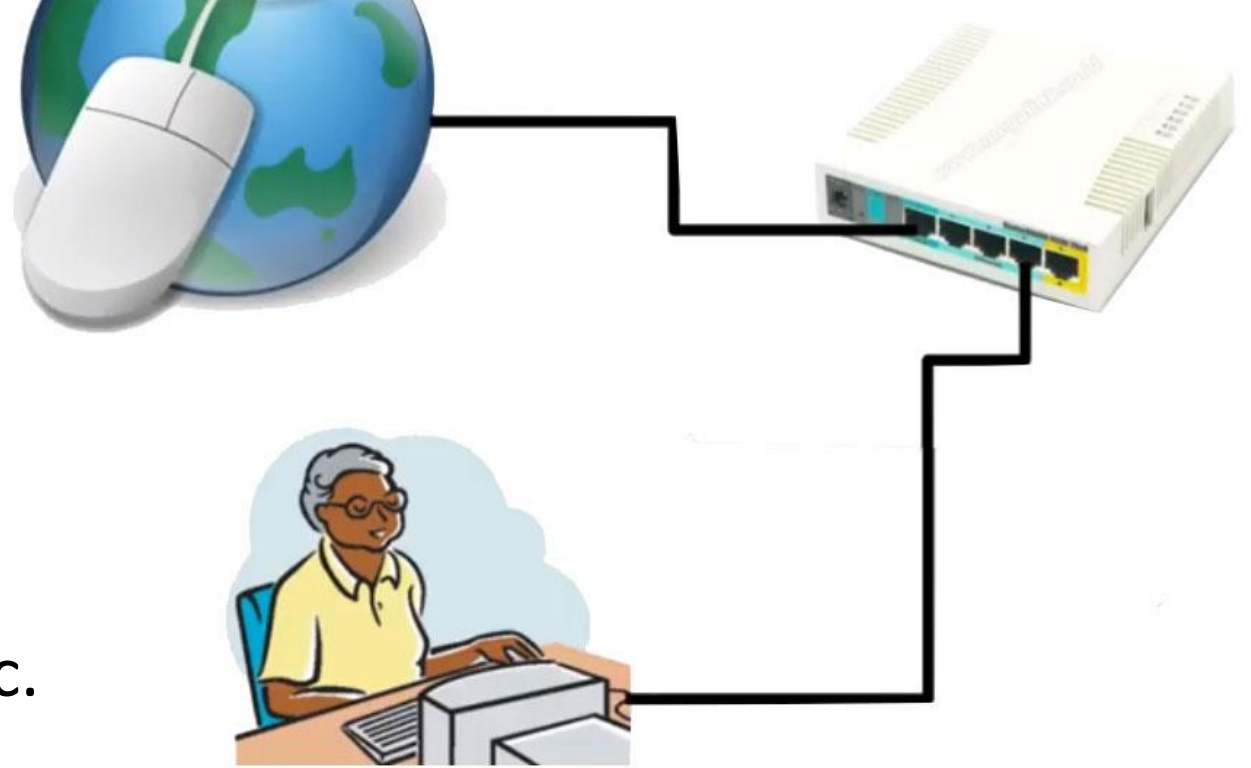


# Router Sebagai Internet Gateway

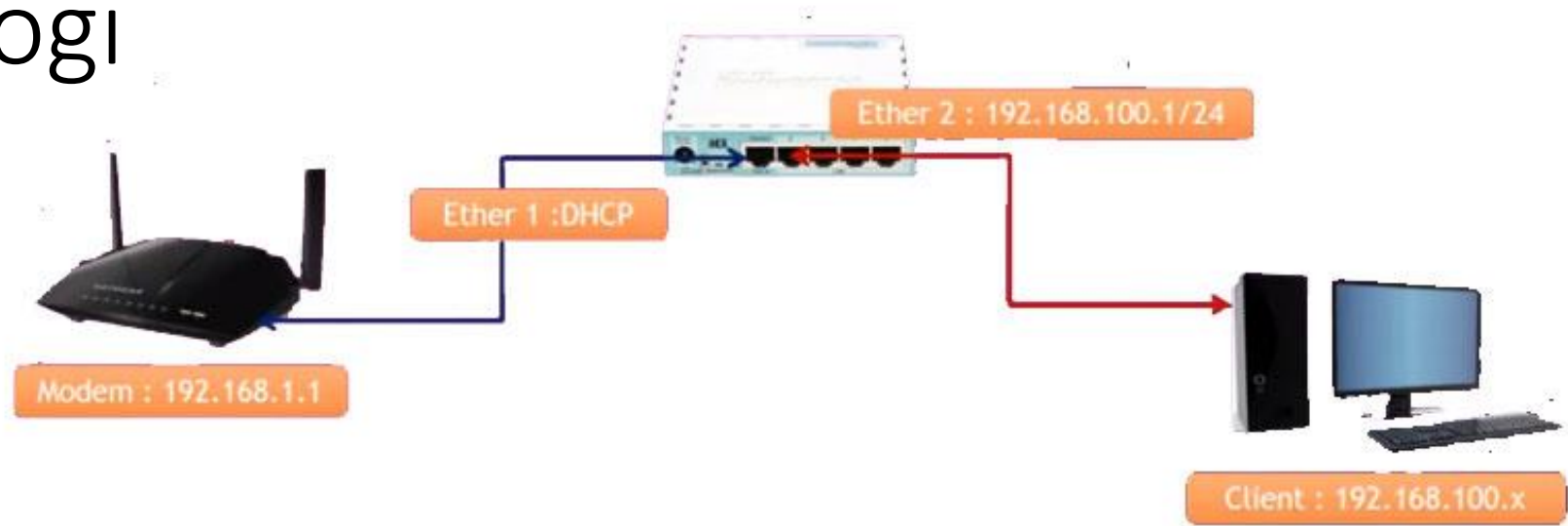
Administrasi Infrastruktur Jaringan

# Gateway

- Merupakan komponen yang menjadi sebuah penghubung atau sebuah gerbang antara jaringan local ke jaringan public.



# Topologi



Ether 1 : ke internet  
menggunakan dhcp client

Ether 1 : ke Jaringan Lokal  
menggunakan dhcp server

- Buka aplikasi Winbox, hubungkan menggunakan Mac Address

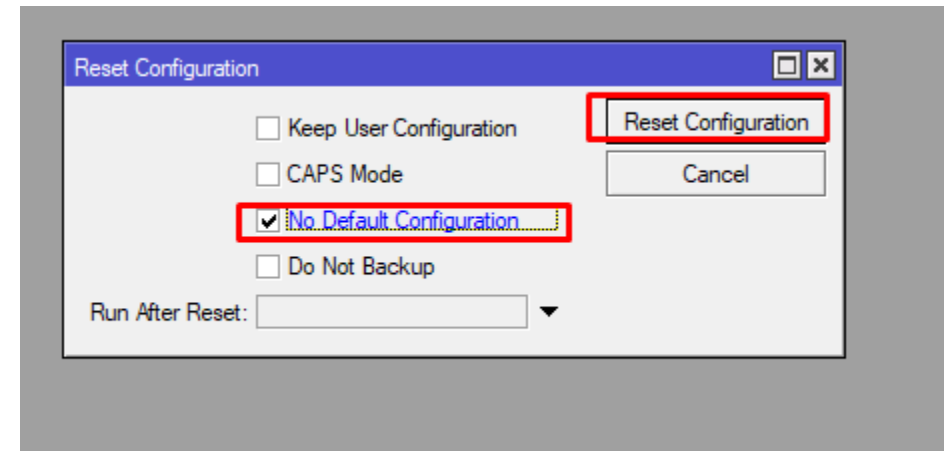
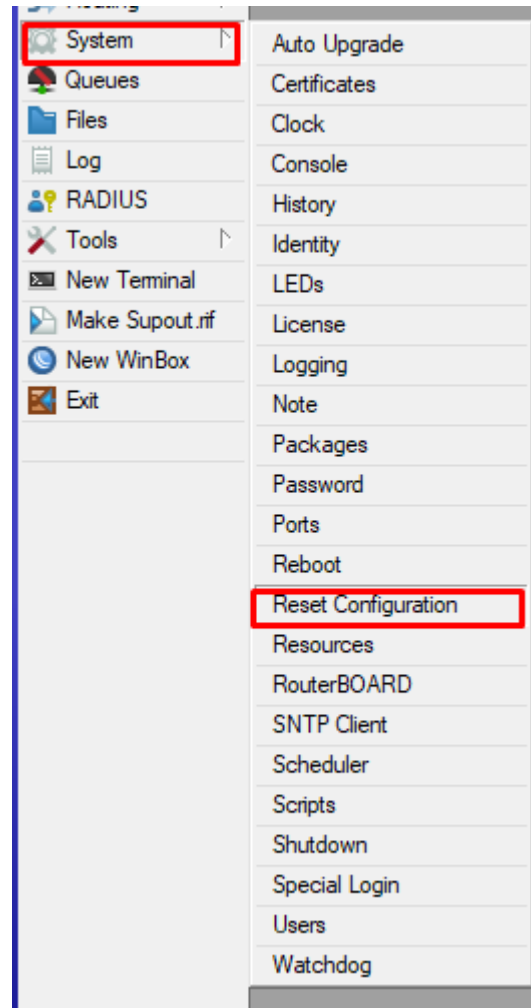
The screenshot shows the WinBox (64bit) v3.36 (Addresses) window. The 'Connect To' field is set to 'DC:2C:6E:8E:B2:52', the 'Login' field is 'admin', and the 'Password' field is empty. The 'Connect' button is highlighted. Below the connection fields, there are buttons for 'Add/Set', 'Connect To RoMON', and 'Connect'. The 'Managed' tab is selected, and the 'Neighbors' section is visible. A table of managed devices is shown with the following data:

MAC Address	IP Address	Identity	Version	Board	Uptime
DC:2C:6E:8E:B2:52	192.168.10.1	MikroTik	6.47.10 (l...	RB941-2nD	08:42:27

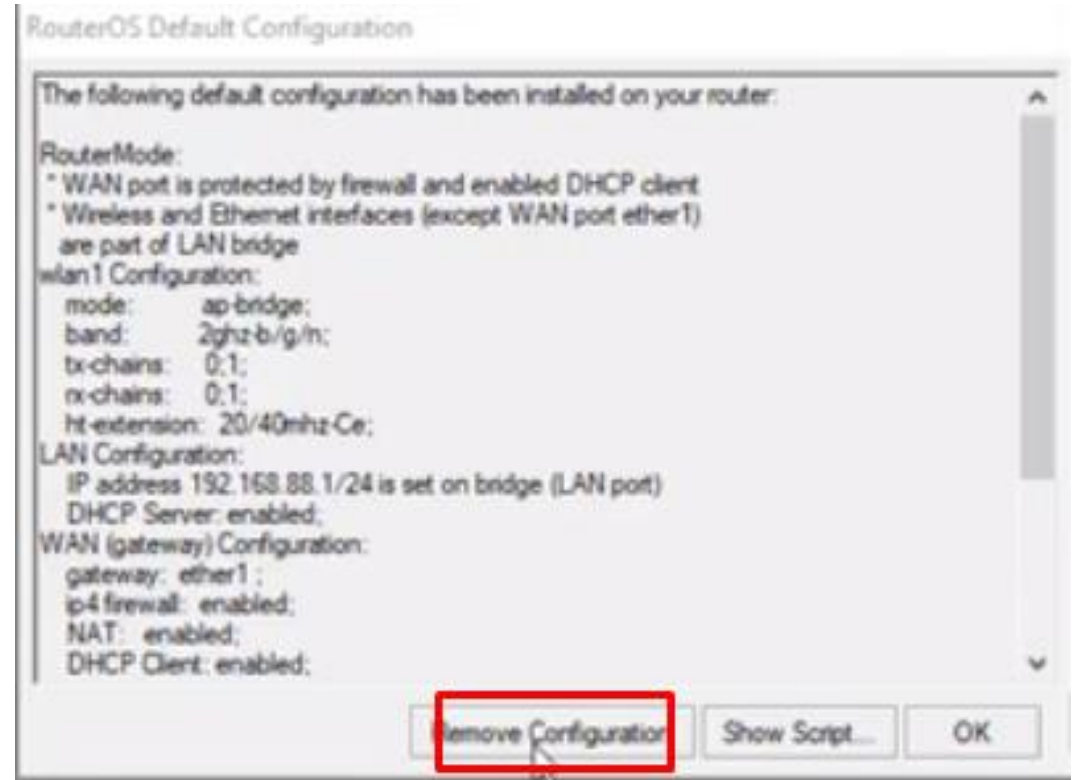
1 item (1 selected)

# Lakukan Reset Mikrotik

- Hubungkan Kembali dengan konek melalui Mac Address



- Pilih remove configuration untuk melakukan konfigurasi secara manual



- Cek pada interface list nya

admin@DC:2C:6E:8E:B2:52 (MikroTik) - WinBox (64bit) v6.47.10 on hAP lite (smips)

Session Settings Dashboard

Safe Mode Session: DC:2C:6E:8E:B2:52

RouterOS WinBox

- Quick Set
- CAPsMAN
- Interfaces**
- Wireless
- Bridge
- PPP
- Switch
- Mesh
- IP
- MPLS
- Routing
- System
- Queues
- Files
- Log
- RADIUS
- Tools
- New Terminal
- Make Supout.rf
- New WinBox
- Exit
- Windows

### Interface List

Interface Interface List Ethernet EoIP Tunnel IP Tunnel GRE Tunnel VLAN VRRP Bonding LTE

+ - [Icons] Detect Internet Find

	Name	Type	Actual MTU	L2 MTU	Tx	Rx
R	ether1	Ethernet	1500	1598	0 bps	51.2
R	ether2	Ethernet	1500	1598	63.5 kbps	5.6
	ether3	Ethernet	1500	1598	0 bps	
	ether4	Ethernet	1500	1598	0 bps	
	pwr-line1	PWR	1500	1598	0 bps	
X	wlan1	Wireless (Atheros AR9...	1500	1600	0 bps	

6 items

- Sesuaikan konfigurasi seperti pada topologi
- Ether 1 untuk ke internet

The screenshot shows the Mikrotik WinBox interface. The title bar indicates the user is 'admin@DC:2C:6E:8E:B2:52 (MikroTik) - WinBox (64bit) v6.47.10 on hAP lite (smips)'. The main window displays the 'Interface List' and the configuration for 'ether1 internet'.

**Interface List**

	Name	Type
R	ether1 internet	Ethernet
R	ether2	Ethernet
	ether3	Ethernet
	ether4	Ethernet
	pwr-line1	PWR
X	wlan1	Wireless (Ather

**Interface <ether1 internet>**

General | Ethernet | Loop Protect | Overall Stats | Rx Stats | ...

Name: ether1 internet  
Type: Ethernet  
MTU: 1500  
Actual MTU: 1500  
L2 MTU: 1598  
Max L2 MTU: 2028  
MAC Address: DC:2C:6E:8E:B2:51  
ARP: enabled  
ARP Timeout: [dropdown]

Buttons: OK, Cancel, Apply, Disable, Comment, Torch, Cable Test, Blink, Reset MAC Address, Reset Counters

- Ether 2 untuk ke jaringan lokal

DC:2C:6E:8E:B2:52 (MikroTik) - WinBox (64bit) v6.47.10 on hAP lite (smips)

Settings Dashboard

Safe Mode Session: DC:2C:6E:8E:B2:52

Interface List

	Name	Type
R	ether1 internet	Ethernet
R	ether2	Ethernet
	ether3	Ethernet
	ether4	Ethernet
	pwr-line1	PWR
X	wlan1	Wireless (Athernet)

6 items (1 selected)

Interface <ether2>

General Ethernet Loop Protect Overall Stats Rx Stats ...

Name: ether2 local

Type: Ethernet

MTU: 1500

Actual MTU: 1500

L2 MTU: 1598

Max L2 MTU: 2028

MAC Address: DC:2C:6E:8E:B2:52

ARP: enabled

ARP Timeout:

OK

Cancel

Apply

Disable

Comment

Torch

Cable Test

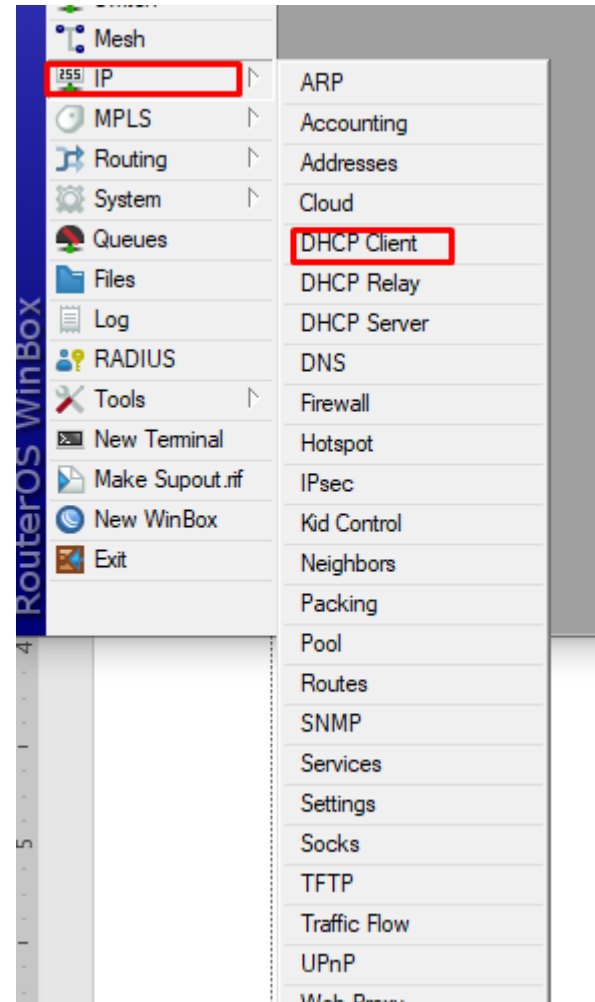
Blink

Reset MAC Address

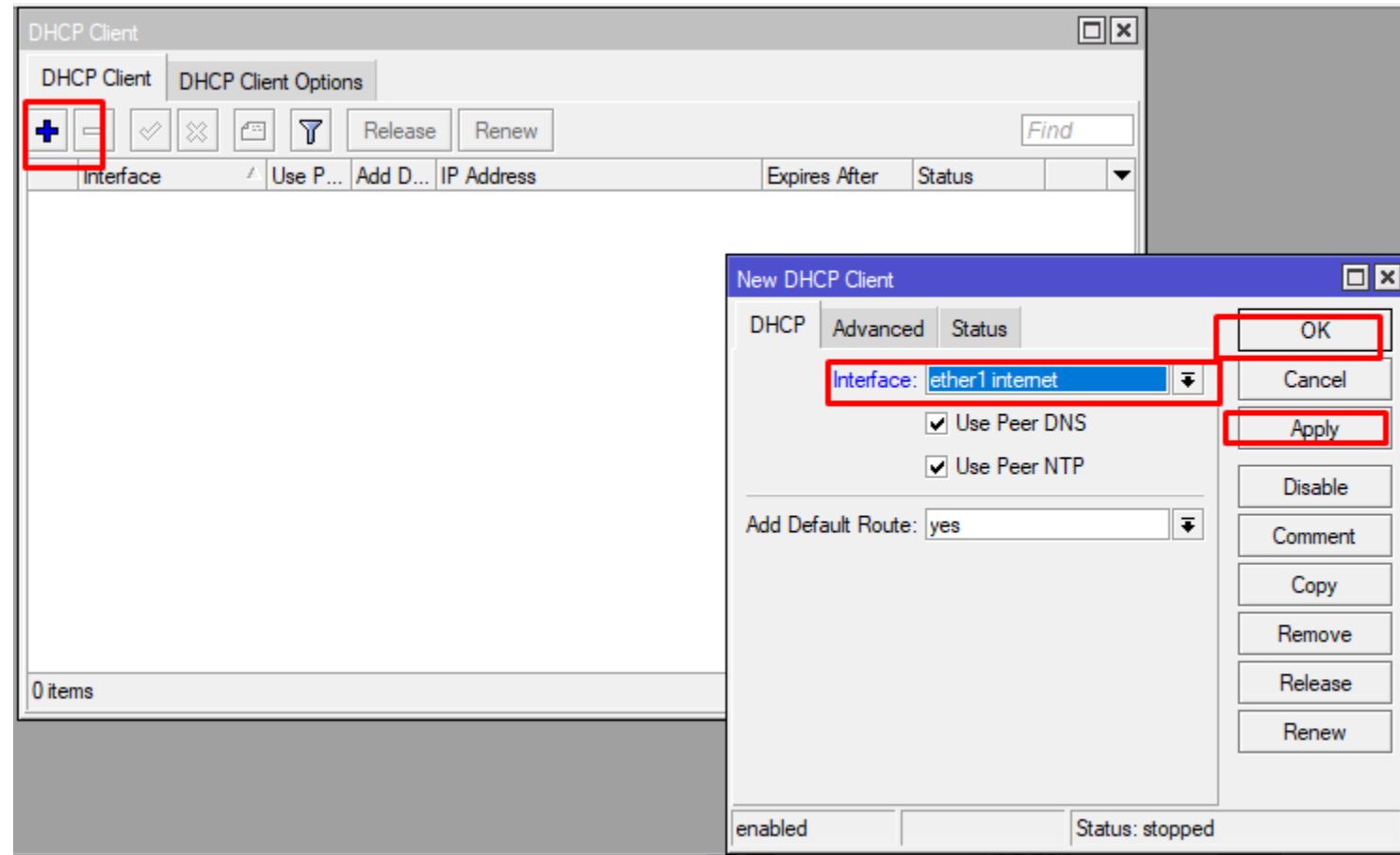
Reset Counters

enabled running slave link ok

- Konfigurasi mikrotik agar mendapatkan ip dhcp dari modem/internet



- Tambahkan interface sebagai dhcp client



- Tunggu sampai mikrotik mendapatkan IP dan status menjadi bound

Interface	Use P...	Add D...	IP Address	Expires After	Status
ether1 internet	yes	yes	192.168.0.101/24	01:59:46	bound

1 item

- Untuk menguji apakah mikrotik sudah mendapat akses internet, masuk ke menu terminal kemudian ping google

The screenshot shows the Mikrotik WinBox interface. On the left is a sidebar menu with various system management options. The 'New Terminal' option is highlighted with a red box. The main area displays a terminal window titled 'Terminal <1>'. Inside the terminal, the command 'ping google.com' has been entered and is also highlighted with a red box. The terminal shows the output of the ping command, including a table of results and summary statistics.

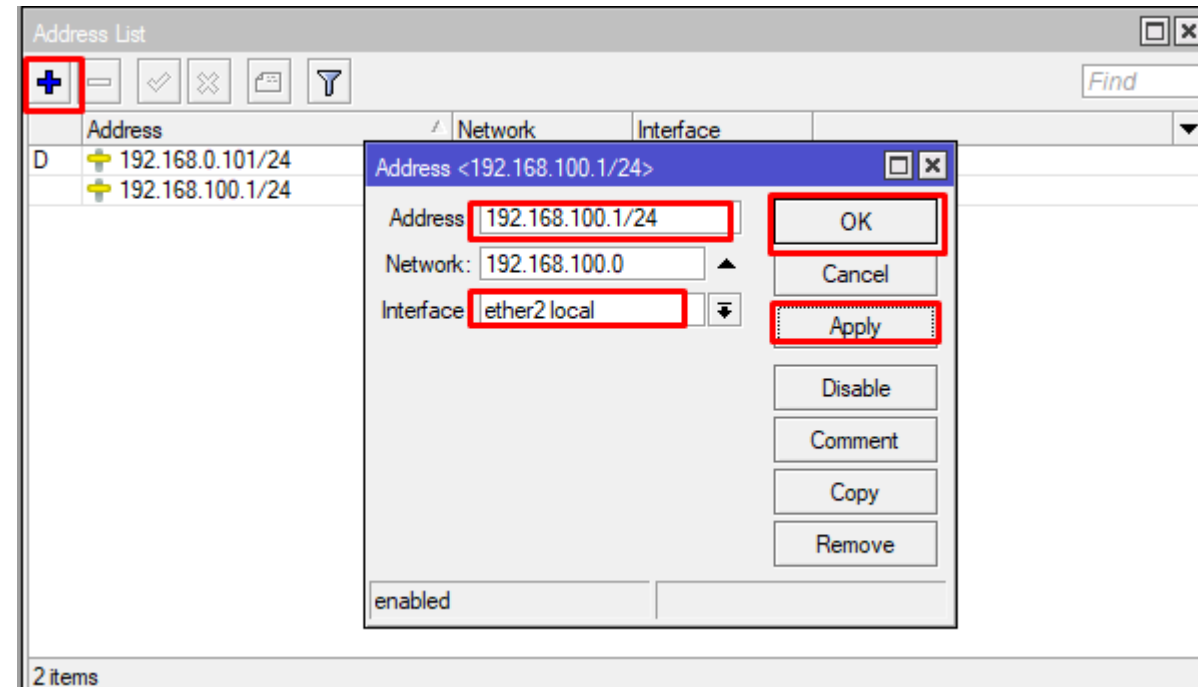
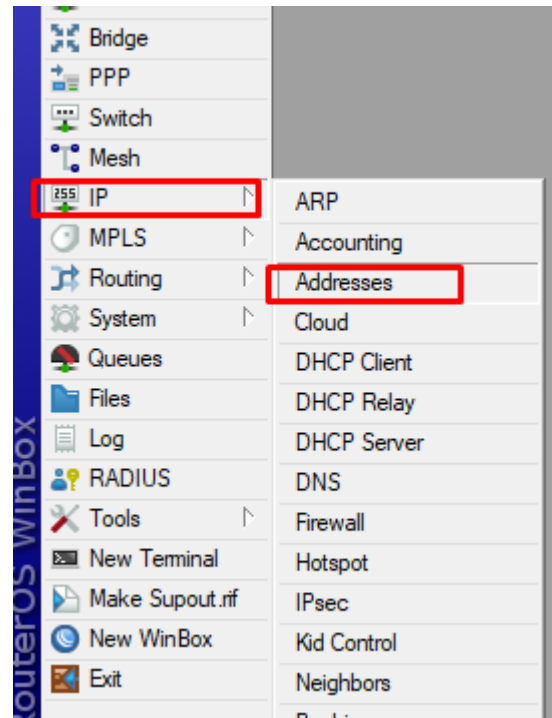
```
Session Settings Dashboard
Safe Mode Session: DC:2C:6E:8E:B2:52

RouterOS WinBox
Quick Set
CAPsMAN
Interfaces
Wireless
Bridge
PPP
Switch
Mesh
IP
MPLS
Routing
System
Queues
Files
Log
RADIUS
Tools
New Terminal
Make Supout.tif
New WinBox
Exit
Windows

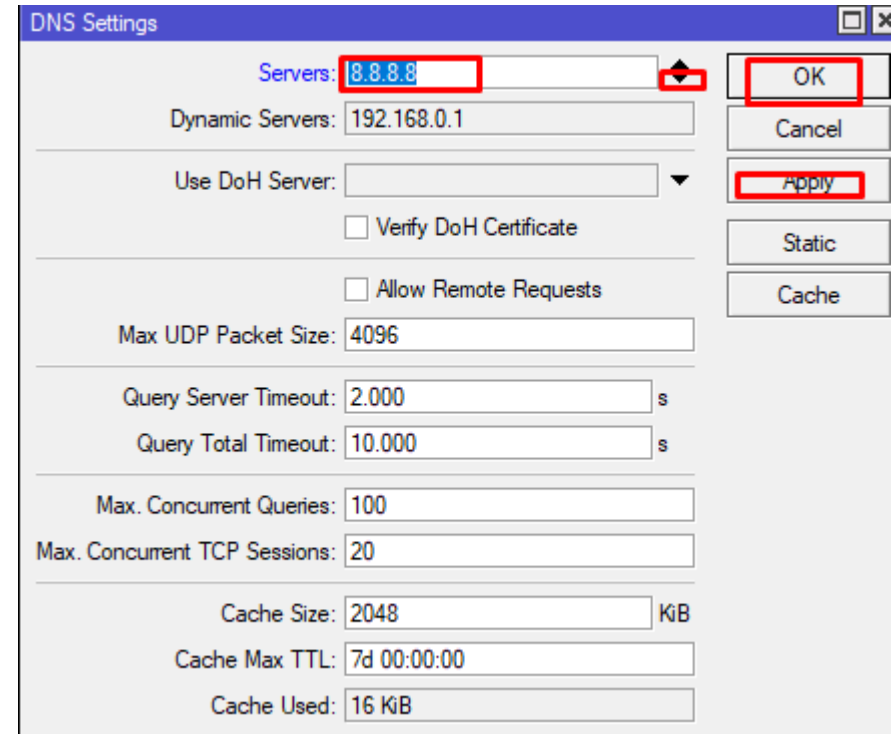
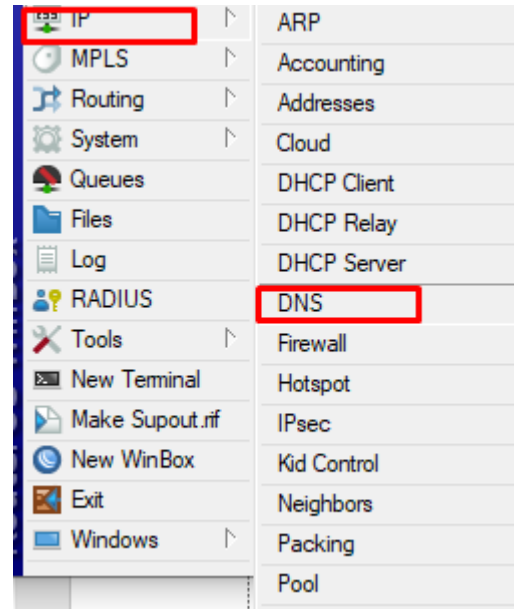
Terminal <1>
[?] Gives the list of available commands
command [?] Gives help on the command and list of arguments
[Tab] Completes the command/word. If the input is ambiguous,
a second [Tab] gives possible options
/ Move up to base level
.. Move up one level
/command Use command at the base level
[admin@MikroTik] : ping google.com
SEQ HOST SIZE TTL TIME STATUS
0 142.250.4.101 56 107 27ms
1 142.250.4.101 56 107 55ms
2 142.250.4.101 56 107 27ms
3 142.250.4.101 56 107 27ms
4 142.250.4.101 56 107 53ms
5 142.250.4.101 56 107 33ms
6 142.250.4.101 56 107 34ms
7 142.250.4.101 56 107 43ms
8 142.250.4.101 56 107 35ms
sent=9 received=9 packet-loss=0% min-rtt=27ms avg-rtt=37ms max-rtt=55ms
[admin@MikroTik] >
```

# Konfigurasi ke Jaringan Lokal

- Setting ip pada ether 2 untuk jaringan lokal

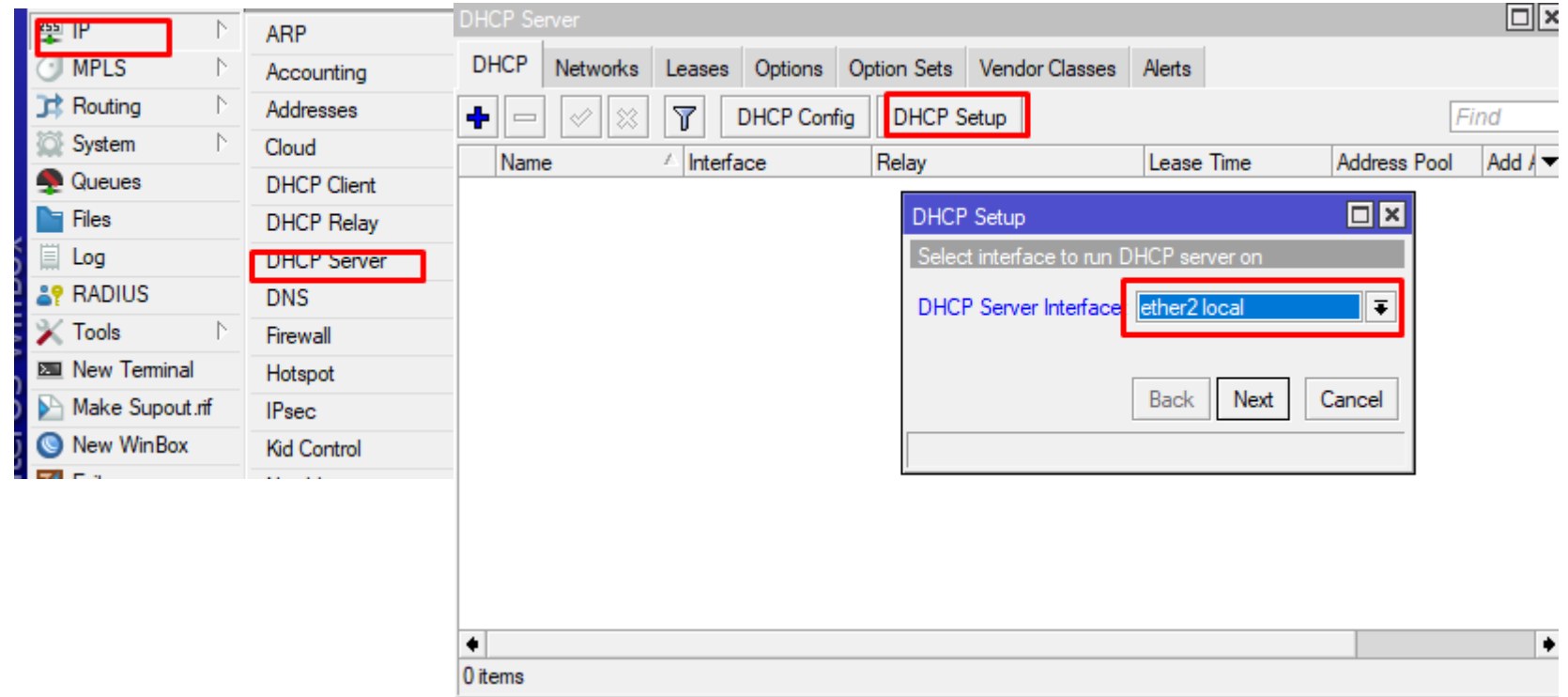


- Tambahkan ip DNS



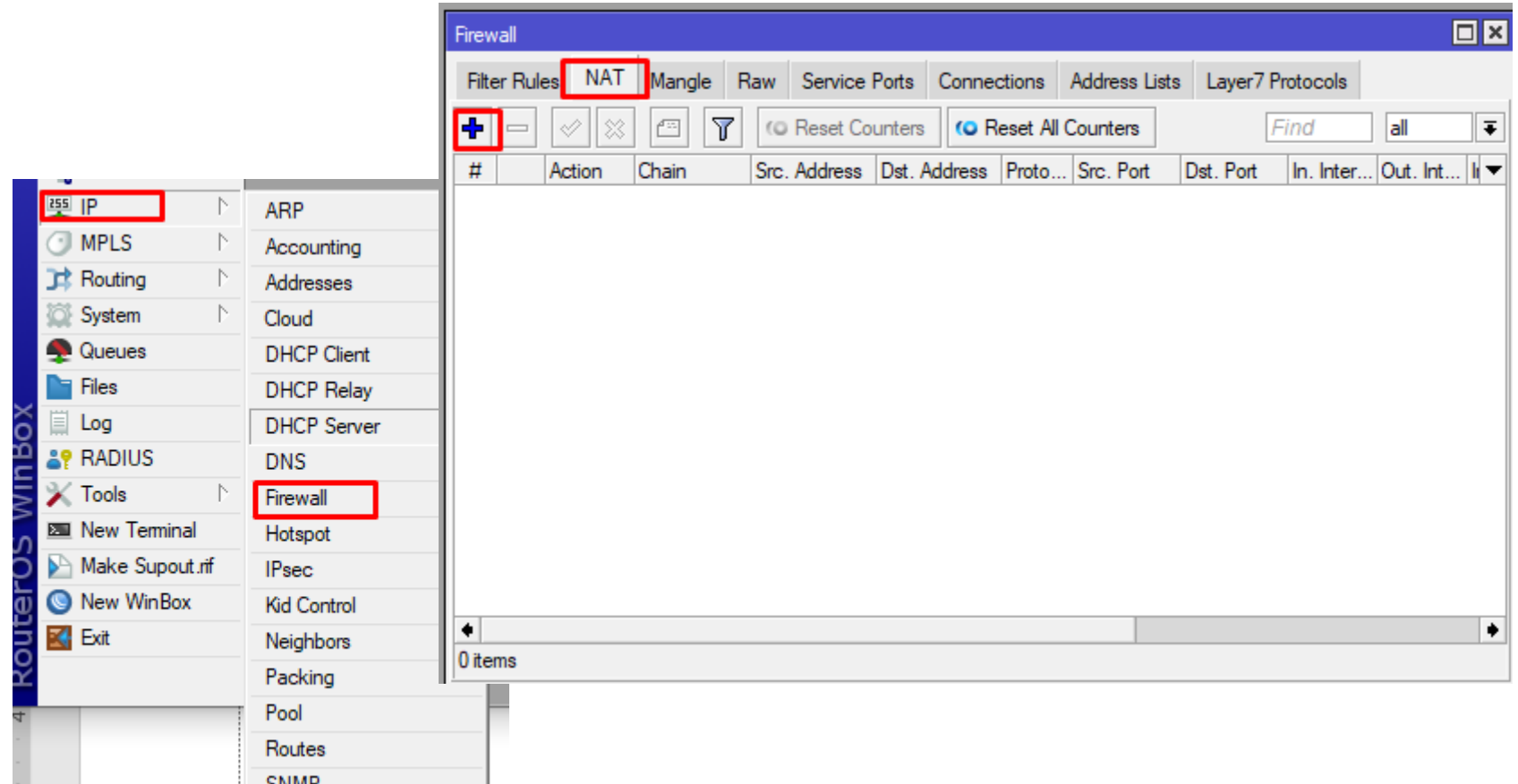
# Buat DHCP server agar client mendapat IP Otomatis dari mikrotik

- Pergi ke menu IP-dhcp server
- Kemudian pilih pada dhcp setup
- Next sampai finish/successful



# Lakukan routing agar client jaringan local mendapatkan akses internet

- Yaitu dengan memanfaatkan fungsi NAT (Network Address Translation)



# NAT Rule yang perlu dikonfigurasi

## Tab general

- Chain = srcnat
- Src address = ip network untuk client jaringan local
- Out interface = ether 1 (ke internet)

## Tab action

- Action = masquerade

The image displays two screenshots of the Mikrotik WinBox 'New NAT Rule' configuration window. The top screenshot shows the 'General' tab with the following configuration:

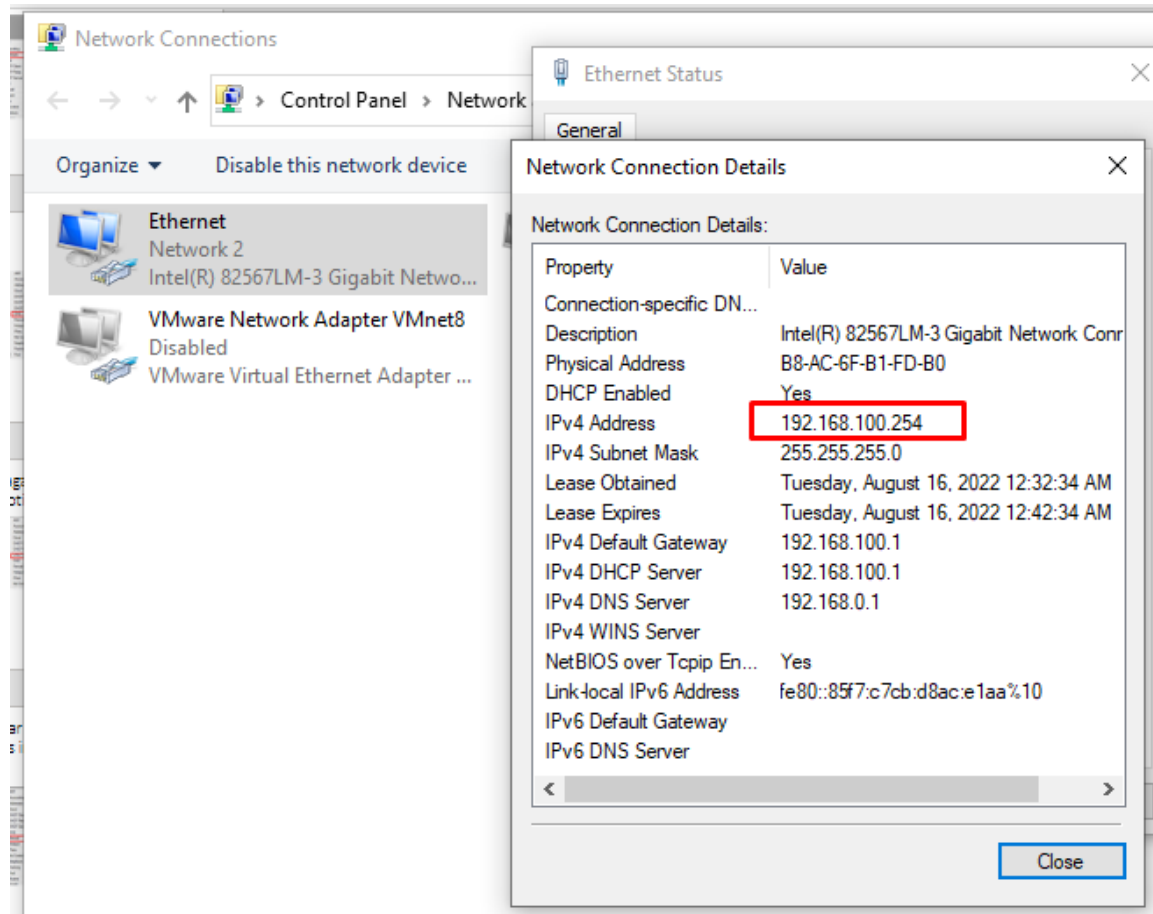
- Chain: srcnat
- Src. Address: 192.168.100.0/24
- Out. Interface: ether1 internet

The bottom screenshot shows the 'Action' tab with the following configuration:

- Action: masquerade

Both screenshots have red boxes highlighting the 'Chain', 'Src. Address', 'Out. Interface', and 'Action' fields. The 'Action' tab also shows a 'Log' checkbox and a 'Log Prefix' field.

# Cek client pada jaringan Lokal



```
C:\WINDOWS\system32\cmd.exe - ping google.com
```

```
Microsoft Windows [Version 10.0.19044.1889]  
(c) Microsoft Corporation. All rights reserved.
```

```
C:\Users\Rifa>ping google.com
```

```
Pinging google.com [74.125.130.139] with 32 bytes of data:  
Reply from 74.125.130.139: bytes=32 time=27ms TTL=55  
Reply from 74.125.130.139: bytes=32 time=31ms TTL=55
```

# KONFIGURASI WLAN

- Tambahkan IP untuk wlan
- Konfigurasi DHCP Server untuk interface wlan

The image shows two screenshots from Mikrotik WinBox. The top screenshot is the 'Address List' window, which displays a table of IP addresses and their associated networks and interfaces. The entry for '172.16.16.1/24' on the 'wlan1' interface is highlighted with a red box. The bottom screenshot is the 'DHCP Server' window, showing a table of DHCP server configurations. The 'dhcp3' entry, which is configured for the 'wlan1' interface, is highlighted with a red box. The 'DHCP Setup' button in the toolbar is also highlighted with a red box.

**Address List**

Address	Network	Interface
10.10.10.1/24	10.10.10.0	ether3 server
172.16.16.1/24	172.16.16.0	wlan1
192.168.0.100/24	192.168.0.0	ether1 Internet
192.168.100.1/24	192.168.100.0	ether2 local

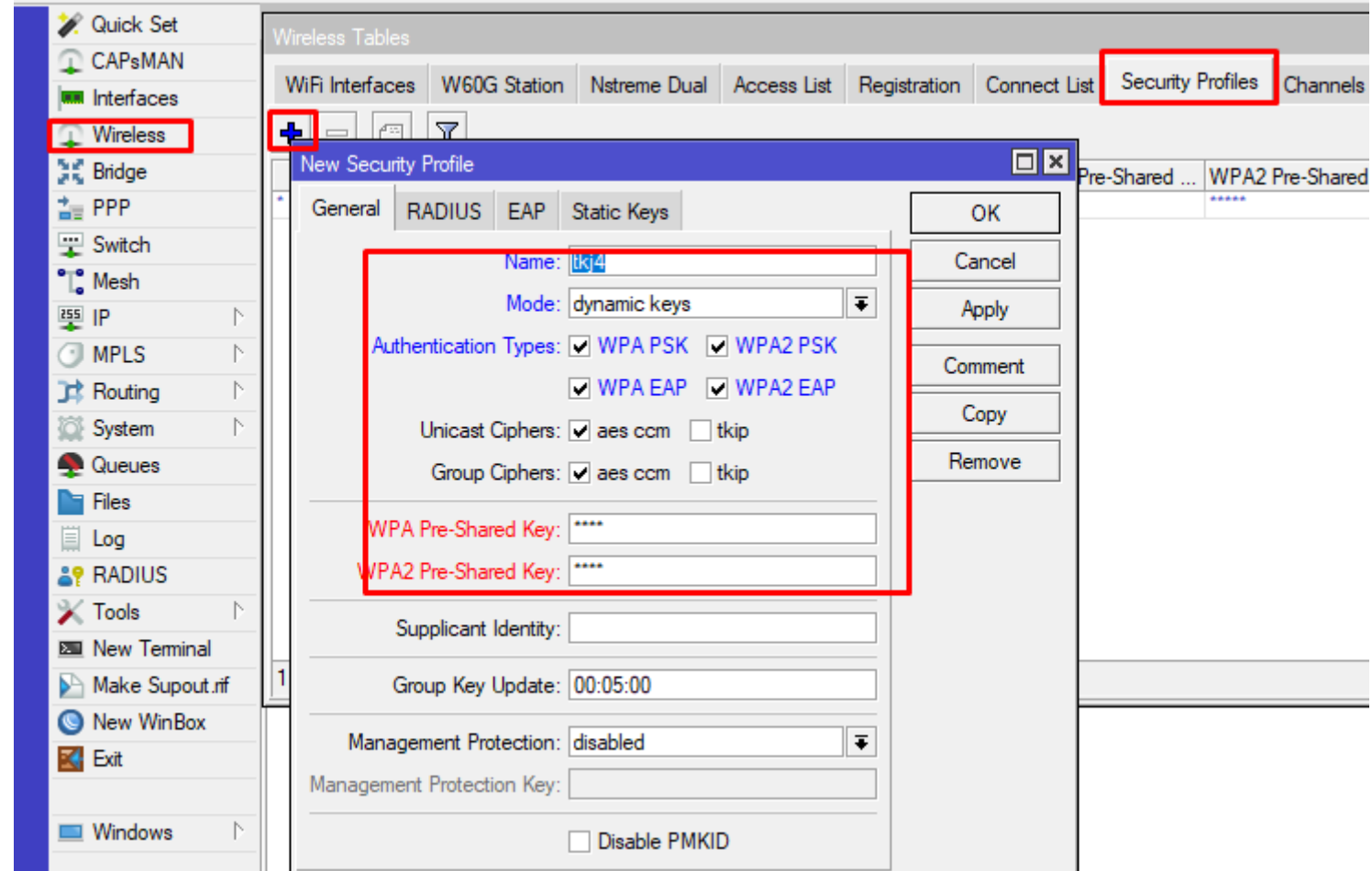
**DHCP Server**

Networks Leases Options Option Sets Vendor Classes Alerts

DHCP Config **DHCP Setup**

Name	Interface	Relay	Lease Time	Address Pool	Add AR...
dhcp1	ether2 local		00:10:00	dhcp_pool0	no
dhcp2	ether3 server		00:10:00	dhcp_pool1	no
dhcp3	wlan1		00:10:00	dhcp_pool2	no

- Tambahkan security profile tkj4\_kelompok



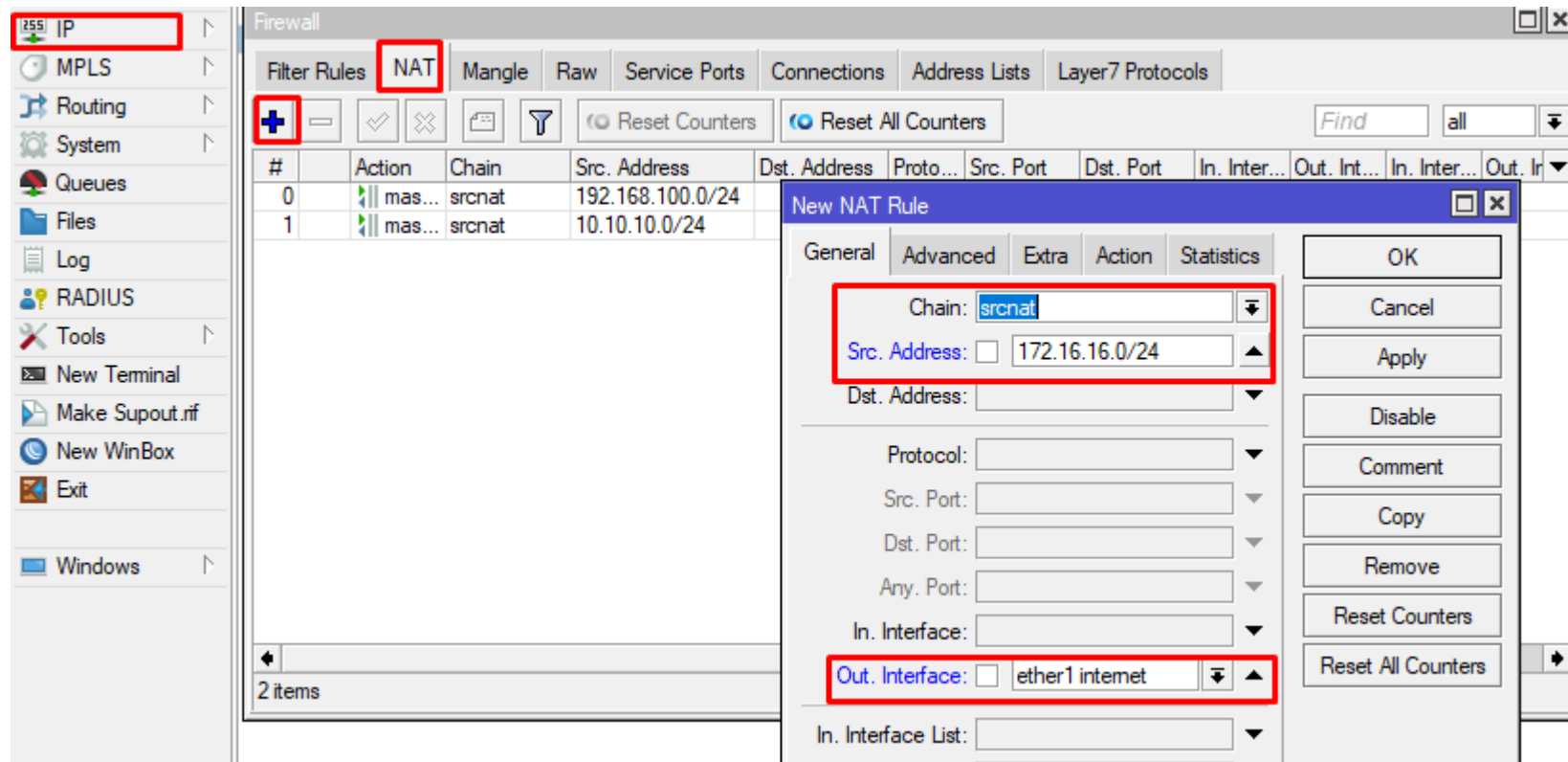
- Untuk interface wlan1 setting mode menjadi AP bridge dan sesuaikan security profile nya.

The image shows a screenshot of the Mikrotik WinBox interface. The main window is titled "Wireless Tables" and contains a table with columns: Name, Type, Actual MTU, Tx, Rx, Tx Packet (p/s), and Rx Packet (p/s). The first row is highlighted with a red box and contains the following data: wlan1, Wireless (Atheros AR9..., 1500, 0 bps, 0 bps, 0. Below the table, there is a button labeled "wlan1" and a status bar indicating "1 item out of 6".

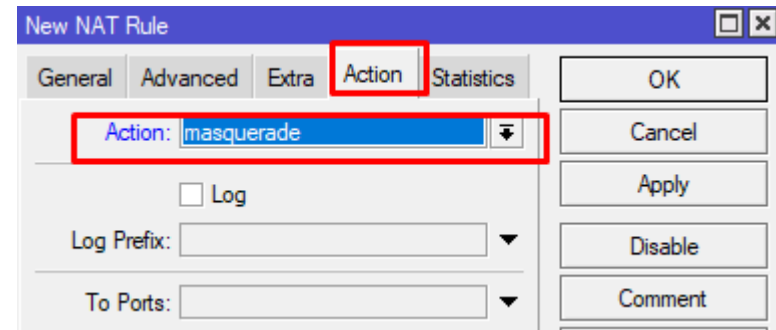
A secondary window titled "Interface <wlan1>" is open, showing the configuration for the wlan1 interface. The "Wireless" tab is selected. The configuration is as follows:

Field	Value
Mode	ap bridge
Band	2GHz-B/G/N
Channel Width	20MHz
Frequency	2412 MHz
SSID	tkj4
Security Profile	tkj4
WPS Mode	push button
Frequency Mode	regulatory-domain
Country	etsi
Installation	any
Default AP Tx Limit	
Default Client Tx Limit	

The "Wireless" tab and the configuration fields are highlighted with a red box. The "Security Profile" field is set to "tkj4".



Tambahkan konfigurasi NAT seperti pada Langkah sebelumnya agar client mendapatkan akses internet



- Uji menggunakan perangkat hp atau laptop dan pastikan mendapatkan ip dhcp dari mikrotik
- Pastikan bisa mengakses internet.

