

LAPORAN Pengerjaan Ujian Akhir Semester
JARINGAN KOMPUTER LANJUTAN



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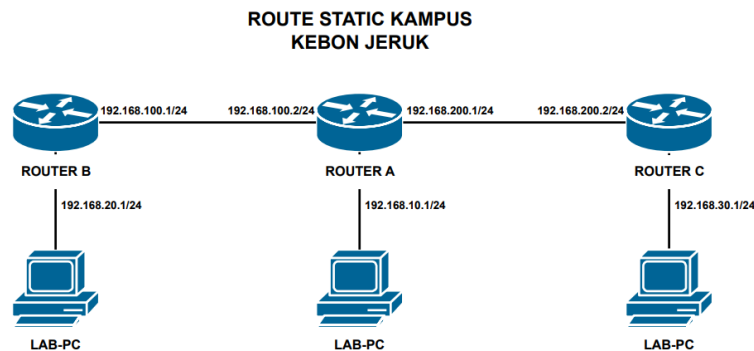
ANALISIS

Jaringan komputer di Universitas Esa Unggul dirancang untuk menghubungkan tiga kampus, yaitu Kampus Kebon Jeruk (KJ), Kampus Citra Raya (KCR), dan Kampus Harapan Indah (KHI). Pendekatan routing yang digunakan mencakup routing statik untuk koneksi sederhana dan/atau opsi lain berupa routing dinamik (RIP, OSPF, dan BGP) untuk memastikan efisiensi dan keandalan dalam komunikasi antar kampus. Topologi jaringan memanfaatkan konsep hybrid dengan kombinasi star topology untuk setiap kampus dan full mesh untuk koneksi antar router kampus. Pemanfaatan protokol seperti OSPF mendukung penyesuaian otomatis terhadap perubahan topologi, sedangkan BGP memastikan koneksi yang andal melalui jalur internet utama. Dengan konfigurasi ini, jaringan dapat memenuhi kebutuhan operasional serta mendukung pertumbuhan infrastruktur Universitas Esa Unggul.

1. Router Static

Router Static adalah metode konfigurasi router secara manual untuk mengarahkan lalu lintas jaringan ke tujuannya.

1.1. Kampus Kebon Jeruk (KJ)



MIKROTIK A

#jan/02/1970 00:14:42 by RouterOS 6.48.6

#software id = XF27-WJ41

#model = RB941-2nD

#serial number = A1C30BB18CA4

/interface wireless

```
set [ find default-name=wlan1 ] ssid=MikroTik
/interface wireless security-profiles
set [ find default=yes ] supplicant-identity=MikroTik
/ip pool
add name=dhcp_pool0 ranges=192.168.10.2-192.168.10.254
/ip dhcp-server
add address-pool=dhcp_pool0 disabled=no interface=ether3 name=dhcp1
/ip address
add address=192.168.100.2/24 interface=ether1 network=192.168.100.0
add address=192.168.200.1/24 interface=ether2 network=192.168.200.0
add address=192.168.10.1/24 interface=ether3 network=192.168.10.0
/ip dhcp-server network
add address=192.168.10.0/24 gateway=192.168.10.1
/ip route
add distance=1 dst-address=192.168.20.0/24 gateway=192.168.100.1
add distance=1 dst-address=192.168.30.0/24 gateway=192.168.200.2
```

MIKROTIK B

#jan/02/1970 00:12:40 by RouterOS 6.48.6

#software id = XF27-WJ41

#model = RB941-2nD

#serial number = A1C30BB18CA4

/interface wireless

set [find default-name=wlan1] ssid=MikroTik

/interface wireless security-profiles

set [find default=yes] supplicant-identity=MikroTik

/ip pool

add name=dhcp_pool0 ranges=192.168.20.2-192.168.20.254

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether2 name=dhcp1

```
/ip address
add address=192.168.100.1/24 interface=ether1 network=192.168.100.0
add address=192.168.20.1/24 interface=ether2 network=192.168.20.0
/ip dhcp-server network
add address=192.168.20.0/24 gateway=192.168.20.1
/ip route
add distance=1 dst-address=192.168.10.0/24 gateway=192.168.100.2
add distance=1 dst-address=192.168.30.0/24 gateway=192.168.100.2
```

MIKROTIK C

#jan/02/1970 00:13:32 by RouterOS 6.48.6

#software id = XF27-WJ41

#model = RB941-2nD

#serial number = A1C30BB18CA4

/interface wireless

set [find default-name=wlan1] ssid=MikroTik

/interface wireless security-profiles

set [find default=yes] supplicant-identity=MikroTik

/ip pool

add name=dhcp_pool0 ranges=192.168.30.2-192.168.30.254

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether2 name=dhcp1

/ip address

add address=192.168.200.2/24 interface=ether1 network=192.168.200.0

add address=192.168.30.1/24 interface=ether2 network=192.168.30.0

/ip dhcp-server network

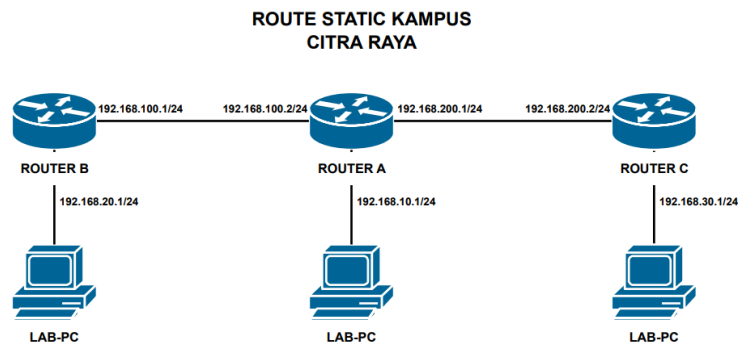
add address=192.168.30.0/24 gateway=192.168.30.1

/ip route

add distance=1 dst-address=192.168.10.0/24 gateway=192.168.200.1

add distance=1 dst-address=192.168.20.0/24 gateway=192.168.200.1

1.2. Kampus Citra Raya (KCR)



MIKROTIK A

#jan/02/1970 00:14:42 by RouterOS 6.48.6

#software id = XF27-WJ41

#model = RB941-2nD

#serial number = A1C30BB18CA4

/interface wireless

set [find default-name=wlan1] ssid=MikroTik

/interface wireless security-profiles

set [find default=yes] supplicant-identity=MikroTik

/ip pool

add name=dhcp_pool0 ranges=192.168.10.2-192.168.10.254

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether3 name=dhcp1

/ip address

add address=192.168.100.2/24 interface=ether1 network=192.168.100.0

add address=192.168.200.1/24 interface=ether2 network=192.168.200.0

add address=192.168.10.1/24 interface=ether3 network=192.168.10.0

/ip dhcp-server network

add address=192.168.10.0/24 gateway=192.168.10.1

/ip route

add distance=1 dst-address=192.168.20.0/24 gateway=192.168.100.1

```
add distance=1 dst-address=192.168.30.0/24 gateway=192.168.200.2
```

MIKROTIK B

```
#jan/02/1970 00:12:40 by RouterOS 6.48.6
```

```
#software id = XF27-WJ41
```

```
#model = RB941-2nD
```

```
#serial number = A1C30BB18CA4
```

```
/interface wireless
```

```
set [ find default-name=wlan1 ] ssid=MikroTik
```

```
/interface wireless security-profiles
```

```
set [ find default=yes ] supplicant-identity=MikroTik
```

```
/ip pool
```

```
add name=dhcp_pool0 ranges=192.168.20.2-192.168.20.254
```

```
/ip dhcp-server
```

```
add address-pool=dhcp_pool0 disabled=no interface=ether2 name=dhcp1
```

```
/ip address
```

```
add address=192.168.100.1/24 interface=ether1 network=192.168.100.0
```

```
add address=192.168.20.1/24 interface=ether2 network=192.168.20.0
```

```
/ip dhcp-server network
```

```
add address=192.168.20.0/24 gateway=192.168.20.1
```

```
/ip route
```

```
add distance=1 dst-address=192.168.10.0/24 gateway=192.168.100.2
```

```
add distance=1 dst-address=192.168.30.0/24 gateway=192.168.100.2
```

MIKROTIK C

```
#jan/02/1970 00:13:32 by RouterOS 6.48.6
```

```
#software id = XF27-WJ41
```

```
#model = RB941-2nD
```

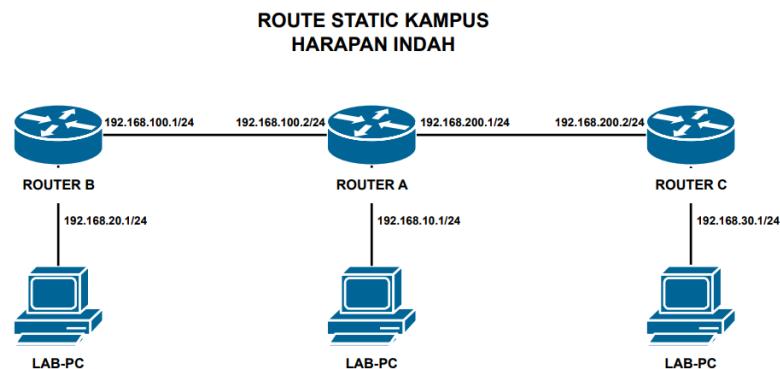
```
#serial number = A1C30BB18CA4
```

```

/interface wireless
set [ find default-name=wlan1 ] ssid=MikroTik
/interface wireless security-profiles
set [ find default=yes ] supplicant-identity=MikroTik
/ip pool
add name=dhcp_pool0 ranges=192.168.30.2-192.168.30.254
/ip dhcp-server
add address-pool=dhcp_pool0 disabled=no interface=ether2 name=dhcp1
/ip address
add address=192.168.200.2/24 interface=ether1 network=192.168.200.0
add address=192.168.30.1/24 interface=ether2 network=192.168.30.0
/ip dhcp-server network
add address=192.168.30.0/24 gateway=192.168.30.1
/ip route
add distance=1 dst-address=192.168.10.0/24 gateway=192.168.200.1
add distance=1 dst-address=192.168.20.0/24 gateway=192.168.200.1

```

1.3. Kampus Harapan Indah (KHI)



MIKROTIK A

#jan/02/1970 00:14:42 by RouterOS 6.48.6

#software id = XF27-WJ41

#model = RB941-2nD

#serial number = A1C30BB18CA4

```
/interface wireless
set [ find default-name=wlan1 ] ssid=MikroTik
/interface wireless security-profiles
set [ find default=yes ] supplicant-identity=MikroTik
/ip pool
add name=dhcp_pool0 ranges=192.168.10.2-192.168.10.254
/ip dhcp-server
add address-pool=dhcp_pool0 disabled=no interface=ether3 name=dhcp1
/ip address
add address=192.168.100.2/24 interface=ether1 network=192.168.100.0
add address=192.168.200.1/24 interface=ether2 network=192.168.200.0
add address=192.168.10.1/24 interface=ether3 network=192.168.10.0
/ip dhcp-server network
add address=192.168.10.0/24 gateway=192.168.10.1
/ip route
add distance=1 dst-address=192.168.20.0/24 gateway=192.168.100.1
add distance=1 dst-address=192.168.30.0/24 gateway=192.168.200.2
```

MIKROTIK B

#jan/02/1970 00:12:40 by RouterOS 6.48.6

#software id = XF27-WJ41

#model = RB941-2nD

#serial number = A1C30BB18CA4

```
/interface wireless
set [ find default-name=wlan1 ] ssid=MikroTik
/interface wireless security-profiles
set [ find default=yes ] supplicant-identity=MikroTik
/ip pool
add name=dhcp_pool0 ranges=192.168.20.2-192.168.20.254
/ip dhcp-server
```



```
add address-pool=dhcp_pool0 disabled=no interface=ether2 name=dhcp1
/ip address
add address=192.168.100.1/24 interface=ether1 network=192.168.100.0
add address=192.168.20.1/24 interface=ether2 network=192.168.20.0
/ip dhcp-server network
add address=192.168.20.0/24 gateway=192.168.20.1
/ip route
add distance=1 dst-address=192.168.10.0/24 gateway=192.168.100.2
add distance=1 dst-address=192.168.30.0/24 gateway=192.168.100.2
```

MIKROTIK C

#jan/02/1970 00:13:32 by RouterOS 6.48.6

#software id = XF27-WJ41

#model = RB941-2nD

#serial number = A1C30BB18CA4

/interface wireless

set [find default-name=wlan1] ssid=MikroTik

/interface wireless security-profiles

set [find default=yes] supplicant-identity=MikroTik

/ip pool

add name=dhcp_pool0 ranges=192.168.30.2-192.168.30.254

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether2 name=dhcp1

/ip address

add address=192.168.200.2/24 interface=ether1 network=192.168.200.0

add address=192.168.30.1/24 interface=ether2 network=192.168.30.0

/ip dhcp-server network

add address=192.168.30.0/24 gateway=192.168.30.1

/ip route

add distance=1 dst-address=192.168.10.0/24 gateway=192.168.200.1

```
add distance=1 dst-address=192.168.20.0/24 gateway=192.168.200.1
```

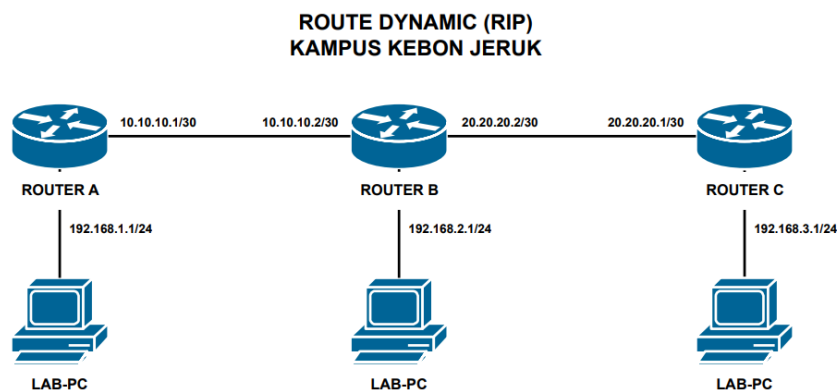
2. Router Dynamic

Router Dynamic adalah metode konfigurasi routing secara otomatis sesuai dengan pengaturan yang dibuat.

2.1. RIP (*Routing Information Protocol*)

RIP (*Routing Information Protocol*) adalah protokol routing dinamis yang menggunakan vektor jarak *hop count* sebagai metrik utamanya.

2.1.1. Kampus Kebon Jeruk (KJ)



MIKROTIK A

```
#jan/02/1970 01:03:37 by RouterOS 6.49.10
```

```
#software id = N3QS-6CS2
```

```
#model = RB941-2nD
```

```
#serial number = HF8099MJW59
```

```
/interface wireless
```

```
set [ find default-name=wlan1 ] ssid=MikroTik
```

```
/interface wireless security-profiles
```

```
set [ find default=yes ] supplicant-identity=MikroTik
```

```
/ip pool
```

```
add name=dhcp_pool0 ranges=192.168.1.2-192.168.1.254
```

```
/ip dhcp-server
```

```
add address-pool=dhcp_pool0 disabled=no interface=ether1
name=dhcp1
/ip address
add address=192.168.1.1/24 interface=ether1 network=192.168.1.0
add address=10.10.10.1/30 interface=ether2 network=10.10.10.0
/ip dhcp-server network
add address=192.168.1.0/24 gateway=192.168.1.1
/routing rip interface
add interface=ether2
add interface=ether1
/routing rip network
add network=10.10.10.0/30
add network=192.168.1.0/24
```

MIKROTIK B

```
#jan/02/1970 00:40:52 by RouterOS 6.49.11
```

```
#software id = SUX5-3H8X
```

```
#model = RB941-2nD
```

```
#serial number = HG109WYFYW6
```

```
/interface wireless
```

```
set [ find default-name=wlan1 ] ssid=MikroTik
```

```
/interface wireless security-profiles
```

```
set [ find default=yes ] supplicant-identity=MikroTik
```

```
/ip pool
```

```
add name=dhcp_pool0 ranges=192.168.2.2-192.168.2.254
```

```
/ip dhcp-server
```

```
add address-pool=dhcp_pool0 disabled=no interface=ether1
```

```
name=dhcp1
```

```
/ip address
```

```
add address=192.168.2.1/24 interface=ether1 network=192.168.2.0
```

```
add address=10.10.10.2/30 interface=ether2 network=10.10.10.0
add address=20.20.20.2/30 interface=ether3 network=20.20.20.0
/ip dhcp-server network
add address=192.168.2.0/24 gateway=192.168.2.1
/routing rip interface
add interface=ether1
add interface=ether2
add interface=ether3
/routing rip network
add network=10.10.10.0/30
add network=192.168.2.0/24
add network=20.20.20.0/30
```

MIKROTIK C

#jan/08/2025 00:55:07 by RouterOS 6.49.10

#software id = 5E9J-IUIA

#model = RB941-2nD

#serial number = HFA09BYXTTN

/interface wireless

set [find default-name=wlan1] ssid=MikroTik

/interface wireless security-profiles

set [find default=yes] supplicant-identity=MikroTik

/ip pool

add name=dhcp_pool0 ranges=192.168.3.2-192.168.3.254

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether1

name=dhcp1

/ip address

add address=20.20.20.1/30 interface=ether3 network=20.20.20.0

add address=192.168.3.1/24 interface=ether1 network=192.168.3.0

```

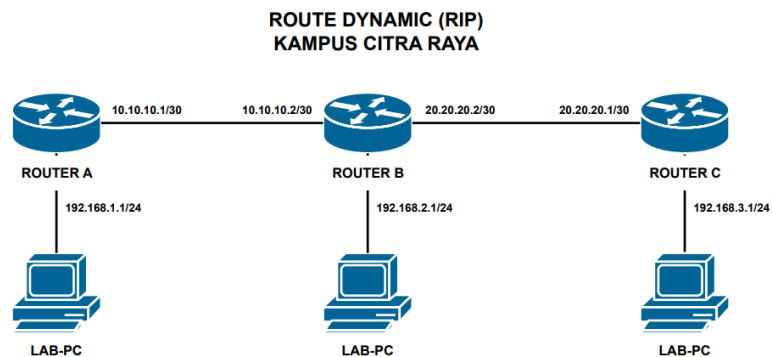
/ip dhcp-server network
add address=192.168.3.0/24 gateway=192.168.3.1

/routing rip interface
add interface=ether1
add interface=ether3

/routing rip network
add network=20.20.20.0/30
add network=192.168.3.0/24

```

2.1.2. Kampus Citra Raya (KCR)



MIKROTIK A

```
#jan/02/1970 10:03:17 by RouterOS 6.49.10
```

```
#software id = N3QS-6CS2
```

```
#model = RB941-2nD
```

```
#serial number = HF8099MJW59
```

```
/interface wireless
```

```
set [ find default-name=wlan1 ] ssid=MikroTik
```

```
/interface wireless security-profiles
```

```
set [ find default=yes ] supplicant-identity=MikroTik
```

```
/ip pool
```

```
add name=dhcp_pool0 ranges=192.168.1.2-192.168.1.254
```

```
/ip dhcp-server
```

```
add address-pool=dhcp_pool0 disabled=no interface=ether1
```

```
name=dhcp1
```

```
/ip address
add address=192.168.1.1/24 interface=ether1 network=192.168.1.0
add address=10.10.10.1/30 interface=ether2 network=10.10.10.0
/ip dhcp-server network
add address=192.168.1.0/24 gateway=192.168.1.1
/routing rip interface
add interface=ether2
add interface=ether1
/routing rip network
add network=10.10.10.0/30
add network=192.168.1.0/24
```

MIKROTIK B

```
#jan/02/1970 10:01:22 by RouterOS 6.49.11
```

```
#software id = SUX5-3H8X
```

```
#model = RB941-2nD
```

```
#serial number = HG109WYFYW6
```

```
/interface wireless
```

```
set [ find default-name=wlan1 ] ssid=MikroTik
```

```
/interface wireless security-profiles
```

```
set [ find default=yes ] supplicant-identity=MikroTik
```

```
/ip pool
```

```
add name=dhcp_pool0 ranges=192.168.2.2-192.168.2.254
```

```
/ip dhcp-server
```

```
add address-pool=dhcp_pool0 disabled=no interface=ether1
name=dhcp1
```

```
/ip address
```

```
add address=192.168.2.1/24 interface=ether1 network=192.168.2.0
```

```
add address=10.10.10.2/30 interface=ether2 network=10.10.10.0
```

```
add address=20.20.20.2/30 interface=ether3 network=20.20.20.0
```

```
/ip dhcp-server network
add address=192.168.2.0/24 gateway=192.168.2.1

/routing rip interface
add interface=ether1
add interface=ether2
add interface=ether3

/routing rip network
add network=10.10.10.0/30
add network=192.168.2.0/24
add network=20.20.20.0/30
```

MIKROTIK C

#jan/08/2025 10:53:07 by RouterOS 6.49.10

#software id = 5E9J-IUIA

#model = RB941-2nD

#serial number = HFA09BYXTTN

/interface wireless

set [find default-name=wlan1] ssid=MikroTik

/interface wireless security-profiles

set [find default=yes] supplicant-identity=MikroTik

/ip pool

add name=dhcp_pool0 ranges=192.168.3.2-192.168.3.254

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether1

name=dhcp1

/ip address

add address=20.20.20.1/30 interface=ether3 network=20.20.20.0

add address=192.168.3.1/24 interface=ether1 network=192.168.3.0

/ip dhcp-server network

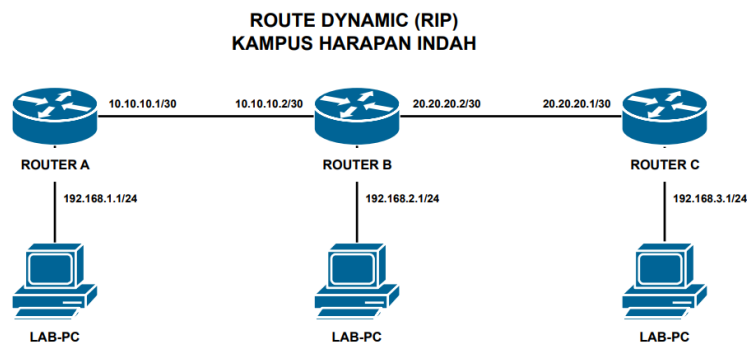
add address=192.168.3.0/24 gateway=192.168.3.1

```

/routing rip interface
add interface=ether1
add interface=ether3
/routing rip network
add network=20.20.20.0/30
add network=192.168.3.0/24

```

2.1.3. Kampus Harapan Indah (KHI)



MIKROTIK A

#jan/02/1970 12:11:12 by RouterOS 6.49.10

#software id = N3QS-6CS2

#model = RB941-2nD

#serial number = HF8099MJW59

/interface wireless

set [find default-name=wlan1] ssid=MikroTik

/interface wireless security-profiles

set [find default=yes] supplicant-identity=MikroTik

/ip pool

add name=dhcp_pool0 ranges=192.168.1.2-192.168.1.254

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether1

name=dhcp1

/ip address

add address=192.168.1.1/24 interface=ether1 network=192.168.1.0


```
add address=10.10.10.1/30 interface=ether2 network=10.10.10.0
/ip dhcp-server network
add address=192.168.1.0/24 gateway=192.168.1.1
/routing rip interface
add interface=ether2
add interface=ether1
/routing rip network
add network=10.10.10.0/30
add network=192.168.1.0/24
```

MIKROTIK B

#jan/02/1970 12:01:42 by RouterOS 6.49.11

#software id = SUX5-3H8X

#model = RB941-2nD

#serial number = HG109WYFYW6

/interface wireless

set [find default-name=wlan1] ssid=MikroTik

/interface wireless security-profiles

set [find default=yes] supplicant-identity=MikroTik

/ip pool

add name=dhcp_pool0 ranges=192.168.2.2-192.168.2.254

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether1

name=dhcp1

/ip address

add address=192.168.2.1/24 interface=ether1 network=192.168.2.0

add address=10.10.10.2/30 interface=ether2 network=10.10.10.0

add address=20.20.20.2/30 interface=ether3 network=20.20.20.0

/ip dhcp-server network

add address=192.168.2.0/24 gateway=192.168.2.1

```
/routing rip interface
add interface=ether1
add interface=ether2
add interface=ether3
/routing rip network
add network=10.10.10.0/30
add network=192.168.2.0/24
add network=20.20.20.0/30
```

MIKROTIK C

#jan/08/2025 12:03:11 by RouterOS 6.49.10

#software id = 5E9J-IUIA

#model = RB941-2nD

#serial number = HFA09BYXTTN

/interface wireless

set [find default-name=wlan1] ssid=MikroTik

/interface wireless security-profiles

set [find default=yes] supplicant-identity=MikroTik

/ip pool

add name=dhcp_pool0 ranges=192.168.3.2-192.168.3.254

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether1

name=dhcp1

/ip address

add address=20.20.20.1/30 interface=ether3 network=20.20.20.0

add address=192.168.3.1/24 interface=ether1 network=192.168.3.0

/ip dhcp-server network

add address=192.168.3.0/24 gateway=192.168.3.1

/routing rip interface

add interface=ether1

```

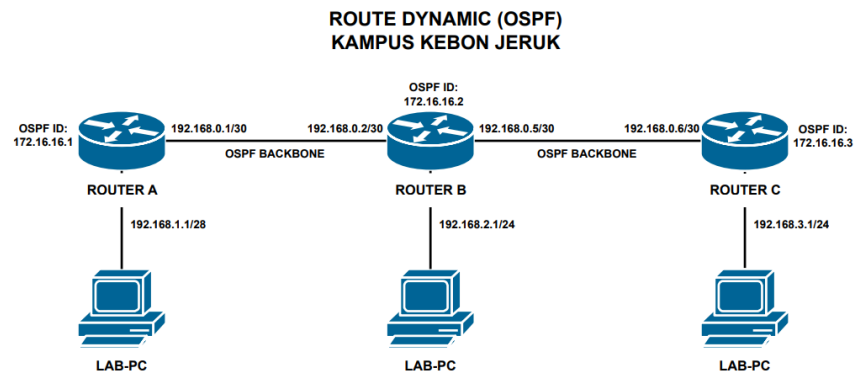
add interface=ether3
/routing rip network
add network=20.20.20.0/30
add network=192.168.3.0/24

```

2.2. OSPF (*Open Shortest Path First*)

OSPF (*Open Shortest Path First*) adalah sebuah protokol routing otomatis yang mampu menjaga, mengatur dan mendistribusikan informasi routing antar network mengikuti setiap perubahan jaringan secara dinamis.

2.2.1. Kampus Kebon Jeruk (KJ)



MIKROTIK A

#jan/02/1970 00:16:31 by RouterOS 6.48.7

#software id = 44UU-TR2K

#model = RouterBOARD 941-2nD

#serial number = 8B0E08B7BB28

/interface bridge

add comment="OSPF loopback" name=loopback

/interface wireless

set [find default-name=wlan1] ssid=KJ

/interface wireless security-profiles

set [find default=yes] supplicant-identity=KJ

/ip pool

add name=dhcp_pool0 ranges=192.168.1.2-192.168.1.14

```
/ip dhcp-server
add address-pool=dhcp_pool0 disabled=no interface=ether2
name=dhcp1
/routing ospf instance
set [ find default=yes ] router-id=172.16.16.1
/ip address
add address=192.168.0.1/30 comment=koneksi_ke_router2
interface=ether1 network=192.168.0.0
add address=192.168.1.1/28 comment=LAN interface=ether2
network=192.168.1.0
add address=172.16.16.1 interface=loopback network=172.16.16.1
/ip dhcp-server network
add address=192.168.1.0/28 gateway=192.168.1.1
/routing ospf network
add area=backbone comment=Loopback network=172.16.16.1/32
add area=backbone comment=koneksi_ke_router2
network=192.168.0.0/30
add area=backbone comment=LAN network=192.168.1.0/28
```

MIKROTIK B

#jan/02/1970 00:14:48 by RouterOS 6.49.8

#software id = RWA7-BHWK

#model = RB941-2nD

#serial number = HF609BYEWH7

/interface bridge

add comment="OSPF loopback" name=loopback

/interface wireless

set [find default-name=wlan1] ssid=KJ

/interface wireless security-profiles

set [find default=yes] supplicant-identity=KJ

/ip pool

```
add name=dhcp_pool0 ranges=192.168.1.18-192.168.1.30
/ip dhcp-server
add address-pool=dhcp_pool0 disabled=no interface=ether3
name=dhcp1
/routing ospf instance
set [ find default=yes ] router-id=172.16.16.2
/ip address
add address=192.168.0.2/30 comment=koneksi_ke_router1
interface=ether1 network=192.168.0.0
add address=192.168.0.5/30 comment=koneksi_ke_router3
interface=ether2 network=192.168.0.4
add address=192.168.1.17/28 comment=koneksi_ke_LAN
interface=ether3 network=192.168.1.16
add address=172.16.16.2 interface=loopback network=172.16.16.2
/ip dhcp-server network
add address=192.168.1.16/28 gateway=192.168.1.17
/routing ospf network
add area=backbone comment=Loopback network=172.16.16.2/32
add area=backbone comment=koneksi_ke_router1
network=192.168.0.0/30
add area=backbone comment=koneksi_ke_router3
network=192.168.0.4/30
add area=backbone comment=LAN network=192.168.1.16/28
```

MIKROTIK C

```
#jan/02/1970 00:06:17 by RouterOS 6.47.10
```

```
#software id = R3AC-AAWW
```

```
#model = RB941-2nD
```

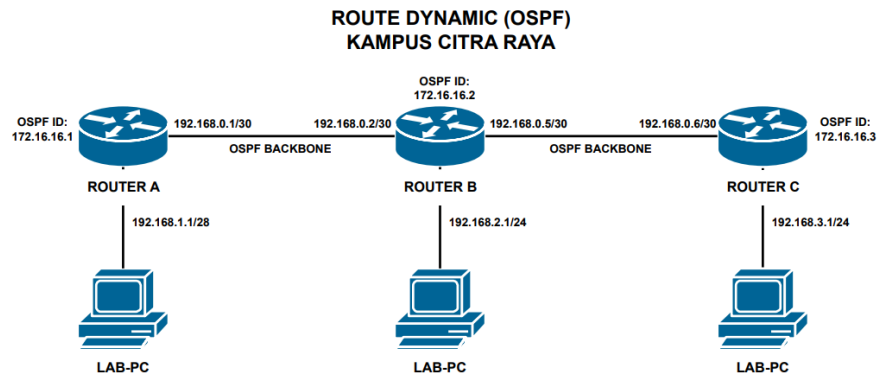
```
#serial number = D1130FD936AB
```

```
/interface wireless
```

```
set [ find default-name=wlan1 ] ssid=KJ
```

```
/interface bridge
add comment="OSPF loopback" name=loopback
/interface wireless security-profiles
set [ find default=yes ] supplicant-identity=KJ
/ip pool
add name=dhcp_pool0 ranges=192.168.1.34-192.168.1.46
/ip dhcp-server
add address-pool=dhcp_pool0 disabled=no interface=ether2
name=dhcp1
/routing ospf instance
set [ find default=yes ] router-id=172.16.16.3
/ip address
add address=192.168.0.6/30 comment=koneksi_ke_router2
interface=ether1 network=192.168.0.4
add address=192.168.1.33/28 comment=LAN interface=ether2
network=192.168.1.32
add address=172.16.16.3 interface=loopback network=172.16.16.3
/ip dhcp-server network
add address=192.168.1.32/28 gateway=192.168.1.33
/routing ospf network
add area=backbone comment=Loopback network=172.16.16.3/32
add area=backbone comment=koneksi_ke_router2
network=192.168.0.4/30
add area=backbone comment=LAN network=192.168.1.32/28
```

2.2.2. Kampus Citra Raya (KCR)



MIKROTIK A

#jan/02/1970 00:16:31 by RouterOS 6.48.7

#software id = 44UU-TR2K

#model = RouterBOARD 941-2nD

#serial number = 8B0E08B7BB28

/interface bridge

add comment="OSPF loopback" name=loopback

/interface wireless

set [find default-name=wlan1] ssid=KJ

/interface wireless security-profiles

set [find default=yes] supplicant-identity=KJ

/ip pool

add name=dhcp_pool0 ranges=192.168.1.2-192.168.1.14

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether2

name=dhcp1

/routing ospf instance

set [find default=yes] router-id=172.16.16.1

/ip address

add address=192.168.0.1/30 comment=koneksi_ke_router2

interface=ether1 network=192.168.0.0

```
add address=192.168.1.1/28 comment=LAN interface=ether2
network=192.168.1.0
add address=172.16.16.1 interface=loopback network=172.16.16.1
/ip dhcp-server network
add address=192.168.1.0/28 gateway=192.168.1.1
/routing ospf network
add area=backbone comment=Loopback network=172.16.16.1/32
add area=backbone comment=koneksi_ke_router2
network=192.168.0.0/30
add area=backbone comment=LAN network=192.168.1.0/28
```

MIKROTIK B

```
#jan/02/1970 00:14:48 by RouterOS 6.49.8
```

```
#software id = RWA7-BHWK
```

```
#model = RB941-2nD
```

```
#serial number = HF609BYEWH7
```

```
/interface bridge
```

```
add comment="OSPF loopback" name=loopback
```

```
/interface wireless
```

```
set [ find default-name=wlan1 ] ssid=KJ
```

```
/interface wireless security-profiles
```

```
set [ find default=yes ] supplicant-identity=KJ
```

```
/ip pool
```

```
add name=dhcp_pool0 ranges=192.168.1.18-192.168.1.30
```

```
/ip dhcp-server
```

```
add address-pool=dhcp_pool0 disabled=no interface=ether3
```

```
name=dhcp1
```

```
/routing ospf instance
```

```
set [ find default=yes ] router-id=172.16.16.2
```

```
/ip address
```



```
add address=192.168.0.2/30 comment=koneksi_ke_router1
interface=ether1 network=192.168.0.0
add address=192.168.0.5/30 comment=koneksi_ke_router3
interface=ether2 network=192.168.0.4
add address=192.168.1.17/28 comment=koneksi_ke_LAN
interface=ether3 network=192.168.1.16
add address=172.16.16.2 interface=loopback network=172.16.16.2
/ip dhcp-server network
add address=192.168.1.16/28 gateway=192.168.1.17
/routing ospf network
add area=backbone comment=Loopback network=172.16.16.2/32
add area=backbone comment=koneksi_ke_router1
network=192.168.0.0/30
add area=backbone comment=koneksi_ke_router3
network=192.168.0.4/30
add area=backbone comment=LAN network=192.168.1.16/28
<hr>
```

MIKROTIK C

#jan/02/1970 00:06:17 by RouterOS 6.47.10

#software id = R3AC-AAWW

#model = RB941-2nD

#serial number = D1130FD936AB

/interface wireless

set [find default-name=wlan1] ssid=KJ

/interface bridge

add comment="OSPF loopback" name=loopback

/interface wireless security-profiles

set [find default=yes] supplicant-identity=KJ

/ip pool

add name=dhcp_pool0 ranges=192.168.1.34-192.168.1.46

```

/ip dhcp-server
add address-pool=dhcp_pool0 disabled=no interface=ether2
name=dhcp1

/routing ospf instance
set [ find default=yes ] router-id=172.16.16.3

/ip address
add address=192.168.0.6/30 comment=koneksi_ke_router2
interface=ether1 network=192.168.0.4

add address=192.168.1.33/28 comment=LAN interface=ether2
network=192.168.1.32

add address=172.16.16.3 interface=loopback network=172.16.16.3

/ip dhcp-server network
add address=192.168.1.32/28 gateway=192.168.1.33

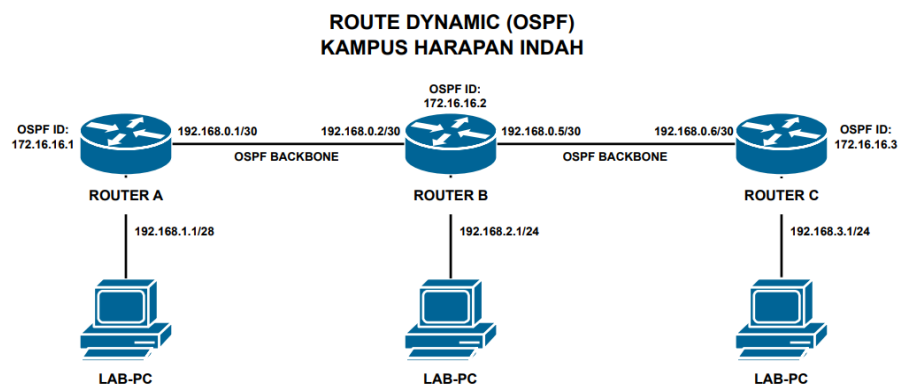
/routing ospf network
add area=backbone comment=Loopback network=172.16.16.3/32

add area=backbone comment=koneksi_ke_router2
network=192.168.0.4/30

add area=backbone comment=LAN network=192.168.1.32/28

```

2.2.3. Kampus Harapan Indah (KHI)



MIKROTIK A

#jan/02/1970 00:16:31 by RouterOS 6.48.7

#software id = 44UU-TR2K

```
#model = RouterBOARD 941-2nD
#serial number = 8B0E08B7BB28
/interface bridge
add comment="OSPF loopback" name=loopback
/interface wireless
set [ find default-name=wlan1 ] ssid=KJ
/interface wireless security-profiles
set [ find default=yes ] supplicant-identity=KJ
/ip pool
add name=dhcp_pool0 ranges=192.168.1.2-192.168.1.14
/ip dhcp-server
add address-pool=dhcp_pool0 disabled=no interface=ether2
name=dhcp1
/routing ospf instance
set [ find default=yes ] router-id=172.16.16.1
/ip address
add address=192.168.0.1/30 comment=koneksi_ke_router2
interface=ether1 network=192.168.0.0
add address=192.168.1.1/28 comment=LAN interface=ether2
network=192.168.1.0
add address=172.16.16.1 interface=loopback network=172.16.16.1
/ip dhcp-server network
add address=192.168.1.0/28 gateway=192.168.1.1
/routing ospf network
add area=backbone comment=Loopback network=172.16.16.1/32
add area=backbone comment=koneksi_ke_router2
network=192.168.0.0/30
add area=backbone comment=LAN network=192.168.1.0/28
```

MIKROTIK B

```
#jan/02/1970 00:14:48 by RouterOS 6.49.8
#software id = RWA7-BHWK
```

```
#model = RB941-2nD
#serial number = HF609BYEWH7
/interface bridge
add comment="OSPF loopback" name=loopback
/interface wireless
set [ find default-name=wlan1 ] ssid=KJ
/interface wireless security-profiles
set [ find default=yes ] supplicant-identity=KJ
/ip pool
add name=dhcp_pool0 ranges=192.168.1.18-192.168.1.30
/ip dhcp-server
add address-pool=dhcp_pool0 disabled=no interface=ether3
name=dhcp1
/routing ospf instance
set [ find default=yes ] router-id=172.16.16.2
/ip address
add address=192.168.0.2/30 comment=koneksi_ke_router1
interface=ether1 network=192.168.0.0
add address=192.168.0.5/30 comment=koneksi_ke_router3
interface=ether2 network=192.168.0.4
add address=192.168.1.17/28 comment=koneksi_ke_LAN
interface=ether3 network=192.168.1.16
add address=172.16.16.2 interface=loopback network=172.16.16.2
/ip dhcp-server network
add address=192.168.1.16/28 gateway=192.168.1.17
/routing ospf network
add area=backbone comment=Loopback network=172.16.16.2/32
add area=backbone comment=koneksi_ke_router1
network=192.168.0.0/30
add area=backbone comment=koneksi_ke_router3
network=192.168.0.4/30
```

```
add area=backbone comment=LAN network=192.168.1.16/28
```

MIKROTIK C

```
#jan/02/1970 00:06:17 by RouterOS 6.47.10
```

```
#software id = R3AC-AAWW
```

```
#model = RB941-2nD
```

```
#serial number = D1130FD936AB
```

```
/interface wireless
```

```
set [ find default-name=wlan1 ] ssid=KJ
```

```
/interface bridge
```

```
add comment="OSPF loopback" name=loopback
```

```
/interface wireless security-profiles
```

```
set [ find default=yes ] supplicant-identity=KJ
```

```
/ip pool
```

```
add name=dhcp_pool0 ranges=192.168.1.34-192.168.1.46
```

```
/ip dhcp-server
```

```
add address-pool=dhcp_pool0 disabled=no interface=ether2
```

```
name=dhcp1
```

```
/routing ospf instance
```

```
set [ find default=yes ] router-id=172.16.16.3
```

```
/ip address
```

```
add address=192.168.0.6/30 comment=koneksi_ke_router2
```

```
interface=ether1 network=192.168.0.4
```

```
add address=192.168.1.33/28 comment=LAN interface=ether2
```

```
network=192.168.1.32
```

```
add address=172.16.16.3 interface=loopback network=172.16.16.3
```

```
/ip dhcp-server network
```

```
add address=192.168.1.32/28 gateway=192.168.1.33
```

```
/routing ospf network
```

```
add area=backbone comment=Loopback network=172.16.16.3/32
```

```

add area=backbone comment=koneksi_ke_router2
network=192.168.0.4/30

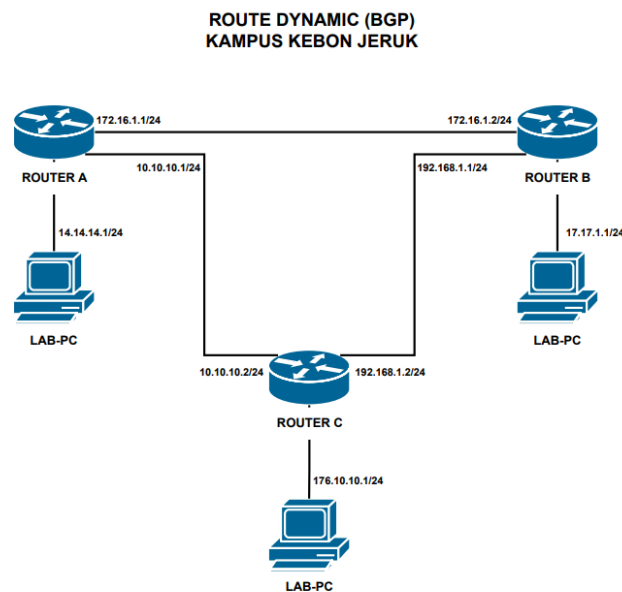
add area=backbone comment=LAN network=192.168.1.32/28

```

2.3. BGP (*Border Gateway Protocol*)

BGP (*Border Gateway Protocol*) adalah protokol routing inti dari internet yang digunakan untuk melakukan pertukaran informasi routing antar jaringan.

2.3.1. Kampus Kebon Jeruk (KJ)



MIKROTIK A

```
#jan/02/1970 00:54:19 by RouterOS 6.48.7
```

```
#software id = 44UU-TR2K
```

```
#model = RouterBOARD 941-2nD
```

```
#serial number = 8B0E08B7BB28
```

```
/interface wireless
```

```
set [ find default-name=wlan1 ] ssid=KJ
```

```
/interface wireless security-profiles
```

```
set [ find default=yes ] supplicant-identity=KJ
```

```
/ip pool
```

```
add name=dhcp_pool0 ranges=10.10.10.2-10.10.10.254
```

```
add name=dhcp_pool1 ranges=14.14.14.2-14.14.14.254
/ip dhcp-server
add address-pool=dhcp_pool0 disabled=no interface=ether2
name=dhcp1
add address-pool=dhcp_pool1 disabled=no interface=ether3
name=dhcp2
/routing bgp instance
set default as=65001 redistribute-connected=yes
/ip address
add address=172.16.1.1/24 interface=ether1 network=172.16.1.0
add address=10.10.10.1/24 interface=ether2 network=10.10.10.0
add address=14.14.14.1/24 interface=ether3 network=14.14.14.0
/ip dhcp-server network
add address=10.10.10.0/24 gateway=10.10.10.1
add address=14.14.14.0/24 gateway=14.14.14.1
/routing bgp network
add network=10.10.10.0/24
add network=14.14.14.0/24
add network=172.16.1.0/24
/routing bgp peer
add name=peer1-ke-mikrotik2 remote-address=172.16.1.2
remote-as=65002
add name=peer2-ke-mikrotik3 remote-address=10.10.10.2
remote-as=65003
/system identity
set name="Router 1"
```

MIKROTIK B

#jan/02/1970 01:04:56 by RouterOS 6.49.8

#software id = RWA7-BHWK

#model = RB941-2nD

```
#serial number = HF609BYEWH7

/interface wireless
set [ find default-name=wlan1 ] ssid=KJ

/interface wireless security-profiles
set [ find default=yes ] supplicant-identity=KJ

/ip pool
add name=dhcp_pool0 ranges=192.168.10.2-192.168.10.254
add name=dhcp_pool1 ranges=17.17.1.2-17.17.1.254

/ip dhcp-server
add address-pool=dhcp_pool1 disabled=no interface=ether3
name=dhcp1

/routing bgp instance
set default as=65002 redistribute-connected=yes

/ip address
add address=172.16.1.2/24 interface=ether1 network=172.16.1.0
add address=192.168.1.1/24 interface=ether2 network=192.168.1.0
add address=17.17.1.1/24 interface=ether3 network=17.17.1.0

/ip dhcp-server network
add address=17.17.1.0/24 gateway=17.17.1.1
add address=192.168.10.0/24 gateway=192.168.10.1

/routing bgp network
add network=17.17.1.0/24
add network=172.16.1.0/24
add network=192.168.1.0/24

/routing bgp peer
add name=Peer1-Ke-MiktrotikA remote-address=172.16.1.1
remote-as=65001
add name=Peer2-Ke-MiktrotikC remote-address=192.168.1.2
remote-as=65003

/system identity
set name="Router 2"
```


MIKROTIK C

#jan/02/1970 00:53:12 by RouterOS 6.47.10

#software id = R3AC-AAWW

#model = RB941-2nD

#serial number = D1130FD936AB

/interface wireless

set [find default-name=wlan1] ssid=KJ

/interface wireless security-profiles

set [find default=yes] supplicant-identity=KJ

/ip pool

add name=dhcp_pool0 ranges=192.168.1.1,192.168.1.3-192.168.1.254

add name=dhcp_pool1 ranges=176.10.10.2-176.10.10.254

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether2
name=dhcp1

add address-pool=dhcp_pool1 disabled=no interface=ether3
name=dhcp2

/routing bgp instance

set default as=65003 redistribute-connected=yes

/ip address

add address=10.10.10.2/24 interface=ether1 network=10.10.10.0

add address=192.168.1.2/24 interface=ether2 network=192.168.1.0

add address=176.10.10.1/24 interface=ether3 network=176.10.10.0

/ip dhcp-server network

add address=176.10.10.0/24 gateway=176.10.10.1

add address=192.168.1.0/24 gateway=192.168.1.2

/routing bgp network

add network=10.10.10.0/24

add network=176.10.10.0/24

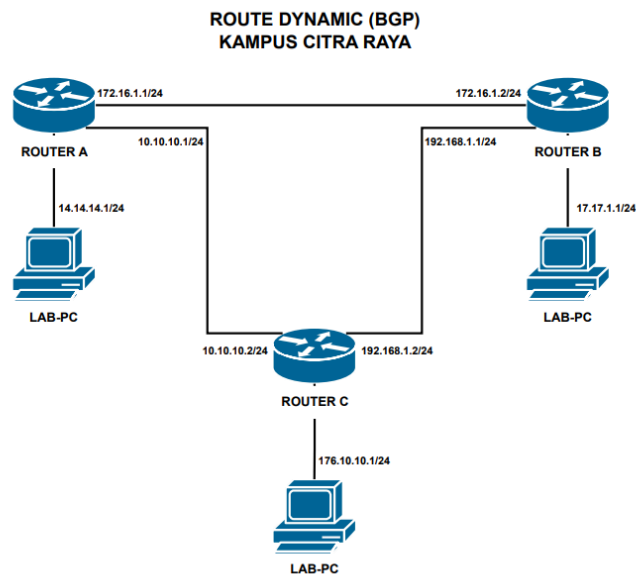
add network=192.168.1.0/24

```

/routing bgp peer
add name="peer1-Ke-Router 1" remote-address=10.10.10.1
remote-as=65001
add name="peer2-Ke-Router 2" remote-address=192.168.1.1
remote-as=65002
/system identity
set name="Router 3"

```

2.3.2. Kampus Citra Raya (KCR)



MIKROTIK A

#jan/02/1970 00:54:19 by RouterOS 6.48.7

#software id = 44UU-TR2K

#model = RouterBOARD 941-2nD

#serial number = 8B0E08B7BB28

/interface wireless

set [find default-name=wlan1] ssid=KJ

/interface wireless security-profiles

set [find default=yes] supplicant-identity=KJ

/ip pool

add name=dhcp_pool0 ranges=10.10.10.2-10.10.10.254

```
add name=dhcp_pool1 ranges=14.14.14.2-14.14.14.254
/ip dhcp-server
add address-pool=dhcp_pool0 disabled=no interface=ether2
name=dhcp1
add address-pool=dhcp_pool1 disabled=no interface=ether3
name=dhcp2
/routing bgp instance
set default as=65001 redistribute-connected=yes
/ip address
add address=172.16.1.1/24 interface=ether1 network=172.16.1.0
add address=10.10.10.1/24 interface=ether2 network=10.10.10.0
add address=14.14.14.1/24 interface=ether3 network=14.14.14.0
/ip dhcp-server network
add address=10.10.10.0/24 gateway=10.10.10.1
add address=14.14.14.0/24 gateway=14.14.14.1
/routing bgp network
add network=10.10.10.0/24
add network=14.14.14.0/24
add network=172.16.1.0/24
/routing bgp peer
add name=peer1-ke-mikrotik2 remote-address=172.16.1.2
remote-as=65002
add name=peer2-ke-mikrotik3 remote-address=10.10.10.2
remote-as=65003
/system identity
set name="Router 1"
```

MIKROTIK B

#jan/02/1970 01:04:56 by RouterOS 6.49.8

#software id = RWA7-BHWK

#model = RB941-2nD

```
#serial number = HF609BYEWH7

/interface wireless
set [ find default-name=wlan1 ] ssid=KJ

/interface wireless security-profiles
set [ find default=yes ] supplicant-identity=KJ

/ip pool
add name=dhcp_pool0 ranges=192.168.10.2-192.168.10.254
add name=dhcp_pool1 ranges=17.17.1.2-17.17.1.254

/ip dhcp-server
add address-pool=dhcp_pool1 disabled=no interface=ether3
name=dhcp1

/routing bgp instance
set default as=65002 redistribute-connected=yes

/ip address
add address=172.16.1.2/24 interface=ether1 network=172.16.1.0
add address=192.168.1.1/24 interface=ether2 network=192.168.1.0
add address=17.17.1.1/24 interface=ether3 network=17.17.1.0

/ip dhcp-server network
add address=17.17.1.0/24 gateway=17.17.1.1
add address=192.168.10.0/24 gateway=192.168.10.1

/routing bgp network
add network=17.17.1.0/24
add network=172.16.1.0/24
add network=192.168.1.0/24

/routing bgp peer
add name=Peer1-Ke-MiktrotikA remote-address=172.16.1.1
remote-as=65001
add name=Peer2-Ke-MiktrotikC remote-address=192.168.1.2
remote-as=65003

/system identity
set name="Router 2"
```

MIKROTIK C

#jan/02/1970 00:53:12 by RouterOS 6.47.10

#software id = R3AC-AAWW

#model = RB941-2nD

#serial number = D1130FD936AB

/interface wireless

set [find default-name=wlan1] ssid=KJ

/interface wireless security-profiles

set [find default=yes] supplicant-identity=KJ

/ip pool

add name=dhcp_pool0 ranges=192.168.1.1,192.168.1.3-192.168.1.254

add name=dhcp_pool1 ranges=176.10.10.2-176.10.10.254

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether2
name=dhcp1

add address-pool=dhcp_pool1 disabled=no interface=ether3
name=dhcp2

/routing bgp instance

set default as=65003 redistribute-connected=yes

/ip address

add address=10.10.10.2/24 interface=ether1 network=10.10.10.0

add address=192.168.1.2/24 interface=ether2 network=192.168.1.0

add address=176.10.10.1/24 interface=ether3 network=176.10.10.0

/ip dhcp-server network

add address=176.10.10.0/24 gateway=176.10.10.1

add address=192.168.1.0/24 gateway=192.168.1.2

/routing bgp network

add network=10.10.10.0/24

add network=176.10.10.0/24

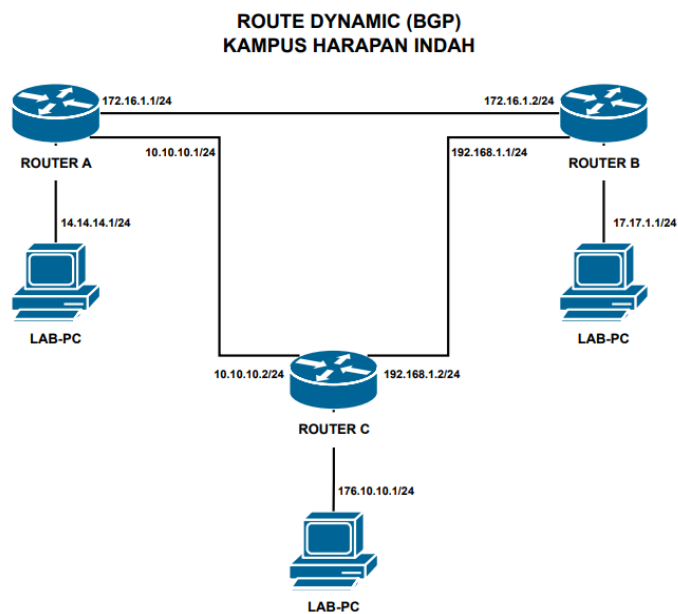
add network=192.168.1.0/24

```

/routing bgp peer
add name="peer1-Ke-Router 1" remote-address=10.10.10.1
remote-as=65001
add name="peer2-Ke-Router 2" remote-address=192.168.1.1
remote-as=65002
/system identity
set name="Router 3"

```

2.3.3. Kampus Harapan Indah (KHI)



MIKROTIK A

#jan/02/1970 00:54:19 by RouterOS 6.48.7

#software id = 44UU-TR2K

#model = RouterBOARD 941-2nD

#serial number = 8B0E08B7BB28

/interface wireless

set [find default-name=wlan1] ssid=KJ

/interface wireless security-profiles

set [find default=yes] supplicant-identity=KJ

/ip pool

add name=dhcp_pool0 ranges=10.10.10.2-10.10.10.254

```
add name=dhcp_pool1 ranges=14.14.14.2-14.14.14.254
/ip dhcp-server
add address-pool=dhcp_pool0 disabled=no interface=ether2
name=dhcp1
add address-pool=dhcp_pool1 disabled=no interface=ether3
name=dhcp2
/routing bgp instance
set default as=65001 redistribute-connected=yes
/ip address
add address=172.16.1.1/24 interface=ether1 network=172.16.1.0
add address=10.10.10.1/24 interface=ether2 network=10.10.10.0
add address=14.14.14.1/24 interface=ether3 network=14.14.14.0
/ip dhcp-server network
add address=10.10.10.0/24 gateway=10.10.10.1
add address=14.14.14.0/24 gateway=14.14.14.1
/routing bgp network
add network=10.10.10.0/24
add network=14.14.14.0/24
add network=172.16.1.0/24
/routing bgp peer
add name=peer1-ke-mikrotik2 remote-address=172.16.1.2
remote-as=65002
add name=peer2-ke-mikrotik3 remote-address=10.10.10.2
remote-as=65003
/system identity
set name="Router 1"
```

MIKROTIK B

#jan/02/1970 01:04:56 by RouterOS 6.49.8

#software id = RWA7-BHWK

#model = RB941-2nD

```
#serial number = HF609BYEWH7

/interface wireless
set [ find default-name=wlan1 ] ssid=KJ

/interface wireless security-profiles
set [ find default=yes ] supplicant-identity=KJ

/ip pool
add name=dhcp_pool0 ranges=192.168.10.2-192.168.10.254
add name=dhcp_pool1 ranges=17.17.1.2-17.17.1.254

/ip dhcp-server
add address-pool=dhcp_pool1 disabled=no interface=ether3
name=dhcp1

/routing bgp instance
set default as=65002 redistribute-connected=yes

/ip address
add address=172.16.1.2/24 interface=ether1 network=172.16.1.0
add address=192.168.1.1/24 interface=ether2 network=192.168.1.0
add address=17.17.1.1/24 interface=ether3 network=17.17.1.0

/ip dhcp-server network
add address=17.17.1.0/24 gateway=17.17.1.1
add address=192.168.10.0/24 gateway=192.168.10.1

/routing bgp network
add network=17.17.1.0/24
add network=172.16.1.0/24
add network=192.168.1.0/24

/routing bgp peer
add name=Peer1-Ke-MiktrotikA remote-address=172.16.1.1
remote-as=65001
add name=Peer2-Ke-MiktrotikC remote-address=192.168.1.2
remote-as=65003

/system identity
set name="Router 2"
```


MIKROTIK C

#jan/02/1970 00:53:12 by RouterOS 6.47.10

#software id = R3AC-AAWW

#model = RB941-2nD

#serial number = D1130FD936AB

/interface wireless

set [find default-name=wlan1] ssid=KJ

/interface wireless security-profiles

set [find default=yes] supplicant-identity=KJ

/ip pool

add name=dhcp_pool0 ranges=192.168.1.1,192.168.1.3-192.168.1.254

add name=dhcp_pool1 ranges=176.10.10.2-176.10.10.254

/ip dhcp-server

add address-pool=dhcp_pool0 disabled=no interface=ether2
name=dhcp1

add address-pool=dhcp_pool1 disabled=no interface=ether3
name=dhcp2

/routing bgp instance

set default as=65003 redistribute-connected=yes

/ip address

add address=10.10.10.2/24 interface=ether1 network=10.10.10.0

add address=192.168.1.2/24 interface=ether2 network=192.168.1.0

add address=176.10.10.1/24 interface=ether3 network=176.10.10.0

/ip dhcp-server network

add address=176.10.10.0/24 gateway=176.10.10.1

add address=192.168.1.0/24 gateway=192.168.1.2

/routing bgp network

add network=10.10.10.0/24

add network=176.10.10.0/24

add network=192.168.1.0/24

```

/routing bgp peer
add name="peer1-Ke-Router 1" remote-address=10.10.10.1
remote-as=65001
add name="peer2-Ke-Router 2" remote-address=192.168.1.1
remote-as=65002
/system identity
set name="Router 3"

```

3. Koneksi Router 3 Kampus

3.1. Router Kampus Kebon Jeruk (KJ)

```

# jan/02/1970 00:54:19 by RouterOS 6.48.7
# software id = 44UU-TR2K
#
# model = RouterBOARD 941-2nD
# serial number = A1C30BB18CA4
/system identity set name=Router-KJ
/interface vlan
add name=MGMT_VLAN4000 vlan-id=4000 interface=ether1
add name=LABPC_VLAN10 vlan-id=10 interface=ether1
add name=MHS_VLAN20 vlan-id=20 interface=ether1
/ip address
add address=10.1.0.1/24 interface=MGMT_VLAN4000
comment="Management VLAN"
add address=10.1.10.1/24 interface=LABPC_VLAN10 comment="Lab
PC VLAN"
add address=10.1.20.1/24 interface=MHS_VLAN20 comment="MHS
VLAN"
add address=10.200.10.1/24 interface=ether1 comment="LAN
Interface"
/ip route
add dst-address=0.0.0.0/0 gateway=10.254.1.1 comment="Default
Route to Internet"
/ip firewall nat

```

```

add chain=srcnat out-interface=ether1 action=masquerade
comment="NAT for Internet Access"

/ip ipsec peer
add address=10.254.254.2/32 local-address=10.254.254.1
comment="IPsec Peer for Branch Connection"

/ip ipsec proposal
set [ find default=yes ] enc-algorithms=aes-256-cbc pfs-group=none

/ip ipsec policy
add src-address=10.254.254.1/30 dst-address=10.254.254.2/30
sa-src-address=10.254.254.1 sa-dst-address=10.254.254.2
action=encrypt comment="IPsec Policy for Secure Communication"

/ip firewall filter
add chain=input connection-state=established,related action=accept
comment="Allow Established/Related Connections"
add chain=input protocol=icmp action=accept comment="Allow Ping"
add chain=input src-address=10.200.10.0/24 action=accept
comment="Allow Internal Management Access"
add chain=input action=drop comment="Drop All Other Traffic"

```

3.2. Router Kampus Citra Raya (KCR)

```

# jan/02/1970 00:57:19 by RouterOS 6.48.7
# software id = 44UU-TR2K
#
# model = RouterBOARD 941-2nD
# serial number = A1C30BB18CA4
/system identity set name=Router-CR

/interface vlan
add name=MGMT_VLAN4000 vlan-id=4000 interface=ether1
add name=LABPC_VLAN10 vlan-id=10 interface=ether1
add name=MHS_VLAN20 vlan-id=20 interface=ether1

/ip address

```

```
add address=10.2.0.1/24 interface=MGMT_VLAN4000
comment="Management VLAN"
add address=10.2.10.1/24 interface=LABPC_VLAN10 comment="Lab
PC VLAN"
add address=10.2.20.1/24 interface=MHS_VLAN20 comment="MHS
VLAN"
add address=10.254.1.9/30 interface=ether1 comment="WAN to
Router-KCR"

/ip route
add dst-address=0.0.0.0/0 gateway=10.254.1.10 comment="Default
Route to Internet"

/ip firewall nat
add chain=srcnat out-interface=ether1 action=masquerade
comment="NAT for Internet Access"

/ip ipsec peer
add address=10.254.254.2/32 local-address=10.254.254.1
comment="IPsec Peer for Branch Connection"

/ip ipsec proposal
set [ find default=yes ] enc-algorithms=aes-256-cbc pfs-group=none

/ip ipsec policy
add src-address=10.254.254.2/30 dst-address=10.254.254.1/30
sa-src-address=10.254.254.6 sa-dst-address=10.254.254.5
action=encrypt comment="IPsec Policy for Secure Communication"

/ip firewall filter
add chain=input connection-state=established,related action=accept
comment="Allow Established/Related Connections"
add chain=input protocol=icmp action=accept comment="Allow Ping"
add chain=input src-address=10.2.0.0/24 action=accept
comment="Allow Internal Management Access"
add chain=input action=drop comment="Drop All Other Traffic"
```

3.3. Router Kampus Harapan Indah (KHI)

```
# jan/02/1970 00:60:19 by RouterOS 6.48.7
# software id = 44UU-TR2K
#
# model = RouterBOARD 941-2nD
# serial number = A1C30BB18CA4
/system identity set name=Router-KHI
/interface vlan
add name=MGMT_VLAN4000 vlan-id=4000 interface=ether1
add name=LABPC_VLAN10 vlan-id=10 interface=ether1
add name=MHS_VLAN20 vlan-id=20 interface=ether1
/ip address
add address=10.3.0.1/24 interface=MGMT_VLAN4000
comment="Management VLAN"
add address=10.3.10.1/24 interface=LABPC_VLAN10 comment="Lab
PC VLAN"
add address=10.3.20.1/24 interface=MHS_VLAN20 comment="MHS
VLAN"
add address=10.254.1.5/30 interface=ether1 comment="WAN to
Router-CR"
/ip route
add dst-address=0.0.0.0/0 gateway=10.254.1.6 comment="Default
Route to Internet"
/ip firewall nat
add chain=srcnat out-interface=ether1 action=masquerade
comment="NAT for Internet Access"
/ip ipsec peer
add address=10.254.254.6/32 local-address=10.254.254.5
comment="IPsec Peer for Branch Connection"
/ip ipsec proposal
set [ find default=yes ] enc-algorithms=aes-256-cbc pfs-group=none
/ip ipsec policy
```

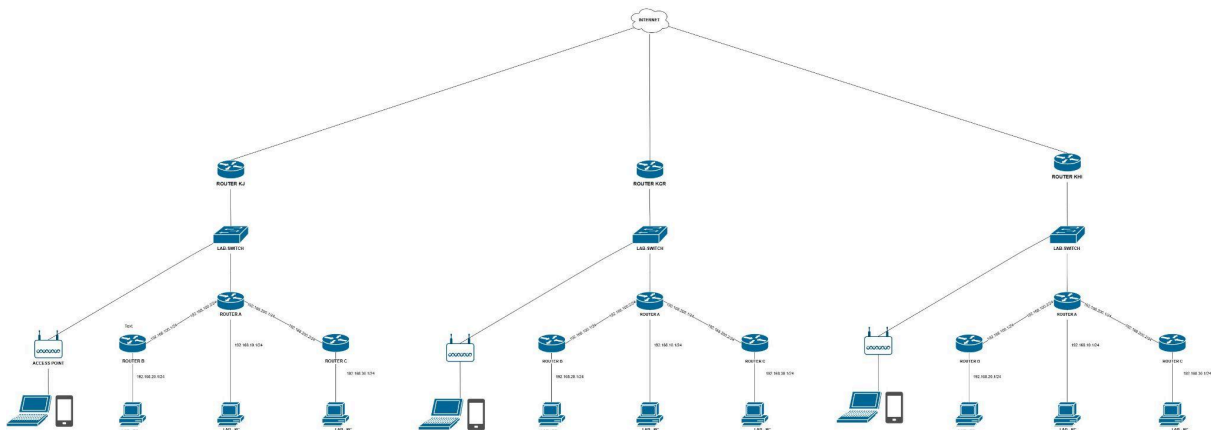
```

add src-address=10.254.254.5/30 dst-address=10.254.254.6/30
sa-src-address=10.254.254.5 sa-dst-address=10.254.254.6
action=encrypt comment="IPsec Policy for Secure Communication"
/ip firewall filter
add chain=input connection-state=established,related action=accept
comment="Allow Established/Related Connections"
add chain=input protocol=icmp action=accept comment="Allow Ping"
add chain=input src-address=10.3.0.0/24 action=accept
comment="Allow Internal Management Access"
add chain=input action=drop comment="Drop All Other Traffic"

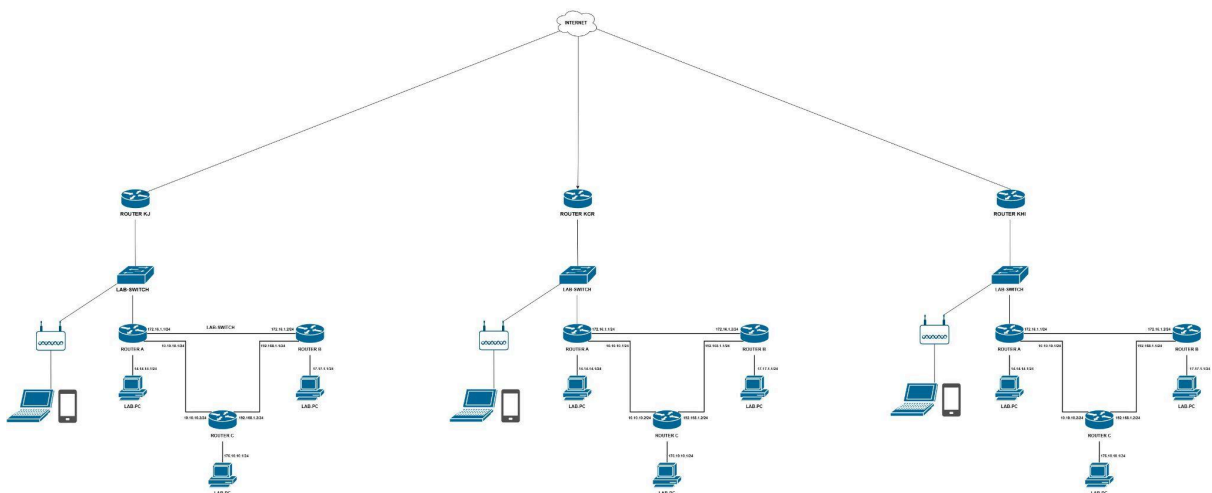
```

4. Topologi Router Static 3 Kampus

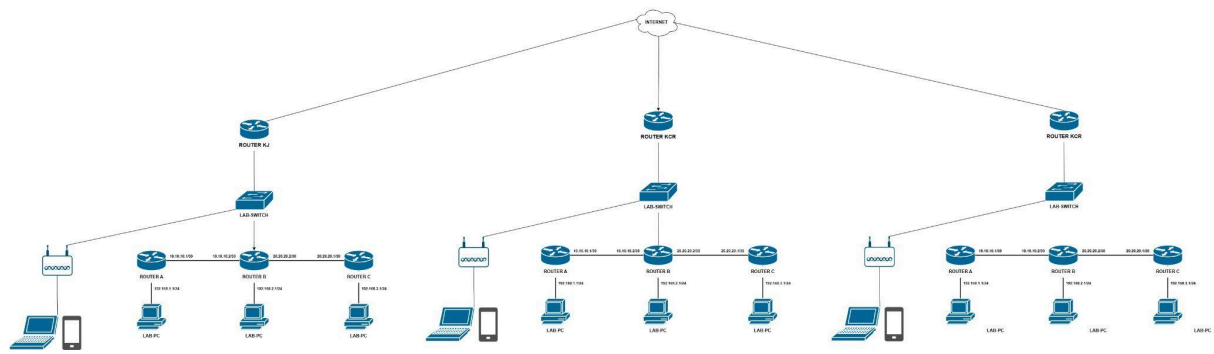
4.1. Static



4.2. BGP



4.3. RIP



4.4. OSPF

