

Nama : Loadtriani Oktavia

NIM : 215314172

IMPLEMENTASI IP ADDRESS VERSI 6.

Berikut ini prosedur yang digunakan untuk mengubah alamat MAC menjadi alamat link-lokal IPv6. Alamat link-lokal hanya dapat dijangkau dalam LAN yang sama dan tidak akan menembus ke jaringan lain melalui router (tidak dirutekan oleh router). Prosedur ini dikenal sebagai metode EUI-64 dan secara otomatis diimplementasikan ke sebagian besar antarmuka jaringan yang mendukung IPv6.

Ada beberapa metode lain yang digunakan untuk membuat alamat link-lokal IPv6, tetapi metode tersebut biasanya acak dan sulit ditentukan tanpa akses fisik ke sistem.

Prosedur

1. Ambil alamat MAC dan ubah oktet pertama dari heksadesimal menjadi biner.

Catatan: Alamat MAC 11: 22: 33: 44: 55: 66 adalah contoh.

11 : 22 : 33 : 44 : 55 : 66

11 → 00010001

2. Balikkan bit ketujuh. (Bit ketujuh adalah 0, jadikan 1).

000100 0 1 → 000100 1 1

3. Ubah oktet kembali menjadi heksadesimal dari biner.

00010011 = 13

4. Ganti oktet pertama yang asli dengan yang baru dikonversi.

11 : 22 : 33 : 44 : 55 : 66 → 13 : 22: 33: 44: 55: 66: 66

5. Tambahkan **FF : FE :** ke tengah alamat MAC baru.

13 : 22 : 33 : FF : FE : 44 : 55 : 66

6. Tambahkan **FE80 ::** ke awal alamat.

FE80 :: 1322 : 33FF : FE44 : 5566

7. Hasil alamat IPv6.

FE80 :: 1322 : 33FF : FE44 : 5566

TUGAS:

- a. Dari topologi jaringan Wireless LAN di atas, isilah IP Address versi 6 berikut ini.

Host	Link Local Address	MAC Address
PC1	FE80::201:43FF:FE54:7103	0001.4354.7103
PC2	FE80::201:63FF:FE1B:1EE8	0001.631B.1EE8
PC3	FE80::201:63FF:FE67:CB4D	0001.6367.CB4D
DHCPLt.2	FE80::202:17FF:FE39:AA94	0002.1739.AA94
Media Player 1	FE80::240:BFF:FED8:1958	0040.0BD8.1958
WK1	FE80::230:F2FF:FE97:1E36	0030.F297.1E36
Netbook1	FE80::2E0:8FFF:FE26:E815	00E0.8F26.E815
DHCPLt.4	FE80::250:FFF:FEDA:1	0050.0FDA.0001
DHCPLt.1	FE80::2D0:58FF:FE58:6C	00D0.5858.006C
Notebook3	FE80::260:3EFF:FE05:2363	0060.3EE5.2363
Notebook2	FE80::2D0:BCFF:FE01:6D76	00D0.BC01.6D76
Notbook1	FE80::2E0:A3FF:FE79:88C	00E0.A379.088C
DHCPLt.3	FE80::2D0:BCFF:FEA0:76BB	00D0.BCA0.76BB

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Tablet1	FE80::201:96FF:FE6D:8160	00D0.FF93.12C7
Pablet1	FE80::201:96FF:FE6D:8160	0001.966D.8160
DVR1	FE80::260:47FF:FE61:82B8	0060.4761.82B8
R1 (Fa0/0)	FE80::201:63FF:FEB0:9E01	0001.63B0.9E01
R1 (Fa0/1)	FE80::201:63FF:FEB0:9E02	0001.63B0.9E02
R2 (Fa0/0)	FE80::201:63FF:FEB0:9E03	0006.2A8C.C501
R2(Fa0/1)	FE80::201:63FF:FEB0:9E04	0006.2A8C.C502
R3(Fa0/0)	FE80::201:63FF:FEB0:9E05	00D0.D36A.E801
R3(Fa0/1)	FE80::201:63FF:FEB0:9E06	00D0.D36A.E802
R4(Fa0/0)	FE80::201:63FF:FEB0:9E07	00E0.8F79.0401
R4(Fa0/1)	FE80::201:63FF:FEB0:9E08	00E0.8F79.0402

Dimulai dari alamat heksa berapakah link-local IPv6?

Link-local ipv^ adalah 64 bit.

- b. Dari PC1 Lakukan ping ke host dalam satu jaringan dan host di jaringan lain. Kemudian isi tabel berikut ini:

```
PC>ipconfig
Wireless Connection (default port)
  Link-local IPv6 Address.....: FE80::2E0:A3FF:FE79:88C
  IPv4 Address.....: 192.168.1.10/24
  Default Gateway.....: 192.168.1.1
  DHCPv4 IAID.....: 1401
  DHCPv6 Client DUID.....: 00-01-00-01-05-2D-48-6C-00-E0-A3-79-08-8C
PC>ping FE80::2D0:BCFF:FE01:6D76

Ping from FE80::2D0:BCFF:FE01:6D76 with 32 bytes of data:
Reply from FE80::2D0:BCFF:FE01:6D76: bytes=32 time=1ms TTL=128

Ping statistics for FE80::2D0:BCFF:FE01:6D76:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milliseconds:
    Minimum = 1ms, Maximum = 7ms, Average = 4ms
PC>
```

Contoh ping IP versi 6

- Ping dari Notebook1 (FE80::2E0:A3FF:FE79:88C) ke Notebook2 (FE80::2D0:BCFF:FE01:6D76)

PC1 Ping ke Host	Link Local Address	Sukses?
PC2	FE80::201:63FF:FE1B:1EE8	Ya
PC3	FE80::201:63FF:FE67:CB4D	Ya
DHCP Lt.2	FE80::202:17FF:FE39:AA94	Ya
Media Player 1	FE80::240:BFF:FED8:1958	Tidak
WK1	FE80::230:F2FF:FE97:1E36	Tidak
Netbook1	FE80::2E0:8FFF:FE26:E815	Tidak
DHCPLt.4	FE80::250:FFF:FEDA:1	Tidak
DHCPLt.1	FE80::2D0:58FF:FE58:6C	Tidak
Notebook3	FE80::260:3EFF:FEE5:2363	Tidak
Notebook2	FE80::2D0:BCFF:FE01:6D76	Tidak
Notbook1	FE80::2E0:A3FF:FE79:88C	Tidak
DHCPLt.3	FE80::2D0:BCFF:FEA0:76BB	Tidak
Tablet1	FE80::201:96FF:FE6D:8160	Tidak
Pablet1	FE80::201:96FF:FE6D:8160	Tidak
DVR1	FE80::260:47FF:FE61:82B8	Tidak
R1 (Fa0/0)	FE80::201:63FF:FEB0:9E01	Tidak
R1 (Fa0/1)	FE80::201:63FF:FEB0:9E02	Tidak
R2 (Fa0/0)	FE80::201:63FF:FEB0:9E03	Tidak
R2(Fa0/1)	FE80::201:63FF:FEB0:9E04	Tidak

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R3(Fa0/0)	FE80::201:63FF:FEBO:9E05	Tidak
R3(Fa0/1)	FE80::201:63FF:FEBO:9E06	Tidak
R4(Fa0/0)	FE80::201:63FF:FEBO:9E07	Tidak
R4(Fa0/1)	FE80::201:63FF:FEBO:9E08	Tidak

Buatlah kesimpulan dari hasil pengamatan dan uji koneksi di atas.

Kesimpulan :

PC1 hanya dapat ping ke computer yang berada dalam satu jaringan yang sama saja

- c. Diberikan IPv6 Address dengan alamat Global SLA (*Site Level Aggregator*) dengan prefix length /64 untuk setiap network di lantai 1-4 dan RIP routing seperti pada tabel berikut ini:

Network Lt.1		Value
Prefix Length	/64	
Network	3FFE:501:8:1231::	
IP Range	3ffe:0501:0008:1231:0000:0000:0000:0000 - 3ffe:0501:0008:1231:ffff:ffff:ffff:ffff	

Network Lt.2		Value
Prefix Length	/64	
Network	3FFE:501:8:1232::	
IP Range	3ffe:0501:0008:1232:0000:0000:0000:0000 - 3ffe:0501:0008:1232:ffff:ffff:ffff:ffff	

Network Lt.3		Value
Prefix Length	/64	
Network	3FFE:501:8:1233::	
IP Range	3ffe:0501:0008:1233:0000:0000:0000:0000 - 3ffe:0501:0008:1233:ffff:ffff:ffff:ffff	

Network Lt.4		Value
Prefix Length	/64	
Network	3FFE:501:8:1234::	
IP Range	3ffe:0501:0008:1234:0000:0000:0000:0000 - 3ffe:0501:0008:1234:ffff:ffff:ffff:ffff	

Network RIP		Value
Prefix Length	/64	
Network	3FFE:501:8:1230::	
IP Range	3ffe:0501:0008:1230:0000:0000:0000:0000 - 3ffe:0501:0008:1230:ffff:ffff:ffff:ffff	

Jelaskan apa yang anda ketahui tentang alamat network 3FFE:501:8:1230:: dan prefix length /64?

Jawab :

Alamat network 3FFE:501:8:1230 merupakan class ipv6 dan prefix length merupakan subnetmask dari alamat network

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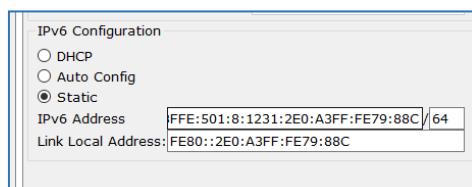
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- d. Lengkapi tabel berikut ini dengan pengalaman IPv6 berdasarkan alamat jaringan pada tabel tugas c.

Nama Perangkat	Nama Interface	IP Address Interface (dengan network mask-nya)	IP Address Gateway (dengan network mask-nya)
PC1	Wireless0	3FFE:501:8:1232:201:63FF:FE1B:1EE8/64	3FFE:501:8:1232:1:1:1:1/64
PC2	Wireless0	3FFE:501:8:1232:201:63FF:FE1A:1EE8/64	3FFE:501:8:1232:1:1:1:1/64
PC3	Wireless0	3FFE:501:8:1232:201:63FF:FE1C:1EE8/64	3FFE:501:8:1232:1:1:1:1/64
DHCP Lt.2	Wireless0	3FFE:501:8:1232:201:63FF:FE1D:1EE8/64	3FFE:501:8:1232:1:1:1:1/64
Media Player 1	Wireless0	3FFE:501:8:1234:201:63FF:FE1A:1EE8/64	3FFE:501:8:1234:1:1:1:1/64
WK1	Wireless0	3FFE:501:8:1234:201:63FF:FE1B:1EE8/64	3FFE:501:8:1234:1:1:1:1/64
Netbook	Wireless0	3FFE:501:8:1234:201:63FF:FE1C:1EE8/64	3FFE:501:8:1234:1:1:1:1/64
DHCP Lt.4	Wireless0	3FFE:501:8:1234:201:63FF:FE1D:1EE8/64	3FFE:501:8:1234:1:1:1:1/64
Notebook1	Wireless0	3FFE:501:8:1231:2E0:A3FF:FE79:88C/64	3FFE:501:8:1231:201:63FF:FEB0:9E02
Notebook2	Wireless0	3FFE:501:8:1231:2D0:BCFF:FE01:6D76/64	3FFE:501:8:1231:201:63FF:FEB0:9E02
Notebook3	Wireless0	3FFE:501:8:1231:260:3EFF:FE55:2363/64	3FFE:501:8:1231:201:63FF:FEB0:9E02
DHCPLt.1	Wireless0	3FFE:501:8:1231:2D0:58FF:FE58:6C/64	3FFE:501:8:1231:201:63FF:FEB0:9E02
DVR1	Wireless0	3FFE:501:8:1233:201:63FF:FE1A:1EE8/64	3FFE:501:8:1233:1:1:1:1/64
Pablet1	Wireless0	3FFE:501:8:1233:201:63FF:FE1B:1EE8/64	3FFE:501:8:1233:1:1:1:1/64
Tablet1	Wireless0	3FFE:501:8:1233:201:63FF:FE1C:1EE8/64	3FFE:501:8:1233:1:1:1:1/64
DHCPLt.3	Wireless0	3FFE:501:8:1233:201:63FF:FE1D:1EE8/64	3FFE:501:8:1233:1:1:1:1/64
R1	Fa0/0	FE80::201:63FF:FEB0:9E01	Link-Local
R1	Fa0/0	3FFE:501:8:1230:201:63FF:FEB0:9E01/64	Global
R1	Fa0/1	FE80::201:63FF:FEB0:9E02	Link-Local
R1	Fa0/1	3FFE:501:8:1231:201:63FF:FEB0:9E02/64	Global
R2	Fa0/0	FE80::201:63FF:FEB0:9E03	Link-Local
R2	Fa0/0	3FFE:501:8:1230:201:63FF:FEB0:9E03/64	Global
R2	Fa0/1	FE80::201:63FF:FEB0:9E04	Link-Local
R2	Fa0/1	3FFE:501:8:1232:201:63FF:FEB0:9E04/64	Global
R3	Fa0/0	FE80::201:63FF:FEB0:9E05	Link-Local
R3	Fa0/0	3FFE:501:8:1230:201:63FF:FEB0:9E05/64	Global
R3	Fa0/1	FE80::201:63FF:FEB0:9E06	Link-Local
R3	Fa0/1	3FFE:501:8:1233:201:63FF:FEB0:9E06/64	Global
R4	Fa0/0	FE80::201:63FF:FEB0:9E07	Link-Local
R4	Fa0/0	3FFE:501:8:1230:201:63FF:FEB0:9E07/64	Global
R4	Fa0/1	FE80::201:63FF:FEB0:9E08	Link-Local
R4	Fa0/1	3FFE:501:8:1234:201:63FF:FEB0:9E08/64	Global

- e. Konfigurasi IPV6 di semua Host, Router dan DHCP Server (Lihat Video)

- Contoh konfigurasi IPv6 host Notebook1 (klik tab Config pilih INTERFACE Wireless0)



Hal yang sama dapat dilakukan pada Server DHCP, Pablet, Tablet, DVR Workstation, Netbook, Komputer PC dan Media Player.

- Contoh konfigurasi IPv6 pada router R1 (klik tab CLI kemudian tekan enter)

```
router>enable
router#configure terminal
router(config)#ipv6 unicast-routing
router(config)#interface FastEthernet0/0
router(config-if)#ipv6 address FE80::201:63FF:FEB0:9E01 link-local
router(config-if)#ipv6 address 3FFE:501:8:1230:201:63FF:FEB0:9E01/64
```

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```
router(config-if)#ipv6 enable
router(config-if)#no shut
router(config-if)#interface FastEthernet0/1
router(config-if)#ipv6 address FE80::201:63FF:FEB0:9E02 link-local
router(config-if)#ipv6 address 3FFE:501:8:1231:201:63FF:FEB0:9E02/64
router(config-if)#ipv6 enable
router(config-if)#no shut
router(config-if)#exit
router(config)#exit
router#exit
router>
```

Hal yang sama dapat dilakukan Router R2, R3, dan R4.

- f. Lengkapi tabel berikut ini dengan IP versi 6.

Nama Jaringan	SSID	Ch	Authentication	Encryp.		DHCP	Gateway
				Type			
HotSpot Lantai 1	lt1.usd	1	WPA-PSK:usd12345	TKIP	3FFE:501:8:1231:2D0:58FF:FE58:6C	3FFE:501:8:1231:201:63FF:FEBO:9E02	
HotSpot Lantai 2	lt2.usd	4	WPA2-PSK:tiusd123	AES	3FFE:501:8:1232:8:8A5:77:6B	3FFE:501:8:1232:1:1:1:1	
HotSpot Lantai 3	lt3.usd	8	WEB:1234567890	40/64 -Bits (10 Hex digits)	3FFE:501:8:1233:8:8D:F2:CAA:6A4	3FFE:501:8:1233:1:1:1:1	
HotSpot Lantai 4	lt4.usd	11	Disible	Disible	3FFE:501:8:1234:F1A:1DD:BA:AB	3FFE:501:8:1234:1:1:1:1	

- g. Konfigurasi jaringan routing statik atau RIP untuk IP Address versi 6. (lihat video demo)

- Contoh konfigurasi routing RIP IPv6 pada router R1 (klik tab CLI kemudian tekan enter)

Routing Static

```
router>enable
router#configure terminal
router(config)#ipv6 router [Network] [interface]
router(config-if)#exit
router(config)#exit
router#exit
router>
```

Routing RIP

```
router>enable
router#configure terminal
router(config)#ipv6 router rip RIP-WLAN-USD
router(config-rtr)#interface FastEthernet0/0
router(config-if)#ipv6 rip RIP-WLAN-USD enable
router(config-if)#interface FastEthernet0/1
router(config-if)#ipv6 rip RIP-WLAN-USD enable
router(config-if)#exit
router(config)#exit
router#exit
router>
```

Hal yang sama dapat dilakukan Router R2, R3, dan R4.

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h. Lengkapi tabel routing RIP berikut dengan IP versi 6.

- Contoh untuk melihat tabel routing RIP IPv6 pada router R1 (klik tab CLI kemudian tekan enter)

```
router>enable  
router#show ipv6 route
```

```
router#exit  
router>
```

```
Router>enable  
Router#show ipv6 route  
IPv6 Routing Table - 8 entries  
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP  
      U - Per-user Static route, M - MIPv6  
      I1 - ISIS level 1, IA - ISIS interarea, IS - ISIS summary  
      O - OSPF inter-area, OS - OSPF intra-area, OI1 - OSPF ext 1, OI2 - OSPF ext 2  
      ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2  
      D - EIGRP EX - EIGRP external  
C 3FFE:501:8:1230::/64 [0/0]  
  via ::, FastEthernet0/0  
L 3FFE:501:8:1231:201:63FF:FE00:9E01/128 [0/0]  
  via ::, FastEthernet0/1  
C 3FFE:501:8:1231::/64 [0/0]  
  via ::, FastEthernet0/1  
L 3FFE:501:8:1231:201:63FF:FE00:9E02/128 [0/0]  
  via ::, FastEthernet0/1  
R 3FFE:501:8:1232::/64 [120/21]  
  via FE80::1232:201:63FF:FE00, FastEthernet0/0  
R 3FFE:501:8:1232::/64 [120/21]  
  via FE80::201:201:63FF:FE00, FastEthernet0/0  
R 3FFE:501:8:1234::/64 [120/21]  
  via FE80::201:201:63FF:FE00, FastEthernet0/0  
L FF00::/8 [0/0]  
  via ::, Null0
```

Routing Static/RIP R1

Mask	Network Address	NextHop (Gateway)	Interface
/64	3ffe:0501:0008:1230:0000:0000:0000:0000	-	Fa0/1
/64	3ffe:0501:0008:1231:0000:0000:0000:0000	-	Fa0/1
/64	3ffe:0501:0008:1232:0000:0000:0000:0000	3FFE:501:8:1232:201:63FF:FE00:9E04	Fa0/0
/64	3ffe:0501:0008:1233:0000:0000:0000:0000	3FFE:501:8:1233:201:63FF:FE00:9E06	Fa0/0
/64	3ffe:0501:0008:1234:0000:0000:0000:0000	3FFE:501:8:1234:201:63FF:FE00:9E08	Fa0/0

Routing Static/RIP R2

Mask	Network Address	NextHop (Gateway)	Interface
/64	3ffe:0501:0008:1230:0000:0000:0000:0000	-	Fa0/1
/64	3ffe:0501:0008:1231:0000:0000:0000:0000	3FFE:501:8:1231:201:63FF:FE00:9E02	Fa0/0
/64	3ffe:0501:0008:1232:0000:0000:0000:0000	-	Fa0/1
/64	3ffe:0501:0008:1233:0000:0000:0000:0000	3FFE:501:8:1233:201:63FF:FE00:9E06	Fa0/0
/64	3ffe:0501:0008:1234:0000:0000:0000:0000	3FFE:501:8:1234:201:63FF:FE00:9E08	Fa0/0

Routing Static/RIP R3

Mask	Network Address	NextHop (Gateway)	Interface
/64	3ffe:0501:0008:1230:0000:0000:0000:0000	-	Fa0/1
/64	3ffe:0501:0008:1231:0000:0000:0000:0000	3FFE:501:8:1231:201:63FF:FE00:9E02	Fa0/0
/64	3ffe:0501:0008:1232:0000:0000:0000:0000	3FFE:501:8:1232:201:63FF:FE00:9E04	Fa0/0
/64	3ffe:0501:0008:1233:0000:0000:0000:0000	-	Fa0/1
/64	3ffe:0501:0008:1234:0000:0000:0000:0000	3FFE:501:8:1234:201:63FF:FE00:9E08	Fa0/0

Routing Static/RIP R4

Mask	Network Address	NextHop (Gateway)	Interface
/64	3ffe:0501:0008:1230:0000:0000:0000:0000	-	Fa0/1
/64	3ffe:0501:0008:1231:0000:0000:0000:0000	3FFE:501:8:1231:201:63FF:FE00:9E02	Fa0/0

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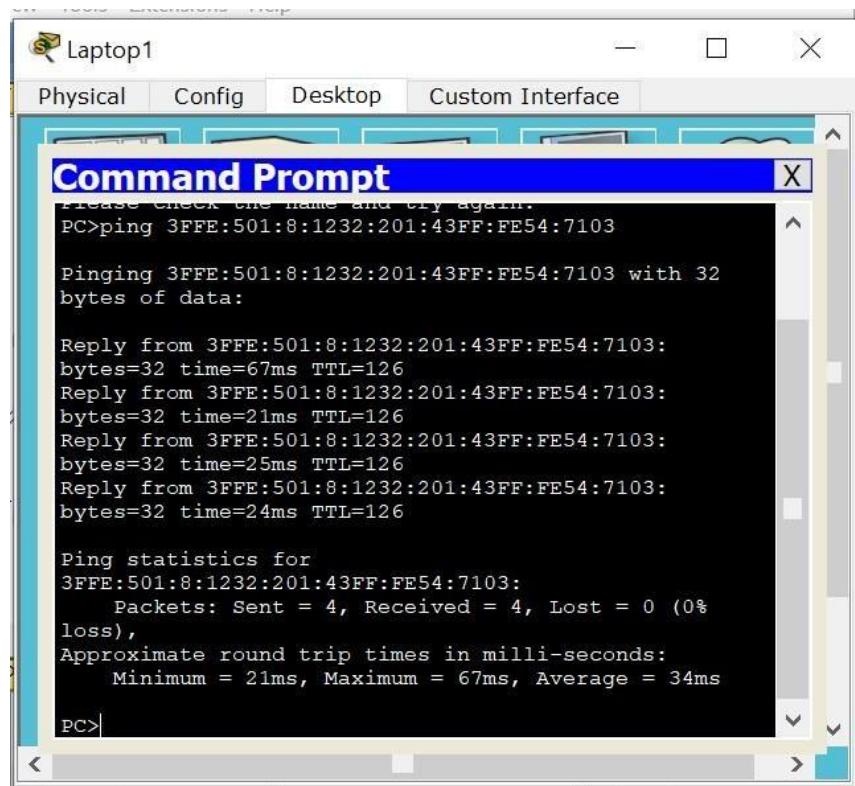
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/64	3ffe:0501:0008:1232:0000:0000:0000:0000	3FFE:501:8:1232:201:63FF:FE00:9E04	Fa0/0
/64	3ffe:0501:0008:1233:0000:0000:0000:0000	3FFE:501:8:1233:201:63FF:FE00:9E06	Fa0/0
/64	3ffe:0501:0008:1234:0000:0000:0000:0000	-	Fa0/1

- i. Uji jaringan seperti pada tugas B ? Buatlah kesimpulannya!

• **Uji ping dari HotSpot lt1.usd ke host jaringan yang lain**

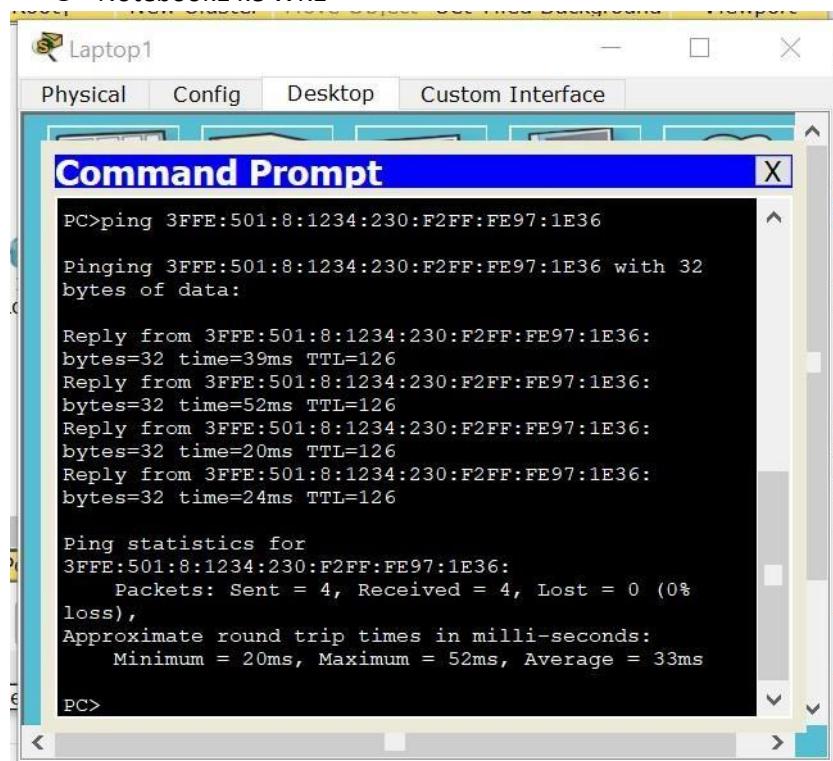
○ Notebook1 ke PC1



```
PC>ping 3FFE:501:8:1232:201:43FF:FE54:7103
Pinging 3FFE:501:8:1232:201:43FF:FE54:7103 with 32 bytes of data:
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103: bytes=32 time=67ms TTL=126
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103: bytes=32 time=21ms TTL=126
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103: bytes=32 time=25ms TTL=126
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103: bytes=32 time=24ms TTL=126

Ping statistics for 3FFE:501:8:1232:201:43FF:FE54:7103:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 21ms, Maximum = 67ms, Average = 34ms
PC>
```

○ Notebook1 ke WK1



```
PC>ping 3FFE:501:8:1234:230:F2FF:FE97:1E36
Pinging 3FFE:501:8:1234:230:F2FF:FE97:1E36 with 32 bytes of data:
Reply from 3FFE:501:8:1234:230:F2FF:FE97:1E36: bytes=32 time=39ms TTL=126
Reply from 3FFE:501:8:1234:230:F2FF:FE97:1E36: bytes=32 time=52ms TTL=126
Reply from 3FFE:501:8:1234:230:F2FF:FE97:1E36: bytes=32 time=20ms TTL=126
Reply from 3FFE:501:8:1234:230:F2FF:FE97:1E36: bytes=32 time=24ms TTL=126

Ping statistics for 3FFE:501:8:1234:230:F2FF:FE97:1E36:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 20ms, Maximum = 52ms, Average = 33ms
PC>
```

Nama : Loadtriani Oktavia

NIM : 215314172

○ Notebook1 ke DHCP Lt.3

```
PC>ping 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB

Pinging 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB with 32 bytes of data:

Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=38ms TTL=126
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=24ms TTL=126
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=24ms TTL=126
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=17ms TTL=126

Ping statistics for
3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 17ms, Maximum = 38ms, Average = 25ms

PC>
```

• Uji ping dari HotSpot lt2.usd ke host jaringan yang lain

○ PC 1 ke Notebook3

```
Packet Tracer PC Command Line 1.0
PC>ping 3FFE:501:8:1231:260:3EFF:FEE5:2363

Pinging 3FFE:501:8:1231:260:3EFF:FEE5:2363 with 32 bytes of data:

Reply from 3FFE:501:8:1231:260:3EFF:FEE5:2363: bytes=32
time=43ms TTL=126
Reply from 3FFE:501:8:1231:260:3EFF:FEE5:2363: bytes=32
time=33ms TTL=126
Reply from 3FFE:501:8:1231:260:3EFF:FEE5:2363: bytes=32
time=18ms TTL=126
Reply from 3FFE:501:8:1231:260:3EFF:FEE5:2363: bytes=32
time=24ms TTL=126

Ping statistics for 3FFE:501:8:1231:260:3EFF:FEE5:2363:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 18ms, Maximum = 43ms, Average = 29ms

PC>
```

Nama : Loadtriani Oktavia
NIM : 215314172

○ PC1 ke Netbook1

```
PC>ping 3FFE:501:8:1234:2E0:8FFF:FE26:E815

Pinging 3FFE:501:8:1234:2E0:8FFF:FE26:E815 with 32
bytes of data:

Reply from 3FFE:501:8:1234:2E0:8FFF:FE26:E815:
bytes=32 time=35ms TTL=126
Reply from 3FFE:501:8:1234:2E0:8FFF:FE26:E815:
bytes=32 time=23ms TTL=126
Reply from 3FFE:501:8:1234:2E0:8FFF:FE26:E815:
bytes=32 time=16ms TTL=126
Reply from 3FFE:501:8:1234:2E0:8FFF:FE26:E815:
bytes=32 time=20ms TTL=126

Ping statistics for
3FFE:501:8:1234:2E0:8FFF:FE26:E815:
    Packets: Sent = 4, Received = 4, Lost = 0 (0%
loss),
Approximate round trip times in milli-seconds:
    Minimum = 16ms, Maximum = 35ms, Average = 23ms

PC>
```

○ PC1 ke DHCP Lt.3

```
PC>ping 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB

Pinging 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB with 32
bytes of data:

Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=15ms TTL=126
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=16ms TTL=126
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=25ms TTL=126
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=11ms TTL=126

Ping statistics for
3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
    Packets: Sent = 4, Received = 4, Lost = 0 (0%
loss),
Approximate round trip times in milli-seconds:
    Minimum = 11ms, Maximum = 25ms, Average = 16ms

PC>
```

Nama : Loadtriani Oktavia

NIM : 215314172

- Uji ping dari HotSpot Lt3.usd ke host jaringan yang lain

- DHCP Lt.3 ke Notebook2

```
Packet Tracer SERVER Command Line 1.0
SERVER>ping 3FFE:501:8:1231:2D0:BCFF:FE01:6D76

Pinging 3FFE:501:8:1231:2D0:BCFF:FE01:6D76 with 32 bytes
of data:

Reply from 3FFE:501:8:1231:2D0:BCFF:FE01:6D76: bytes=32
time=37ms TTL=126
Reply from 3FFE:501:8:1231:2D0:BCFF:FE01:6D76: bytes=32
time=21ms TTL=126
Reply from 3FFE:501:8:1231:2D0:BCFF:FE01:6D76: bytes=32
time=19ms TTL=126
Reply from 3FFE:501:8:1231:2D0:BCFF:FE01:6D76: bytes=32
time=18ms TTL=126

Ping statistics for 3FFE:501:8:1231:2D0:BCFF:FE01:6D76:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 18ms, Maximum = 37ms, Average = 23ms

SERVER>
```

- DHCP Lt.3 ke PC1

```
SERVER>ping 3FFE:501:8:1232:201:43FF:FE54:7103

Pinging 3FFE:501:8:1232:201:43FF:FE54:7103 with 32
bytes of data:

Reply from 3FFE:501:8:1232:201:43FF:FE54:7103:
bytes=32 time=23ms TTL=126
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103:
bytes=32 time=13ms TTL=126
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103:
bytes=32 time=23ms TTL=126
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103:
bytes=32 time=17ms TTL=126

Ping statistics for
3FFE:501:8:1232:201:43FF:FE54:7103:
    Packets: Sent = 4, Received = 4, Lost = 0 (0%
loss),
Approximate round trip times in milli-seconds:
    Minimum = 13ms, Maximum = 23ms, Average = 19ms

SERVER>
```

Nama : Loadtriani Oktavia

NIM : 215314172

○ DHCP Lt.3 ke DHCP Lt.4

```
MINimum = 10ms, Maximum = 25ms, Average = 15ms
SERVER>ping 3FFE:501:8:1234:250:FFF:FEDA:1
Pinging 3FFE:501:8:1234:250:FFF:FEDA:1 with 32 bytes of data:
Reply from 3FFE:501:8:1234:250:FFF:FEDA:1: bytes=32 time=57ms TTL=126
Reply from 3FFE:501:8:1234:250:FFF:FEDA:1: bytes=32 time=10ms TTL=126
Reply from 3FFE:501:8:1234:250:FFF:FEDA:1: bytes=32 time=18ms TTL=126
Reply from 3FFE:501:8:1234:250:FFF:FEDA:1: bytes=32 time=18ms TTL=126
Ping statistics for 3FFE:501:8:1234:250:FFF:FEDA:1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 57ms, Average = 25ms
SERVER>
```

• Uji ping dari HotSpot Lt4.usd ke host jaringan yang lain

○ WK1 ke Notebook2

```
Background Viewport
CopyPC0(2)
Physical Config Desktop Custom Interface
Command Prompt X
Packet Tracer PC Command Line 1.0
PC>ping 3FFE:501:8:1231:2D0:BCFF:FE01:6D76
Pinging 3FFE:501:8:1231:2D0:BCFF:FE01:6D76 with 32 bytes of data:
Reply from 3FFE:501:8:1231:2D0:BCFF:FE01:6D76: bytes=32 time=14ms TTL=126
Reply from 3FFE:501:8:1231:2D0:BCFF:FE01:6D76: bytes=32 time=21ms TTL=126
Reply from 3FFE:501:8:1231:2D0:BCFF:FE01:6D76: bytes=32 time=21ms TTL=126
Reply from 3FFE:501:8:1231:2D0:BCFF:FE01:6D76: bytes=32 time=22ms TTL=126
Ping statistics for 3FFE:501:8:1231:2D0:BCFF:FE01:6D76:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 14ms, Maximum = 22ms, Average = 19ms
PC>
```

Nama : Loadtriani Oktavia

NIM : 215314172

○ WK1 ke PC3

CopyPC0(2)

Physical Config Desktop Custom Interface

Command Prompt

```
PC>ping 3FFE:501:8:1232:201:63FF:FE67:CB4D
Pinging 3FFE:501:8:1232:201:63FF:FE67:CB4D with 32 bytes of data:
Reply from 3FFE:501:8:1232:201:63FF:FE67:CB4D:
bytes=32 time=42ms TTL=126
Reply from 3FFE:501:8:1232:201:63FF:FE67:CB4D:
bytes=32 time=21ms TTL=126
Reply from 3FFE:501:8:1232:201:63FF:FE67:CB4D:
bytes=32 time=20ms TTL=126
Reply from 3FFE:501:8:1232:201:63FF:FE67:CB4D:
bytes=32 time=15ms TTL=126

Ping statistics for 3FFE:501:8:1232:201:63FF:FE67:CB4D:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 15ms, Maximum = 42ms, Average = 24ms

PC>
```

○ WK1 ke DHCP Lt.3

CopyPC0(2)

Physical Config Desktop Custom Interface

Command Prompt

```
PC>ping 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB
Pinging 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB with 32 bytes of data:
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=27ms TTL=126
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=20ms TTL=126
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=23ms TTL=126
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=23ms TTL=126

Ping statistics for 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 20ms, Maximum = 27ms, Average = 23ms

PC>
```

Nama : Loadtriani Oktavia

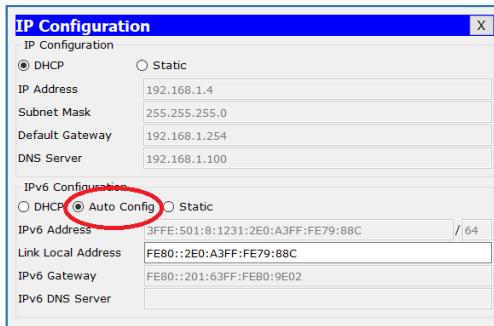
NIM : 215314172

IMPLEMENTASI AUTOCONFIGURATION IP ADDRESS VERSI 6 (I).

TUGAS:

- a. Dari topologi jaringan Wireless LAN di atas, konfigurasi otomatis IP Address versi 6 berikut ini:

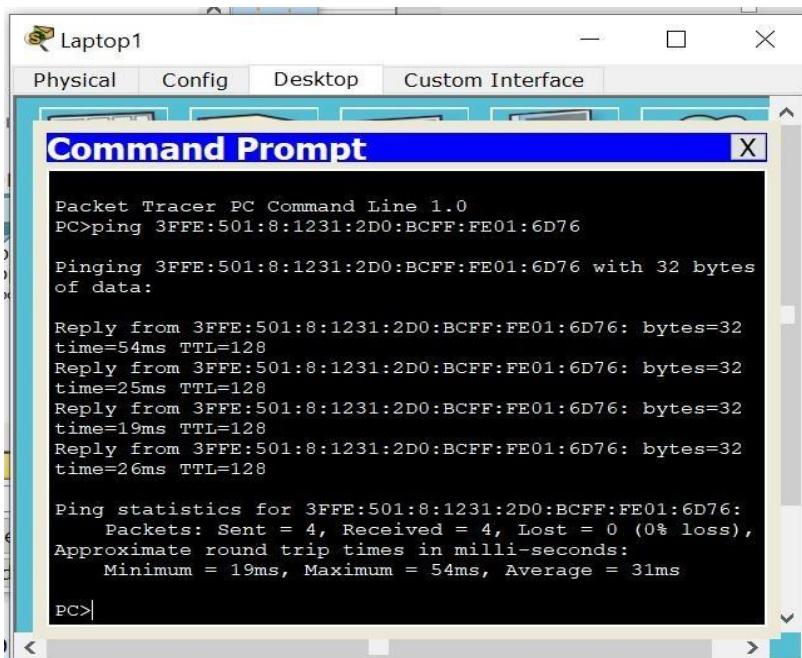
- Contoh konfigurasi otomatis pada host jaringan HostSpotLt1.usd
 - Host Notebook1
 - Pilih Desktop → IP Configuration
 - Pada IPv6 Configuration pilih Auto Config



- Lakukan langkah yang sama untuk host Notebook2, Host Notebook3, dan DHCPLt.1)

- b. Lakukan pengujian dengan menjalankan perintah ping dari Notebook1 ke Notebook2, Host Notebook3, DHCPLt.1, dan Gateway)

- Notebook1 ke Notebook2



Nama : Loadtriani Oktavia

NIM : 215314172

- Notebook1 ke Notebook3

```
PC>ping 3FFE:501:8:1231:260:3EFF:FEE5:2363
Pinging 3FFE:501:8:1231:260:3EFF:FEE5:2363 with 32 bytes of data:
Reply from 3FFE:501:8:1231:260:3EFF:FEE5:2363: bytes=32 time=29ms TTL=128
Reply from 3FFE:501:8:1231:260:3EFF:FEE5:2363: bytes=32 time=25ms TTL=128
Reply from 3FFE:501:8:1231:260:3EFF:FEE5:2363: bytes=32 time=21ms TTL=128
Reply from 3FFE:501:8:1231:260:3EFF:FEE5:2363: bytes=32 time=30ms TTL=128

Ping statistics for 3FFE:501:8:1231:260:3EFF:FEE5:2363:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 21ms, Maximum = 30ms, Average = 26ms

PC>
```

- Notebook1 ke DHCP Lt.1

```
PC>ping 3FFE:501:8:1231:2D0:58FF:FE58:6C
Pinging 3FFE:501:8:1231:2D0:58FF:FE58:6C with 32 bytes of data:
Reply from 3FFE:501:8:1231:2D0:58FF:FE58:6C: bytes=32 time=46ms TTL=128
Reply from 3FFE:501:8:1231:2D0:58FF:FE58:6C: bytes=32 time=27ms TTL=128
Reply from 3FFE:501:8:1231:2D0:58FF:FE58:6C: bytes=32 time=22ms TTL=128
Reply from 3FFE:501:8:1231:2D0:58FF:FE58:6C: bytes=32 time=26ms TTL=128

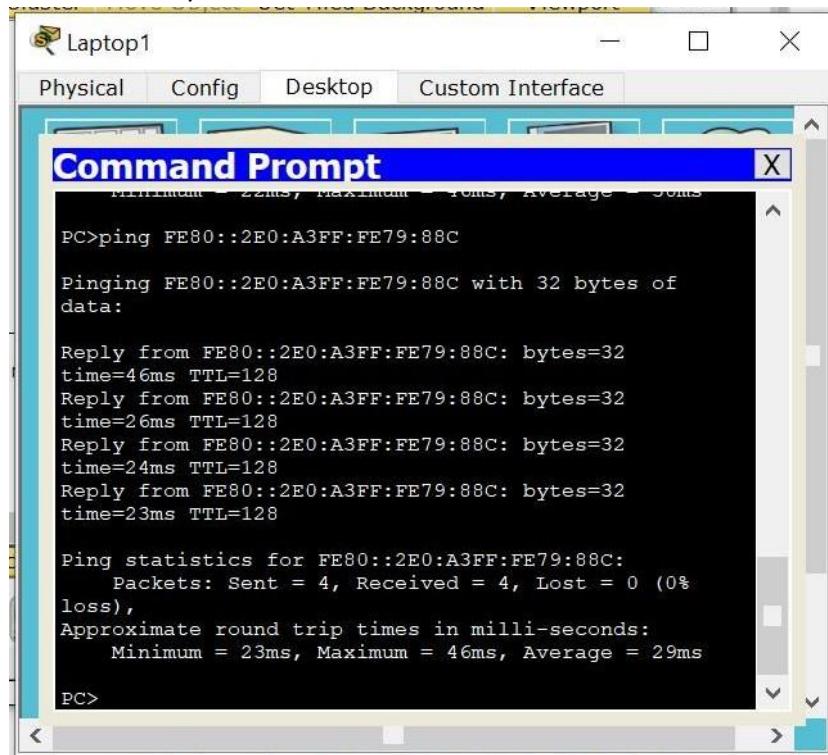
Ping statistics for 3FFE:501:8:1231:2D0:58FF:FE58:6C:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 22ms, Maximum = 46ms, Average = 30ms

PC>
```

Nama : Loadtriani Oktavia

NIM : 215314172

▪ Notebook1 ke Gateway



```
PC>ping FE80::2E0:A3FF:FE79:88C

Pinging FE80::2E0:A3FF:FE79:88C with 32 bytes of
data:

Reply from FE80::2E0:A3FF:FE79:88C: bytes=32
time=46ms TTL=128
Reply from FE80::2E0:A3FF:FE79:88C: bytes=32
time=26ms TTL=128
Reply from FE80::2E0:A3FF:FE79:88C: bytes=32
time=24ms TTL=128
Reply from FE80::2E0:A3FF:FE79:88C: bytes=32
time=23ms TTL=128

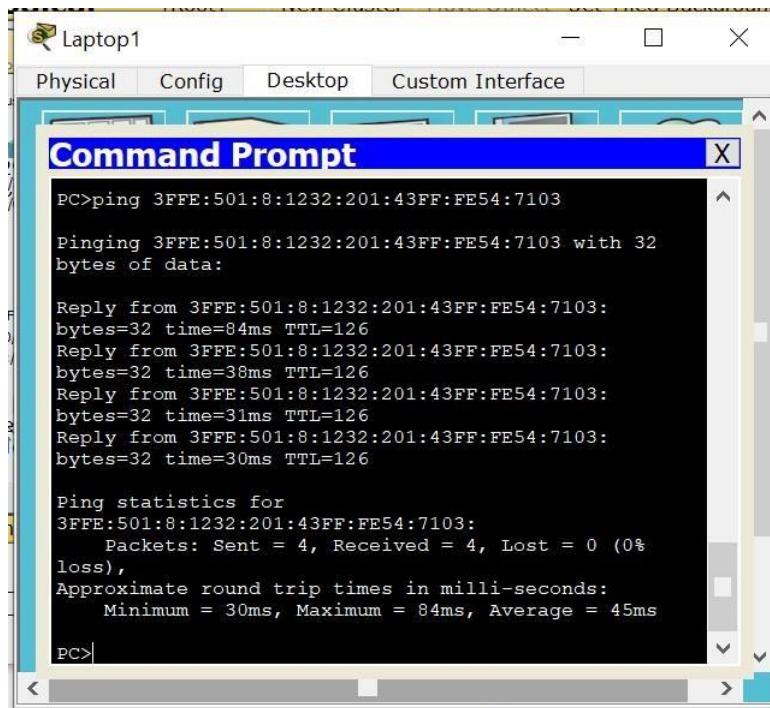
Ping statistics for FE80::2E0:A3FF:FE79:88C:
    Packets: Sent = 4, Received = 4, Lost = 0 (0%
loss),
Approximate round trip times in milli-seconds:
    Minimum = 23ms, Maximum = 46ms, Average = 29ms

PC>
```

- c. Lakukan langkah a dan b untuk host-host di network HostSpotLt2.usd, HostSpotLt3.usd dan HostSpotLt4.usd.

HostSpotLt2.usd

○ Notebook1 ke PC1



```
PC>ping 3FFE:501:8:1232:201:43FF:FE54:7103

Pinging 3FFE:501:8:1232:201:43FF:FE54:7103 with 32
bytes of data:

Reply from 3FFE:501:8:1232:201:43FF:FE54:7103:
bytes=32 time=84ms TTL=126
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103:
bytes=32 time=38ms TTL=126
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103:
bytes=32 time=31ms TTL=126
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103:
bytes=32 time=30ms TTL=126

Ping statistics for
3FFE:501:8:1232:201:43FF:FE54:7103:
    Packets: Sent = 4, Received = 4, Lost = 0 (0%
loss),
Approximate round trip times in milli-seconds:
    Minimum = 30ms, Maximum = 84ms, Average = 45ms

PC>
```

Nama : Loadtriani Oktavia
NIM : 215314172

Notebook1 ke PC2

```
PC>ping 3FFE:501:8:1232:201:63FF:FE1B:1EE8
Pinging 3FFE:501:8:1232:201:63FF:FE1B:1EE8 with 32 bytes of data:
Reply from 3FFE:501:8:1232:201:63FF:FE1B:1EE8: bytes=32 time=35ms TTL=126
Reply from 3FFE:501:8:1232:201:63FF:FE1B:1EE8: bytes=32 time=14ms TTL=126
Reply from 3FFE:501:8:1232:201:63FF:FE1B:1EE8: bytes=32 time=19ms TTL=126
Reply from 3FFE:501:8:1232:201:63FF:FE1B:1EE8: bytes=32 time=25ms TTL=126

Ping statistics for 3FFE:501:8:1232:201:63FF:FE1B:1EE8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 35ms, Average = 23ms

PC>
```

○ Notebook1 ke PC3

```
PC>ping 3FFE:501:8:1232:201:63FF:FE67:CB4D
Pinging 3FFE:501:8:1232:201:63FF:FE67:CB4D with 32 bytes of data:
Reply from 3FFE:501:8:1232:201:63FF:FE67:CB4D: bytes=32 time=64ms TTL=126
Reply from 3FFE:501:8:1232:201:63FF:FE67:CB4D: bytes=32 time=10ms TTL=126
Reply from 3FFE:501:8:1232:201:63FF:FE67:CB4D: bytes=32 time=19ms TTL=126
Reply from 3FFE:501:8:1232:201:63FF:FE67:CB4D: bytes=32 time=11ms TTL=126

Ping statistics for 3FFE:501:8:1232:201:63FF:FE67:CB4D:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 10ms, Maximum = 64ms, Average = 26ms

PC>
```

HostSpotLt3.usd

O Notebook1 ke DVR1

```
name and try again.  
PC>ping 3FFE:501:8:1233:260:47FF:FE61:82B8  
  
Pinging 3FFE:501:8:1233:260:47FF:FE61:82B8 with 32  
bytes of data:  
  
Reply from 3FFE:501:8:1233:260:47FF:FE61:82B8:  
bytes=32 time=40ms TTL=126  
Reply from 3FFE:501:8:1233:260:47FF:FE61:82B8:  
bytes=32 time=23ms TTL=126  
Reply from 3FFE:501:8:1233:260:47FF:FE61:82B8:  
bytes=32 time=14ms TTL=126  
Reply from 3FFE:501:8:1233:260:47FF:FE61:82B8:  
bytes=32 time=16ms TTL=126  
  
Ping statistics for  
3FFE:501:8:1233:260:47FF:FE61:82B8:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0%  
loss),  
Approximate round trip times in milli-seconds:  
    Minimum = 14ms, Maximum = 40ms, Average = 23ms  
  
PC>
```

O Notebook1 ke Pablet1

```
Request timed out.  
  
Ping statistics for  
3FFE:501:8:1233:201:96FF:FE6D:8160:  
    Packets: Sent = 4, Received = 0, Lost = 4 (100%  
loss),  
  
PC>ping 3FFE:501:8:1233:201:96FF:FE6D:8160  
  
Pinging 3FFE:501:8:1233:201:96FF:FE6D:8160 with 32  
bytes of data:  
  
Request timed out.  
Request timed out.  
Request timed out.  
Request timed out.  
  
Ping statistics for  
3FFE:501:8:1233:201:96FF:FE6D:8160:  
    Packets: Sent = 4, Received = 0, Lost = 4 (100%  
loss),  
  
PC>
```

Nama : Loadtriani Oktavia
NIM : 215314172

Notebook1 ke Tablet1

○ Notebook1 ke DHCP Lt.3

Physical Config Desktop Custom Interface

Command Prompt

```
Request timed out.

Ping statistics for
3FFE:501:8:1233:201:96FF:FE6D:8160:
    Packets: Sent = 4, Received = 0, Lost = 4 (100%
loss),

PC>ping 3FFE:501:8:1233:2D0:FFFF:FE93:12C7

Pinging 3FFE:501:8:1233:2D0:FFFF:FE93:12C7 with 32
bytes of data:

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

Ping statistics for
3FFE:501:8:1233:2D0:FFFF:FE93:12C7:
    Packets: Sent = 4, Received = 0, Lost = 4 (100%
loss),
PC>
```

Physical Config Desktop Custom Interface

Command Prompt

```
PC>ping 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB

Pinging 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB with 32
bytes of data:

Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=53ms TTL=126
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=18ms TTL=126
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=29ms TTL=126
Reply from 3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
bytes=32 time=21ms TTL=126

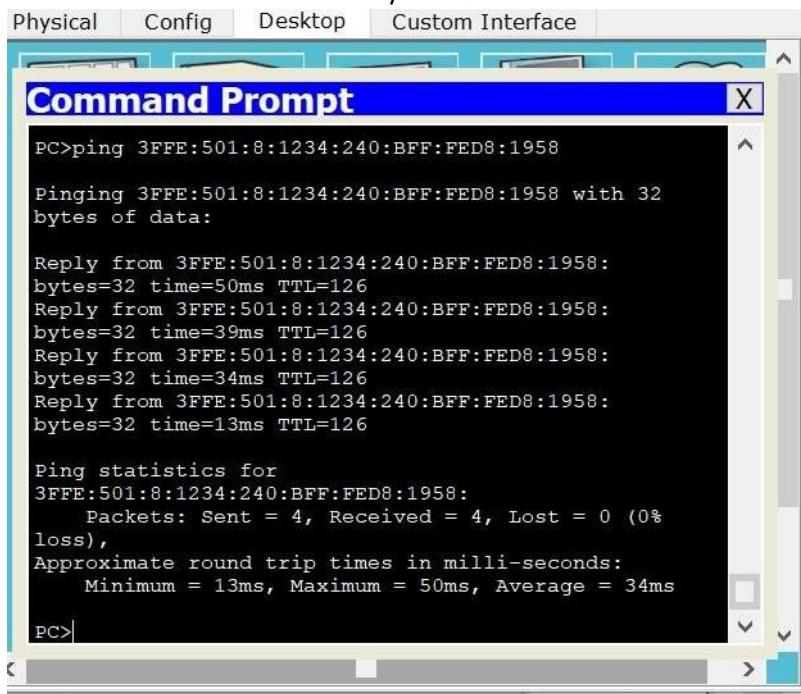
Ping statistics for
3FFE:501:8:1233:2D0:BCFF:FEA0:76BB:
    Packets: Sent = 4, Received = 4, Lost = 0 (0%
loss),
Approximate round trip times in milli-seconds:
    Minimum = 18ms, Maximum = 53ms, Average = 30ms
PC>
```

Nama : Loadtriani Oktavia

NIM : 215314172

HostSpotLt4.usd

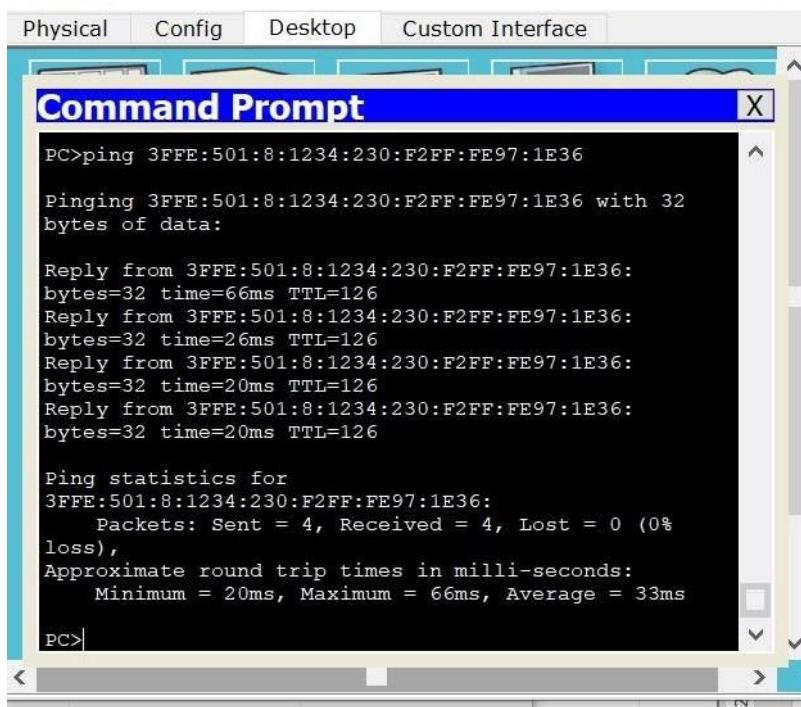
○ Notebook1 ke Media Player 1



```
PC>ping 3FFE:501:8:1234:240:BFF:FED8:1958
Pinging 3FFE:501:8:1234:240:BFF:FED8:1958 with 32 bytes of data:
Reply from 3FFE:501:8:1234:240:BFF:FED8:1958:
bytes=32 time=50ms TTL=126
Reply from 3FFE:501:8:1234:240:BFF:FED8:1958:
bytes=32 time=39ms TTL=126
Reply from 3FFE:501:8:1234:240:BFF:FED8:1958:
bytes=32 time=34ms TTL=126
Reply from 3FFE:501:8:1234:240:BFF:FED8:1958:
bytes=32 time=13ms TTL=126

Ping statistics for 3FFE:501:8:1234:240:BFF:FED8:1958:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 13ms, Maximum = 50ms, Average = 34ms
PC>
```

○ Notebook1 ke WK1



```
PC>ping 3FFE:501:8:1234:230:F2FF:FE97:1E36
Pinging 3FFE:501:8:1234:230:F2FF:FE97:1E36 with 32 bytes of data:
Reply from 3FFE:501:8:1234:230:F2FF:FE97:1E36:
bytes=32 time=66ms TTL=126
Reply from 3FFE:501:8:1234:230:F2FF:FE97:1E36:
bytes=32 time=26ms TTL=126
Reply from 3FFE:501:8:1234:230:F2FF:FE97:1E36:
bytes=32 time=20ms TTL=126
Reply from 3FFE:501:8:1234:230:F2FF:FE97:1E36:
bytes=32 time=20ms TTL=126

Ping statistics for 3FFE:501:8:1234:230:F2FF:FE97:1E36:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 20ms, Maximum = 66ms, Average = 33ms
PC>
```

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NIM : 215314172

Notebook1 ke Netbook1

```
Physical Config Desktop Custom Interface X
Command Prompt
PC>ping 3FFE:501:8:1234:2E0:8FFF:FE26:E815
Pinging 3FFE:501:8:1234:2E0:8FFF:FE26:E815 with 32 bytes of data:
Reply from 3FFE:501:8:1234:2E0:8FFF:FE26:E815: bytes=32 time=64ms TTL=126
Reply from 3FFE:501:8:1234:2E0:8FFF:FE26:E815: bytes=32 time=42ms TTL=126
Reply from 3FFE:501:8:1234:2E0:8FFF:FE26:E815: bytes=32 time=28ms TTL=126
Reply from 3FFE:501:8:1234:2E0:8FFF:FE26:E815: bytes=32 time=15ms TTL=126
Ping statistics for 3FFE:501:8:1234:2E0:8FFF:FE26:E815:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 15ms, Maximum = 64ms, Average = 37ms
PC>
```

● Notebook1 ke DHCP Lt.4

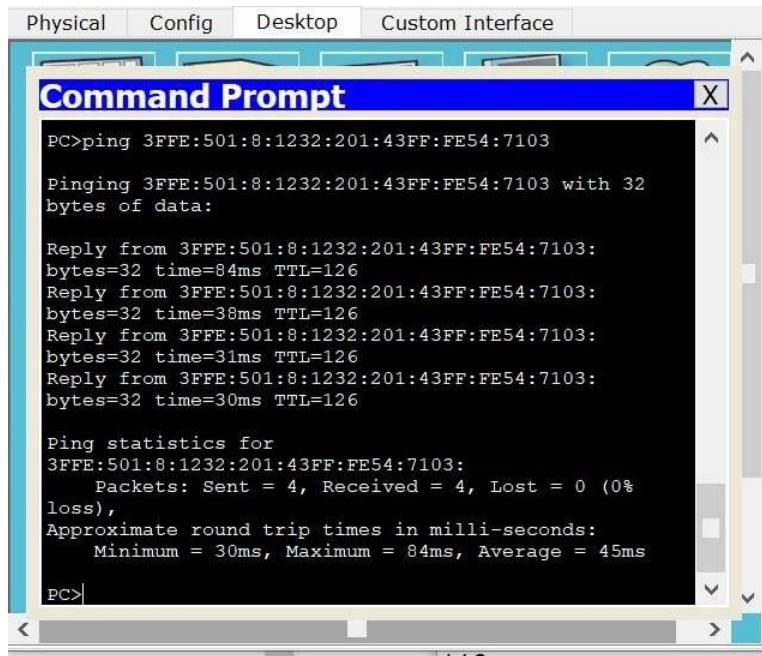
```
Physical Config Desktop Custom Interface X
Command Prompt
PC>ping 3FFE:501:8:1234:250:FFF:FEDA:1
Pinging 3FFE:501:8:1234:250:FFF:FEDA:1 with 32 bytes of data:
Reply from 3FFE:501:8:1234:250:FFF:FEDA:1: bytes=32 time=84ms TTL=126
Reply from 3FFE:501:8:1234:250:FFF:FEDA:1: bytes=32 time=15ms TTL=126
Reply from 3FFE:501:8:1234:250:FFF:FEDA:1: bytes=32 time=36ms TTL=126
Reply from 3FFE:501:8:1234:250:FFF:FEDA:1: bytes=32 time=24ms TTL=126
Ping statistics for 3FFE:501:8:1234:250:FFF:FEDA:1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 15ms, Maximum = 84ms, Average = 39ms
PC>
```

Nama : Loadtriani Oktavia

NIM : 215314172

- d. Lakukan pengujian ke host di jaringan lain dengan menjalankan perintah ping dari Notebook1 ke PC1, WK1, dan DVR1.

- Notebook1 ke PC1



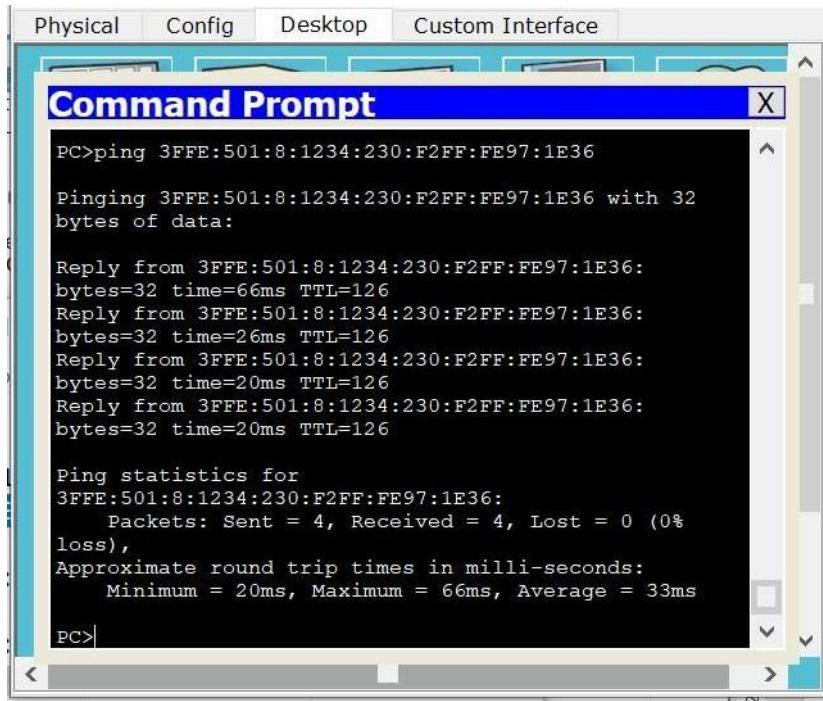
Physical Config Desktop Custom Interface

Command Prompt

```
PC>ping 3FFE:501:8:1232:201:43FF:FE54:7103
Pinging 3FFE:501:8:1232:201:43FF:FE54:7103 with 32 bytes of data:
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103: bytes=32 time=84ms TTL=126
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103: bytes=32 time=38ms TTL=126
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103: bytes=32 time=31ms TTL=126
Reply from 3FFE:501:8:1232:201:43FF:FE54:7103: bytes=32 time=30ms TTL=126

Ping statistics for 3FFE:501:8:1232:201:43FF:FE54:7103:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 30ms, Maximum = 84ms, Average = 45ms
PC>
```

- Notebook1 ke WK1



Physical Config Desktop Custom Interface

Command Prompt

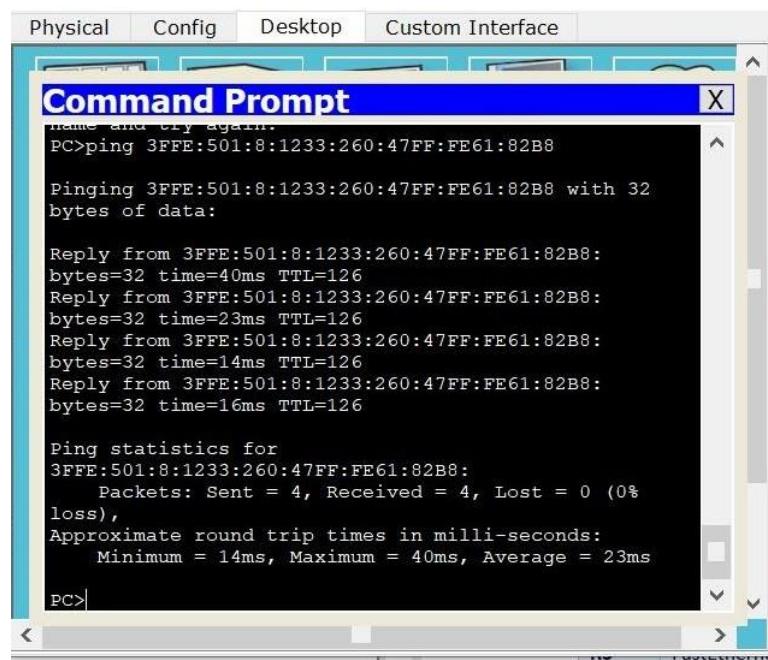
```
PC>ping 3FFE:501:8:1234:230:F2FF:FE97:1E36
Pinging 3FFE:501:8:1234:230:F2FF:FE97:1E36 with 32 bytes of data:
Reply from 3FFE:501:8:1234:230:F2FF:FE97:1E36: bytes=32 time=66ms TTL=126
Reply from 3FFE:501:8:1234:230:F2FF:FE97:1E36: bytes=32 time=26ms TTL=126
Reply from 3FFE:501:8:1234:230:F2FF:FE97:1E36: bytes=32 time=20ms TTL=126
Reply from 3FFE:501:8:1234:230:F2FF:FE97:1E36: bytes=32 time=20ms TTL=126

Ping statistics for 3FFE:501:8:1234:230:F2FF:FE97:1E36:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 20ms, Maximum = 66ms, Average = 33ms
PC>
```

Nama : Loadtriani Oktavia

NIM : 215314172

- Notebook1 ke DVR1



The screenshot shows a Command Prompt window titled "Command Prompt". The window displays the output of a ping command from the PC to a device with the MAC address 3FFE:501:8:1233:260:47FF:FE61:82B8. The output shows four successful replies with round trip times ranging from 14ms to 40ms, and a loss rate of 0%. The window has tabs at the top: Physical, Config, Desktop, and Custom Interface.

```
PC>ping 3FFE:501:8:1233:260:47FF:FE61:82B8
Pinging 3FFE:501:8:1233:260:47FF:FE61:82B8 with 32 bytes of data:
Reply from 3FFE:501:8:1233:260:47FF:FE61:82B8: bytes=32 time=40ms TTL=126
Reply from 3FFE:501:8:1233:260:47FF:FE61:82B8: bytes=32 time=23ms TTL=126
Reply from 3FFE:501:8:1233:260:47FF:FE61:82B8: bytes=32 time=14ms TTL=126
Reply from 3FFE:501:8:1233:260:47FF:FE61:82B8: bytes=32 time=16ms TTL=126

Ping statistics for 3FFE:501:8:1233:260:47FF:FE61:82B8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 40ms, Average = 23ms

PC>
```

- e. Simpulkan apa yang anda peroleh dari praktikum bagian autoconfiguration IP Address version 6! (terutama perbedaan dengan konfigurasi Static)
Address version 6! (terutama perbedaan dengan konfigurasi Static)
- Konsep routing statik pada IPv6 sama dengan routing statik pada IPv4. Paket yang akan dikirimkan ke network tujuan akan dilewatkan melalui sebuah gateway yang telah ditentukan . Dari hasil pratikum yang saya lakukan, jika melakukan routing static kita mengisi ip address, subnet mask, dan default gatewaynya secara manual pada pc atau host masing-masing pada bagian menu desktop kemudian memilih menu item ip configuration.
- Sedangkan jika autoconfiguration, kita mengconfig pada router kemudian memilih menu CLI. Kemudian mengklik masing-masing host pada menu ip configuration pada auto configuration maka akan muncul secara otomatis ip address, link local addresss, dan gatewaynya secara otomatis. Semua ip address, link local address, dan gateway secara otomatis akan terisi pada masing-masing host jika mengklik auto config.
- Namun berbeda dengan Pablet1 dan Tablet 1 pada HotSpot Lt.3 USD, gateway pada host tersebut tidak bisa terkoneksi.
- Jadi bisa disimpulkan, jika menconfig static tidak efektif namun jika autoconfig tentu lebih efektif karena cocok digunakan untuk jaringan berskala besar.

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IMPLEMENTASI AUTOCONFIGURATION IP ADDRESS VERSI 6 (II).

TUGAS:

- a. Dari topologi jaringan Wireless LAN untuk Implementasi **autoconfiguration IP Address version 6 (I)**, ubahlah IPv6 Address pada jaringan HotSpotLt1.usd, HostSpotLt2.usd, HostSpotLt3.usd dan HostSpotLt4.usd dengan mengganti IPv6 setiap router mengikuti tabel berikut ini:

Router	Interface	Link Local Address	Prefix Length
R1	FastEthernet0/1	2001:0DB8:0:1::FFFE	/64
R2	FastEthernet0/1	2001:0DB8:0:2::FFFE	/64
R3	FastEthernet0/1	2001:0DB8:0:3::FFFE	/64
R4	FastEthernet0/1	2001:0DB8:0:4::FFFE	/64

- Contoh konfigurasi IPv6 pada router R1 (klik tab CLI kemudian tekan enter)

```
router>enable
router#configure terminal
router(config)#interface FastEthernet0/1
router(config-if)#no ipv6 address 3FFE:501:8:1231:201:63FF:FEB0:9E02/64
router(config-if)#ipv6 address 2001:0DB8:0:1::FFFE/64
router(config-if)#shutdown
router(config-if)#no shutdown
router(config-if)#exit
router(config)#exit
router#exit
router>
```

Hal yang sama dapat dilakukan Router R2, R3, dan R4.

- b. Ubahlah konfigurasi IPv6 pada seluruh host di jaringan menjadi **Auto Config** dan Amati perubahan yang terjadi pada konfigurasi IPv6. Simpulkan hasil pengamatan anda!

Ketika mengubah konfigurasi ipv6 pada R1 dengan data-data yang disediakan, adanya perubahan yang terjadi. Perubahan tersebut ada pada awalan 64-bit ipv6 addressnya. Dimana Ketika melakukan config dengan mengubah interface fa0/1 pada masing-masing router kemudian melakukan autoconfig pada masing-masing host disaat itulah perubahan 64-bit pertama pada ip addressnya berubah. Perubahan tersebut mengikuti link local address yang dikonfigurasi pada interface fa0/1. Misal pada jaringan HotSpot Lt.1 semua awalan pada ip address masing-masing host berubah menjadi 2001:0DB8:0:1 tidak lagi 3FFE:501:8:1231 begitu juga dengan jaringan yang lainnya. Jika diexpand missal pda ipv6 address
2001:DB8:0:2:201:43FF:FE54:7103/64 menjadi
2001:0db8:0000:0002:0201:43ff:fe54:7103/64.

Namun, pada 2 host yaitu Pablet1 dan Tablet1 masih sama dengan sebelumnya, yaitu gatewaynya tidak terisi.

- c. Amati tabel routing RIP IPv6 pada setiap router. Bandingkan dengan hasil pengamatan sebelumnya. Simpulkan hasil pengamatan anda!

RIP R1

Mask	Network Address	NextHop (Gateway)	Interface
/64	2001:DB8:0:2::	FE80::206:2AFF:FE8C:C501	Fa0/0

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/64	2001:DB8:0:3::	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/64	2001:DB8:0:4::	FE80::2E0:8FFF:FE79:401	Fa0/0
/64	3FFE:501:8:1232::	FE80::206:2AFF:FE8C:C501	Fa0/0
/64	3FFE:501:8:1233::	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/64	3FFE:501:8:1234::	FE80::2E0:8FFF:FE79:401	Fa0/0

RIP R2

Mask	Network Address	NextHop (Gateway)	Interface
/64	2001:DB8:0:1::	FE80::201:63FF:FEBO:9E01	Fa0/0
/64	2001:DB8:0:3::	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/64	2001:DB8:0:4::	FE80::2E0:8FFF:FE79:401	Fa0/0
/64	3FFE:501:8:1231::	FE80::201:63FF:FEBO:9E01	Fa0/0
/64	3FFE:501:8:1233::	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/64	3FFE:501:8:1234::	FE80::2E0:8FFF:FE79:401	Fa0/0

RIP R3

Mask	Network Address	NextHop (Gateway)	Interface
/64	2001:DB8:0:1::	FE80::201:63FF:FEBO:9E01	Fa0/0
/64	2001:DB8:0:2::	FE80::206:2AFF:FE8C:C501	Fa0/0
/64	2001:DB8:0:4::	FE80::2E0:8FFF:FE79:401	Fa0/0
/64	3FFE:501:8:1231::	FE80::201:63FF:FEBO:9E01	Fa0/0
/64	3FFE:501:8:1232::	FE80::206:2AFF:FE8C:C501	Fa0/0
/64	3FFE:501:8:1234::	FE80::2E0:8FFF:FE79:401	Fa0/0

RIP R4

Mask	Network Address	NextHop (Gateway)	Interface
/64	2001:DB8:0:1::	FE80::201:63FF:FEBO:9E01	Fa0/0
/64	2001:DB8:0:2::	FE80::206:2AFF:FE8C:C501	Fa0/0
/64	2001:DB8:0:3::	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/64	3FFE:501:8:1231::	FE80::201:63FF:FEBO:9E01	Fa0/0
/64	3FFE:501:8:1232::	FE80::206:2AFF:FE8C:C501	Fa0/0
/64	3FFE:501:8:1233::	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0

Dari hasil pengamatan, perbedaan dengan table routing RIP IPV6 pada masingmasing routing adalah jumlah table RIPnya. Dimana sebelumnya terdapat 3 tabel routing RIP namun kali ini terdapat 6 tabel routing RIP pada masingmasing router. Dan awalan ip addressnya tentu berbeda namun masih menggunakan prefix-length 64-bit.

- d. Lakukan pengujian dengan menjalankan perintah ping dari Notebook1 ke semua host di jaringan. Simpulkan hasil pengamatan anda!

HotSpot Lt2.USD

○ Notebook1 ke PC1

```
Packet Tracer PC Command Line 1.0
PC>ping 2001:DB8:0:2:201:43FF:FE54:7103

Pinging 2001:DB8:0:2:201:43FF:FE54:7103 with 32 bytes of
data:

Reply from 2001:DB8:0:2:201:43FF:FE54:7103: bytes=32
time=73ms TTL=126
Reply from 2001:DB8:0:2:201:43FF:FE54:7103: bytes=32
time=18ms TTL=126
Reply from 2001:DB8:0:2:201:43FF:FE54:7103: bytes=32
time=15ms TTL=126
Reply from 2001:DB8:0:2:201:43FF:FE54:7103: bytes=32
time=17ms TTL=126

Ping statistics for 2001:DB8:0:2:201:43FF:FE54:7103:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 15ms, Maximum = 73ms, Average = 30ms

PC>
```

○ Notebook1 ke PC2

```
PC>ping 2001:DB8:0:2:201:63FF:FE1B:1EE8

Pinging 2001:DB8:0:2:201:63FF:FE1B:1EE8 with 32 bytes of
data:

Reply from 2001:DB8:0:2:201:63FF:FE1B:1EE8: bytes=32
time=40ms TTL=126
Reply from 2001:DB8:0:2:201:63FF:FE1B:1EE8: bytes=32
time=22ms TTL=126
Reply from 2001:DB8:0:2:201:63FF:FE1B:1EE8: bytes=32
time=25ms TTL=126
Reply from 2001:DB8:0:2:201:63FF:FE1B:1EE8: bytes=32
time=26ms TTL=126

Ping statistics for 2001:DB8:0:2:201:63FF:FE1B:1EE8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 22ms, Maximum = 40ms, Average = 28ms

PC>
```

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Notebook1 ke PC3

HotSpot Lt3.USD

```
PC>ping 2001:DB8:0:2:201:63FF:FE67:CB4D

Pinging 2001:DB8:0:2:201:63FF:FE67:CB4D with 32 bytes
of data:

Reply from 2001:DB8:0:2:201:63FF:FE67:CB4D: bytes=32
time=37ms TTL=126
Reply from 2001:DB8:0:2:201:63FF:FE67:CB4D: bytes=32
time=21ms TTL=126
Reply from 2001:DB8:0:2:201:63FF:FE67:CB4D: bytes=32
time=15ms TTL=126
Reply from 2001:DB8:0:2:201:63FF:FE67:CB4D: bytes=32
time=19ms TTL=126

Ping statistics for 2001:DB8:0:2:201:63FF:FE67:CB4D:
    Packets: Sent = 4, Received = 4, Lost = 0 (0%
loss),
Approximate round trip times in milli-seconds:
    Minimum = 15ms, Maximum = 37ms, Average = 23ms

PC>
```

○ Notebook1 ke DVR1

```
Physical Config Desktop Custom Interface

PC>ping 2001:DB8:0:3:260:47FF:FE61:82B8

Pinging 2001:DB8:0:3:260:47FF:FE61:82B8 with 32 bytes
of data:

Reply from 2001:DB8:0:3:260:47FF:FE61:82B8: bytes=32
time=48ms TTL=126
Reply from 2001:DB8:0:3:260:47FF:FE61:82B8: bytes=32
time=17ms TTL=126
Reply from 2001:DB8:0:3:260:47FF:FE61:82B8: bytes=32
time=16ms TTL=126
Reply from 2001:DB8:0:3:260:47FF:FE61:82B8: bytes=32
time=23ms TTL=126

Ping statistics for 2001:DB8:0:3:260:47FF:FE61:82B8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0%
loss),
Approximate round trip times in milli-seconds:
    Minimum = 16ms, Maximum = 48ms, Average = 26ms

PC>
```

Nama : Loadtriani Oktavia
NIM : 215314172

Notebook1 ke Pablet 1

Physical Config Desktop Custom Interface

Command Prompt

```
Time=25ms TTR=120
Ping statistics for 2001:DB8:0:3:260:47FF:FE61:82B8:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
    Minimum = 16ms, Maximum = 48ms, Average = 26ms

PC>ping 2001:DB8:0:3:201:96FF:FE6D:8160

Pinging 2001:DB8:0:3:201:96FF:FE6D:8160 with 32 bytes
of data:

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

Ping statistics for 2001:DB8:0:3:201:96FF:FE6D:8160:
  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>
```

○ Notebook 1 ke Tablet1

Physical Config Desktop Custom Interface

Command Prompt

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

Ping statistics for 2001:DB8:0:3:201:96FF:FE6D:8160:
  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

PC>ping 2001:DB8:0:3:2D0:FFFF:FE93:12C7

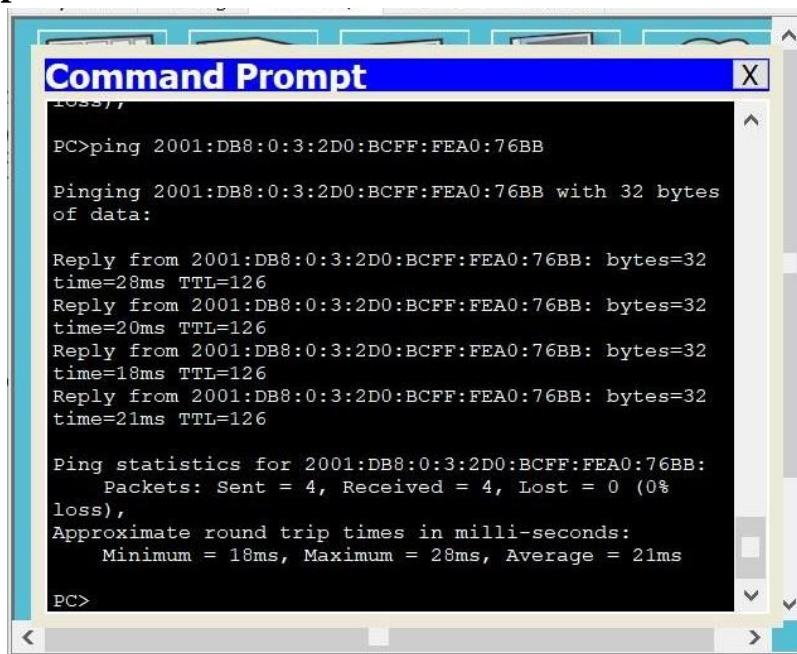
Pinging 2001:DB8:0:3:2D0:FFFF:FE93:12C7 with 32 bytes
of data:

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

Ping statistics for 2001:DB8:0:3:2D0:FFFF:FE93:12C7:
  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>
```

Notebook1 ke DHCP Lt.3

HotSpot Lt4.USD



```
PC>ping 2001:DB8:0:3:2D0:BCFF:FEA0:76BB

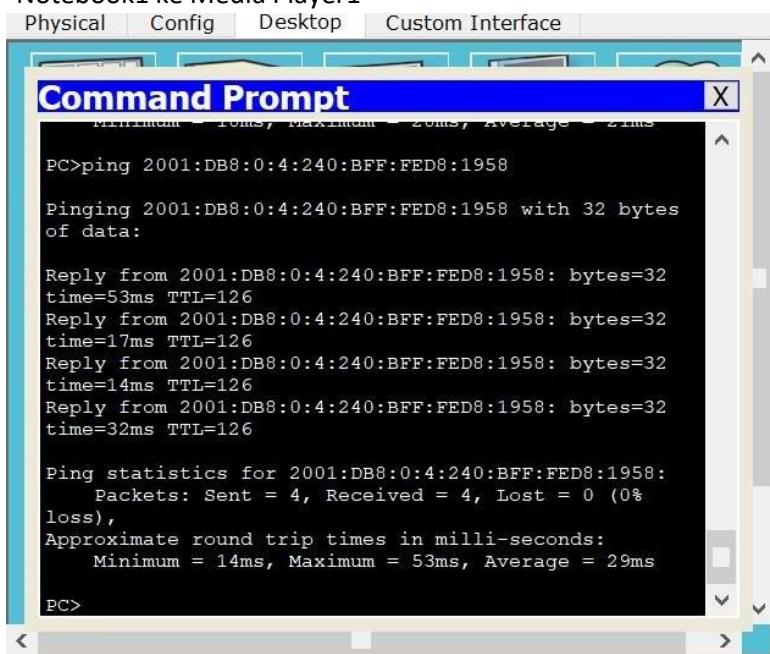
Pinging 2001:DB8:0:3:2D0:BCFF:FEA0:76BB with 32 bytes
of data:

Reply from 2001:DB8:0:3:2D0:BCFF:FEA0:76BB: bytes=32
time=28ms TTL=126
Reply from 2001:DB8:0:3:2D0:BCFF:FEA0:76BB: bytes=32
time=20ms TTL=126
Reply from 2001:DB8:0:3:2D0:BCFF:FEA0:76BB: bytes=32
time=18ms TTL=126
Reply from 2001:DB8:0:3:2D0:BCFF:FEA0:76BB: bytes=32
time=21ms TTL=126

Ping statistics for 2001:DB8:0:3:2D0:BCFF:FEA0:76BB:
    Packets: Sent = 4, Received = 4, Lost = 0 (0%
loss),
Approximate round trip times in milli-seconds:
    Minimum = 18ms, Maximum = 28ms, Average = 21ms

PC>
```

○ Notebook1 ke Media Player1



```
Physical Config Desktop Custom Interface

PC>ping 2001:DB8:0:4:240:BFF:FED8:1958

Pinging 2001:DB8:0:4:240:BFF:FED8:1958 with 32 bytes
of data:

Reply from 2001:DB8:0:4:240:BFF:FED8:1958: bytes=32
time=53ms TTL=126
Reply from 2001:DB8:0:4:240:BFF:FED8:1958: bytes=32
time=17ms TTL=126
Reply from 2001:DB8:0:4:240:BFF:FED8:1958: bytes=32
time=14ms TTL=126
Reply from 2001:DB8:0:4:240:BFF:FED8:1958: bytes=32
time=32ms TTL=126

Ping statistics for 2001:DB8:0:4:240:BFF:FED8:1958:
    Packets: Sent = 4, Received = 4, Lost = 0 (0%
loss),
Approximate round trip times in milli-seconds:
    Minimum = 14ms, Maximum = 53ms, Average = 29ms

PC>
```

Nama : Loadtriani Oktavia

NIM : 215314172

Notebook1 ke WK1

○ Notebook1 ke Netbook1

```
PC>ping 2001:DB8:0:4:230:F2FF:FE97:1E36
Pinging 2001:DB8:0:4:230:F2FF:FE97:1E36 with 32 bytes
of data:

Reply from 2001:DB8:0:4:230:F2FF:FE97:1E36: bytes=32
time=40ms TTL=126
Reply from 2001:DB8:0:4:230:F2FF:FE97:1E36: bytes=32
time=22ms TTL=126
Reply from 2001:DB8:0:4:230:F2FF:FE97:1E36: bytes=32
time=19ms TTL=126
Reply from 2001:DB8:0:4:230:F2FF:FE97:1E36: bytes=32
time=28ms TTL=126

Ping statistics for 2001:DB8:0:4:230:F2FF:FE97:1E36:
    Packets: Sent = 4, Received = 4, Lost = 0 (0%
loss),
Approximate round trip times in milli-seconds:
    Minimum = 19ms, Maximum = 40ms, Average = 27ms

PC>
```

```
Physical Config Desktop Custom Interface
PC>ping 2001:DB8:0:4:2E0:8FFF:FE26:E815
Pinging 2001:DB8:0:4:2E0:8FFF:FE26:E815 with 32 bytes
of data:

Reply from 2001:DB8:0:4:2E0:8FFF:FE26:E815: bytes=32
time=41ms TTL=126
Reply from 2001:DB8:0:4:2E0:8FFF:FE26:E815: bytes=32
time=20ms TTL=126
Reply from 2001:DB8:0:4:2E0:8FFF:FE26:E815: bytes=32
time=22ms TTL=126
Reply from 2001:DB8:0:4:2E0:8FFF:FE26:E815: bytes=32
time=12ms TTL=126

Ping statistics for 2001:DB8:0:4:2E0:8FFF:FE26:E815:
    Packets: Sent = 4, Received = 4, Lost = 0 (0%
loss),
Approximate round trip times in milli-seconds:
    Minimum = 12ms, Maximum = 41ms, Average = 23ms

PC>
```

Notebook1 ke DHCP Lt.4

```
PC>ping 2001:DB8:0:4:250:FFF:FEDA:1
Pinging 2001:DB8:0:4:250:FFF:FEDA:1 with 32 bytes of data:
Reply from 2001:DB8:0:4:250:FFF:FEDA:1: bytes=32 time=46ms TTL=126
Reply from 2001:DB8:0:4:250:FFF:FEDA:1: bytes=32 time=29ms TTL=126
Reply from 2001:DB8:0:4:250:FFF:FEDA:1: bytes=32 time=19ms TTL=126
Reply from 2001:DB8:0:4:250:FFF:FEDA:1: bytes=32 time=19ms TTL=126

Ping statistics for 2001:DB8:0:4:250:FFF:FEDA:1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 19ms, Maximum = 46ms, Average = 28ms

PC>
```

Simpulan dari hasil pengujian tersebut, sama seperti sebelumnya yaitu dilakukannya ping dari Notebook1 ke semua host di jaringan lain berhasil/terkoneksi. Kecuali pada Pablet1 dan tablet1 yang tidak terkoneksi atau request time out.

- e. Apakah masih dibutuhkan server DHCP pada pengalaman IP versi 6? Jelaskan jawaban anda dengan singkat!

Dynamic Host Configuration Protocol atau biasa disingkat DHCP adalah protokol berbasis server yang digunakan untuk memudahkan penyebaran IP Address ke sebuah jaringan secara otomatis. Server DHCP adalah perangkat yang bertugas untuk mengatur, mengisi, memberikan serta mendistribusikan alamat IP ke setiap host yang berada dalam satu jaringan sama secara otomatis. Dan tentu ini sangat berguna pada IPV6 karena kita tidak perlu mengisi ip address secara manual dan tentu dapat mengurangi kesalahan jika pengisian ip address secara manual pada masing-masing host

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IMPLEMENTASI DHCP IP ADDRESS VERSI 6 (III).

TUGAS:

- a. Dari topologi jaringan Wireless LAN untuk Implementasi **autoconfiguration IP Address version 6 (II)**, ubahlah IPv6 Address pada jaringan HotSpotLt1.usd, HostSpotLt2.usd, HostSpotLt3.usd dan HostSpotLt4.usd dengan mengganti IPv6 setiap router dan DHCP mengikuti tabel berikut ini:

Router	Interface	Link Local Address	Prefix Length
R1	FastEthernet0/1	2001:0DB8::1:FFFE	/112
DHCP Pool LT1	-	2001:0DB8::1:0	/112
R2	FastEthernet0/1	2001:0DB8::2:FFFE	/112
DHCP Pool LT2	-	2001:0DB8::2:0	/112
R3	FastEthernet0/1	2001:0DB8::3:FFFE	/112
DHCP Pool LT3	-	2001:0DB8::3:0	/112
R4	FastEthernet0/1	2001:0DB8::4:FFFE	/112
DHCP Pool LT4	-	2001:0DB8::4:0	/112
DNS-Server	-	2001:0DB8::8888	-
DNS-Server	-	2001:0DB8::8844	-

- Contoh konfigurasi DHCP Statefull pada router R1 (klik tab CLI kemudian tekan enter)

```
router>enable
router#configure terminal
router(config)#interface FastEthernet0/1
router(config-if)#no ipv6 address 2001:0DB8:0:1::FFFE/64
router(config-if)#ipv6 address 2001:0DB8::1:FFFE/112
router(config)# ipv6 local pool LT1_POOL 2001:DB8::1:0/112 112
router(config)# ipv6 dhcp pool LT1.USD
router(config-dhcpv6)#prefix-delegation pool LT1_POOL
router(config-dhcpv6)# dns-server 2001:4860:4860::8888
router(config-dhcpv6)# dns-server 2001:4860:4860::8844
router(config-dhcpv6)#domain-name TI.USD
router(config-dhcpv6)#exit
router(config)#interface FastEthernet0/1
router(config-if)# ipv6 dhcp server LT1.USD
router(config)#exit
router#exit
router>
```

Hal yang sama dapat dilakukan Router R2, R3, dan R4.

- b. Ubahlah konfigurasi IPv6 pada seluruh host di jaringan menjadi **DHCP** dan Amati perubahan yang terjadi pada konfigurasi IPv6. Simpulkan hasil pengamatan anda! Setelah melakukan konfigurasi DHCP Statefull pada router R1, R2, R3, dan R4 sesuai data yang diberikan, kemudian mengklik DHCP pada ip configuration bahwa dapat disimpulkan adanya perubahan dari routing sebelumnya. Dimana perubahan tersebut adalah pada ipv6 addressnya dan dns servernya dari masing-masing host. Dari ipv6 addressnya terlihat lebih pendek yaitu missal pada Notebook1 yaitu 2001:DB8::2:7103/112 kalau diexpand menjadi 2001:0db8:0000:0000:0000:0002:7103/112 . Dan tanda “::” pada ipv6 address merupakan hasil kompresi dari satu atau lebih hextet 16-bit yang terdiri dari semua nol dan tanda “::” hanya dapat digunakan sekali dalam sebuah alamat. Begitu juga

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pada semua host. Namun yang masih sama adalah pada Pablet1 dan Tablet1 gatewaynya tidak bisa terkoneksi.

- b. Amati tabel routing RIP IPv6 pada setiap router. Bandingkan dengan hasil pengamatan sebelumnya. Simpulkan hasil pengamatan anda!

RIP R1

Mask	Network Address	NextHop (Gateway)	Interface
/112	2001:DB8::2:0	FE80::206:2AFF:FE8C:C501	Fa0/0
/112	2001:DB8::3:0	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/112	2001:DB8::4:0	FE80::2E0:8FFF:FE79:401	Fa0/0
/64	2001:DB8:0:2::	FE80::206:2AFF:FE8C:C501	Fa0/0
/64	2001:DB8:0:3::	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/64	2001:DB8:0:4::	FE80::2E0:8FFF:FE79:401	Fa0/0
/64	3FFE:501:8:1232::	FE80::206:2AFF:FE8C:C501	Fa0/0
/64	3FFE:501:8:1233::	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/64	3FFE:501:8:1234::	FE80::2E0:8FFF:FE79:401	Fa0/0

RIP R2

Mask	Network Address	NextHop (Gateway)	Interface
/112	2001:DB8::1:0	FE80::201:63FF:FEB0:9E01	Fa0/0
/112	2001:DB8::3:0	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/112	2001:DB8::4:0	FE80::2E0:8FFF:FE79:401	Fa0/0
/64	2001:DB8:0:1::	FE80::201:63FF:FEB0:9E01	Fa0/0
/64	2001:DB8:0:3::	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/64	2001:DB8:0:4::	FE80::2E0:8FFF:FE79:401	Fa0/0
/64	3FFE:501:8:1231::	FE80::201:63FF:FEB0:9E01	Fa0/0
/64	3FFE:501:8:1233::	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/64	3FFE:501:8:1234::	FE80::2E0:8FFF:FE79:401	Fa0/0

RIP R3

Mask	Network Address	NextHop (Gateway)	Interface
/112	2001:DB8::1:0	FE80::201:63FF:FEB0:9E01	Fa0/0
/112	2001:DB8::2:0	FE80::206:2AFF:FE8C:C501	Fa0/0
/112	2001:DB8::4:0	FE80::2E0:8FFF:FE79:401	Fa0/0
/64	2001:DB8:0:1::	FE80::201:63FF:FEB0:9E01	Fa0/0
/64	2001:DB8:0:2::	FE80::206:2AFF:FE8C:C501	Fa0/0
/64	2001:DB8:0:4::	FE80::2E0:8FFF:FE79:401	Fa0/0
/64	3FFE:501:8:1231::	FE80::201:63FF:FEB0:9E01	Fa0/0
/64	3FFE:501:8:1232::	FE80::206:2AFF:FE8C:C501	Fa0/0
/64	3FFE:501:8:1234::	FE80::2E0:8FFF:FE79:401	Fa0/0

RIP R4

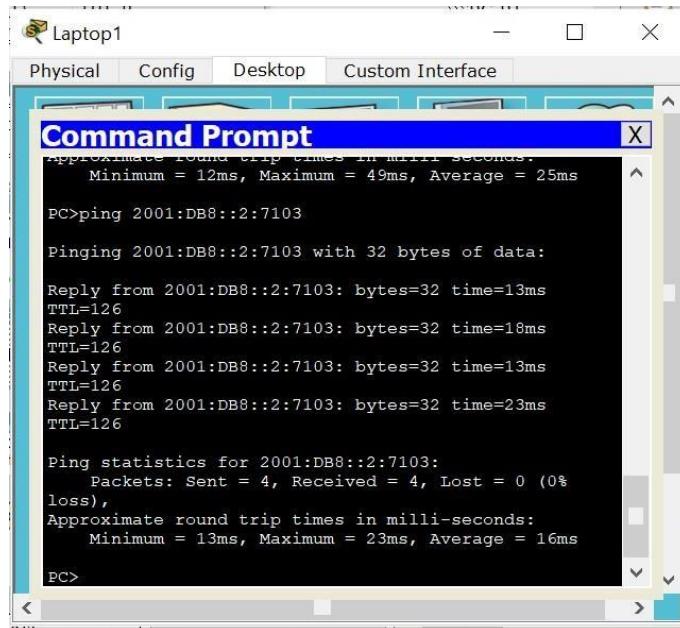
Mask	Network Address	NextHop (Gateway)	Interface
/112	2001:DB8::1:0	FE80::201:63FF:FEB0:9E01	Fa0/0
/112	2001:DB8::2:0	FE80::206:2AFF:FE8C:C501	Fa0/0
/112	2001:DB8::3:0	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/64	2001:DB8:0:1::	FE80::201:63FF:FEB0:9E01	Fa0/0
/64	2001:DB8:0:2::	FE80::206:2AFF:FE8C:C501	Fa0/0
/64	2001:DB8:0:3::	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0
/64	3FFE:501:8:1231::	FE80::201:63FF:FEB0:9E01	Fa0/0
/64	3FFE:501:8:1232::	FE80::206:2AFF:FE8C:C501	Fa0/0
/64	3FFE:501:8:1233::	FE80::201:2D0:D3FF:FE6A:E801	Fa0/0

Dari hasil pengamatan, perbedaan dengan table routing RIP IPV6 pada masing-masing routing adalah jumlah table RIPnya. Dimana sebelumnya terdapat 6 tabel routing RIP namun kali ini terdapat 9 tabel routing RIP pada masing-masing router. Dan perubahan juga terjadi pada awalan ip addressnya dan prefix-length yang sekarang menjadi 112-bit.

- d. Lakukan pengujian dengan menjalankan perintah ping dari Notebook1 ke semua host di jaringan. Simpulkan hasil pengamatan anda!

HotSpot Lt2.USD

○ Notebook1 ke PC1



```
Laptop1
Physical Config Desktop Custom Interface
Command Prompt
Approximate round trip times in milli seconds.
    Minimum = 12ms, Maximum = 49ms, Average = 25ms
PC>ping 2001:DB8::2:7103

Pinging 2001:DB8::2:7103 with 32 bytes of data:
Reply from 2001:DB8::2:7103: bytes=32 time=13ms TTL=126
Reply from 2001:DB8::2:7103: bytes=32 time=18ms TTL=126
Reply from 2001:DB8::2:7103: bytes=32 time=13ms TTL=126
Reply from 2001:DB8::2:7103: bytes=32 time=23ms TTL=126

Ping statistics for 2001:DB8::2:7103:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 13ms, Maximum = 23ms, Average = 16ms
PC>
```

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Notebook1 ke PC2

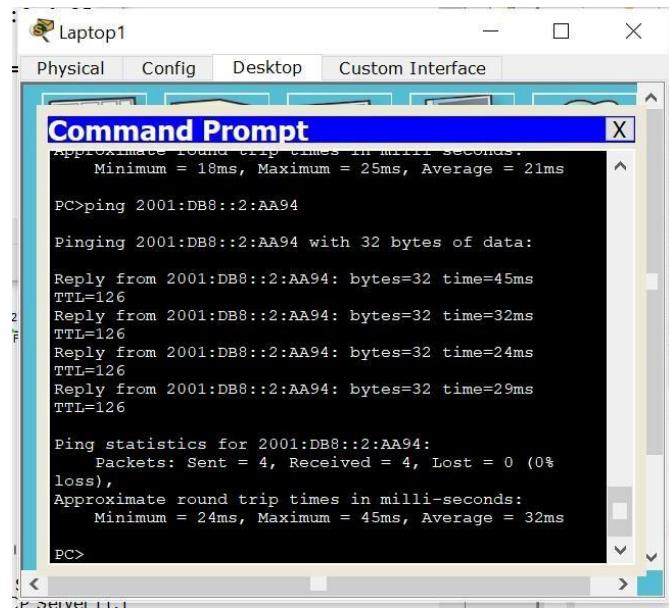
```
LTE 0 Laptop1 - X
Physical Config Desktop Custom Interface
Command Prompt X
PC>ping 2001:DB8::2:1EE8
Pinging 2001:DB8::2:1EE8 with 32 bytes of data:
Reply from 2001:DB8::2:1EE8: bytes=32 time=39ms TTL=126
Reply from 2001:DB8::2:1EE8: bytes=32 time=21ms TTL=126
Reply from 2001:DB8::2:1EE8: bytes=32 time=20ms TTL=126
Reply from 2001:DB8::2:1EE8: bytes=32 time=20ms TTL=126
Ping statistics for 2001:DB8::2:1EE8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 20ms, Maximum = 39ms, Average = 25ms
PC>
```

○ Notebook1 ke PC3

```
LTE 0 Laptop1 - X
Physical Config Desktop Custom Interface
Command Prompt X
PC>ping 2001:DB8::2:CB4D
Pinging 2001:DB8::2:CB4D with 32 bytes of data:
Reply from 2001:DB8::2:CB4D: bytes=32 time=23ms TTL=126
Reply from 2001:DB8::2:CB4D: bytes=32 time=18ms TTL=126
Reply from 2001:DB8::2:CB4D: bytes=32 time=20ms TTL=126
Reply from 2001:DB8::2:CB4D: bytes=32 time=25ms TTL=126
Ping statistics for 2001:DB8::2:CB4D:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 18ms, Maximum = 25ms, Average = 21ms
PC>
```

Nama : Loadtriani Oktavia
NIM : 215314172

Notebook1 ke DHCP Lt.2



Laptop1

Physical Config Desktop Custom Interface

Command Prompt

```
Approximate round trip times in milli-seconds:
    Minimum = 18ms, Maximum = 25ms, Average = 21ms

PC>ping 2001:DB8::2:AA94

Pinging 2001:DB8::2:AA94 with 32 bytes of data:

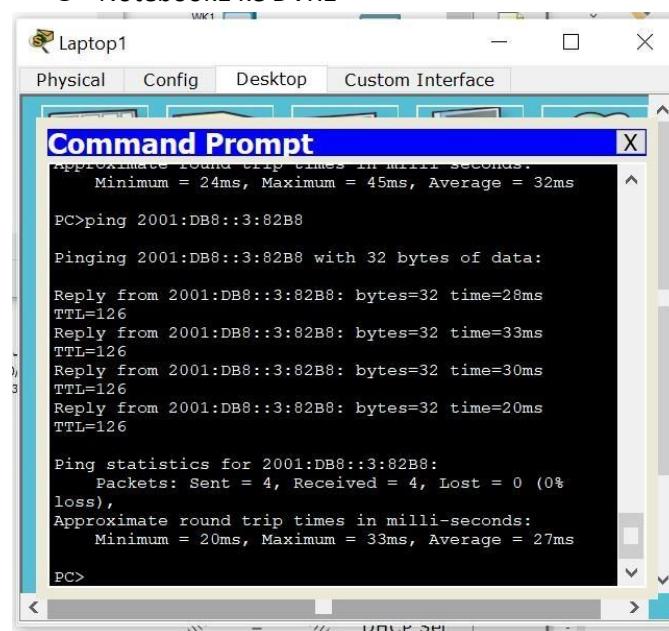
Reply from 2001:DB8::2:AA94: bytes=32 time=45ms
TTL=126
Reply from 2001:DB8::2:AA94: bytes=32 time=32ms
TTL=126
Reply from 2001:DB8::2:AA94: bytes=32 time=24ms
TTL=126
Reply from 2001:DB8::2:AA94: bytes=32 time=29ms
TTL=126

Ping statistics for 2001:DB8::2:AA94:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 24ms, Maximum = 45ms, Average = 32ms

PC>
```

HotSpot Lt3.USD

○ Notebook1 ke DVR1



Laptop1

Physical Config Desktop Custom Interface

Command Prompt

```
Approximate round trip times in milli-seconds:
    Minimum = 24ms, Maximum = 45ms, Average = 32ms

PC>ping 2001:DB8::3:82B8

Pinging 2001:DB8::3:82B8 with 32 bytes of data:

Reply from 2001:DB8::3:82B8: bytes=32 time=28ms
TTL=126
Reply from 2001:DB8::3:82B8: bytes=32 time=33ms
TTL=126
Reply from 2001:DB8::3:82B8: bytes=32 time=30ms
TTL=126
Reply from 2001:DB8::3:82B8: bytes=32 time=20ms
TTL=126

Ping statistics for 2001:DB8::3:82B8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 20ms, Maximum = 33ms, Average = 27ms

PC>
```

Nama : Loadtriani Oktavia
NIM : 215314172

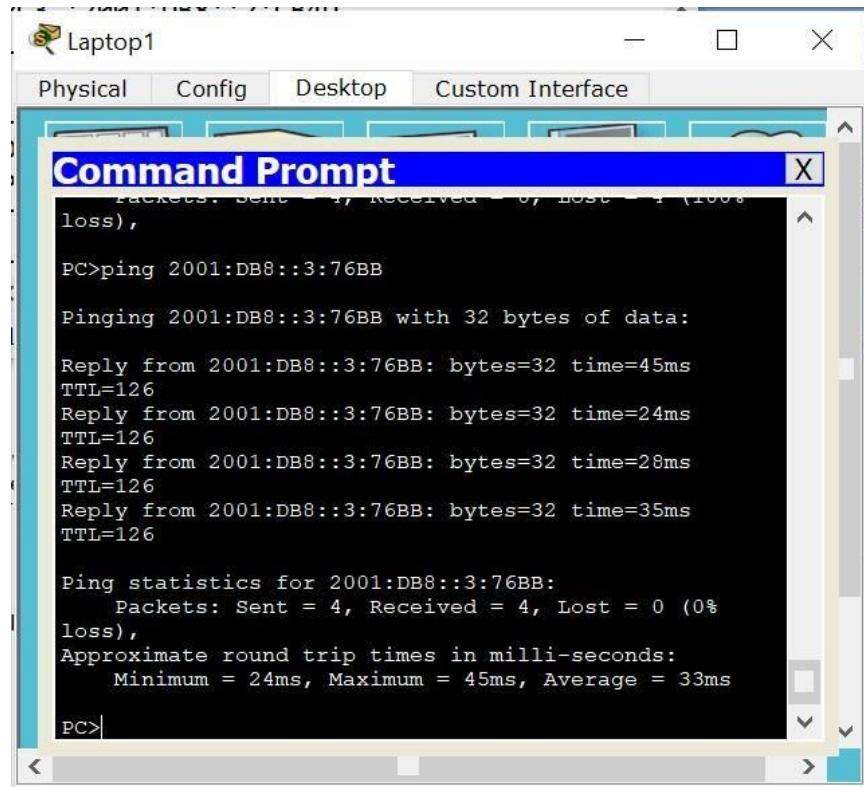
Notebook1 ke Pablet1

```
Request timed out.  
Request timed out.  
Request timed out.  
Request timed out.  
  
Ping statistics for 2001:DB8::3:8160:  
    Packets: Sent = 4, Received = 0, Lost = 4 (100%  
loss),  
  
PC>ping 2001:DB8::3:8160  
  
Pinging 2001:DB8::3:8160 with 32 bytes of data:  
  
Request timed out.  
Request timed out.  
Request timed out.  
Request timed out.  
  
Ping statistics for 2001:DB8::3:8160:  
    Packets: Sent = 4, Received = 0, Lost = 4 (100%  
loss),  
  
PC>
```

○ Notebook1 ke Tablet1

```
Request timed out.  
Request timed out.  
Request timed out.  
Request timed out.  
  
Ping statistics for 2001:DB8::3:8160:  
    Packets: Sent = 4, Received = 0, Lost = 4 (100%  
loss),  
  
PC>ping 2001:DB8::3:12C7  
  
Pinging 2001:DB8::3:12C7 with 32 bytes of data:  
  
Request timed out.  
Request timed out.  
Request timed out.  
Request timed out.  
  
Ping statistics for 2001:DB8::3:12C7:  
    Packets: Sent = 4, Received = 0, Lost = 4 (100%  
loss),  
  
PC>
```

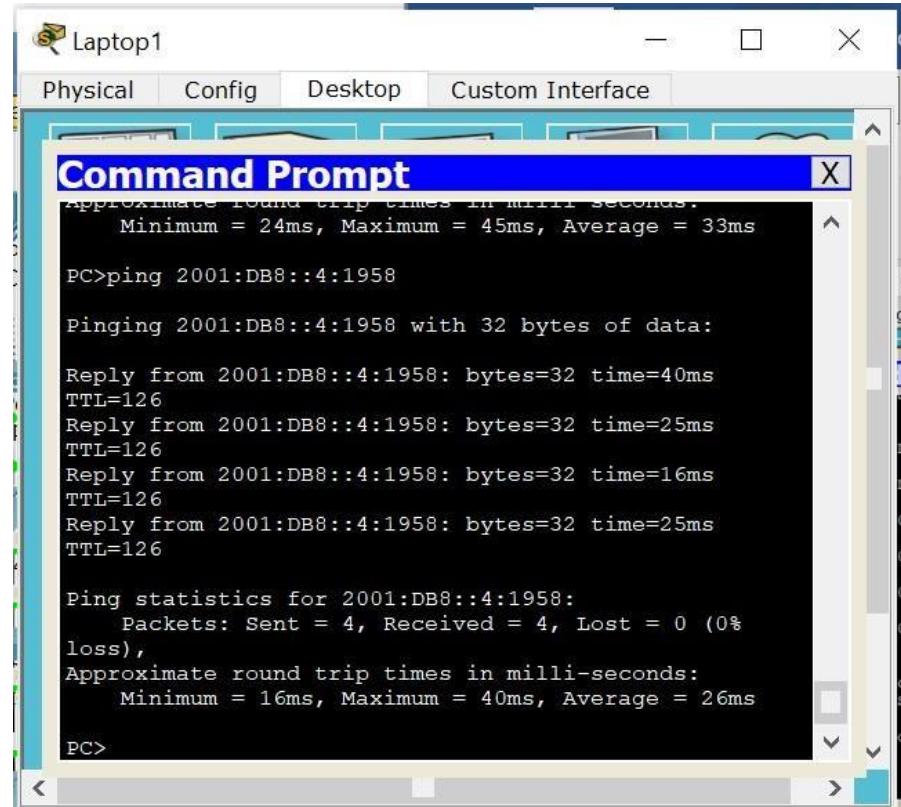
Notebook1 ke DHCP Lt.3



```
Laptop1
Physical Config Desktop Custom Interface
Command Prompt
PC>ping 2001:DB8::3:76BB
Pinging 2001:DB8::3:76BB with 32 bytes of data:
Reply from 2001:DB8::3:76BB: bytes=32 time=45ms TTL=126
Reply from 2001:DB8::3:76BB: bytes=32 time=24ms TTL=126
Reply from 2001:DB8::3:76BB: bytes=32 time=28ms TTL=126
Reply from 2001:DB8::3:76BB: bytes=32 time=35ms TTL=126
Ping statistics for 2001:DB8::3:76BB:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 24ms, Maximum = 45ms, Average = 33ms
PC>
```

HotSpot Lt4.USD

- Notebook1 ke MediaPlayer1



```
Laptop1
Physical Config Desktop Custom Interface
Command Prompt
Approximate round trip times in milli-seconds.
    Minimum = 24ms, Maximum = 45ms, Average = 33ms
PC>ping 2001:DB8::4:1958
Pinging 2001:DB8::4:1958 with 32 bytes of data:
Reply from 2001:DB8::4:1958: bytes=32 time=40ms TTL=126
Reply from 2001:DB8::4:1958: bytes=32 time=25ms TTL=126
Reply from 2001:DB8::4:1958: bytes=32 time=16ms TTL=126
Reply from 2001:DB8::4:1958: bytes=32 time=25ms TTL=126
Ping statistics for 2001:DB8::4:1958:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 16ms, Maximum = 40ms, Average = 26ms
PC>
```

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Notebook1 ke WK1

Laptop1

Physical Config Desktop Custom Interface

Command Prompt

```
Approximate round trip times in milli-seconds.
    Minimum = 16ms, Maximum = 40ms, Average = 26ms

PC>ping 2001:DB8::4:1E36

Pinging 2001:DB8::4:1E36 with 32 bytes of data:

Reply from 2001:DB8::4:1E36: bytes=32 time=49ms
TTL=126
Reply from 2001:DB8::4:1E36: bytes=32 time=16ms
TTL=126
Reply from 2001:DB8::4:1E36: bytes=32 time=17ms
TTL=126
Reply from 2001:DB8::4:1E36: bytes=32 time=20ms
TTL=126

Ping statistics for 2001:DB8::4:1E36:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 16ms, Maximum = 49ms, Average = 25ms

PC>
```

○ Notebook1 ke Netbook1

Laptop1

Physical Config Desktop Custom Interface

Command Prompt

```
Approximate round trip times in milli-seconds.
    Minimum = 16ms, Maximum = 49ms, Average = 25ms

PC>ping 2001:DB8::4:E815

Pinging 2001:DB8::4:E815 with 32 bytes of data:

Reply from 2001:DB8::4:E815: bytes=32 time=39ms
TTL=126
Reply from 2001:DB8::4:E815: bytes=32 time=17ms
TTL=126
Reply from 2001:DB8::4:E815: bytes=32 time=14ms
TTL=126
Reply from 2001:DB8::4:E815: bytes=32 time=19ms
TTL=126

Ping statistics for 2001:DB8::4:E815:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 39ms, Average = 22ms

PC>
```

Notebook1 ke DHCP Lt.4

The screenshot shows a 'Command Prompt' window titled 'Command Prompt'. The window displays the output of a ping command. The output is as follows:

```
Ping statistics for 2001:DB8::4:E815:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 14ms, Maximum = 39ms, Average = 22ms  
  
PC>ping 2001:DB8::4:1  
  
Pinging 2001:DB8::4:1 with 32 bytes of data:  
  
Reply from 2001:DB8::4:1: bytes=32 time=39ms TTL=126  
Reply from 2001:DB8::4:1: bytes=32 time=24ms TTL=126  
Reply from 2001:DB8::4:1: bytes=32 time=17ms TTL=126  
Reply from 2001:DB8::4:1: bytes=32 time=16ms TTL=126  
  
Ping statistics for 2001:DB8::4:1:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 16ms, Maximum = 39ms, Average = 24ms  
  
PC>
```

Sama seperti sebelumnya, ping dari Notebook1 ke host di jaringan yang lain berhasil/terkoneksi. Kecuali pada Pablet1 dan Tablet1 yang tidak terkoneksi karena gatewaynya tidak terisi secara otomatis.

- e. Jelaskan perbedaan, kekurangan dan keuntungan konfigurasi IPv6 Static, Auto Config dan DHCP!

Konfigurasi IPV6 Static

Kelebihan

- Bebas menentukan IP berapa yang mau dipakai sebagai IP address • Lebih mudah diingat karena IP address tetap
- Mempermudah men-setting device tersebut.

Kekurangan

- Jika memiliki banyak device akan capek karena men-konfigurasi 1 per 1 IP pada device tersebut
- Harus mengingat IP mana saja yang sudah dipakai
- Bila pembagian IP tidak benar akan mengalami IP conflict atau IP saling bertabrakan
- Tidak cocok untuk jaringan bersekalau besar

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Nama : Aldityo Chandra Agusta

NIM : 215314155

AutoConfig

Kelebihan

- Mempermudah dalam mendapatkan IP.
- Tidak perlu menyetting 1 per 1 host yang ada dalam jaringan
- Tidak perlu mengingat IP mana saja yang telah terpakai
- Host tidak akan mengalami IP conflict
- Cocok untuk jaringan skala besar

Kekurangan

- Sulit untuk mengidentifikasi saat terjadi gangguan.
- Alamat yang tidak beraturan karena serba otomatis

DHCP

Kelebihan

- Tidak perlu menyetting 1 per 1 host yang ada dalam jaringan
- Host tidak akan mengalami IP conflict karena jika IP address yang dibagikan admin telah dipakai, otomatis Host tersebut akan mencari IP lain dan merequest kembali IP ke device admin
- Tidak perlu mengingat IP mana saja yang telah terpakai karena DHCP server akan otomatis mencatat IP mana saja yang telah terpakai
- DNS bisa disetting diisi secara manual atau otomatis.

Kekurangan

- Sulit untuk mengidentifikasi saat terjadi gangguan.
- Alamat yang tidak beraturan karena serba otomatis

Perbedaan

Perbedaan mencolok antara konfigurasi static, autoconfig dan DHCP adalah soal perubahan alamatnya.

Pada static alamatnya tidak akan berubah sebelum kita menggantinya sedangkan autoConfig dan DHCP alamatnya akan berubah setiap kali perangkat terhubung pada suatu jaringan karena termasuk ip address dinamis.

Kesimpulan

Baik konfigurasi static, auto config, dan DHCP sama-sama memiliki kekurangan dan kelebihan.

Semua itu tergantung pada kebutuhan kita masingmasing saat kita akan membuat suatu jaringan.

Selamat belajar ☺