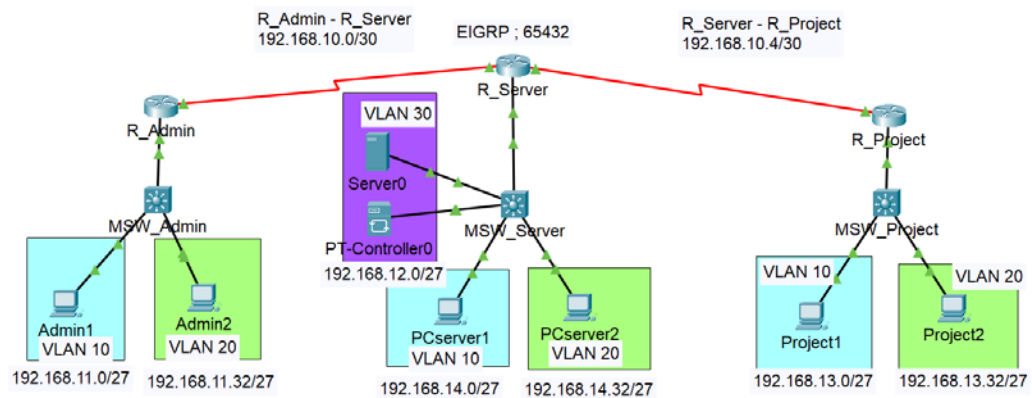


LAPORAN FINAL PROJECT

1. Design and Build a Small Network

Pembuatan desain jaringan menggunakan studi kasus di PT. Telkom Akses, dimana pada desain jaringan ini menghubungkan antar 3 ruangan, yaitu Ruang Admin, Ruang Server, dan Ruang Project. Pada masing masing ruangan terdapat dua hingga tiga vlan, diantaranya adalah VLAN 10 yang digunakan oleh Manager, VLAN 20 digunakan oleh Karyawan, dan VLAN 30 untuk server dan Network Controller. Adapun detail dari desain jaringan yang dibuat sebagai berikut:

a. Topologi dan Pembagian VLAN



b. Penggunaan SSH

```

logging 192.168.12.253
line con 0
!
line aux 0
!
line vty 0 4
login local
transport input ssh
!
ntp server 192.168.12.253

```

c. Privilege dan Password Console

```

hostname R_Server
!
!
enable secret 5 $1$mERr$YSK2q5zozDct2FWD7bcvf/

```

d. VLANs

VLAN	Name	Status	Ports
1	default	active	Gig1/0/6, Gig1/0/7, Gig1/0/8, Gig1/0/9 Gig1/0/10, Gig1/0/11, Gig1/0/12, Gig1/0/13 Gig1/0/14, Gig1/0/15, Gig1/0/16, Gig1/0/17 Gig1/0/18, Gig1/0/19, Gig1/0/20, Gig1/0/21 Gig1/0/22, Gig1/0/23, Gig1/0/24, Gig1/1/1 Gig1/1/2, Gig1/1/3, Gig1/1/4
10	MANAGER	active	Gig1/0/2
20	KARYAWAN	active	Gig1/0/3
30	PUSAT	active	Gig1/0/4, Gig1/0/5
99	native	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

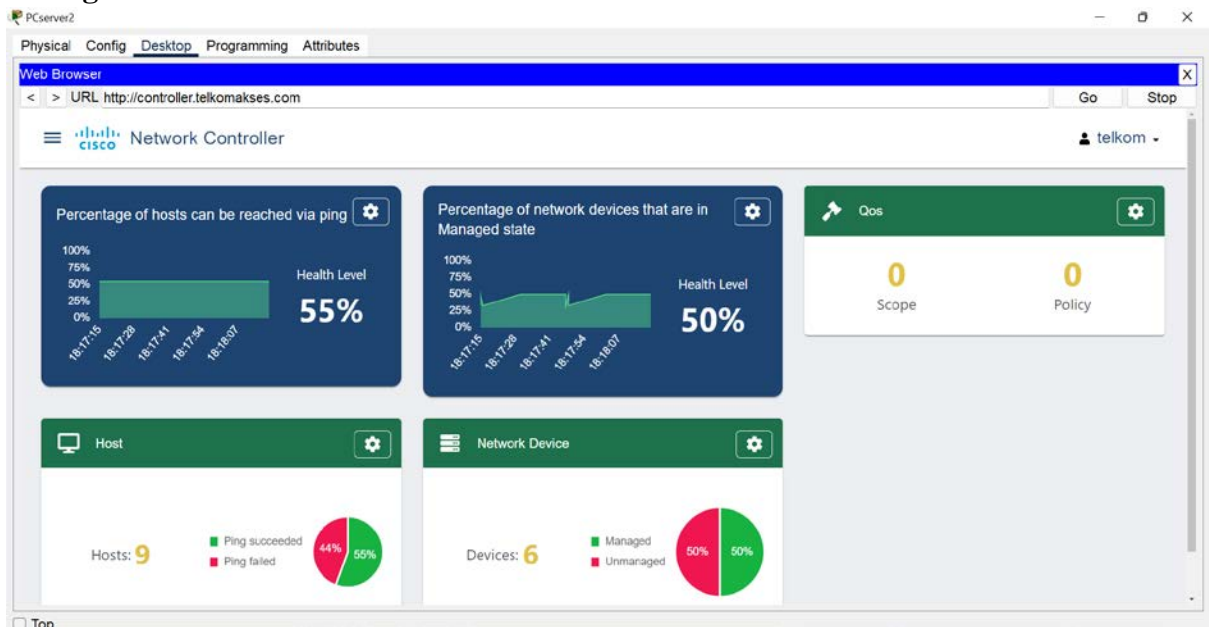
e. Router on Stick

```
interface GigabitEthernet0/0/1.10
 encapsulation dot1Q 10
 ip address 192.168.14.1 255.255.255.224
!
interface GigabitEthernet0/0/1.20
 encapsulation dot1Q 20
 ip address 192.168.14.33 255.255.255.224
!
interface GigabitEthernet0/0/1.30
 encapsulation dot1Q 30
 ip address 192.168.12.1 255.255.255.0
.
```

f. Dynamic Routing (EIGRP)

```
router eigrp 65432
 network 192.168.12.0
 network 192.168.10.0
 network 192.168.14.0
 auto-summary
```

2. Configure SDN Controller



3. Send REST Request Inside Packet Tracer

```

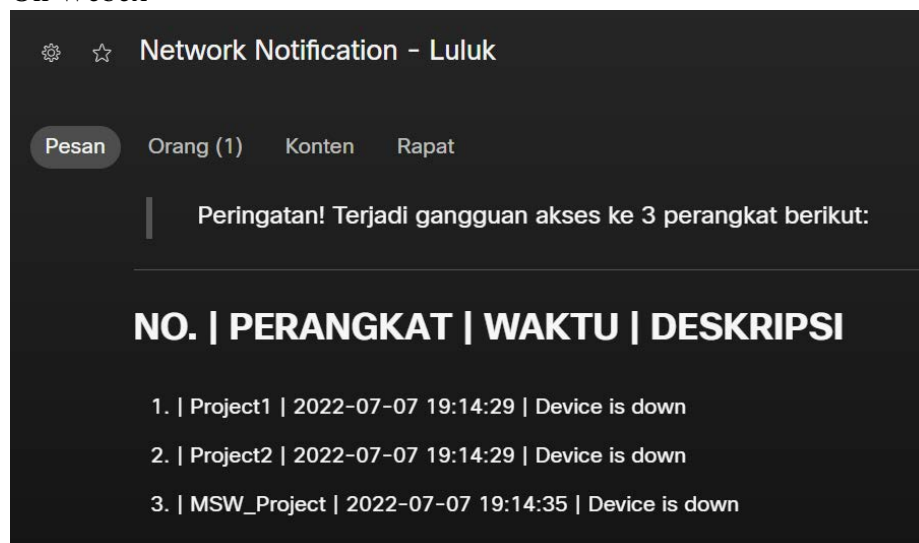
controller (Python) - main.py
Open New Delete Rename Import

main.py
47 return output
48
49 def onHTTPDone(status, data, replyHeader):
50     if status == 200:
51         print("Pesan Network Issues sukses dikirim!")
52     else:
53         print("Pesan Network Issues gagal dikirim!")
54
55 def escape_underscore(txt):
56     return txt.replace("_", "-")
57
58 if __name__ == "__main__":
59     network_health = get_network_health()
60     if int(network_health) < 100:
61         issues = get_network_issues()
62         print(issues)
63         http = realhttp.RealHTTPClient()
64
65         # headers = ("Authorization":"Bearer "+accessToken, "Content-Type":"application/json")
66         # message = {"roomId":roomId, "markdown":"***Permasalahan Jaringan :***\n" + ">"+ issues}
67         # http.postWithHeader(webex_url, message, headers)
68
69         issues = escape_underscore(issues)
70         send_text = 'https://api.telegram.org/bot/' + bot_token + '/sendMessage?chat_id=' + bot_chatID + '&parse_mode=Markdowntext=' + issues

Starting controller (Python)...
Peringatan! Terjadi gangguan akses ke 4 perangkat berikut:
-----
NO. | PERANGKAT | WAKTU | DESKRIPSI
-----
1. | Project2 | 2022-07-07 17:55:41 | Device is down
2. | MSW_Project | 2022-07-07 17:57:22 | Device is down
3. | Project2 | 2022-07-07 17:57:38 | Device is down
4. | Project1 | 2022-07-07 17:57:38 | Device is down
-----
Pesan Network Issues sukses dikirim!
  
```

4. Construct a Python Script to send Network Issues

a. On Webex



b. On Telegram

