

# Jumpstart your router with

# *MikroTik*

# QUICKSET

Mikrotik User Meeting Laos, May 8, 2017

Achmad Mardiansyah

[achmad@glcnetworks.com](mailto:achmad@glcnetworks.com)

GLC Networks, Indonesia

# Agenda

- Introduction
- Router configuration
- Quick set
- Demo
- Q & A

# What is GLC?

- Garda Lintas Cakrawala ([www.glcnetworks.com](http://www.glcnetworks.com))
- Based in Bandung, Indonesia
- Areas: Training, IT Consulting
- Mikrotik Certified Training Partner
- Mikrotik Certified Consultant
- Mikrotik distributor

# Trainer Introduction



- Name: Achmad Mardiansyah
- Base: bandung, Indonesia
- Linux user since '99
- Certified Trainer (MTCNA/RE/WE/UME/INE/TCE)
- Mikrotik Certified Consultant
- Work: Telco engineer, Sysadmin, PHP programmer, and Lecturer at Telkom University
- Personal website: <http://achmad.glcnetworks.com>
- More info: <http://au.linkedin.com/in/achmadmardiansyah>

# About Telkom University



- Located in Bandung, Indonesia
- 7 Faculties, 27 schools
- Areas: Engineering, Communications, Computing, Business and management, Arts
- 650+ Academic staff, 400+ Administration staff, 20000+ students
- An exchange program
- Runs mikrotik academy program

# Mikrotik academy @ TEL-U

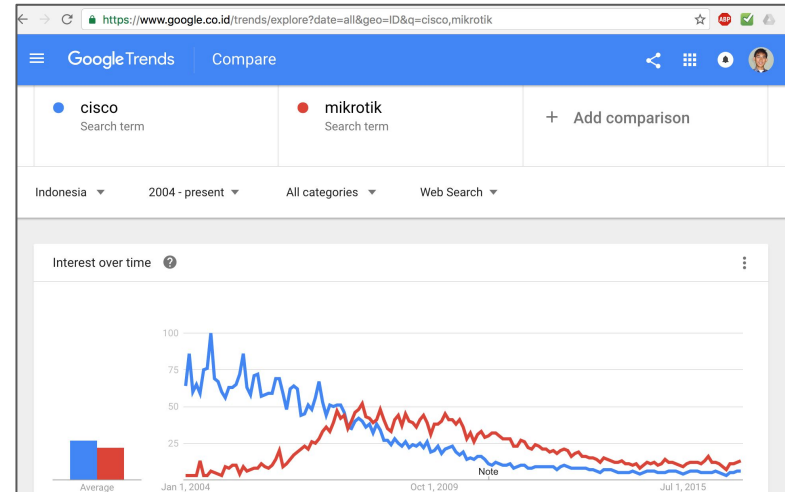
- Started in 2013
- Embedded into schools curricula
- 100% hands-on
- Get MTCNA certification





# Mikrotik in Indonesia

- Very popular product for networking
- Early adopters (beginning of 2000)
- Many schools already join Mikrotik Academy programs
- Lots of training classes
- Biggest MUM in the world (2500+ participants, 2-day event)
- Very active community (facebook, telegram, forum, etc)
- What..? you don't know Mikrotik? Where have you been?



# Configuring RouterOS



# How to configure RouterOS?

- Via local (physical) access

Meaning: Router and configuring devices should be directly connected

- Console port (if available)
- MAC address (layer 2 connection). Winbox application

- Via remote access (aka. Services. why?)

Meaning: Router will be accessed through layer 3 addressing

- Webfig (web configuration using http)
- Winbox (port 8291)
- SSH (port 22)
- Telnet (port 21)
- API (port 8728)

| Name    | Port  | Available From | Certificate |
|---------|-------|----------------|-------------|
| api     | 8728  |                |             |
| api-ssl | 8729  |                | none        |
| ftp     | 21    | 192.168.0.0/16 |             |
| ssh     | 22    | 192.168.0.0/16 |             |
| telnet  | 23    |                |             |
| winbox  | 8291  |                |             |
| www     | 50080 | 192.168.0.0/16 |             |
| www-ssl | 443   |                | none        |

8 items

# RouterOS default configuration (RB751U-2HnD)

- Ether1 -> WAN
  - Firewall NAT is active
  - **DHCP-client** is active
  - MAC server is **disabled** (cant access winbox from this port)
- Ether 2-5 -> combined using switch (LAN)
  - Local IP address: 192.168.88.1/25
  - DHCP-server is active
  - MAC server is enabled
- WLAN is OFF

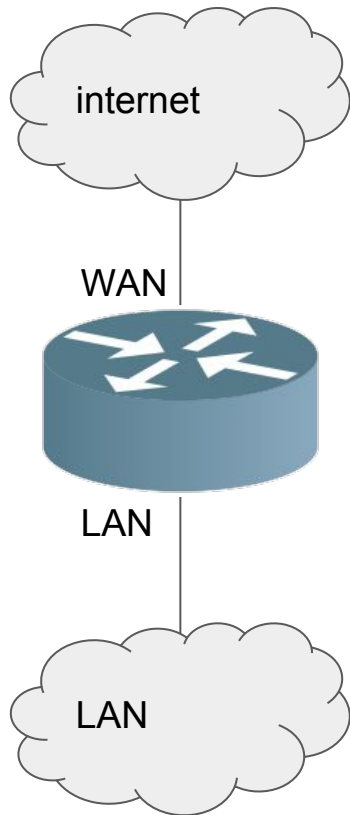
Source:

[https://wiki.mikrotik.com/wiki/Manual:Default\\_Configurations](https://wiki.mikrotik.com/wiki/Manual:Default_Configurations)

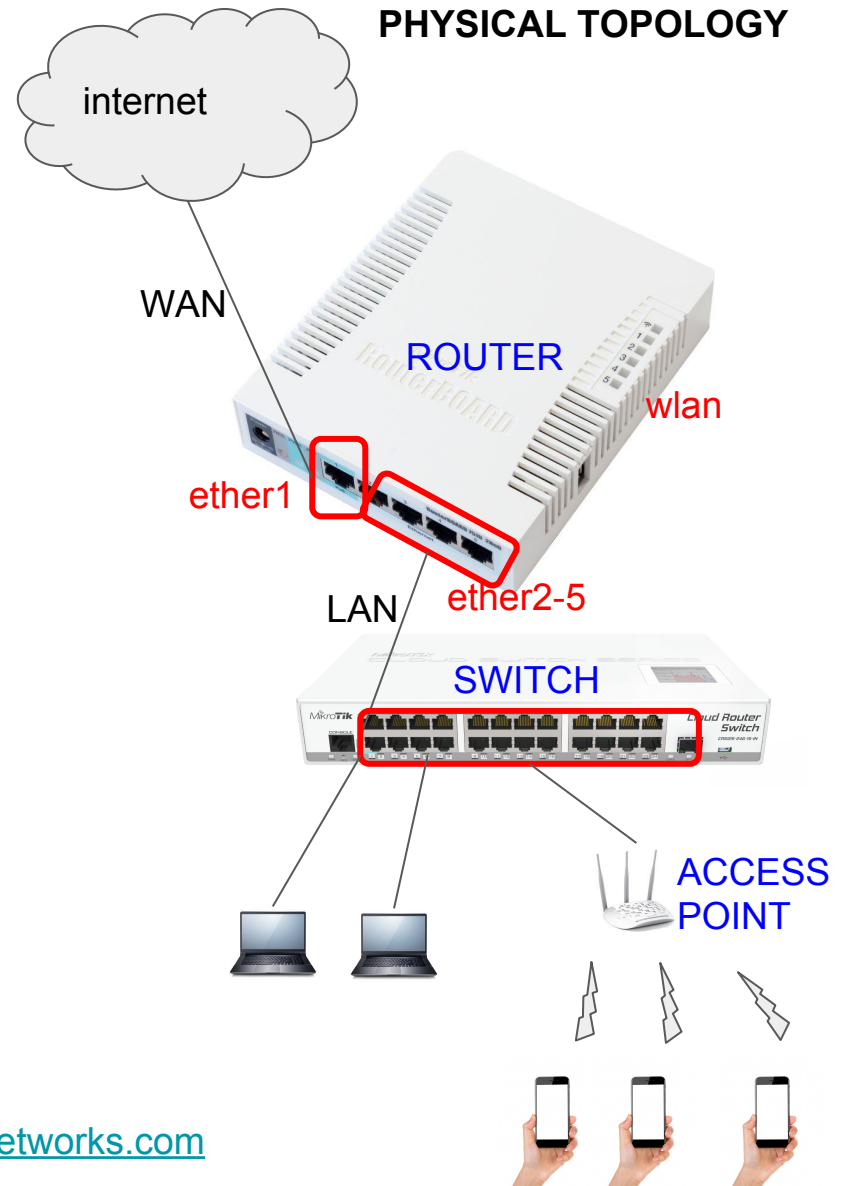


# Default config topology

## LOGICAL TOPOLOGY



## PHYSICAL TOPOLOGY



# Quick set

# What is jumpstart (vehicle)?

- a method of starting a vehicle with a discharged starting battery
- Without jumpstart:
  - Unplug the battery
  - Replace / energize the battery in different place
  - Put back the good battery to its position
  - Takes loooong time
- With jumpstart:
  - Its fast

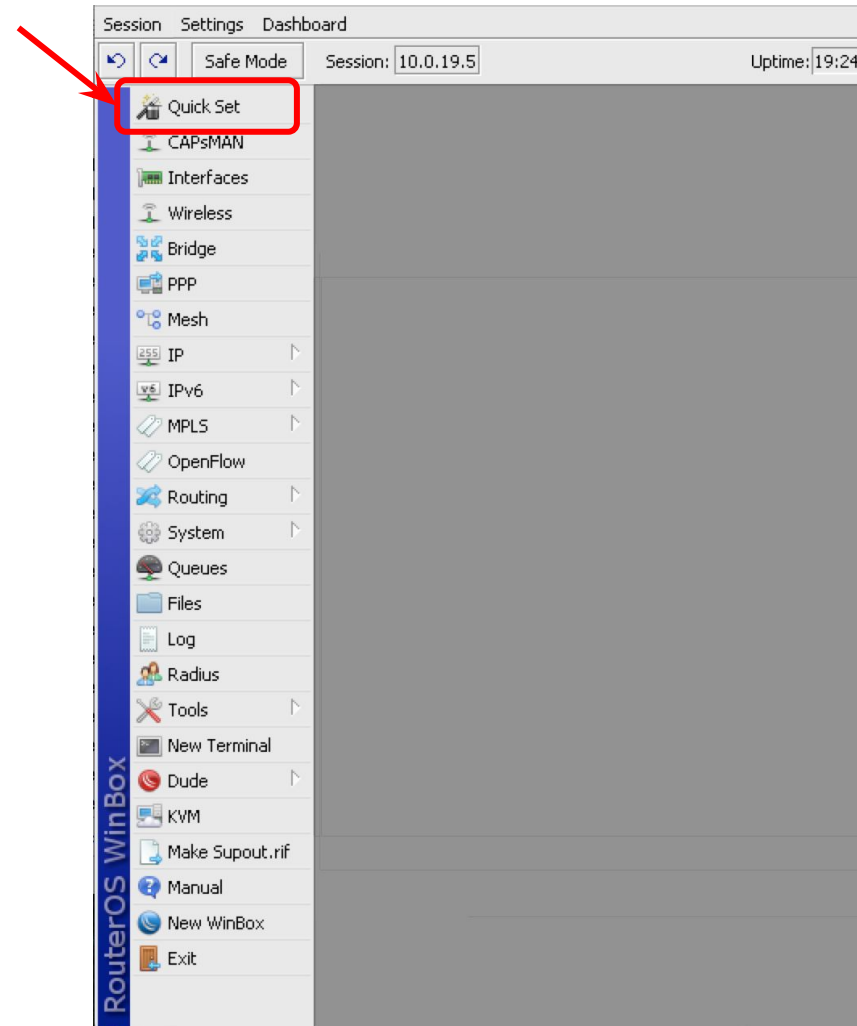


From [www.hirerush.com](http://www.hirerush.com)

# Can we configure routerOS like a jumpstart?

Yes, use **Quick set!**

- Contains of common scenarios of RouterOS implementation
- Each scenario is only one page configuration
- Very convenient for unexperienced users, non-technical persons
- Can save your time, a lot
- Sometimes it is a good tool for troubleshooting too :-p





# Quick set scenarios

| scenario       | description                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------|
| CPE            | Customer Premise Equipment (CPE). Routerboard will be configured as wireless client                                 |
| PTP Bridge AP  | If you want to setup a Point-To-Point wireless bridge, Routerboard will be configured as Access Point (AP) side     |
| PTP Bridge CPE | If you want to setup a Point-To-Point wireless bridge, Routerboard will be configured as Access Point side CPE side |
| WISP AP        | Wireless ISP, Access Point. Routerboard will be configured as Access Point in ISP environment                       |
| Home AP        | Routerboard will be configured as Access Point in Home Environment                                                  |
| Basic AP       | Routerboard will be configured as a Basic Access Point                                                              |
| CAP            | Routerboard will be configured as Controlled Access Point (CAP)                                                     |

# Scenario: CPE

## PHYSICAL TOPOLOGY

CPE Quick Set

Info

WLAN MAC Address: D4:CA:6D:6B:30:07

LAN MAC Address: D4:CA:6D:6B:30:02

Wireless

Country: no\_country\_set

Channel Width: 20/40MHz Ce

|    | Address           | Network Name  | Channel       | Pro |
|----|-------------------|---------------|---------------|-----|
| RB | E4:8D:8C:52:FE:23 | quickset_2GHz | 2412/20/gn    | 802 |
| P  | 84:16:F9:46:AA:20 | ALI HOTEL 3   | 2427/20-Ce/gn | 802 |
| P  | 60:E3:27:F2:80:8D | ALI HOTEL 4   | 2457/20-eC/gn | 802 |
|    | 4A:D9:E7:A5:3D:57 | @ETL_WIFI     | 2462/20/gn    | 802 |
| P  | 18:A6:F7:B0:A8:6A | ALI HOTEL 1   | 2457/20-eC/gn | 802 |
|    | 4A:D9:E7:A5:44:D7 | @ETL_WIFI     | 2437/20/gn    | 802 |
| P  | 84:16:F9:46:AA:24 | ALI HOTEL 2   | 2447/20-eC/gn | 802 |
|    | 4A:D9:E7:59:2D:93 | @ETL_WIFI     | 2462/20/gn    | 802 |
| P  | 4E:D9:E7:59:2D:93 |               | 2462/20/gn    | 802 |

Signal Strength: -57 dB

Network Name: ALI HOTEL 3

WiFi Password:  ☐ Hide

Connect

Configuration

Mode: ☒ Router ☐ Bridge

Wireless Network

Address Acquisition: ☐ Static ☒ Automatic ☐ PPPoE

IP Address:  Renew Release

Netmask:

Gateway:

Upload: unlimited bits/s

Download: unlimited bits/s

Local Network

IP Address: 0.0.0.0

Netmask: 255.0.0.0 (/8)

☐ DHCP Server

☐ NAT

☐ Bridge All LAN Ports

System

Router Identity: MikroTik

Check For Updates Reset Configuration

Password:

Confirm Password:

OK Cancel Apply



# Scenario: PTP-bridge

PTP Bridge AP Quick Set

**Wireless**

Wireless Protocol: ☒ 802.11 ☐ nstreme ☐ nv2

Network Name: MikroTik-6B3007

Frequency: auto MHz

Band: 2GHz-B/G/N

Channel Width: 20/40MHz Ce

Country: no\_country\_set

MAC Address: D4:CA:6D:6B:30:07

☐ Use Access List (ACL)

Security: ☐ WPA ☐ WPA2

**Wireless Clients**

| MAC Address | In ACL | Last IP | Uptime | S |
|-------------|--------|---------|--------|---|
|-------------|--------|---------|--------|---|

☒ Signal Strength:

**Configuration**

Address Acquisition: ☐ Static ☒ Automatic

Address Source: ☒ Any ☐ Ethernet ☐ WLAN

IP Address: 47.28.93.137 Renew Release

Netmask: 255.255.255.0 (/24)

Gateway: 47.28.93.1

**System**

Router Identity: MikroTik

Check For Updates Reset Configuration

Password:

Confirm Password:

OK Cancel Apply

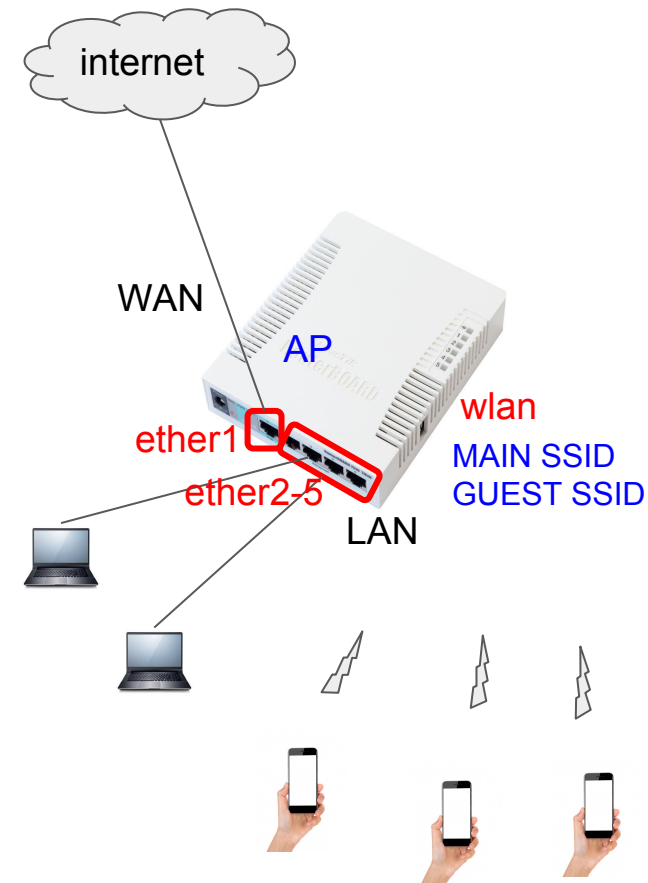
## PHYSICAL TOPOLOGY



# Scenario: Home AP

The screenshot shows the 'Home AP' configuration window. The 'Wireless' section (top left) is highlighted in red and contains fields for Network Name (MUM\_LAOS\_2017), Frequency (auto), Band (2GHz-G/N), Country (no\_country\_set), MAC Address (D4:CA:6D:6B:30:07), and WiFi Password (1234512345). The 'Internet' section (top right) is also highlighted in red and includes Address Acquisition (Automatic), IP Address, Netmask, Gateway, MAC Address (D4:CA:6D:6B:30:02), and Firewall Router (checked). The 'Local Network' section (bottom right) is highlighted in red and shows IP Address (192.168.55.1), Netmask (255.255.255.0), DHCP Server (checked), DHCP Server Range (192.168.55.10-192.168.55.254), NAT (checked), and UPnP (unchecked). Other sections include 'Guest Wireless Network', 'Wireless Clients', 'VPN', and 'System'.

## PHYSICAL TOPOLOGY



# Scenario: WISP AP

WISP AP Quick Set

Wireless

Wireless Protocol: ☒ 802.11 ☐ nstreme ☐ nv2

Network Name: MikroTik-6B3007

Frequency: auto MHz

Band: 2GHz-B/G/N

Channel Width: 20/40MHz Ce

Country: no\_country\_set

MAC Address: D4:CA:6D:6B:30:07

☐ Use Access List (ACL)

Security: ☐ WPA ☐ WPA2

Configuration

Mode: ☒ Router ☐ Bridge

Internet

Address Acquisition: ☐ Static ☒ Automatic ☐ PPPoE

IP Address: 47.28.93.137 Renew Release

Netmask: 255.255.255.0 (/24)

Gateway: 47.28.93.1

MAC Address: D4:CA:6D:6B:30:02

☒ Firewall Router

Local Network

IP Address: 192.168.88.1

Netmask: 255.255.255.0 (/24)

☒ DHCP Server

DHCP Server Range: 192.168.88.10-192.168.88.254

☒ NAT

VPN

☐ VPN Access

VPN Address: 3a6a029ae8a0.sn.mynetname.net

System

Router Identity: MikroTik

Check For Updates Reset Configuration

Password:

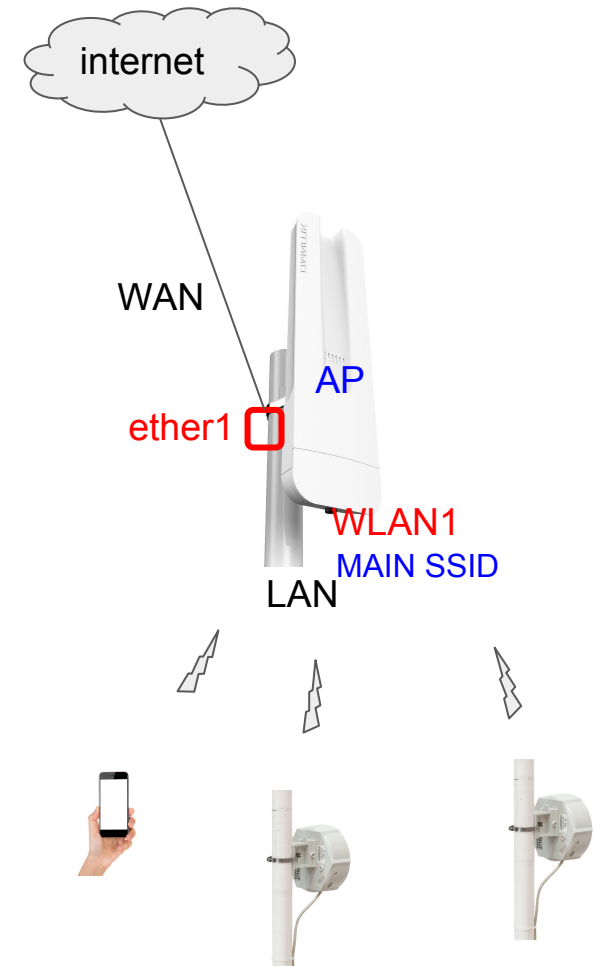
Confirm Password:

Signal Strength:

Copy To ACL Remove From ACL

inactive

## PHYSICAL TOPOLOGY



# Scenario: CAP

## PHYSICAL TOPOLOGY

CAP Quick Set

Bridge

Address Acquisition: ☐ Static ☒ Automatic

Address Source: ☒ Any ☐ Ethernet ☐ WLAN

IP Address: 47.28.93.137

Netmask: 255.255.255.0 (/24)

Gateway: 47.28.93.1

☒ Bridge All LAN Ports

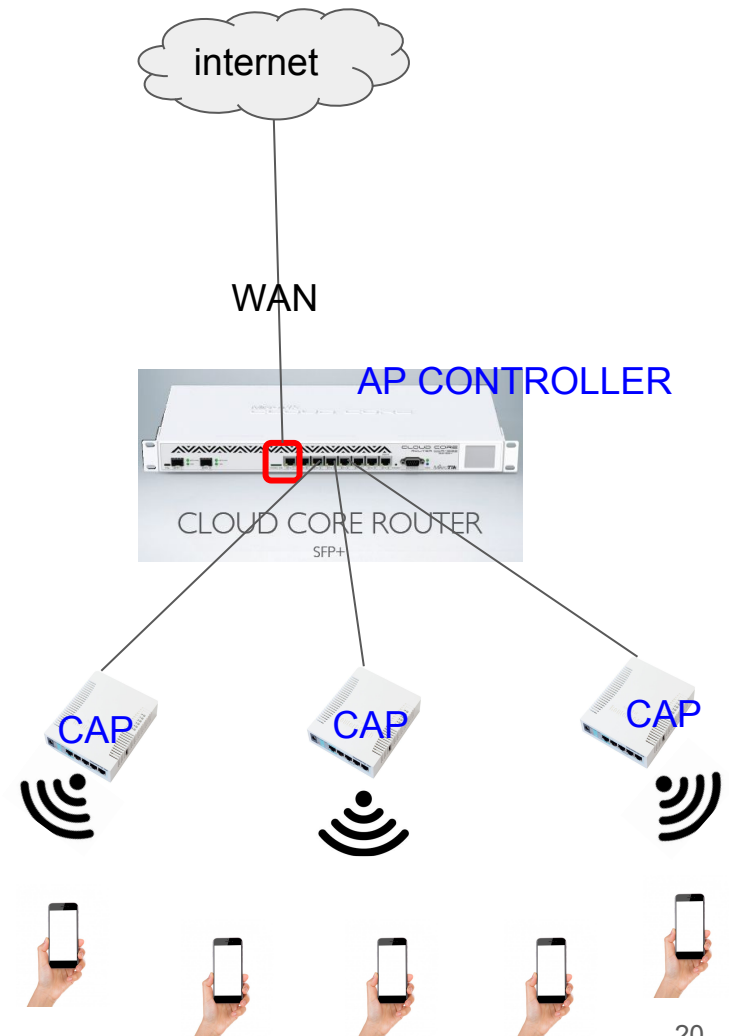
MAC Address: D4:CA:6D:6B:30:07

System

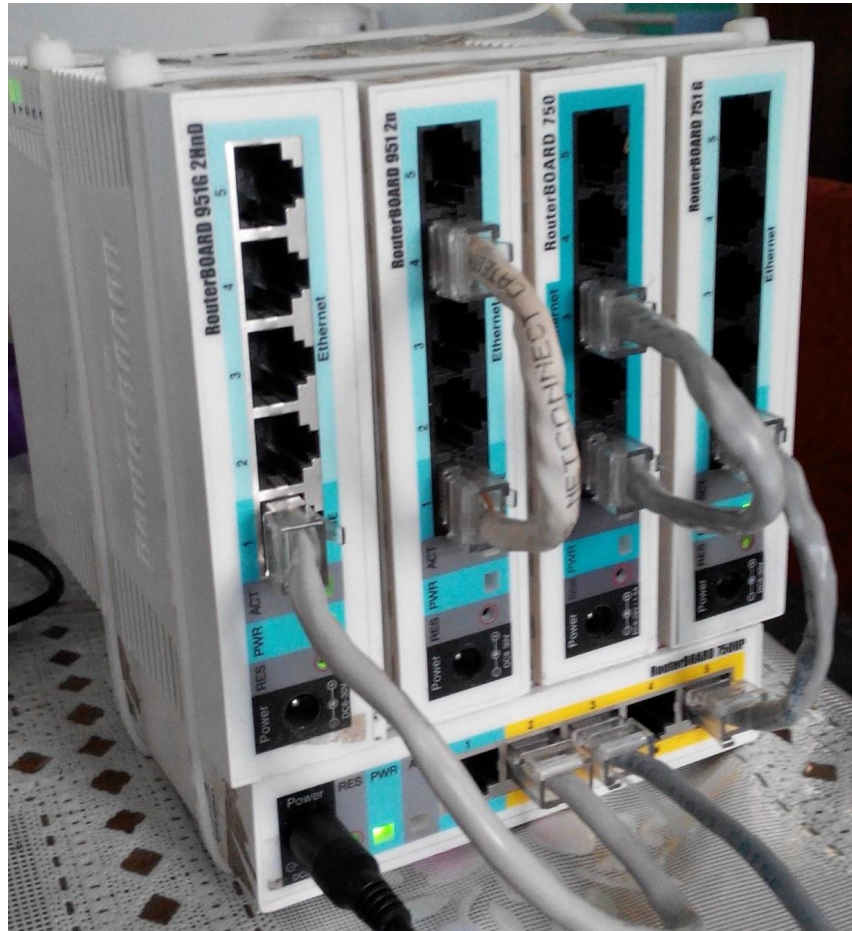
Router Identity: MikroTik

Password:

Confirm Password:

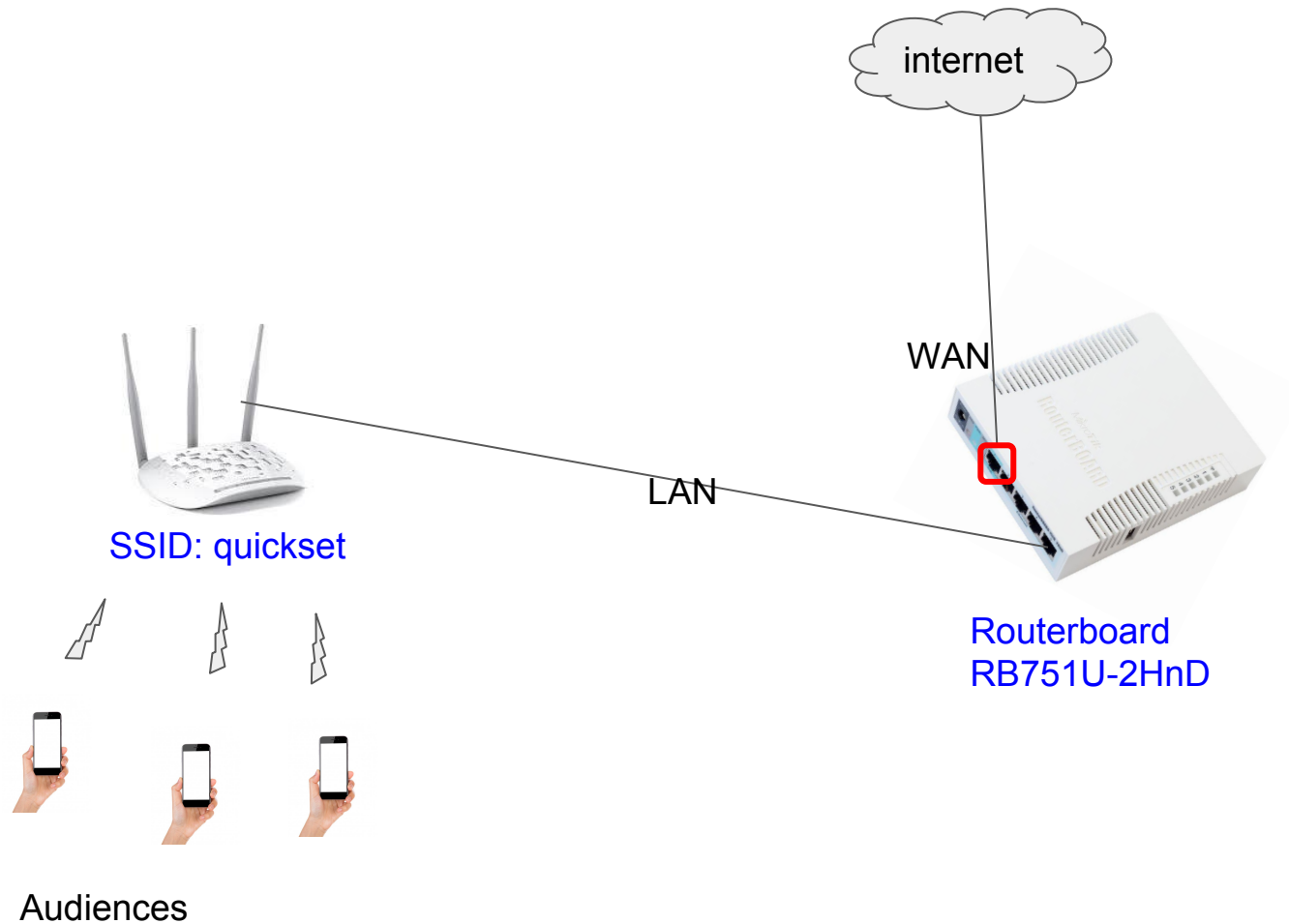


demo





# Demo topology



# Scenario: CPE

## PHYSICAL TOPOLOGY

CPE Quick Set

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Confirm Password:

OK Cancel Apply



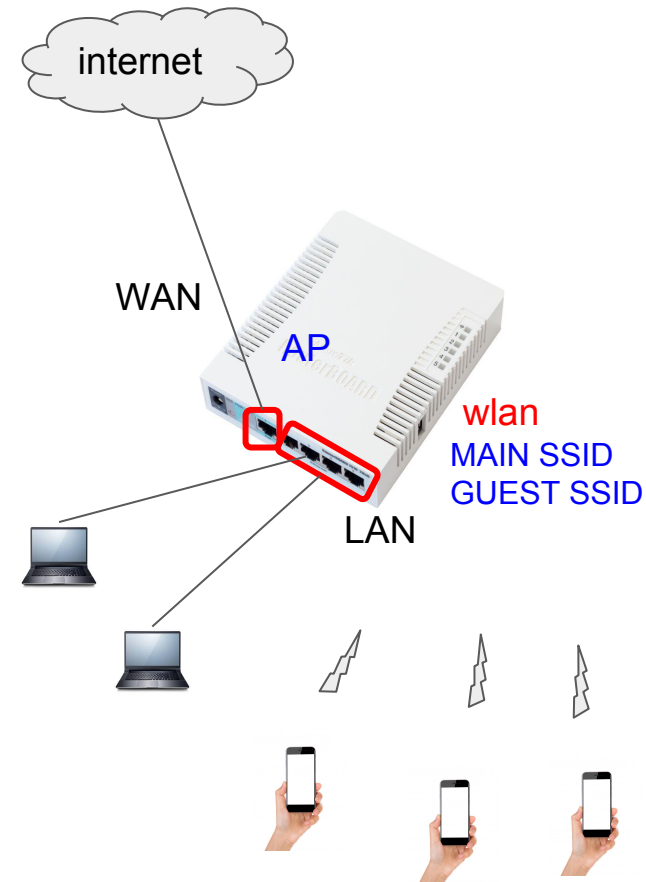
# Scenario: Home AP

The screenshot shows the 'Home AP' configuration window. Three sections are highlighted with red boxes:

- Wireless:** Network Name: MUM\_LAOS\_2017, Frequency: auto, Band: 2GHz-G/N, Country: no\_country\_set, MAC Address: D4:CA:6D:6B:30:07, WiFi Password: 1234512345.
- Internet:** Address Acquisition: Automatic, IP Address: (empty), Netmask: (empty), Gateway: (empty), MAC Address: D4:CA:6D:6B:30:02, Firewall Router: checked.
- Local Network:** IP Address: 192.168.55.1, Netmask: 255.255.255.0 (/24), DHCP Server: checked, DHCP Server Range: 192.168.55.10-192.168.55.254, NAT: checked, UPnP: unchecked.

Other visible sections include Guest Wireless Network, Wireless Clients, VPN, and System.

## PHYSICAL TOPOLOGY



QA

# End of slides

- Thank you for your attention
- Please submit your feedback: <http://bit.ly/glcfeedback>
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