Hotel Wifi Solution with MikroTik

CAPsMAN, HotSpot and User Manager

Presented By Aung Myo

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Hotel Wifi Solution

1. Receptionist
   - Create the Wifi Internet access account in Mikrotik User Manager depend on room type or whatever
2. Generate voucher and give it to Guest for Internet Access
Hotel Wifi Solution with MikroTik

• CAPsMAN (Controlled Access Point system Manager) also known as WLAN controller

• HotSpot

• User Manager
CAPsMAN Feature

- Centralized management of RouterOS APs
- Dual Band AP support
- Provisioning of APs
- MAC and IP Layer communication with APs
- Certificate support for AP communication
- Full and Local data forwarding mode
- RADIUS MAC authentication
- Custom configuration support
CAPsMAN Version

• CAPsMAN v1

• CAPsMAN v2
  
  **NOTE:** CAPsMAN v2 is NOT compatible with CAPsMAN v1

(CAPsMAN)
Controlled Access Point system Manager

Controller

(CAP)
Controlled Access Points

AP

CAPsMAN+CAP

CAP

CAP
SSID: HOTEL-GUEST (VLAN10-192.168.10.0/24)
SSID: HOTEL-MGMT (VLAN20-192.168.20.0/24)
SSID: HOTEL-HR (VLAN30-192.168.30.0/24)
SSID: HOTEL-ADMIN (VLAN40-192.168.40.0/24)
## Require Package List

### CAPsMAN

<table>
<thead>
<tr>
<th>Name</th>
<th>Version</th>
<th>Build Time</th>
<th>Scheduled</th>
</tr>
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<tbody>
<tr>
<td>advanced tools</td>
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<td>Aug/14/2015 15:42:51</td>
<td></td>
</tr>
<tr>
<td>callee</td>
<td>6.31</td>
<td>Aug/14/2015 15:42:51</td>
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<td></td>
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<tr>
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<td></td>
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<tr>
<td>ipv6</td>
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<td>Aug/14/2015 15:42:51</td>
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<tr>
<td>ntp</td>
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<td>Aug/14/2015 15:42:51</td>
<td></td>
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<tr>
<td>system</td>
<td>6.31</td>
<td>Aug/14/2015 15:42:51</td>
<td></td>
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<tr>
<td>user-manager</td>
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<td>Aug/14/2015 15:42:51</td>
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<tr>
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<td>6.31</td>
<td>Aug/14/2015 15:42:51</td>
<td></td>
</tr>
</tbody>
</table>

10 items
Network Infra Configuration

CAPsMAN+CAP1, CAP2, CAP3

1. Interface Master/Slave Configuration
2. Bridge Configuration
3. VLAN Configuration
4. IP addressing
5. WAN Configuration with Load Balancing
6. NAT, NTP, Timezone and DNS
SSID: HOTEL-GUEST (VLAN10-192.168.10.0/24)
SSID: HOTEL-MGMT (VLAN20-192.168.20.0/24)
SSID: HOTEL-HR (VLAN30-192.168.30.0/24)
SSID: HOTEL-ADMIN (VLAN40-192.168.40.0/24)
CAPsMAN and CAPs configuration

- Click CAPsMAN interface, check the “Enabled” for CAPsManager device.
- Click Wireless interface>click Interfaces tab>click the CAP button and Check the “Enabled” for CAP device.

* CAPsManager device itself can be enable CAP.
CAPsMAN see all CAPs

When we enabled CAPsMAN and CAP, you may see the remote AP under the tab of Remote CAP of CAPsMAN device.
Recipe of CAPsMAN

- **Channel**
  Can define Frequency and width, etc..

- **Datapath**
  Can define the data forwarding related settings, such as bridge to which particular interfaces should be added automatically as port.

- **Security**
  Can define authentication types or passphrase

- **Configuration**
  Main wireless settings group, includes setting such as SSID and additionally binds together with other setting such as channel, datapath, security, etc...

- **Provisioning**
  Can define each AP for provisioning.
# Channel Configuration

<table>
<thead>
<tr>
<th>Name</th>
<th>Frequency</th>
<th>Width</th>
<th>Band</th>
<th>Extension Channel</th>
<th>Tx. Power</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2412MHz</td>
<td>20MHz</td>
<td>2ghz-b/g/n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>channel6</td>
<td>2437MHz</td>
<td>20MHz</td>
<td>2ghz-b/g/n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>channel11</td>
<td>2462MHz</td>
<td>20MHz</td>
<td>2ghz-b/g/n</td>
<td></td>
<td></td>
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</tbody>
</table>

![CAPsMAN interface](image)
Datapath Configuration
### Security Configuration

<table>
<thead>
<tr>
<th>Name</th>
<th>Authentication Type</th>
<th>Encryption</th>
<th>Group Encryption</th>
<th>Passphrase</th>
<th>EAP Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLAN20</td>
<td>WPA PSK WPA2</td>
<td>aes cm</td>
<td>aes com</td>
<td>VLAN20123456789</td>
<td></td>
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<tr>
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<td>WPA PSK WPA2</td>
<td>aes cm</td>
<td>aes com</td>
<td>VLAN30123456789</td>
<td></td>
</tr>
<tr>
<td>VLAN40</td>
<td>WPA PSK WPA2</td>
<td>aes cm</td>
<td>aes com</td>
<td>VLAN40123456789</td>
<td></td>
</tr>
</tbody>
</table>
Manual Provisioning
CAPsMAN Finished!!!!

All created virtual AP can see with bounding condition.
HotSpot Configuration

To use this feature, you must have installed and enabled "hotspot" package.

1. Go to IP>hotspot. Click the hotspot setup button under the server tab. 
So you will see the pop-up box will appear. Select a desire interface from the drop down list. Then, Click Next.

2. It is automatically detect the IP address of the interface. Then, Click Next.

3. Check the IP pool ranges. You can adjust your pool ranges to give out. Then, Click Next.

4. We don't need certificate and SMTP server address. Leave as default.

5. Set the DNS server IP address. And then, Click Next.

6. Set the DNS Name. (Example: www.example.com)

7. You must create at least one hotspot user account. 
   If you set up those step correctly, you will be created hotspot successfully.

* You can manage the hotspot user by connecting with User Manager.
HotSpot Configuration

1. Select interface to run HotSpot on: VLAN10
2. Set HotSpot address for interface:
   Local Address of Network: 192.168.10.1/24
   - Masquerade Network
3. Set pool for HotSpot addresses:
   Address Pool of Network: 192.168.10.2-192.168.10.254
4. Setup DNS configuration:
   DNS Servers: 192.168.10.1
5. DNS name of local hotspot server:
   DNS Name: www.hotelparami.com
6. Create local HotSpot user:
   Name of Local HotSpot User: admin
   Password for the User: admin
Customize the Wi-Fi Login Page

1. Click the "Files" tab. In the "File List", find the hotspot folder.

2. In the "hotspot" folder, you may see the subfolder such as "hotspot/img", "hotspot/lv", etc... and files such as "hotspot/login.html", "hotspot/logout.html", etc..

3. You can simply drag and drop the "hostpsot/login.html" and "hostpot/img" to your desktop to edit.

4. After finished your editing, place those file correctly to the destination folder.

*If you have web programming experiences you can do more beautiful.
HotSpot Files
RADIUS Setup for User Manager

User Manager is one of built-in radius alike software includes in Router OS packages.

To use this feature, you must have installed and enabled "usermanager" package.

1. Click the "Radius" tab. Simply press the + button to add "New Radius Server"

2. Check you desire service, type the IP address or User Manager router address or 127.0.0.1 and secret.
   And then click apply and ok.

3. Open the web browser, type the User Manager router address/userman to access the User Manager Page.

4. In the "User Manager "page, create new profile, limitation, user, etc... as per requirement.
RADIUS Setup for User Manager
User Manager Setup
User Manager Setup

1. Add Routers
   - IP address and secret key of income routers, logs, etc...

2. Create “Profile Limitation”
   - Bandwidth, Data upload and download limitation, etc...

3. Create “profile”
   - Shared user, Time Validity, etc...

4. Create User
   - Single user or Batch user with profile assignment

5. Create Voucher Code
   - Generate one or many voucher code at a time.

6. Customize the page
   - this is optional
Continue.. Setup
Continue.. Setup
Continue.. Setup
## Continue.. Setup

<table>
<thead>
<tr>
<th>Username</th>
<th>Till time</th>
<th>Total time left</th>
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<tbody>
<tr>
<td>hg8k</td>
<td>09/01/2015 11:46:31</td>
<td>5d18h17m47s</td>
<td>Deluxe</td>
</tr>
<tr>
<td>4rwb</td>
<td>Unknown</td>
<td>lw</td>
<td>Deluxe</td>
</tr>
<tr>
<td>9u2r</td>
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<td>Deluxe</td>
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<td>k74r</td>
<td>Unknown</td>
<td>lw</td>
<td>Deluxe</td>
</tr>
</tbody>
</table>
Customize the User Manager Page

1. Log into your Mikrotik User Manager, go to settings tab. A new window will appear and see tabs “Appearances, Style, Template,” etc...

2. Click on Style tab, modify the Main background, Logo, Logo text, etc...

3. Click on Templates tab, edit the HTML code for voucher code template.
Customize the User Manager Page
Customize the Voucher Code
Real World Hotel Wifi Infra

WAN1 → CAPsMAN
WAN2 → POE
WAN3 → 10 Gbps
WAN4 → CAPsMAN

CAPsMAN → CAP1, CAP2, CAP3, CAP48
POE → 10 Gbps
Any Question?
• References;

Thank You