

MikroTik User Meeting

Langkah Praktis Implementasi Mikrotik

Adyatma Yoga K

Citraweb Nusa Infomedia

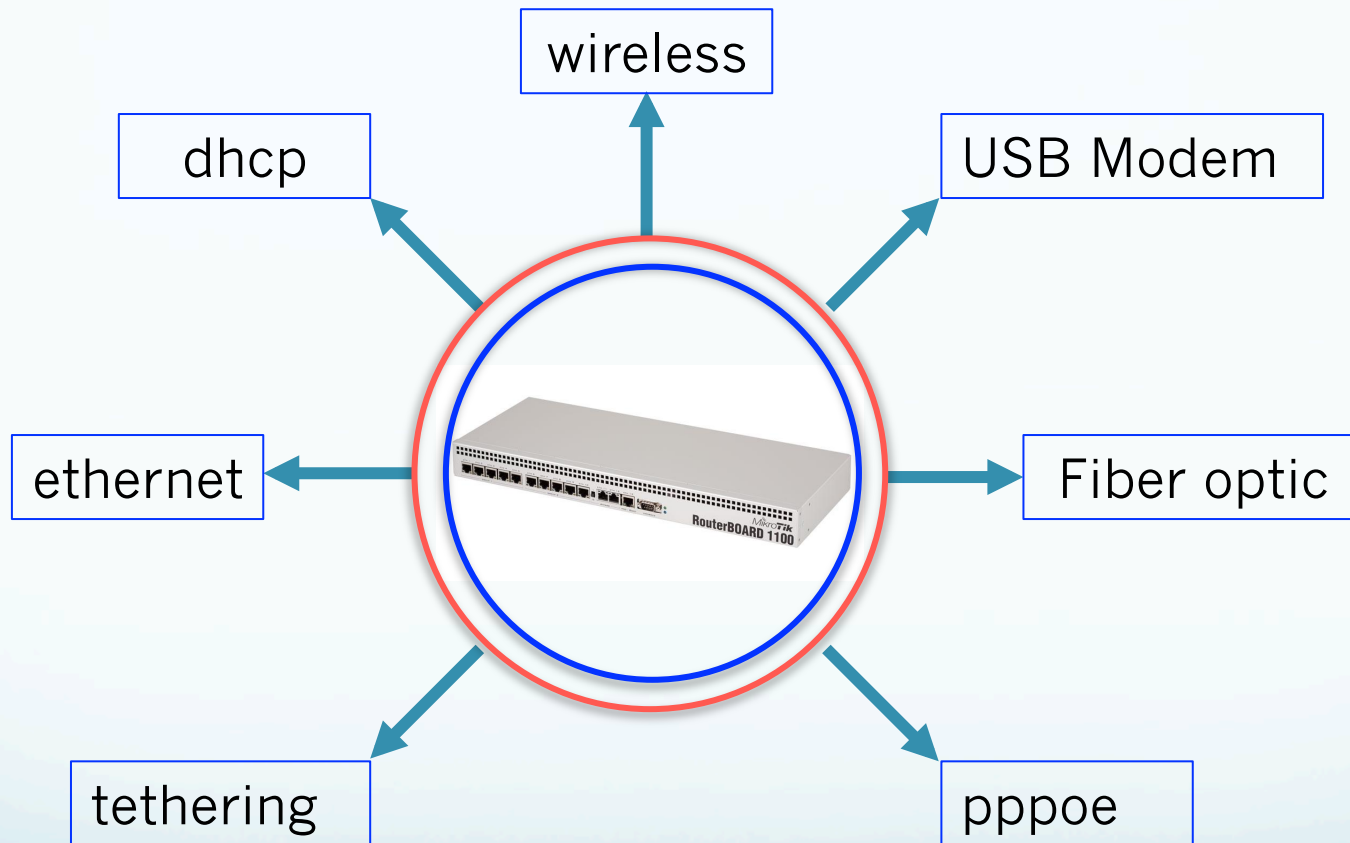
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About Me

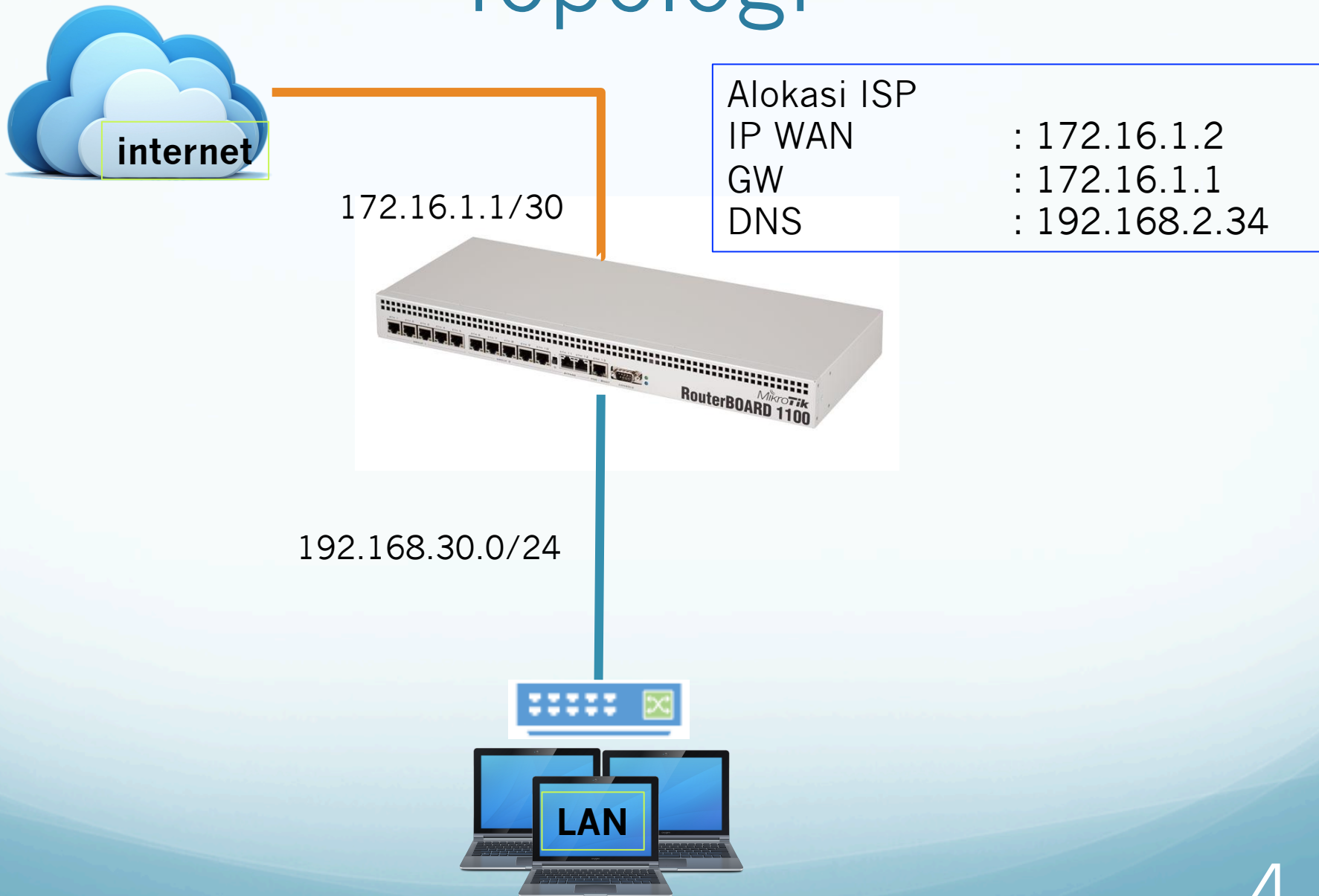
- **Adyatma Yoga K**
- Citraweb Nusa Infomedia
 - Mikrotik Distributor & Training Partner (mikrotik.co.id)
- Training & Support Officer
- MTCNA, MTCTCE, MTCRE
- #udahgituaja



Media Koneksi Internet

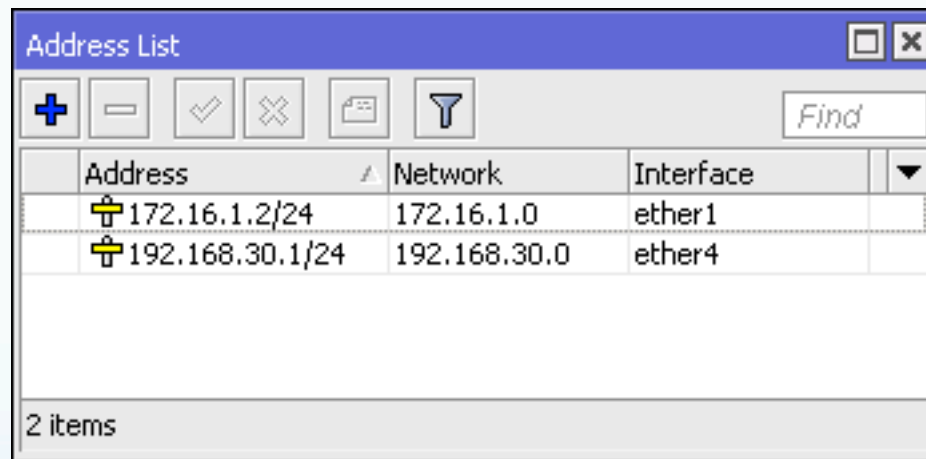


Topologi



Basic Config

- Aktifkan Link ke provider
- Add IP Address public (alokasi ISP)

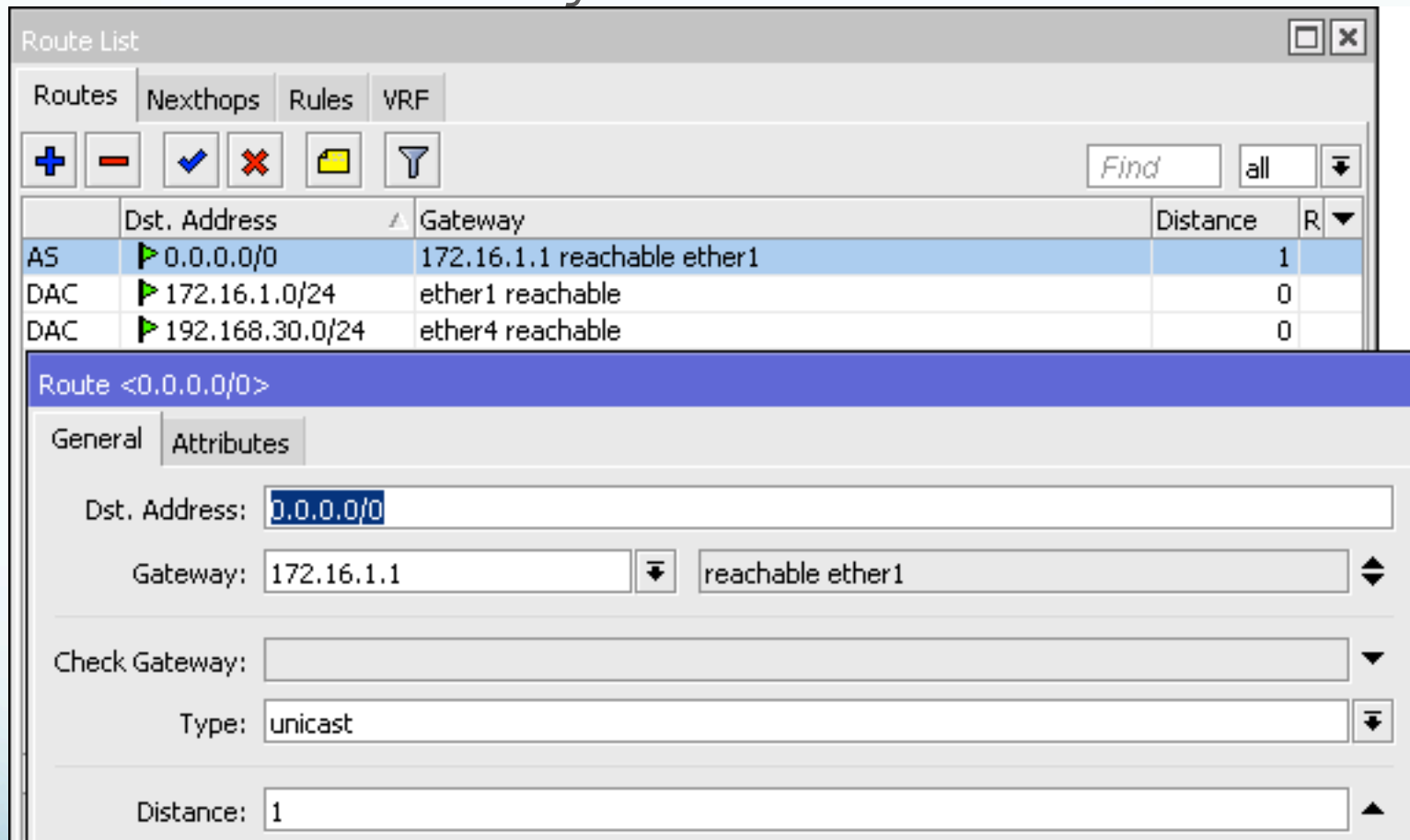


Address	Network	Interface
172.16.1.2/24	172.16.1.0	ether1
192.168.30.1/24	192.168.30.0	ether4

2 items

Basic Config

- Add default Gateway



The screenshot displays a network configuration interface. At the top, the 'Route List' window is open, showing a table of routes. Below this, the configuration details for the selected route (0.0.0.0/0) are shown in the 'General' tab.

Route List Table:

	Dst. Address	Gateway	Distance	R
AS	0.0.0.0/0	172.16.1.1 reachable ether1	1	
DAC	172.16.1.0/24	ether1 reachable	0	
DAC	192.168.30.0/24	ether4 reachable	0	

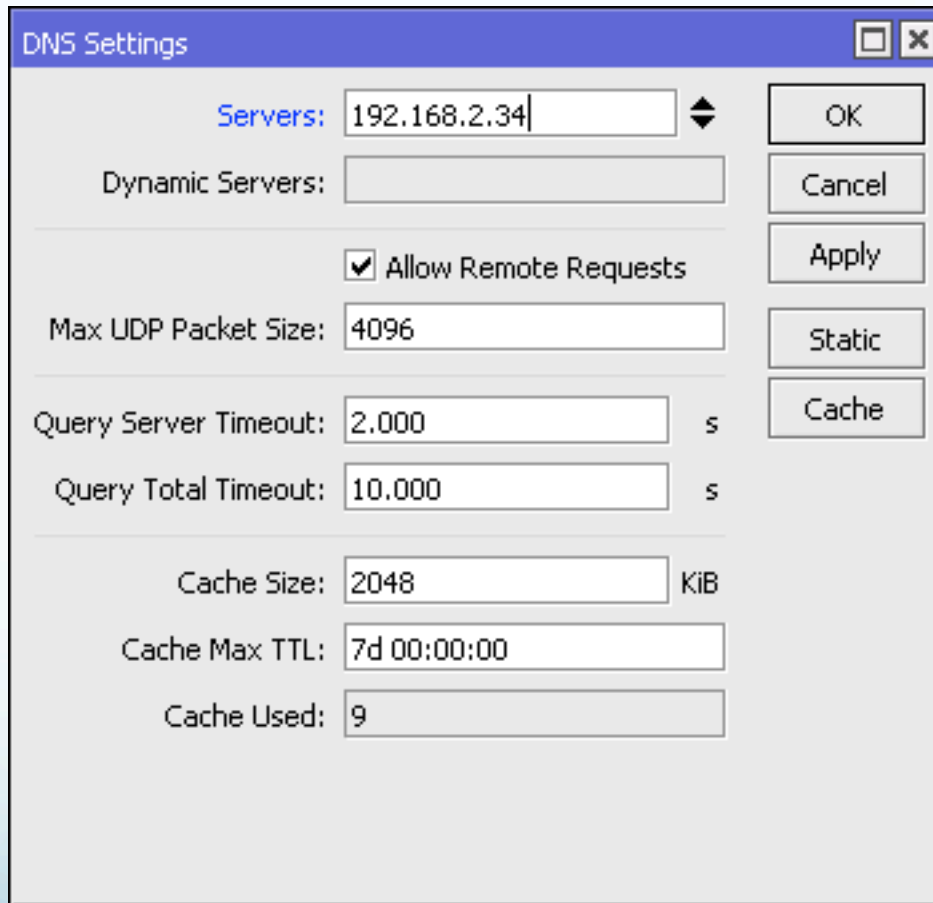
Route <0.0.0.0/0> Configuration:

General Tab:

- Dst. Address: 0.0.0.0/0
- Gateway: 172.16.1.1 reachable ether1
- Check Gateway: (empty)
- Type: unicast
- Distance: 1

Basic Config

- Set DNS Server

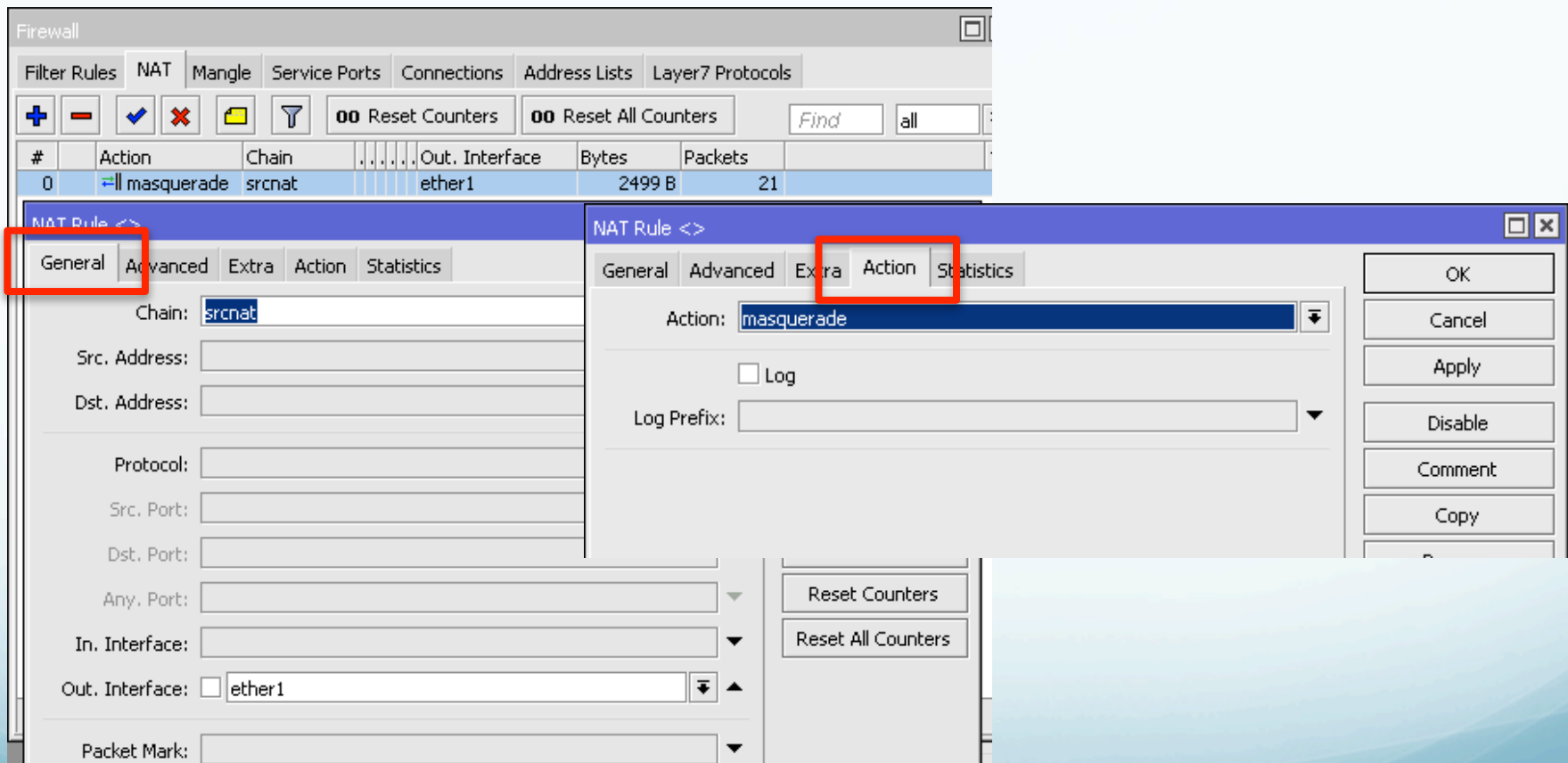


The image shows a 'DNS Settings' dialog box with a blue title bar. It contains several configuration fields and a list of buttons on the right. The 'Servers' field is highlighted in blue and contains the IP address '192.168.2.34'. The 'Dynamic Servers' field is empty. The 'Allow Remote Requests' checkbox is checked. The 'Max UDP Packet Size' is set to '4096'. The 'Query Server Timeout' is '2.000' seconds, and the 'Query Total Timeout' is '10.000' seconds. The 'Cache Size' is '2048' KIB, the 'Cache Max TTL' is '7d 00:00:00', and the 'Cache Used' is '9'. The buttons on the right are 'OK', 'Cancel', 'Apply', 'Static', and 'Cache'.

Field	Value
Servers:	192.168.2.34
Dynamic Servers:	
Allow Remote Requests	☒
Max UDP Packet Size:	4096
Query Server Timeout:	2.000 s
Query Total Timeout:	10.000 s
Cache Size:	2048 KIB
Cache Max TTL:	7d 00:00:00
Cache Used:	9

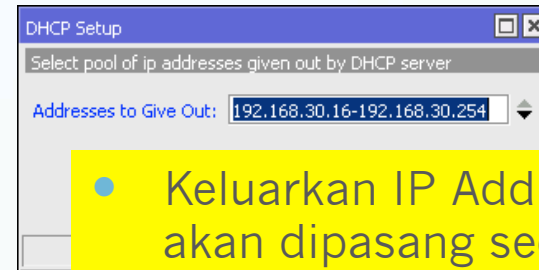
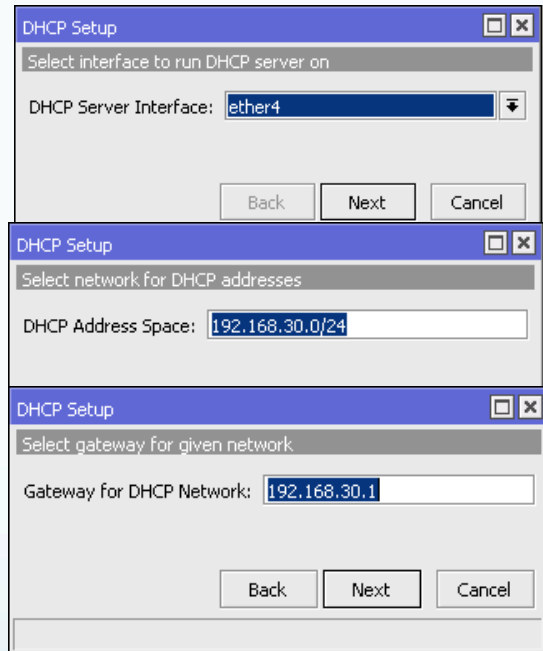
Basic Config

- Add src-nat masquerade agar PC LAN dapat akses internet

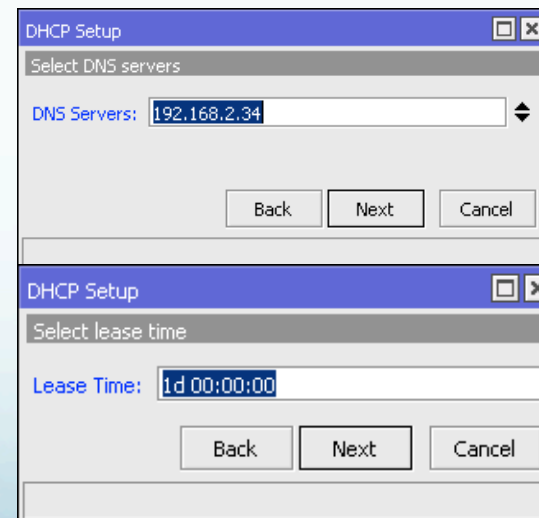


Basic Config

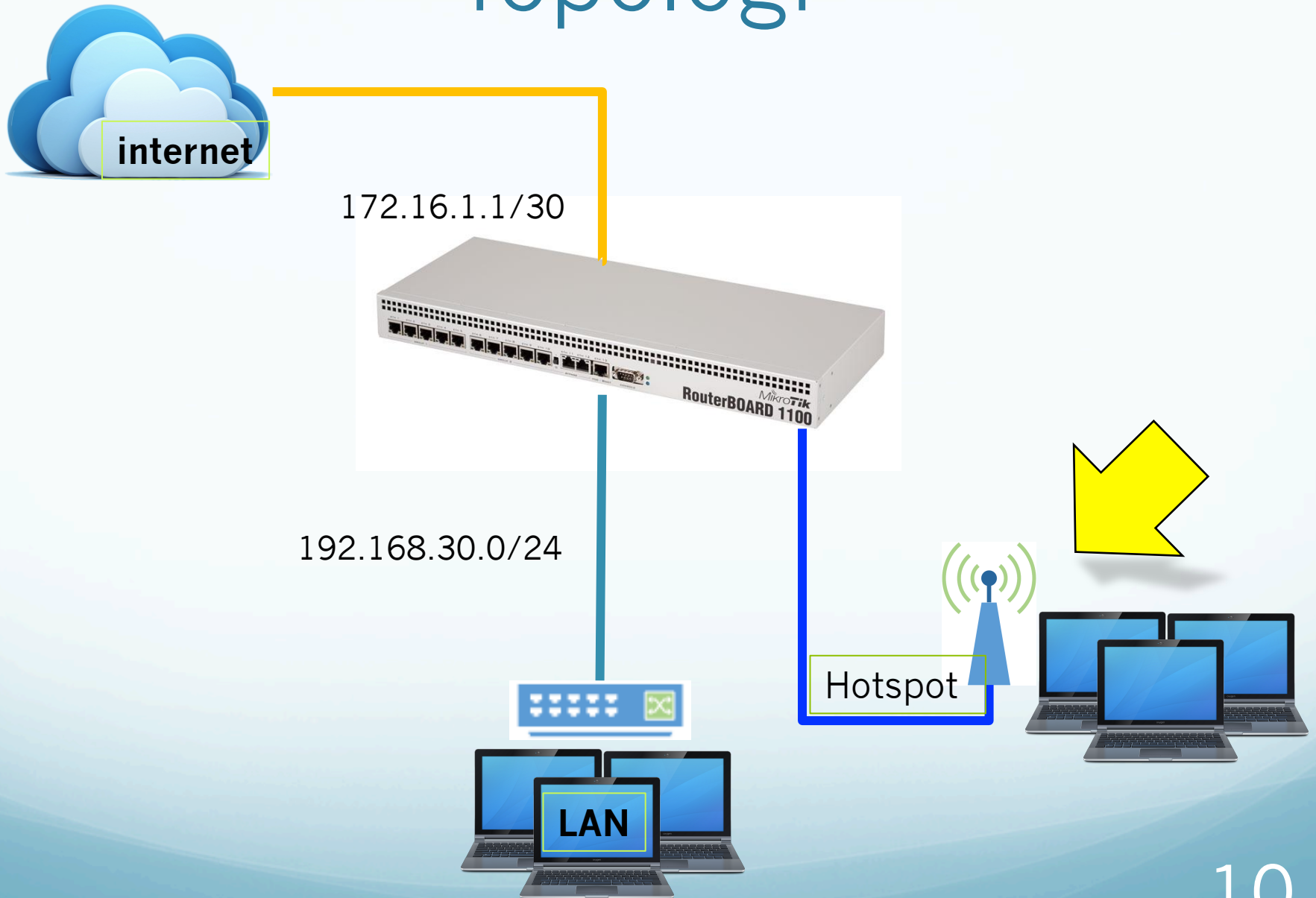
- Create DHCP Server untuk memudahkan client terkoneksi ke internet



- Keluarkan IP Address yang akan dipasang secara static dari DHCP IP Pool

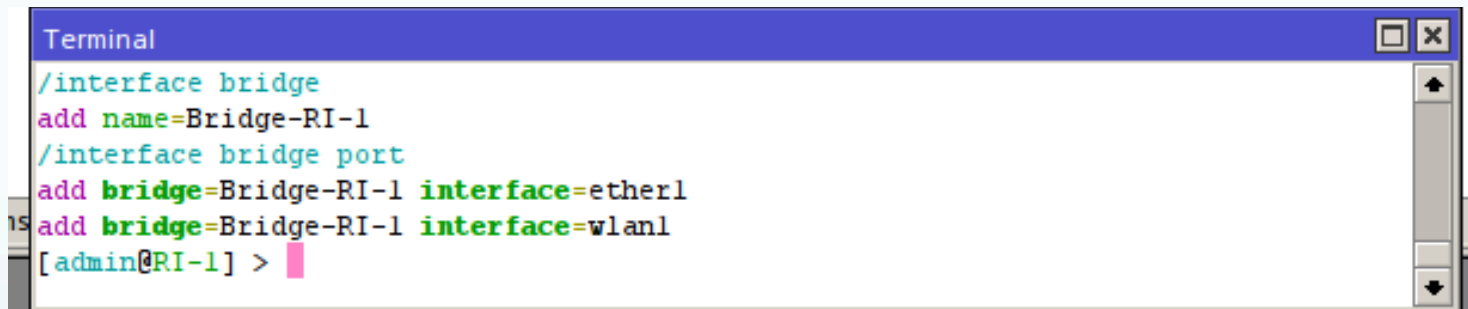


Topologi



Hotspot

- Untuk memudahkan manajemen, Hotspot server diaktifkan pada Router Utama
- Bridge wlan1 dan ether1 AP, agar client langsung mendapatkan service Hotspot dari Router utama

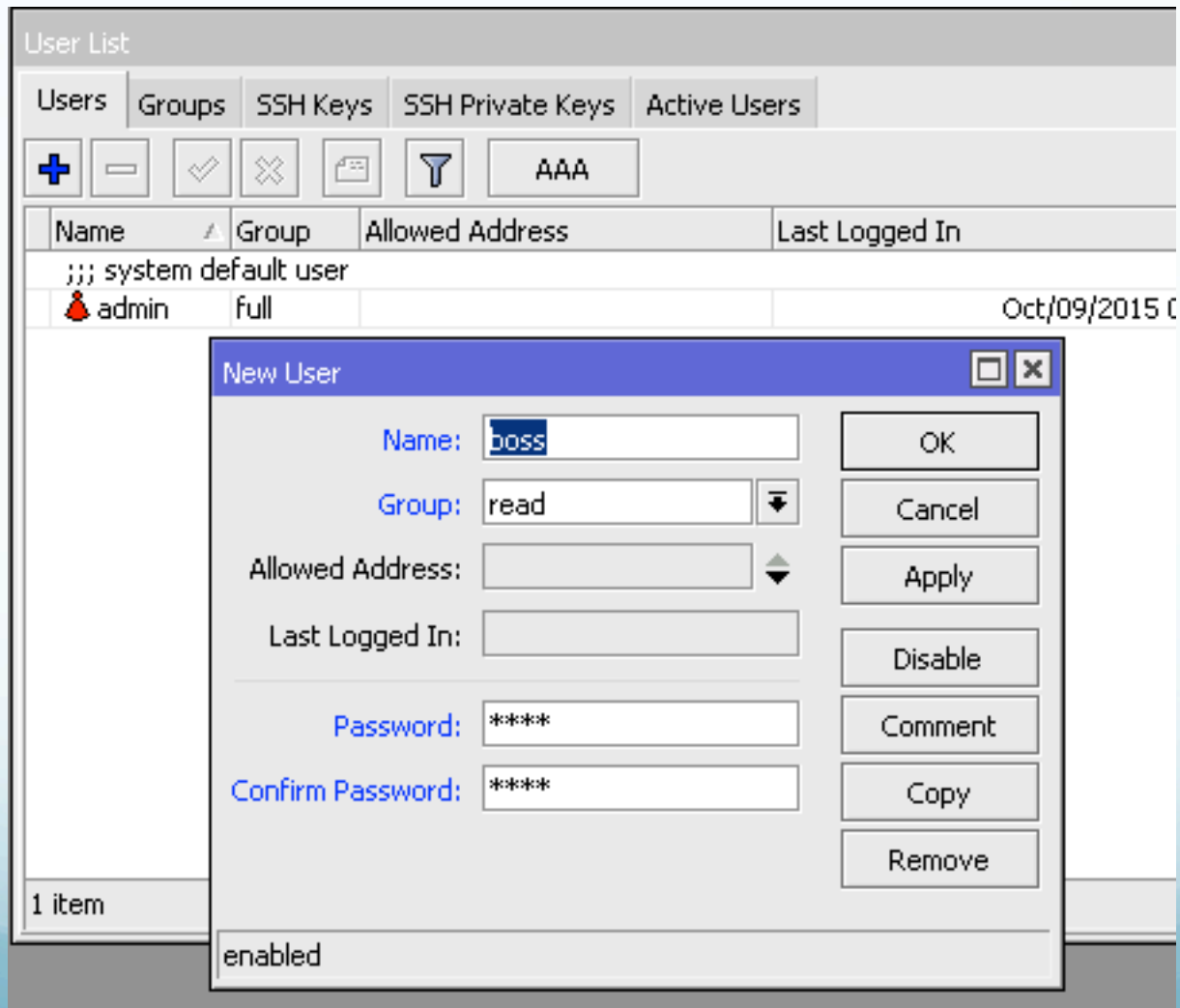
A screenshot of a terminal window with a blue title bar labeled "Terminal". The window contains the following text:

```
/interface bridge
add name=Bridge-RI-1
/interface bridge port
add bridge=Bridge-RI-1 interface=ether1
add bridge=Bridge-RI-1 interface=wlan1
[admin@RI-1] >
```

 The text is color-coded: blue for commands, green for keywords, and black for values. The prompt "[admin@RI-1] >" is at the bottom. The window has standard OS controls (minimize, maximize, close) in the top right corner and a vertical scrollbar on the right side.

Security

- Set password / tambah baru winbox user



The screenshot shows the Mikrotik WinBox interface. The 'User List' window is open, displaying a table of users. The 'admin' user is selected. A 'New User' dialog box is overlaid on top, allowing the creation of a new user named 'boss' with the 'read' group. The dialog includes fields for Name, Group, Allowed Address, Last Logged In, Password, and Confirm Password, along with buttons for OK, Cancel, Apply, Disable, Comment, Copy, and Remove.

User List

Users Groups SSH Keys SSH Private Keys Active Users

+ - ✓ ✗ [icon] AAA

Name	Group	Allowed Address	Last Logged In
;;; system default user			
admin	full		Oct/09/2015 0

1 item

enabled

New User

Name: boss

Group: read

Allowed Address:

Last Logged In:

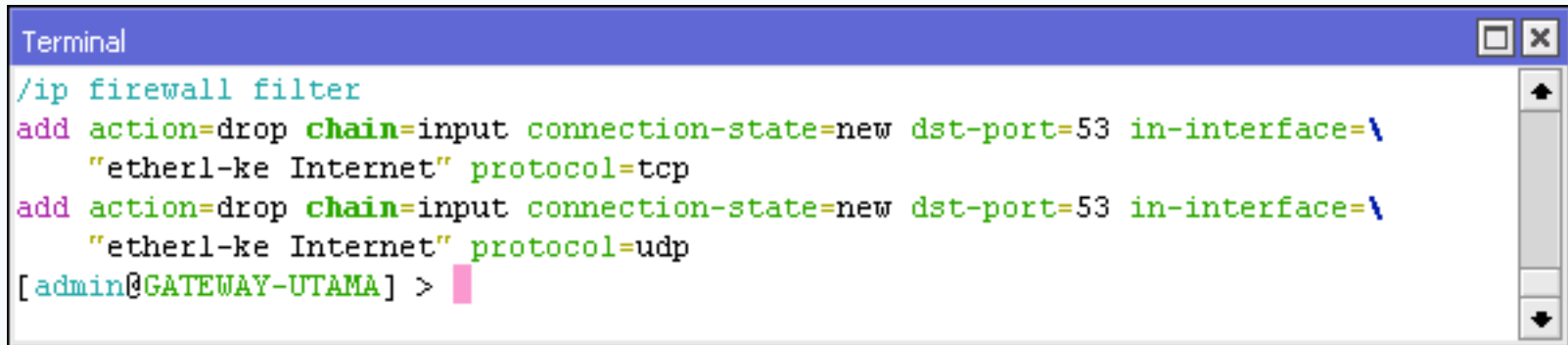
Password: ****

Confirm Password: ****

OK Cancel Apply Disable Comment Copy Remove

Security

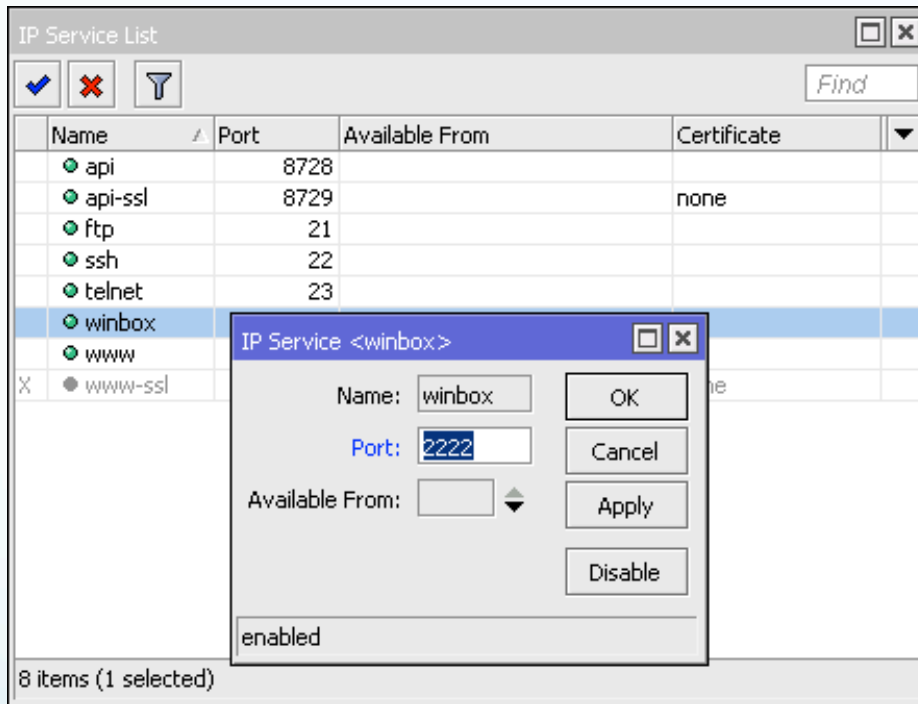
- Add firewall filter untuk mencegah request DNS dari internet

A terminal window with a blue title bar labeled "Terminal". The window contains two lines of firewall configuration commands. The first line is a comment: `/ip firewall filter`. The second line is `add action=drop chain=input connection-state=new dst-port=53 in-interface=\` followed by a new line `"ether1-ke Internet" protocol=tcp`. The third line is `add action=drop chain=input connection-state=new dst-port=53 in-interface=\` followed by a new line `"ether1-ke Internet" protocol=udp`. The prompt `[admin@GATEWAY-UTAMA] >` is followed by a pink cursor.

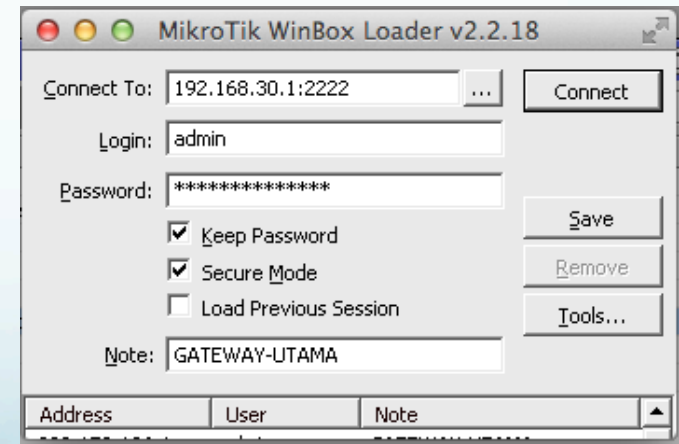
```
Terminal
/ip firewall filter
add action=drop chain=input connection-state=new dst-port=53 in-interface=\
    "ether1-ke Internet" protocol=tcp
add action=drop chain=input connection-state=new dst-port=53 in-interface=\
    "ether1-ke Internet" protocol=udp
[admin@GATEWAY-UTAMA] >
```

Security

- Manajemen service port



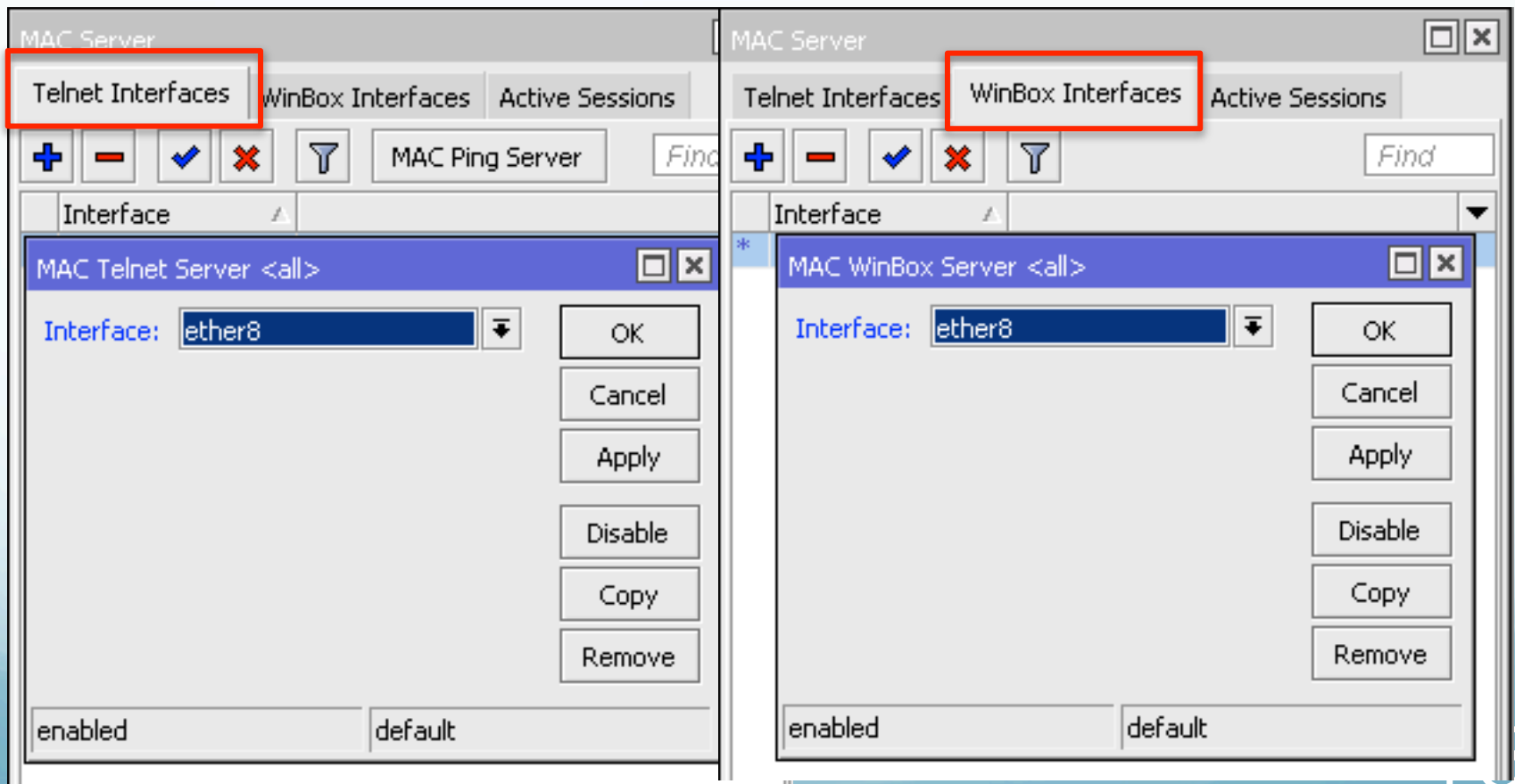
Akses winbox



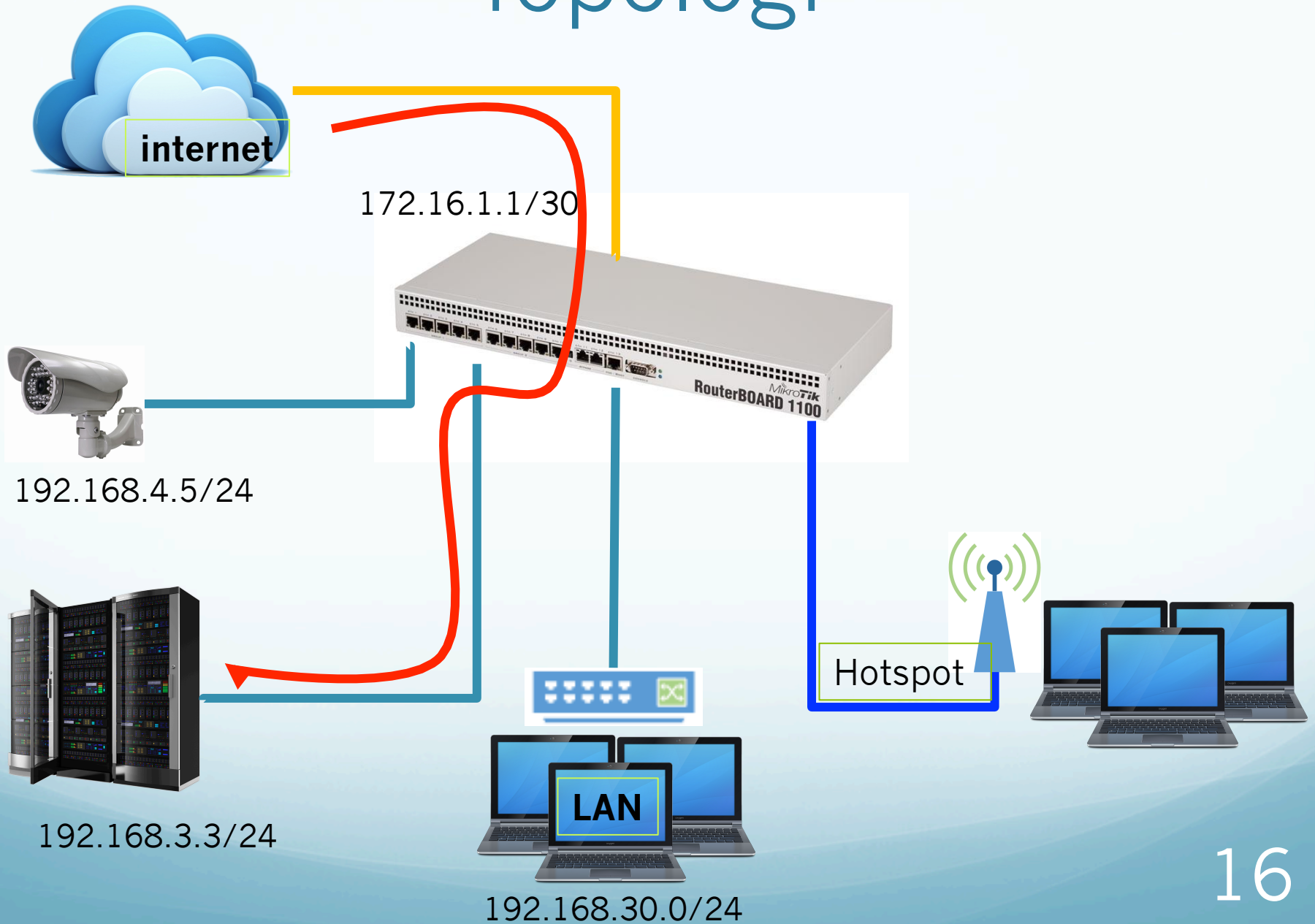
Security

- Manajemen MAC-Telnet dan MAC-Winbox Server

/tool mac-server



Topologi

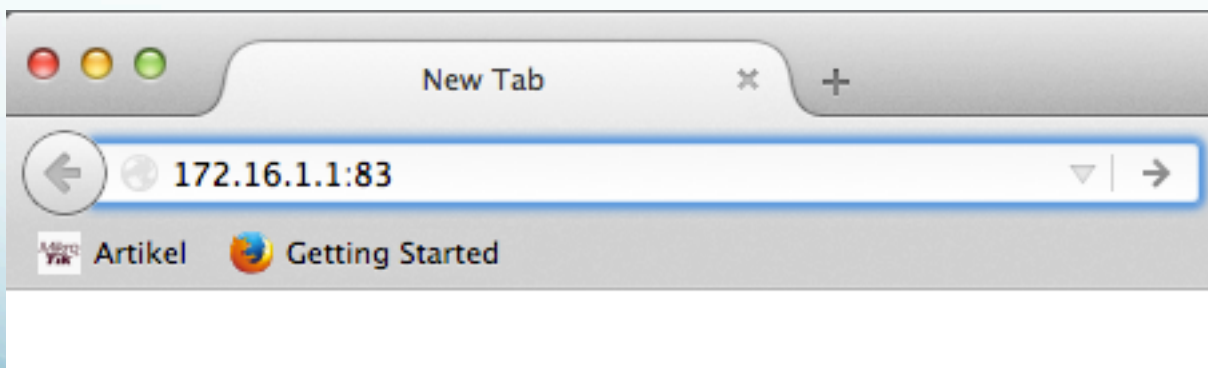


Port Forwarding

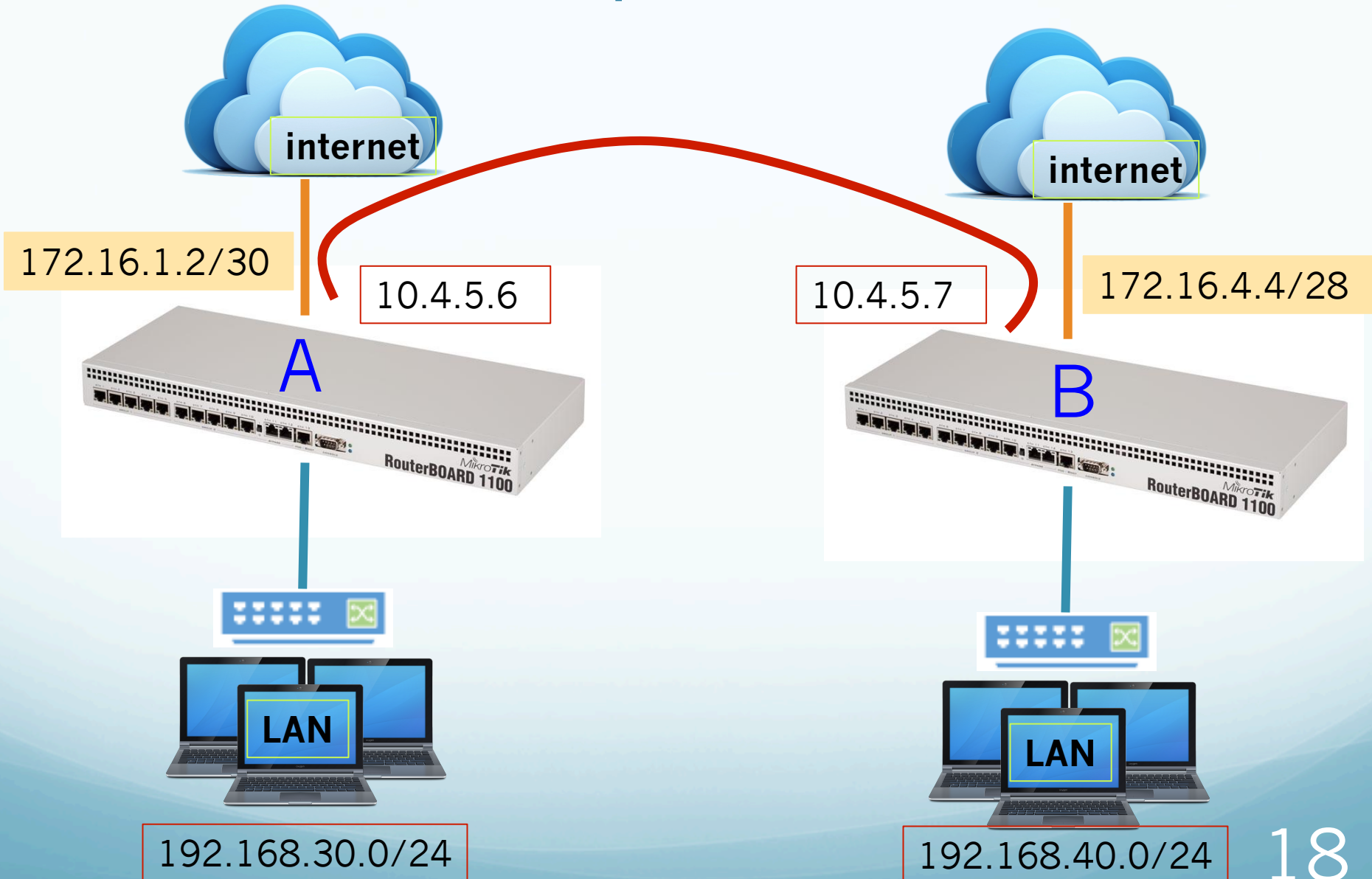
- Akses CCTV dan server lokal dari public (internet)

```
/ip firewall nat
add chain=dstnat action=dst-nat dst-address=172.16.1.1 dst-port=83
to-addresses=192.168.3.3 to-ports=80
add chain=dstnat action=dst-nat dst-address=172.16.1.1 dst-port=84
to-addresses=192.168.4.5 to-ports=80
```

- Akses via web browser



Simple VPN



Simple VPN

- Site A

```
/interface ptp-server server  
set enabled=yes
```

```
/ppp secret  
add name=user password=rahasia profile=default-encryption local-  
address=10.4.5.6 remote-address=10.4.5.7
```

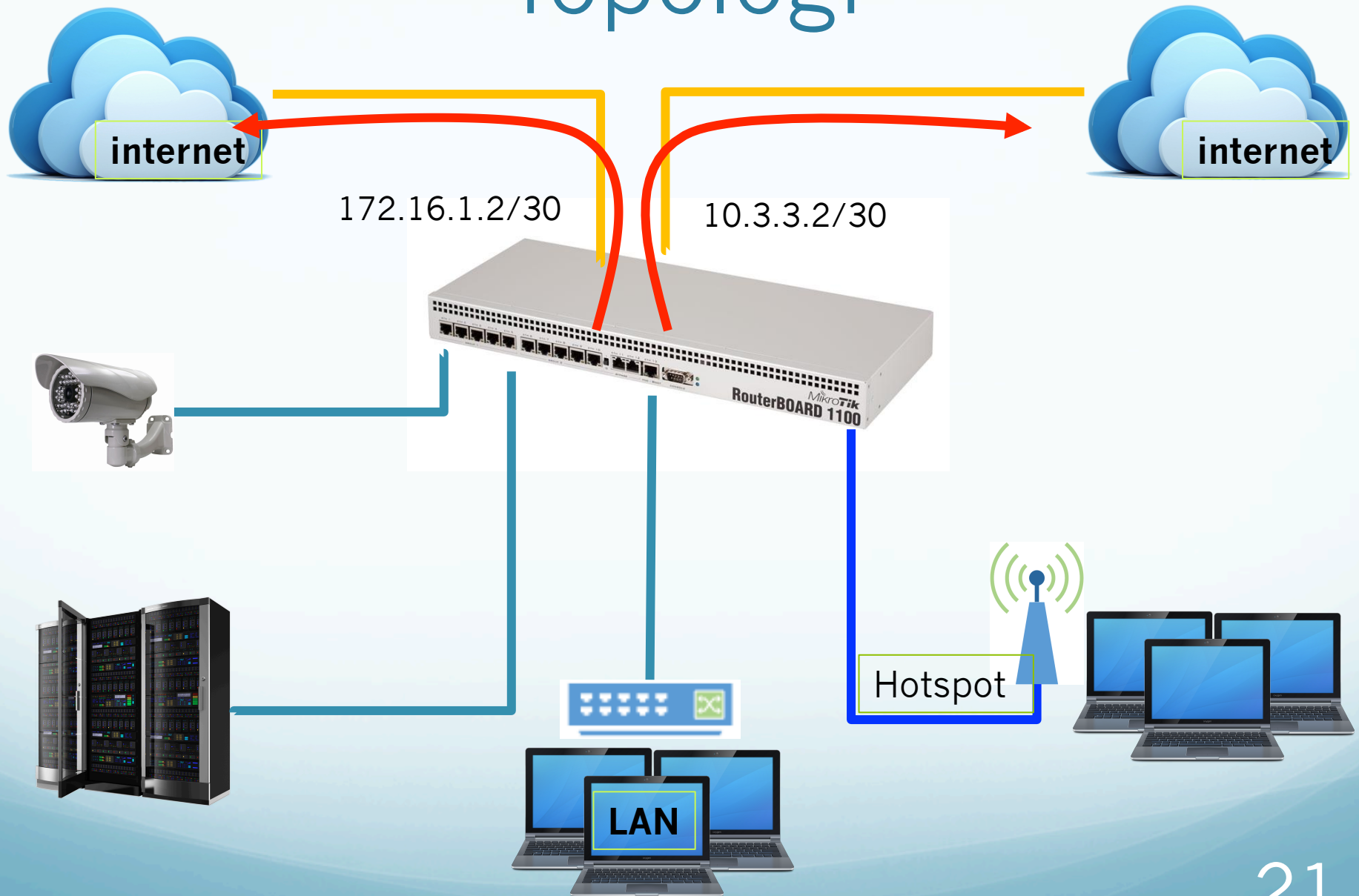
```
/ip route  
add dst-address=192.168.40.0/24 gateway=10.4.5.7
```

Simple VPN

- Site B

```
/interface pptp-client  
add connect-to=172.16.1.1 disabled=no mrru=1600 name=pptp-out1  
password=rahasia user=user  
  
/ip route  
add dst-address=192.168.30.0/24 gateway=10.4.5.6
```

Topologi



Penambahan ISP baru

- Tambahkan ip alokasi ip ISP-B

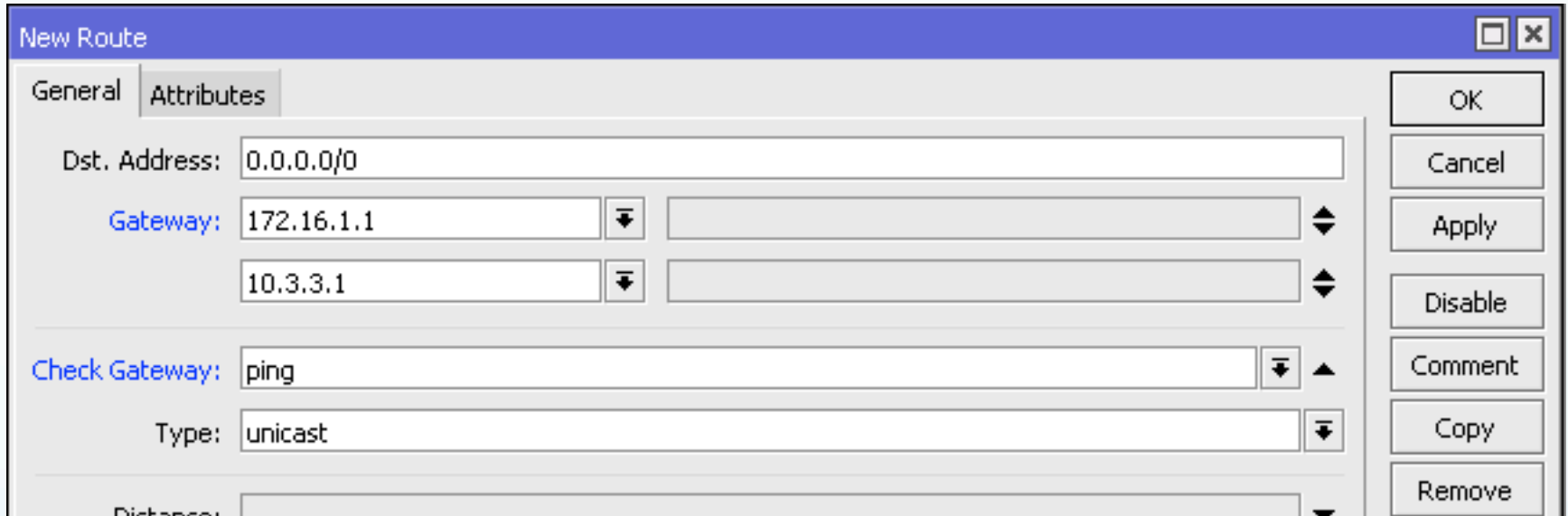
```
/ip address add address=10.3.3.2/30 interface=ether2
```

- Tambahkan firewall nat masquerade ISP-B

```
/ip firewall nat add chain=srcnat out-interface=ether2  
action=masquerade
```

Simple LoadBalance

- ECMP



The image shows a 'New Route' dialog box with a blue title bar and standard window controls. It has two tabs: 'General' and 'Attributes'. The 'General' tab is active. It contains several input fields and buttons. The 'Dst. Address' field is set to '0.0.0.0/0'. There are two 'Gateway' entries, each with a text field and a dropdown arrow; the first is '172.16.1.1' and the second is '10.3.3.1'. The 'Check Gateway' field is set to 'ping'. The 'Type' field is set to 'unicast'. The 'Distance' field is partially visible at the bottom. On the right side of the dialog, there is a vertical stack of buttons: 'OK', 'Cancel', 'Apply', 'Disable', 'Comment', 'Copy', and 'Remove'.

New Route

General Attributes

Dst. Address: 0.0.0.0/0

Gateway: 172.16.1.1

10.3.3.1

Check Gateway: ping

Type: unicast

Distance:

OK

Cancel

Apply

Disable

Comment

Copy

Remove

Simple LoadBalance

- Add mangle mark route untuk menjaga koneksi yang masuk dari internet, keluar melalui gateway yang sama

```
/ip firewall mangle
add chain=input in-interface=ether1-ISP-A action=mark-connection new-
connection-mark=ISP-A_conn
add chain=input in-interface=ether4-ISP-B action=mark-connection new-
connection-mark=ISP-B_conn
add chain=output connection-mark=ISP-A_conn action=mark-routing new-
routing-mark=to_ISP-A
add chain=output connection-mark=ISP-B_conn action=mark-routing new-
routing-mark=to_ISP-B
```

Simple LoadBalance

- Penambahan rule routing berdasarkan mangle mark-route

```
/ ip route  
add dst-address=0.0.0.0/0 gateway=172.16.1.1 routing-mark=to_ISP-A  
add dst-address=0.0.0.0/0 gateway=10.3.3.1 routing-mark=to_ISP-B
```

Simple QOS

- Simple QOS with PCQ

```
/queue type
```

```
add kind=pcq name=pcq-up pcq-classifier=src-address pcq-limit=50  
pcq-rate=1M pcq-total-limit=2000
```

```
add kind=pcq name=pcq-down pcq-classifier=dst-address pcq-  
limit=50 pcq-rate=1M pcq-total-limit=2000
```

```
/queue simple
```

```
Add max-limit=10M/10M name=client queue=pcq-up/pcq-down  
target=192.168.30.0/24,192.168.4.0/24,192.168.5.0/24
```

Terima Kasih

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