

# RouterOS with Radius Server for Android

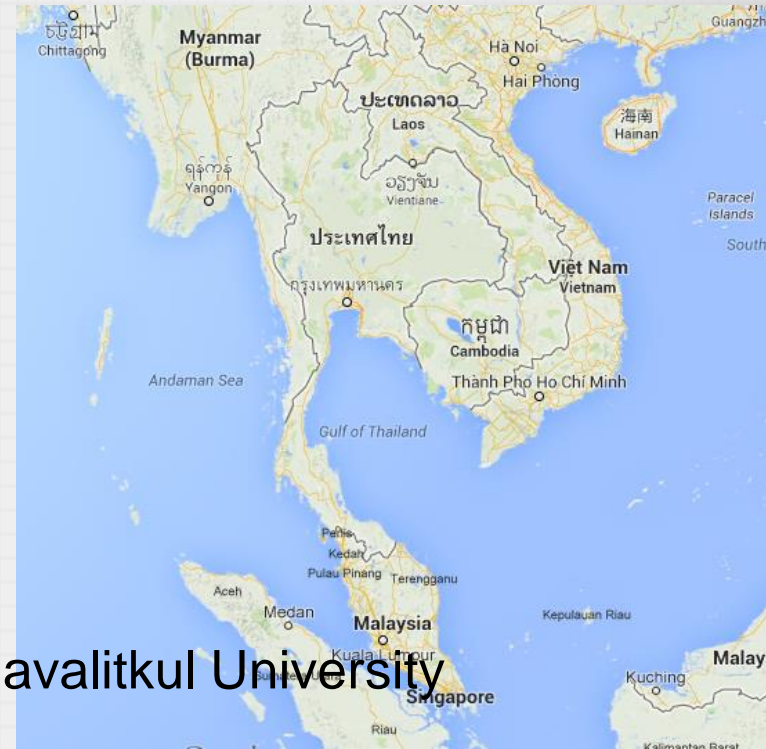
PRESENTED BY MANA KAEWCHAROEN

22 MAY 2014  
MUM in Bangkok , Thailand



# About me

- Mana Kaewcharoen
- Mikrotik user since May 2013
- Mikrotik Trainer since Feb 2014
- Coordinator since Apr 2014
- From Bangkok , Thailand.
- MTCNA , MTCRE , MTCTCE , MTCWE
- Mikrotik Academy Coordinator at Vongchavalitkul University
- ThaiMikroTik.com



CONSULTANT

CERTIFIED TRAINER

COORDINATOR

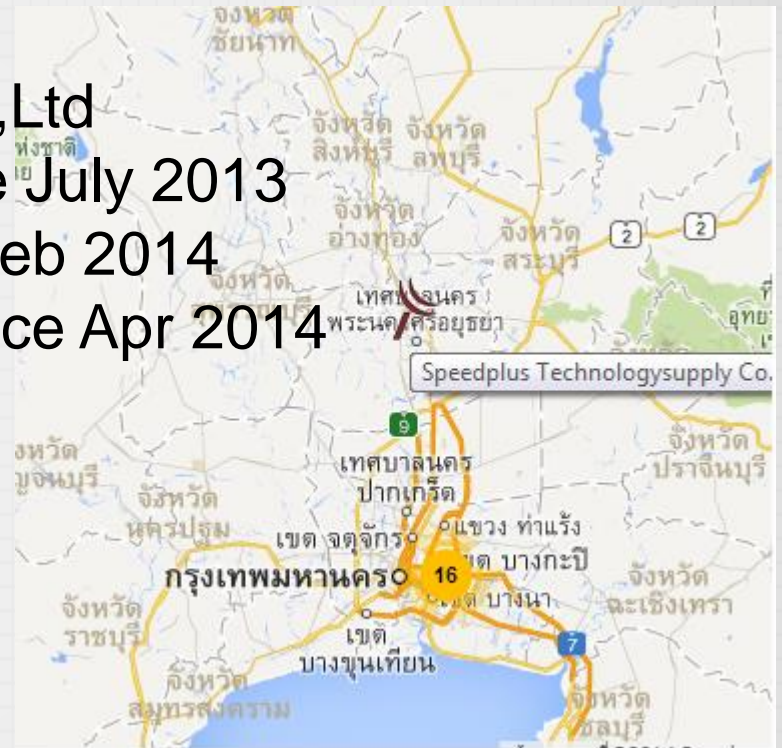
<http://www.mikrotik.com/consultants/asia/thailand>

<http://www.mikrotik.com/training/partners/asia/thailand>

<http://www.mikrotik.com/training/academy/asia/thailand>

# About ThaiMikroTik

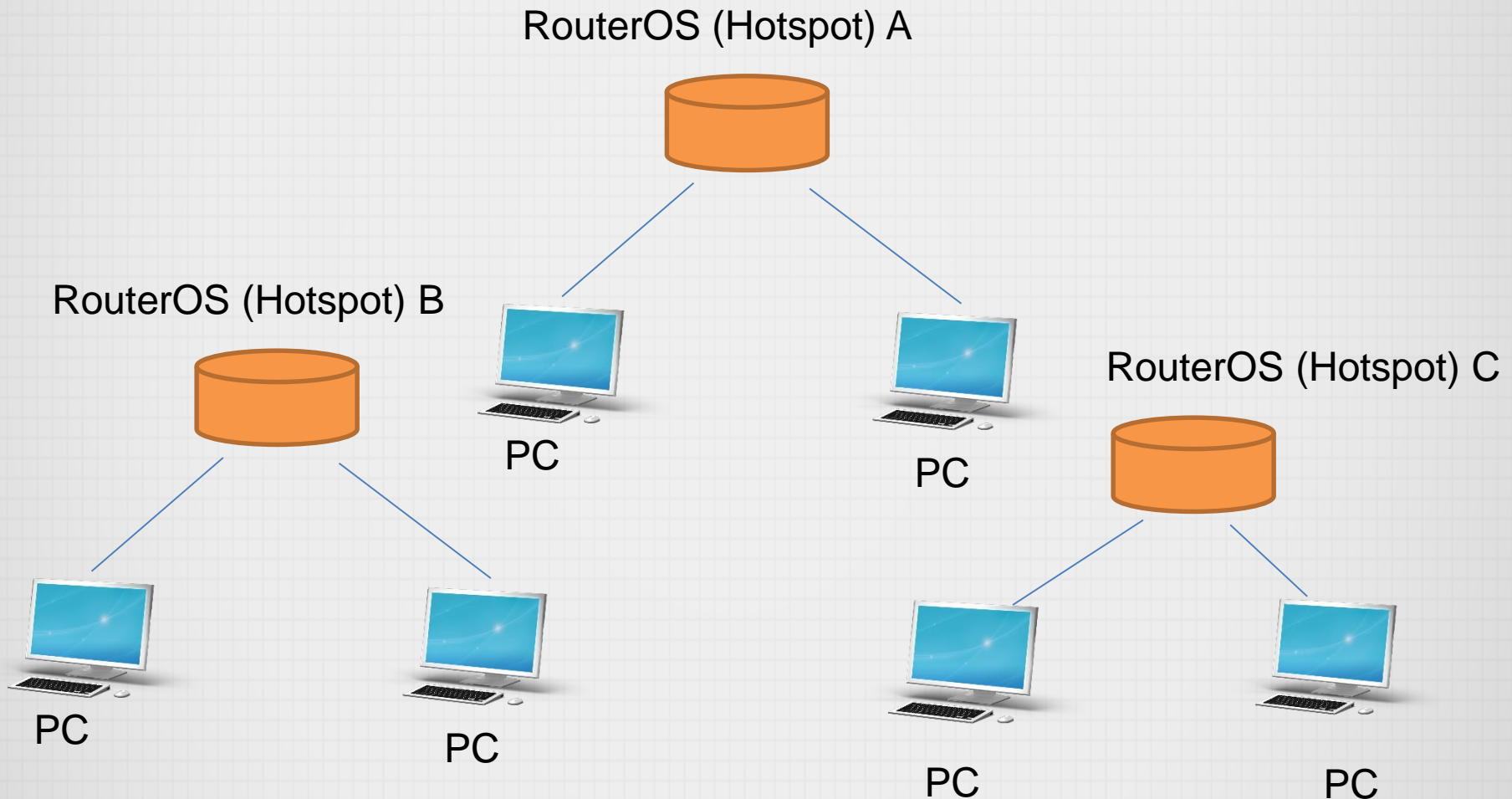
- Speedplus Technologysupply Co.,Ltd
- MikroTik Master Distributors since July 2013
- MikroTik Training Centers since Feb 2014
- Mikrotik Academy Coordinator since Apr 2014
- <http://www.thaimikrotik.com>
- Ayutthaya , Thailand.



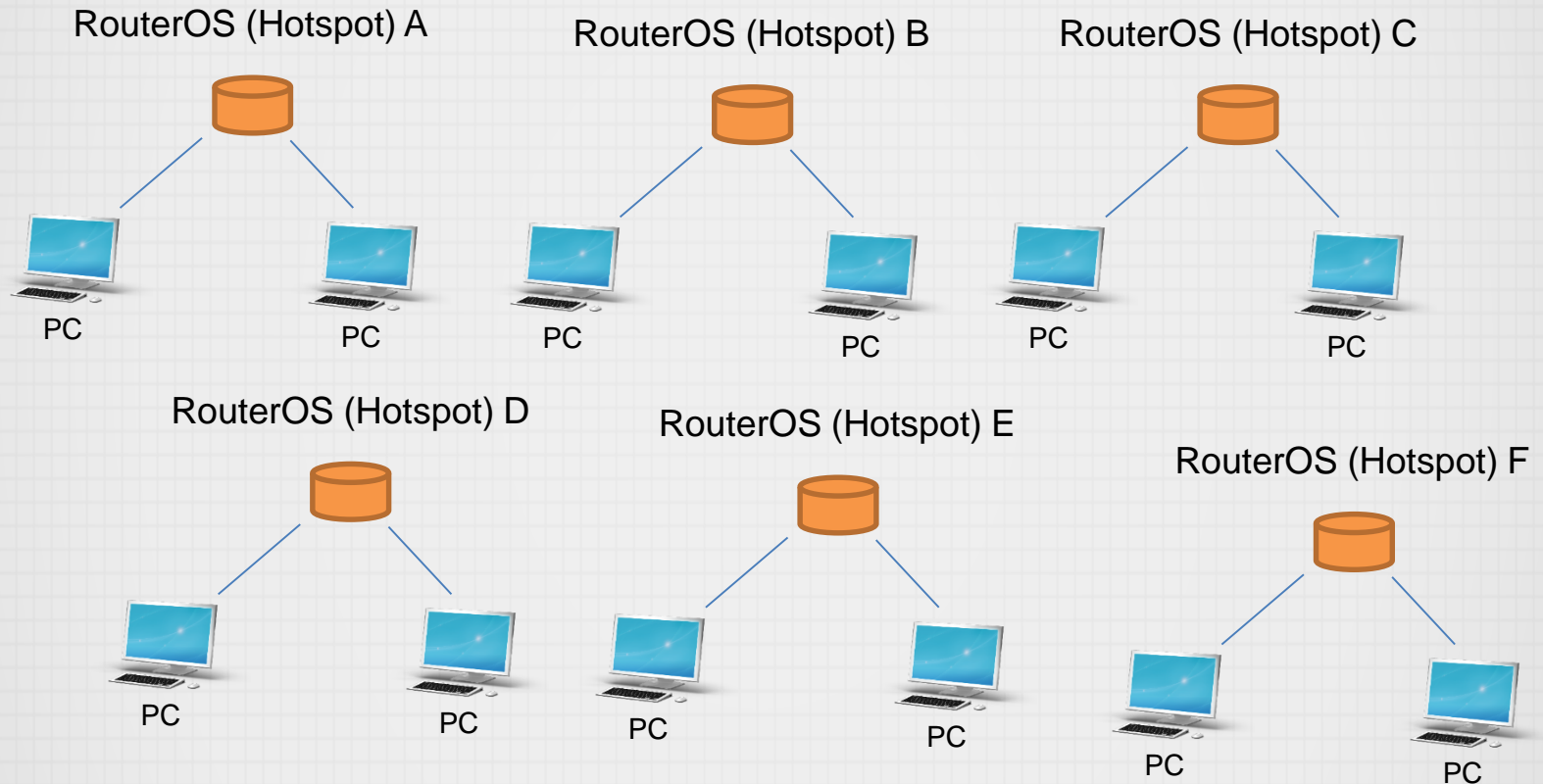
Distributors

<http://www.mikrotik.com/buy/asia/thailand>

# Introduction

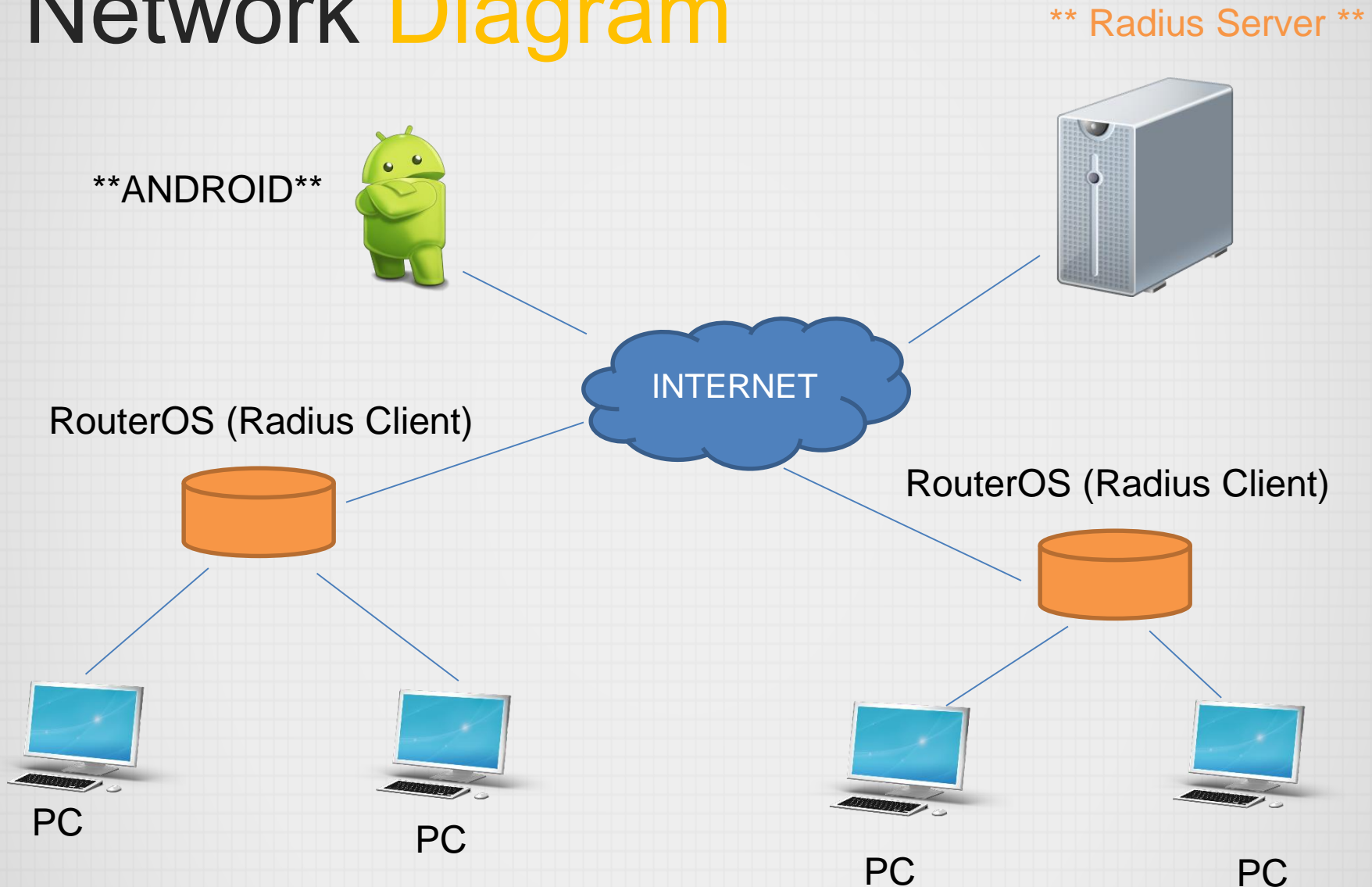


# Introduction



**\*\* More devices = More problems**

# Network Diagram



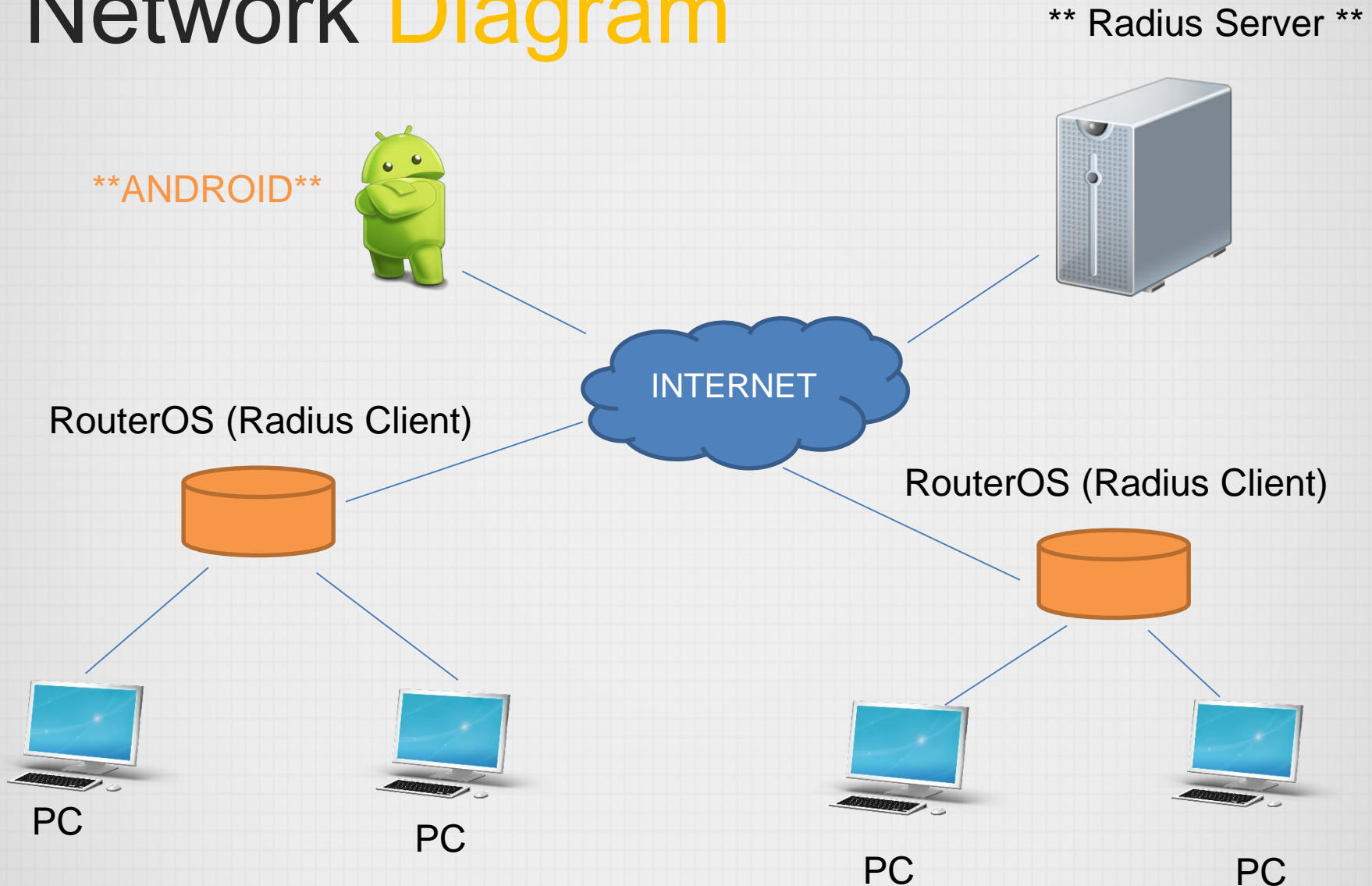
# Radius ???

- ***Remote Authentication Dial-In User Service***
- RFC 2865 ( <http://tools.ietf.org/html/rfc2865> )
- Protocol UDP 1812 , UDP 1813
- AAA Concept
  - Authentication
  - Authorization
  - Accounting





# Network Diagram





# Why we use android ??

- Mobility
- Easy to use
- Price
- Compatibility
- Development



# Radius user,client,server

- **User** (PC) tries to connect to the internet using username and password
- **Client** (RouterOS) looks for the user in local database and if it fails – asks RADIUS server
- **Server** – tell the client whether it should accept or reject the user



# Radius request and response



Username , Password

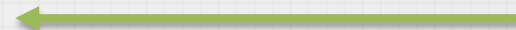
MAC Address , IP



Access-Request(1)



Access-Accept(2)



Or

Access-Reject(3)



# Radius **Server** - install

- Installation Of FreeRADIUS
- CentOS :

```
yum -y install httpd
```

```
yum -y install mysql-server
```

```
yum -y install freeradius freeradius-mysql freeradius-utils
```

Script Install

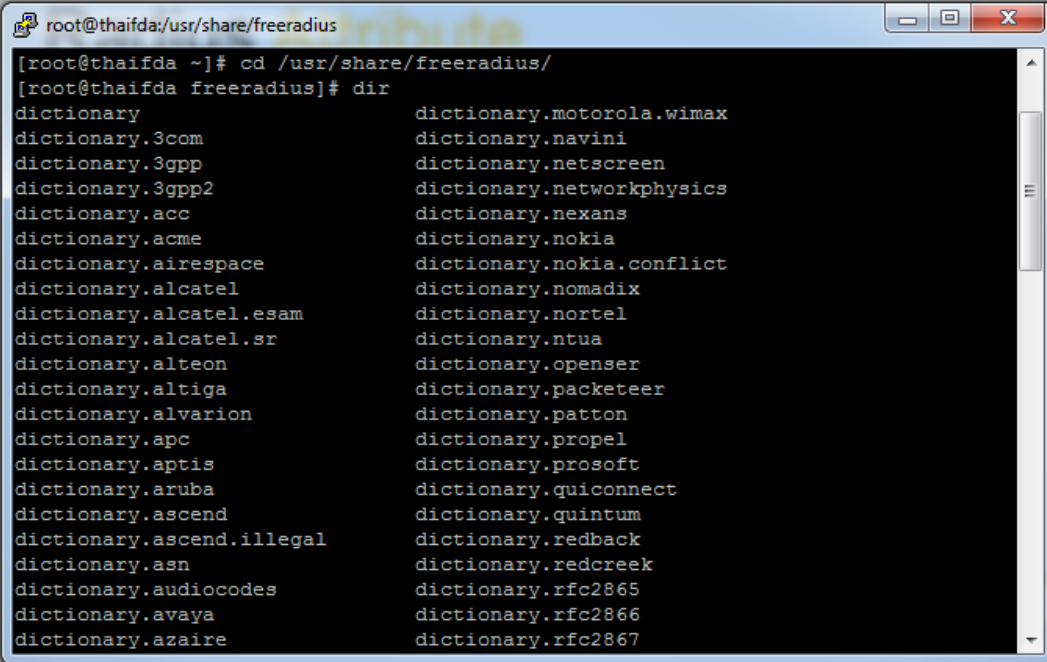
<http://www.thaimikrotik.com/download2/rd.tar.gz>

```
tar -zxvf rd.tar.gz
```

```
./install
```

# Radius Attribute

- /usr/share/freeradius/dictionary.rfc2865
- /usr/share/freeradius/dictionary.mikrotik



```
root@thaifda: /usr/share/freeradius
[root@thaifda ~]# cd /usr/share/freeradius/
[root@thaifda freeradius]# dir
dictionary
dictionary.3com
dictionary.3gpp
dictionary.3gpp2
dictionary.acc
dictionary.acme
dictionary.airespace
dictionary.alcatel
dictionary.alcatel.esam
dictionary.alcatel.sr
dictionary.alteon
dictionary.altiga
dictionary.alvarion
dictionary.apc
dictionary.aptis
dictionary.aruba
dictionary.ascend
dictionary.ascend.illegal
dictionary.asn
dictionary.audiocodes
dictionary.avaya
dictionary.azaire
dictionary.motorola.wimax
dictionary.navini
dictionary.netscreen
dictionary.networkphysics
dictionary.nexans
dictionary.nokia
dictionary.nokia.conflict
dictionary.nomadix
dictionary.nortel
dictionary.ntua
dictionary.openser
dictionary.packeteer
dictionary.patton
dictionary.propel
dictionary.prosoft
dictionary.quiconnect
dictionary.quantum
dictionary.redback
dictionary.redcreek
dictionary.rfc2865
dictionary.rfc2866
dictionary.rfc2867
```

ATTRIBUTE

[http://www.mikrotik.com/testdocs/ros/2.9/guide/aaa\\_radius.php](http://www.mikrotik.com/testdocs/ros/2.9/guide/aaa_radius.php)

# Radius Attribute

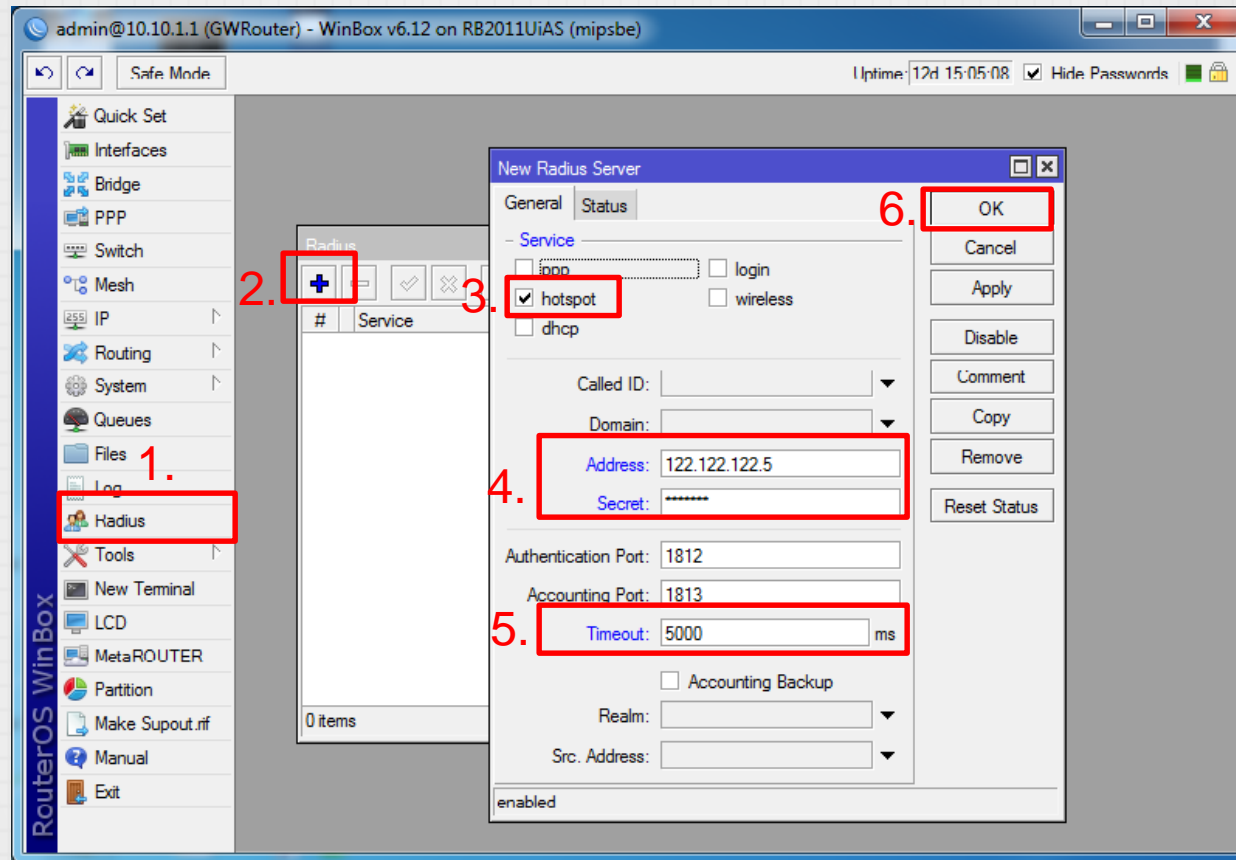
# WISPr Attributes (defined in [http://www.wi-fi.org/getfile.asp?f=WISPr\\_V1.0.pdf](http://www.wi-fi.org/getfile.asp?f=WISPr_V1.0.pdf))

VENDOR	WISPr	14122
ATTRIBUTE	WISPr-Location-Id	1 string WISPr
ATTRIBUTE	WISPr-Location-Name	2 string WISPr
ATTRIBUTE	WISPr-Logoff-URL	3 string WISPr
ATTRIBUTE	WISPr-Redirection-URL	4 string WISPr
ATTRIBUTE	WISPr-Bandwidth-Min-Up	5 integer WISPr
ATTRIBUTE	WISPr-Bandwidth-Min-Down	6 integer WISPr
ATTRIBUTE	WISPr-Bandwidth-Max-Up	7 integer WISPr
ATTRIBUTE	WISPr-Bandwidth-Max-Down	8 integer WISPr
ATTRIBUTE	WISPr-Session-Terminate-Time	9 string WISPr

# MikroTik Attributes

VENDOR	Mikrotik	14988
ATTRIBUTE	Mikrotik-Recv-Limit	1 integer Mikrotik
ATTRIBUTE	Mikrotik-Xmit-Limit	2 integer Mikrotik
ATTRIBUTE	Mikrotik-Group	3 string Mikrotik
ATTRIBUTE	Mikrotik-Wireless-Forward	4 integer Mikrotik
ATTRIBUTE	Mikrotik-Wireless-Skip-Dot1x	5 integer Mikrotik
ATTRIBUTE	Mikrotik-Wireless-Enc-Algo	6 integer Mikrotik
ATTRIBUTE	Mikrotik-Wireless-Enc-Key	7 string Mikrotik
ATTRIBUTE	Mikrotik-Rate-Limit	8 string Mikrotik
ATTRIBUTE	Mikrotik-Realm	9 string Mikrotik
ATTRIBUTE	Mikrotik-Host-IP	10 ipaddr Mikrotik
ATTRIBUTE	Mikrotik-Mark-Id	11 string Mikrotik
ATTRIBUTE	Mikrotik-Advertise-URL	12 string Mikrotik
ATTRIBUTE	Mikrotik-Advertise-Interval	13 integer Mikrotik
ATTRIBUTE	Mikrotik-Recv-Limit-Gigawords	14 integer Mikrotik

# Radius Client - Setup

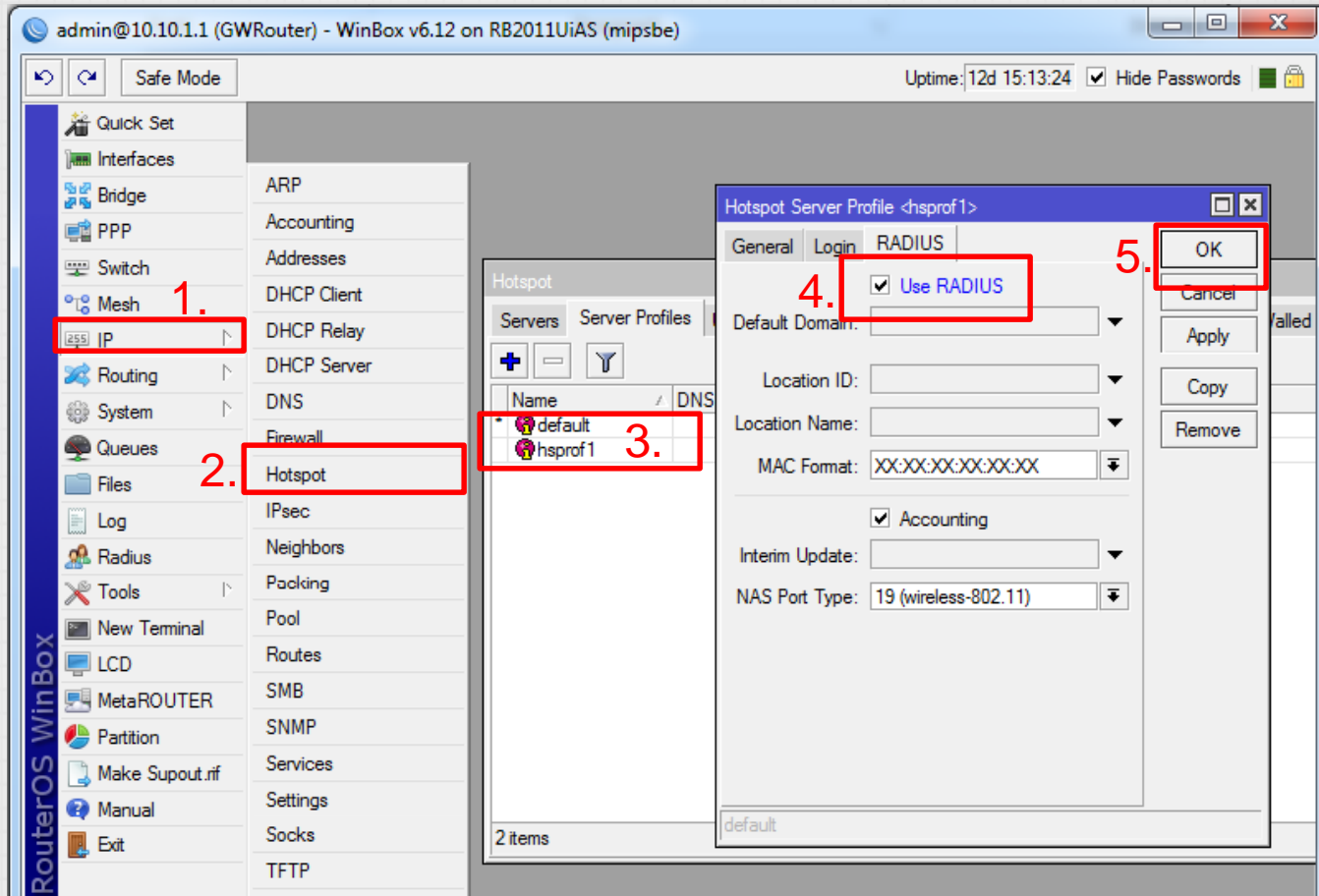


Script

```
/radius add address=122.155.5.235 comment=MIKRODROID  
secret=Mikrotik service=hotspot timeout=5000ms
```



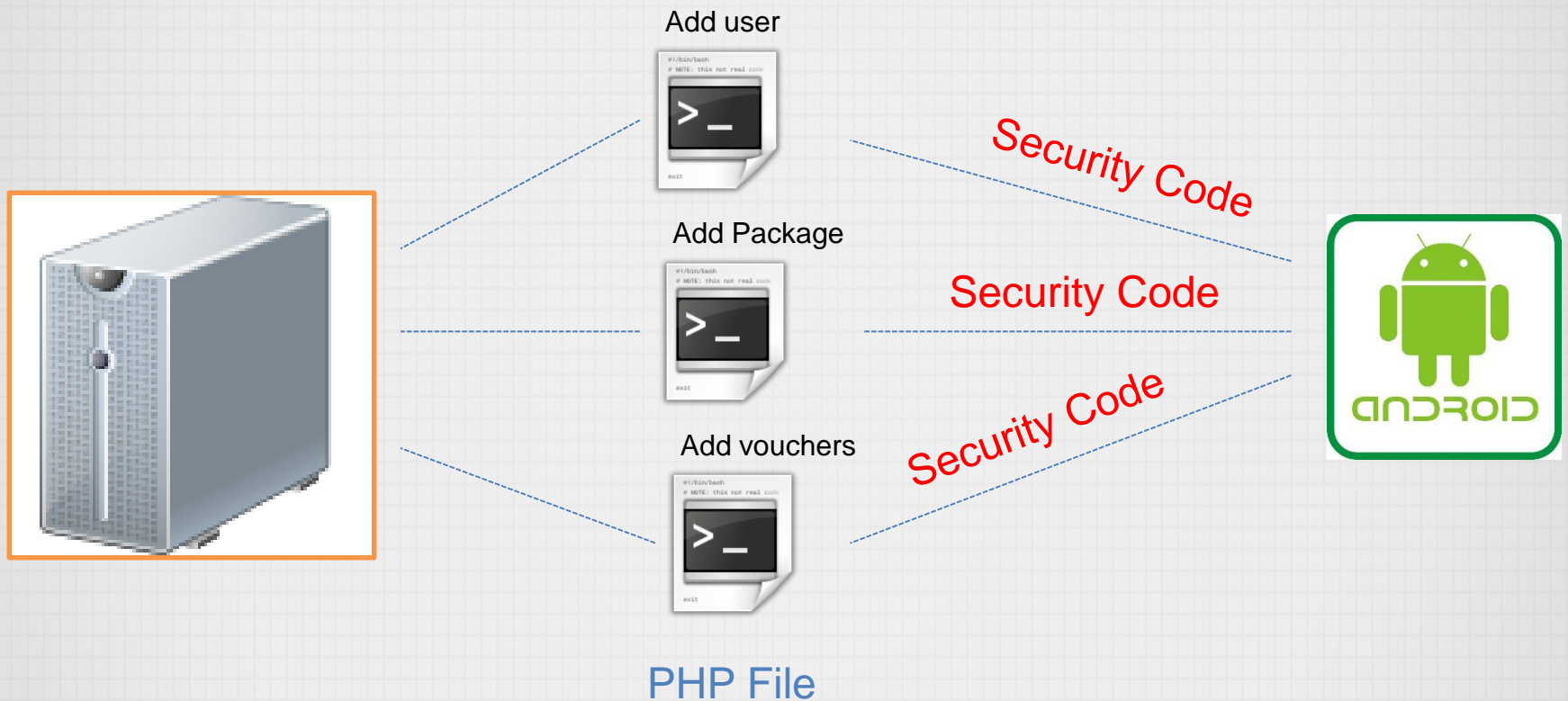
# Hotspot Server - Setup



Script

```
/ip hotspot profile set hsprof1 use-radius=yes
```

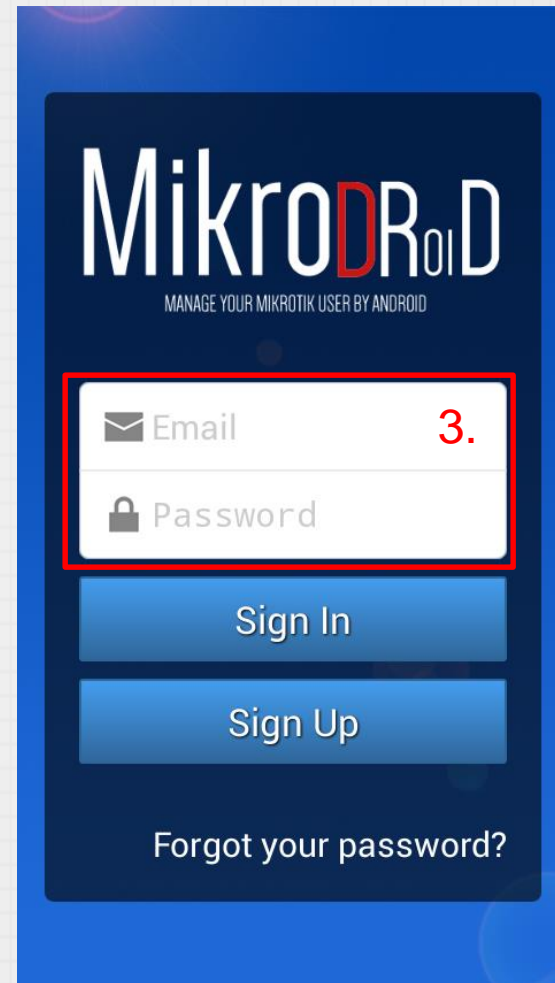
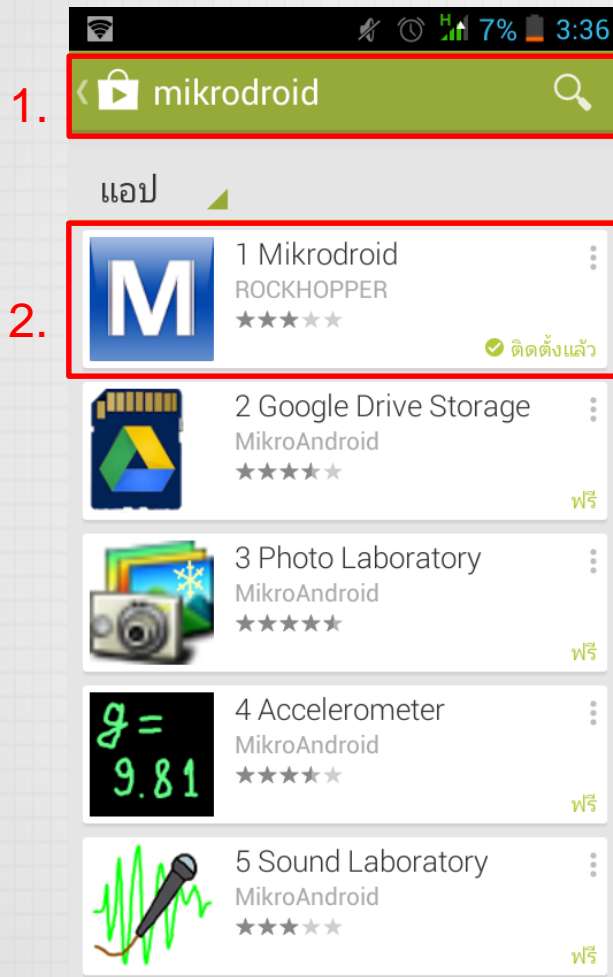
# How to connect with android



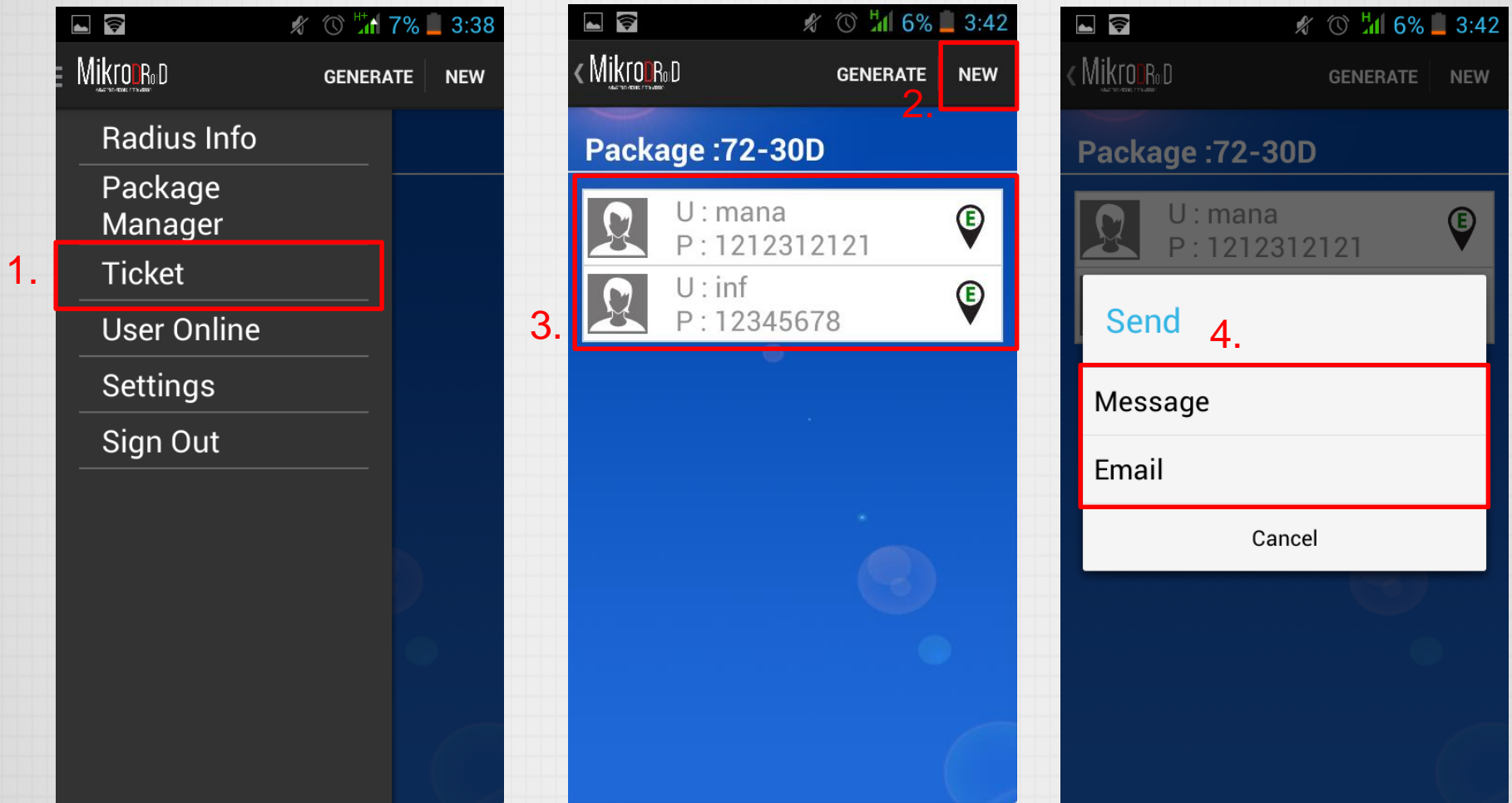
Download Script

<http://www.thaimikrotik.com/download2/apiconn.zip>

# Example: mikrodroid



# Example: mikrodroid



# Example: mikrodroid

The image shows a web browser window displaying the ThaiMikrotik website. The browser's address bar shows the URL [www.thaimikrotik.com/shop/](http://www.thaimikrotik.com/shop/). The website has a dark blue header with navigation links: +Skype, Web, Price List, Reseller Login, Activation, Download, and Contact US. The date and time are 2014-05-21 18:55:20. A search bar is visible on the right.

Overlaid on the website is a login window titled "internet hotspot > login". The window's address bar shows the URL [10.10.1.1/login?dst=http%3A%2F%2Fwww.gstatic.com%2Fgenerate\\_204](http://10.10.1.1/login?dst=http%3A%2F%2Fwww.gstatic.com%2Fgenerate_204). The login form contains fields for "login" (with the text "mana") and "password" (with a masked password "\*\*\*\*\*"). Below the fields is an "OK" button. The text "Please log on to use the internet hotspot service" is displayed above the form. The login window is powered by MikroTik RouterOS.

The background website features a "MikroTik DISTRIBUTORS" banner and a "THAI MIKROTIK" logo. A "Call Center 02-9926269" is listed. A section titled "เข้าเชียร์ริงลิต !!!" (Join the Ringlit promotion!!!) lists services: - ศูนย์กระจายสินค้า (Distribution Center), - Service Center, and - Training Center. A "ขั้นตอนการชำระเงิน" (Payment process) section provides contact information for various branches. A "Mikrotik User Meeting Thailand in Bangkok 22 May 2014" banner is also visible.

The Windows taskbar at the bottom shows the Start button, Internet Explorer, File Explorer, Google Chrome, and several other applications. The system tray shows the date and time as 18:49 on 21/5/2557 (Buddhist Era).



THANKS FOR listening 

Credit to

Android Developer : Songpob Jitpranee

PHP Developer : Amnuay Pintong

Linux Developer : Mana Kaewcharoen