



Radius
Networks

How to Build 2 Radius Server Hotspot in 1 Router



Perkenalan diri

IRFAN DIVI ZIANKA

- **PELAJAR SMKN 1 KOTA BEKASI.**
- **ALUMNI PESANTREN NETWORKERS 2015/2016.**

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Mikrotik academy



Tentang Pesantren Networkers

STUDY NETWORK

LEARN

CREATION

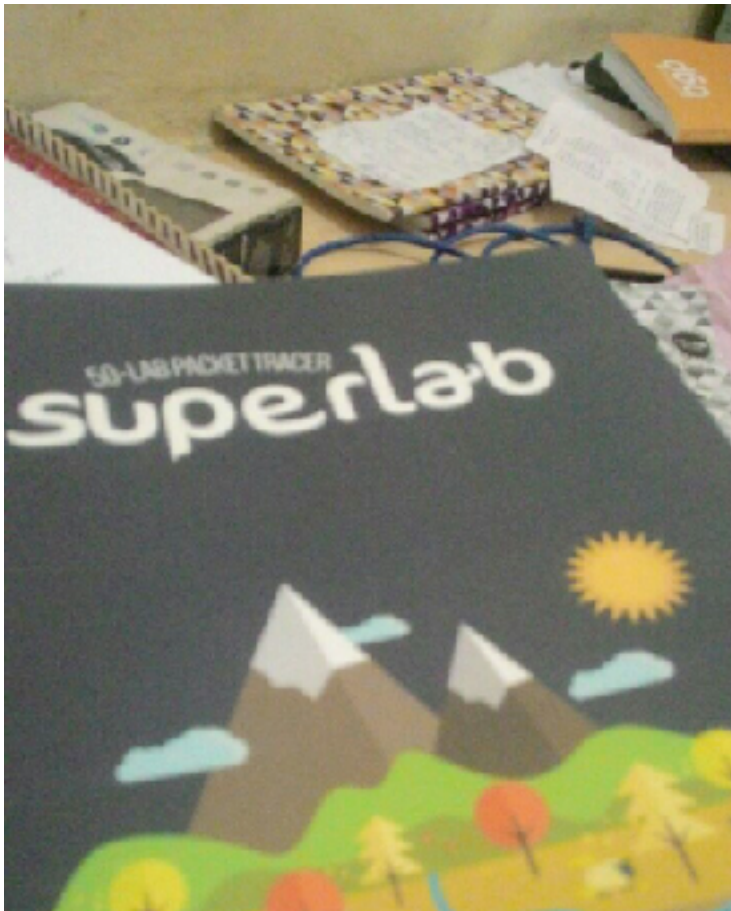
**STUDY LANGUAGE
(ENGLISH AND ARAB)**

TEMAN – TEMAN PESANTREN NETWORKERS



AKTIVITAS PESANTREN NETWORKER

Pray – config – eat – sleep – no take a bath



AGENDA

Introduction about RADIUS

The Concepts (topology)

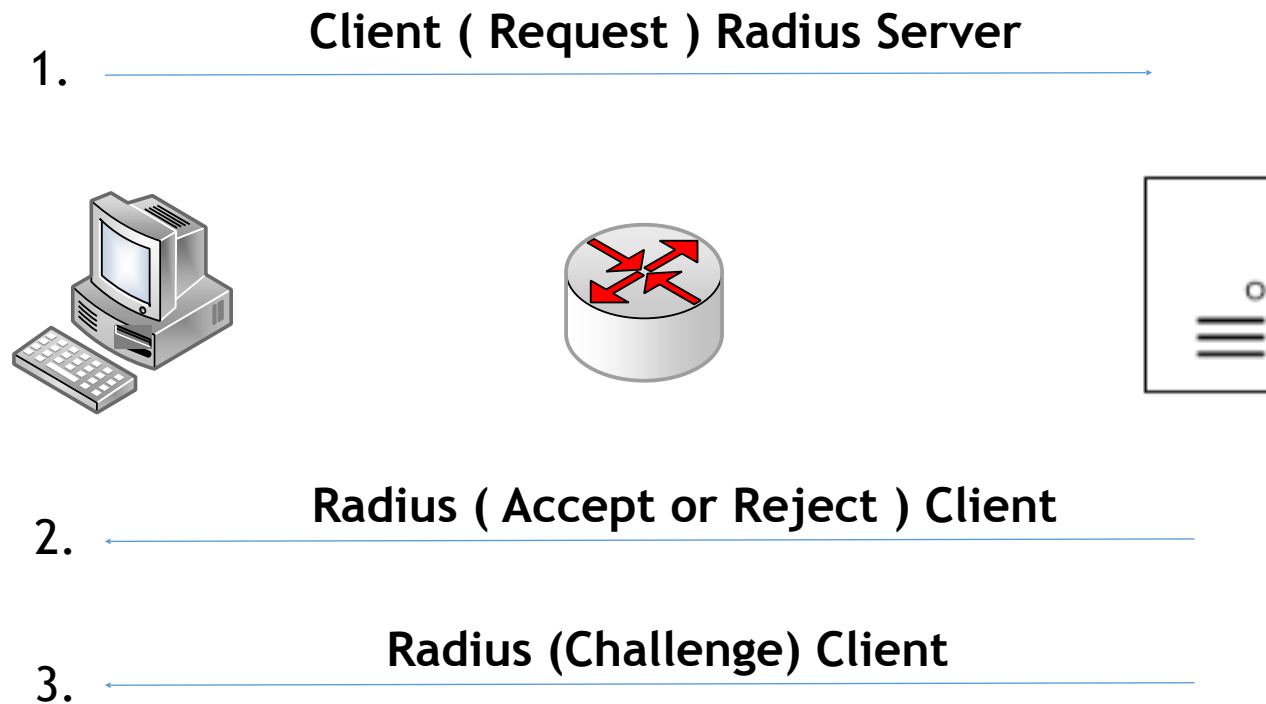
Configuration

Result

Introduksi Radius Server

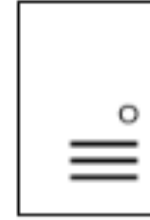
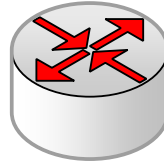
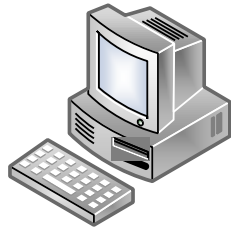
- RADIUS (Remote Authentication Dial-In User Service)
adalah sebuah protokol keamanan komputer yang digunakan untuk melakukan
Authentication , Authorization & Accounting secara terpusat untuk mengakses jaringan.
- Radius menggunakan metode Client – Server dalam konsep jaringan.

Packet Flow Authentication & Authorization



Packet Flow Accounting

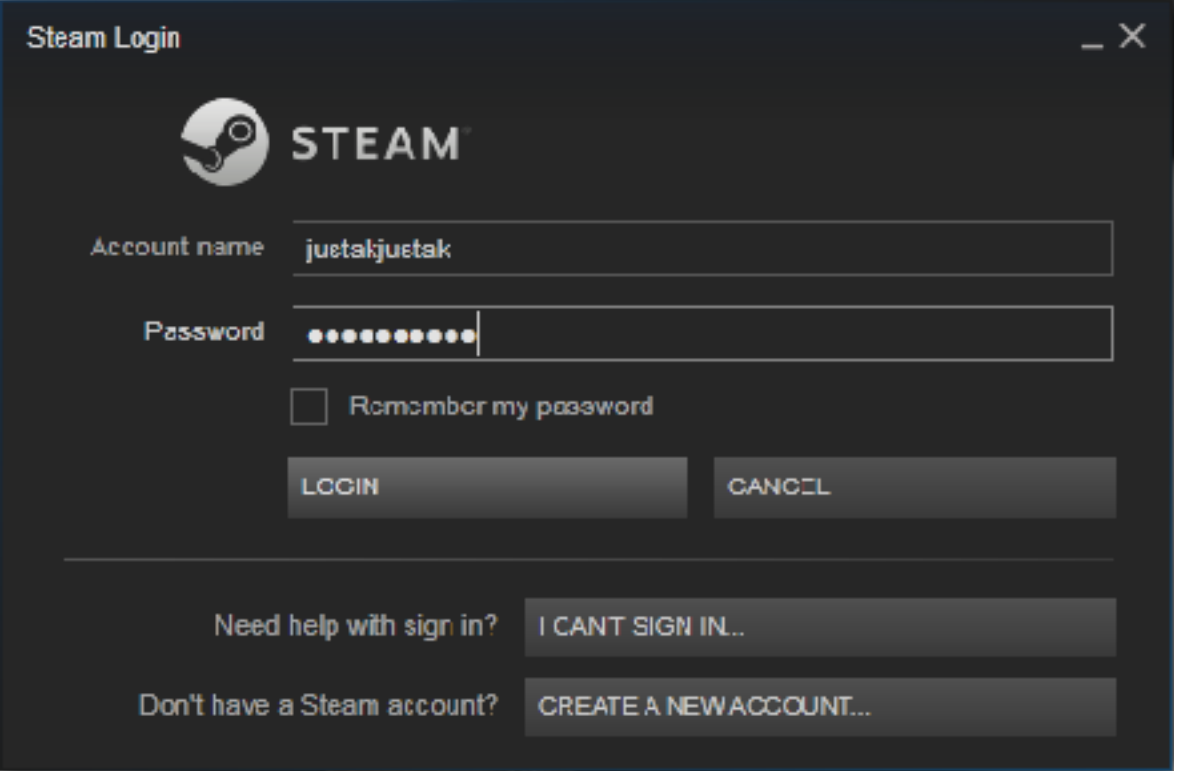
Client Request (Status : Start, Interim Update, Stop) Radius Server



Radius Server (Responses) Client

Authentication (who is allowed to access)

Merupakan sebuah metode untuk memverifikasi user berdasarkan pada username dan password. Username dan Password merupakan syarat utama dalam proses autentikasi

A screenshot of the Steam Login window. The window has a dark gray background and a title bar that says "Steam Login". At the top center is the Steam logo (a key in a circle) followed by the word "STEAM" in a bold, sans-serif font. Below the logo, there are two input fields: "Account name" with the text "justakjustak" and "Password" with a series of dots. Below the password field is a checkbox labeled "Remember my password". At the bottom of the login section are two buttons: "LOGIN" and "CANCEL". Below these buttons is a horizontal line. Under the line, there are two links: "Need help with sign in?" followed by a button labeled "I CANT SIGN IN..." and "Don't have a Steam account?" followed by a button labeled "CREATE A NEW ACCOUNT...".

Steam Login

 STEAM

Account name justakjustak

Password

☐ Remember my password

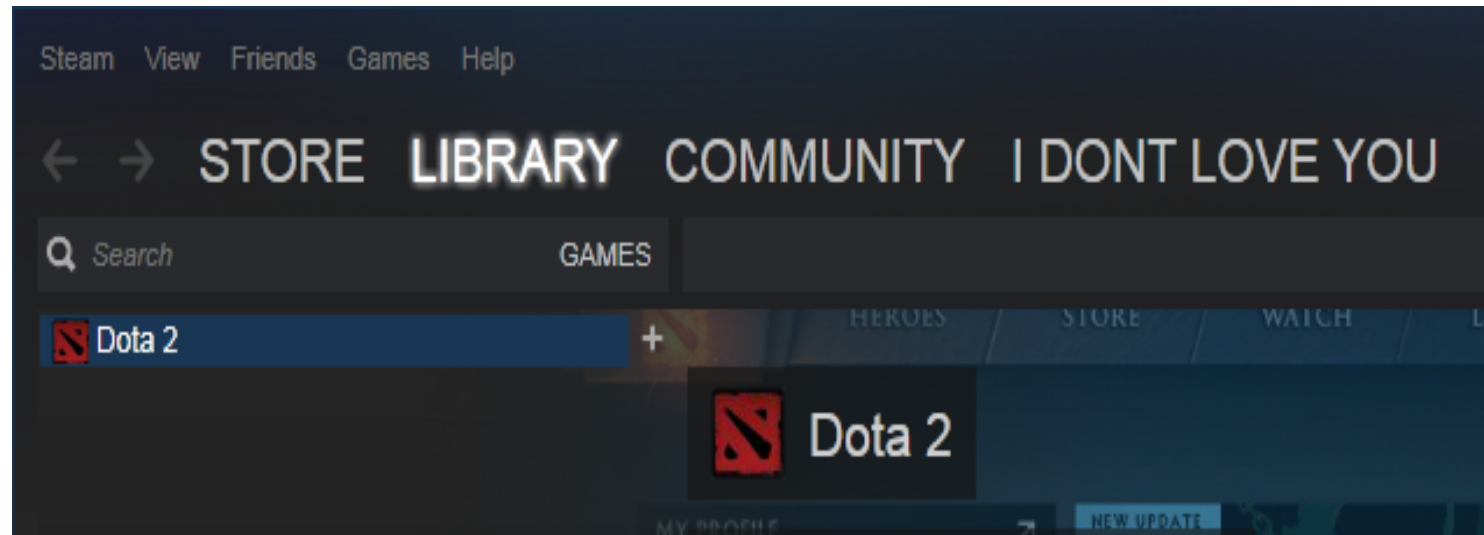
LOGIN CANCEL

Need help with sign in? I CANT SIGN IN...

Don't have a Steam account? CREATE A NEW ACCOUNT...

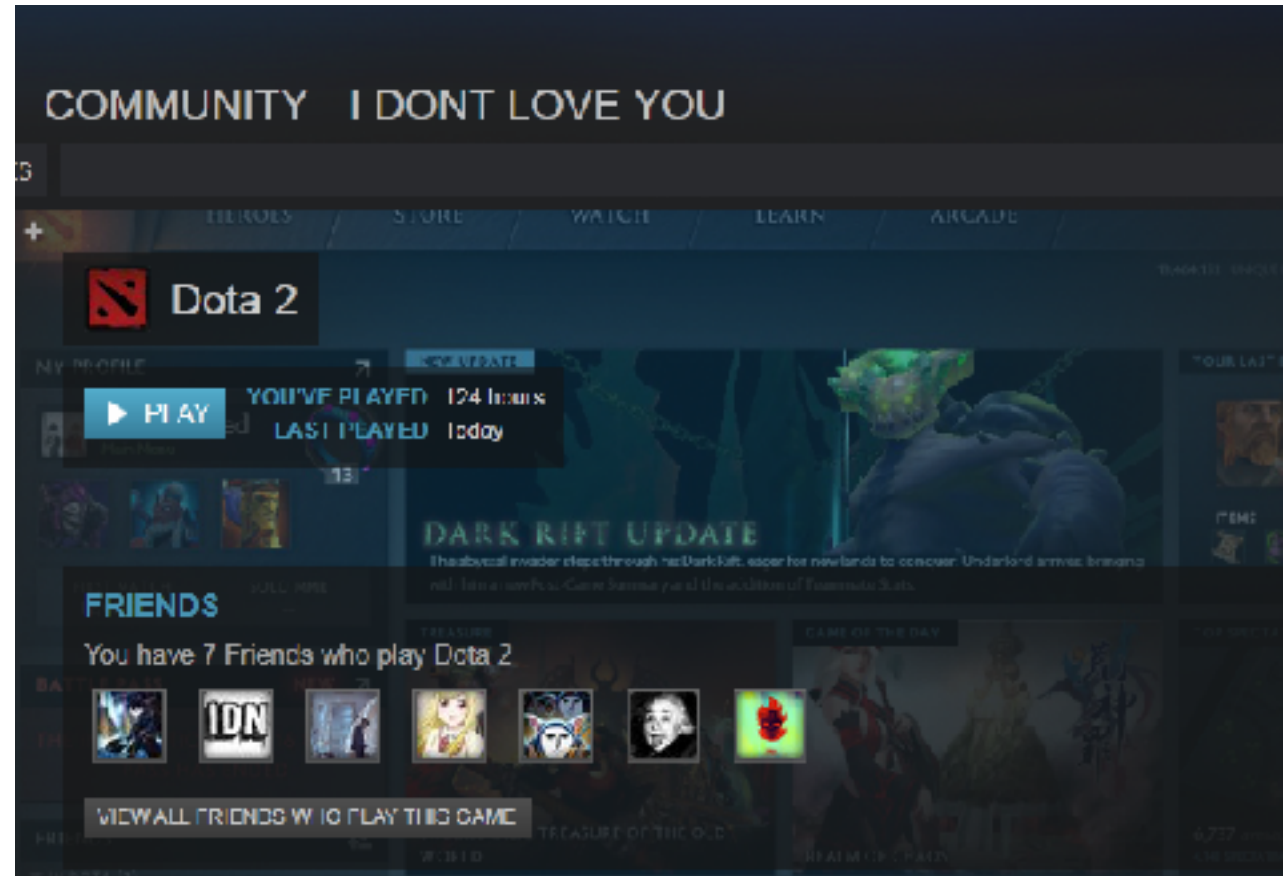
Authorization (allowed services)

Metode yang bertugas untuk menyediakan access control terhadap resource atau operasi apa saja yang dapat dilakukan oleh user.



Accounting (user monitoring)

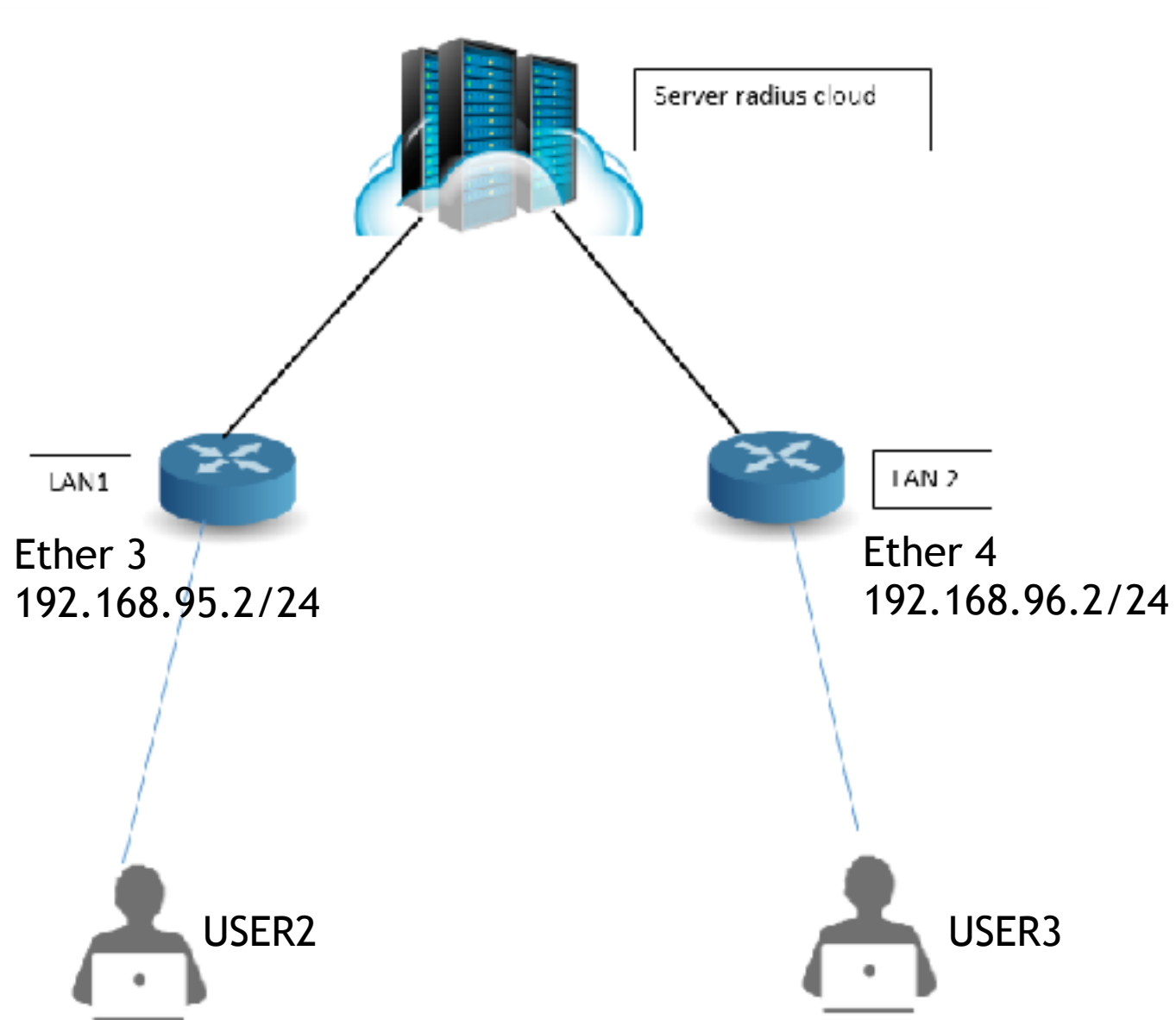
Metode yang bertugas untuk menelusuri tindakan user, resource yang diakses dan lamanya mengakses suatu resource.



Concepts

- Setting ip address
- Setting internet connection
- Setting radius & hotspot server
- Setting hotspot server profile
- Setting user manager

Topologi



PENJELASAN KONSEP

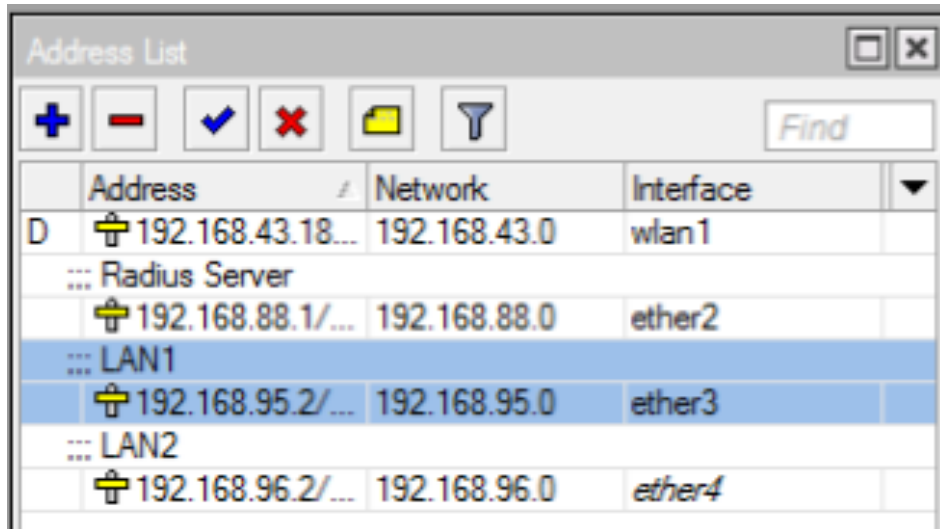
- Saya memiliki RB-951 yang akan bertindak sebagai Radius & Hotspot Server.
- Beberapa interfacenya (Ether 3 dan 4) digunakan sebagai Gateway dari 2 Network yang berbeda (LAN 1 dan LAN 2).
- Dalam pembuatan user & password beserta status router, saya menggunakan user manager dan untuk tiap networknya sudah ditentukan masing – masing usernya.
- User yang akan melakukan autentikasi akan di proses oleh User Manager terkait dengan hak akses yang diberikan, jika match maka user tersebut akan mendapatkan alokasi IP untuk akses Internet.

Configuration

- Siapkan user dengan spesifikasi sebagai berikut

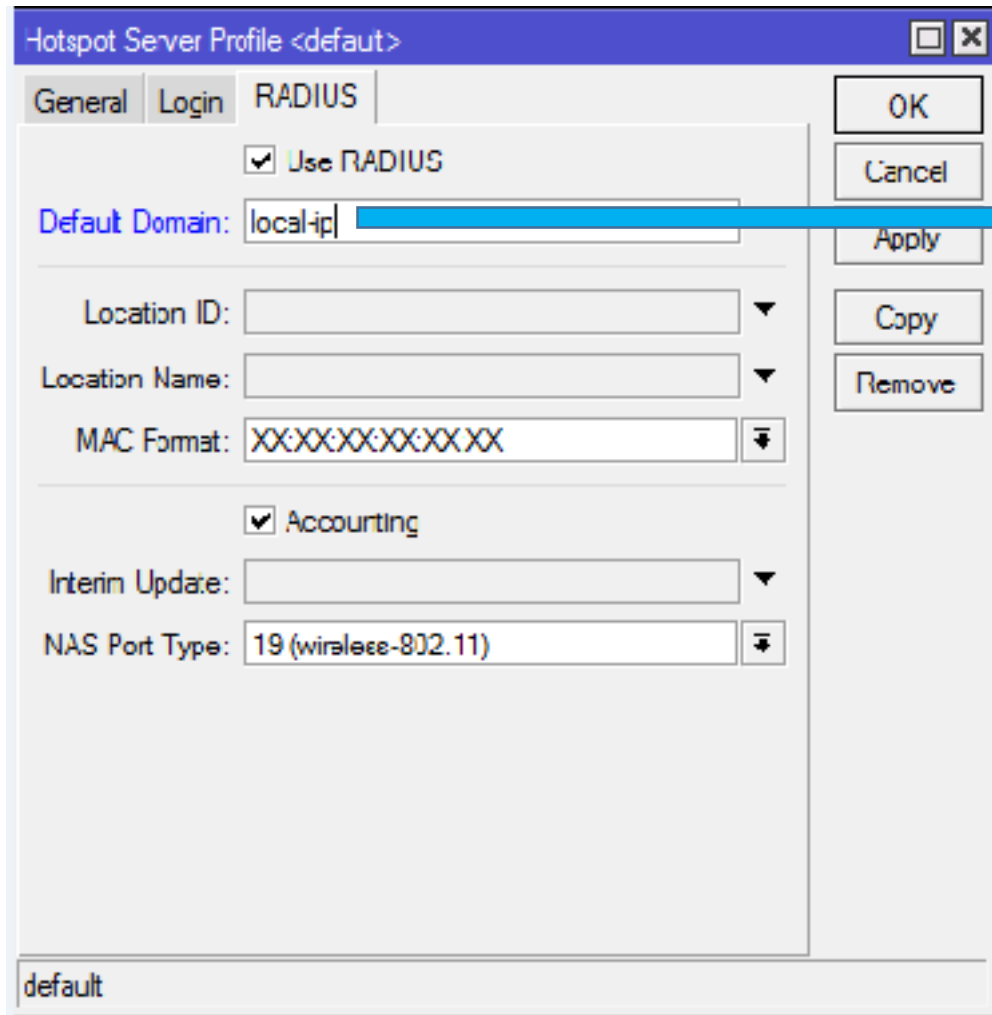
Nama User	Server Radius	Nama Profile	Nama Router
USER2	Local-IP	LAN1	Local-IP
USER3	Local-IP2	LAN2	Local-IP2

- Dan alokasikan ip address sebagai berikut



Address List			
	Address	Network	Interface
D	192.168.43.18...	192.168.43.0	wlan1
... Radius Server			
	192.168.88.1/...	192.168.88.0	ether2
... LAN1			
	192.168.95.2/...	192.168.95.0	ether3
... LAN2			
	192.168.96.2/...	192.168.96.0	ether4

Masuk ke menu IP Hotspot > Server Profile



The screenshot shows a window titled "Hotspot Server Profile <default>". It has three tabs: "General", "Login", and "RADIUS", with "RADIUS" being the active tab. The window contains several configuration fields and checkboxes. A blue arrow points from the "Default Domain" field to the text "Isikan nama Domain dari LAN1".

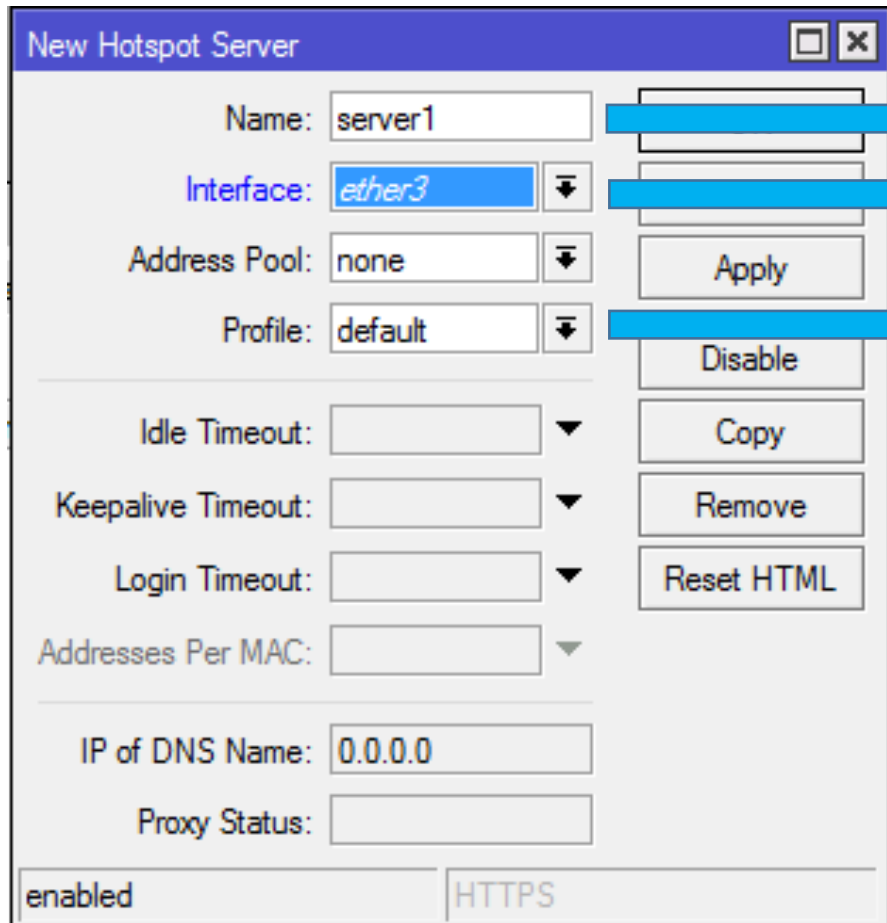
Field/Option	Value
Use RADIUS	☒
Default Domain	local-ip
Location ID	
Location Name	
MAC Format	XX:XX:XX:XX:XX:XX
Accounting	☒
Interim Update	
NAS Port Type	19 (wireless-802.11)

Buttons on the right: OK, Cancel, Apply, Copy, Remove.

Bottom status bar: default

Isikan nama Domain dari LAN1

Konfigurasi HOTSPOT SERVER UNTUK LAN1.



The screenshot shows the 'New Hotspot Server' configuration window. It contains several input fields and buttons. Three blue arrows point from the right side of the window to the following elements:

- Name:** server1
- Interface:** ether3
- Profile:** default

Below these fields are buttons for 'Apply', 'Disable', 'Copy', 'Remove', and 'Reset HTML'. At the bottom, there are fields for 'Idle Timeout', 'Keepalive Timeout', 'Login Timeout', 'Addresses Per MAC', 'IP of DNS Name' (set to 0.0.0.0), and 'Proxy Status'. The status bar at the bottom shows 'enabled' and 'HTTPS'.

Isikan dengan Server1 sebagai identitas Gateway LAN1

Merupakan interface yang digunakan sebagai Gateway LAN1

Menu yang digunakan sebagai tempat atau lokasi dari Hotspot Server

Konfigurasi HOTSPOT SERVER UNTUK

LAN2.

Name: server2

Interface: ether4

Address Pool: none

Profile: server2

Idle Timeout: ▼

Keepalive Timeout: ▼

Login Timeout: ▼

Addresses Per MAC: ▼

IP of DNS Name: 0.0.0.0

Proxy Status:

enabled HTTPS

Nama Server untuk LAN2

Interface yang digunakan sebagai Gateway LAN2

Profile yang dipakai untuk LAN2

Konfigurasi local-IP sebagai Radius server UNTUK LAN1.

Address List:

Address	Network	Interface
192.168.43.18	192.168.43.0	wlan1
:: Radius Server		
192.168.88.1/	192.168.88.0	ether2
:: LAN1		
192.168.95.2/	192.168.95.0	ether3
:: LAN2		
192.168.96.2/	192.168.96.0	ether4

4 items (1 selected)

New Radius Server

General Status

Service: ☐ ppp ☒ login ☒ hotspot ☐ wireless ☐ dhcp

Called ID:

Domain: localip

Address: 192.168.95.2

Secret: 12345

Authentication Port: 1012

Accounting Port: 1813

Timeout: 300 ms

☐ Accounting Backup

Fcilm:

Src. Address:

OK Cancel Apply Disable Comment Remove Reset Status

enabled

Berisikan nama Domain Server
Radius untuk LAN1

IP Address dari interface ETHER3

Password untuk Radius Server
LAN1

Konfigurasi local-IP2 sebagai Radius server UNTUK LAN2.

The screenshot shows the Mikrotik WinBox interface for configuring a Radius Server. On the left, a list of services is shown with 'LOCAL-IP2' selected. The main window displays the configuration for 'Radius Server <192.168.96.2>'. The 'General' tab is active, showing fields for Service, Called ID, Domain, Address, Secret, Authentication Port, Accounting Port, Timeout, Accounting Backup, Realm, and Src. Address. The 'Status' tab is also visible. The 'Domain' field is set to 'local-ip2', 'Address' is '192.168.96.2', and 'Secret' is '12345'. The 'Status' tab shows 'Service' with 'login' checked and 'hotspot' checked. The 'Status' tab also has buttons for 'OK', 'Cancel', 'Apply', 'Disable', 'Comment', 'Copy', 'Remove', and 'Reset Status'. The 'Status' tab also has a 'enabled' checkbox at the bottom.

#	Service
0	login hotspot
1	login hotspot

2 items (1 selected)

Radius Server <192.168.96.2>

General

Service ☐ login ☒ hotspot ☐ wireless

Called ID

Domain local-ip2

Address 192.168.96.2

Secret 12345

Authentication Port 1812

Accounting Port 1813

Timeout 300 ms

☐ Accounting Backup

Realm

Src. Address 0.0.0.0

enabled

OK Cancel Apply Disable Comment Copy Remove Reset Status

Isikan dengan nama Domain untuk Gateway LAN2

IP Address ETHER4 untuk Gateway LAN2

Password untuk Radius Server LAN2

ACCESS IP ETHER3 LEWAT USER MANAGER UNTUK MEMBUAT PROFILE server radius LAN1.

Router details

▲ Main

Name: local-ip

Owner: admin

IP address: 192.160.95.2

Shared secret: 12345

Time zone: Parent time zone ▼

Disabled: ☐

Log events:

- ☐ Authorization success
- ☒ Authorization failure
- ☐ Accounting success
- ☐ Accounting failure

▲ Radius incoming

CoA support: ☐

CoA port: 3799

▼ Request statistics

Add

Pada user manager masuk ke menu > router, untuk menambahkan informasi mengenai router dengan radius servernya.

Isikan nama Domain untuk LAN1

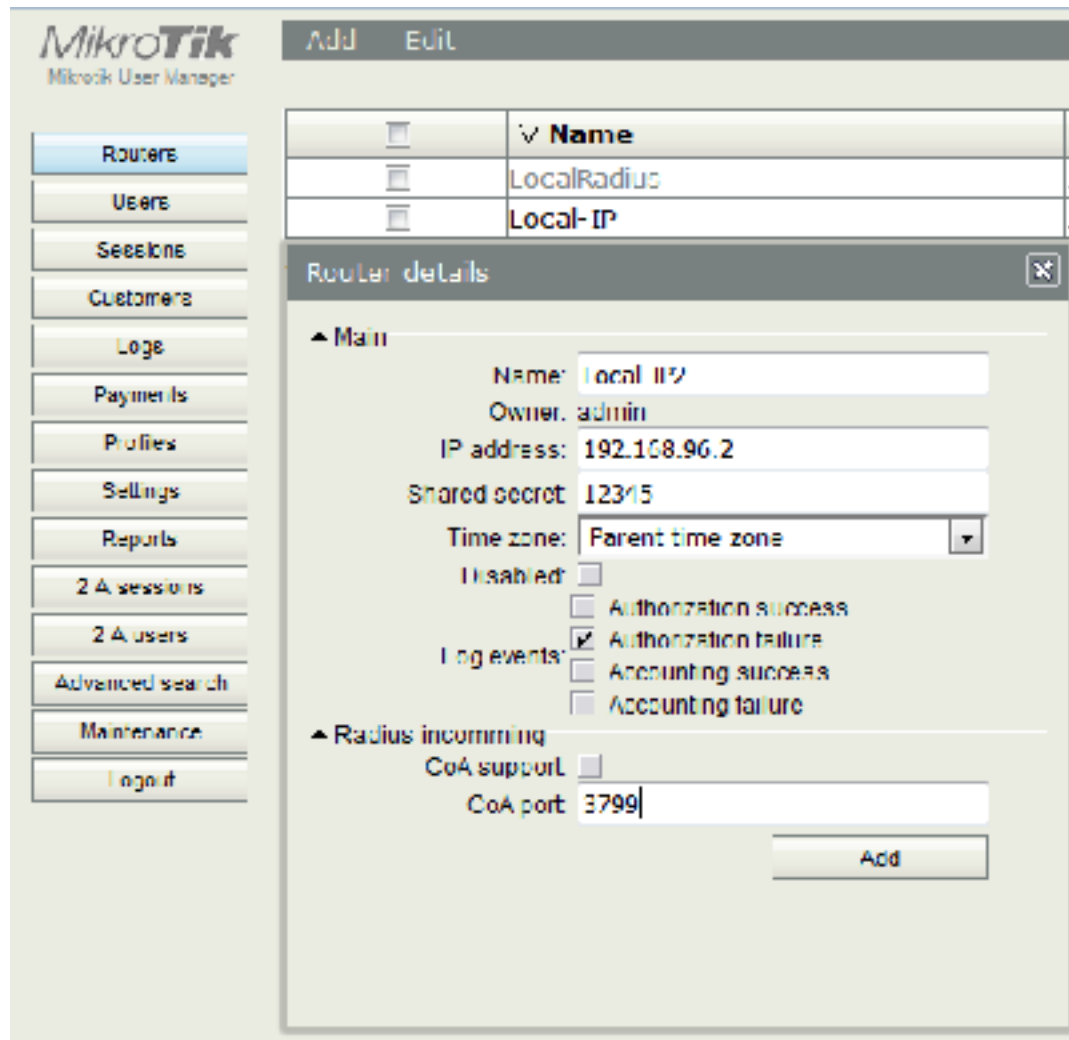
Isikan IP Address ETHER3

Password harus sesuai dengan Radius Server

Incoming port dari Radius Server LAN1

Jika sudah, pilih add kemudian centang konfigurasi router detail untuk LAN1, dan enable konfigurasinya pada menu edit

ACCESS IP ETHER4 LEWAT USER MANAGER UNTUK MEMBUAT PROFILE server radius LAN2



The screenshot shows the MikroTik User Manager web interface. On the left is a sidebar menu with options: Routers, Users, Sessions, Customers, Logs, Payments, Profiles, Settings, Reports, 2 A sessions, 2 A users, Advanced search, Maintenance, and Logout. The main area has 'Add' and 'Edit' buttons at the top. Below them is a table with two rows: 'LocalRadius' and 'Local-IP'. The 'Local-IP' row is selected, and its details are shown in a 'Router details' modal window. The modal has two sections: 'Main' and 'Radius incoming'. The 'Main' section contains fields for Name (Local-IP2), Owner (admin), IP address (192.168.96.2), Shared secret (12345), Time zone (Parent time zone), and a Disabled checkbox. The 'Radius incoming' section contains CoA support (checkbox) and CoA port (3799). There are checkboxes for logging events: Authorization success, Authorization failure (checked), Accounting success, and Accounting failure. An 'Add' button is at the bottom right of the modal.

Name
LocalRadius
Local-IP

Router details

▲ Main

Name: Local-IP2
Owner: admin
IP address: 192.168.96.2
Shared secret: 12345
Time zone: Parent time zone
Disabled: ☐

Log events:

- ☐ Authorization success
- ☒ Authorization failure
- ☐ Accounting success
- ☐ Accounting failure

▲ Radius incoming

CoA support: ☐
CoA port: 3799

Add

Name : Isikan nama LAN2 (Local-IP2)
IP Address : IP Ether 4
Shared Secret : 12345

Profiles Limitations

Profile: LAN2

Name: Irfan

Name for users: LAN1

Owner: admin

Validity:

Starts: At first login

Price: 0.000

Shared users: not used

Save profile Remove profile

Unlimited profile

Add new limitation

Menu yang digunakan untuk Create Profile

MikroTik
Mikrotik User Manager

Add Edit Generate

Username Till

User details

Main

Username: USER2

Password: 123

Disabled: ☐

Owner: admin

Actual profile

Constraints

Wireless

Private Information

Statistics

Bill

All profiles

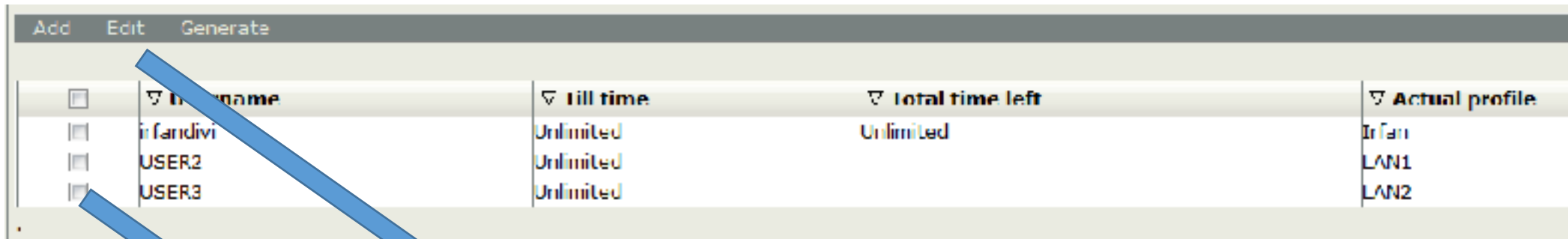
Irfan

Show actions Save

Menu yang digunakan untuk membuat User Radius

Kemudian jika sudah, untuk mengaktifkan usernya dengan cara melakukan centang pada user yang dituju.

Kemudian pilih edit dan enable user yang dituju, maka secara otomatis usermanager akan melakukan pengoperasian.



The screenshot shows a user management interface with a table of users. Above the table is a menu bar with 'Add', 'Edit', and 'Generate' options. The table has four columns: 'Username', 'Till time', 'Total time left', and 'Actual profile'. There are three rows of users: 'Infandivi', 'USER2', and 'USER3'. All 'Till time' and 'Total time left' values are 'Unlimited'. The 'Actual profile' for 'Infandivi' is 'Infan', for 'USER2' is 'LAN1', and for 'USER3' is 'LAN2'. Two blue arrows point from the interface to explanatory text below. One arrow points from the 'Edit' menu option to the text 'Menu untuk disable, enable, remove user'. The other arrow points from the checkboxes in the first column to the text 'Menu untuk memilih user mana yang akan di eksekusi'.

☐	Username	Till time	Total time left	Actual profile
☐	Infandivi	Unlimited	Unlimited	Infan
☐	USER2	Unlimited		LAN1
☐	USER3	Unlimited		LAN2

Menu untuk disable, enable, remove user

Menu untuk memilih user mana yang akan di eksekusi

Result

Akses login HOTSPOT untuk client lan 1

Selamat Datang - Abyfine Hotspot

192.168.95.2/login

Username Password Login Hotspot

Wireless Internet Provider Abyfine Bersama Facebook

Tetaplah Terhubung di Abyfine Hotspot
Kini Abyfine Bisa diakses lebih luas dimana saja

Abyfine Hotspot membantu Anda terhubung Ke Internet lebih mudah.

Mendaftar
Gratis, sampai kapan pun.

Nama Depan Nama Belakang Email/Anda Masukkan Alamat Email Anda Nomor HP/No. Bioskop

Boyer:

Tanggal: Bulan: Tahun:

Mengapa saya harus memberikan tanggal lahir saya?

Dengan mendaftar, Anda menyanggah keamanan dan Anda telah membaca dan memahami Kebijakan Penggunaan Layanan, termasuk Penggunaan Code.

Mendaftar Sekarang

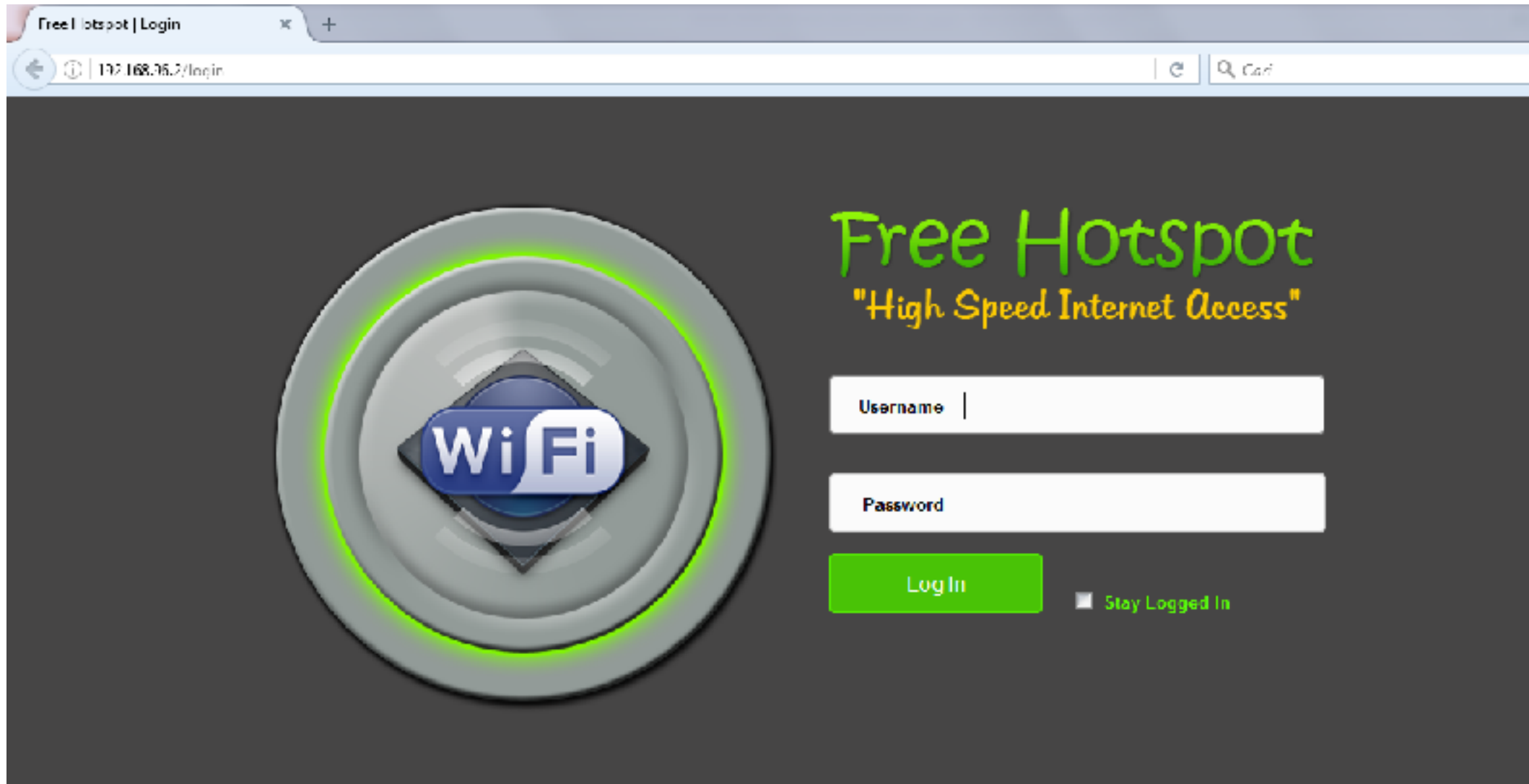
Hasil Mendaftar untuk keabsahan, agar masuk akan lebih.

Sesi pengetesan koneksi internet



Result

Akses login HOTSPOT untuk client lan 2



Free Hotspot | Login

192.168.35.2/login

Free Hotspot
"High Speed Internet Access"

Username

Password

Log In

☐ Stay Logged In

Ada pertanyaan

Result

Lihat di router server dan cek kedua user sedang aktif

Hotspot				
Servers	Server Profiles	Users	User Profiles	Active
User	Domain	MAC Address	Expires In	
 USER2		68:F7:28:7B:4D:6D	2d 23:52:50	
 USER3		68:F7:28:7B:4D:6D	2d 23:59:28	

Hotspot									
Servers	Server Profiles	Users	User Profiles	Active	Hosts	IP Bindings	Service Ports	Walled Garden	Walled Garden IP List
Server	User	Domain	Address	Uptime	Idle Time	Session Time ...	Rx Rate	Tx Rate	
R  server1	USER2		192.168.95.3	00:00:31	00:00:00		1857 bps	2.1 kbps	
R  server2	USER3		192.168.96.3	00:02:51	00:00:00		34.3 kb...	916.3 k...	