

Sentralisasi Hotspot Mikrotik Dynamic NAS

MUM 2015 – Indonesia

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Perkenalan

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Agenda

- Introduction
- The Concept
- Configuration
- Demo
- Q&A

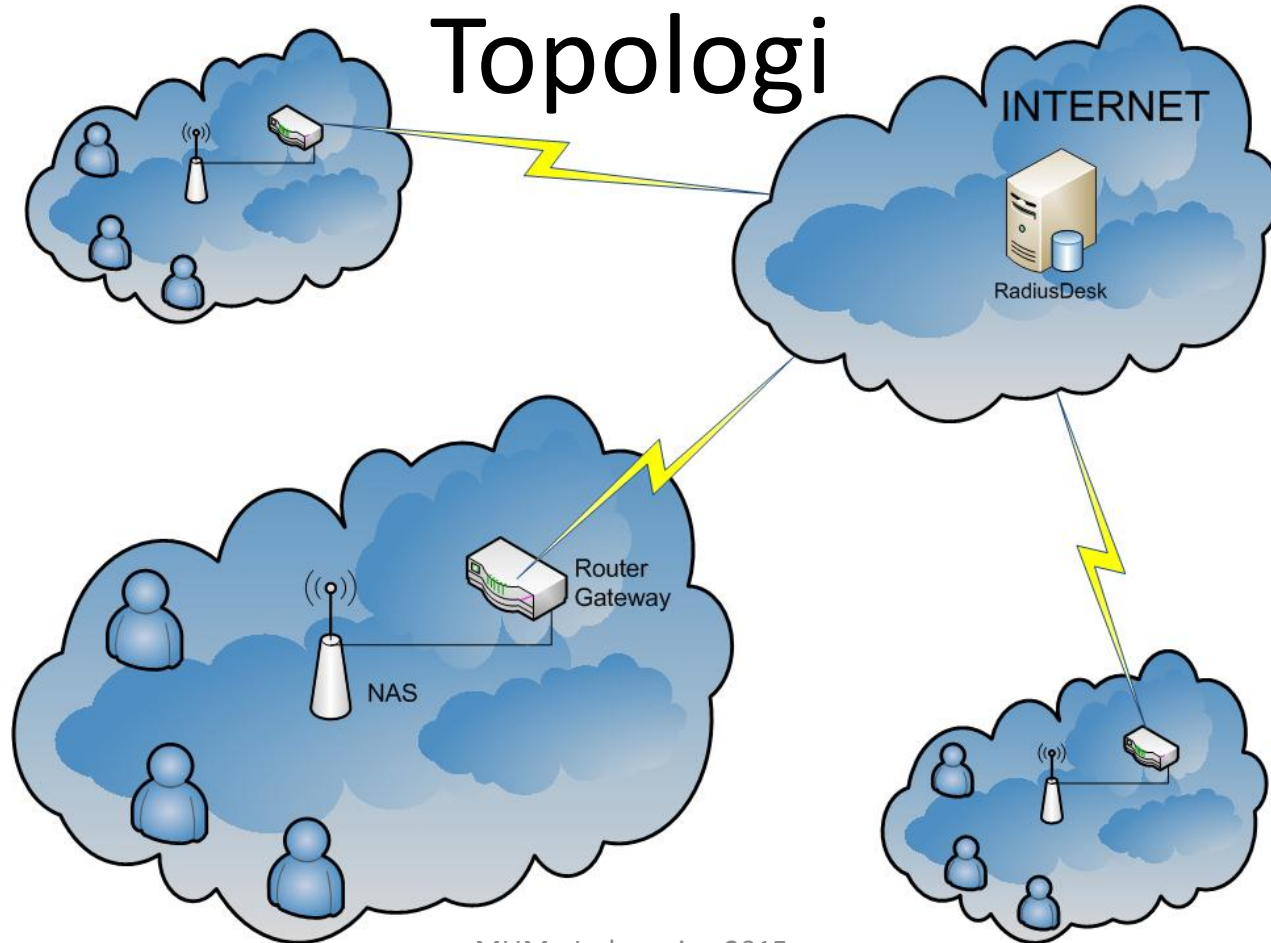
Introduction

- Bagaimana cara membuat system Hotspot dengan AAA (Authentication, Authorization & Accounting) terpusat dengan NAS yang tersebar dan bersifat Dynamic.
- Memiliki fitur Page Hotspot Dinamis.
- Memiliki fitur Social Login.

The Concept

1. Setup RADIUS Server.
2. Setup NAS (Network Access Server).
3. Setup Authentication, Authorization dan Accounting (AAA) di RADIUS Server
4. Setup Page Hotspot
5. Social Media Login (Facebook, Google+ & Twitter)

Topologi



Config - Setup RADIUS Server

- Menggunakan RadiusDesk (<http://www.radiusdesk.com>)
- Install Fresh (from sources) atau,
- Deploy VM Image (VirtualBox) → Proxmox

Prosedur Deploy RadiusDesk

1. Siapkan Server Proxmox dengan resources & storage yang memadai.
2. Download vm image RadiusDesk dari:
<http://sourceforge.net/projects/radiusdesk/files/VM-Images/RADIUSdesk-2015-3-0.ova/download>.
3. Upload ke Server Proxmox.

4. Extract file:

```
root@vt1:/tmp# tar -xvf RADIUSdesk-2015-3-0.tar
```

```
root@vt1:/tmp# ls -l
```

```
-rw----- 1 root root 607780352 Jun  1 02:33 RADIUSdesk-2015-3-0-disk1.vmdk
```

```
-rw----- 1 root root      13738 Jun  1 02:27 RADIUSdesk-2015-3-0.ovf
```

5. Convert ke format qcow2 dan rename:

```
qemu-img convert -f vmdk RADIUSdesk-2015-3-0-disk1.vmdk -O qcow2 vm-101-local.qcow2
```

6. Buat VM di Proxmox:

Buatlah sebuah VM Container di Proxmox seperti biasanya membuat sebuah VM dengan cara: Login ke WebPanel Proxmox -> Create-VM -> Ikuti Langkah-langkahnya dan sesuaikan dengan kondisi di tempat anda (misalkan vm-id = 101).

7. Pindahkan file `vm-101-local.qcow2` (hasil convert) ke direktory image untuk `vm-id`

```
mv vm-101-local.qcow2 /var/lib/vz/image/101/
```

8. Convert ke format `qcow2` dan rename sesuai VM-ID:

```
qemu-img convert -f vmdk RADIUSdesk-2015-3-0-disk1.vmdk -O qcow2 RADIUSdesk-2015-3-0-disk1.qcow2
```

9. Jalankan VM 101

Lihat di console, dan setelah booting selesai login ke shell menggunakan default user: system password: admin. Gunakan user `system` yang memiliki hak akses `sudo` untuk langkah lebih lanjut.

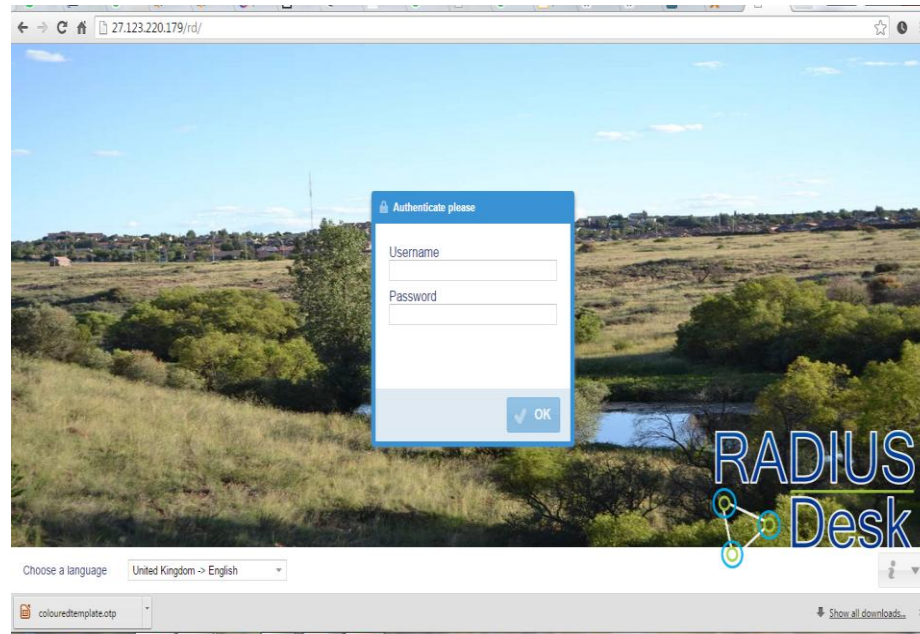
10. Setting IP Server:

```
root@RADIUSdesk-2015-3-0:/home/system# cat /etc/network/interfaces
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).
```

```
# The loopback network interface
auto lo
iface lo inet loopback
```

```
# The primary network interface
auto eth0
iface eth0 inet static
    address 27.123.220.179
    netmask 255.255.255.240
    gateway 27.123.220.177
    dns-nameservers 27.123.220.220 27.123.220.221
```

11. Restart server, dan test login ke:
<http://ip.server.radiusdesk/rd> dengan default
user: root password: admin.



Config - Setup NAS

- Setup Mikrotik sebagai NAS.
- Setup Dynamic NAS di RadiusDesk.
- Testing koneksi RADIUS.
- Modifikasi Hotspot Page Mikrotik

Setup NAS

1. Siapkan RouterBoard yang akan digunakan sebagai NAS (Reset to No Default Configuration – Setup Basic Configuration). Cek
2. Set Identity Router.
`/system identity set name=Fibernet-CN-01`
3. Setting RADIUS di Mikrotik.
`/radius add address=27.123.220.179 secret=mikrotikrd \`
`service=hotspot timeout=5s`
4. Lakukan instalasi Hotspot menggunakan fitur Hotspot Setup.

Setup Hotspot (1)

- Gunakan Wizard di IP – Hotspot – Hotspot Setup.
- Hotspot Interface: WLAN1
- Local Network Address: 10.5.50.1/24
- Masquerade Network dicheck
- Address Pool: 10.5.50.2-10.5.50.254
- Select Certificate : none
- IP Address SMTP abaikan
- DNS Servers abaikan
- DNS Name abaikan.
- Buat user admin dan passwordnya

Setup Hotspot (2)

- Aktifkan koneksi RADIUS di Server Profile.
- IP – Hotspot. Pilih Server Profiles – hsprof1.
- Pastikan Use RADIUS dicheck.
- Jika menggunakan MAC Authentication sebaiknya MAC format: **XX-XX-XX-XX-XX-XX**.
- Pastikan HTTP-PAP juga diaktifkan di tab Login.

Setup Dynamic NAS (1)

- Akses <http://ip.server.radiusdesk/rd> menggunakan browser dengan user: root password: admin
- Pilih Menu – NAS Devices – NAS Devices
- Klik tombol + (add) – Pilih Dynamic Client – Next.

 **NAS devices**

Home

Action



Document

Nas

	Owner	IP Address	Name
1	root	127.0.0.1	localhost
2	root	10.120.0.5	Fibernet-CN-01
3	root	10.120.0.4	lion_cp3
4	root	10.120.0.3	lion_cp2
5	root	10.120.0.2	lion_cp1
6	root	10.120.0.1	cheetah_cp1

There are 6 items

+ Add NAS device

Select the owner

Owner

▶ Logged in user

→ Next

Menu

NAS Device...

+ Add NAS de...

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Setup Dynamic NAS (2)

- Di tab Dynamic AVP Detail isikan parameter sbb:
 - Attribute pilih NAS-Identifier
 - Value isi dengan System-Identity NAS Mikrotik (Fibernet-CN-01).
- Pilih tab NAS isikan parameter sbb:
 - Name: system-identity (Fibernet-CN-01).
 - Secret: diisi sesuai dengan secret pada saat setting radius secret di Mikrotik (mikrotikrd).

Add NAS device

Choose a connection type

Connection type

☐ Direct (Fixed IP)

☒ Dynamic Client

← Previous

→ Next

Add NAS device

Unique AVP combination

Attribute

Mikrotik-Realm

Value

Fibernet-CN-01

Dynamic AVP detail

NAS

Realms

← Previous

→ Next

+ Add NAS device

Supply the following

Owner

Logged in user

IP Address

Set by server

Name

Fibernet-CN-01

Secret

mikrotikrd

Dynamic AVP detail

NAS

Realms

← Previous

→ Next

+ Add NAS device

☒ Make available to any realm

Dynamic AVP detail

NAS

Realms

← Previous

→ Next

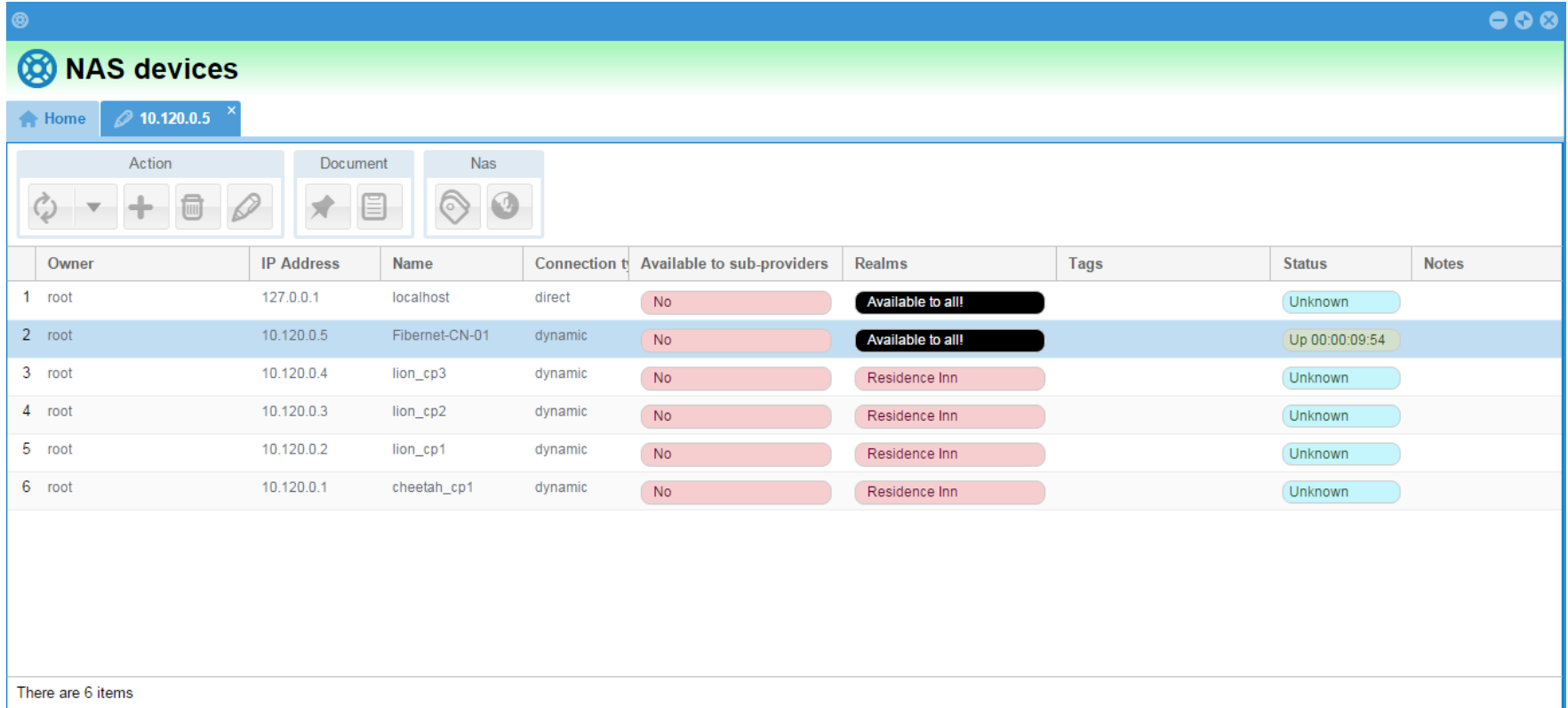
Setup Dynamic NAS (3)

- Pilih tab Realm Pilih realm bagi pengguna yang diijinkan untuk terhubung ke NAS ini.
- Klik Next untuk menyelesaikan tahap ini.
- Pilih NAS Devices yang baru dibuat dan edit.
- Klik Tab NAS – Optional Info.
 - NAS Identifier= System-Identity (Fibernet-CN-01)
 - Type = Mikrotik-Heartbeat
- Save untuk menyimpan konfigurasi.

Testing Koneksi NAS ke RadiusDesk

- Tunggu beberapa saat (max 10 menit) hingga koneksi RADIUS NAS ke RadiusDesk established.
- Untuk mempercepat:
Menu → Tools → Logfile Viewer and Stop; Start
- Lihat status NAS Devices baru

Tampilan NAS sudah aktif di RD



NAS devices

Home 10.120.0.5

Actions: Refresh, Add, Delete, Edit, Star, Document, Nas

	Owner	IP Address	Name	Connection t	Available to sub-providers	Realms	Tags	Status	Notes
1	root	127.0.0.1	localhost	direct	No	Available to all!		Unknown	
2	root	10.120.0.5	Fibernet-CN-01	dynamic	No	Available to all!		Up 00:00:09:54	
3	root	10.120.0.4	lion_cp3	dynamic	No	Residence Inn		Unknown	
4	root	10.120.0.3	lion_cp2	dynamic	No	Residence Inn		Unknown	
5	root	10.120.0.2	lion_cp1	dynamic	No	Residence Inn		Unknown	
6	root	10.120.0.1	cheetah_cp1	dynamic	No	Residence Inn		Unknown	

There are 6 items

Modifikasi Hotspot Page Mikrotik

- Agar login page terintegrasi dengan RadiusDesk yang menggunakan JSONP Web Services harus dilakukan modifikasi untuk file: login.html, status.html, fstatus.html, alogin.html, logout.html.
- Sources:
http://www.radiusdesk.com/developers_corner/mikrotik_jsonp

login.html

```
$(if error == "")
<html>
  <head>
    <title>...</title>
    <meta http-equiv="refresh" content="0;
      url=http://repace_with_your_server.com/cake2/rd_cake/dynamic_details/mikrotik_browser
      _detect/?loginlink=$(link-login-
      only)&nasid=$(identity)&ssid=Struisbaai&type=mikrotik&link_status=$(link-
      status)&link_login_only=$(link-login-only)&link_logout=$(link-logout)">
    <meta http-equiv="pragma" content="no-cache">
    <meta http-equiv="expires" content="-1">
  </head>
```

login.html (cont'd)

```
<body>
</body>
</html>
$(else)
$(var){
    'logged_in'           : '$(logged-in)',
    'link_login_only'    : '$(link-login-only)',
    'error_orig'         : '$(error-orig)',
    'error'              : '$(error)'
})
$(endif)
```

status.html

```
$(var){  
    'logged_in':          '$(logged-in)',  
    'link_login_only':    '$(link-login-only)',  
    'link_logout':        '$(link-logout)',  
    'username':           '$(username)',  
    'ip':                  '$(ip)',  
    'bytes_in':            '$(bytes-in)',  
    'bytes_in_nice':       '$(bytes-in-nice)',  
    'bytes_out':           '$(bytes-out)',  
    'bytes_out_nice':      '$(bytes-out-nice)',  
    'remain_bytes_in':     '$(remain-bytes-in)',  
    'remain_bytes_out':    '$(remain-bytes-out)',  
    'packets_out':         '$(packets-out)',  
    'packets_in':          '$(packets-in)',  
    'session_time_left':   '$(session-time-left)',  
    'uptime':              '$(uptime)'  
}}
```

fstatus.html

```
$(var){  
  'logged_in'           : '$(logged-in)',  
  'link_login_only'     : '$(link-login-only)'  
}
```

alogin.html

```
$(var){  
  'logged_in'           : '$(logged-in)',  
  'link_login_only'     : '$(link-login-only)'  
}
```

logout.html

```
$(var){  
    'logged_in'           : '$(logged-in)',  
    'link_login_only'     : '$(link-login-only)'  
})
```

Add Walled-Garden IP List

```
/ip hotspot walled-garden ip  
add action=accept disabled=no \  
dst-address=27.123.220.179
```

Access Provider & Realm

- Untuk keperluan tahap berikutnya sebaiknya membuat Access Provider dan Realm tersendiri.
- Klik Menu – Owner pilih Logged in users – Next. Masukkan username dan password yang dikehendaki. Klik OK jika sudah selesai.
- Klik Menu – Realms – Owner pilih Logged in users – Next. Masukkan Nama Realm yang dikehendaki. Klik OK jika sudah selesai.

Profile & Profile Component

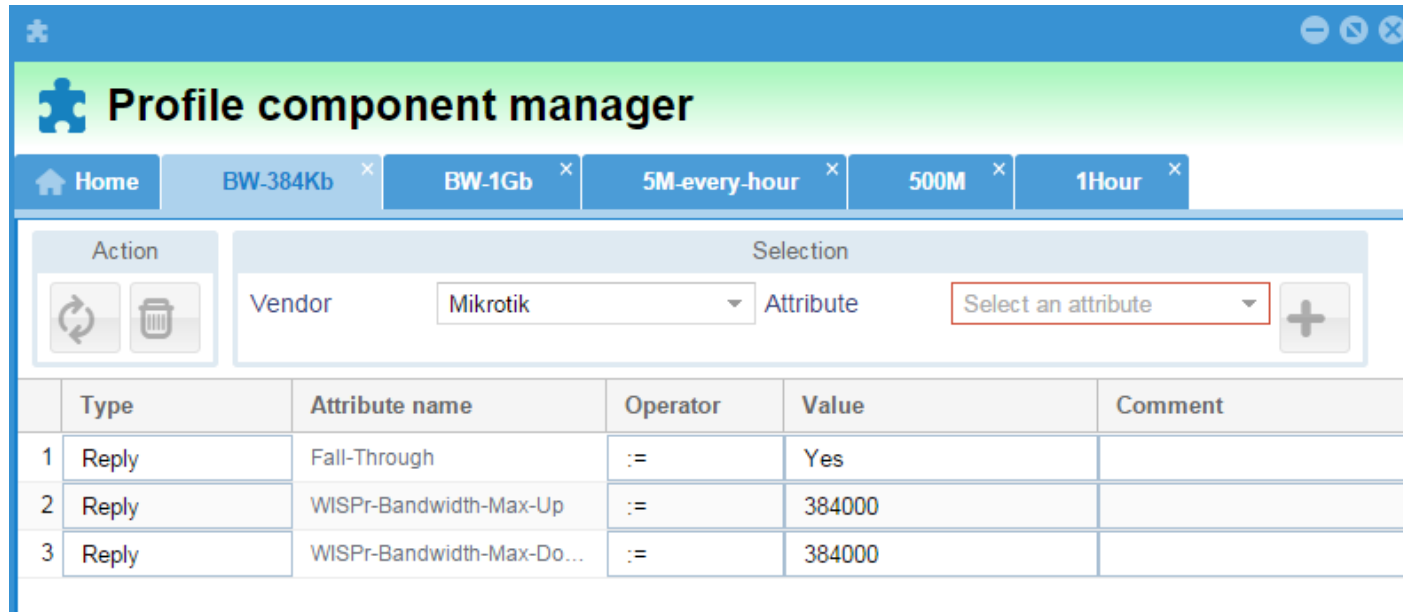
- Seperti halnya UserMan di Mikrotik, untuk membuat sebuah profile diperlukan limitation nya terlebih dahulu. Kemudian limitation tsb diterapkan dalam sebuah profile yang akan digunakan oleh user.
- Profile Component = Limitation

Profile Component

- Menu – Profile – Profile Component.
- Terdapat beberapa template.
- Menggunakan attribute-atribute RADIUS dari vendor yang sudah disediakan oleh RadiusDesk.

Contoh Profile Component

- Bandwidth limit 384 Kbps:



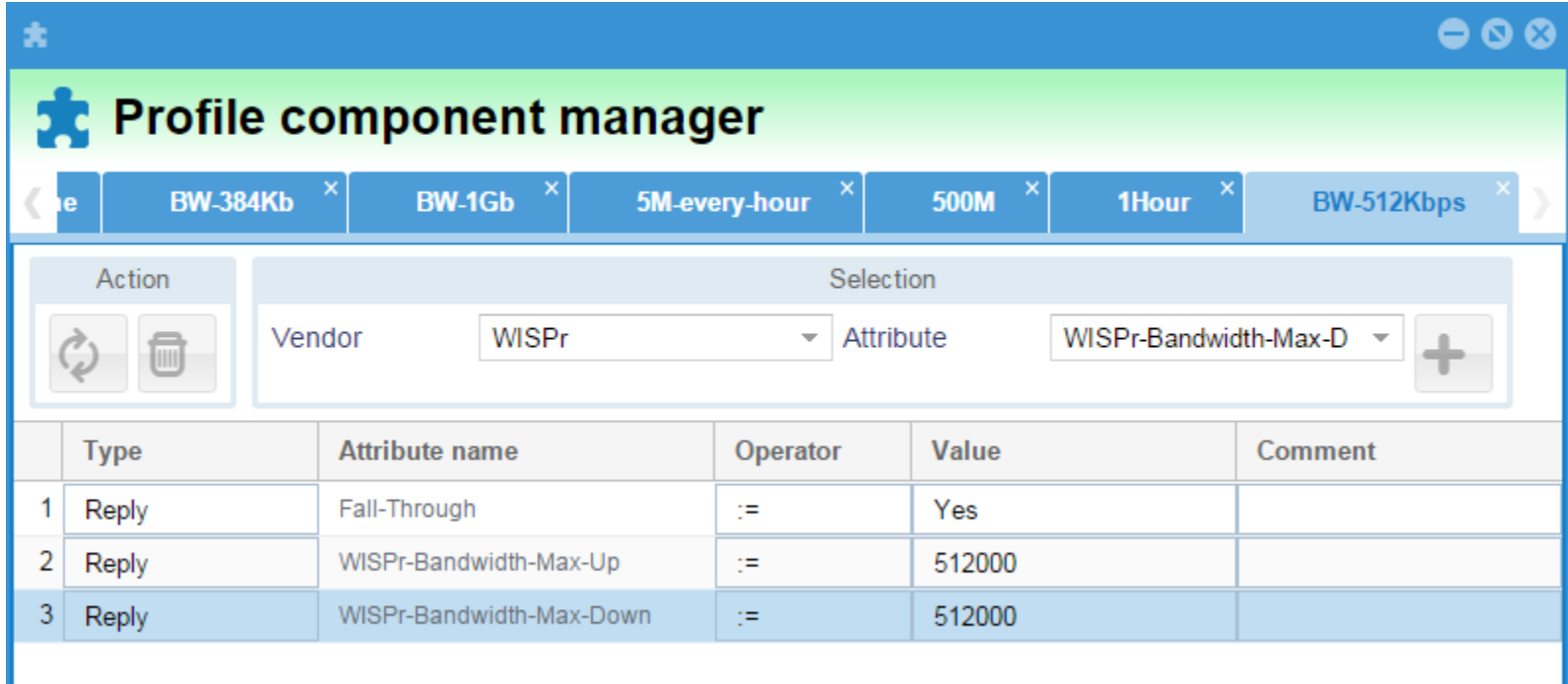
The screenshot shows a web application titled "Profile component manager". It has a navigation bar with tabs: "Home", "BW-384Kb", "BW-1Gb", "5M-every-hour", "500M", and "1Hour". Below the navigation bar, there is a section for "Action" with icons for refresh and delete, and a "Selection" section with a "Vendor" dropdown set to "Mikrotik", an "Attribute" dropdown set to "Select an attribute", and a "+" button. Below this is a table with 6 columns: "Type", "Attribute name", "Operator", "Value", and "Comment". The table contains 3 rows of data.

	Type	Attribute name	Operator	Value	Comment
1	Reply	Fall-Through	:=	Yes	
2	Reply	WISPr-Bandwidth-Max-Up	:=	384000	
3	Reply	WISPr-Bandwidth-Max-Do...	:=	384000	

- Membuat Bandwidth Limit 512 Kbps:
 - Menu – Profile – Profile Component - add,
 - Owner pilih Logged in user – Next
 - Name:BW-512Kbps (check also show to sub providers) – Next
 - Pilih dan Edit profile component yang baru dibuat.
 - Vendor Pilih: FreeRADIUS internal, Attribute: Fall-Through - Add, Type ubah -> Reply, Value: Yes

- Membuat Bandwidth Limit 512 Kbps (cont'd)
 - Vendor Pilih: WISPr, Attribute: WISPr-Bandwidth-Max-Down - Add Type Ubah -> Reply, Value = 512000
 - Vendor Pilih: WISPr, Attribute: WISPr-Bandwidth-Max-Up - Add, Type Ubah -> Reply, Value = 512000

Membuat Bandwidth Limit 512 Kbps (cont'd)



The screenshot shows a web-based interface titled "Profile component manager". At the top, there is a breadcrumb navigation bar with several tabs: "BW-384Kb", "BW-1Gb", "5M-every-hour", "500M", "1Hour", and "BW-512Kbps". Below this, there is a section for "Action" with icons for refresh and delete, and a "Selection" section with dropdown menus for "Vendor" (set to "WISPr") and "Attribute" (set to "WISPr-Bandwidth-Max-D"). Below these is a table with 6 columns: "Type", "Attribute name", "Operator", "Value", and "Comment". The table contains 3 rows of data, all with "Reply" in the "Type" column.

	Type	Attribute name	Operator	Value	Comment
1	Reply	Fall-Through	:=	Yes	
2	Reply	WISPr-Bandwidth-Max-Up	:=	512000	
3	Reply	WISPr-Bandwidth-Max-Down	:=	512000	

Profiles

- Menu – Profiles – Profiles
- Add – Owner: Logged in user – Next
- Name: Speed-512Kbps
- Pilih dan Edit Profile tsb.
- Pilih Add Component – Profile component: BW-512Kbps. Klik OK.
- Dapat ditambah, dikurangi profile component yang tersedia.

Profiles manager

 Home

Action



Document



	Owner	Name	Available to sub-providers	Profile components	Notes
1	root	Time-Standard-1Hour	☒	1Hour(80) BW-384Kb(100)	
2	root	TestProfile	☒		
3	root	Speed-512Kbps	☒	BW-512Kbps(100)	
4	root	Data-Standard-500	☒	BW-384Kb(100)	
5	root	Data-Standard-250	☒	250M(80) BW-384Kb(100)	
6	root	Data-Standard-1G	☒	1G(80) BW-384Kb(100)	
7	root	5M-every-hour	☒	5M-every-hour(100)	
8	root	1024MB	☒		

 Menu

 Profiles m...

Permanent Users

- Untuk membuat user account.
- Menu – Permanent Users – Permanent Users
- Contoh jika ingin membuat user tamu dengan profile Speed-512 Kbps:
 - Add – pilih Owner sesuai keinginan – Next
 - Di Tab Basic Info - Username: tamu, password: tamu
 - Realm pilih realm yang sudah dibuat (ie_realm)
 - Profile: Speed-512Kbps

Permanent Users

[Home](#)[tamu](#) ×

Action



Document



Extra actions



	Username	Auth type	Realm	Profile	Active	Notes
1	tempuser	sql	ie_realm	Speed-512Kbps	Yes	
2	tamu2	sql	ie_realm	1024MB	Yes	
3	tamu1	sql	ie_realm	Speed-512Kbps	Yes	
4	tamu	sql	ie_realm	Speed-512Kbps	Yes	
5	dvdwait	sql	Residence Inn	Data-Standard-1G	Yes	
6	click_to_connect@Struisbaai	sql	Residence Inn	5M-every-hour	Yes	
7	click_to_connect@IndonesianExpert	sql	ie_realm	Speed-512Kbps	Yes	

« < | Page 1 of 1 | > » | ↺ Displaying 1 - 7 of 7

Menu ▾

Dynamic lo...

Permanent ...

Dynamic Pages

- RadiusDesk memiliki fitur Dynamic Pages yang dapat dilakukan update dengan mudah dan terpusat sesuai dengan realm yang digunakan.
- Memiliki fitur:
User login, user registration, lost password, voucher login, complimentary login, social login (Facebook, Google+ dan Twitter)

Membuat Dynamic Pages

- Menu – Dynamic Login Pages – Add
- Name: beri nama sesuai keinginan
- Isikan field-field di tab Contact Detail, Address dan T&C.
- Setelah selesai Edit Pages yang telah dibuat terutama di tab Logo, Photos dan Own Pages.

Home

Indonesian Expert

Detail

Logo

Photos

Own pages

Dynamic keys

Settings

Click to connect

Social login

Owner

root

Name

Indonesian Expert

Make available to sub-providers

☒

Required info

Contact detail

Address

✓ Save

Menu

Dynamic lo...

Membuat Dynamic Pages (cont'd)

- Di Tab Dynamic keys tambahkan:
 - Name: nasid,
 - Value: system-identity (Fibernet-CN-01)
- Tab Settings berisi pengaturan Theme, Login T&C dan Redirect. Silahkan disesuaikan dengan yang diinginkan.

 **Dynamic login pages**

Home

Indonesian Expert

Detail

Logo

Photos

Own pages

Dynamic keys

Settings

Click to connect

Social login

Action



	Name	Value
1	nasid	Fibernet-CN-01

There are 1 items

 Menu

 Dynamic lo...

Membuat Dynamic Pages (cont'd)

- Tab Click to connect terdapat pengaturan login complimentary.
- Jika ditambahkan add suffix off maka user pada connect as akan menjadi: `click_to_connect@ssid`.
- Contoh SSID = IndonesianExpert, maka user yang harus disiapkan adalah: `click_to_connect@IndonesianExpert`.
- Untuk membuat user `click_to_connect` dapat shared users gunakan Attribute Port Limit dari vendor Misc dengan type Reply.

Dynamic login pages

Home Indonesian Expert

Detail Logo Photos Own pages Dynamic keys Settings Click to connect Social login

Enable ☒

Connect as

Add suffix of

Delay before connecting (seconds)

Only Click-to-connect ☐

☒ Save

Menu Dynamic lo... Permanent ...

 Permanent Users

Home

click_to_connect@IndonesianExpert

Basic info

Personal info

Device

Private attributes

Tracking

Authentication data

Accounting data

Usage graphs

Action



Selection

Vendor

Misc

Attribute

Port-Limit

+

	Type	Attribute name	Operator	Value
1	Check	Cleartext-Password	:=	click_to_connect
2	Check	Rd-User-Type	:=	user
3	Check	Rd-Account-Disabled	:=	0
4	Check	Rd-Not-Track-Auth	:=	1
5	Check	User-Profile	:=	Speed-512Kbps
6	Check	Rd-Realm	:=	ie_realm
7	Check	Rd-Cap-Type-Data	:=	hard
8	Reply	Port-Limit	:=	100

There are 8 items

 Menu

 Dynamic lo...

 Permanent ...

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Social Login

- http://www.radiusdesk.com/user_guide/social_login
- Untuk mengaktifkan social login harus membuat temporary user terlebih dahulu.
- Menu – Dynamic login pages – pilih & edit.
- Pilih tab Social login – di sub tab Basic check Enable, Temp login user pilih user temporary yang telah dibuat sebelumnya.

 **Dynamic login pages**

Home Indonesian Expert x

Detail Logo Photos Own pages Dynamic keys Settings Click to connect **Social login**

Enable ☒

Temp login user

Basic Facebook Google+ Twitter

 **Save**

 **Menu**  Dynamic lo...

Social Login - Facebook

- Login ke Facebook, dan buka <https://developers.facebook.com/>
- Pilih My Apps – Add a new app – advanced setup.
- Display name: nama aplikasi anda.
- Pilih Category sesuai yang diinginkan.

Social Login – Facebook (cont'd)

- Pilih menu My Apps – Settings – Basic.
- Isi Contact Email.
- Isi site URL dengan url ke RadiusDesk (misal: <http://hotspot.fiber.net.id/>)

Indonesian Expert

Dashboard

Settings

Status & Review

App Details

Roles

Open Graph

Alerts

Localize

Canvas Payments

Audience Network

Test Apps

BasicAdvancedMigrations

App ID

917173401690592

App Secret

.....

Show

Display Name

Indonesian Expert

Namespace

indonesianexpert

App Domains

Contact Email

husam@indonesian.expert

Website

Quick Start

X

Site URL

http://hotspot.fiber.net.id/

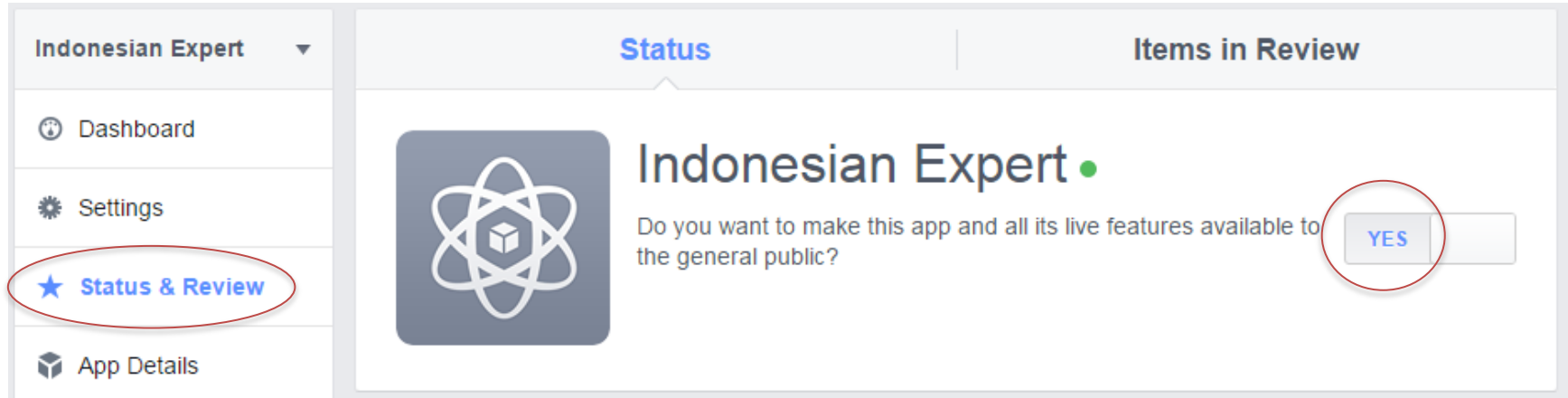
+ Add Platform

Delete App

Discard

Save Changes

Klik menu My Apps – Settings – Status & Review.
Publish App dengan mengubah No -> Yes.



Social Login – Facebook (cont'd)

- Input APP-ID dan App Secret ke menu di RadiusDesk: Menu – Dynamic login pages – pilih & edit dynamic pages anda. Tab Social Login – sub tab Facebook.
- Auto Create: Permanent User
- Realm: ie_realm
- Profile: Speed-512Kbps.



Dynamic login pages

[Home](#)[Indonesian Expert](#) ×[Detail](#)[Logo](#)[Photos](#)[Own pages](#)[Dynamic keys](#)[Settings](#)[Click to connect](#)[Social login](#)**Enable****Record info****Key/Id****Secret****Auto create****Realm****Profile**[Basic](#)[Facebook](#)[Google+](#)[Twitter](#)**Save****Menu**

Dynamic lo...

Conclusions

- RadiusDesk dapat menerima request AAA dari NAS Dynamic Mikrotik.
- RadiusDesk memiliki banyak fitur yang dapat digunakan sebagai Captive Portal namun diperlukan pengembangan lebih lanjut agar lebih optimal.



Terimakasih...
Pertanyaan?

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