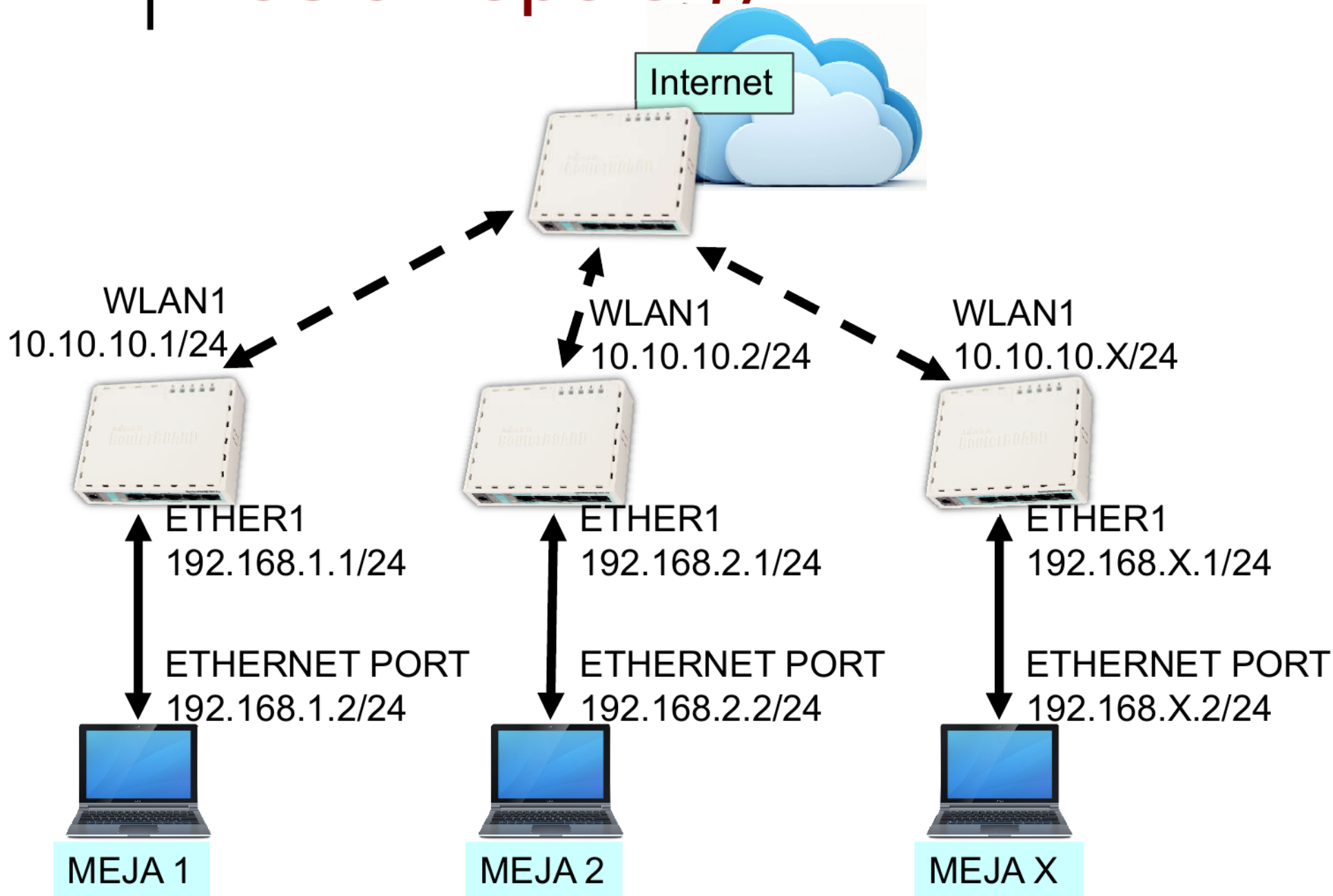


# Basic Topology



# IP Configuration

Lab-1 adalah sebuah simulasi konfigurasi dasar sebuah Router Mikrotik yang akan digunakan di jaringan local seperti **Warnet, Office, Kampus** atau bahkan di **RT/RW-NET**

X = nomor peserta

- Routerboard Setting
  - WAN IP : 10.10.10.x/24
  - Gateway : 10.10.10.100
  - LAN IP : 192.168.x.1/24
  - DNS : 8.8.8.8
  - Src-NAT and DNS Server
- Laptop Setting
  - IP Address : 192.168.x.2/24
  - Gateway : 192.168.x.1
  - DNS : 192.168.x.1

# [LAB-1] Connect to Router

1. Matikan Wireless dan Interface selain Ethernet (LAN) pada laptop
2. Setting IP Manual pada laptop
3. Remote router dengan MAC winbox

Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

Obtain an IP address automatically

Use the following IP address:

IP address: 192 . 168 . X . 2

Subnet mask: 255 . 255 . 255 . 0

Default gateway: 192 . 168 . X . 1

Obtain DNS server address automatically

Use the following DNS server addresses:

Preferred DNS server: 192 . 168 . X . 1

Alternate DNS server: . . .

Validate settings upon exit

Advanced...

OK Cancel

# [LAB-2] Connect to AP

The screenshot shows the Mikrotik WinBox interface. On the left sidebar, the 'Wireless' menu item is highlighted with a red box. A red arrow points from this menu to the 'Wireless Tables' window. In this window, the 'wlan1' interface is selected and highlighted with a red box. Another red arrow points from 'wlan1' to the 'Interface <wlan1>' configuration window. In this configuration window, the 'Wireless' tab is active. The 'Mode' dropdown is set to 'station' (highlighted with a red box). The 'Band' is set to '2GHz-B/G', 'Channel Width' to '20MHz', and 'Frequency' to '2412 MHz'. The 'SSID' is set to 'latmikrotik' (highlighted with a red box). The 'Enable' button is also highlighted with a red box. A red arrow points from the 'Enable' button to the 'Comment' field.

Name	Type	L2 MTU	Tx	Rx
wlan1	wireless (Atheros Ar...	1600		0 bps

Interface <wlan1>

Mode: station

Band: 2GHz-B/G

Channel Width: 20MHz

Frequency: 2412 MHz

SSID: latmikrotik

Enable

# [LAB-2] Connect to AP\*opt

The image shows the Mikrotik WinBox interface for configuring wireless security profiles. The 'Wireless Tables' window has the 'Security Profiles' tab selected. A table lists the profiles, with 'default' (Mode: none) highlighted. A red box highlights the 'Security Profiles' tab and the 'default' row. A red arrow points from the 'Security Profiles' tab to the 'default' row, and another red arrow points from the 'default' row to the 'Security Profile <default>' dialog box.

The 'Security Profile <default>' dialog box is open, showing the following configuration:

- Name: default
- Mode: dynamic keys
- Authentication Types:  WPA PSK,  WPA2 PSK,  WPA EAP,  WPA2 EAP
- Unicast Ciphers:  aes ccm,  tkip
- Group Ciphers:  aes ccm,  tkip
- WPA Pre-Shared Key: bismillah
- WPA2 Pre-Shared Key: (empty)

Buttons on the right side of the dialog include OK, Cancel, Apply, Copy, and Remove.

# [LAB-3] IP Setting

The image illustrates the steps to configure IP addresses in Mikrotik WinBox:

- Address List:** A table with columns for Address, Network, and Interface. A red circle highlights the '+' button used to add a new address.
- New Address Dialog (Left):** Shows configuration for the address `10.10.10.X/24` on the `wlan1` interface.
- New Address Dialog (Right):** Shows configuration for the address `192.168.X.1/24` on the `ether1` interface.

# [LAB-4] Default Gateway

The screenshot shows the Mikrotik WinBox interface. On the left, the 'Routes' menu is open, with the 'Routes' option selected. A red box highlights the 'Routes' menu item, and a red arrow points from it to the 'New Route' dialog. The 'New Route' dialog is open, showing the 'General' tab. The 'Dst. Address' field is set to '0.0.0.0/0'. The 'Gateway' field is set to '10.10.10.100', which is highlighted with a red box. A red arrow points from the '+' button in the 'Route List' table to the 'Gateway' field. The 'Route List' table shows two existing routes:

Routes	Nexthops	Rules	VRF
DAC	▶ 10.10.10.0/24	wlan1 reachable	
DAC	▶ 192.168.30.0...	ether1 reachable	

The 'New Route' dialog has the following fields:

- General
- Attributes
- Dst. Address: 0.0.0.0/0
- Gateway: 10.10.10.100

# [LAB-5]DNS Config

The image shows the configuration process for DNS in Mikrotik WinBox. The left sidebar shows the navigation menu with 'DNS' selected. The main window displays the 'DNS Settings' dialog box. Key configurations are highlighted with red boxes and arrows:

- Servers:** 8.8.8.8
- Allow Remote Requests**

Other visible settings in the dialog include:

- Dynamic Servers: (empty)
- 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

Jika mengaktifkan "Allow Remote Request" biasanya untuk proteksi dari Internet



# [LAB-6] Masquerade

The image illustrates the configuration of a NAT rule in Mikrotik WinBox. It consists of four main screenshots connected by red arrows:

- Top Left:** The 'Mesh' configuration window. The 'IP' tab is selected and highlighted with a red box. A red arrow points from the 'IP' tab to the 'Firewall' tab in the adjacent window.
- Top Right:** The 'Firewall' configuration window. The 'NAT' tab is selected and highlighted with a red box. A red arrow points from the 'NAT' tab to the '+' button in the 'Filter Rules' section. Another red arrow points from the '+' button to the 'Chain' dropdown in the 'New NAT Rule' window below.
- Bottom Left:** The 'New NAT Rule' configuration window. The 'Chain' dropdown is set to 'srcnat' and is highlighted with a red box. A red arrow points from the 'Chain' dropdown to the 'Out. Interface' dropdown in the same window.
- Bottom Right:** The 'New NAT Rule' configuration window, showing the 'Action' tab. The 'Action' dropdown is set to 'masquerade' and is highlighted with a red box. A red arrow points from the 'Out. Interface' dropdown in the previous window to the 'Action' dropdown.



# Troubleshoot

- Test ping dari **Router** ke **Gateway** (10.10.10.100)
  - Jika error : Cek Wireless connection, Cek IP Address pada wlan1
- Test ping dari **Router** ke **Internet** (contoh: yahoo.com)
  - Jika error : Cek DNS Server Setting
- Test ping dari **Laptop** ke **Router** Anda (10.10.10.x)
  - Jika error : Cek konfigurasi laptop, Cek IP Address pada Ether1
- Test ping dari **Laptop** ke **Gateway** (10.10.10.100)
  - Jika error : Cek Firewall - NAT
- Test ping dari **Laptop** ke **Internet** (contoh: yahoo.com)
  - Jika error : Cek setting DNS pada laptop dan router
- Cek koneksi Laptop secara menyeluruh (browsing, chatting, download, dsb)