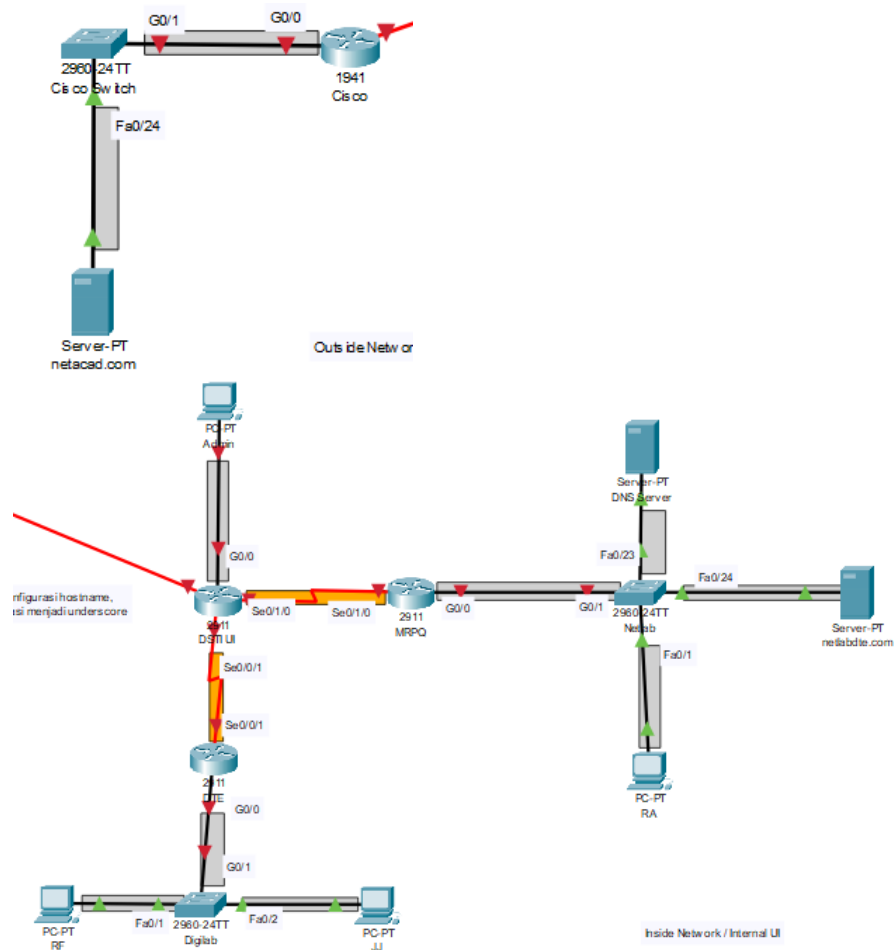


PRAKTIKUM DESAIN DAN MANAJEMEN JARINGAN KOMPUTER

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NPM	2206024682	Tipe	Case Study

1. Menghubungkan perangkat:



2. Hostname:

```
Router(config)#host Cisco Router(config)#host DSTI_UI
Router(config)#host DTE Router(config)#host MRPQ
```

3. Pengalamatan perangkat:

- DSTI UI.

```
DSTI_UI(config)#int s0/0/0
DSTI_UI(config-if)#ip add 152.118.16.1 255.255.255.252
DSTI_UI(config-if)#no sh
DSTI_UI(config-if)#int s0/0/1
DSTI_UI(config-if)#ip add 10.6.4.1 255.255.255.252
DSTI_UI(config-if)#no sh
DSTI_UI(config-if)#int s0/1/0
DSTI_UI(config-if)#ip add 10.4.6.1 255.255.255.252
DSTI_UI(config-if)#no sh
DSTI_UI(config-if)#int g0/0
DSTI_UI(config-if)#ip add 192.168.66.1 255.255.255.0
DSTI_UI(config-if)#no sh
```

- DTE.

```
DTE(config)#int s0/0/1
DTE(config-if)#ip add 10.6.4.2 255.255.255.252
DTE(config-if)#no sh
DTE(config-if)#int g0/0
DTE(config-if)#ip add 192.168.44.1 255.255.255.0
DTE(config-if)#no sh
```

- MRPQ.

```
MRPQ(config)#int s0/1/0
MRPQ(config-if)#ip add 10.4.6.2 255.255.255.252
MRPQ(config-if)#no sh
MRPQ(config-if)#int g0/0
MRPQ(config-if)#ip add 192.168.64.1 255.255.255.0
MRPQ(config-if)#no sh
```

- Cisco.

```
Cisco(config)#int s0/0/1
Cisco(config-if)#ip add 44.205.16.1 255.255.255.252
Cisco(config-if)#no sh
Cisco(config-if)#int g0/0
Cisco(config-if)#ip add 44.205.128.1 255.255.255.0
Cisco(config-if)#no sh
```

Admin

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP
☒ Static

IPv4 Address 192.168.66.2

Subnet Mask 255.255.255.0

Default Gateway 192.168.66.1

DNS Server 192.168.64.20

RF

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

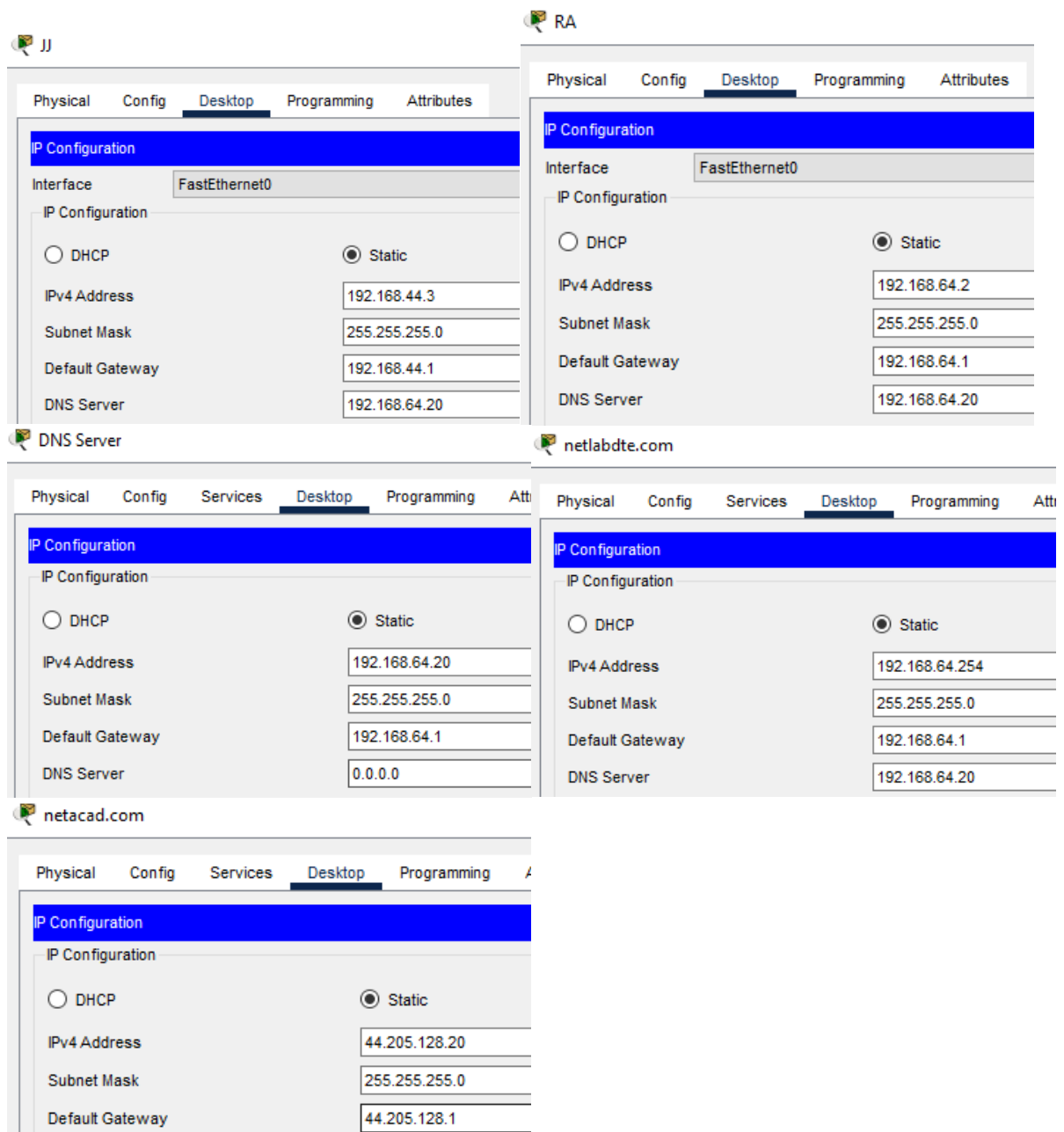
☐ DHCP
☒ Static

IPv4 Address 192.168.44.2

Subnet Mask 255.255.255.0

Default Gateway 192.168.44.1

DNS Server 192.168.64.20



The screenshot displays four NetLab device configuration windows, each showing the 'Desktop' tab with 'IP Configuration' settings for the 'FastEthernet0' interface. The configurations are as follows:

Device	Interface	IP Configuration	IPv4 Address	Subnet Mask	Default Gateway	DNS Server
JJ	FastEthernet0	Static	192.168.44.3	255.255.255.0	192.168.44.1	192.168.64.20
RA	FastEthernet0	Static	192.168.64.2	255.255.255.0	192.168.64.1	192.168.64.20
DNS Server	FastEthernet0	Static	192.168.64.20	255.255.255.0	192.168.64.1	0.0.0.0
netlabdte.com	FastEthernet0	Static	192.168.64.254	255.255.255.0	192.168.64.1	192.168.64.20
netacad.com	FastEthernet0	Static	44.205.128.20	255.255.255.0	44.205.128.1	

4. EIGRP:

```
DSTI_UI(config)#router eigrp 10
DSTI_UI(config-router)#net 10.6.4.0 0.0.0.3
DSTI_UI(config-router)#net 10.4.6.1 0.0.0.3
DSTI_UI(config-router)#net 192.168.66.0 0.0.0.255
DSTI_UI(config-router)#passive-int g0/0
DTE(config)#router eigrp 10
DTE(config-router)#net 10.6.4.0 0.0.0.3
DTE(config-router)#net 192.168.44.0 0.0.0.255
DTE(config-router)#pass
DTE(config-router)#passive-interface g0/0
```

```
MRPQ(config)#router eigrp 10
MRPQ(config-router)#net 10.4.6.0 0.0.0.3
MRPQ(config-router)#net 192.168.64.0 0.0.0.255
MRPQ(config-router)#pass
MRPQ(config-router)#passive-interface g0/0
```

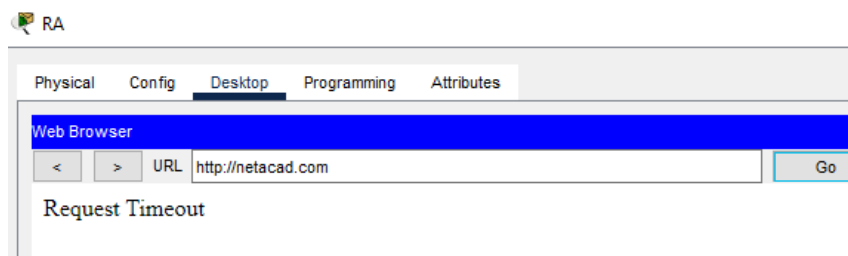
5. Tes konektivitas:

Last Status	Source	Destination
Successful	RF	RA
Successful	JJ	Admin
Successful	Admin	netlabdte.com

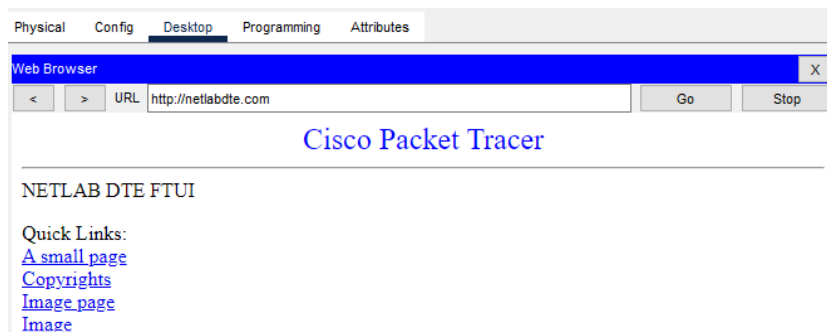
6. DNS server:

0	netacad.com	A Record	44.205.128.20
1	netlabdte.com	A Record	192.168.64.254

7. Akses web server:



Akses ke netacad.com gagal karena server merupakan outside network dan belum dilakukan NAT dalam topologi. Sehingga jika PC dalam inside network mencoba untuk mengakses server luar, hasilnya akan gagal.



Akses ke netlabdte.com berhasil, hal ini karena server berada dalam jaringan yang sama dengan PC RA. Selain itu PC RA juga telah memiliki alamat DNS dalam konfigurasinya.

8. Static routing dan propagasi:

```
DSTI_UI(config)#ip route 0.0.0.0 0.0.0.0 s0/0/0
DSTI_UI(config)#router eigrp 10
DSTI_UI(config-router)#redistri
DSTI_UI(config-router)#redistribute static
```

9. Static routing di Cisco:

```
Cisco(config)#ip route 152.118.64.160 255.255.255.248 s0/0/1
```

10. Tes ping/PDU:

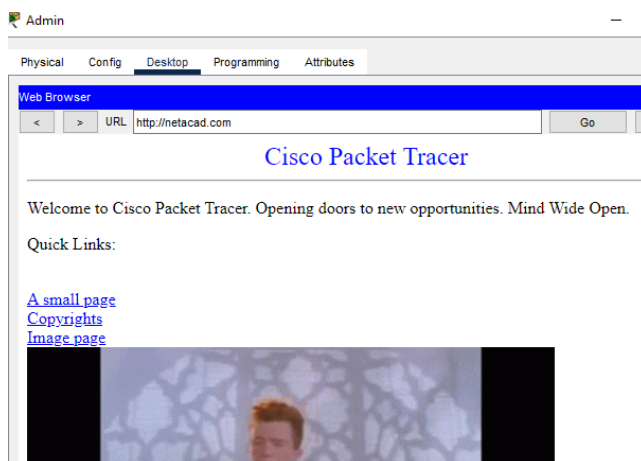
Last Status	Source	Destination
Failed	Admin	Cisco

PDU yang dilakukan masih gagal. Meskipun telah dilakukan static routing, namun NAT belum diterapkan dalam topologi, sehingga host dalam local network masih belum bisa mengakses perangkat yang ada di outside network.

11. Konfigurasi static NAT:

```
DSTI_UI(config)#ip nat inside source stat 192.168.66.2 152.118.64.161
DSTI_UI(config)#int g0/0
DSTI_UI(config-if)#ip nat in
DSTI_UI(config-if)#int s0/0/0
DSTI_UI(config-if)#ip nat out
```

12. Akses netacad.com:



13. Menampilkan hasil:

```
DSTI_UI#sh ip nat trans
Pro Inside global      Inside local      Outside local      Outside global
--- 152.118.64.161      192.168.66.2      ---
tcp 152.118.64.161:1026 192.168.66.2:1026 44.205.128.20:80  44.205.128.20:80
tcp 152.118.64.161:1027 192.168.66.2:1027 44.205.128.20:80  44.205.128.20:80
```

Kedua entri ini menunjukkan bahwa ada dua koneksi TCP dari host dengan alamat IP lokal 192.168.66.2 ke server dengan alamat IP global 44.205.128.20 di port 80 (HTTP). Alamat IP global yang digunakan untuk NAT adalah 152.118.64.161. terdapat dua entri karena port yang digunakan berbeda.

14. Tes RF ke netacad.com:

Failed RF netacad.com

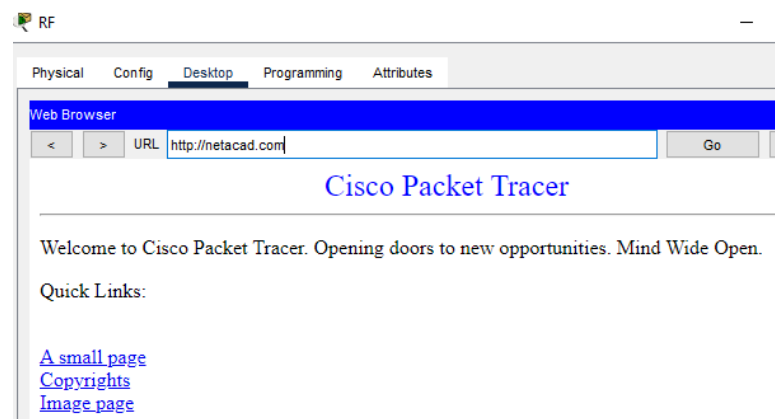
PDU yang dilakukan gagal. Karena NAT untuk PC selain PC Admin belum diterapkan, sehingga end devices lain belum dapat mengakses outside network.

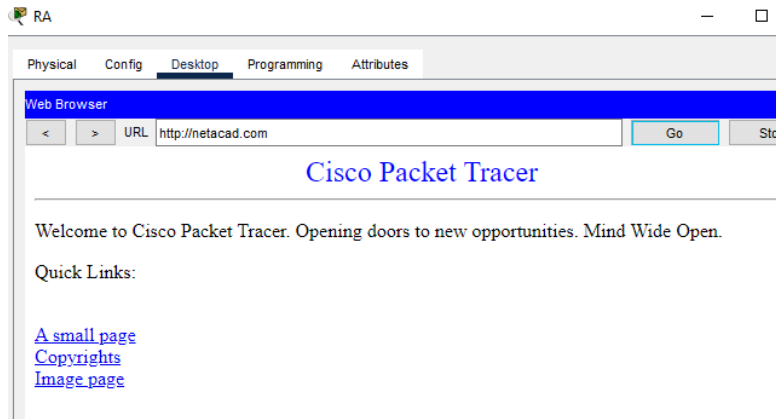
15. Dynamic NAT:

```
DSTI_UI(config)#ip nat pool elektroNAT 152.118.64.162 152.118.64.166 netmask
255.255.255.248
DSTI_UI(config)#int s0/0/1
DSTI_UI(config-if)#ip nat in
DSTI_UI(config-if)#in s0/1/0
DSTI_UI(config-if)#ip nat in
DSTI_UI(config-if)#int s0/0/0
DSTI_UI(config-if)#ip nat out

DSTI_UI(config)#ip access-list extended NATPOOL
DSTI_UI(config-ext-nacl)#permit ip 192.168.44.0 0.0.0.255 any
DSTI_UI(config-ext-nacl)#permit ip 192.168.64.0 0.0.0.255 any
DSTI_UI(config-ext-nacl)#
DSTI_UI(config-ext-nacl)#ex
DSTI_UI(config)#ip nat inside source list NATPOOL pool elektroNAT OVERLOAD
```

16. Akses web:





17. Menampilkan hasil:

```
DSTI_UI#sh ip nat trans
Pro Inside global    Inside local    Outside local    Outside global
--- 152.118.64.161    192.168.66.2    ---             ---
tcp 152.118.64.161:1026 192.168.66.2:1026 44.205.128.20:80 44.205.128.20:80
tcp 152.118.64.161:1027 192.168.66.2:1027 44.205.128.20:80 44.205.128.20:80

DSTI_UI#sh ip nat stat
Total translations: 3 (1 static, 2 dynamic, 2 extended)
Outside Interfaces: Serial0/0/0
Inside Interfaces: GigabitEthernet0/0 , Serial0/0/1 , Serial0/1/0
Hits: 2873 Misses: 3
Expired translations: 0
Dynamic mappings:
-- Inside Source
access-list NATPOOL pool elektroNAT refCount 0
pool elektroNAT: netmask 255.255.255.248
start 152.118.64.162 end 152.118.64.166
type generic, total addresses 5 , allocated 0 (0%), misses 0
```

DSTI_UI memiliki dua koneksi NAT dinamis yang aktif (untuk dari s0/1/0 dan s0/0/1) menggunakan alamat IP global 152.118.64.161 dan memiliki pool NAT untuk membuat pemetaan dinamis dari alamat IP lokal ke alamat IP global. Statistik menunjukkan total translasi, interface yang terlibat serta informasi terkait pemetaan dinamis yang digunakan.