



SMS Notification Integration for The Dude Network Monitoring System

Integrate on The Dude Version 6.37.1

Jakarta, 14th October 2016

by

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MikrotikIndo.blogspot.com



The Dude MikroTik





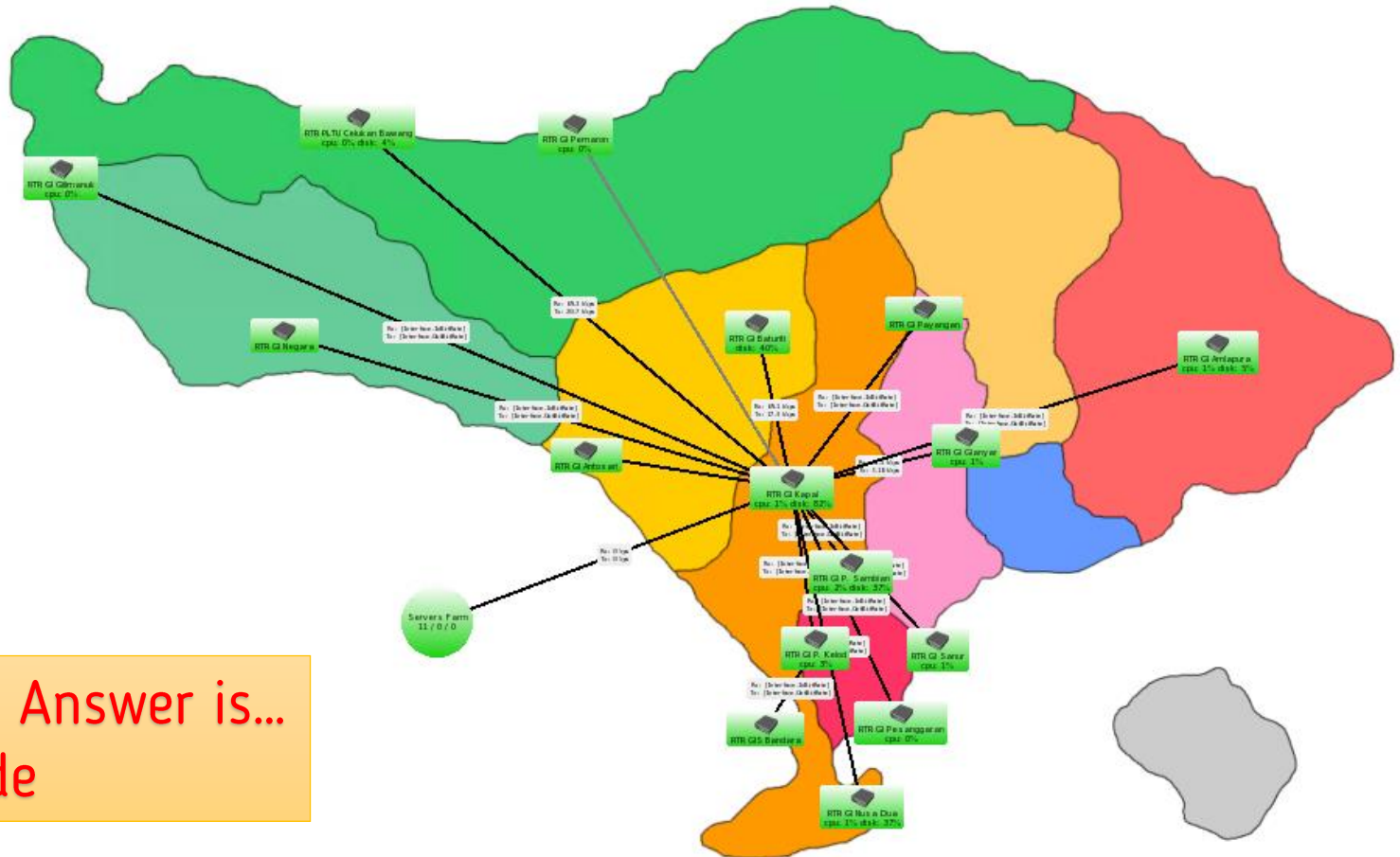
About me

My Name :
Rizky Agung Pratama

- Graduated from Diploma Electrical Engineering, Gadjah Mada University
- Learn Mikrotik since 2012
- Blogger at MikrotikIndo.blogspot.com since 2013
- Work as IT Analyst at Government Corp since 2014

The Background

- I work for electrical company who has a lot of Intelligent Electrical Devices (IED).
- Most of them are connected and monitored via Network (IP Based).
- I need a simple application to monitor the status of those devices and notify about their status changes.



And the Answer is...
The Dude

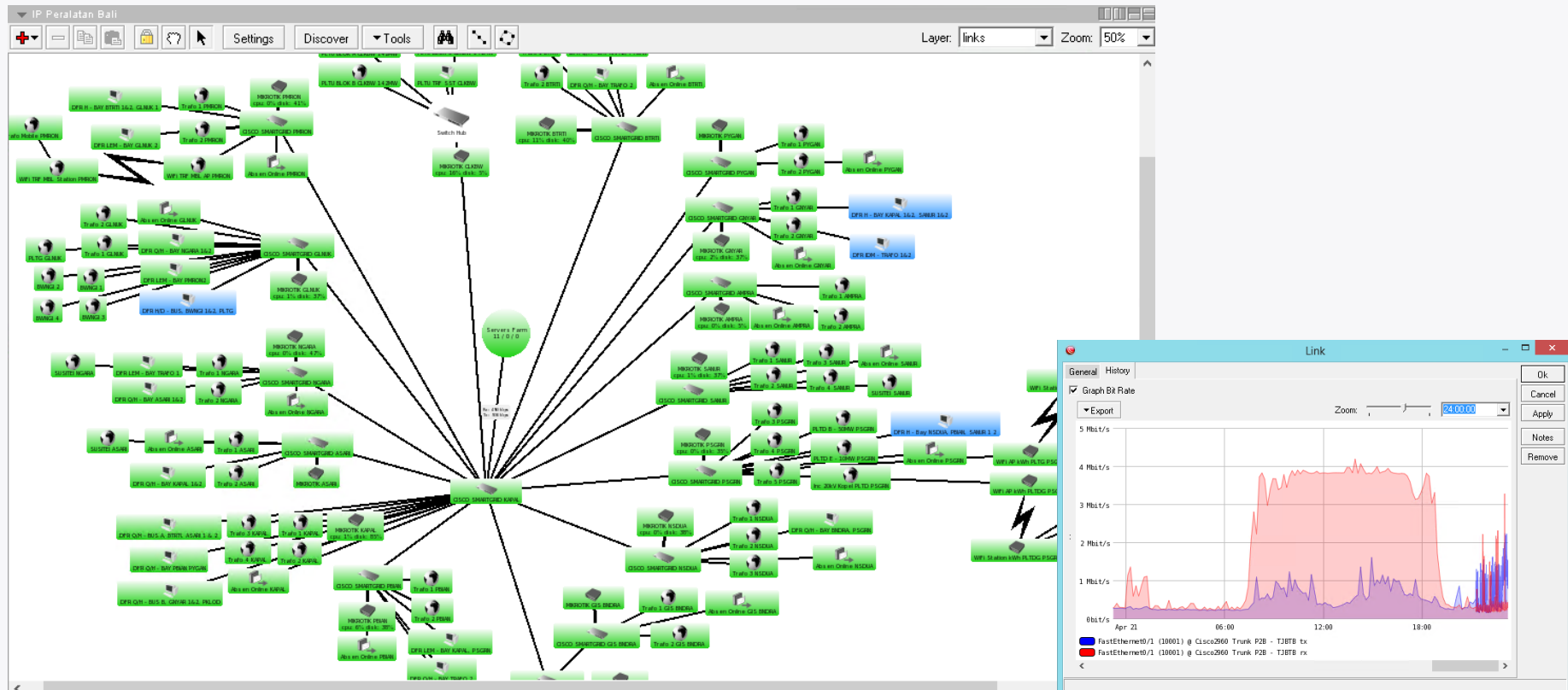
An Introduction

What is The Dude?

The Dude is a free application by MikroTik, which can dramatically improve the way you manage your network environment.

It will automatically scan all devices within specified subnets, draw and layout a map of your networks, monitor services of your devices and execute actions based on device Status changes.

wiki.mikrotik.com



What we Need?

Software & Hardware we need to integrating SMS Notification on The Dude



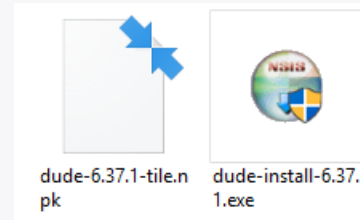
1. Mikrotik device which capable to Install The Dude Server



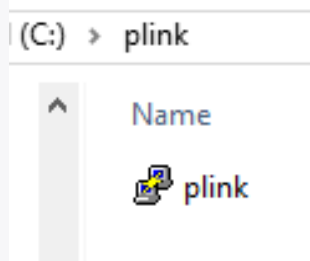
2. PC as The Dude Client



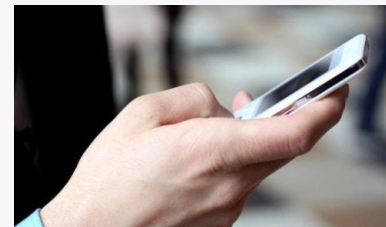
3. USB Modem (Supported by RouterOS)



4. The Dude Installation file



5. Plink SSH Software (Free)



6. Some SMS Package

SMS Notification Integration on The Dude Version 6.37.1

The Dude Server Installation

1. Download The Dude Server package from Mikrotik.com
2. Make sure you download the dude as same version of your RouterOS

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	6.34.6 (Bugfix only)	6.37.1 (Current)	5.26 (Legacy)	6.38rc10 (Release candidate)
MIPSBE	CRS, NetBox, NetMetal, PowerBox, QRT, RB9xx, hAP, mAP, RB4xx, cAP, hEX, wAP, BaseBox, DynaDish, RB2011, SXT, OmniTik, Groove, Metal, Sextant, RB7xx			
Main package				
Extra packages				
SMIPS	hAP lite			
Main package			-	
Extra packages			-	
TILE	CCR			
Main package			-	
Extra packages			-	
The Dude server			-	
PPC	RB3xx, RB600, RB8xx, RB1xxx			
Main package				
Extra packages				

The Dude Client Installation

1. Download The Dude Client installation file from Mikrotik.com
2. Make sure you download The Dude Client as same as The Dude Server version

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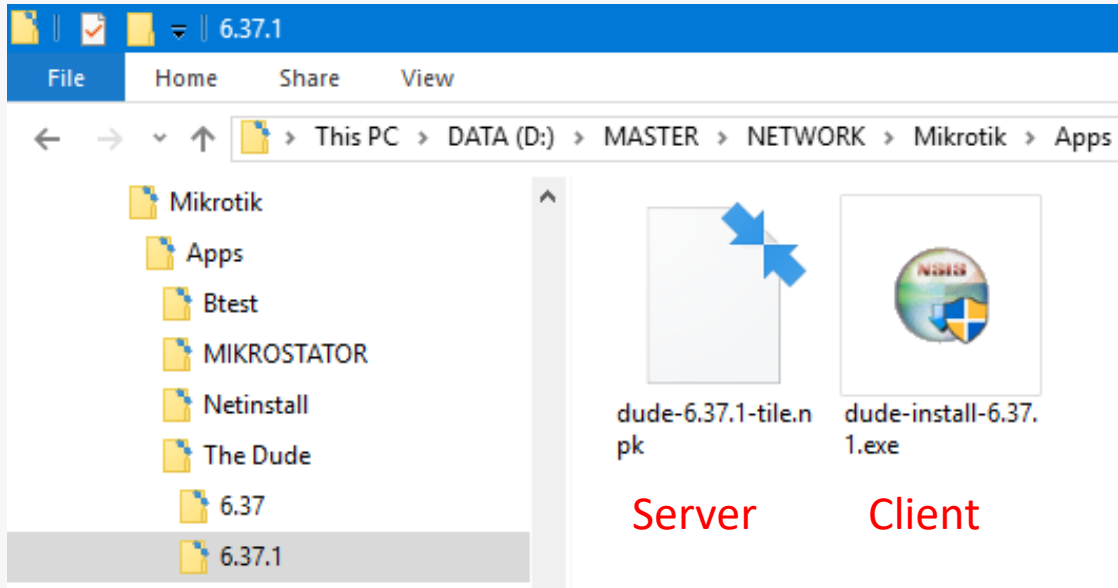
GENERAL

[Netinstall](#)[The Dude client](#)

-

[Changelog](#)[MD5](#)

The Dude Installation Files



System requirements for server package

RouterOS:
v6.34rc13 or newer

Hardware:

- MikroTik CCR series hardware
- MikroTik RB3011
- RouterOS x86 installations
- RouterOS CHR environment

The Dude Server Installation

3. Copy the .npk file to Mikrotik Device → Reboot
4. Make Sure The Dude package has installed → open System -> Packages

The screenshot displays the Mikrotik WinBox interface during the installation of the Dude package. It features three overlapping windows:

- Package List (Top):** Shows a list of installed packages. The 'dude' package is highlighted with a red box. The table below shows the installed packages:
- File List (Middle):** Shows the files being uploaded. The file 'dude-6.37.1.tile.npk' is selected and highlighted with a red box. An orange 'Upload' button is visible above the list.
- Package List (Bottom):** Shows the list of installed packages after the upload. The 'dude' package is highlighted with a red box. An orange 'Reboot' button is visible above the list.

A red arrow points from the 'dude-6.37.1.tile.npk' file in the File List window to the 'dude' package in the Package List window, indicating the successful installation of the package.

Name	Version	Build Time	Scheduled
advanced-tools	6.37.1	Sep/30/2016 10:28:41	
calea	6.37.1	Sep/30/2016 10:28:41	
dhcp	6.37.1	Sep/30/2016 10:28:41	
gps	6.37.1	Sep/30/2016 10:28:41	
hotspot	6.37.1	Sep/30/2016 10:28:41	
ipv6	6.37.1	Sep/30/2016 10:28:41	
mpls	6.37.1	Sep/30/2016 10:28:41	
multicast	6.37.1	Sep/30/2016 10:28:41	
ntp	6.37.1	Sep/30/2016 10:28:41	
openflow	6.37.1	Sep/30/2016 10:28:41	
ppp	6.37.1	Sep/30/2016 10:28:41	
routing	6.37.1	Sep/30/2016 10:28:41	
security	6.37.1	Sep/30/2016 10:28:41	
system	6.37.1	Sep/30/2016 10:28:41	
ups	6.37.1	Sep/30/2016 10:28:41	
user-manager	6.37.1	Sep/30/2016 10:28:41	
wireless	6.37.1	Sep/30/2016 10:28:41	

Name	Version	Build Time	Scheduled
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gps	6.37.1	Sep/30/2016 10:28:41	
hotspot	6.37.1	Sep/30/2016 10:28:41	
ipv6	6.37.1	Sep/30/2016 10:28:41	
mpls	6.37.1	Sep/30/2016 10:28:41	
multicast	6.37.1	Sep/30/2016 10:28:41	
ntp	6.37.1	Sep/30/2016 10:28:41	
openflow	6.37.1	Sep/30/2016 10:28:41	
ppp	6.37.1	Sep/30/2016 10:28:41	
routing	6.37.1	Sep/30/2016 10:28:41	
security	6.37.1	Sep/30/2016 10:28:41	
system	6.37.1	Sep/30/2016 10:28:41	
ups	6.37.1	Sep/30/2016 10:28:41	
user-manager	6.37.1	Sep/30/2016 10:28:41	
wireless	6.37.1	Sep/30/2016 10:28:41	

Run The Dude Server

Open the Terminal input the following Command :

Enable The Dude Server :

dude set enabled=yes

Check Whether The Dude Running or not:

dude print

```
Terminal
MMM      MMM      KKK      TTTTTTTTTT      KKK
MMMM     MMMM     KKK      TTTTTTTTTT      KKK
MMM MMMM MMM III KKK KKK RRRRRR 000000 TTT III KKK KKK
MMM MM  MMM III KKKKK RRR RRR 000 000 TTT III KKKKK
MMM     MMM III KKK KKK RRRRRR 000 000 TTT III KKK KKK
MMM     MMM III KKK KKK RRR RRR 000000 TTT III KKK KKK

MikroTik RouterOS 6.37.1 (c) 1999-2016      http://www.mikrotik.com/

[?]          Gives the list of available commands
command [?]  Gives help on the command and list of arguments

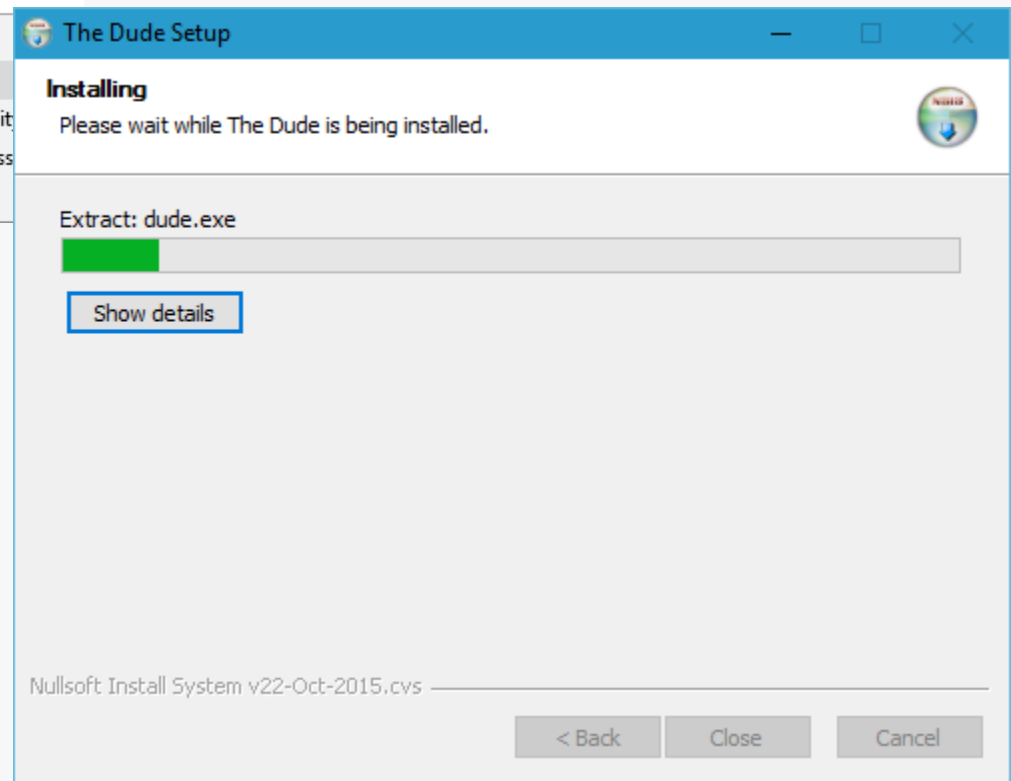
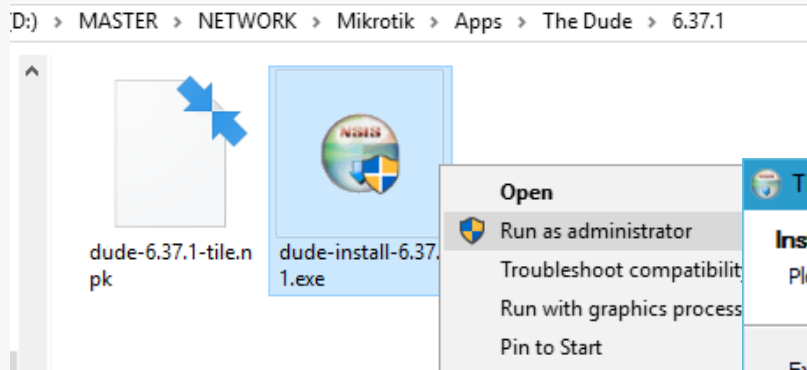
[Tab]        Completes the command/word. If the input is ambiguous,
              a second [Tab] gives possible options

/            Move up to base level
..           Move up one level
/command     Use command at the base level
[rizky@ROUTER_APPBALI] > dude set enabled=yes
[rizky@ROUTER_APPBALI] > dude print
              enabled: yes
              data-directory: dude
              status: running
[rizky@ROUTER_APPBALI] >
```

The Dude Server is now Running

The Dude Client Installation

3. Install the .exe file to your PC



The Dude Client Installation

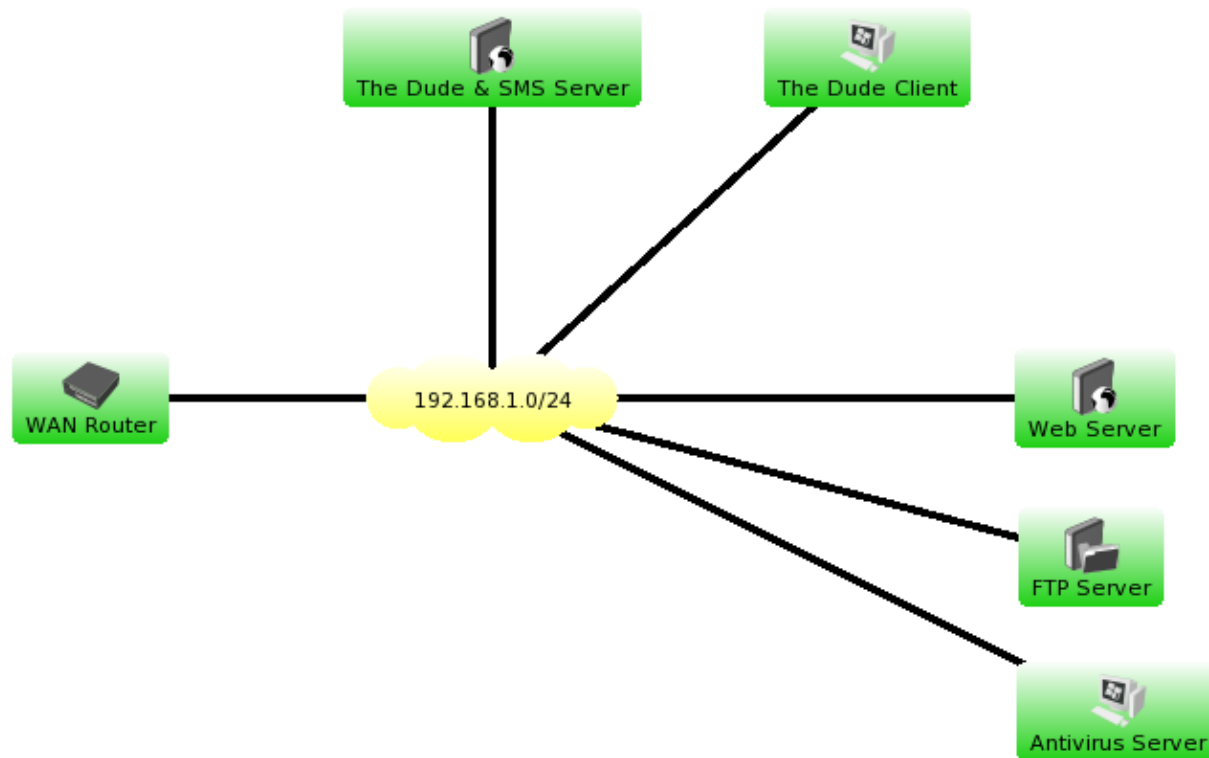
4. After the installation → Open The Dude Application
5. Fill in The Dude Server IP Address → Click Connect

The screenshot shows the 'The Dude' application window. The title bar reads 'not connected - The Dude 6.37.1'. The interface includes a menu bar with 'Preferences' and 'Help'. A status bar at the top right says 'HOTSPOT CONTROLLERS -> WWW'. The main area contains fields for 'Server' (192.168.1.1), 'Mode' (radio buttons for 'plain' and 'secure'), 'Port' (8291), 'User Name' (rizky), 'Password' (masked with asterisks), a checked 'Remember Password' checkbox, and a 'Comment' field. To the right of these fields are 'Connect', 'Save', and 'Remove' buttons. Below the fields is a table with columns 'Address', 'User Name', and 'Comment'. The status bar at the bottom shows 'Client: rx 0 bps / tx 0 bps' and 'disconnected'.

Address	User Name	Comment
---------	-----------	---------

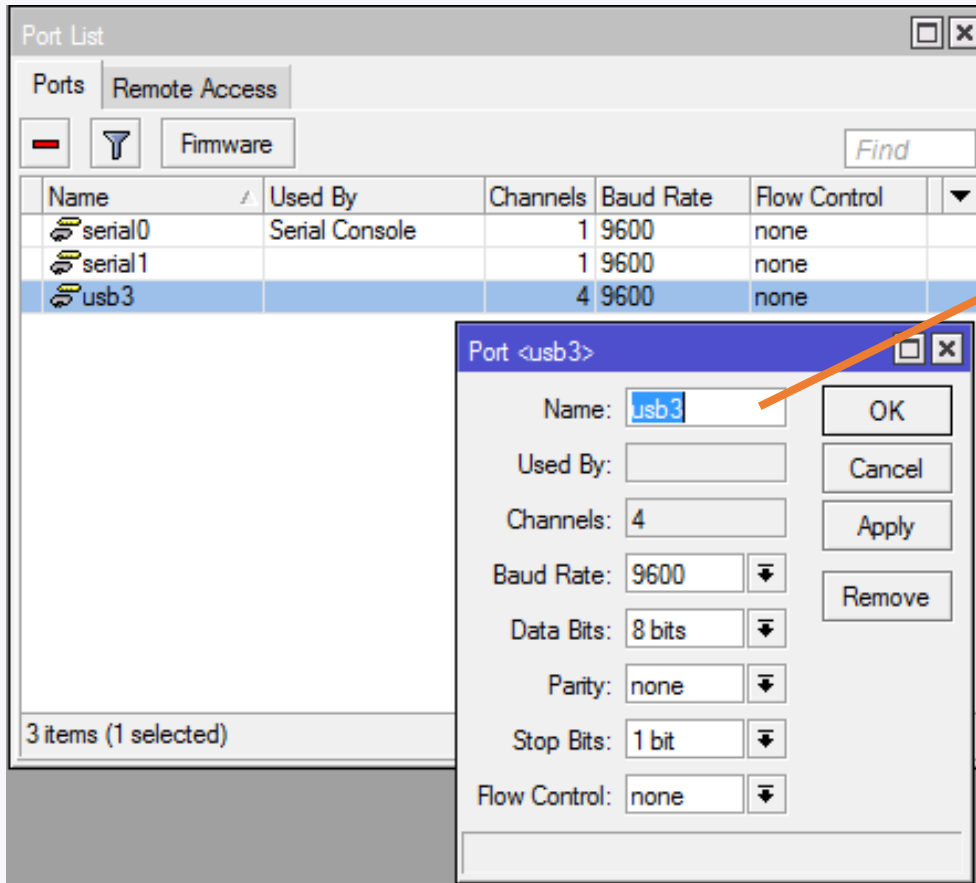
Build Your Own Network Map

1. Once you connected The Dude Client to The Dude Server, Build your own Network Map
2. You can add your devices manually or just scan it using Discover Tool



Set up The USB Modem

1. Plug in your USB Modem to one of the Mikrotik CCR USB Ports
2. Check whether Mikrotik CCR detect your USB Modem or not
3. Go to menu System → Ports

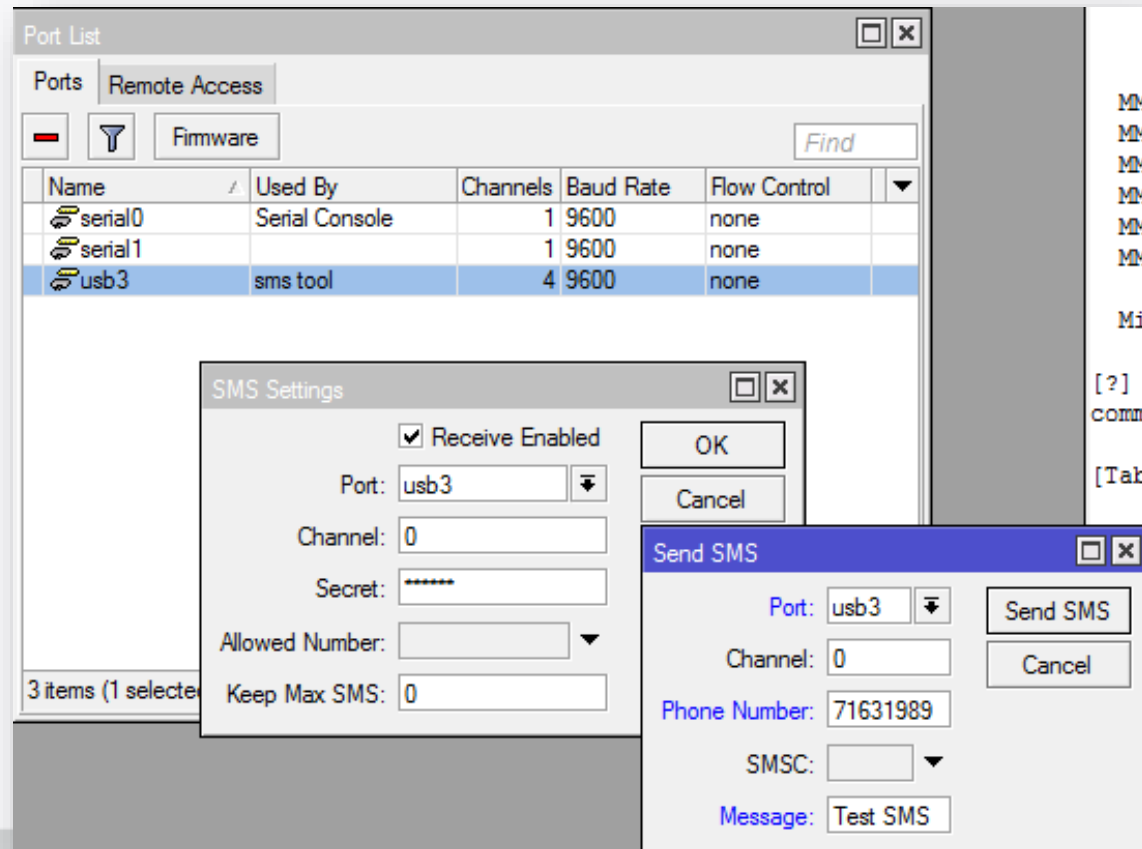


The USB Modem has been Detected and Installed by RouterOS

Set up The SMS

We need to make sure The USB Modem can be used to Send SMS

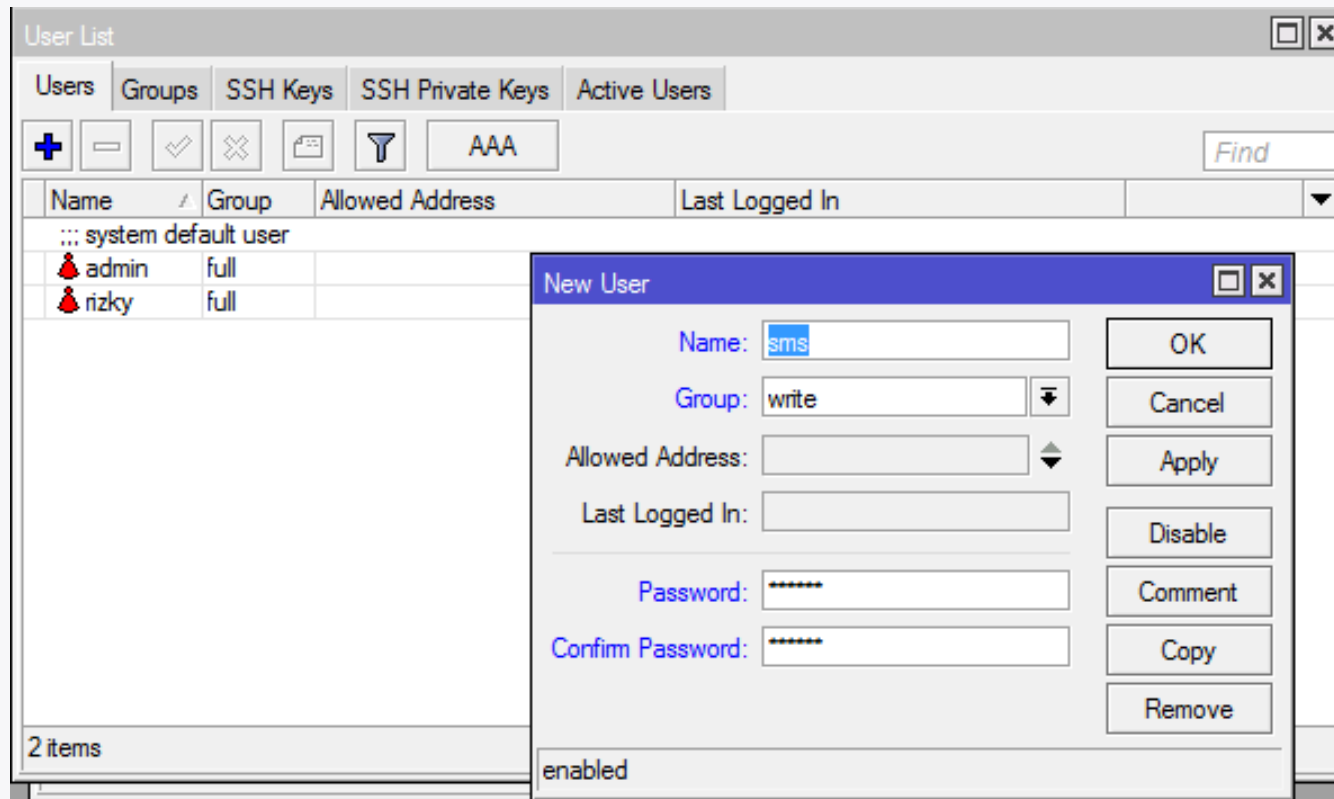
1. Go to menu Tools → SMS → Choose the USB Port used by USB Modem → tick Receive Enabled → Apply
2. Send a SMS Message → Click Send SMS → Choose Port, fill in the phone number you want to send SMS, & fill in the Message → Click Send SMS
3. Check your phone



Add a New User for SMS

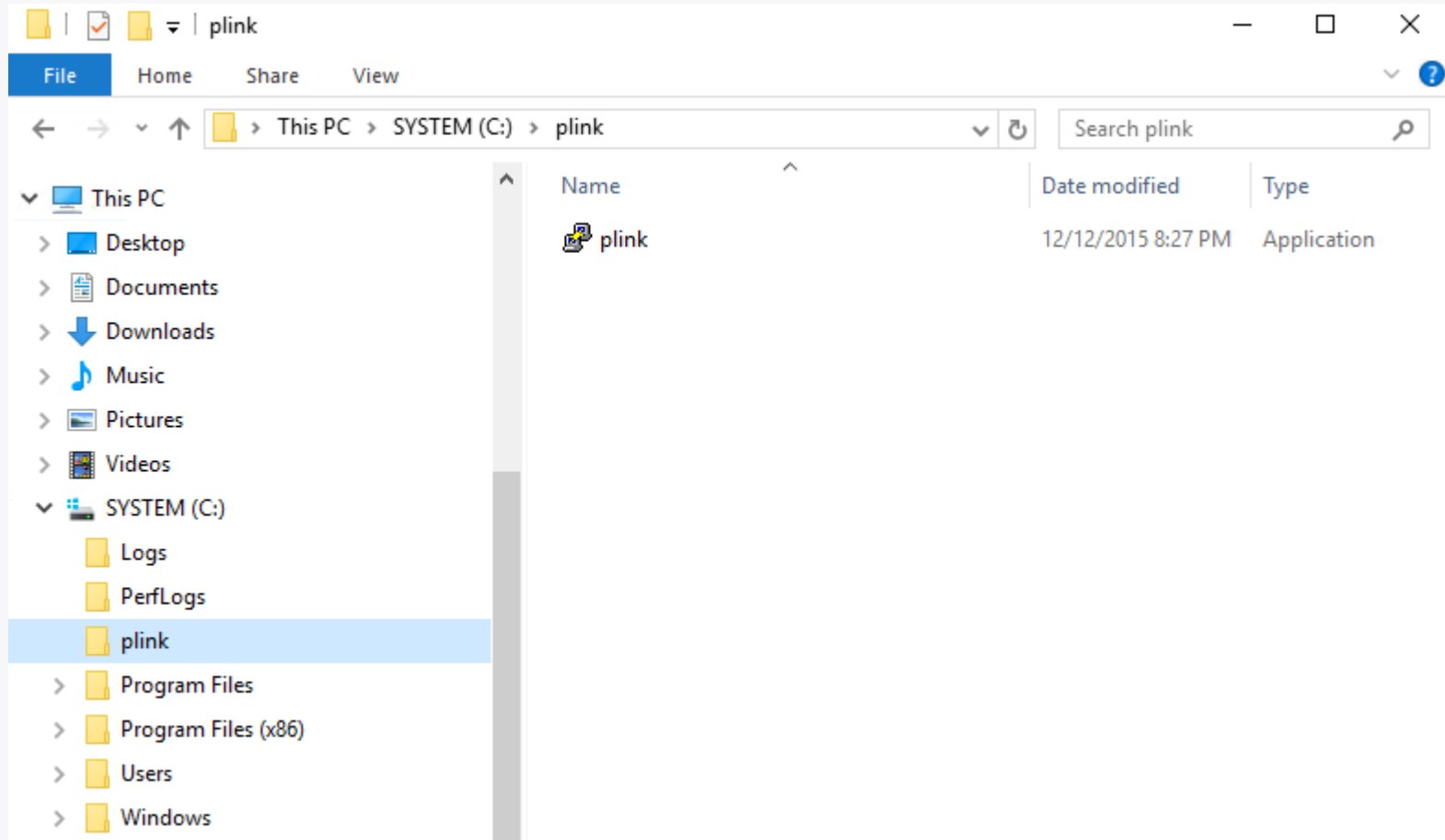
We need to add a dummy user for SSH login to send SMS Message

1. Open Menu System → Users
2. Add a New User with **write** group & don't forget to set the password



The Integration Configurations

1. Download Plink SSH Application. We can download it here :
<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>
2. Copy plink.exe to directory c:\plink

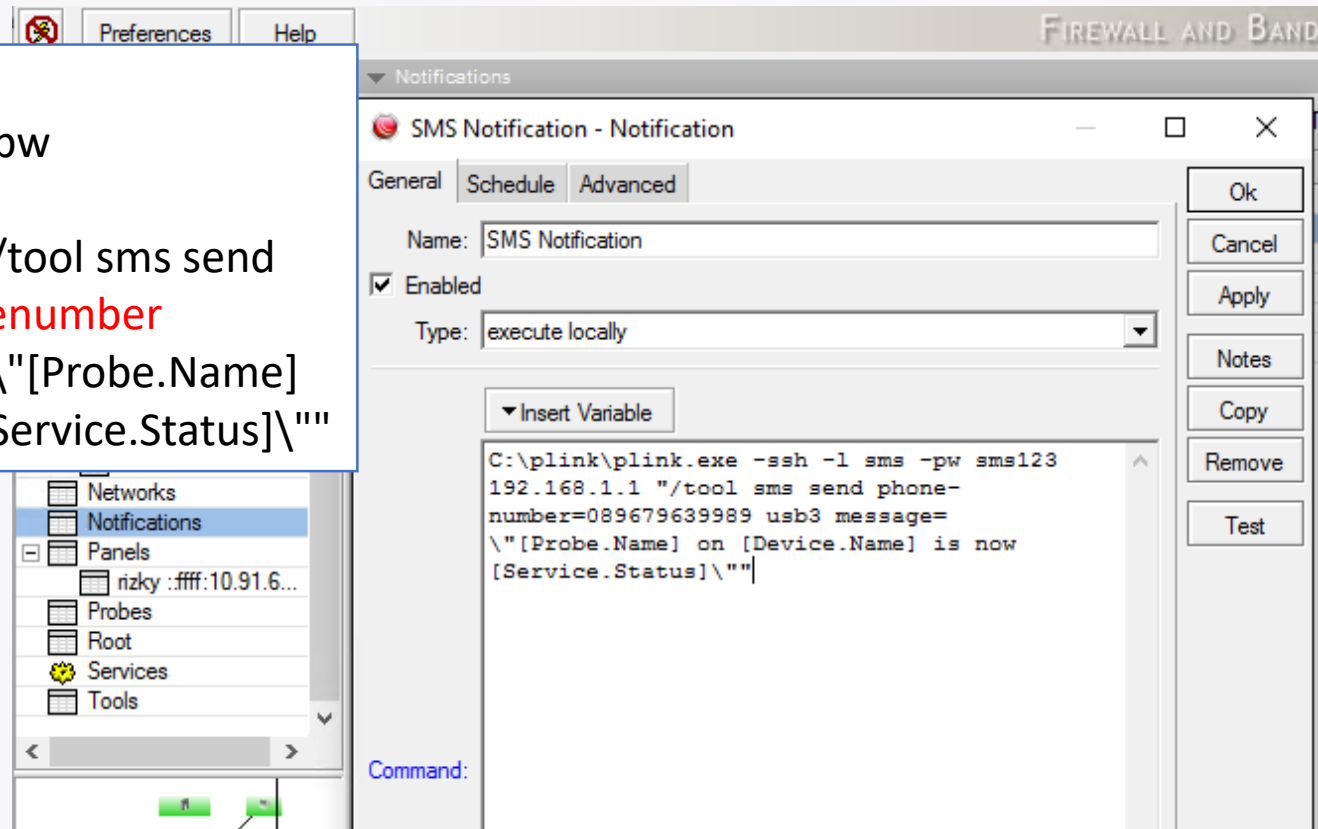


The Integration Configurations

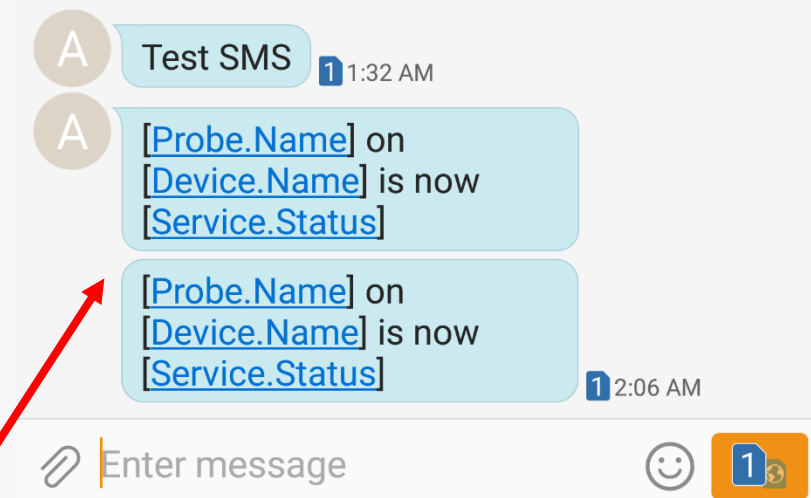
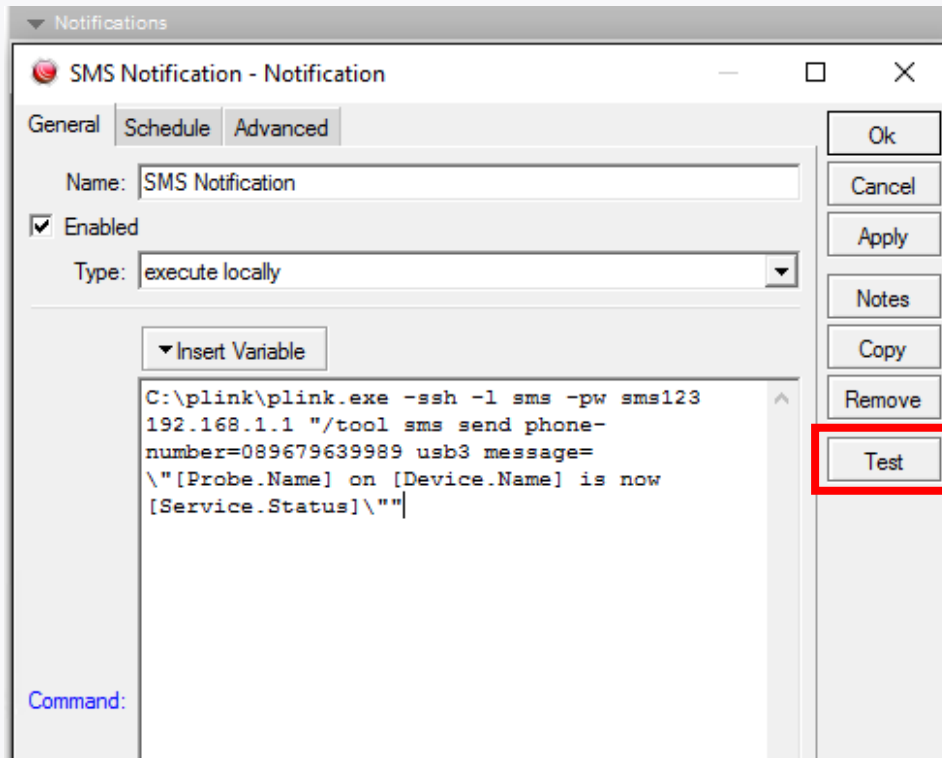
3. Open The Dude → Go to menu Notifications → Add New Notification

4. Fill in the Name → Tick Enabled → Type : execute locally → Fill in the following command :

```
C:\plink\plink.exe -ssh -l  
mikrotik_sms_username -pw  
mikrotik_sms_password  
mikrotik_sms_ipaddress "/tool sms send  
phone-number=yourphonenumber  
usbportnumber message=\"[Probe.Name]  
on [Device.Name] is now [Service.Status]\""
```



Test SMS from The Dude



Apply SMS Notification to Network Map

The screenshot shows the MikrotikIno application interface. On the left is a 'Contents' sidebar with a tree view including Address Lists, Agents, Charts, Devices, Files, Functions, History Actions, Links, Log, Mib Nodes, Network Maps, Networks, Notifications, Panels, Probes, Root, Services, and Tools. The 'Network Maps' folder is expanded, showing 'MikrotikIndo' selected. The main window displays a network map with a central yellow node labeled 'MikrotikIndo' connected to several green nodes. A red arrow points from the 'Settings' button in the top toolbar to the 'Polling' tab in the 'MikrotikIndo - Network Map' dialog box. In the 'Polling' tab, the 'Enabled' checkbox is checked. Below it are three settings: 'Probe Interval' (set to 'default'), 'Probe Timeout' (set to 'default'), and 'Probe Down Count' (set to 'default'). Each has a corresponding timeline slider. The 'Use Notifications' checkbox is checked and highlighted with a red box. A red arrow points from this checkbox to a table of notification options. The table has a 'Name' column and a checkbox column. The 'SMS Notification' row is checked. Below the table, the word 'Notifications:' is followed by a list of options: beep, flash, log to events, log to syslog, and popup.

MikrotikIndo - Network Map

General **Polling** Outages Appearance Background

☒ Enabled

Probe Interval: **default** [Timeline: default, 2s, 5s, 10s, 15s, 1m, 2m, 5m, 15m, 1h, 2h, 3h, 6h, 12h, 1d]

Probe Timeout: **default** [Timeline: default, 2s, 5s, 10s, 15s, 1m, 2m, 5m, 15m, 1h, 2h, 3h, 6h, 12h, 1d]

Probe Down Count: **default** [Timeline: default, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, 20, 25, 50, 100]

☒ Use Notifications

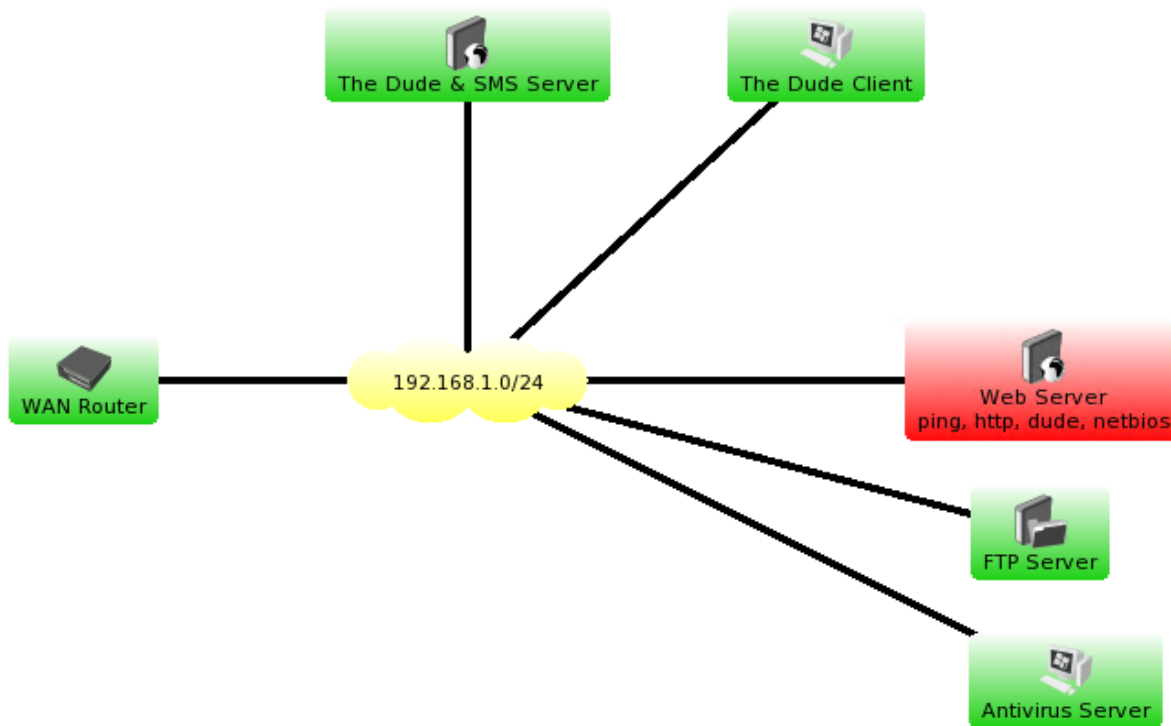
Name	
☒ SMS Notification	
beep	
flash	
log to events	
log to syslog	
popup	

Notifications:

- beep
- flash
- log to events
- log to syslog
- popup

Test The Configuration

Disconnect one of your monitored devices to test the configuration



N

- dude on Web Server is now down
- ping on Web Server is now down
- netbios on Web Server is now down
- http on Web Server is now down

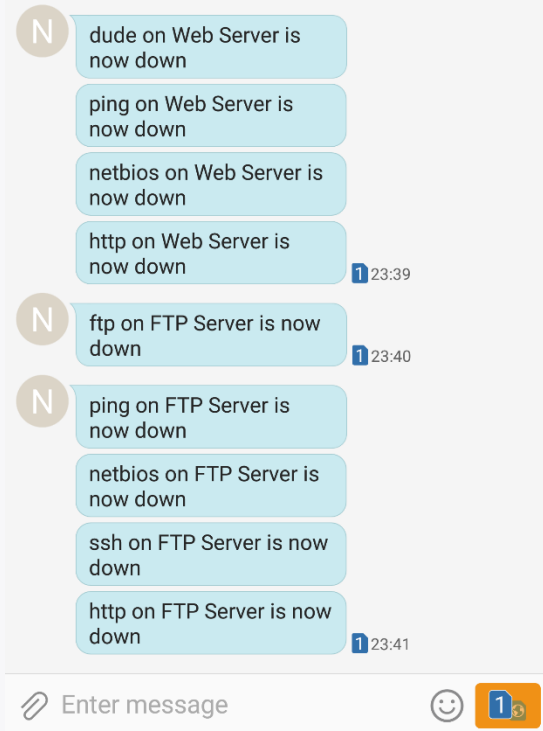
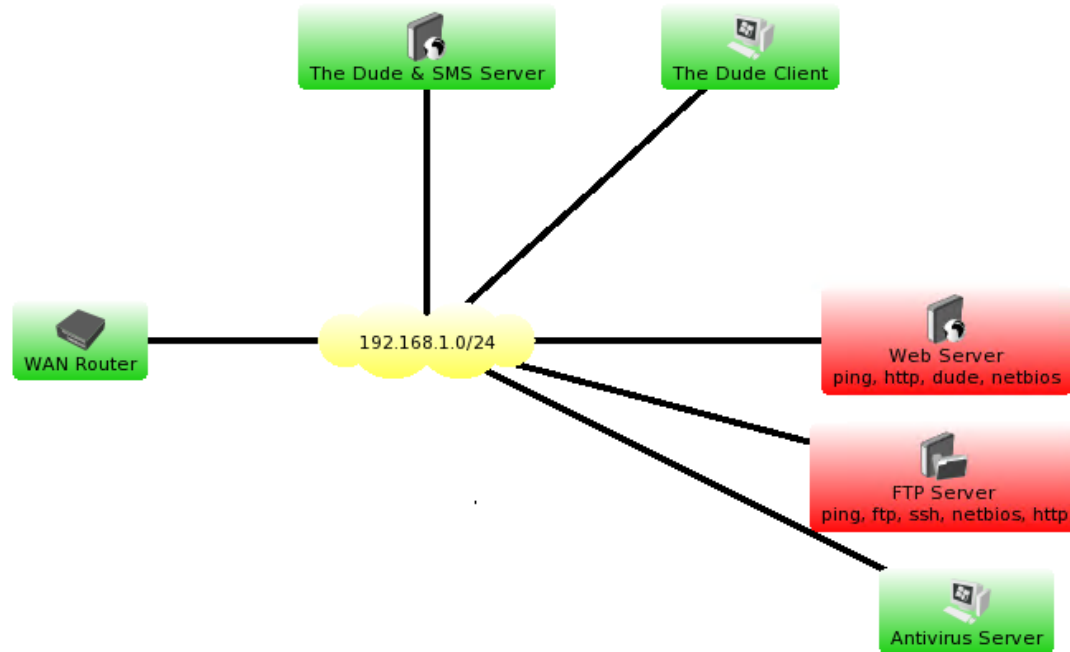
1 23:39

Enter message

1

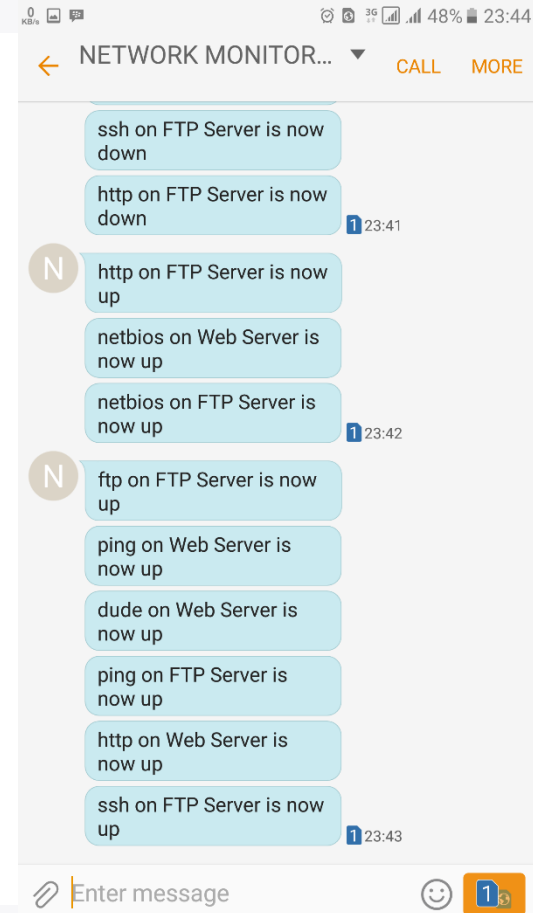
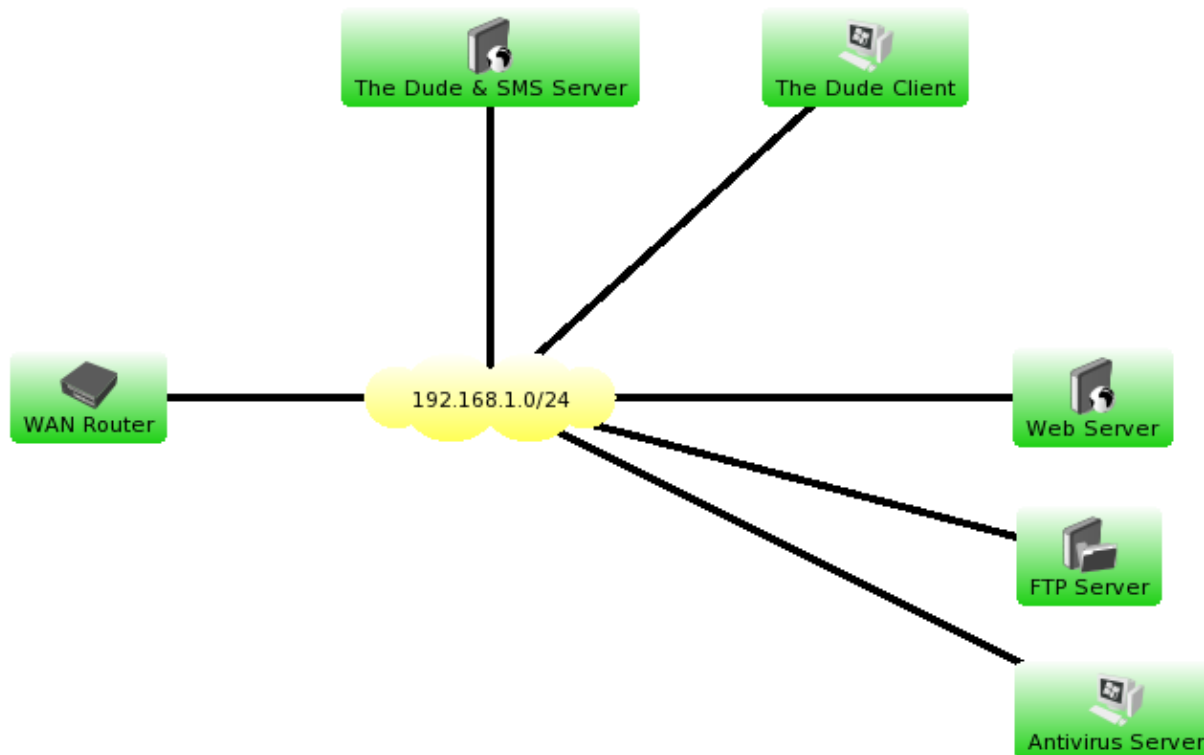
Test The Configuration

When devices you monitor change their Status to down, SMS Message will sent to your phone number



Test The Configuration

When their Status change to up, SMS Message will sent to your phone number



The Polling Options

How long we have to wait until the device we monitored declared as down?

Server Configuration

General SNMP Polling Server Agents Syslog Map Chart Report Discover RouterOS Misc

Service polling defaults

☒ Enabled

Probe Interval: 00:00:30

Probe Timeout: 00:00:10

Probe Down Count: 5

Notifications that are performed on service status changes if not specified on lower level

Name
SMS Notification
beep

Probe Interval :

How often does it query (ping) a specific device.

Probe Timeout :

How long The Dude waits for a reply from a ping or check of a telnet, ssh, or http port before considering it a failed response.

Probe Down Count :

How many failed responses are required before The Dude declares the device as a failed device.

Default configuration is 30 second poll interval with 10 seconds timeout and down count of 5. Therefore, you would have 5 polls at 30 second intervals plus 10 seconds would need to be failed before you see a declaration of a failed device (2 minutes and 40 seconds).

The Polling Options

We can override the Global Server Polling Configuration on Network Map Polling Options or directly on The Device Polling Options.

The image shows two overlapping windows from Mikrotik WinBox. The background window is 'Server Configuration' with the 'Polling' tab selected. The foreground window is 'MikrotikIndo - Network Map' with the 'Polling' tab selected. Both windows have their polling options highlighted with red rectangles.

Server Configuration - Polling Tab:

- ☒ Enabled
- Probe Interval: 00:00:30
- Probe Timeout: 00:00:10
- Probe Down Count: 5

MikrotikIndo - Network Map - Polling Tab:

- ☒ Enabled
- Probe Interval: default
- Probe Timeout: default
- Probe Down Count: 1
- ☒ Use Notifications

Notifications that are pe changes if not specified:

	Name
☐	SMS Notification
☐	beep
☐	flash
☐	log to events
☒	log to syslog
☐	popup

Notifications:

	Name
☒	SMS Notification
☐	beep
☐	flash
☐	log to events
☐	log to syslog
☐	popup

Customization

If you think that Services you monitor are too many, just remove them. Leave the **ping** service alone.

0 KB/s 3G 48% 23:44

← NETWORK MONITOR... CALL MORE

ssh on FTP Server is now down

http on FTP Server is now down 1 23:41

N http on FTP Server is now up

netbios on Web Server is now up

netbios on FTP Server is now up 1 23:42

N

ftp on FTP Server is now up

ping on Web Server is now up

dude on Web Server is now up

ping on FTP Server is now up

http on Web Server is now up

ssh on FTP Server is now up 1 23:43

Enter message

1

Too many services?

FTP Server - Device

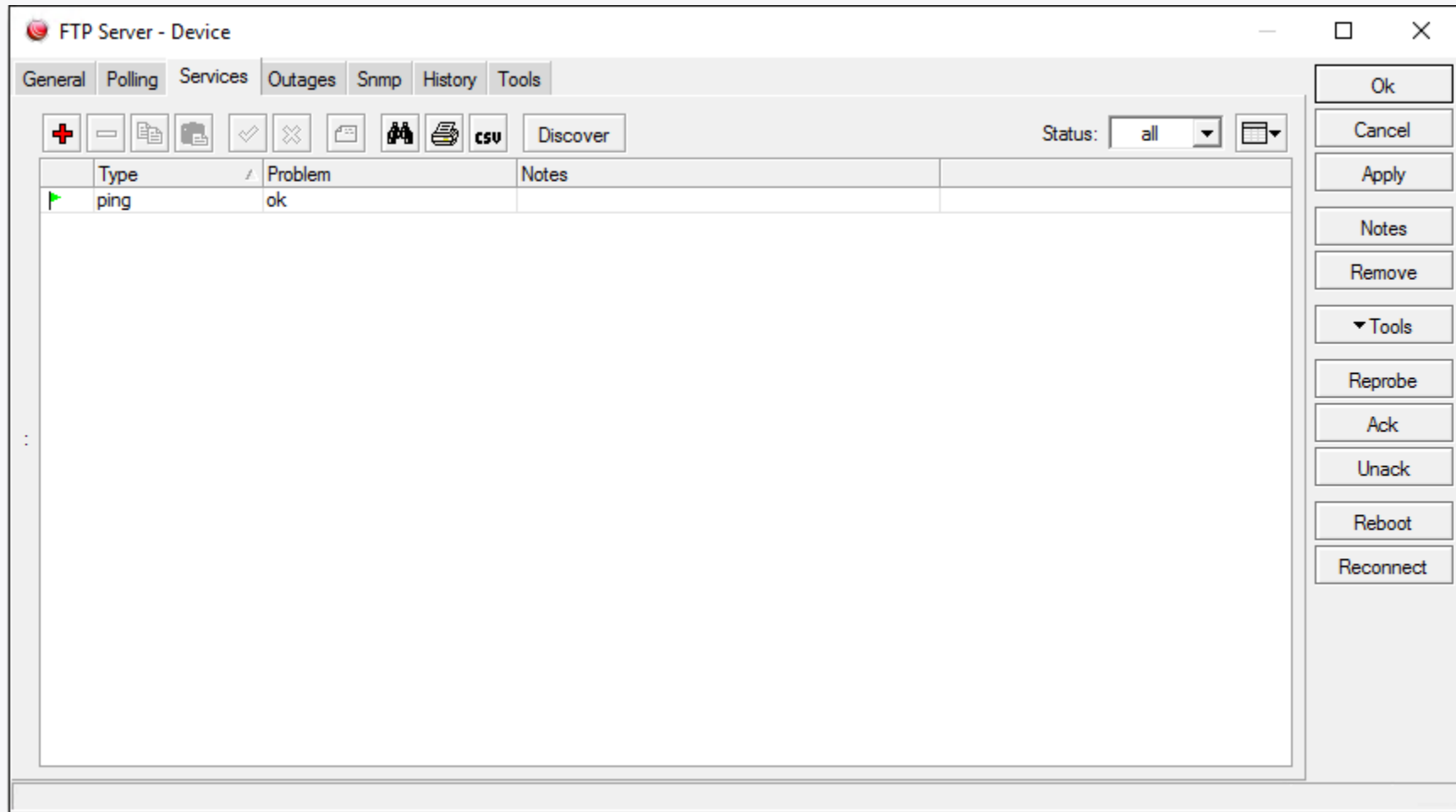
General Polling Services Outages Snmp History Tools

+ - [Icons] Discover

Type	Problem	Notes
ftp	ok X	
http	ok X	
netbios	ok X	
ping	ok ✓	
ssh	ok X	

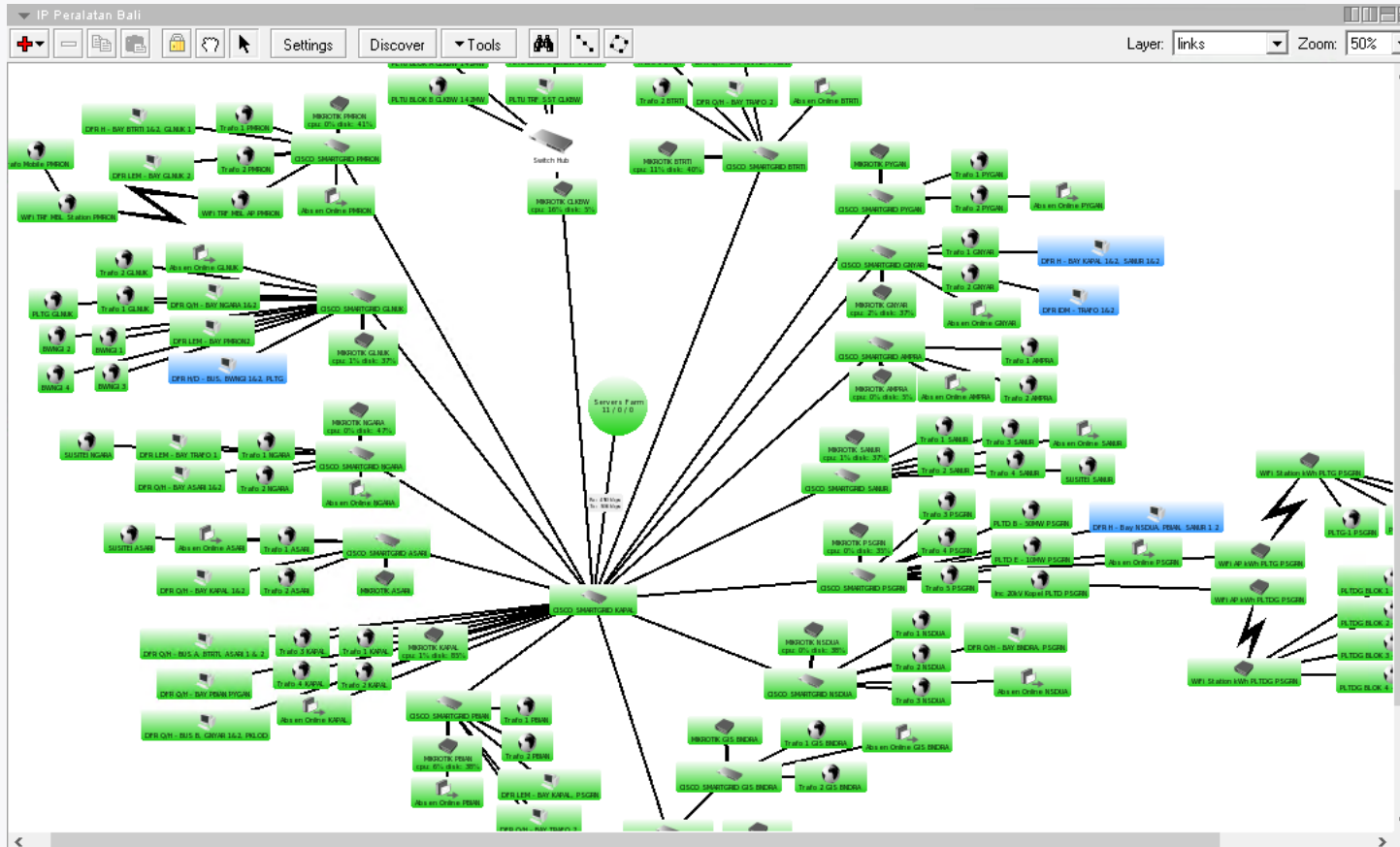
Customization

If you think that Services you monitor are too many, just remove them. Leave the **ping** service alone.



Customization

If you want to monitor a lot of devices, maybe you'll consider to change the SMS Notification with Email Notification



How to do that?? You can find the Tutorial I have wrote here :

<http://mikrotikindo.blogspot.co.id/2015/12/cara-membuat-notifikasi-email-the-dude-mikrotik.html>

Any Question?

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Or Just Email me :
admin@rizkyagung.com

Thanks for Your Attention



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