

**Praktikum Jaringan Komputer**  
**Tugas Persiapan UAS Jaringan Komputer**  
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**Kelas : H**

**PROGRAM STUDI TEKNIK INFORMATIKA**  
**FAKULTAS KOMUNIKASI DAN INFORMATIKA**  
**UNIVERSITAS MUHAMMADIYAH SURAKARTA**

**2023**

## I. Tugas Persiapan UAS

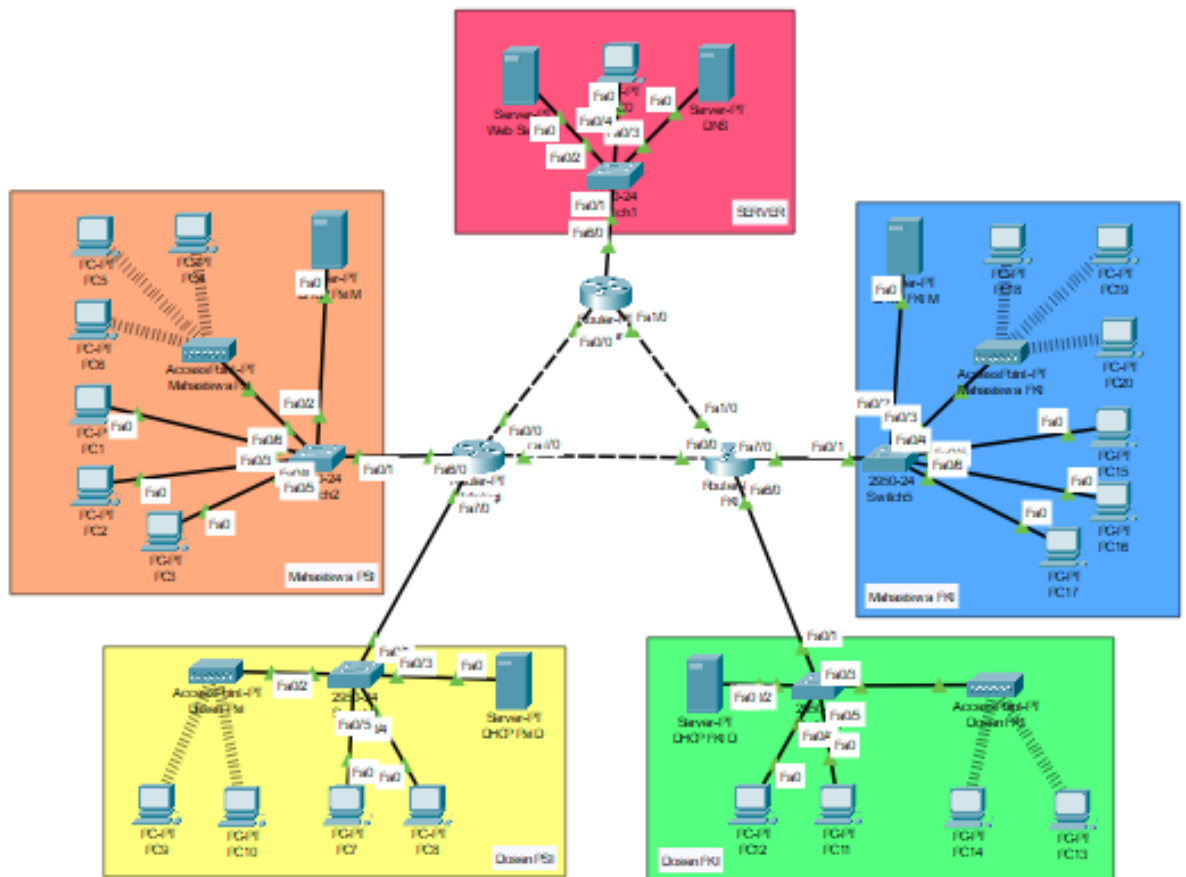
Buatlah topologi jaringan terdapat :

- 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:

- Setiap gedung Server, Psikologi, dan FKI terdapat router, switch, access point, DHCP Server, dan beberapa PC yg sudah ditentukan.
- Perangkat yang terpasang pada setiap gedung terdapat 3 PC yang terhubung pada jaringan mahasiswa menggunakan media wireless dan 3 PC menggunakan jaringan kabel.
- Pada ruang dosen 2 PC terhubung dengan jaringan kabel dan 2 PC terhubung dengan jaringan wireless.
- 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>    | 0001.9607.5B06 |
| FastEthernet1/0  | Up   | 11.1.0.0/8 | <not set>    | 0004.9A72.518D |
| 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>    | 000C.CF3A.43DC |
| FastEthernet5/0  | Down | <not set>  | <not set>    | 0001.C73E.8203 |
| FastEthernet6/0  | Up   | 13.1.1.1/8 | <not set>    | 0001.4328.CDC2 |
| Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > Server |      |            |              |                |

***Router PSI***

| Device Name: Psikologi  |      |            |              |                |
|---|------|------------|--------------|----------------|
| Device Model: Router-PT   |      |            |              |                |
| Hostname: Router  |      |            |              |                |
| Port  | Link | IP Address | IPv6 Address | MAC Address    |
| FastEthernet0/0   | Up   | 10.2.0.0/8 | <not set>    | 0001.C90A.EB22 |
| FastEthernet1/0   | Up   | 12.2.0.0/8 | <not set>    | 0040.0BEC.2A36 |
| 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>    | 00E0.B070.24D9 |
| FastEthernet5/0   | Down | <not set>  | <not set>    | 0002.171D.7BD1 |
| FastEthernet6/0   | Up   | 14.1.1.1/8 | <not set>    | 0060.4794.4665 |
| FastEthernet7/0   | Up   | 15.1.1.1/8 | <not set>    | 0001.C9C4.7D67 |
| 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   | 12.1.0.0/8 | <not set>    | 00D0.FF4E.E573 |
| FastEthernet1/0   | Up   | 11.2.0.0/8 | <not set>    | 00E0.B056.EA83 |
| 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>    | 00D0.FF0C.9732 |
| FastEthernet5/0   | Down | <not set>  | <not set>    | 0007.ECAC.8C1B |
| FastEthernet6/0   | Up   | 16.1.1.1/8 | <not set>    | 00E0.8F55.CB89 |
| FastEthernet7/0   | Up   | 17.1.1.1/8 | <not set>    | 000B.BE85.4268 |
| 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   | 13.1.1.4/8 | <not set>    | 0060.70C5.9CB8 |
| 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 |      |            |              |                |

### *PC server*

|   |      |            |              |                |
|---|------|------------|--------------|----------------|
| Device Name: PC0  |      |            |              |                |
| Device Model: PC-PT   |      |            |              |                |
| Port  | Link | IP Address | IPv6 Address | MAC Address    |
| FastEthernet0   | Up   | 13.1.1.2/8 | <not set>    | 00D0.BCB9.DC2A |
| Bluetooth   | Down | <not set>  | <not set>    | 00E0.F793.EA74 |
| Gateway: 13.1.1.1   |      |            |              |                |
| DNS Server: 13.1.1.3  |      |            |              |                |
| Line Number: <not set>  |      |            |              |                |
| Physical Location: Intercity > Home City > Corporate Office > PC0 |      |            |              |                |

### *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>    | 00E0.F733.96B3 |
| 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 |      |            |              |                |

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

### *Jaringan Mahasiswa PSI*

#### *DHCP 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>    | 0090.21CD.7BB8 |
| 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** **3**

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   | 14.1.1.3         | 255.0.0.0   | 200      | 0.0.0.0     | 0.0.0.0     |

## IP PC

PC1 PC2 PC3 PC4 PC5 PC6

Physical Config **Desktop** Physical Config **Desktop** Physical Config **Desktop** Physical Config **Desktop** Physical Config **Desktop** Physical Config **Desktop** Programming Attributes

**IP Configuration**

Interface: **FastEthernet0** **DHCP** ☐ Static

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 Address: **FE80::**

Link Local Address: **FE80::**

Default Gateway: **FE80::**

DNS Server: **FE80::**

802.1X

☐ Use 802.1X Security

Authentication: **MDS**

Username: **FE80::**

Password: **FE80::**

**IP Configuration**

Interface: **FastEthernet0** **DHCP** ☐ Static

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 Address: **FE80::**

Link Local Address: **FE80::**

Default Gateway: **FE80::**

DNS Server: **FE80::**

802.1X

☐ Use 802.1X Security

Authentication: **MDS**

Username: **FE80::**

Password: **FE80::**

**IP Configuration**

Interface: **FastEthernet0** **DHCP** ☐ Static

IPv4 Address: **14.1.1.5**

Subnet Mask: **255.0.0.0**

Default Gateway: **14.1.1.1**

DNS Server: **13.1.1.3**

**IPv6 Configuration**

☐ Automatic ☒ Static

IPv6 Address: **FE80::**

Link Local Address: **FE80::**

Default Gateway: **FE80::**

DNS Server: **FE80::**

802.1X

☐ Use 802.1X Security

Authentication: **MDS**

Username: **FE80::**

Password: **FE80::**

**IP Configuration**

Interface: **Wireless0** **DHCP** ☐ Static

IPv4 Address: **14.1.1.8**

Subnet Mask: **255.0.0.0**

Default Gateway: **14.1.1.1**

DNS Server: **13.1.1.3**

**IPv6 Configuration**

☒ Automatic ☐ Static

IPv6 Address: **FE80::**

Link Local Address: **FE80::**

Default Gateway: **FE80::**

DNS Server: **FE80::**

802.1X

☐ Use 802.1X Security

Authentication: **MDS**

Username: **FE80::**

Password: **FE80::**

**IP Configuration**

Interface: **Wireless0** **DHCP** ☐ Static

IPv4 Address: **14.1.1.7**

Subnet Mask: **255.0.0.0**

Default Gateway: **14.1.1.1**

DNS Server: **13.1.1.3**

**IPv6 Configuration**

☒ Automatic ☐ Static

IPv6 Address: **FE80::**

Link Local Address: **FE80::**

Default Gateway: **FE80::**

DNS Server: **FE80::**

802.1X

☐ Use 802.1X Security

Authentication: **MDS**

Username: **FE80::**

Password: **FE80::**

**IP Configuration**

Interface: **Wireless0** **DHCP** ☐ Static

IPv4 Address: **14.1.1.6**

Subnet Mask: **255.0.0.0**

Default Gateway: **14.1.1.1**

DNS Server: **13.1.1.3**

**IPv6 Configuration**

☒ Automatic ☐ Static

IPv6 Address: **FE80::**

Link Local Address: **FE80::**

Default Gateway: **FE80::**

DNS Server: **FE80::**

802.1X

☐ Use 802.1X Security

Authentication: **MDS**

Username: **FE80::**

Password: **FE80::**

## Jaringan Dosen PSI

### DHCP 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>    | 00D0.BAC7.798D |

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     |

## IP PC

PC7

Physical

Config

Desktop

IP Configuration

Interface

FastEthernet0

IP Configuration

DHCP

Static

IPv4 Address

15.1.1.4

Subnet Mask

255.0.0.0

Default Gateway

15.1.1.1

DNS Server

13.1.1.3

IPv6 Configuration

Automatic

Static

IPv6 Address

Link Local Address

FE80::

Default Gateway

DNS Server

802.1X

Use 802.1X Security

Authentication

MD5

Username

Password

PC8

Physical

Config

Desktop

IP Configuration

Interface

FastEthernet0

IP Configuration

DHCP

Static

IPv4 Address

15.1.1.3

Subnet Mask

255.0.0.0

Default Gateway

15.1.1.1

DNS Server

13.1.1.3

IPv6 Configuration

Automatic

Static

IPv6 Address

Link Local Address

FE80::

Default Gateway

DNS Server

802.1X

Use 802.1X Security

Authentication

MD5

Username

Password

PC9

Physical

Config

Desktop

IP Configuration

Interface

Wireless0

IP Configuration

DHCP

Static

IPv4 Address

15.1.1.5

Subnet Mask

255.0.0.0

Default Gateway

15.1.1.1

DNS Server

13.1.1.3

IPv6 Configuration

Automatic

Static

IPv6 Address

Link Local Address

FE80::

Default Gateway

DNS Server

PC10

Physical

Config

Desktop

Programming

Attributes

IP Configuration

Interface

Wireless0

IP Configuration

DHCP

Static

IPv4 Address

15.1.1.6

Subnet Mask

255.0.0.0

Default Gateway

15.1.1.1

DNS Server

13.1.1.3

IPv6 Configuration

Automatic

Static

IPv6 Address

Link Local Address

FE80::2D0:FFFF:FE84:B6E0

Default Gateway

DNS Server

## Jaringan Dosen FKI

### DHCP 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>      0001.6368.930B

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**

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: serverPool

Default Gateway: 16.1.1.1

DNS Server: 13.1.1.3

Start IP Address: 16 1 1 3

Subnet Mask: 255 0 0 0

Maximum Number of Users: 10

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 | 16.1.1.1        | 13.1.1.3   | 16.1.1.3         | 255.0.0.0   | 10       | 0.0.0.0     | 0.0.0.0     |

### IP PC

**PC11**

Physical Config **Desktop**

**IP Configuration**

Interface: FastEthernet0

IP Configuration: ☒ DHCP ☐ Static

IPv4 Address: 16.1.1.3

Subnet Mask: 255.0.0.0

Default Gateway: 16.1.1.1

DNS Server: 13.1.1.3

IPv6 Configuration: ☐ Automatic ☒ Static

IPv6 Address:

Link Local Address: FE80::2

Default Gateway:

DNS Server:

802.1X: ☐ Use 802.1X Security

Authentication: MDS

Username:

Password:

**PC12**

Physical Config **Desktop**

**IP Configuration**

Interface: FastEthernet0

IP Configuration: ☒ DHCP ☐ Static

IPv4 Address: 16.1.1.4

Subnet Mask: 255.0.0.0

Default Gateway: 16.1.1.1

DNS Server: 13.1.1.3

IPv6 Configuration: ☐ Automatic ☒ Static

IPv6 Address:

Link Local Address: FE80::

Default Gateway:

DNS Server:

802.1X: ☐ Use 802.1X Security

Authentication: MDS

Username:

Password:

**PC13**

Physical Config **Desktop**

**IP Configuration**

Interface: Wireless0

IP Configuration: ☒ DHCP ☐ Static

IPv4 Address: 16.1.1.5

Subnet Mask: 255.0.0.0

Default Gateway: 16.1.1.1

DNS Server: 13.1.1.3

IPv6 Configuration: ☒ Automatic ☐ Static

IPv6 Address:

Link Local Address: FE80::

Default Gateway:

DNS Server:

**PC14**

Physical Config **Desktop** Programming Attributes

**IP Configuration**

Interface: Wireless0

IP Configuration: ☒ DHCP ☐ Static

IPv4 Address: 16.1.1.6

Subnet Mask: 255.0.0.0

Default Gateway: 16.1.1.1

DNS Server: 13.1.1.3

IPv6 Configuration: ☒ Automatic ☐ Static

IPv6 Address:

Link Local Address: FE80::201:97FF:FEAB:76BC

Default Gateway:

DNS Server:

## Jaringan Mahasiswa FKI

### DHCP 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>    | 000C.CF19.6769 |

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     |

### IP PC

PC16 PC17 PC18 PC19 PC20 PC15

Physical Config **Desktop** Programming Attributes

**IP Configuration**

Interface: FastEthernet0

IP Configuration: ☒ DHCP ☐ Static

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: FE80::

Link Local Address: FE80::

Default Gateway:

DNS Server:

802.1X: ☐ Use 802.1X Security

Authentication: MDS

Username:

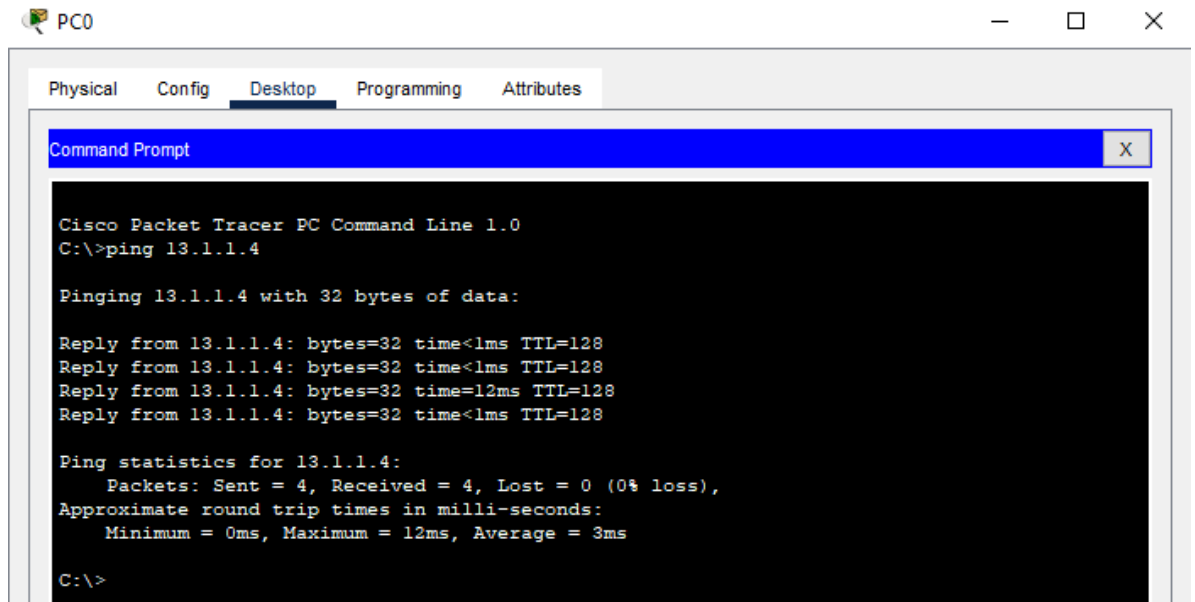
Password:



- *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 → web server*



The screenshot shows the 'Desktop' tab of PC0 in Cisco Packet Tracer. A Command Prompt window is open, displaying the following text:

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

Pinging 13.1.1.4 with 32 bytes of data:

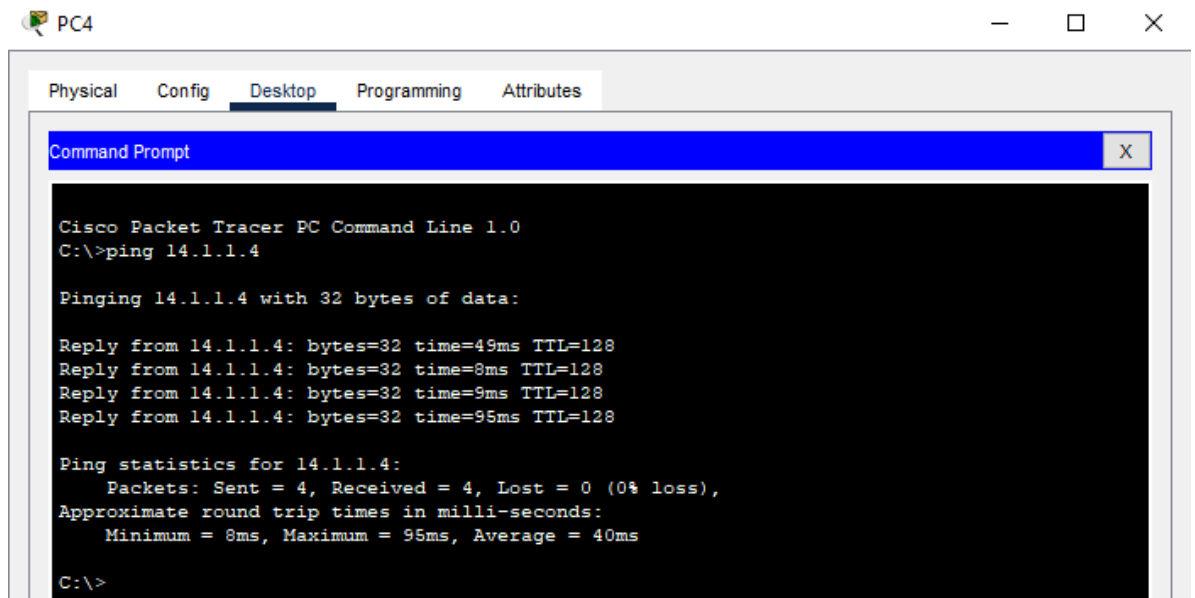
Reply from 13.1.1.4: bytes=32 time<1ms TTL=128
Reply from 13.1.1.4: bytes=32 time<1ms TTL=128
Reply from 13.1.1.4: bytes=32 time=12ms TTL=128
Reply from 13.1.1.4: bytes=32 time<1ms TTL=128

Ping statistics for 13.1.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 12ms, Average = 3ms

C:\>
```

### *Jaringan Mahasiswa PSI*

*Ping pc (4) wireless → pc (1) wired*



The screenshot shows the 'Desktop' tab of PC4 in Cisco Packet Tracer. A Command Prompt window is open, displaying the following text:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 14.1.1.4

Pinging 14.1.1.4 with 32 bytes of data:

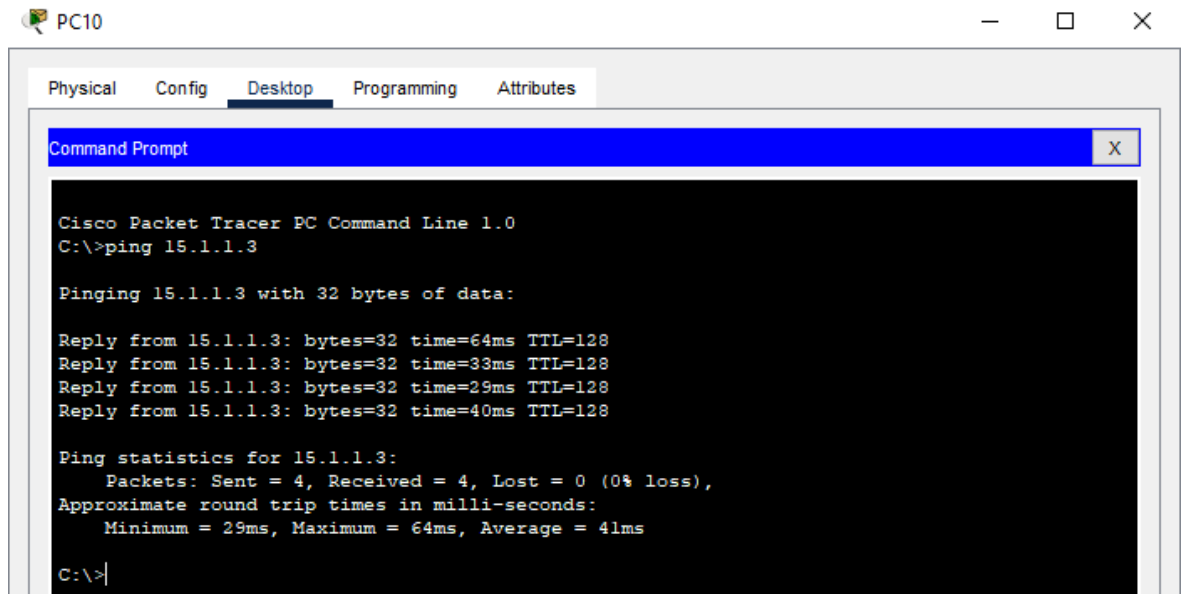
Reply from 14.1.1.4: bytes=32 time=49ms TTL=128
Reply from 14.1.1.4: bytes=32 time=8ms TTL=128
Reply from 14.1.1.4: bytes=32 time=9ms TTL=128
Reply from 14.1.1.4: bytes=32 time=95ms TTL=128

Ping statistics for 14.1.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 8ms, Maximum = 95ms, Average = 40ms

C:\>
```

## *Jaringan Dosen PSI*

*Ping pc (10) wireless → pc (8) wired*



PC10

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 15.1.1.3

Pinging 15.1.1.3 with 32 bytes of data:

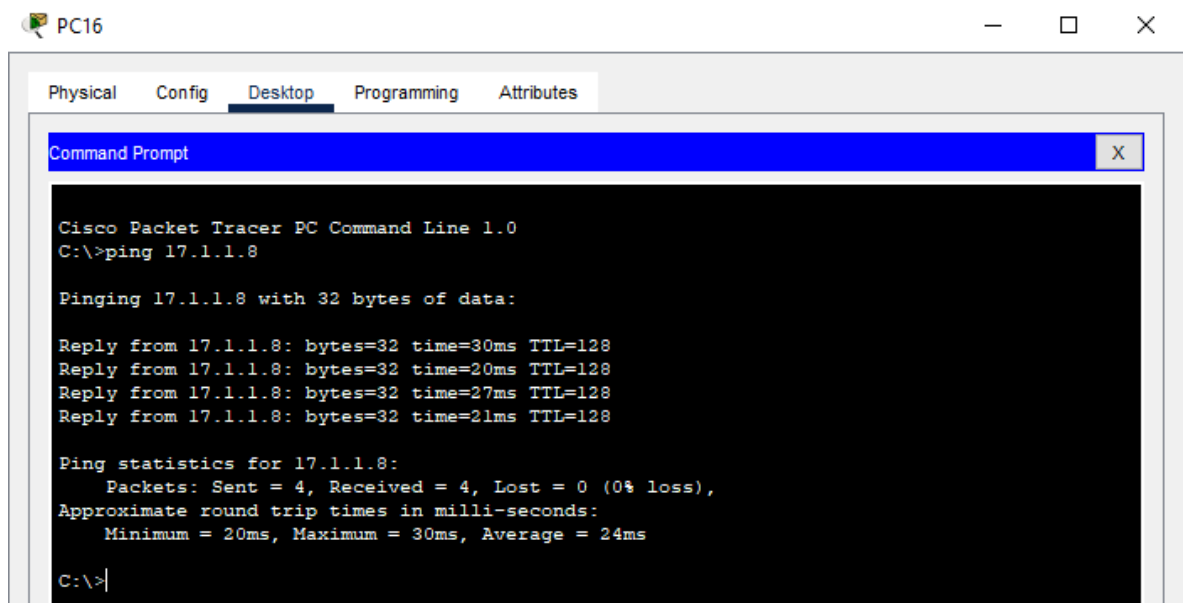
Reply from 15.1.1.3: bytes=32 time=64ms TTL=128
Reply from 15.1.1.3: bytes=32 time=33ms TTL=128
Reply from 15.1.1.3: bytes=32 time=29ms TTL=128
Reply from 15.1.1.3: bytes=32 time=40ms TTL=128

Ping statistics for 15.1.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 29ms, Maximum = 64ms, Average = 41ms

C:\>|
```

## *Jaringan Mahasiswa FKI*

*Ping pc (20) wireless → pc (16) wired*



PC16

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 17.1.1.8

Pinging 17.1.1.8 with 32 bytes of data:

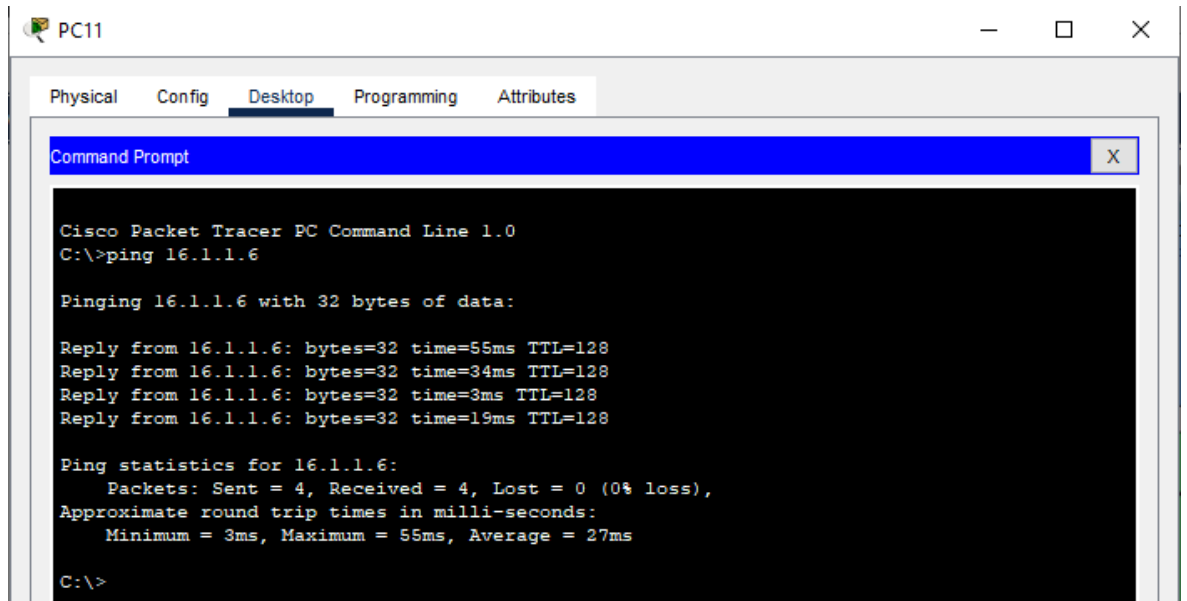
Reply from 17.1.1.8: bytes=32 time=30ms TTL=128
Reply from 17.1.1.8: bytes=32 time=20ms TTL=128
Reply from 17.1.1.8: bytes=32 time=27ms TTL=128
Reply from 17.1.1.8: bytes=32 time=21ms TTL=128

Ping statistics for 17.1.1.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 20ms, Maximum = 30ms, Average = 24ms

C:\>|
```

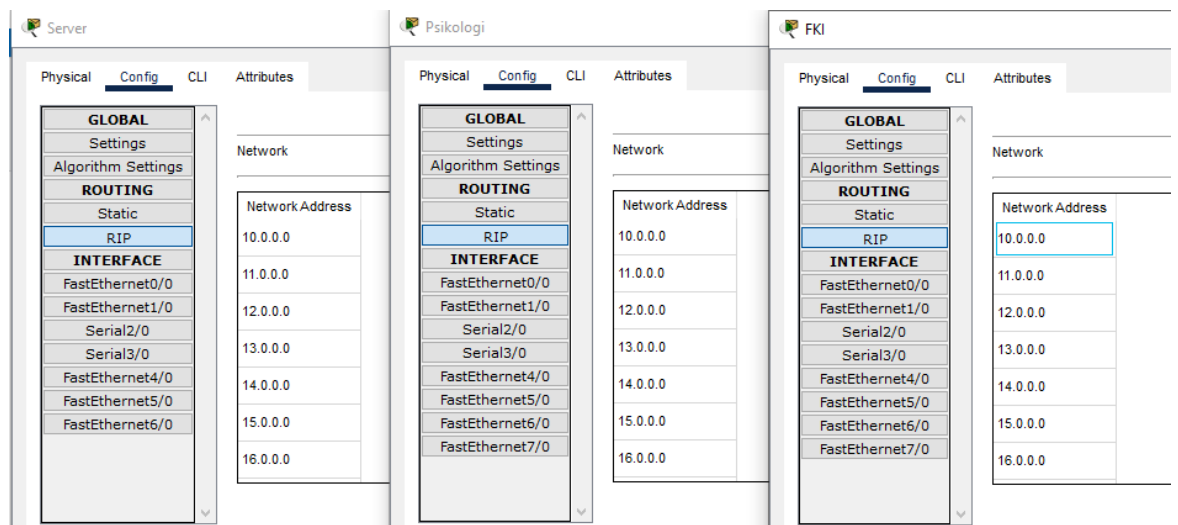
## Jaringan Dosen FKI

Ping pc (14) wireless → pc (11) wired



### 3. Buatlah konfigurasi routing dinamis pada setiap router

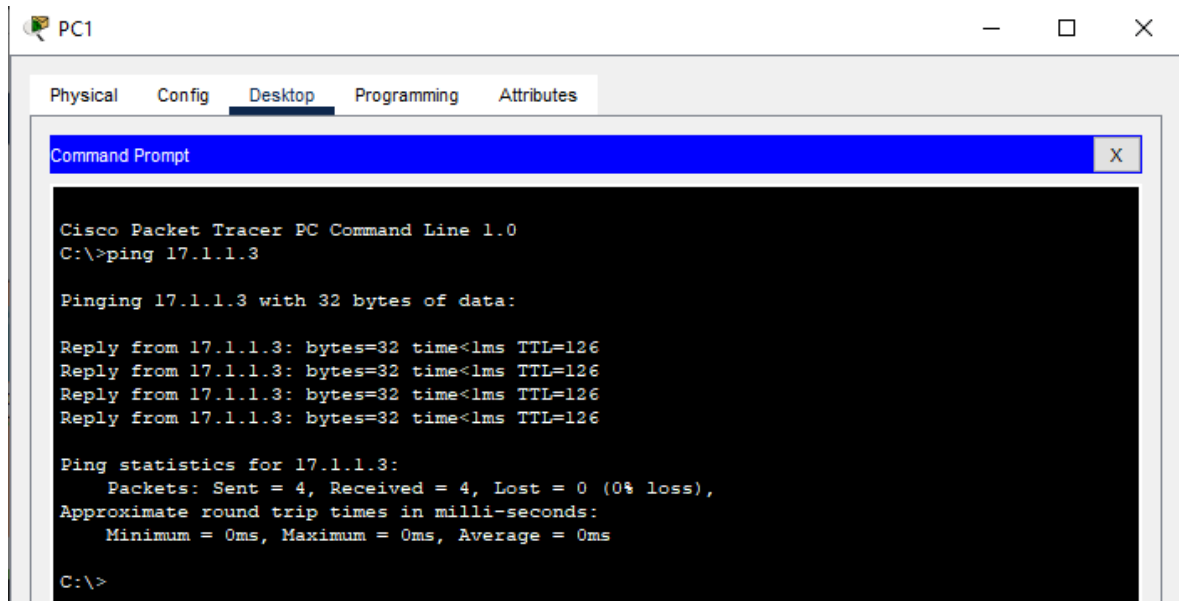
- *Dokumentasikan konfigurasi routing setiap router*



\* Note : pada routing dinamis terdapat ip network 17.0.0.0, namun tidak terlihat saat proses screenshot.

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

### *Ping PSI → FKI*



The screenshot shows the 'PC1' window in Cisco Packet Tracer. The 'Desktop' tab is selected, displaying a 'Command Prompt' window. The text in the command prompt is as follows:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 17.1.1.3

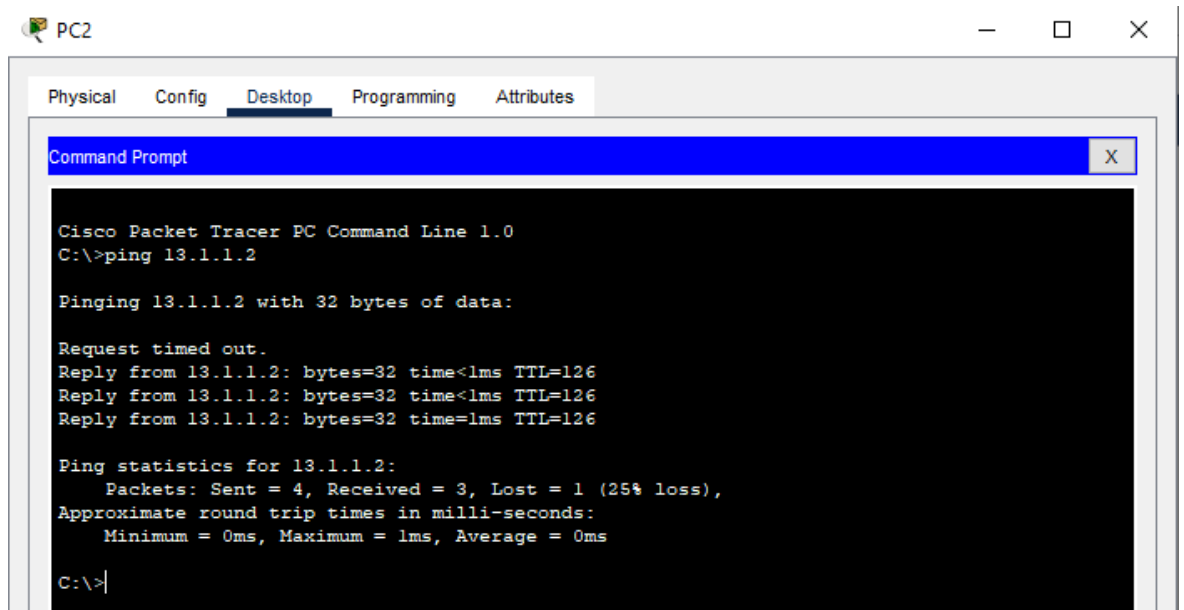
Pinging 17.1.1.3 with 32 bytes of data:

Reply from 17.1.1.3: bytes=32 time<1ms TTL=126
Reply from 17.1.1.3: bytes=32 time<1ms TTL=126
Reply from 17.1.1.3: bytes=32 time<1ms TTL=126
Reply from 17.1.1.3: bytes=32 time<1ms TTL=126

Ping statistics for 17.1.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

### *Ping PSI → Server*



The screenshot shows the 'PC2' window in Cisco Packet Tracer. The 'Desktop' tab is selected, displaying a 'Command Prompt' window. The text in the command prompt is as follows:

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

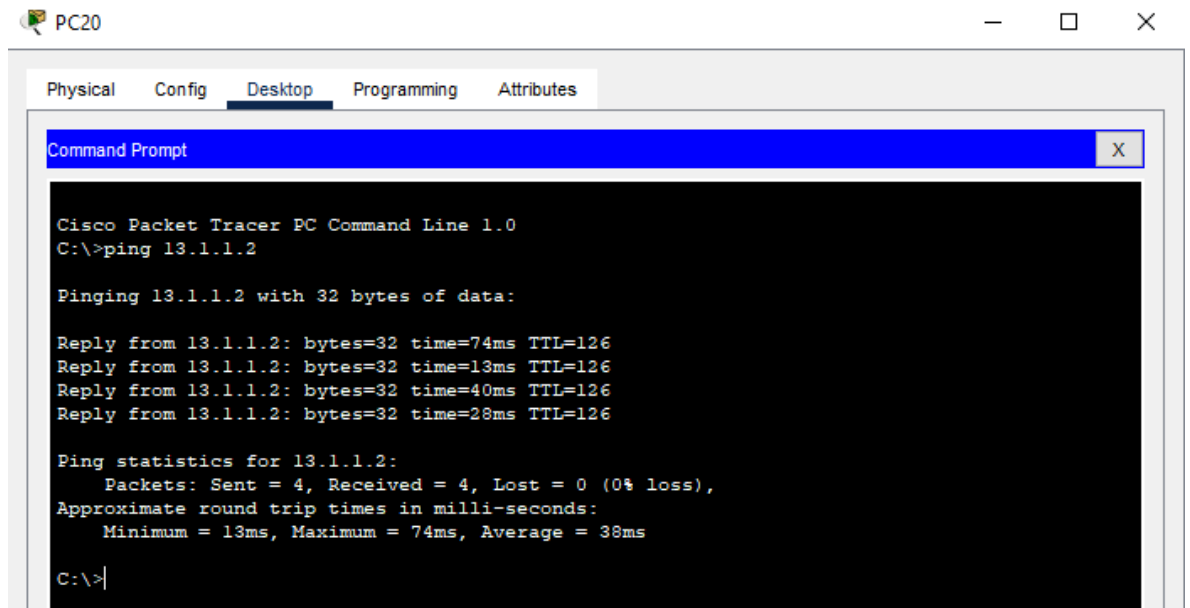
Pinging 13.1.1.2 with 32 bytes of data:

Request timed out.
Reply from 13.1.1.2: bytes=32 time<1ms TTL=126
Reply from 13.1.1.2: bytes=32 time<1ms TTL=126
Reply from 13.1.1.2: bytes=32 time<1ms TTL=126

Ping statistics for 13.1.1.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>|
```

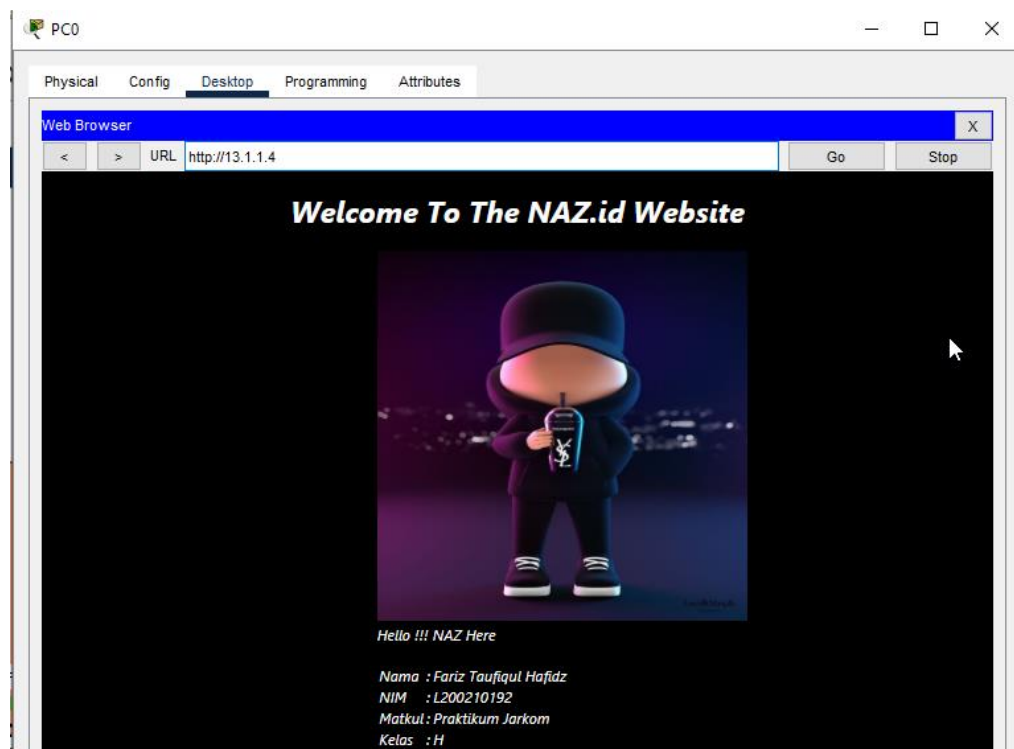
### *Ping FKI → Server*



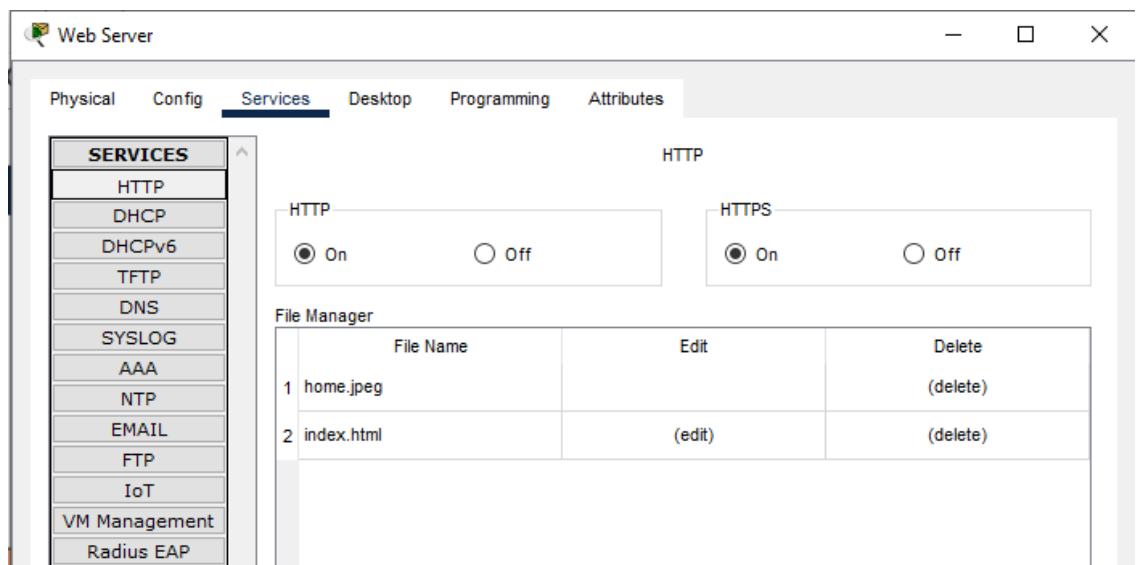
#### **4. Rancanglah server Web dan DNS server di gedung server.**

- 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

### *Akses ip web server dari PC server*



- *Dokumentasikan konfigurasi HTTP pada web server .*



The screenshot shows the 'Web Server' configuration window. The 'Services' tab is selected. On the left, a list of services includes HTTP, DHCP, DHCPv6, TFTP, DNS, SYSLOG, AAA, NTP, EMAIL, FTP, IoT, VM Management, and Radius EAP. The main area shows the configuration for HTTP and HTTPS services. Both are set to 'On'.

**HTTP**

HTTP ☒ On ☐ Off

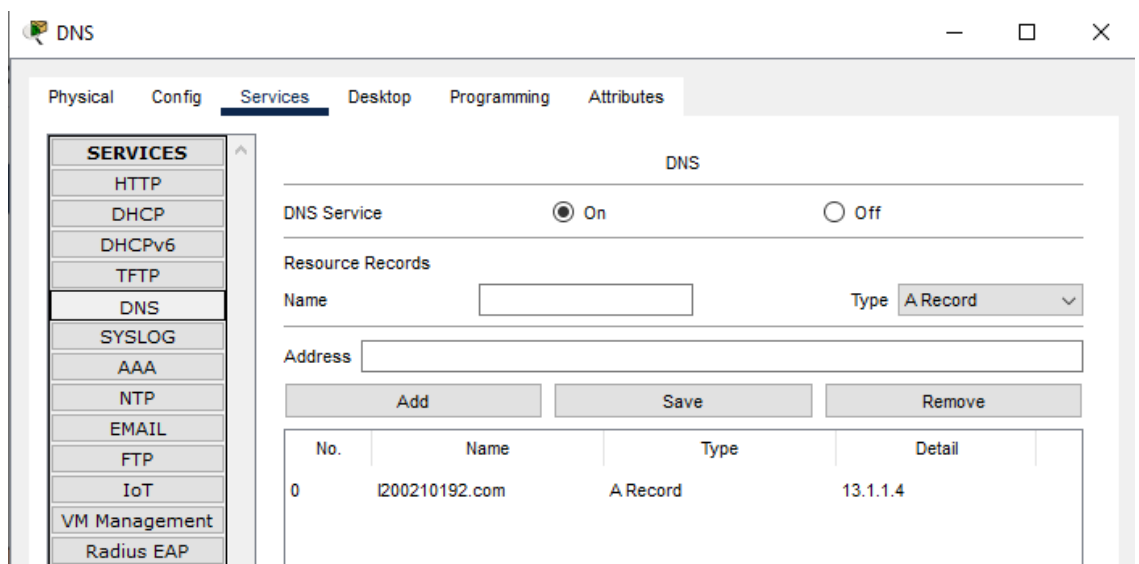
**HTTPS**

HTTPS ☒ On ☐ Off

**File Manager**

|   | File Name  | Edit   | Delete   |
|---|------------|--------|----------|
| 1 | home.jpeg  |        | (delete) |
| 2 | index.html | (edit) | (delete) |

- *Dokumentasikan konfigurasi DNS server.*



The screenshot shows the 'DNS' configuration window. The 'Services' tab is selected. On the left, a list of services includes HTTP, DHCP, DHCPv6, TFTP, DNS, SYSLOG, AAA, NTP, EMAIL, FTP, IoT, VM Management, and Radius EAP. The main area shows the configuration for the DNS service. The 'DNS Service' is set to 'On'. Below, the 'Resource Records' section shows a table with one record added.

**DNS**

DNS Service ☒ On ☐ Off

**Resource Records**

Name  Type **A Record** ▼

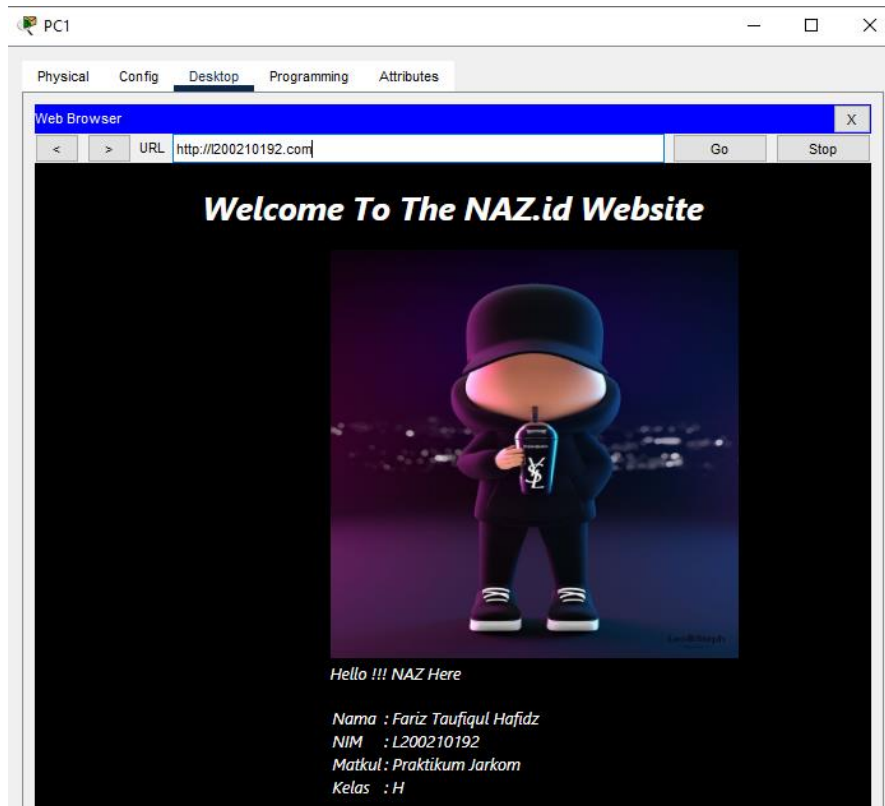
Address

**Add** **Save** **Remove**

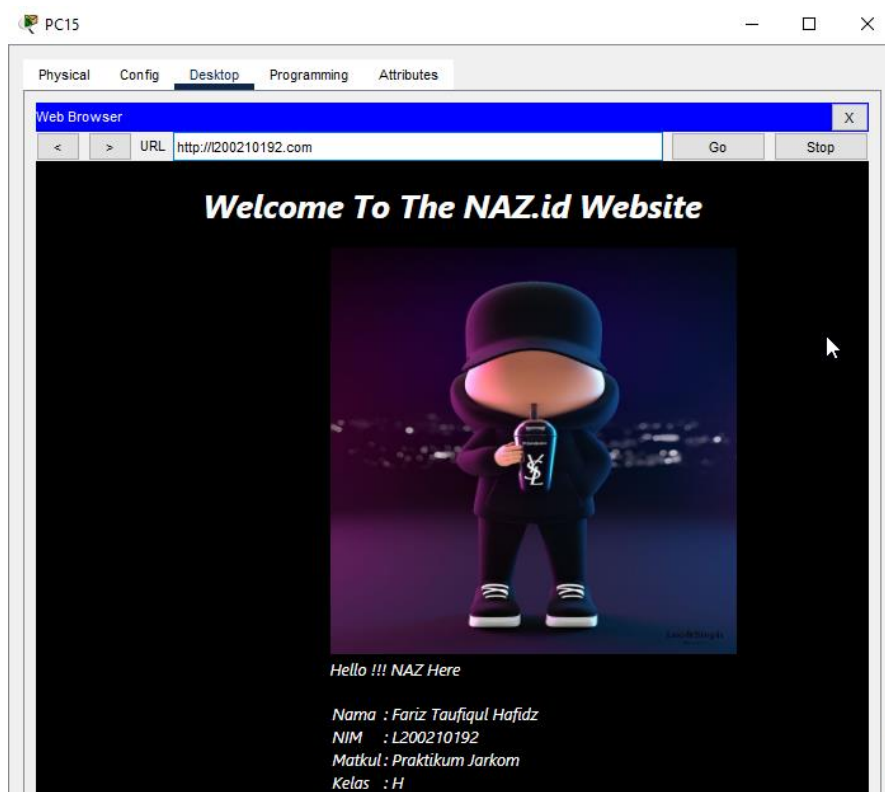
| No. | Name           | Type     | Detail   |
|-----|----------------|----------|----------|
| 0   | l200210192.com | A Record | 13.1.1.4 |

- *Dokumentasikan hasil akses domain name dari salah satu PC Psi dan FKI.*

#### *Akses domain name dari PC PSI*



#### *Akses domain name dari PC FKI*

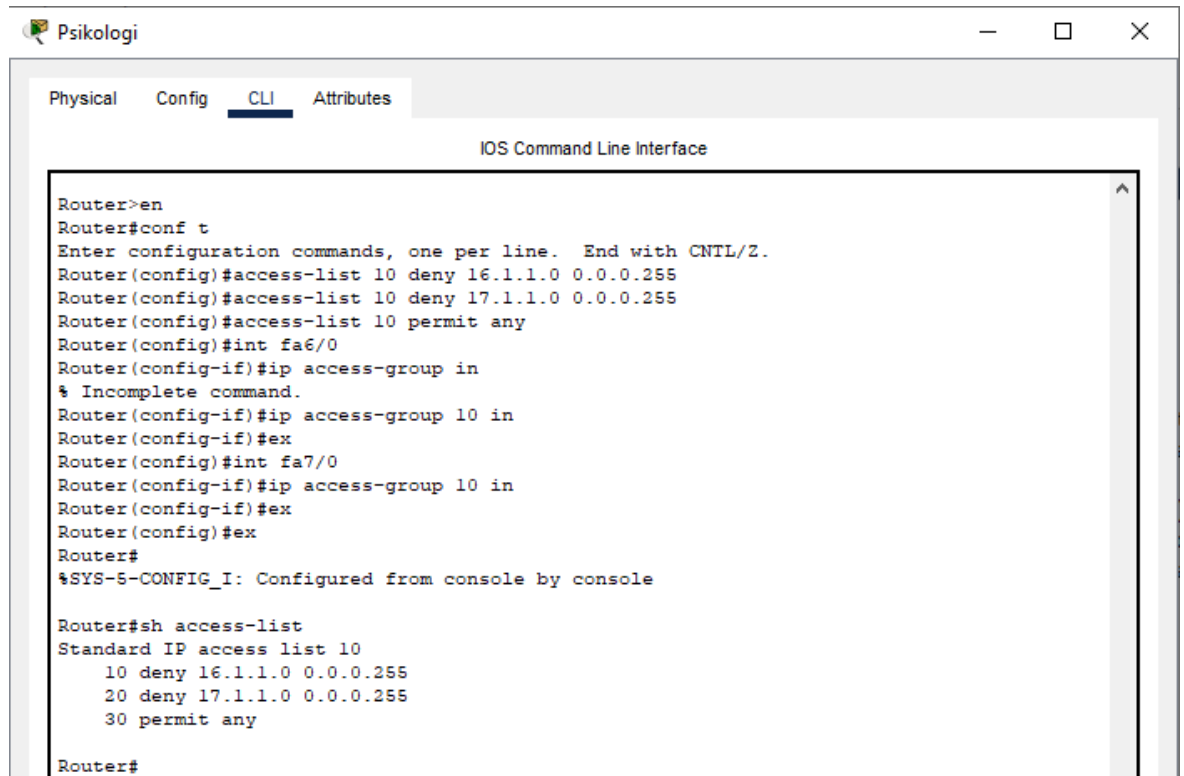


## 5. Buatlah pembatasan dengan access list dimana

- NIM Genap : Mahasiswa & Dosen FKI tidak bisa melakukan ping pada Jaringan Psi

- Dokumentasikan konfigurasi ACL pada router*

### *Konfigurasi Access-List pada Router Psikologi*

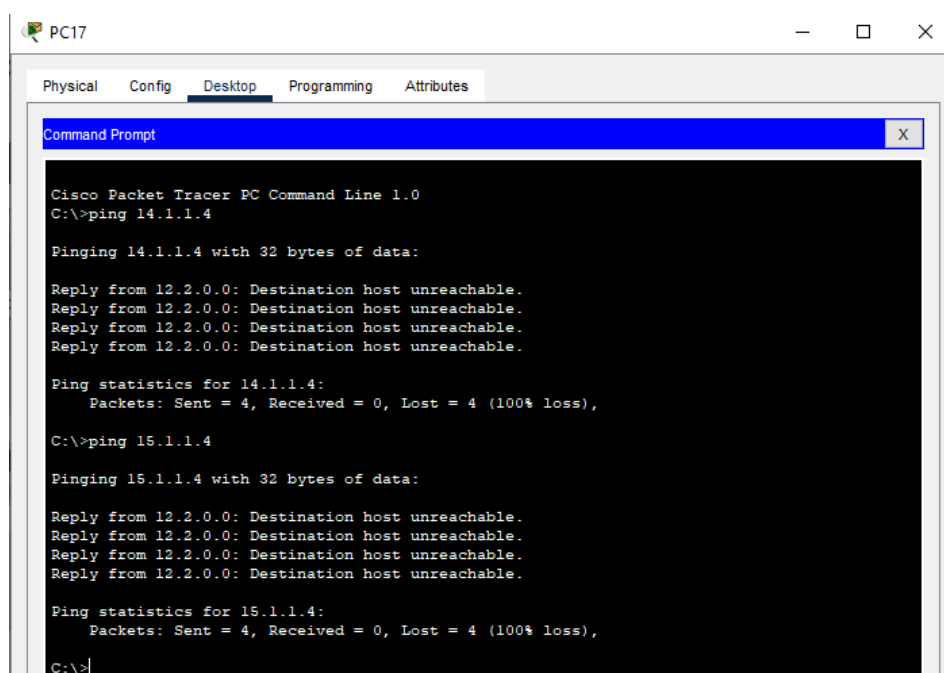


```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#access-list 10 deny 16.1.1.0 0.0.0.255
Router(config)#access-list 10 deny 17.1.1.0 0.0.0.255
Router(config)#access-list 10 permit any
Router(config)#int fa6/0
Router(config-if)#ip access-group 10 in
Router(config-if)#ex
Router(config)#int fa7/0
Router(config-if)#ip access-group 10 in
Router(config-if)#ex
Router(config)#ex
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#sh access-list
Standard IP access list 10
 10 deny 16.1.1.0 0.0.0.255
 20 deny 17.1.1.0 0.0.0.255
 30 permit any
Router#
```

- Dokumentasikan hasil percobaan ping*

### *Ping PC mahasiswa FKI → PC mahasiswa dan dosen PSI*



```
PC17
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 14.1.1.4

Pinging 14.1.1.4 with 32 bytes of data:

Reply from 12.2.0.0: Destination host unreachable.
Reply from 12.2.0.0: Destination host unreachable.
Reply from 12.2.0.0: Destination host unreachable.
Reply from 12.2.0.0: Destination host unreachable.

Ping statistics for 14.1.1.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 15.1.1.4

Pinging 15.1.1.4 with 32 bytes of data:

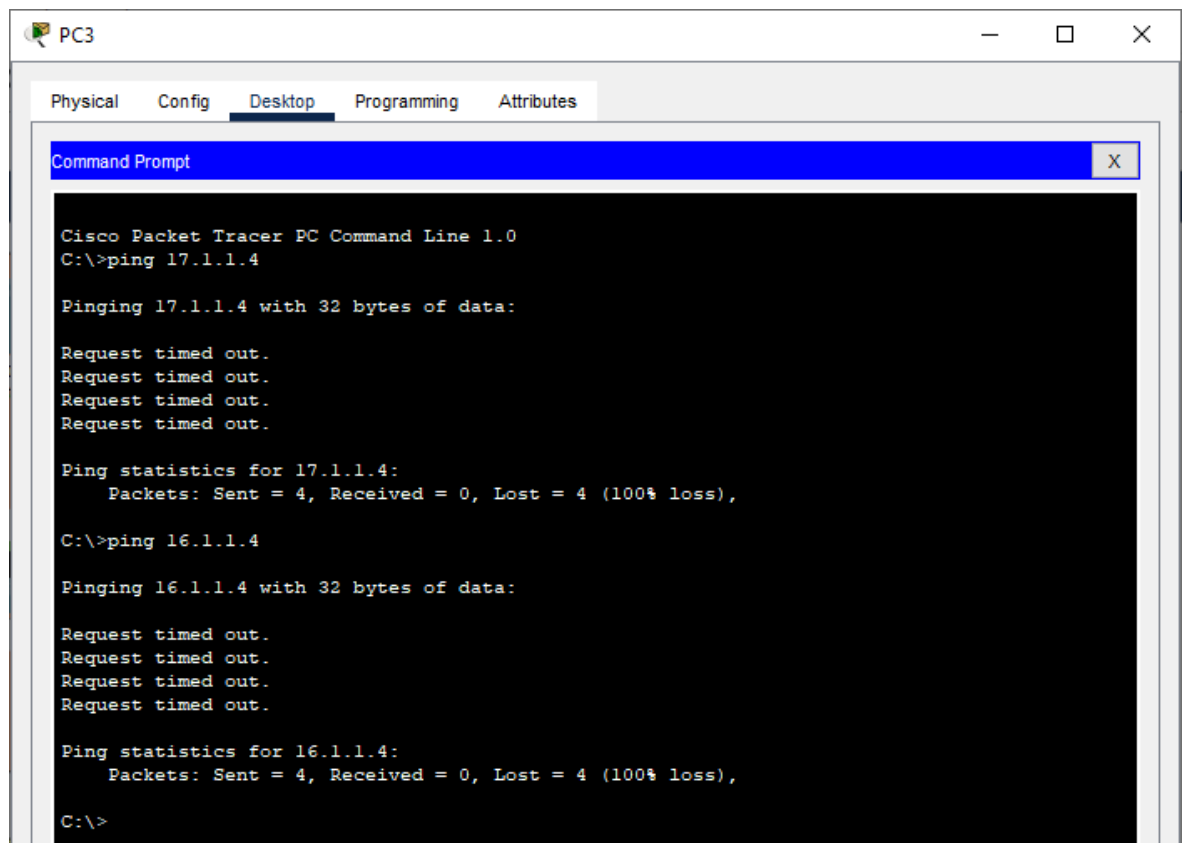
Reply from 12.2.0.0: Destination host unreachable.
Reply from 12.2.0.0: Destination host unreachable.
Reply from 12.2.0.0: Destination host unreachable.
Reply from 12.2.0.0: Destination host unreachable.

Ping statistics for 15.1.1.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>|
```



*Ping PC mahasiswa PSI → PC mahasiswa dan dosen FKl*



The screenshot shows a PC3 window with tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, displaying a Command Prompt window. The Command Prompt shows the following output:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 17.1.1.4

Pinging 17.1.1.4 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

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

C:\>ping 16.1.1.4

Pinging 16.1.1.4 with 32 bytes of data:

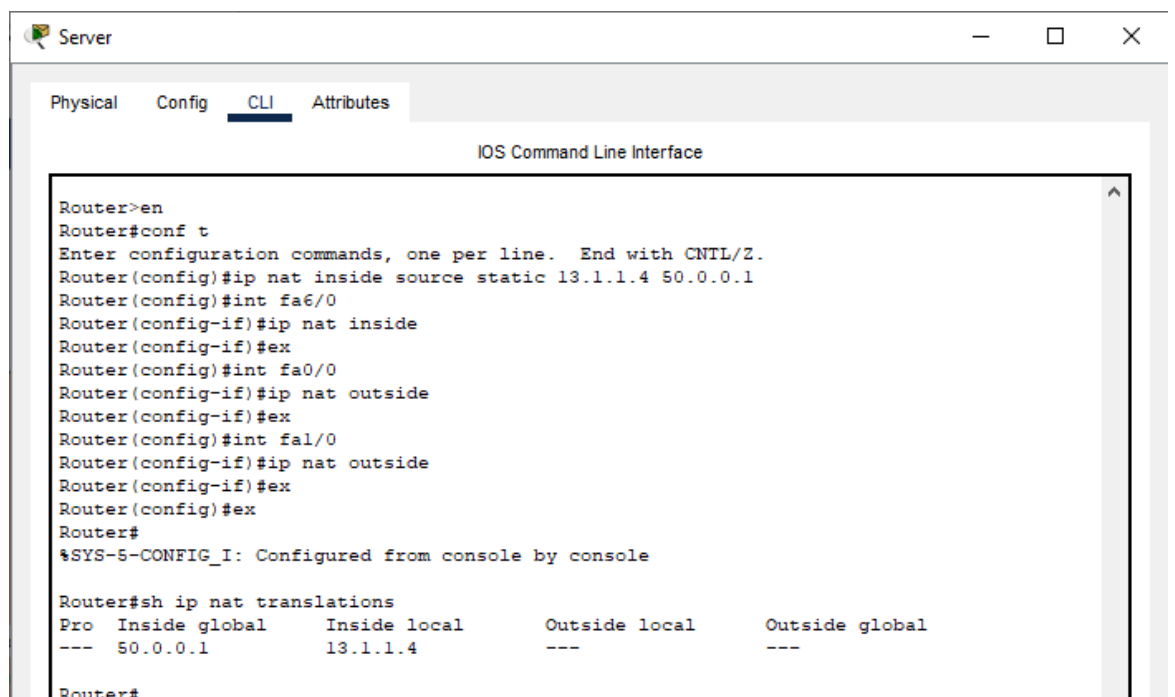
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 16.1.1.4:
    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*



The screenshot shows a Server window with tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the IOS Command Line Interface. The following commands and output are shown:

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip nat inside source static 13.1.1.4 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              13.1.1.4          ---                ---
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

Network50.0.0.0

Mask255.0.0.0

Next Hop10.1.0.0

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

Network50.0.0.0

Mask255.0.0.0

Next Hop11.1.0.0

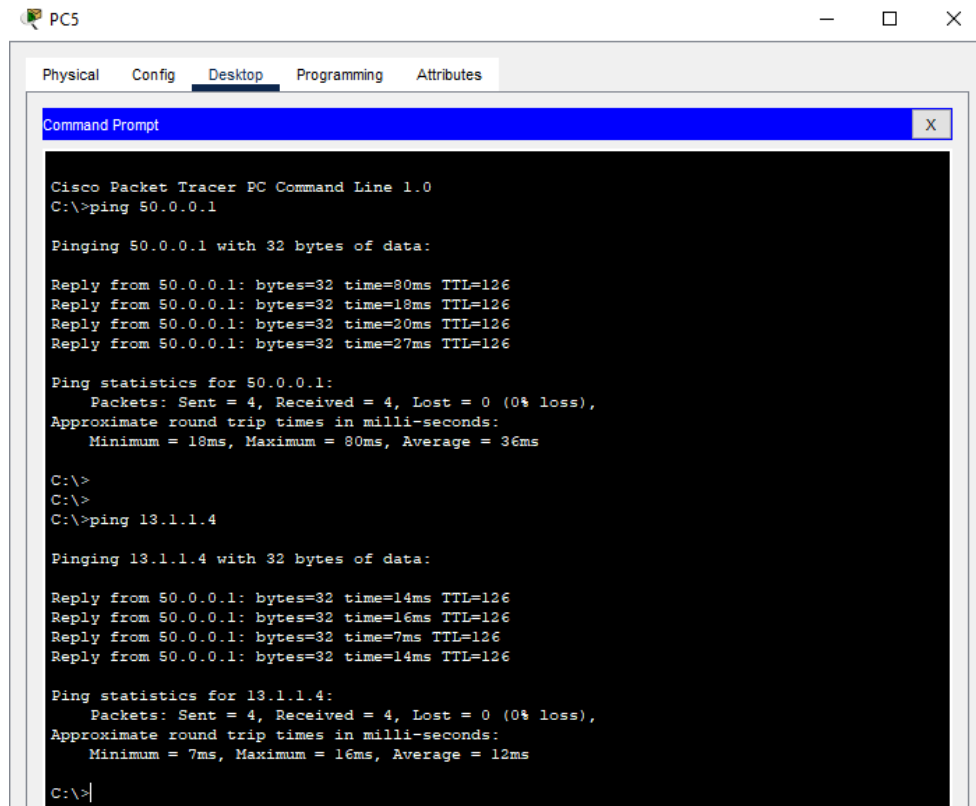
Add

Network Address

50.0.0.0/8 via 11.1.0.0

- *Dokumentasikan hasil percobaan ping*

*Ping PC mahasiswa PSI → Web server (ip local 13.1.1.4) dan (ip global 50.0.0.1)*



```

PC5
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
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=80ms TTL=126
Reply from 50.0.0.1: bytes=32 time=18ms TTL=126
Reply from 50.0.0.1: bytes=32 time=20ms TTL=126
Reply from 50.0.0.1: bytes=32 time=27ms 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 = 18ms, Maximum = 80ms, Average = 36ms

C:\>
C:\>
C:\>ping 13.1.1.4

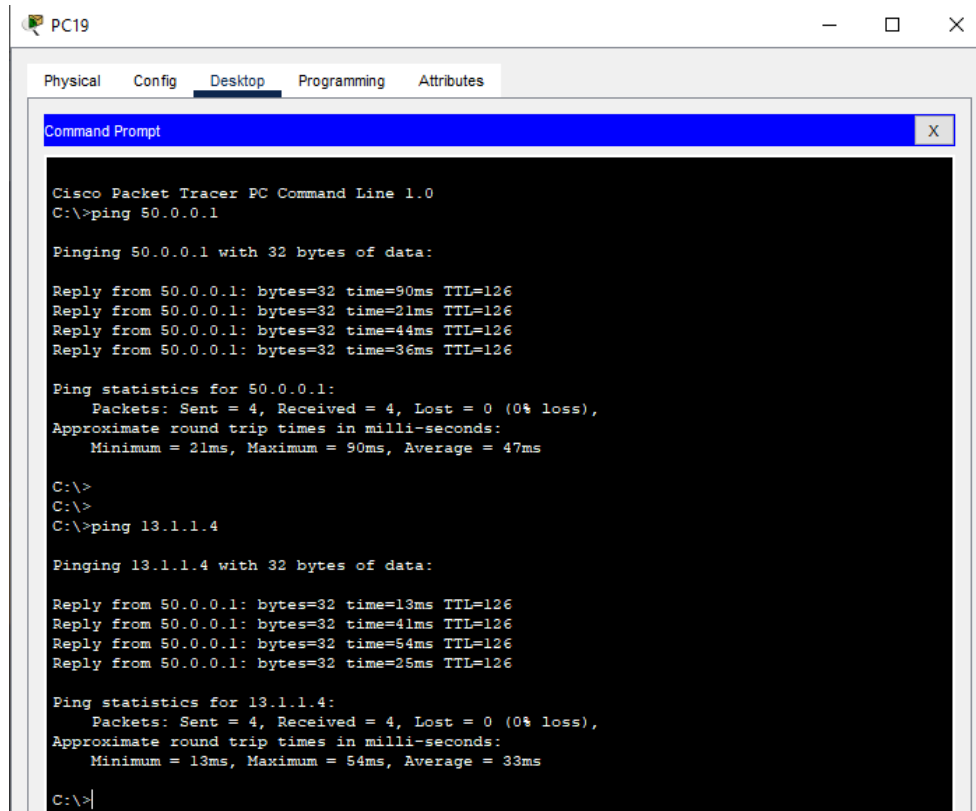
Pinging 13.1.1.4 with 32 bytes of data:

Reply from 50.0.0.1: bytes=32 time=14ms TTL=126
Reply from 50.0.0.1: bytes=32 time=16ms TTL=126
Reply from 50.0.0.1: bytes=32 time=7ms TTL=126
Reply from 50.0.0.1: bytes=32 time=14ms 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 = 7ms, Maximum = 16ms, Average = 12ms

C:\>|
  
```

*Ping PC mahasiswa FKI → Web server (ip local 13.1.1.4) dan (ip global 50.0.0.1)*



```

PC19
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
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=90ms TTL=126
Reply from 50.0.0.1: bytes=32 time=21ms TTL=126
Reply from 50.0.0.1: bytes=32 time=44ms TTL=126
Reply from 50.0.0.1: bytes=32 time=36ms 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 = 21ms, Maximum = 90ms, Average = 47ms

C:\>
C:\>
C:\>ping 13.1.1.4

Pinging 13.1.1.4 with 32 bytes of data:

Reply from 50.0.0.1: bytes=32 time=13ms TTL=126
Reply from 50.0.0.1: bytes=32 time=41ms TTL=126
Reply from 50.0.0.1: bytes=32 time=54ms TTL=126
Reply from 50.0.0.1: bytes=32 time=25ms 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 = 54ms, Average = 33ms

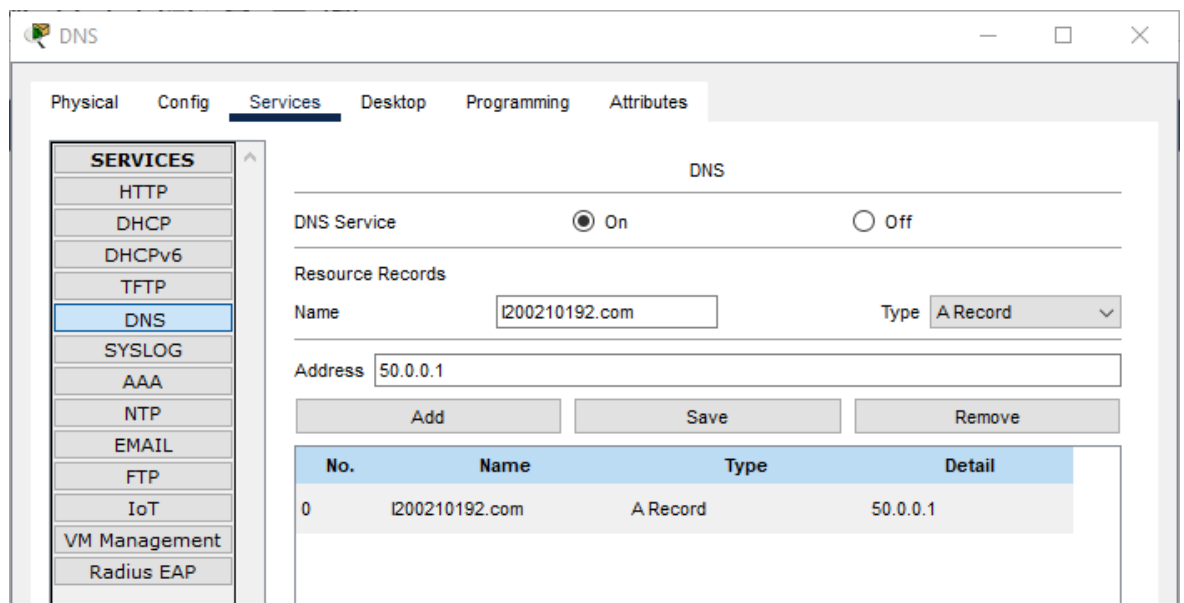
C:\>|
  
```

*\* Note tambahan*

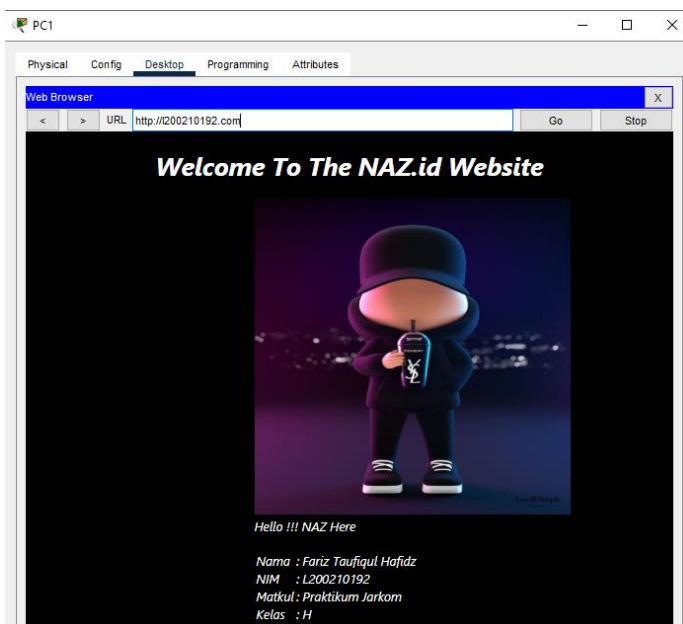
### ***Perubahan Address pada DNS server***

Sebelum dilakukannya proses IP NAT router server, Pada DNS server melakukan serve dns dengan memanggil ip pada web server yaitu 13.1.1.4 dengan domain akses diubah ke l200210192.com.

Namun, setelah dilakukan IP NAT pada web server yang awalnya IP 13.1.1.4 (local) lalu ditranslasi menjadi IP global yaitu 50.0.0.1 (global) mengakibatkan akses domain l200210192.com bermasalah karena ketika kita mengakses ip 13.1.1.4 otomatis ditranslasi ke 50.0.0.1. Untuk mengatasi hal itu, dilakukan perubahan address pada service dns 13.1.1.4 menjadi 50.0.0.1. seperti pada gambar dibawah ini :



### ***Akses domain name dari PC PSI***



*Akses domain name dari PC FKI*

