

# Jumpstart your router with

# *Mikro***Tik** QUICKSET

Mikrotik User Meeting Laos, May 8, 2017

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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

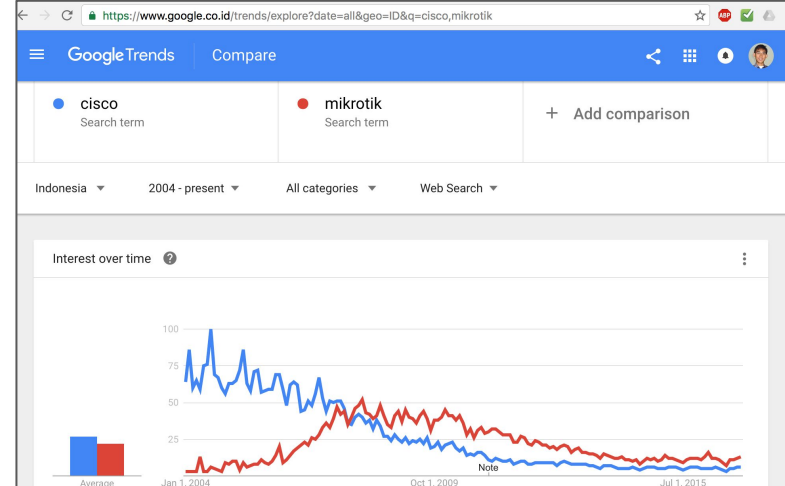
# Mikrotik academy @ TEL-U

- 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

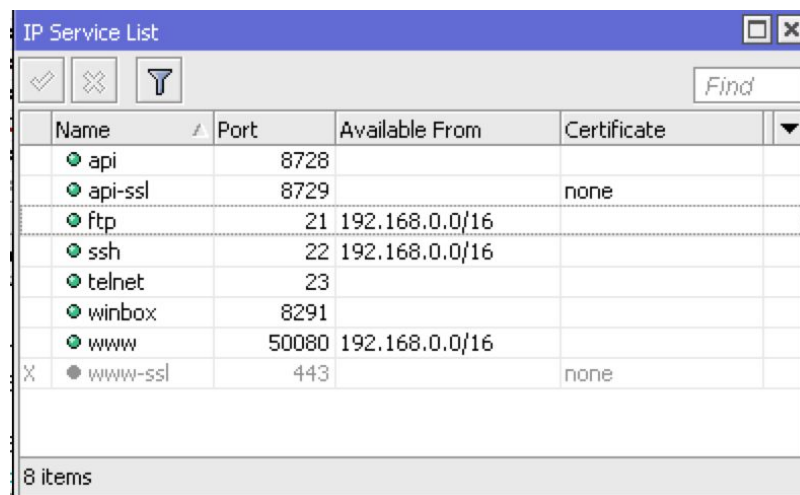
Meaning: Router and configuring devices should be directly connected

- 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

# 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

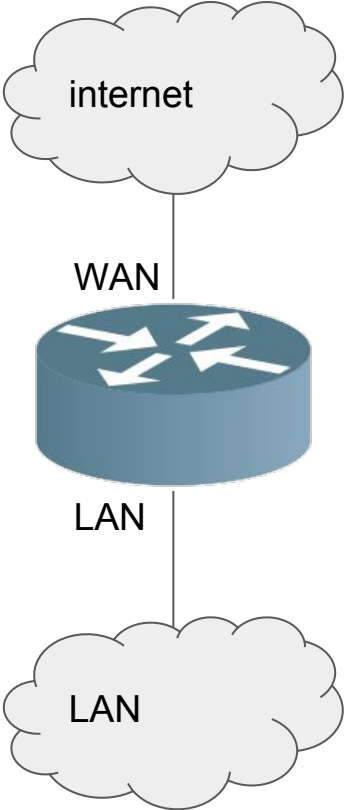


Source:

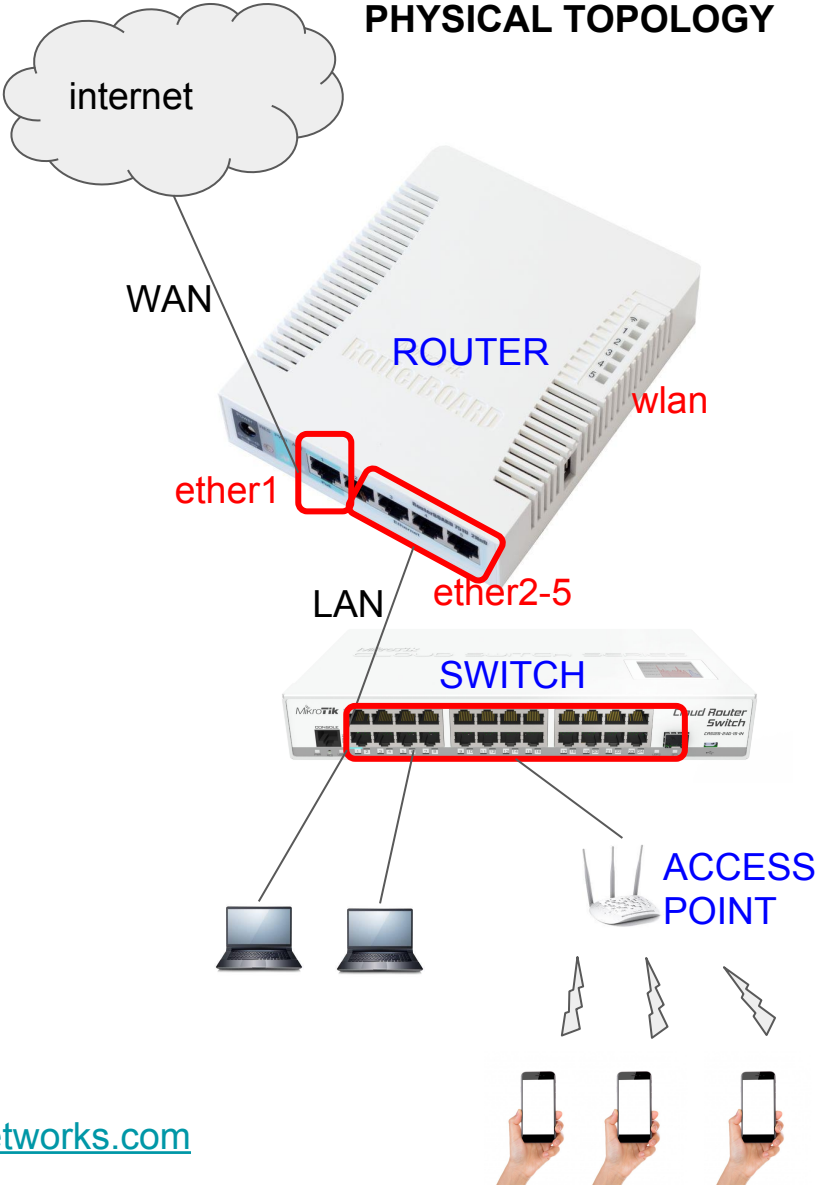
[https://wiki.mikrotik.com/wiki/Manual:Default\\_Configurations](https://wiki.mikrotik.com/wiki/Manual:Default_Configurations)

# 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

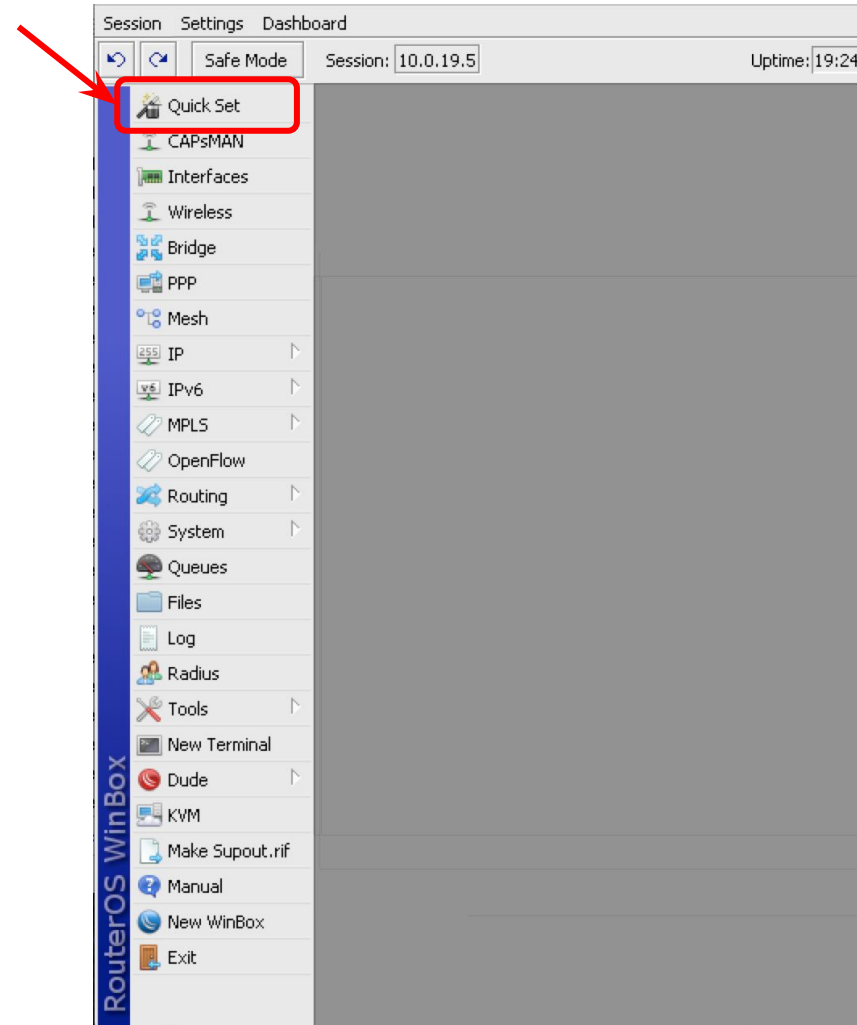


From [www.hirerush.com](http://www.hirerush.com)

# 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

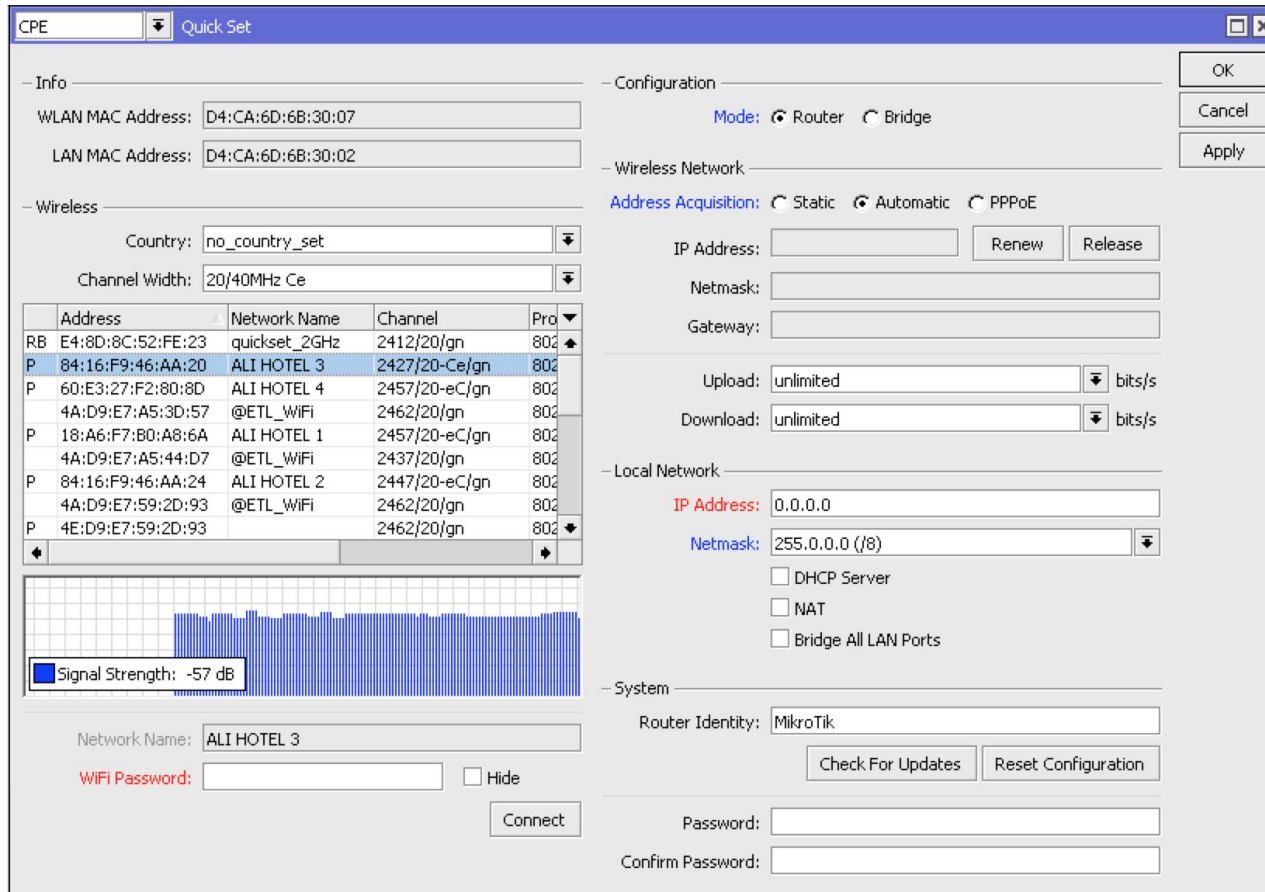


# Quick set scenarios

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



The screenshot shows the MikroTik WinBox CPE configuration window. The window is titled "CPE" and has a "Quick Set" button. It is divided into several sections:

- 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.
- Configuration:** Mode:  Router  Bridge.
- Wireless Network:** Address Acquisition:  Static  Automatic  PPPoE. IP Address, Netmask, and Gateway fields are empty. Renew and Release buttons are present. Upload and Download speeds are set to unlimited bits/s.
- Local Network:** IP Address: 0.0.0.0, Netmask: 255.0.0.0 (/8). Checkboxes for DHCP Server, NAT, and Bridge All LAN Ports are unchecked.
- System:** Router Identity: MikroTik. Check For Updates and Reset Configuration buttons are present. Password and Confirm Password fields are empty.

A table of available networks is shown below the Wireless section:

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

A signal strength graph is shown below the table, indicating a signal strength of -57 dB. The Network Name is set to "ALI HOTEL 3" and the WiFi Password field is empty with a "Hide" checkbox. A "Connect" button is at the bottom right.





# 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

— 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:

— Wireless Clients —

MAC Address	In ACL	Last IP	Uptime	S
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Signal Strength:

OK  
Cancel  
Apply

## PHYSICAL TOPOLOGY



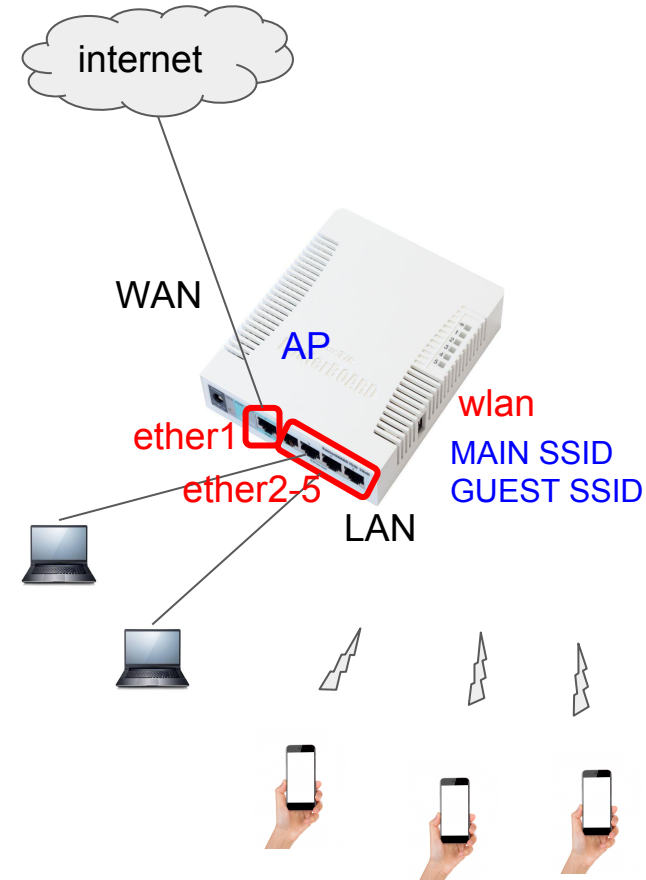
# Scenario: Home AP

The screenshot shows the configuration page for a Home AP. The interface is divided into several sections, with red boxes highlighting the Wireless, Internet, and Local Network sections.

- 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 sections include Guest Wireless Network, Wireless Clients, VPN, and System settings.

## 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:

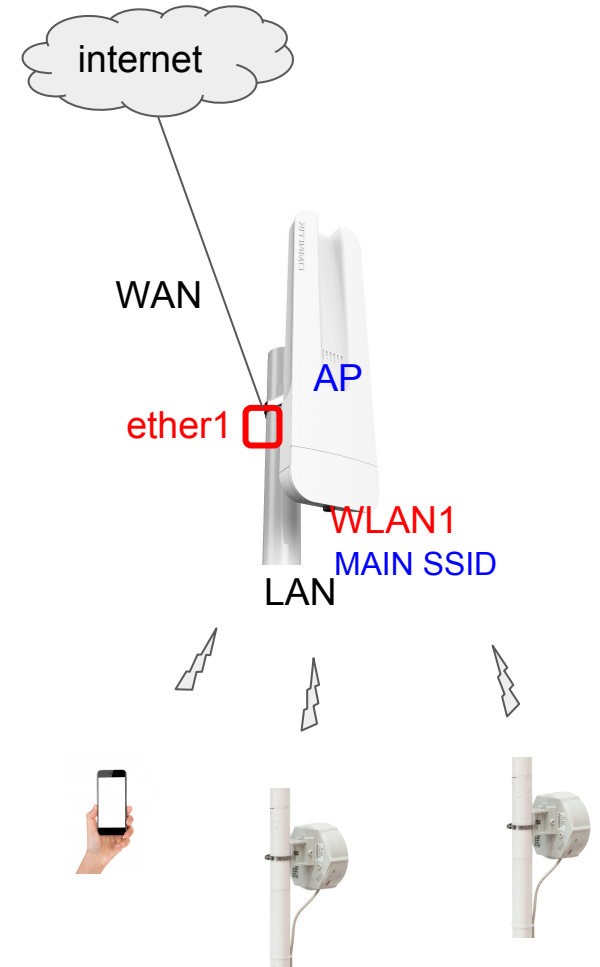
Confirm Password:

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

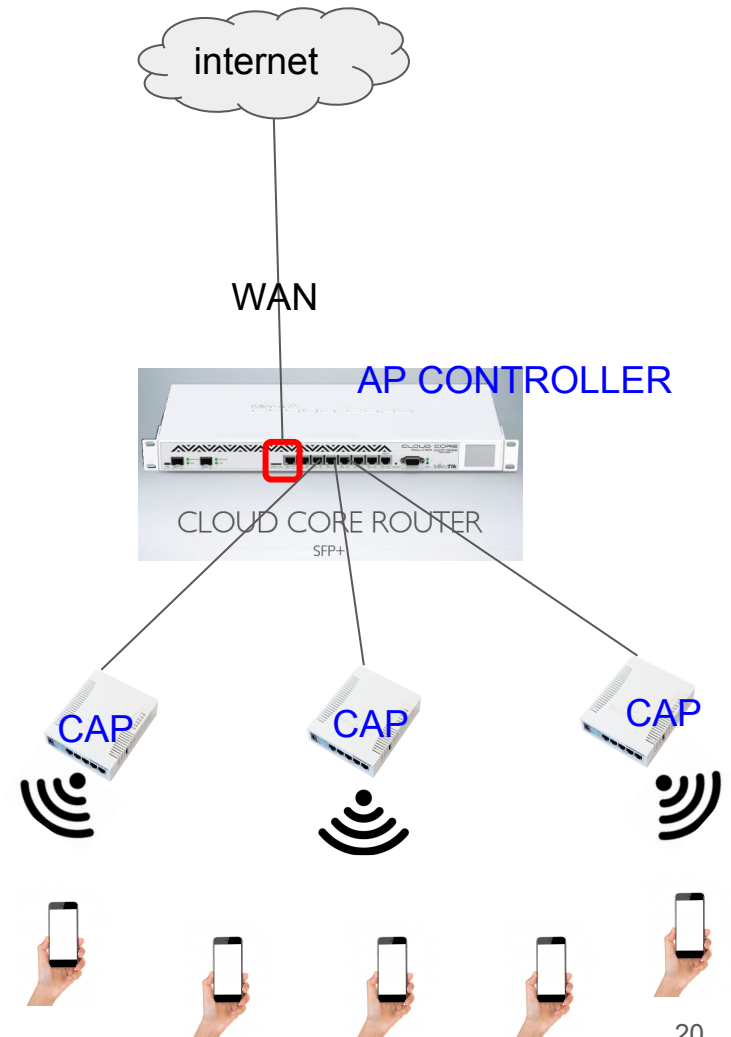
MAC Address: D4:CA:6D:6B:30:07

System

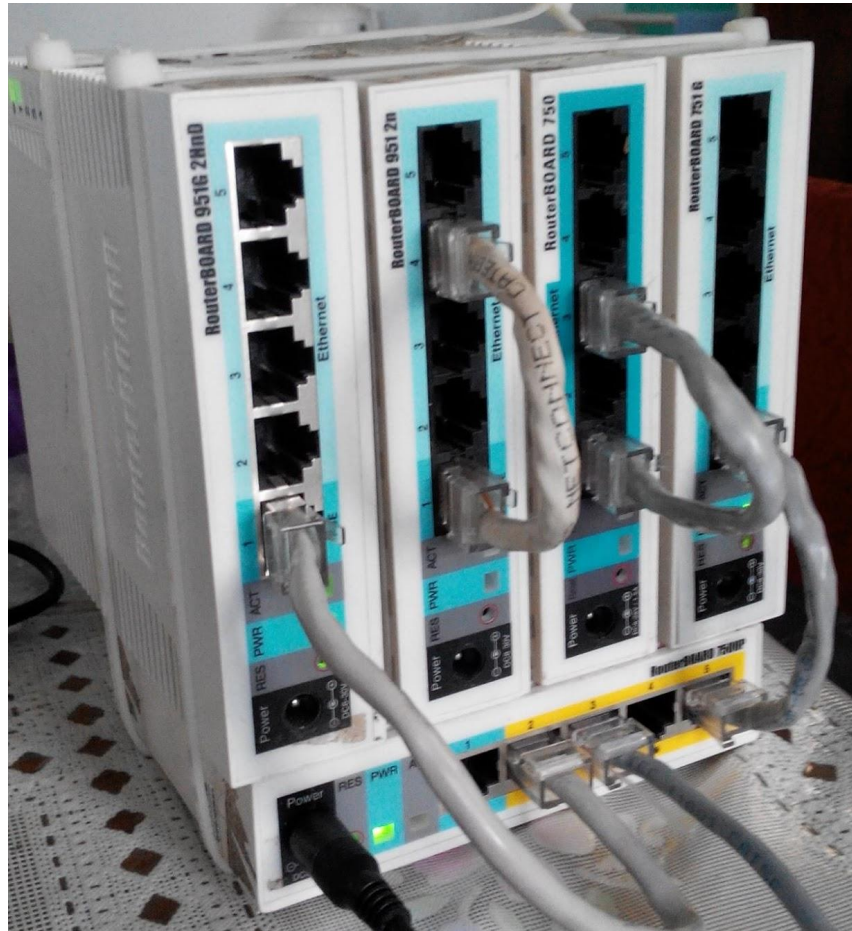
Router Identity: MikroTik

Password:

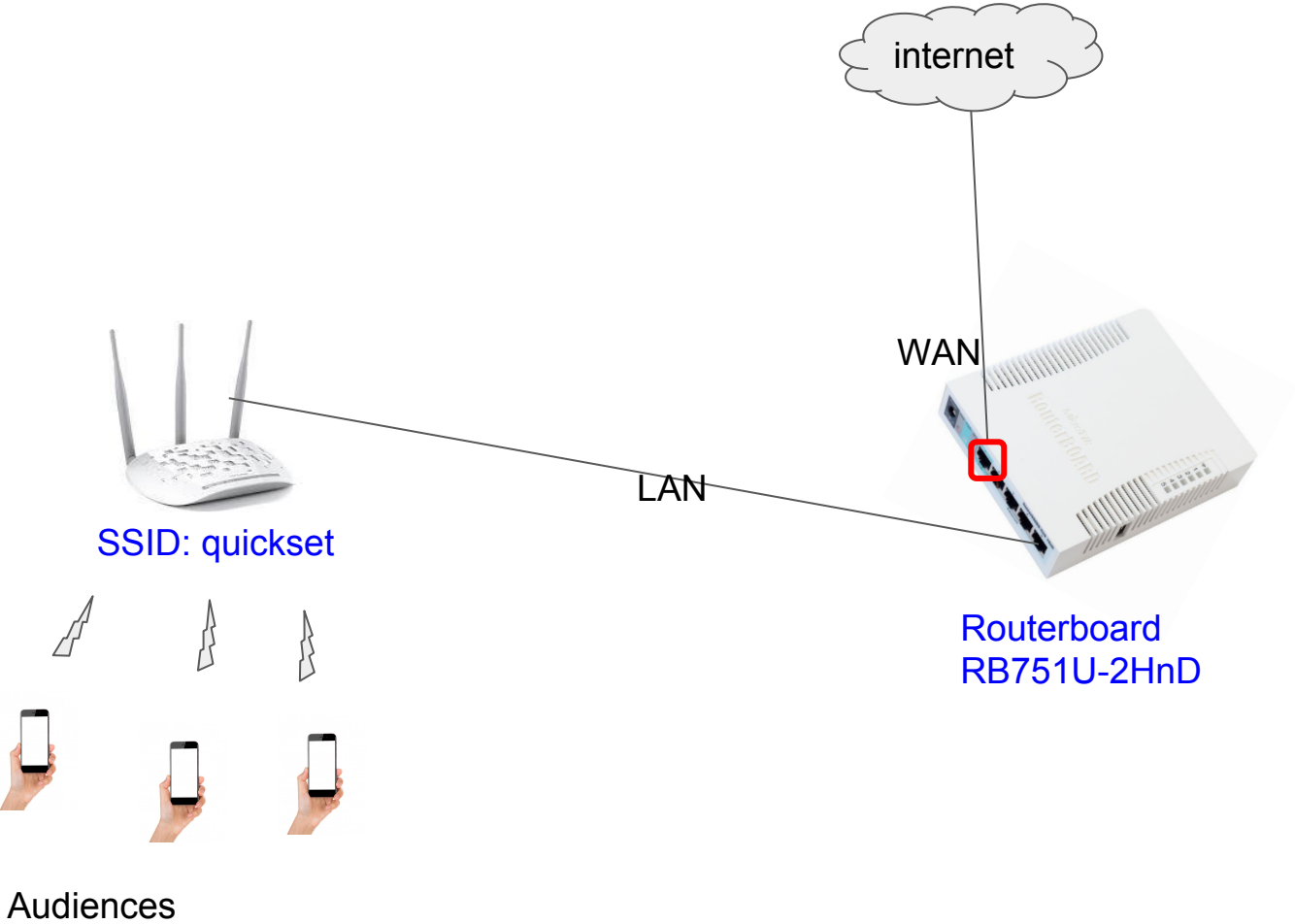
Confirm Password:



demo

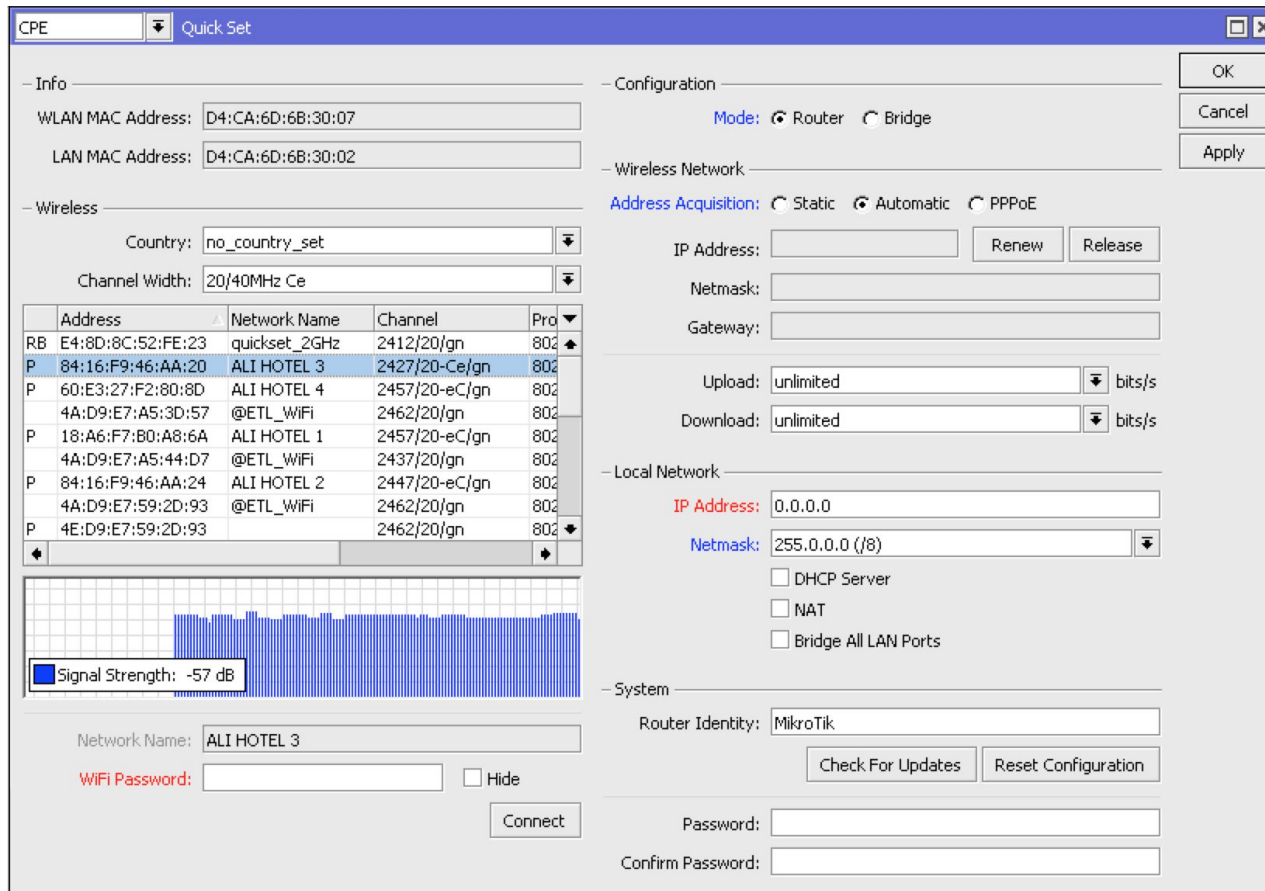


# Demo topology



# Scenario: CPE

## PHYSICAL TOPOLOGY



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- Wireless:** Country: no\_country\_set, Channel Width: 20/40MHz Ce.
- Configuration:** Mode:  Router  Bridge.
- Wireless Network:** Address Acquisition:  Static  Automatic  PPPoE. IP Address, Netmask, and Gateway fields are present with Renew and Release buttons.
- Local Network:** IP Address: 0.0.0.0, Netmask: 255.0.0.0 (/8). Options for DHCP Server, NAT, and Bridge All LAN Ports are unchecked.
- System:** Router Identity: MikroTik. Check For Updates and Reset Configuration buttons are present.
- Network List:** A table showing various networks with columns for Address, Network Name, Channel, and Priority.
- Signal Strength:** A bar chart showing signal strength at -57 dB.
- Network Name:** ALI HOTEL 3. WiFi Password field is present with a Hide checkbox and a Connect button.



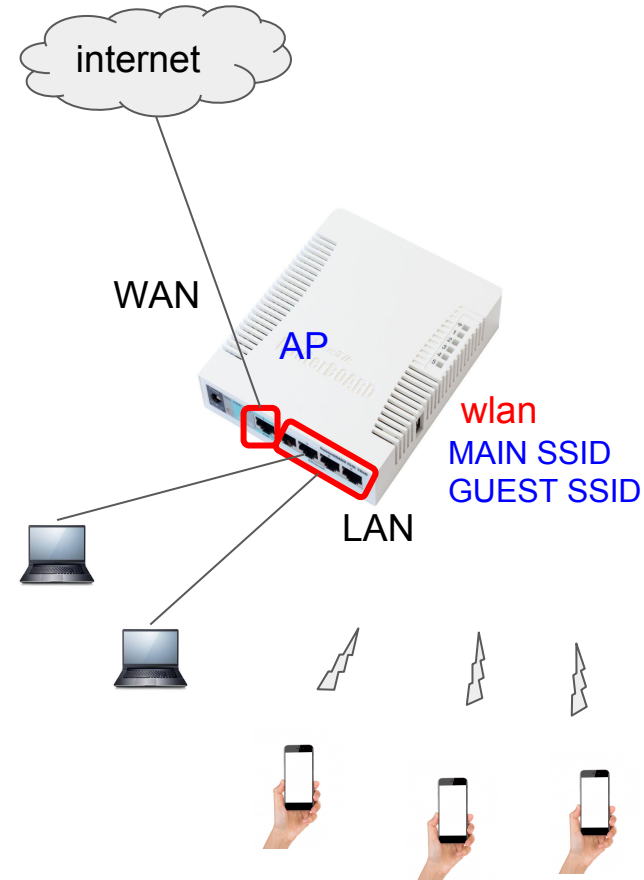
# Scenario: Home AP

The screenshot shows the configuration interface for a Home AP. The following 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.
- Guest Wireless Network:** Guest Network: MUM\_LAOS\_2017 Guests, Guest WiFi Password: guest12345, Limit Download Speed: 64k.

Other visible sections include Local Network (IP: 192.168.55.1, Netmask: 255.255.255.0, DHCP Server, NAT), VPN, and System settings.

## PHYSICAL TOPOLOGY





QA

# End of slides

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- Please submit your feedback: <http://bit.ly/glcfeedback>
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