



SMS Notification Integration for The Dude Network Monitoring System

Integrate on The Dude Version 6.37.1

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by

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The Dude MikroTik

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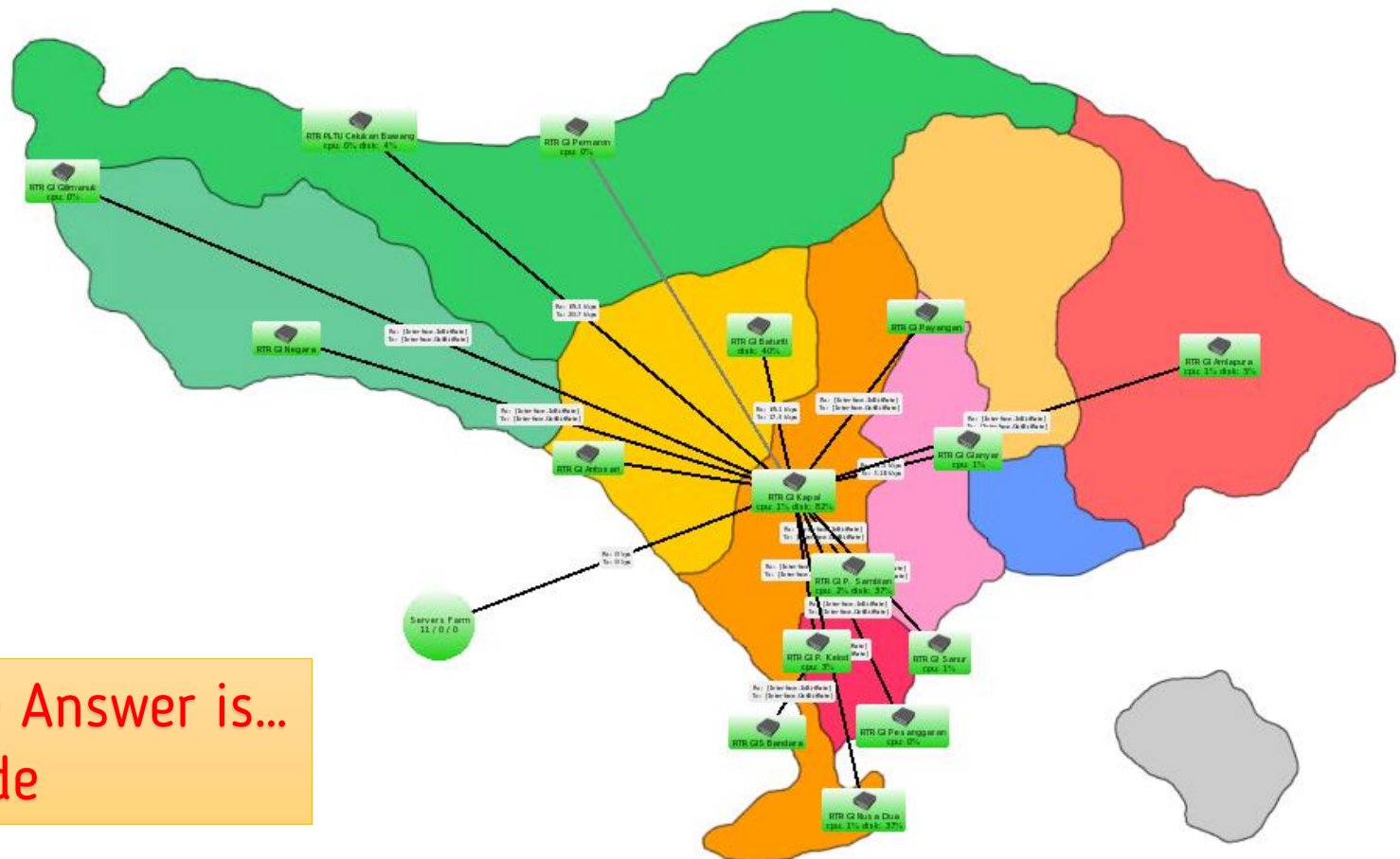
About me

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

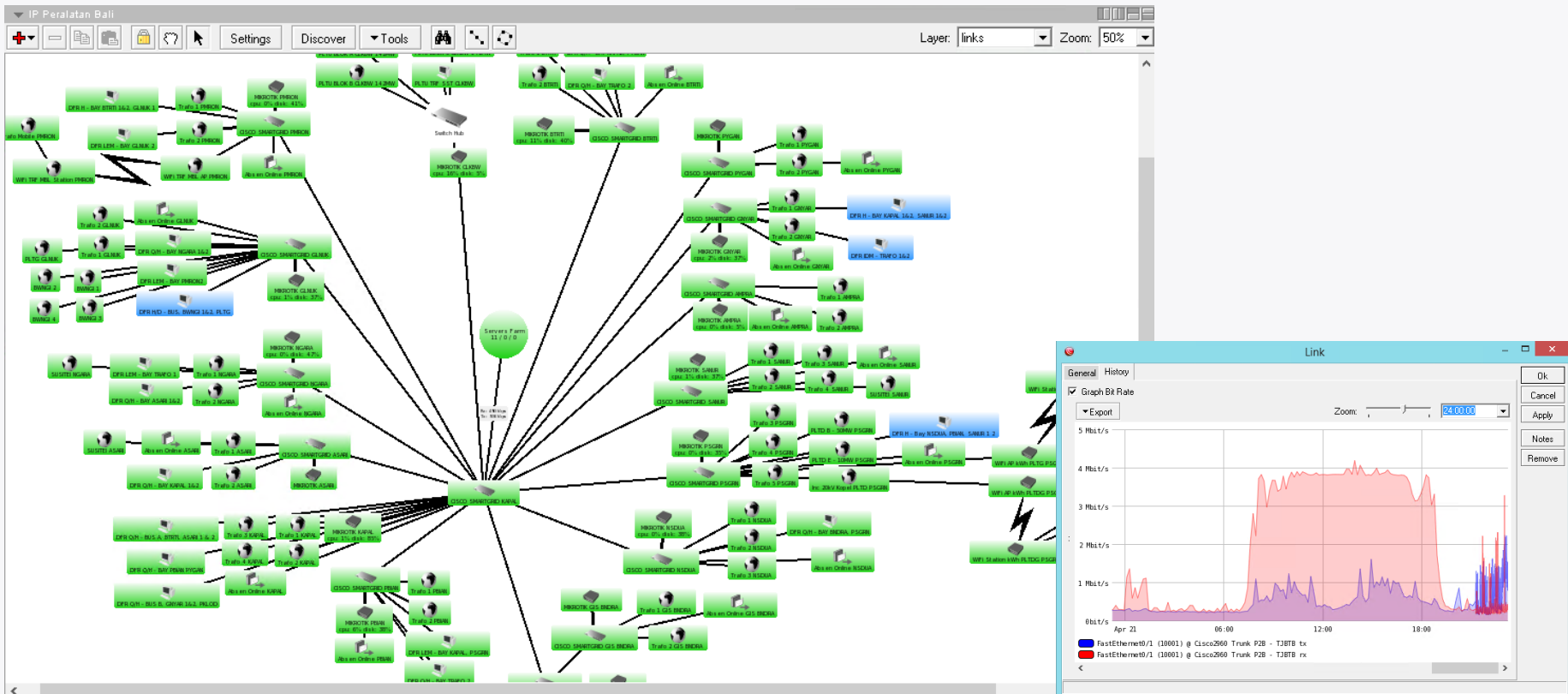
An Introduction

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



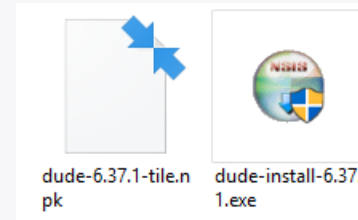
1. Mikrotik device which capable to Install The Dude Server



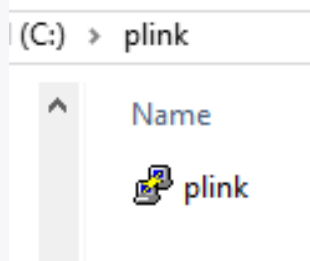
2. PC as The Dude Client



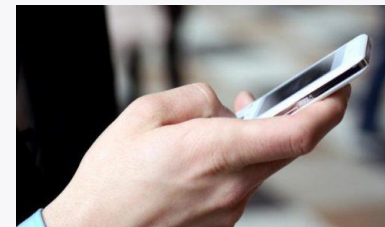
3. USB Modem (Supported by RouterOS)



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

The screenshot shows the Mikrotik website's Downloads section. The 'Downloads' menu item is highlighted with a red box. Below it, there are tabs for 'RouterOS' and 'Download archive'. A table lists various RouterOS versions: 6.34.6 (Bugfix only), 6.37.1 (Current), 5.26 (Legacy), and 6.38rc10 (Release candidate). Under each version, there are links for 'Main package' and 'Extra packages' for different hardware categories: MIPSBE, SMIPS, TILE, and PPC. The 'The Dude server' link under the 6.37.1 (Current) version is highlighted with a red box.

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



Home






Software

Downloads

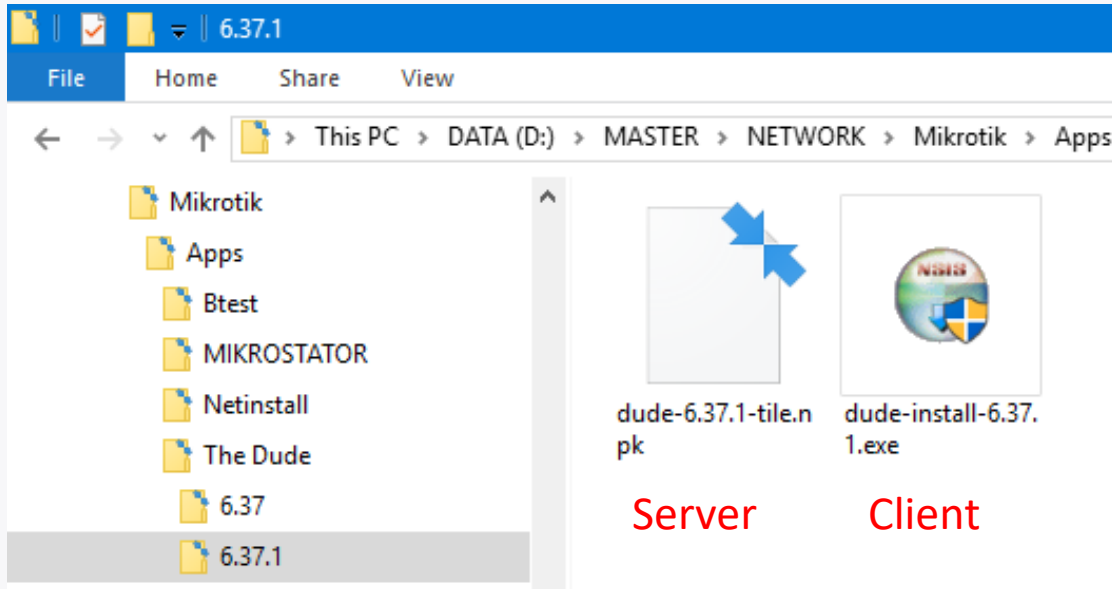
Products

Support

GENERAL

Netinstall				
The Dude client			-	
Changelog				
MD5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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:

- File List:** Shows the local file system. The file `dude-6.37.1.tile.npk` is selected, and an orange **Upload** button is positioned over it.
- Package List:** Shows the installed packages. The `dude` package is highlighted with a red box, indicating it is installed with version 6.37.1.
- System:** An orange **Reboot** button is visible, indicating the system needs to be restarted for the installation to take effect.

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	

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

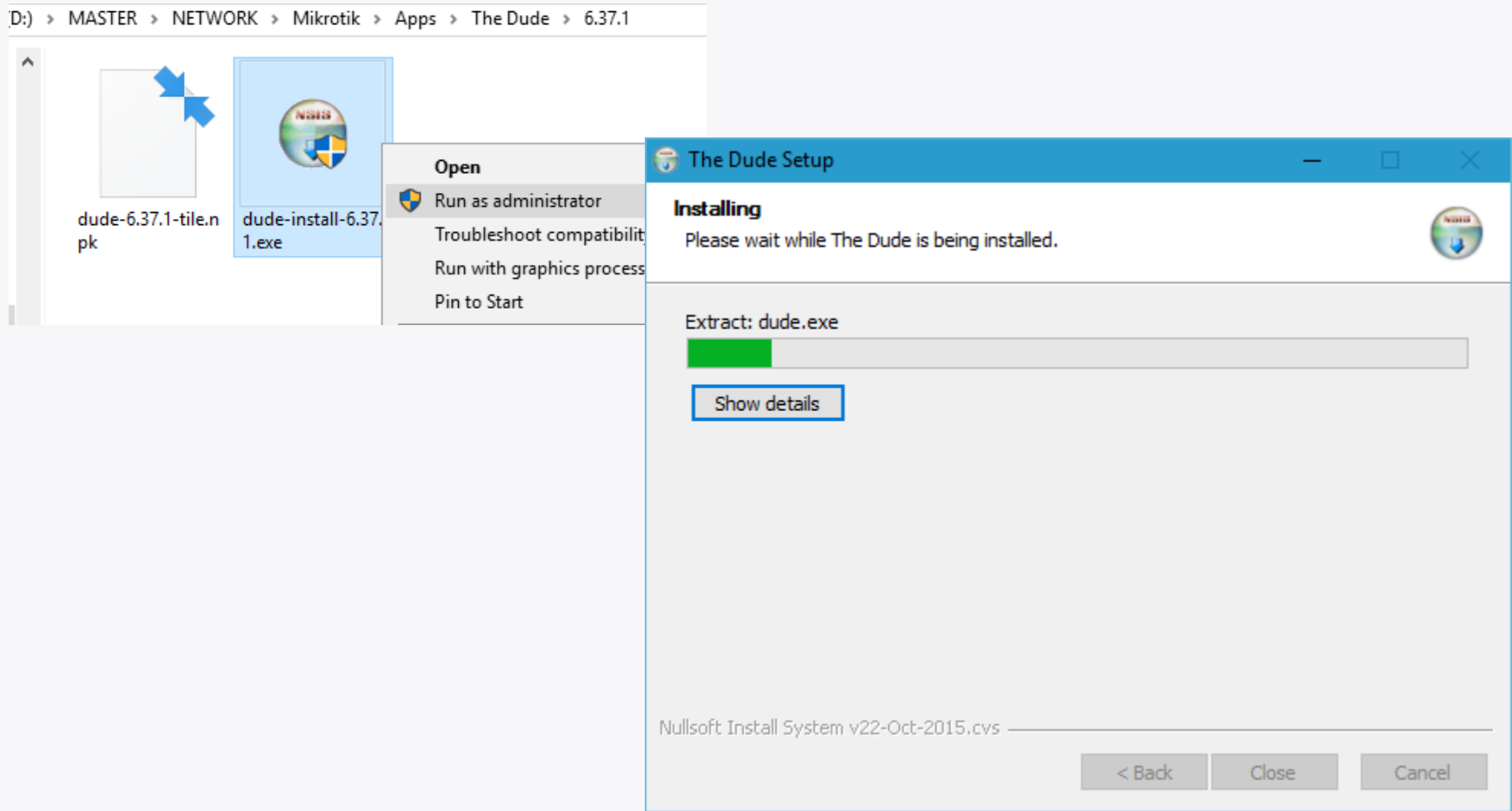
[Tab]       Completes the command/word. If the input is ambiguous,
            a second [Tab] gives possible options

/           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

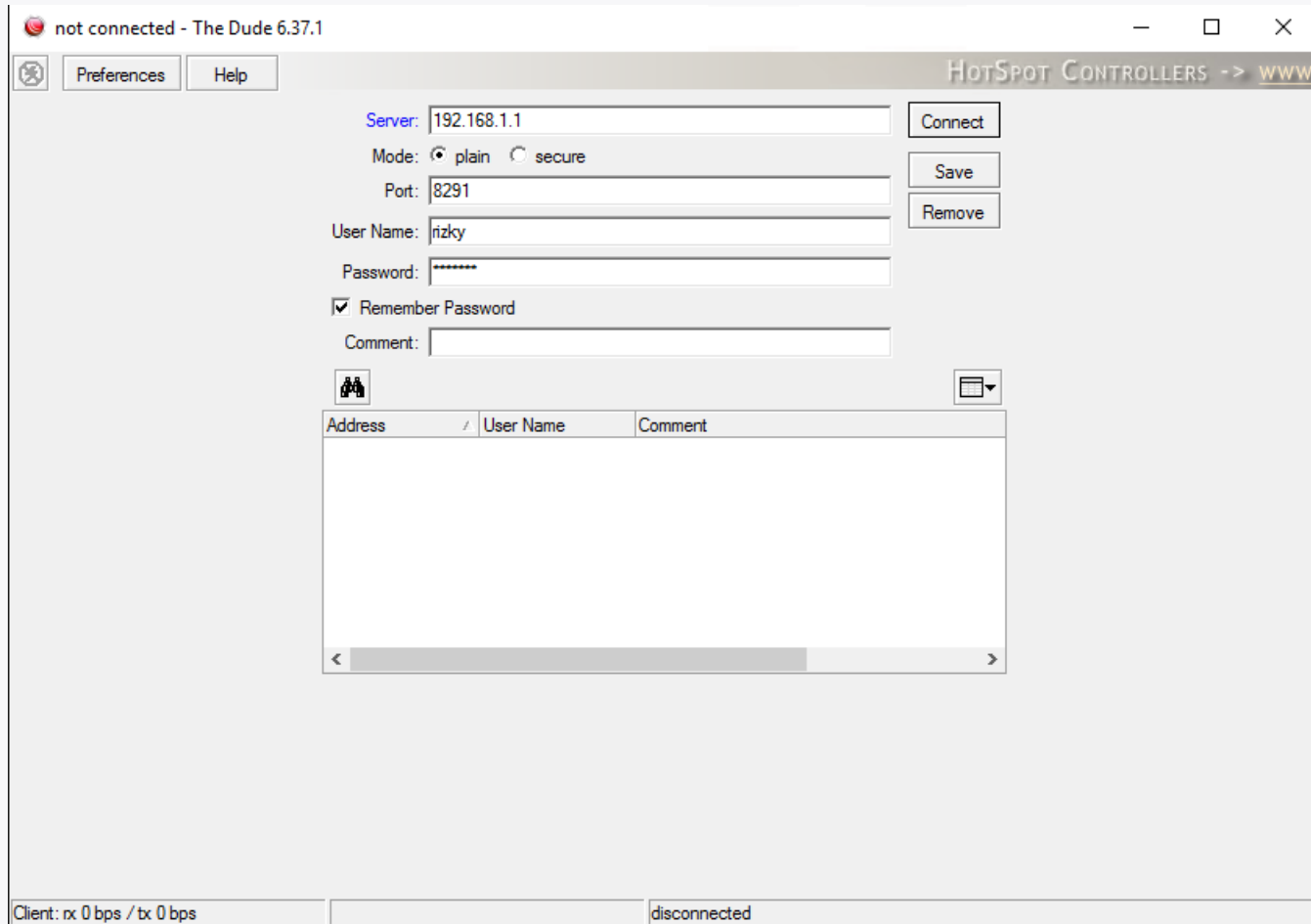
The Dude Client Installation

3. Install the .exe file to your PC



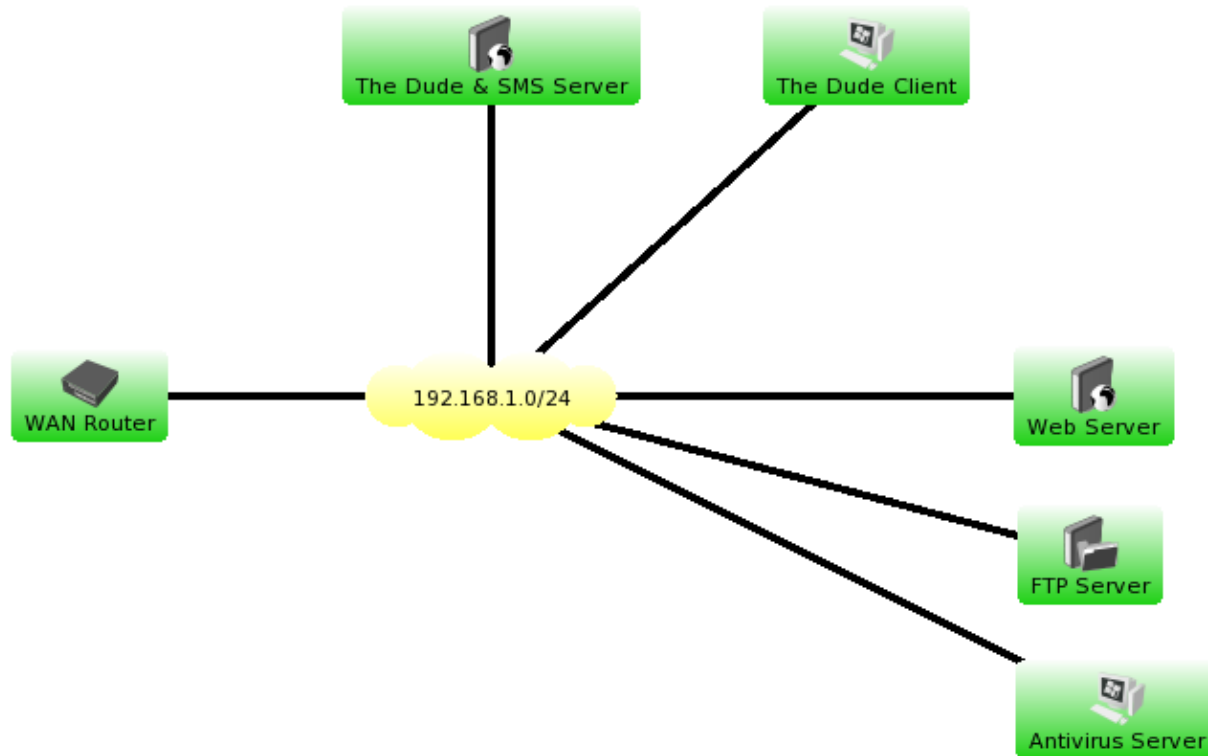
The Dude Client Installation

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



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 screenshot shows the Mikrotik WinBox interface. The 'Port List' window is open, displaying a table of ports. The 'usb3' port is selected. A configuration dialog for 'usb3' is open, showing the following settings:

Name	Used By	Channels	Baud Rate	Flow Control
serial0	Serial Console	1	9600	none
serial1		1	9600	none
usb3		4	9600	none

The configuration dialog for 'usb3' shows the following settings:

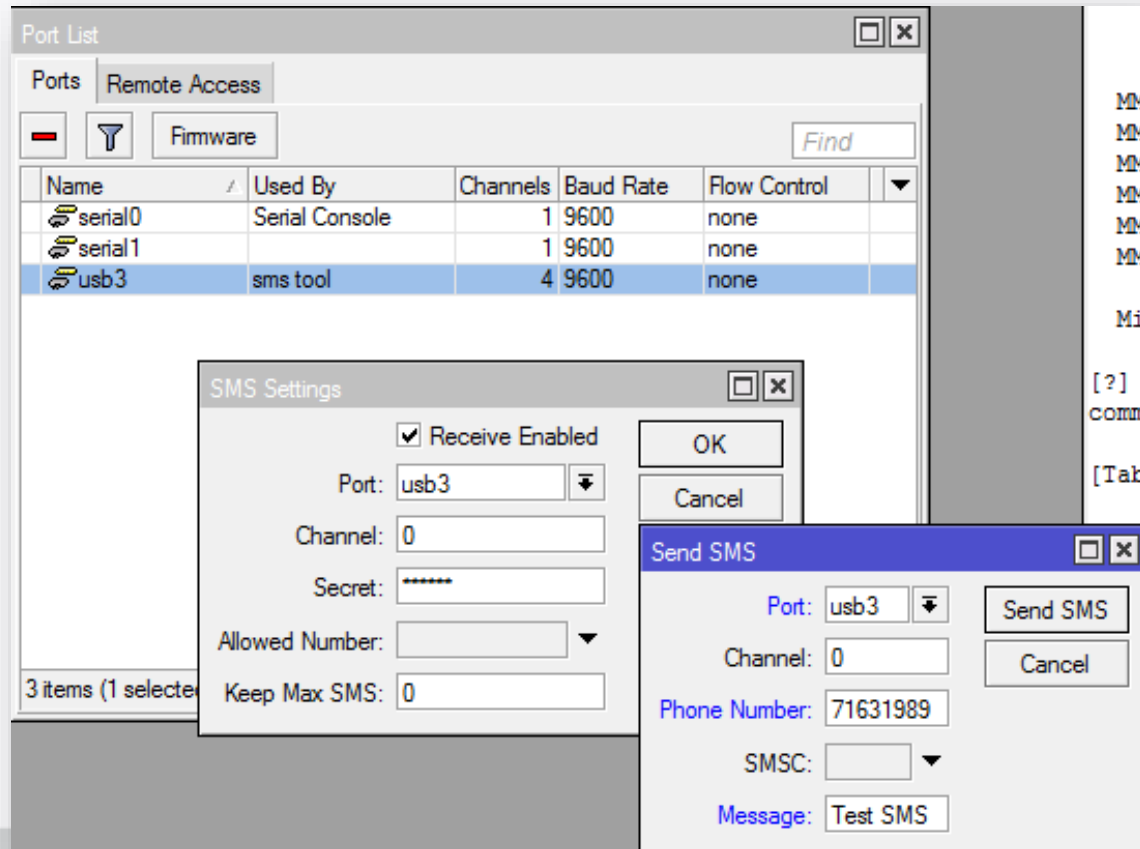
- Name: usb3
- Used By: (empty)
- Channels: 4
- Baud Rate: 9600
- Data Bits: 8 bits
- Parity: none
- Stop Bits: 1 bit
- Flow Control: none

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

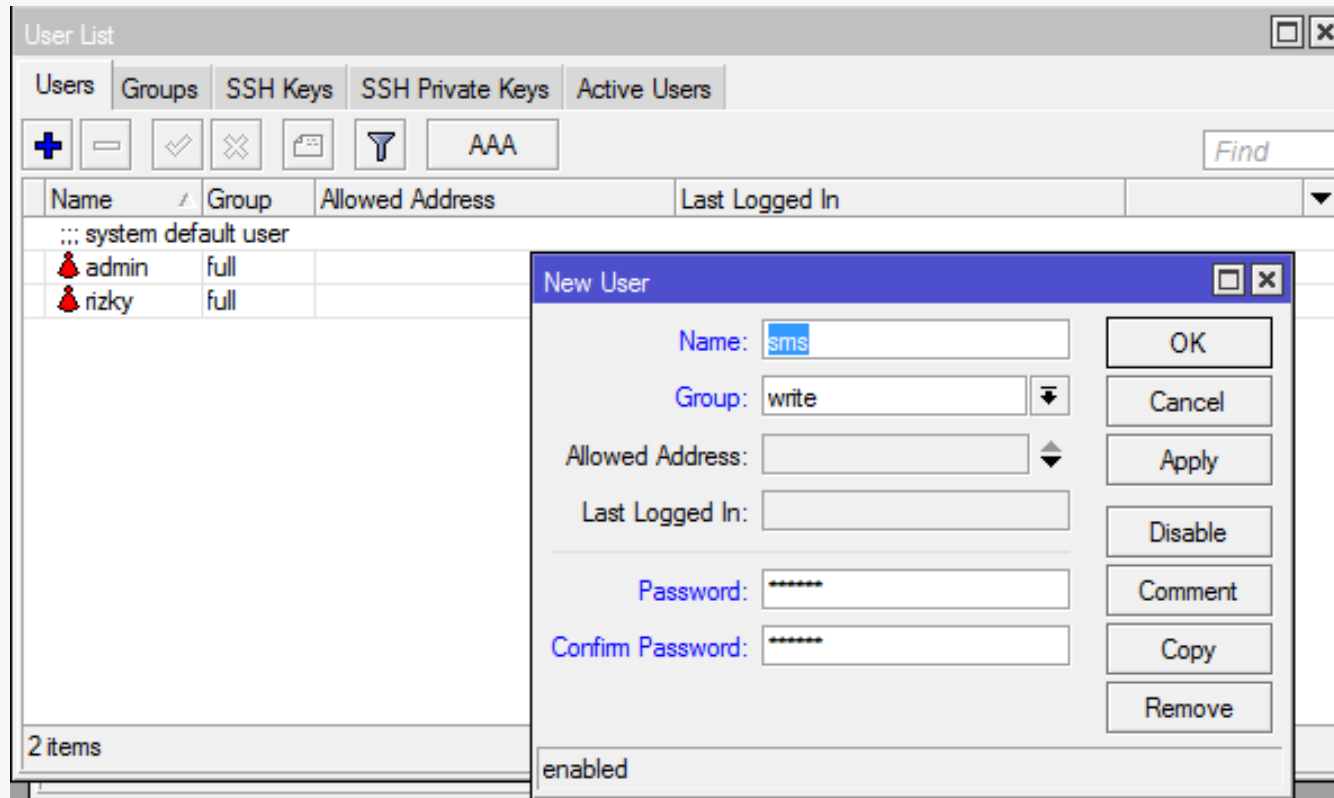
1. Go to menu Tools → SMS → Choose the USB Port used by USB Modem → tick Receive Enabled → Apply
2. Send a SMS Message → Click Send SMS → Choose Port, fill in the phone number you want to send SMS, & fill in the Message → Click Send SMS
3. Check your phone



Add a New User for SMS

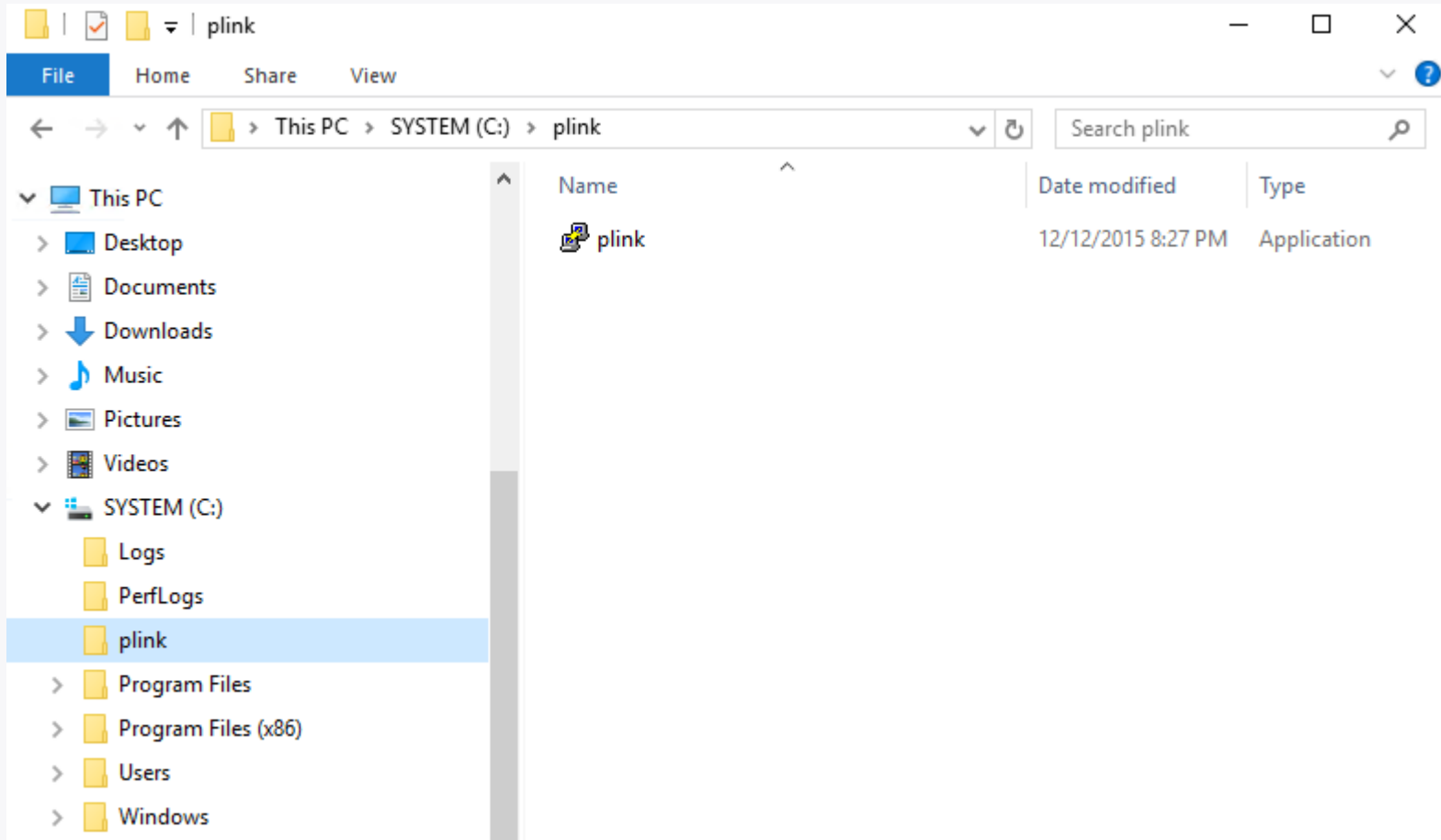
We need to add a dummy user for SSH login to send SMS Message

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

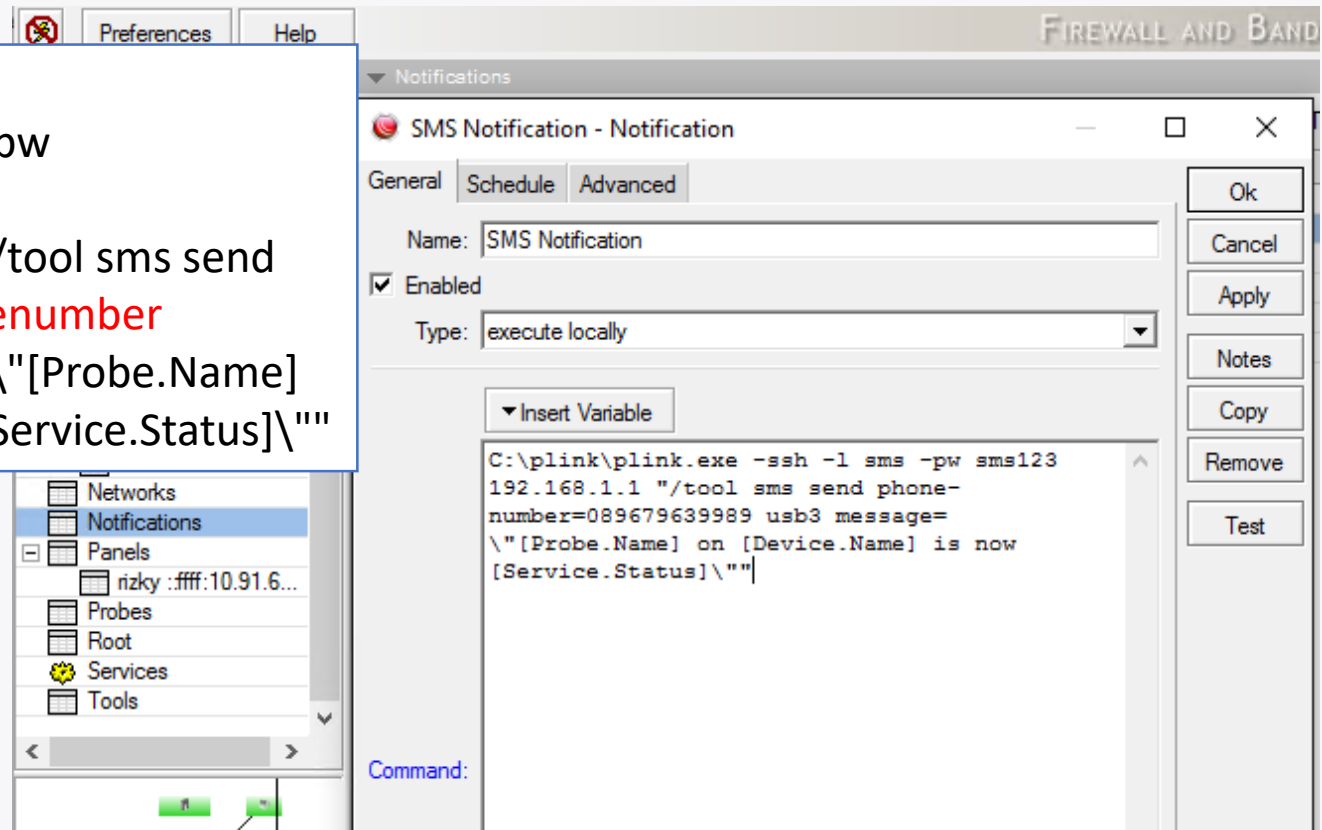


The Integration Configurations

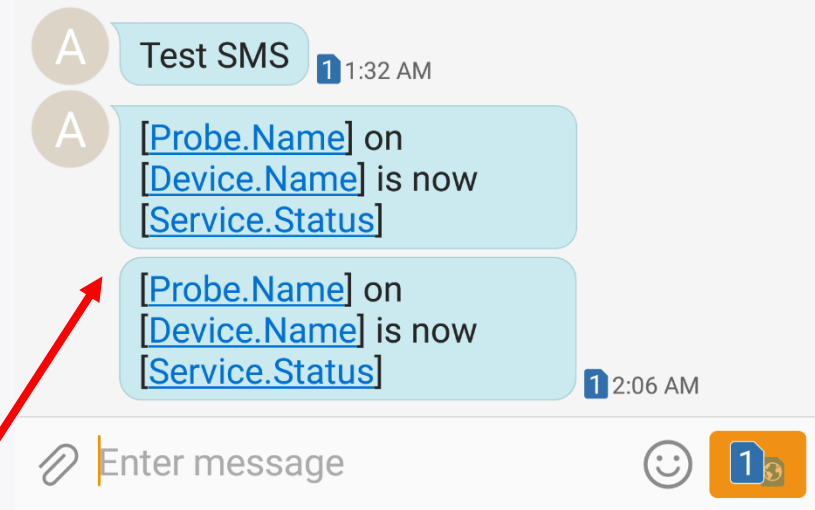
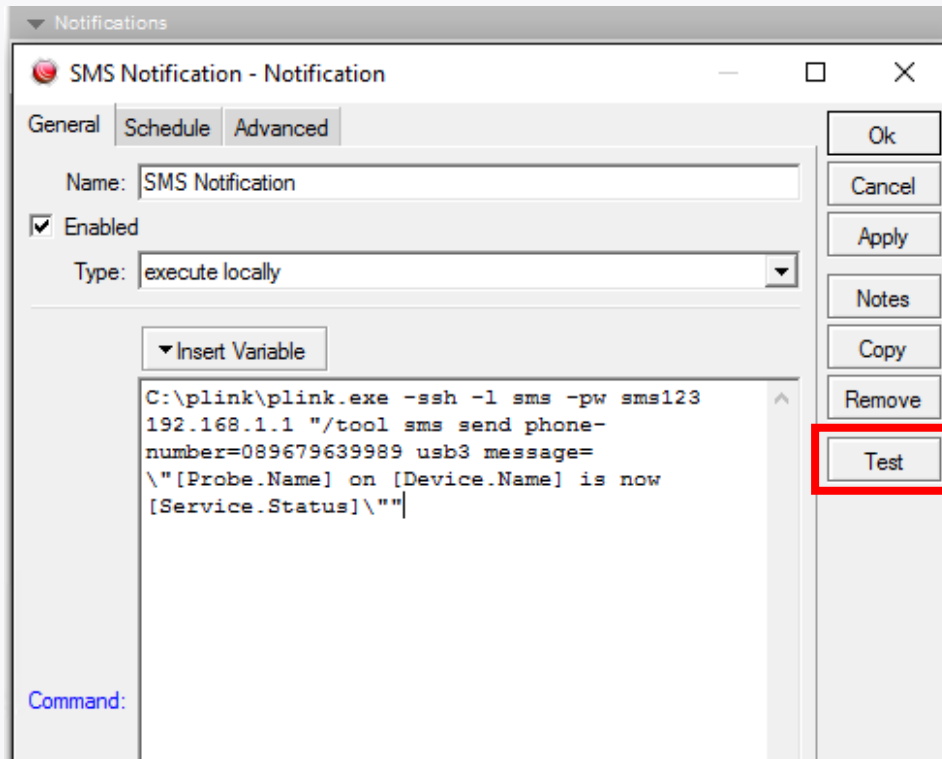
3. Open The Dude → Go to menu Notifications → Add New Notification

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 MikrotikInDo interface. On the left is a 'Contents' sidebar with a tree view including 'Network Maps' and 'MikrotikInDo'. The main window displays a network map with a central yellow node and several green nodes connected to it. A 'Settings' button in the top toolbar is highlighted with a red box, and a red arrow points from it to the 'Settings' tab of the 'MikrotikInDo - Network Map' dialog box.

The 'MikrotikInDo - Network Map' dialog box has several tabs: 'General', 'Polling', 'Outages', 'Appearance', and 'Background'. The 'Polling' tab is active. It contains the following settings:

- Enabled
- Probe Interval: default (dropdown menu)
- Probe Timeout: default (dropdown menu)
- Probe Down Count: default (dropdown menu)
- Use Notifications (highlighted with a red box)

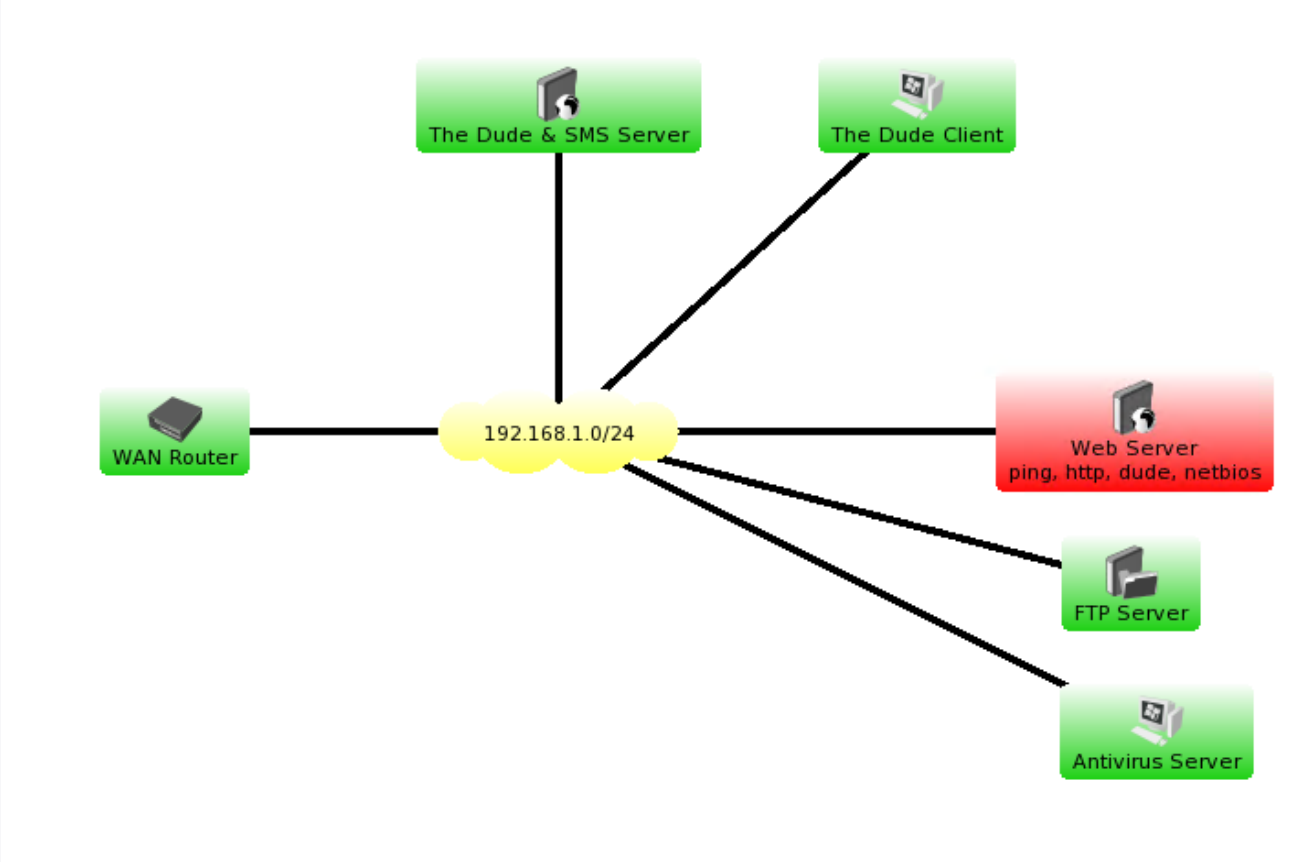
Below the 'Use Notifications' checkbox is a table of notification options:

Name	
<input checked="" type="checkbox"/> SMS Notification	
<input type="checkbox"/> beep	
<input type="checkbox"/> flash	
<input type="checkbox"/> log to events	
<input type="checkbox"/> log to syslog	
<input type="checkbox"/> popup	

On the right side of the dialog box, there are buttons for 'Ok', 'Cancel', 'Apply', and 'Notes'. At the bottom left of the dialog, the text 'Notifications:' is visible.

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

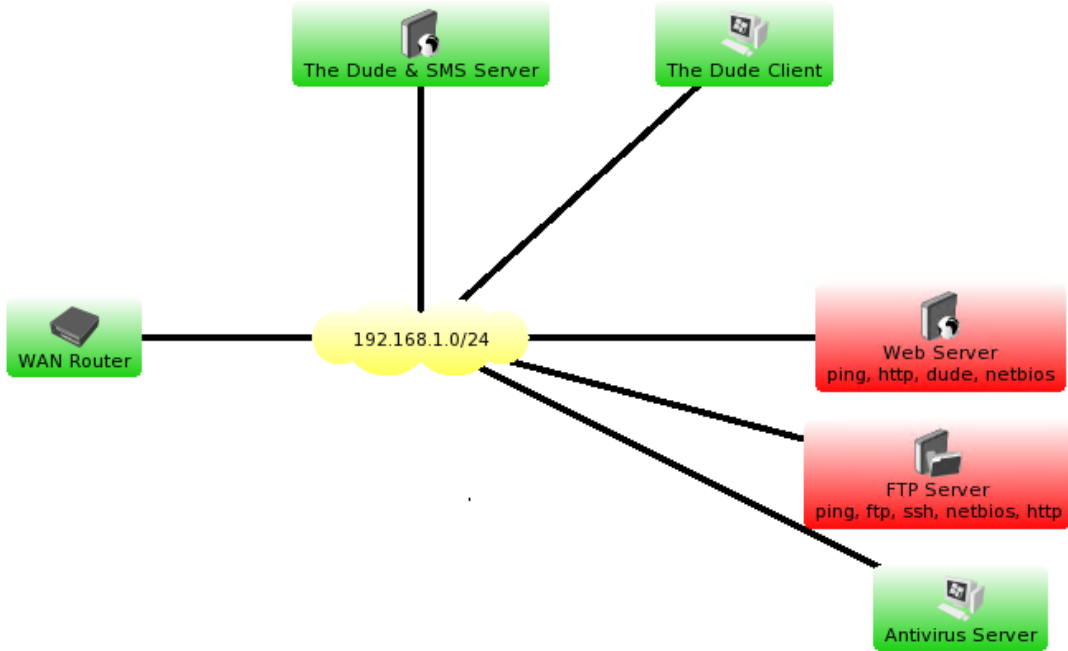
1 23:39

Enter message

1 3

Test The Configuration

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



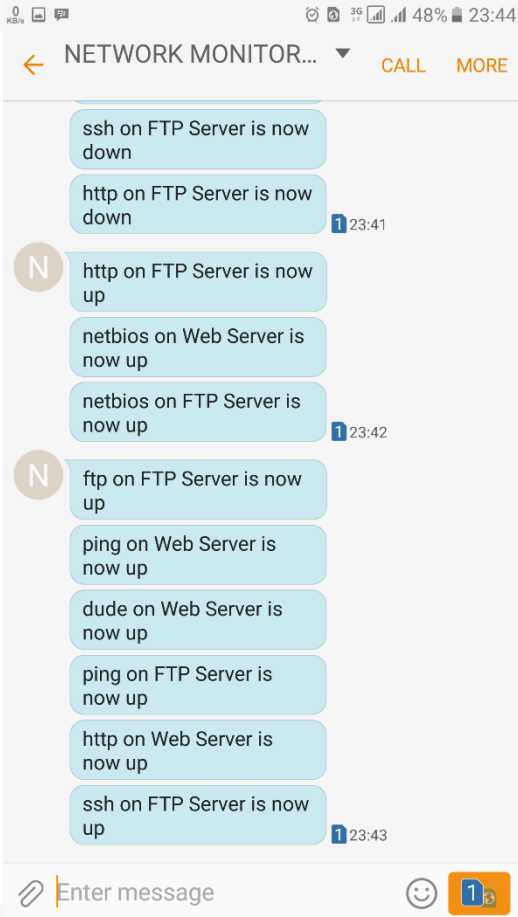
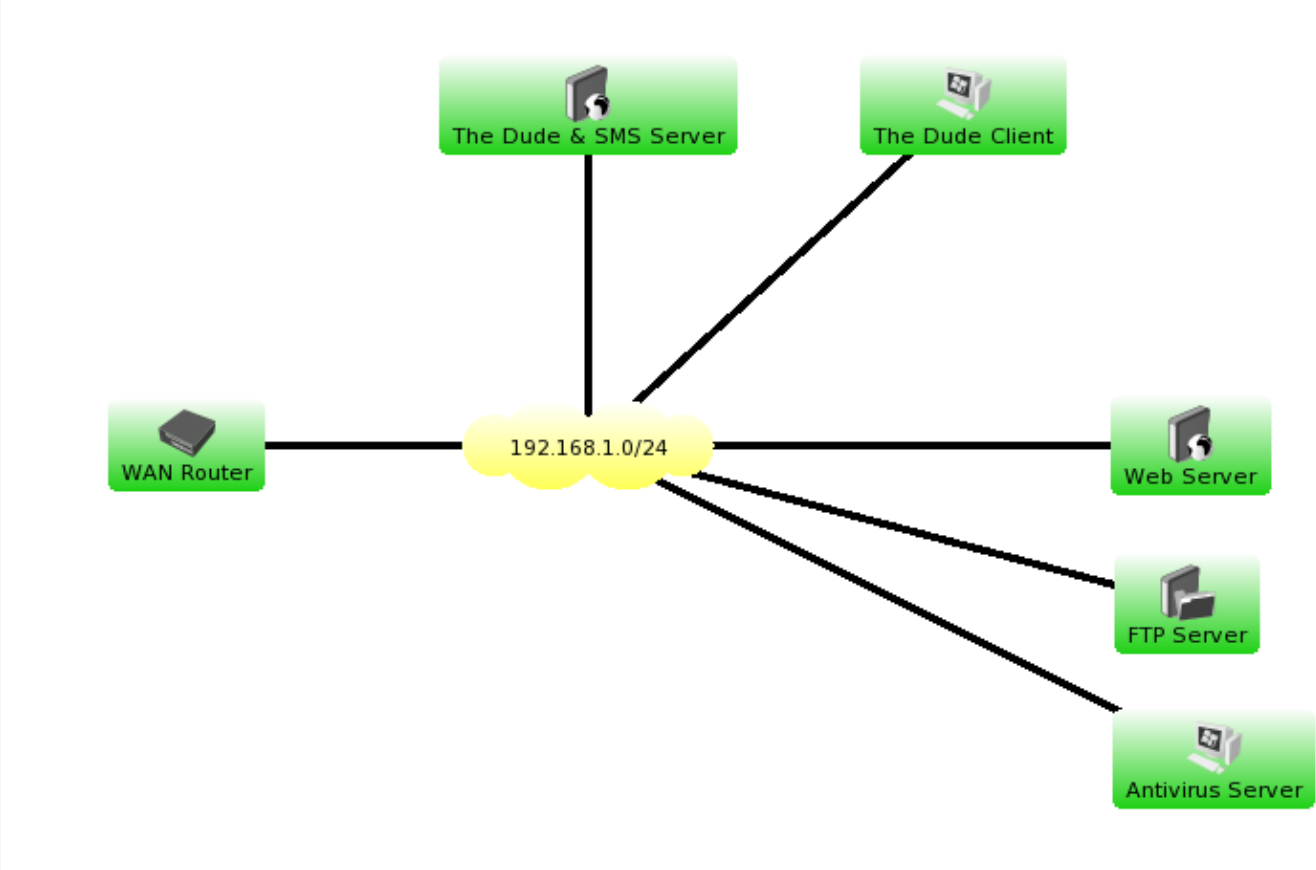
The screenshot shows a series of SMS messages from a contact labeled 'N'. The messages report the status of various services on the Web Server and FTP Server. The messages are as follows:

- 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)
- ftp on FTP Server is now down (1 23:40)
- ping on FTP Server is now down
- netbios on FTP Server is now down
- ssh on FTP Server is now down
- http on FTP Server is now down (1 23:41)

At the bottom of the screenshot, there is an input field with the text "Enter message", a smiley face icon, and a blue square icon with the number "1".

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).

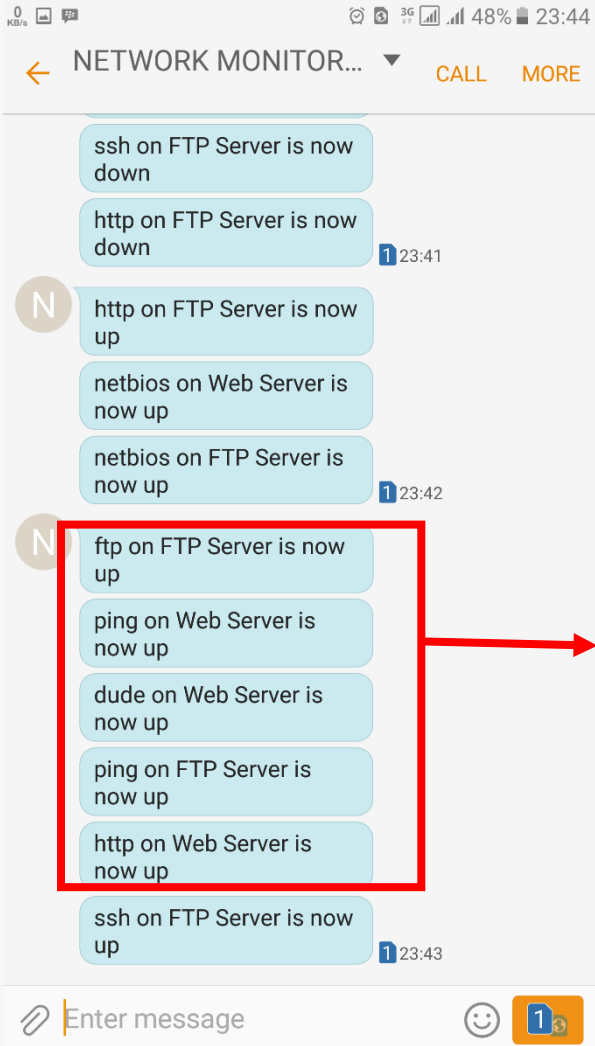
The Polling Options

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

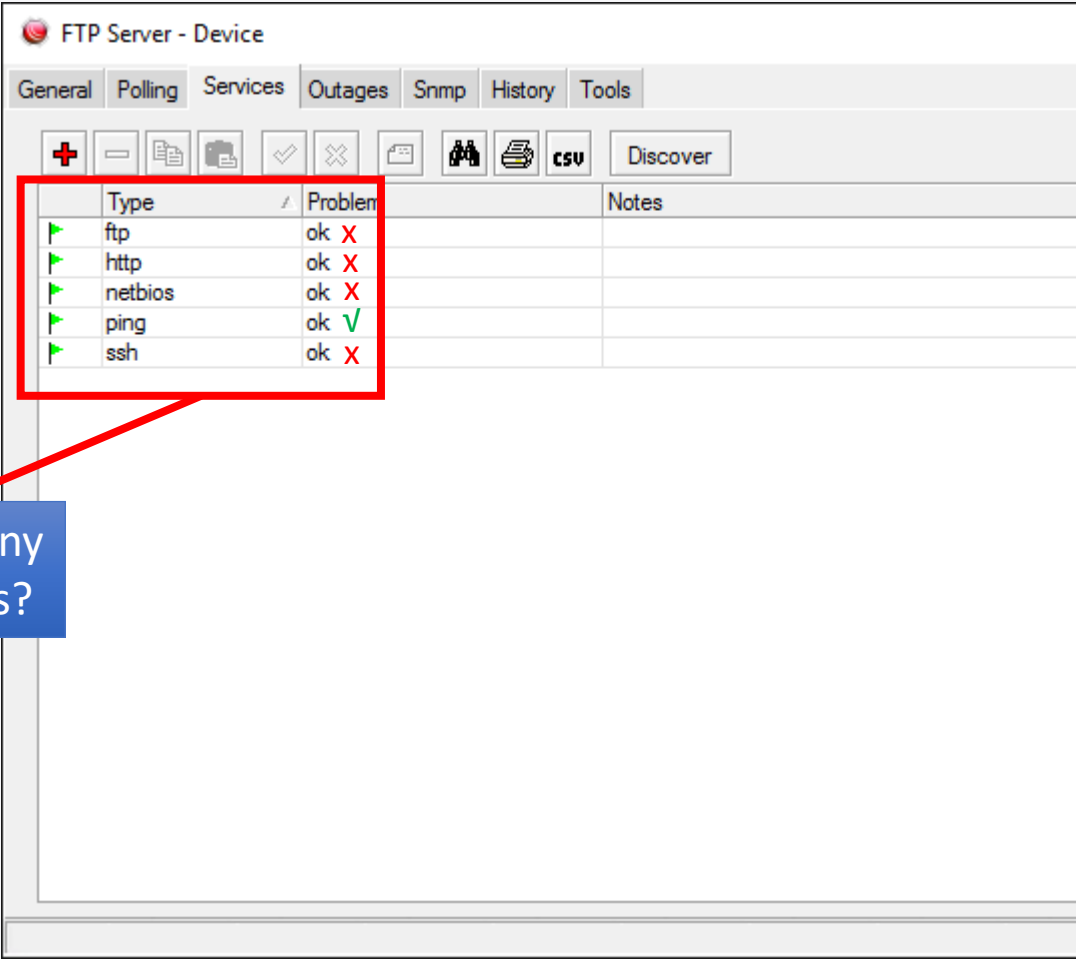
The image shows two overlapping windows from Mikrotik WinBox. The background window is 'Server Configuration' with the 'Polling' tab selected. It has a 'Service polling defaults' section with 'Enabled' checked. Below this, three fields are highlighted with a red box: 'Probe Interval' set to '00:00:30', 'Probe Timeout' set to '00:00:10', and 'Probe Down Count' set to '5'. There is also a 'Notifications' section with a list of options: 'SMS Notification', 'beep', 'flash', 'log to events', 'log to syslog' (checked), and 'popup'. The foreground window is 'MikrotikIndo - Network Map' with the 'Polling' tab selected. It also has 'Enabled' checked. Its 'Polling' section has three fields highlighted with a red box: 'Probe Interval' set to 'default', 'Probe Timeout' set to 'default', and 'Probe Down Count' set to '1'. It also has a 'Use Notifications' section with a list of options: 'SMS Notification' (checked), 'beep', 'flash', 'log to events', 'log to syslog', and 'popup'.

Customization

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

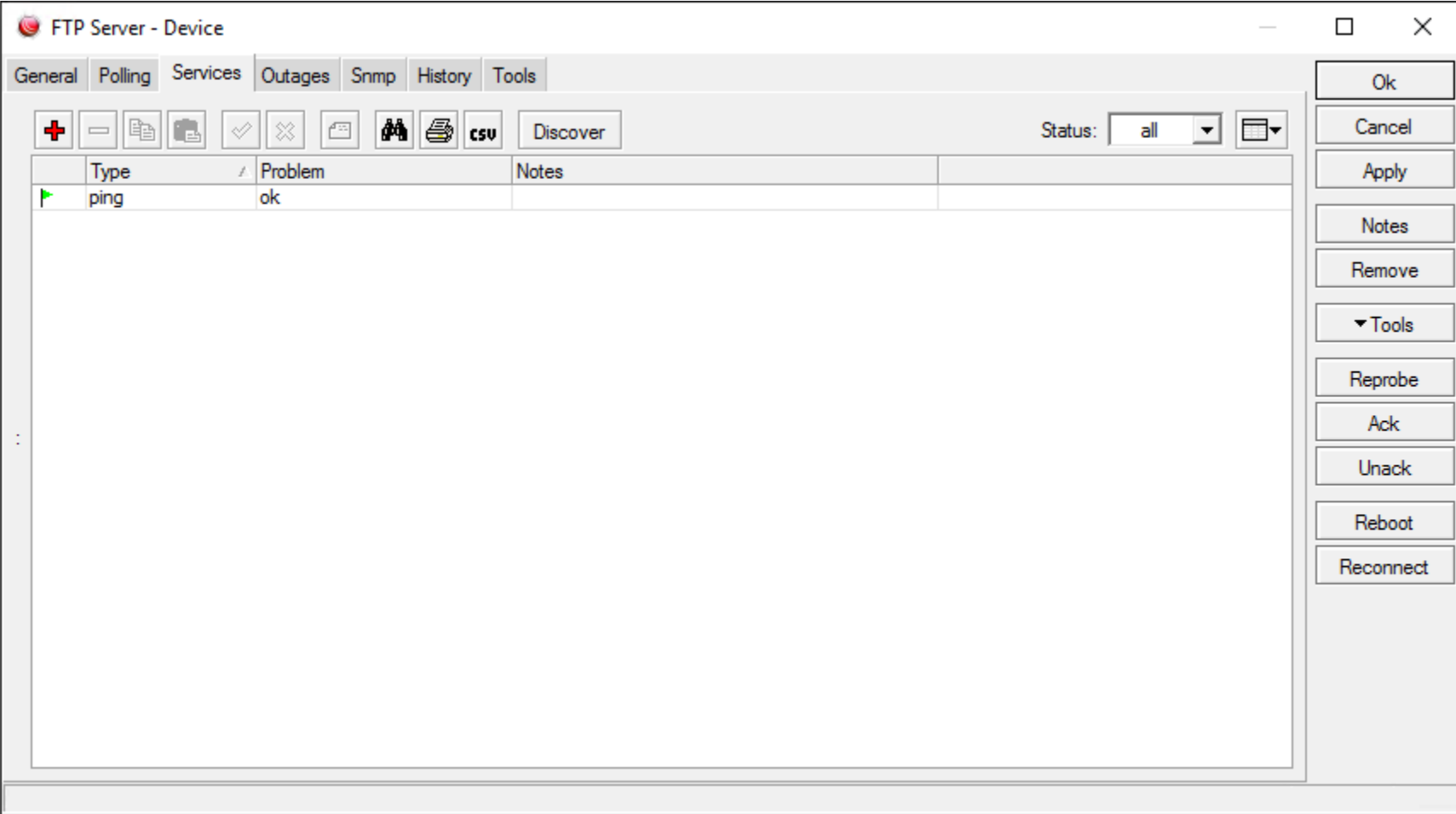


Too many services?



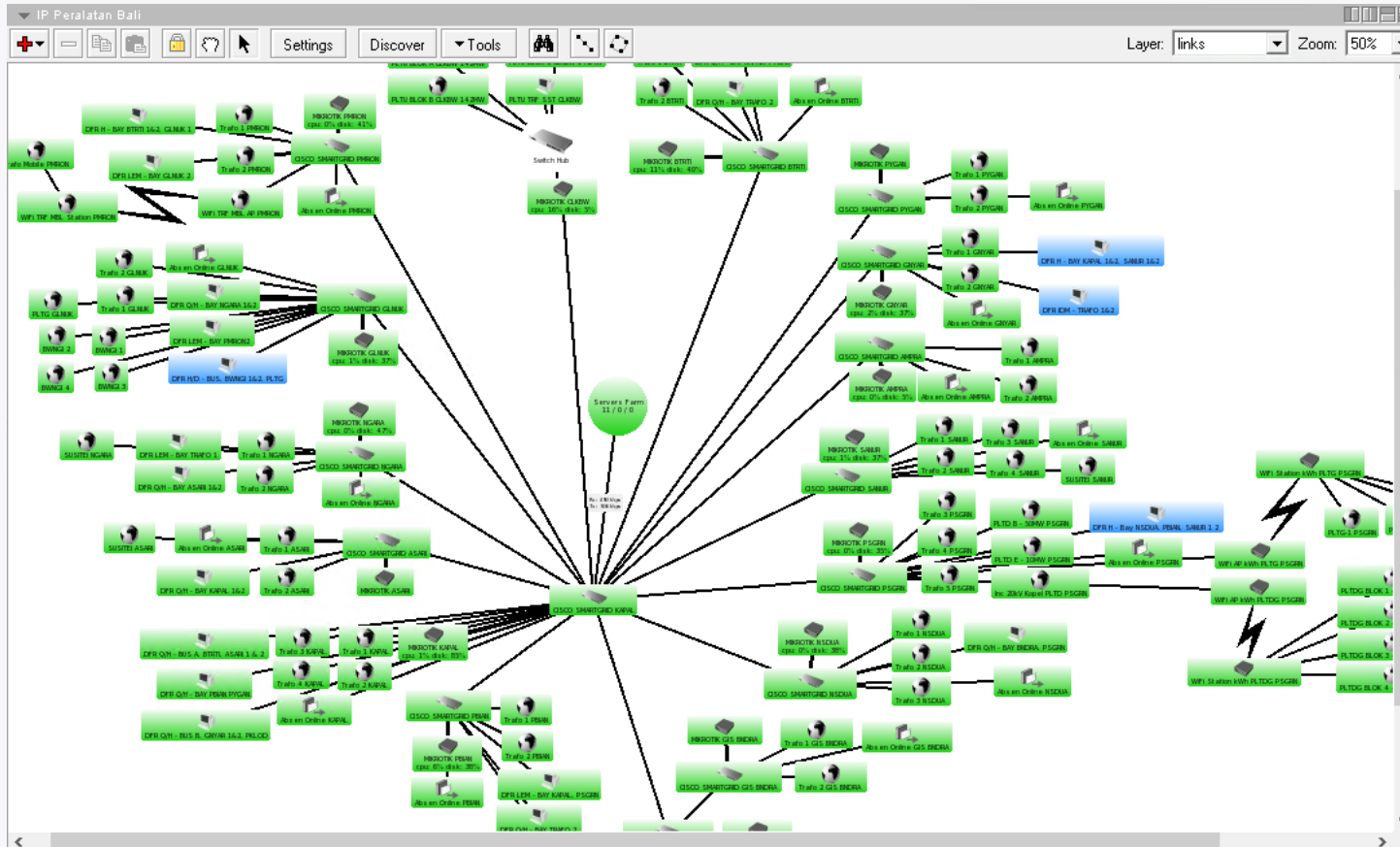
Customization

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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