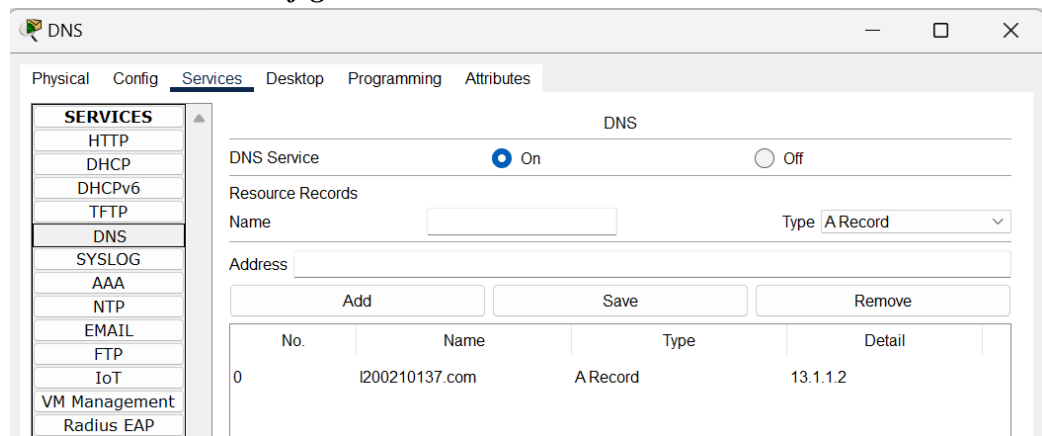
C:\>
```

4. Rancanglah server Web dan DNS server di gedung server.
 - a. Pada web server menampilkan tampilan tentang biodata setiap mahasiswa yang terdiri dari Nama, NIM, Kelas.
 - b. Pada DNS server menampilkan alamat web sesuai nimnya masing- masing
 - c. Hasil dari server diatas dibuktikan dengan menampilkan pada pc server
 - ***Dokumentasikan konfigurasi HTTP pada web server .***

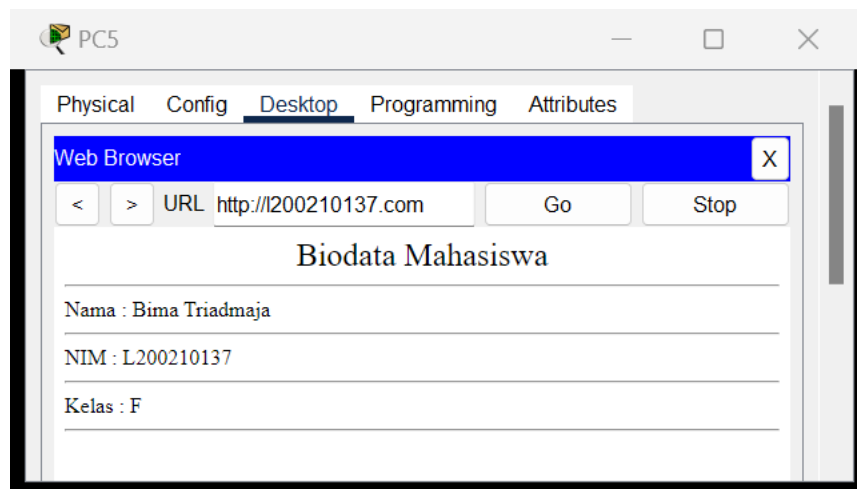




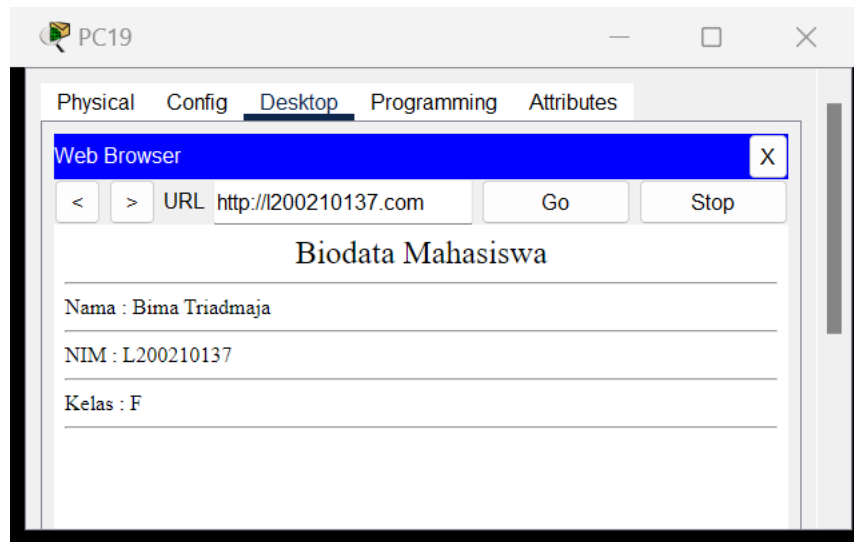
- ***Dokumentasikan konfigurasi DNS server.***



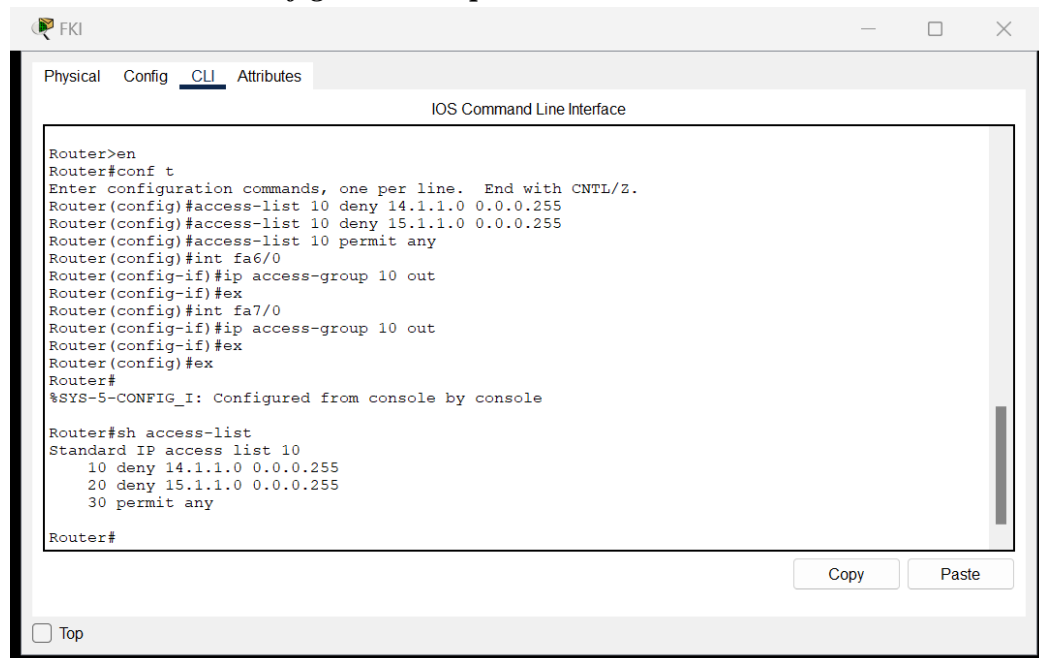
- ***Dokumentasikan hasil akses domain name dari salah satu PC Psi dan FKI. Akses domain name dari PC Psikologi (PC 5)***



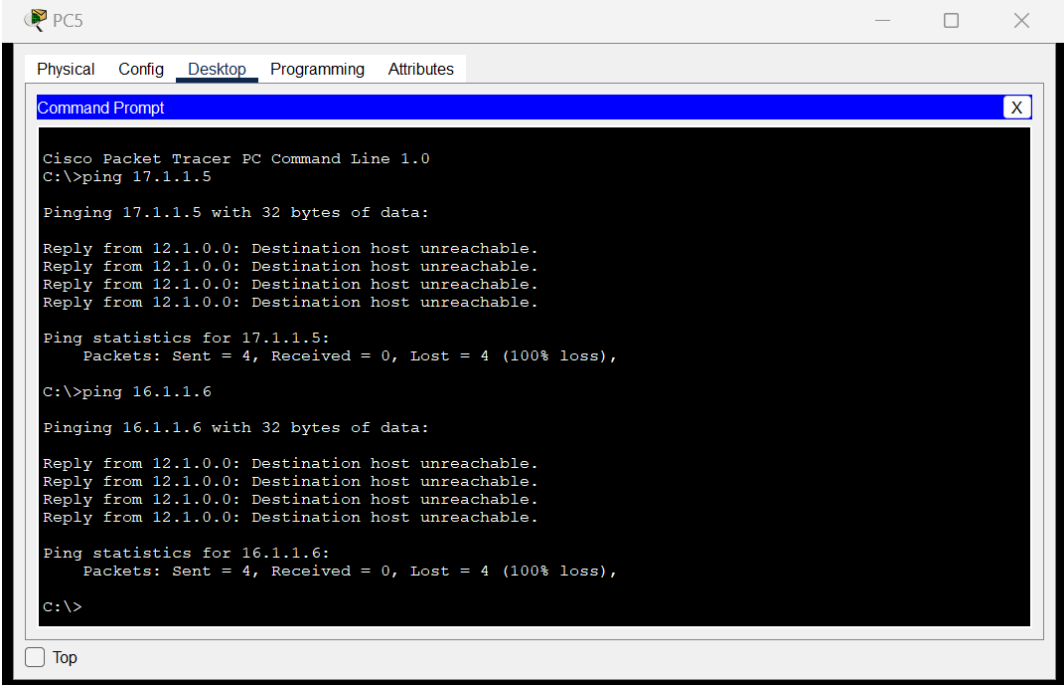
Akses domain name dari PC FKI



5. Buatlah pembatasan dengan access list dimana
 - a. NIM Ganjil : Mahasiswa & Dosen Psi tidak bisa melakukan ping pada Jaringan FKI
- *Dokumentasikan konfigurasi ACL pada router*



- **Dokumentasikan hasil percobaan ping**
Ping PC mahasiswa Psikologi → PC mahasiswa dan dosen FKI



The screenshot shows a Cisco Packet Tracer PC Command Line window for PC5. The window has tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, displaying a Command Prompt. The prompt shows the user entering 'ping 17.1.1.5' and 'ping 16.1.1.6'. Both commands result in 'Destination host unreachable' for all four attempts, with a 100% loss of packets.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 17.1.1.5

Pinging 17.1.1.5 with 32 bytes of data:

Reply from 12.1.0.0: Destination host unreachable.
Reply from 12.1.0.0: Destination host unreachable.
Reply from 12.1.0.0: Destination host unreachable.
Reply from 12.1.0.0: Destination host unreachable.

Ping statistics for 17.1.1.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 16.1.1.6

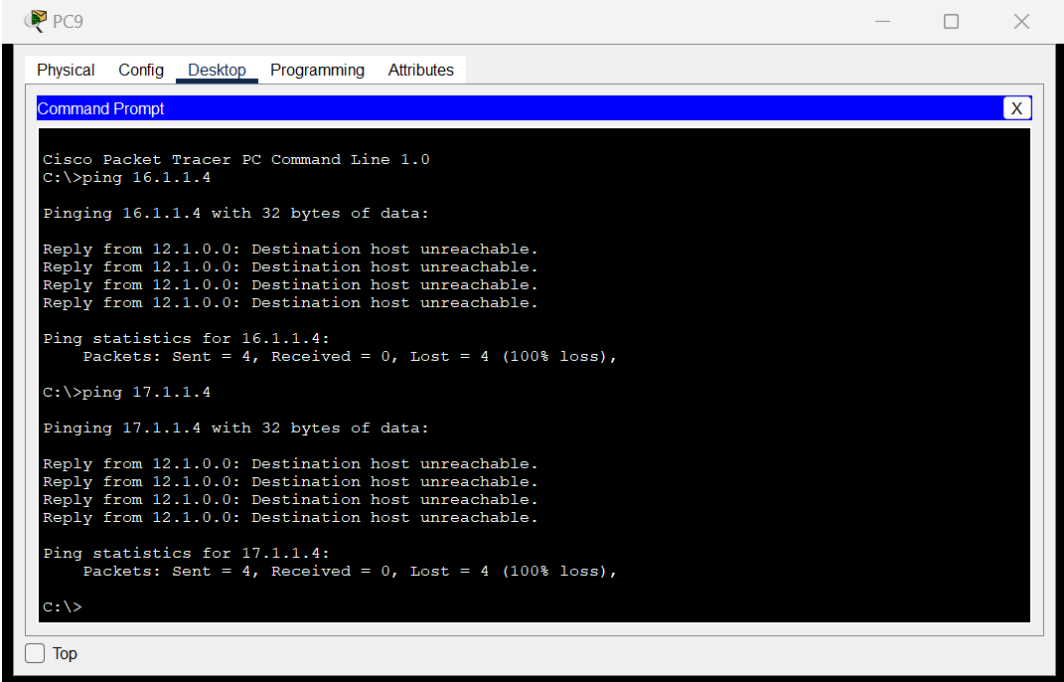
Pinging 16.1.1.6 with 32 bytes of data:

Reply from 12.1.0.0: Destination host unreachable.
Reply from 12.1.0.0: Destination host unreachable.
Reply from 12.1.0.0: Destination host unreachable.
Reply from 12.1.0.0: Destination host unreachable.

Ping statistics for 16.1.1.6:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

Ping PC dosen Psikologi → PC mahasiswa dan dosen FKI



The screenshot shows a Cisco Packet Tracer PC Command Line window for PC9. The window has tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, displaying a Command Prompt. The prompt shows the user entering 'ping 16.1.1.4' and 'ping 17.1.1.4'. Both commands result in 'Destination host unreachable' for all four attempts, with a 100% loss of packets.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 16.1.1.4

Pinging 16.1.1.4 with 32 bytes of data:

Reply from 12.1.0.0: Destination host unreachable.
Reply from 12.1.0.0: Destination host unreachable.
Reply from 12.1.0.0: Destination host unreachable.
Reply from 12.1.0.0: Destination host unreachable.

Ping statistics for 16.1.1.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 17.1.1.4

Pinging 17.1.1.4 with 32 bytes of data:

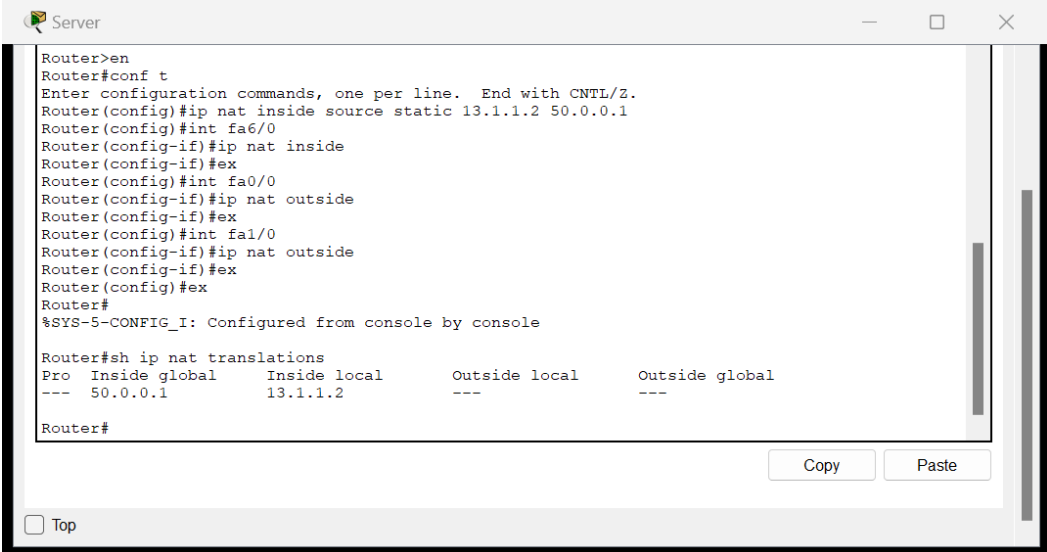
Reply from 12.1.0.0: Destination host unreachable.
Reply from 12.1.0.0: Destination host unreachable.
Reply from 12.1.0.0: Destination host unreachable.
Reply from 12.1.0.0: Destination host unreachable.

Ping statistics for 17.1.1.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

6. Tambahkan konfigurasi NAT pada server web.

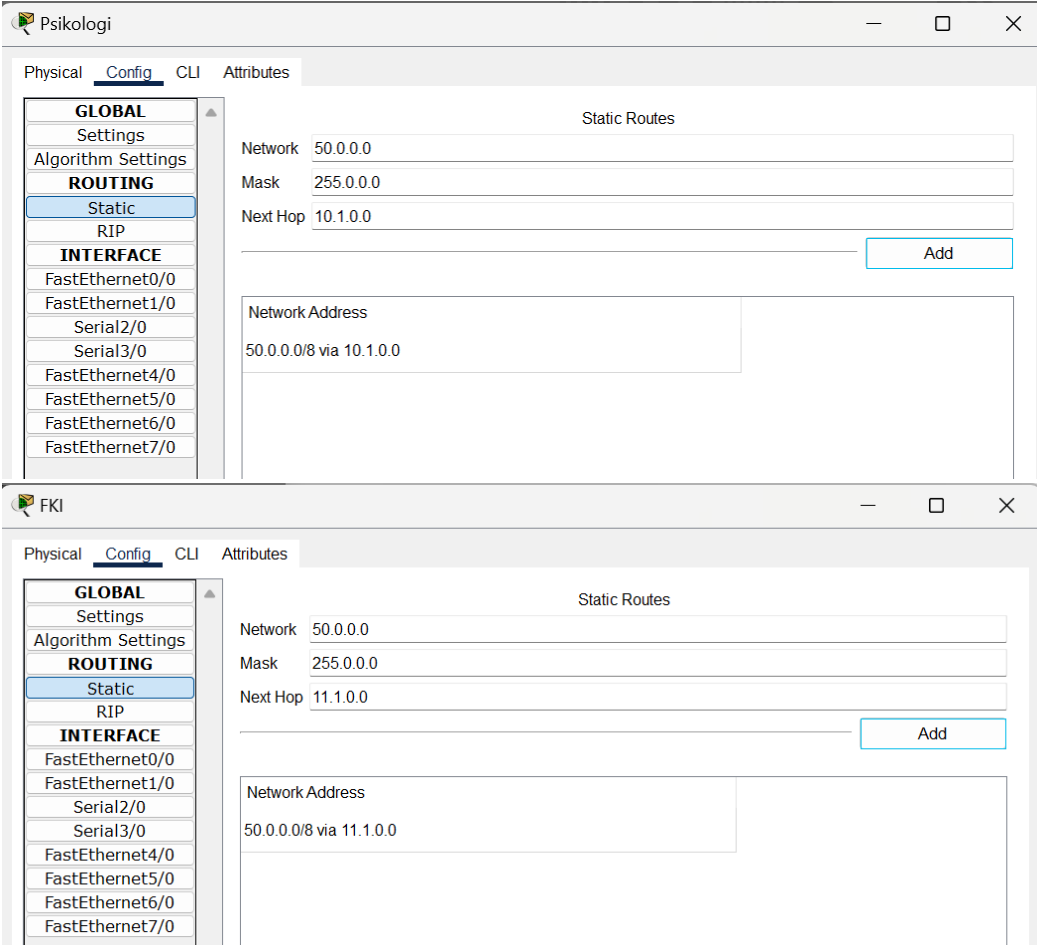
- ***Dokumentasikan konfigurasi NAT pada router***
Konfigurasi IP NAT pada Router Server



```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip nat inside source static 13.1.1.2 50.0.0.1
Router(config)#int fa6/0
Router(config-if)#ip nat inside
Router(config-if)#ex
Router(config)#int fa0/0
Router(config-if)#ip nat outside
Router(config-if)#ex
Router(config)#int fa1/0
Router(config-if)#ip nat outside
Router(config-if)#ex
Router(config)#ex
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#sh ip nat translations
Pro  Inside global      Inside local      Outside local      Outside global
---  50.0.0.1              13.1.1.2         ---               ---
Router#
```

Routing static pada Router Psikologi dan FKI



Psikologi

Physical **Config** CLI Attributes

GLOBAL

- Settings
- Algorithm Settings
- ROUTING**
- Static
- RIP

INTERFACE

- FastEthernet0/0
- FastEthernet1/0
- Serial2/0
- Serial3/0
- FastEthernet4/0
- FastEthernet5/0
- FastEthernet6/0
- FastEthernet7/0

Static Routes

Network: 50.0.0.0
Mask: 255.0.0.0
Next Hop: 10.1.0.0

Add

Network Address

50.0.0.0/8 via 10.1.0.0

FKI

Physical **Config** CLI Attributes

GLOBAL

- Settings
- Algorithm Settings
- ROUTING**
- Static
- RIP

INTERFACE

- FastEthernet0/0
- FastEthernet1/0
- Serial2/0
- Serial3/0
- FastEthernet4/0
- FastEthernet5/0
- FastEthernet6/0
- FastEthernet7/0

Static Routes

Network: 50.0.0.0
Mask: 255.0.0.0
Next Hop: 11.1.0.0

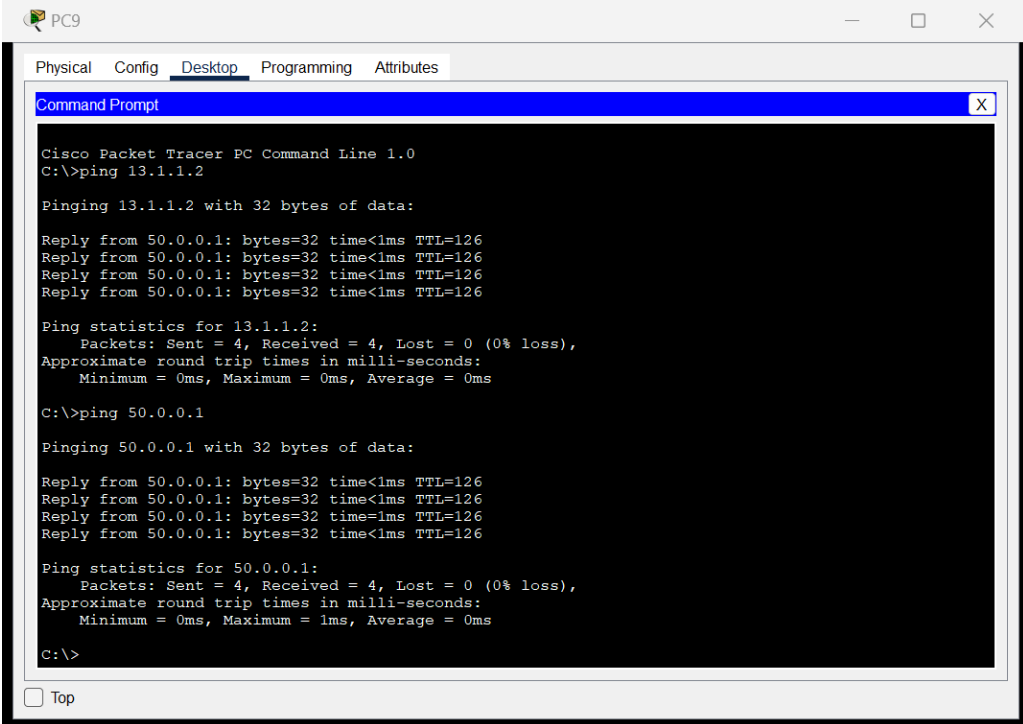
Add

Network Address

50.0.0.0/8 via 11.1.0.0

- *Dokumentasikan hasil percobaan ping*

Ping PC dosen Psikologi → Web server (ip local 13.1.1.2) dan (ip global 50.0.0.1)



PC9

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 13.1.1.2

Pinging 13.1.1.2 with 32 bytes of data:

Reply from 50.0.0.1: bytes=32 time<1ms TTL=126
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126

Ping statistics for 13.1.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 50.0.0.1

Pinging 50.0.0.1 with 32 bytes of data:

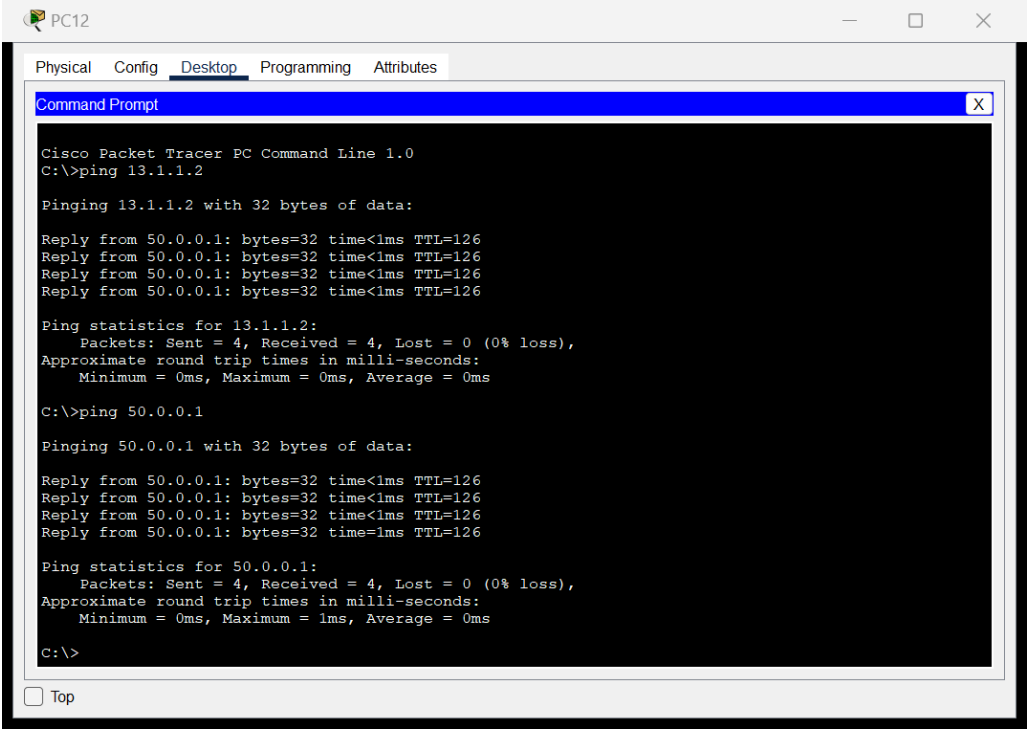
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126

Ping statistics for 50.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

☐ Top

Ping PC dosen PSI → Web server (ip local 13.1.1.2) dan (ip global 50.0.0.1)



PC12

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 13.1.1.2

Pinging 13.1.1.2 with 32 bytes of data:

Reply from 50.0.0.1: bytes=32 time<1ms TTL=126
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126

Ping statistics for 13.1.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 50.0.0.1

Pinging 50.0.0.1 with 32 bytes of data:

Reply from 50.0.0.1: bytes=32 time<1ms TTL=126
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126
Reply from 50.0.0.1: bytes=32 time<1ms TTL=126

Ping statistics for 50.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

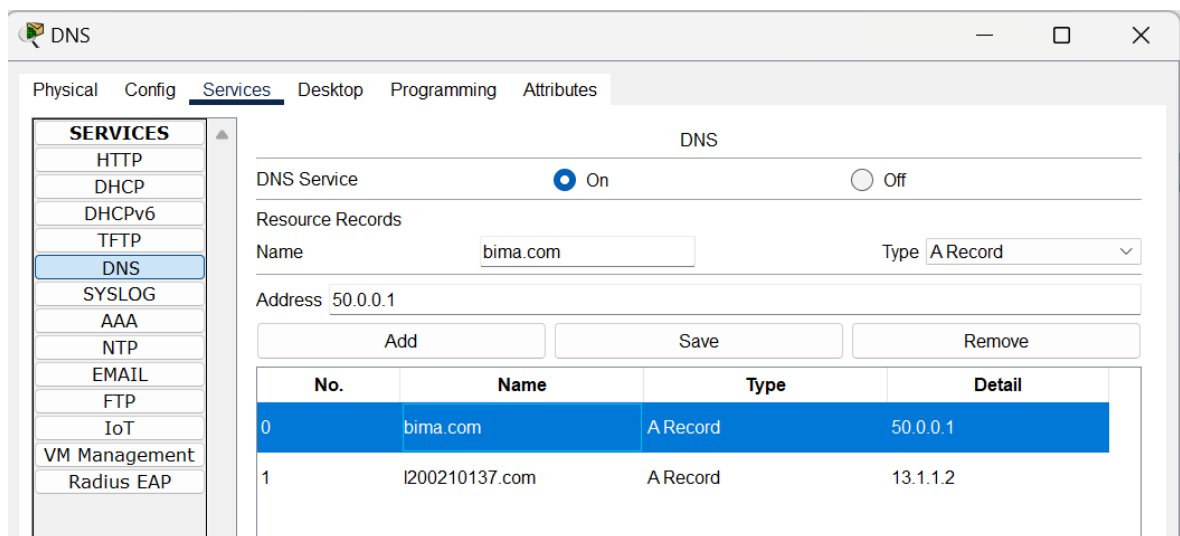
C:\>
```

☐ Top

Perubahan Address pada DNS server

Sebelum melakukan proses IP NAT pada router server, saya melakukan DNS dalam server DNS dengan memanggil IP pada web server yaitu **13.1.1.2** dan domain akses **l200210137.com**.

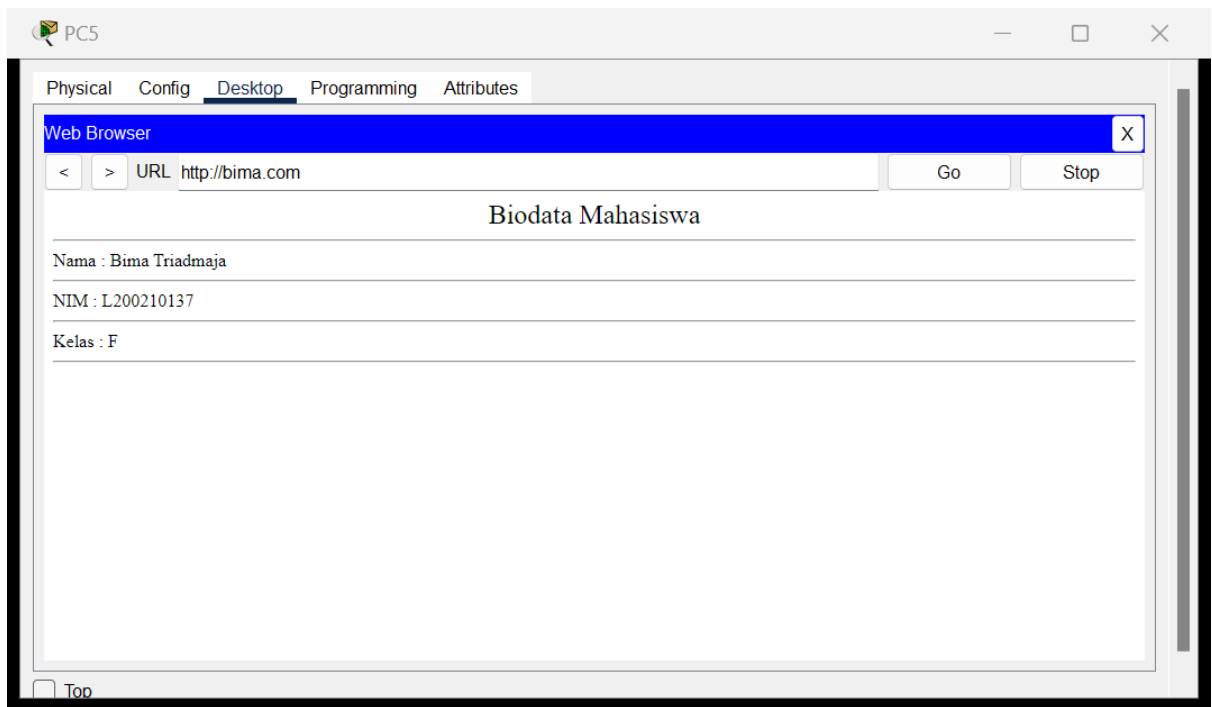
Namun, setelah saya melakukan IP NAT pada web server yang awalnya **IP 13.1.1.2 (local)** kemudian ditranslasikan menjadi **50.0.0.1 (global)** yang menyebabkan akses domain **l200210137.com** bermasalah ketika di akses pada PC mahasiswa dan dosen Psikologi maupun FKI, untuk mengatasi masalah tersebut, saya melakukan penambahan pada DNS server dengan IP address **50.0.0.1** dan domain akses **bima.com**, seperti pada gambar dibawah ini :



The screenshot shows the Mikrotik WinBox interface for configuring the DNS service. The 'Services' tab is selected, and the 'DNS' service is enabled. The 'Resource Records' section shows two entries:

No.	Name	Type	Detail
0	bima.com	A Record	50.0.0.1
1	l200210137.com	A Record	13.1.1.2

Akses domain name dari PC Psikologi



Akses domain name dari PC FKI

