

LAPORAN UTS

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1. Tujuan

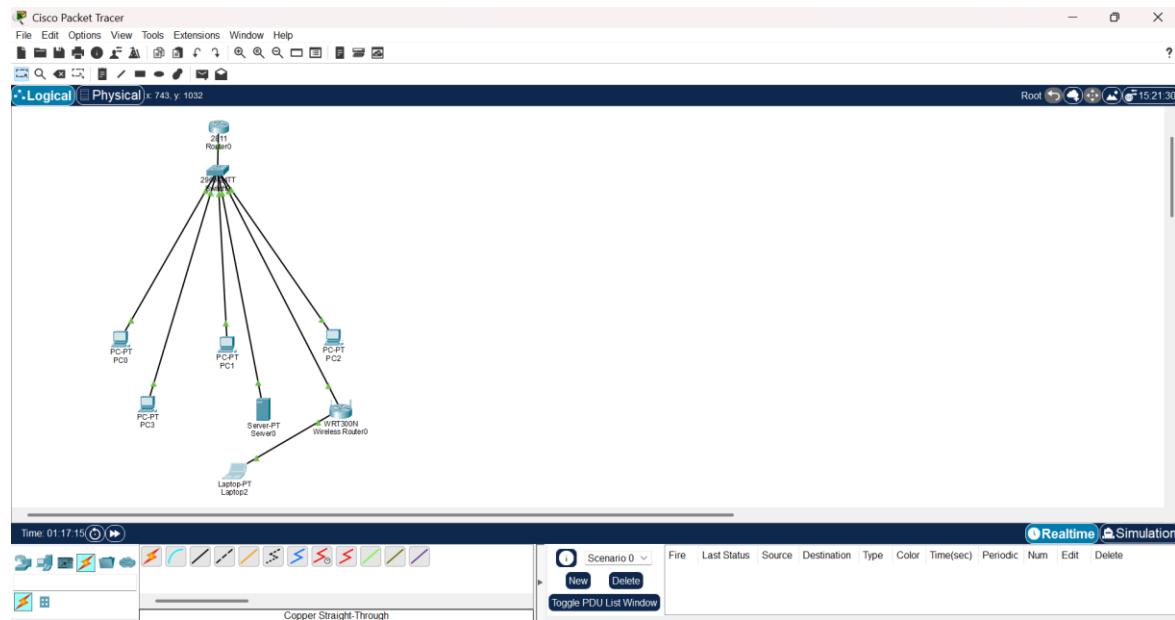
Untuk memahami dan mengimplementasikan konsep VLAN serta inter-VLAN routing pada jaringan komputer menggunakan perangkat Cisco, sehingga setiap divisi jaringan dapat saling berkomunikasi dengan efisien melalui router utama.

2. Topologi Jaringan

Topologi ini terdiri dari:

- 1 Router (Router0)
- 1 Switch (Switch0)
- 1 Wireless Router (Wireless Router0 – SSID: Hotspot)
- 4 PC (Yayasan, Guru, CCTV, Room1)
- 1 Server (Server0 – NVR)
- 1 Laptop (Laptop0 – Hotspot)

Screenshot:



3. Tabel IP Address

VLAN	Nama	IP Address / Subnet	Gateway	Perangkat
10	Yayasan	10.10.10.x / 24	10.10.10.1	PC0

VLAN	Nama	IP Address / Subnet	Gateway	Perangkat
20	Guru	10.10.20.x / 24	10.10.20.1	PC1
30	CCTV	10.10.30.x / 24	10.10.30.1	PC2
40	Room1	10.10.40.x / 24	10.10.40.1	PC3
50	Hotspot/NVR	10.10.50.x / 24	10.10.50.1	Server0, Laptop0, Wireless Router0

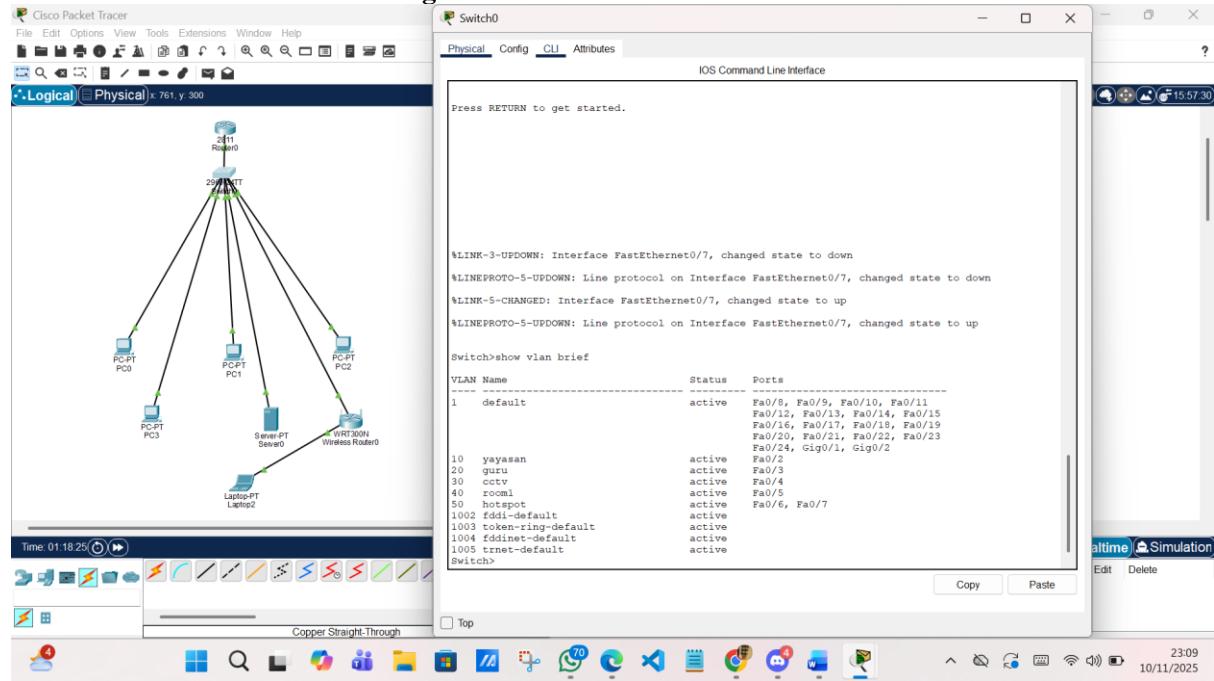
4. Langkah Konfigurasi

A. Konfigurasi Switch (Switch0)

1. Klik Switch0 → CLI
2. Ketik perintah:
3. enable
4. configure terminal
5. vlan 10
6. name Yayasan
7. vlan 20
8. name Guru
9. vlan 30
10. name CCTV
11. vlan 40
12. name Room1
13. vlan 50
14. name Hotspot
15. exit
16. Atur port:
17. interface fa0/2
18. switchport mode access
19. switchport access vlan 10
20. exit
21. interface fa0/3
22. switchport mode access
23. switchport access vlan 20
24. exit
25. ...

26. interface fa0/6
27. switchport access vlan 50
28. interface fa0/7
29. switchport access vlan 50
30. exit
31. Simpan:
32. end
33. write memory

SS 2 — CLI Switch VLAN Configuration

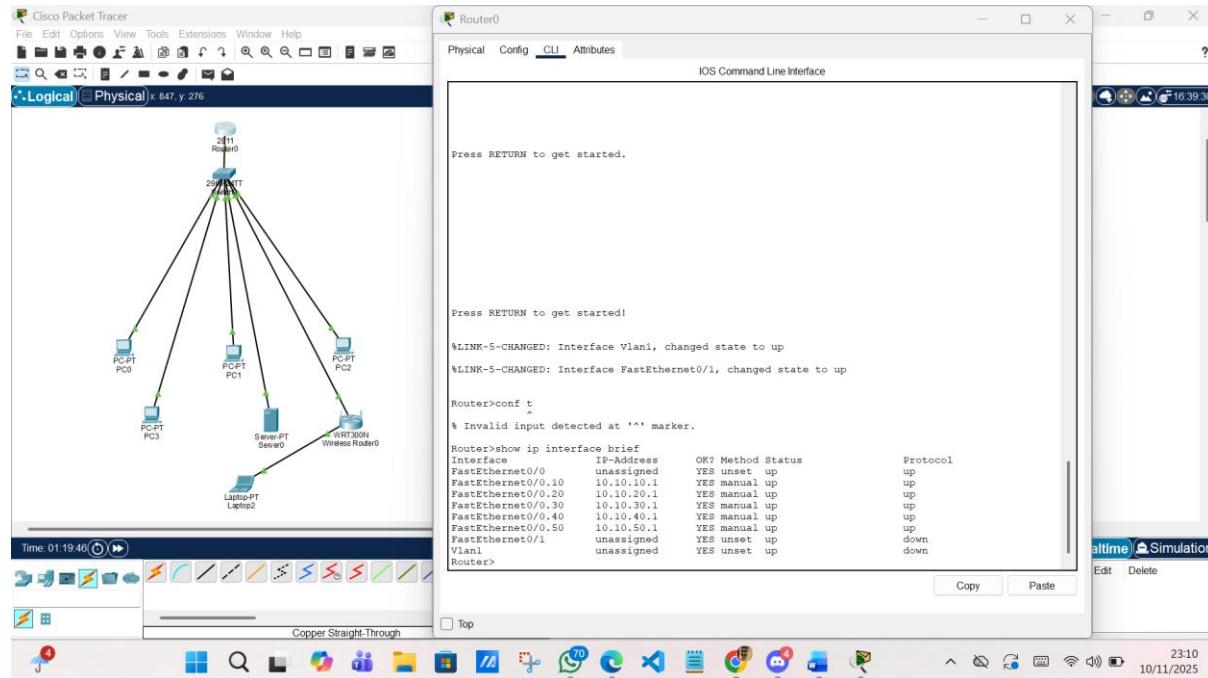


B. Konfigurasi Router (Router0)

1. Klik Router0 → CLI
2. Ketik:
3. enable
4. configure terminal
5. interface fa0/0
6. no shutdown
7. exit
- 8.
9. interface fa0/0.10
10. encapsulation dot1Q 10

11. ip address 10.10.10.1 255.255.255.0
12. no shutdown
13. exit
14. ...
15. interface fa0/0.50
16. encapsulation dot1Q 50
17. ip address 10.10.50.1 255.255.255.0
18. no shutdown
19. exit
20. end
21. write memory

SS 3 — Subinterface Router

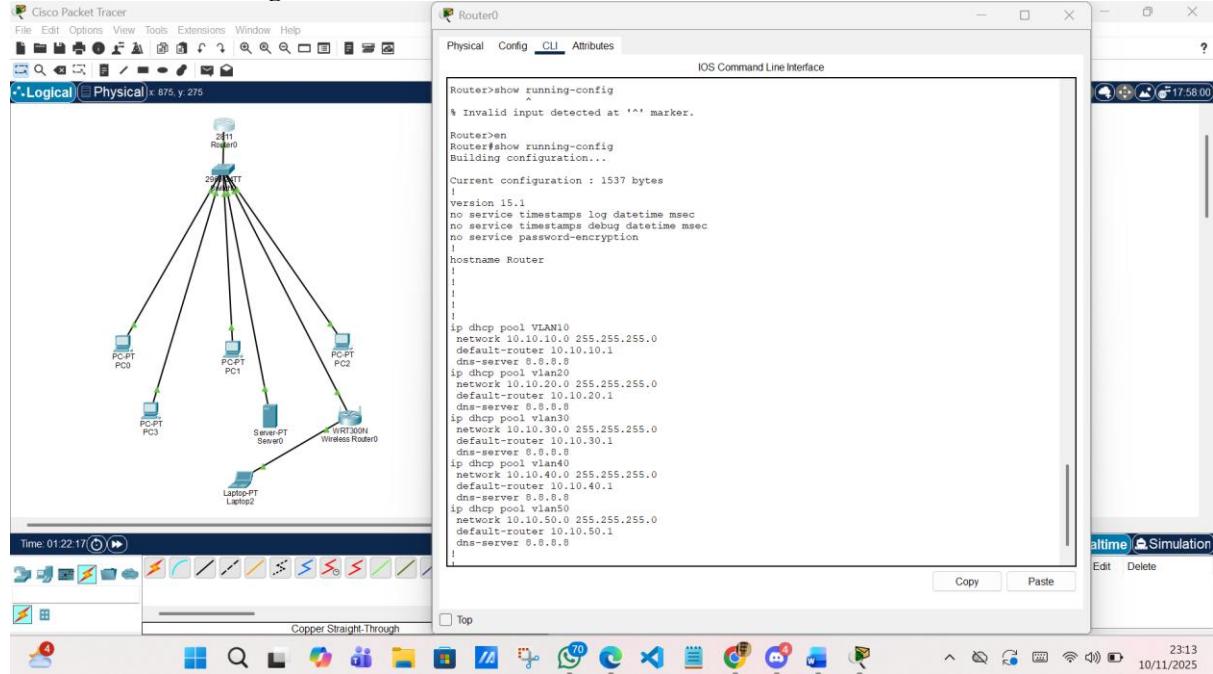


C. DHCP Configuration (Router0)

1. Di CLI Router:
2. ip dhcp pool VLAN10
3. network 10.10.10.0 255.255.255.0
4. default-router 10.10.10.1
5. dns-server 8.8.8.8
6. ...
7. ip dhcp pool VLAN50

8. network 10.10.50.0 255.255.255.0
9. default-router 10.10.50.1
10. dns-server 8.8.8.8

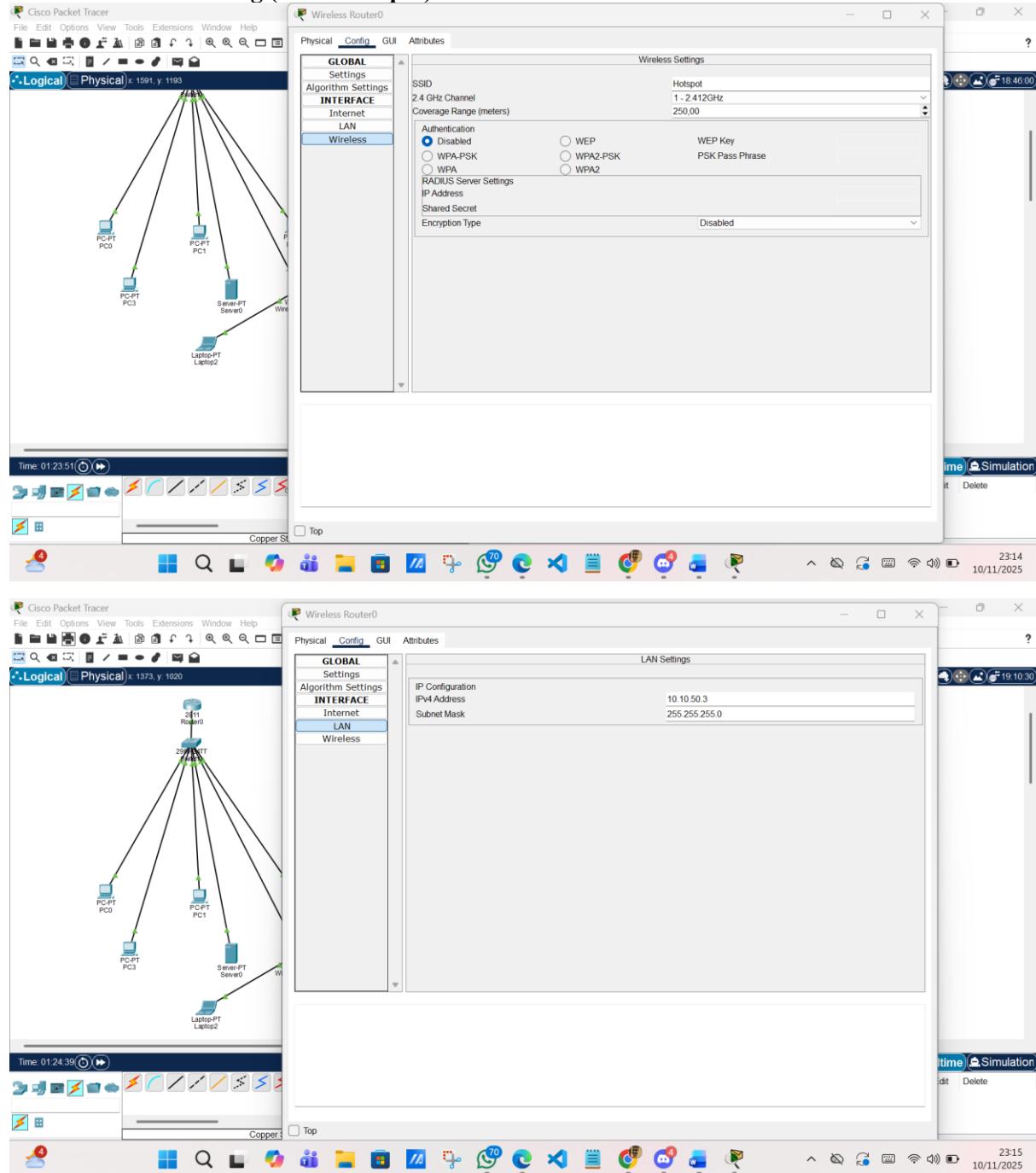
SS 4 — DHCP Configuration



D. Konfigurasi Wireless Router (Hotspot)

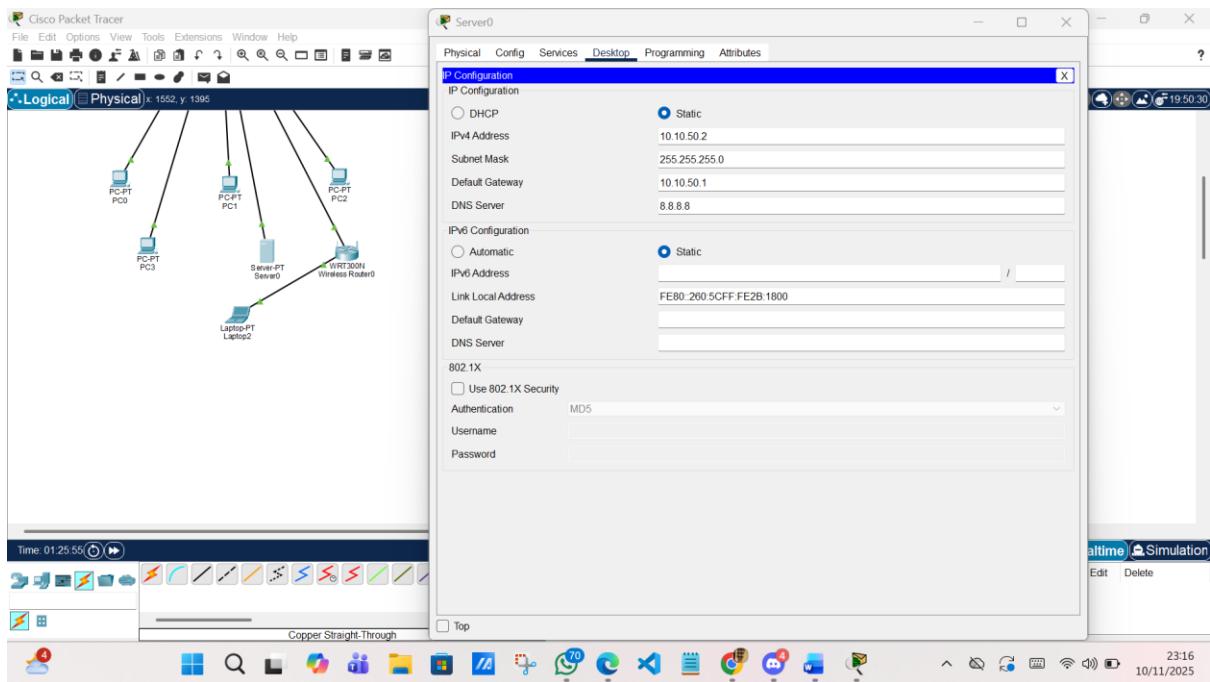
1. Klik Wireless Router0 → Config → LAN
 - IP Address: 10.10.50.3
 - Subnet Mask: 255.255.255.0
 - DHCP Server: ON
 - DNS Server: 8.8.8.8
2. Klik Wireless → SSID: Hotspot, Port ON

SS 5 — Wireless Config (SSID Hotspot)



E. Konfigurasi Server (NVR)

1. Klik Server0 → Desktop → IP Configuration
2. IP Address: 10.10.50.2
3. Subnet Mask: 255.255.255.0
4. Default Gateway: 10.10.50.1
5. DNS Server: 8.8.8.8

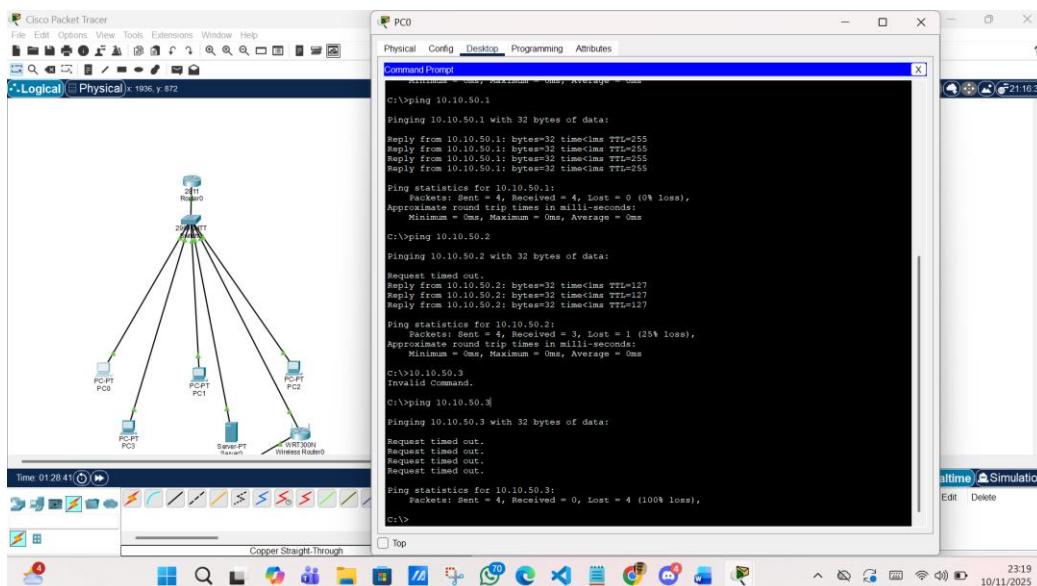


5. Pengujian Jaringan

Lakukan pengujian dengan Command Prompt:

Source	Tujuan	IP Tujuan	Hasil
Laptop0	Wireless Router0	10.10.50.3	Reply ✓
Laptop0	Server0	10.10.50.2	Reply ✓
Laptop0	Router0	10.10.50.1	Reply ✓
PC0	Server0	10.10.50.2	Reply ✓

SS 7 — Hasil Ping Laptop0 & PC0



6. Kesimpulan

Dari hasil simulasi ini dapat disimpulkan bahwa:

- Setiap VLAN berhasil dikonfigurasi dengan baik pada Switch0.
- Router0 berfungsi sebagai penghubung antar-VLAN (Router-on-a-Stick).
- DHCP bekerja sesuai masing-masing VLAN.
- Laptop dan Server dalam VLAN 50 (Hotspot/NVR) dapat berkomunikasi dengan baik.
- Seluruh jaringan saling terhubung dan berfungsi sesuai rancangan.

7. Github Link Cisco

<https://github.com/tatyanna010905-maker/20230801016---TATYANNA-SEKAR-HARUN.git>