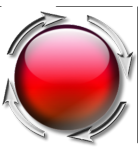




The Dude



Mikrotrain

- Gevestigd te Zwolle



- Trainingsruimte Meppel



In-company training



- ITN Groep in Nieuwdorp (Zeeland)
- www.itngroep.nl



- Stigho Electro in IJsselstein
- www.stigho.nl



Projecten

- Firewall renewal
 - HA, Bridge Firewall
 - 2 x CCR1036, 2 x CRS317
 - www.mk2.nl

 interwijs



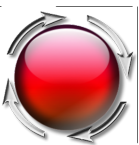
- Netwerk vernieuwing
 - Inclusief WiFi, LTE failover
 - www.interwijs.nl


MikroTik Opleidingen & Consultancy

Training



infracom ict
verbonden met
mijn business



Mikrotrain

- Henk Veldkamp
- MTCNA, MTCRE
- MTCWE, MTCTCE
- MTCIPv6E, MTCINE, MTCUME
- Trainer (TR0551)
- CCNA, MCSE
- Mikrotik consultancy & training



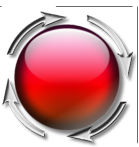
Presentatie

- Doel van de presentatie
 - Introductie/quickstart “The Dude”
 - requirements
- Overview van een aantal mogelijkheden zoals
 - Layout aanpassingen
 - Logging
 - Notification



Requirements server deel

- $\geq$ ROS 6.34rc13
- TILE
- ARM
- MMIPS
- X86
- CHR
- >16Mb storage anders USB of μ SD



Client

- Op alle recente Windows versies
- Interface soortgelijk aan Winbox (zelfde poort: 8291)

not connected - The Dude 6.43.12

Preferences Help FIREWALL AND BAND

Server: 192.168.1.254 Connect

Mode: ☐ plain ☒ secure

Port: 8291 Save

User Name: admin Remove

Password:

☒ Remember Password

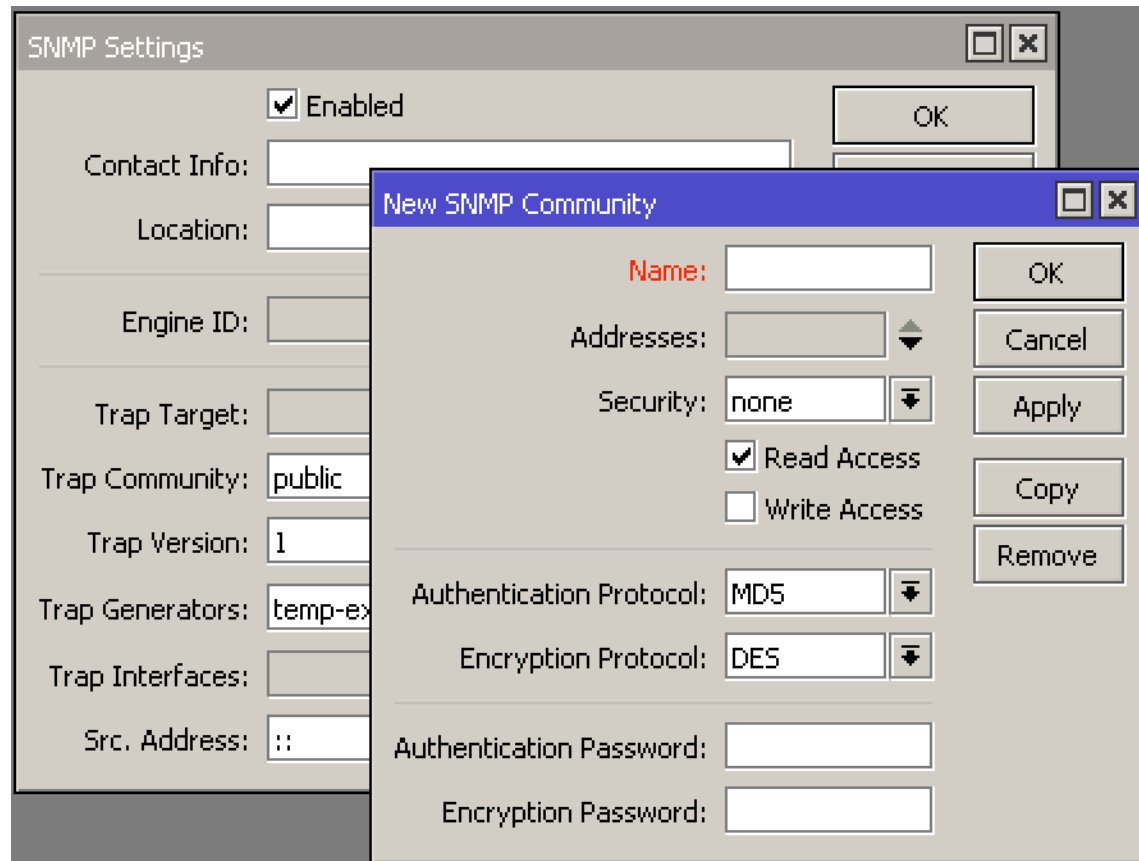
Comment:

Address	User Name	Comment
192.168.1.254	admin	

SNMP enable

- Enable SNMP, verander community en authentication



The image shows two overlapping windows from the Mikrotik WinBox interface. The background window is titled "SNMP Settings" and contains the following fields: "Enabled" (checked), "Contact Info:", "Location:", "Engine ID:", "Trap Target:", "Trap Community:" (set to "public"), "Trap Version:" (set to "1"), "Trap Generators:" (set to "temp-ex"), "Trap Interfaces:", and "Src. Address:" (set to "::"). The foreground window is titled "New SNMP Community" and contains the following fields: "Name:", "Addresses:" (with a dropdown arrow), "Security:" (set to "none" with a dropdown arrow), "Read Access" (checked), "Write Access" (unchecked), "Authentication Protocol:" (set to "MD5" with a dropdown arrow), "Encryption Protocol:" (set to "DES" with a dropdown arrow), "Authentication Password:", and "Encryption Password:". Both windows have "OK", "Cancel", "Apply", "Copy", and "Remove" buttons.

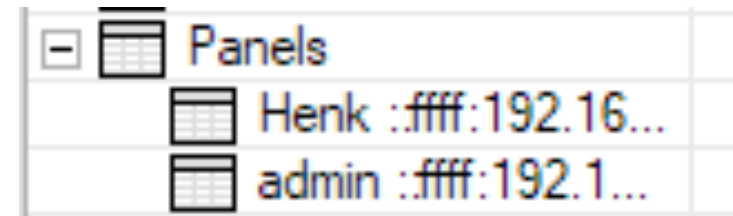
Dude client Login

- Username & Password = Winbox->System->Users



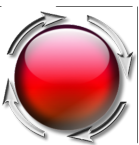
A screenshot of the Dude client login interface. It features two input fields: 'User Name:' with the text 'admin' entered, and 'Password:' which is currently empty. The fields are set against a light gray background.

- Maak Dude groep(en)
 - Dude+read, Dude+read+write+ftp+test
 - Voeg gebruikers toe
- Users zichtbaar in Panels
- Maak zelfde gebruikers system-wide



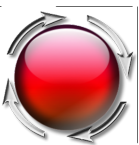
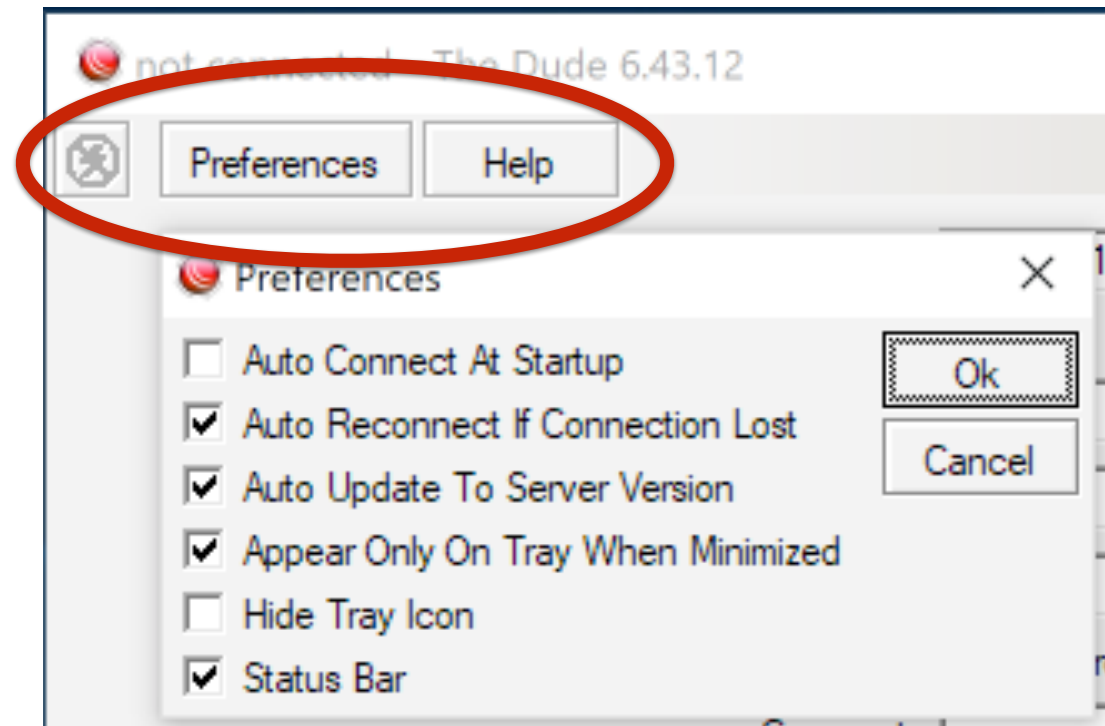
	Panels
	Henk :ffff:192.16...
	admin :ffff:192.1...

A screenshot of the 'Panels' section in the Dude client. It shows a table with two columns: an icon column and a text column. The text column contains the names of the panels and their IP addresses. The first row is the header 'Panels'. The second row shows 'Henk :ffff:192.16...'. The third row shows 'admin :ffff:192.1...'. Each row has a small icon to its left.



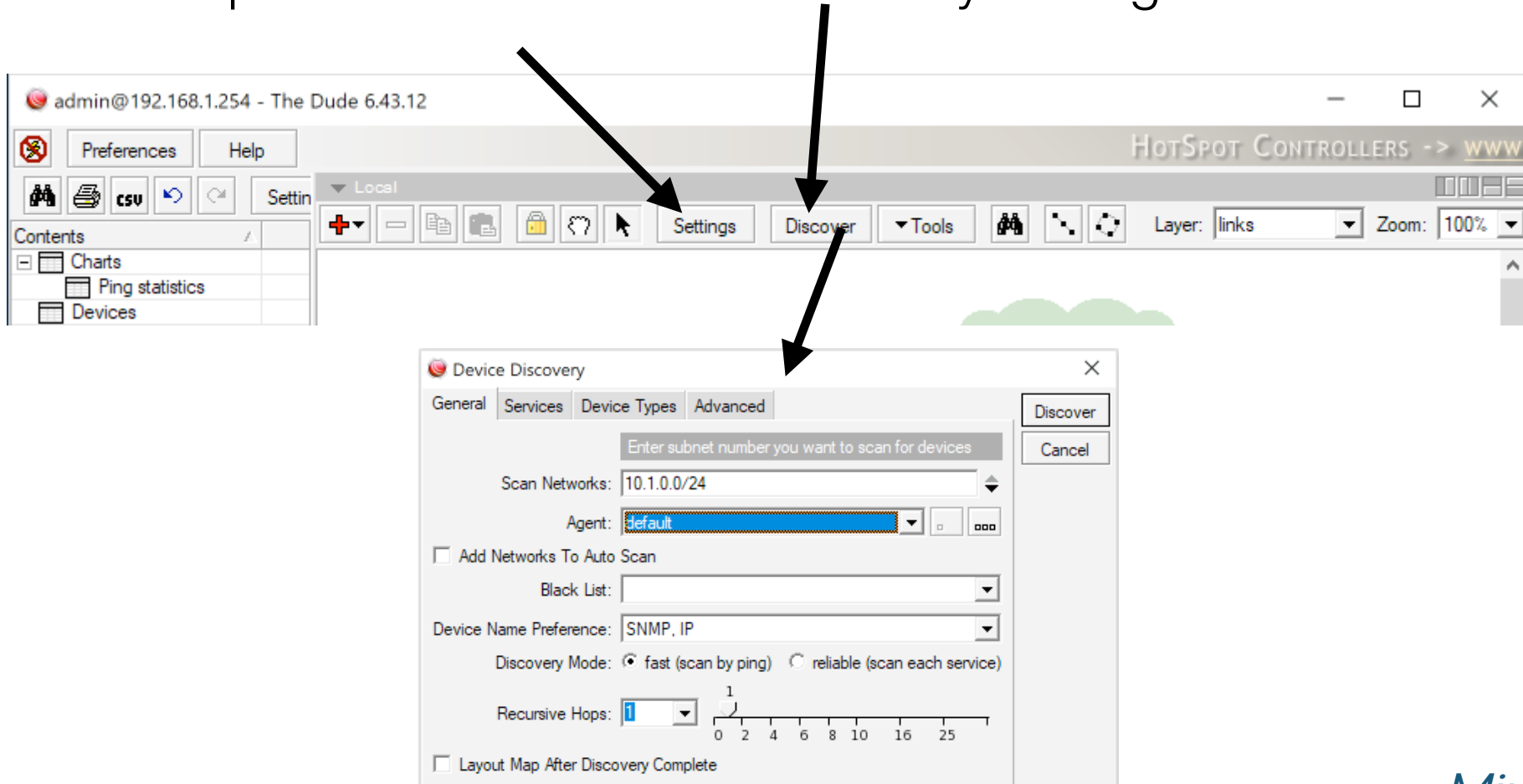
Client Preferences

- Stel preferences in
 - Auto Connect altijd naar laatste Sessie
- Auto Connect + Reconnect naar behoefte



Layout menu

- Opties voor Default en Discovery settings



Discover defaults

- Default worden vrij veel services onderzocht
- Aanpassen voordat discovery gedaan wordt

SNMP Polling Agents Syslog Map Chart Report Discover RouterOS Misc

These are the default values for device discovery which are going to be used for new discoveries

Black List:

Name Preference: SNMP, IP

Mode: ☒ fast (scan by ping) ☐ reliable (scan each service)

Recursive Hops: 1 0 1 2 3 4 5 6 7 8 9

Biggest Network Size Allow Hop To: 12

▼ Advanced

▼ Services

▼ Device Types

▼ Item Placement Settings

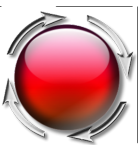
Discover defaults

- Selekteer services die je wilt

Services

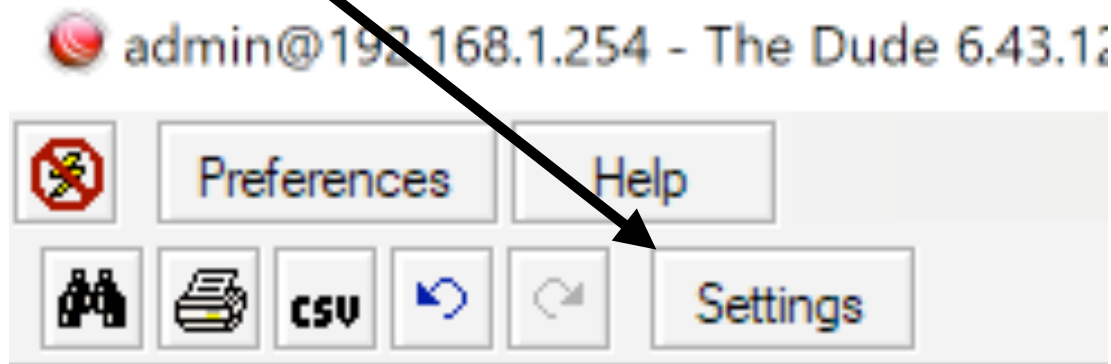
Services To Discover:

	Name
✓	cpu
✓	disk
	dns
	ftp
	gopher
	hp jetdirect
	http
	imap4
✓	memory
	mikrotik

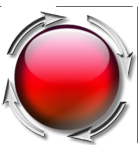


Server settings

- Server Default settings

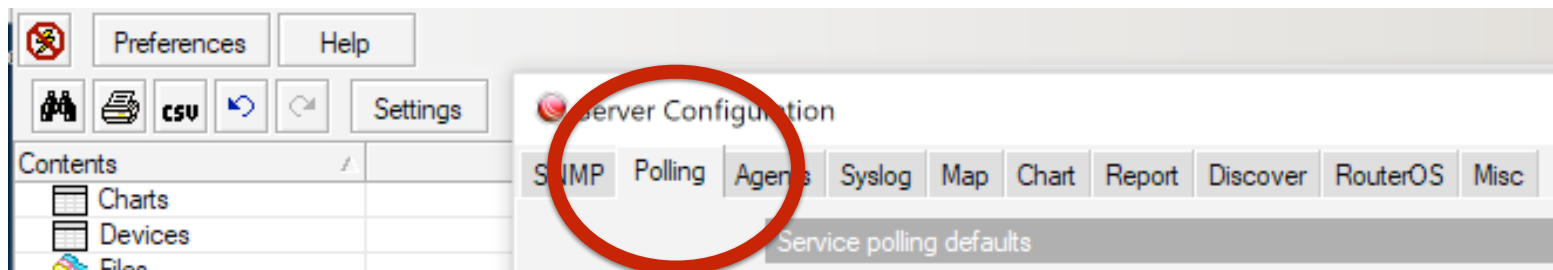


- Indien Submenu setting = default dan gelden deze settings

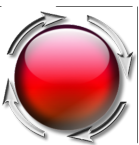
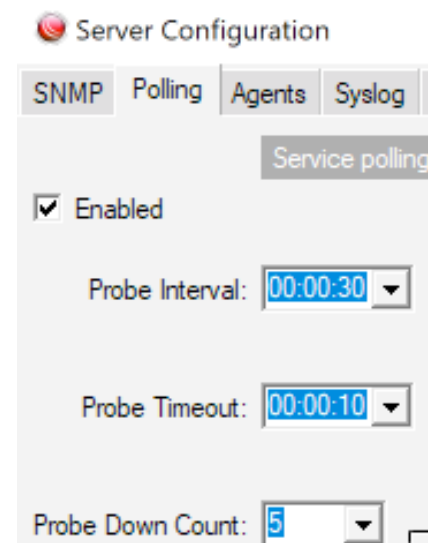


Polling settings

- De tijden waarop polling, timeouts en “down” gebeuren



- Default settings in tabbladen



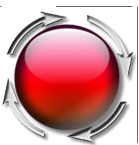
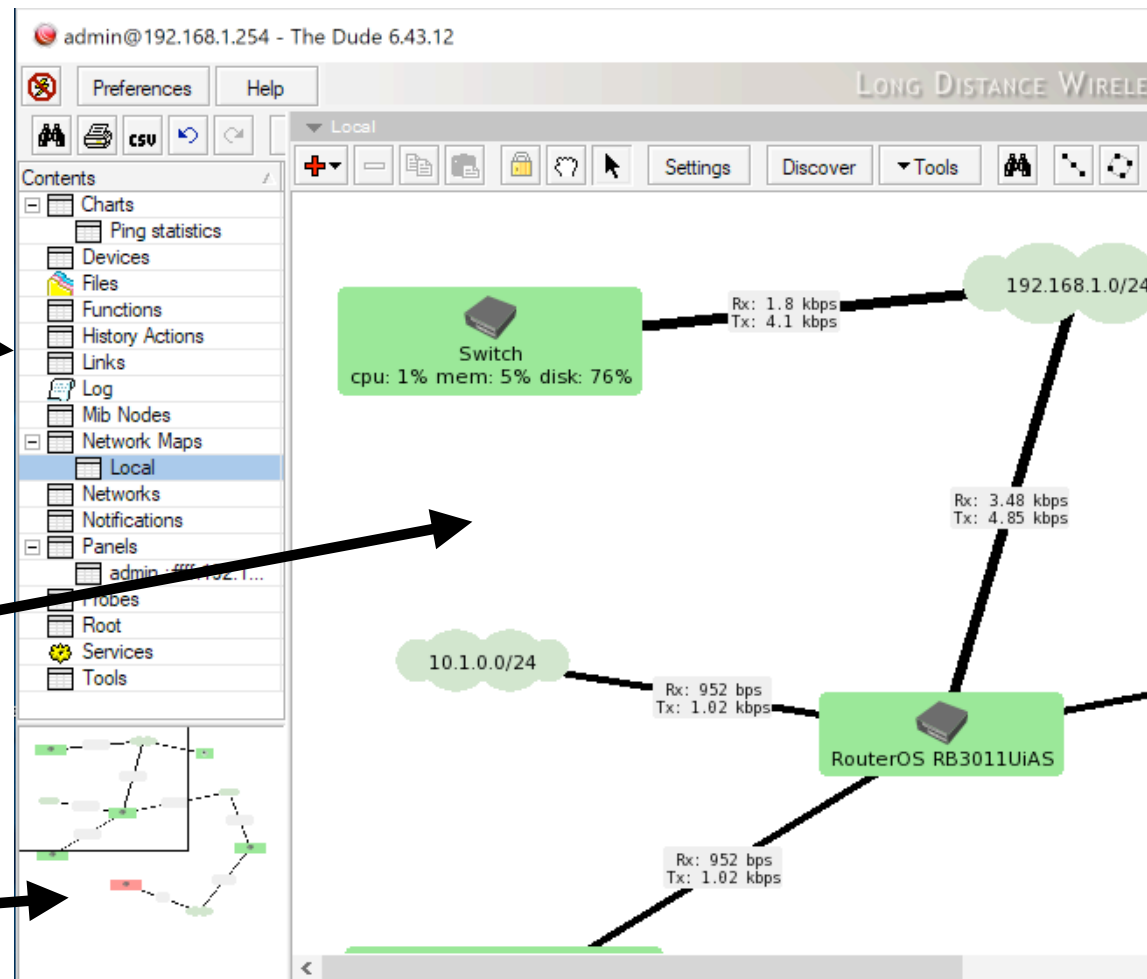
Menu opbouw

- Panes, vensters

- Menu
- Dubbelklik

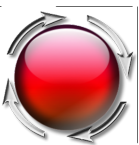
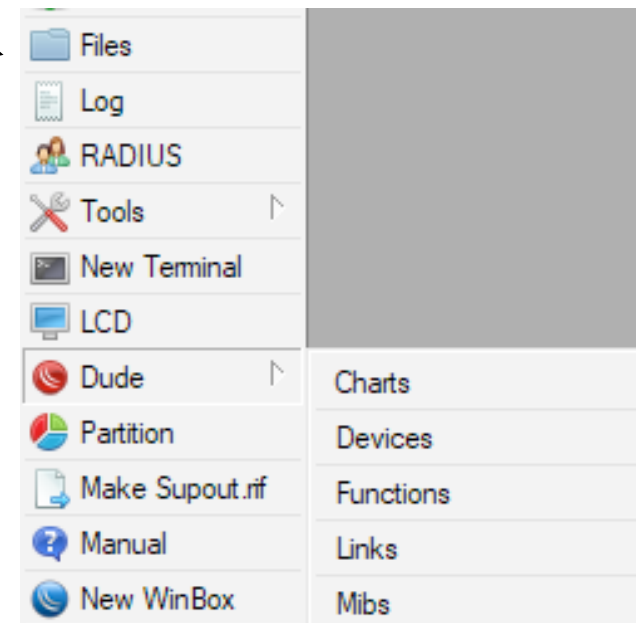
- Main

- Overview



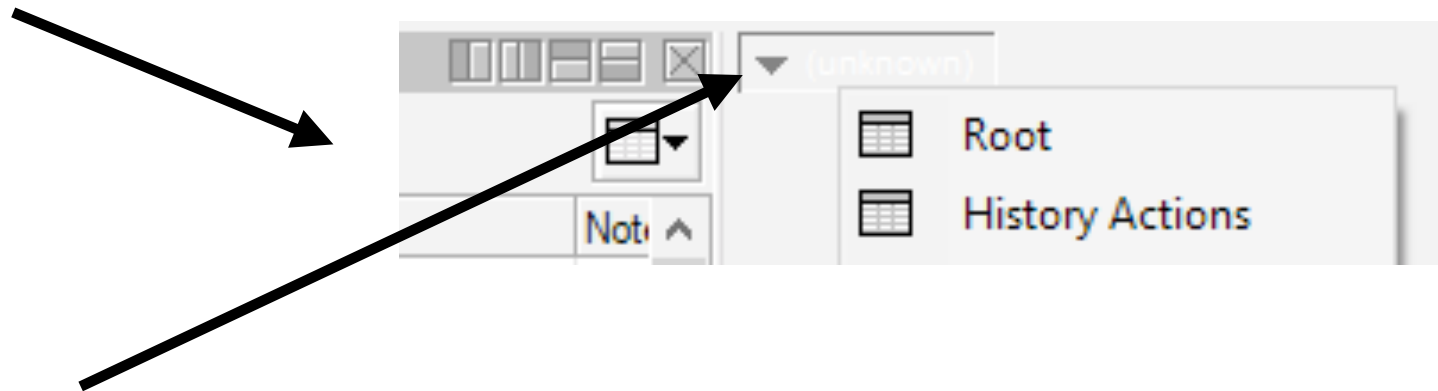
Server (winbox)

- Winbox->Dude
 - Files uploaden alleen via Winbox
 - Packages
 - MIB's
 - Graphics (images)
- Dude menu
 - Voedingsbron voor Client

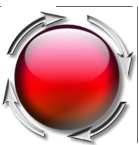
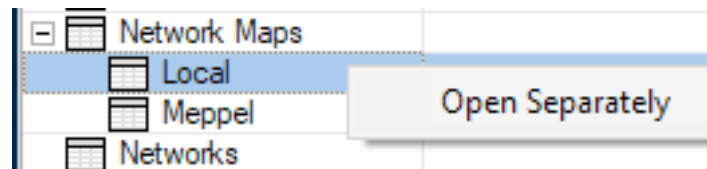


Schermen opdelen

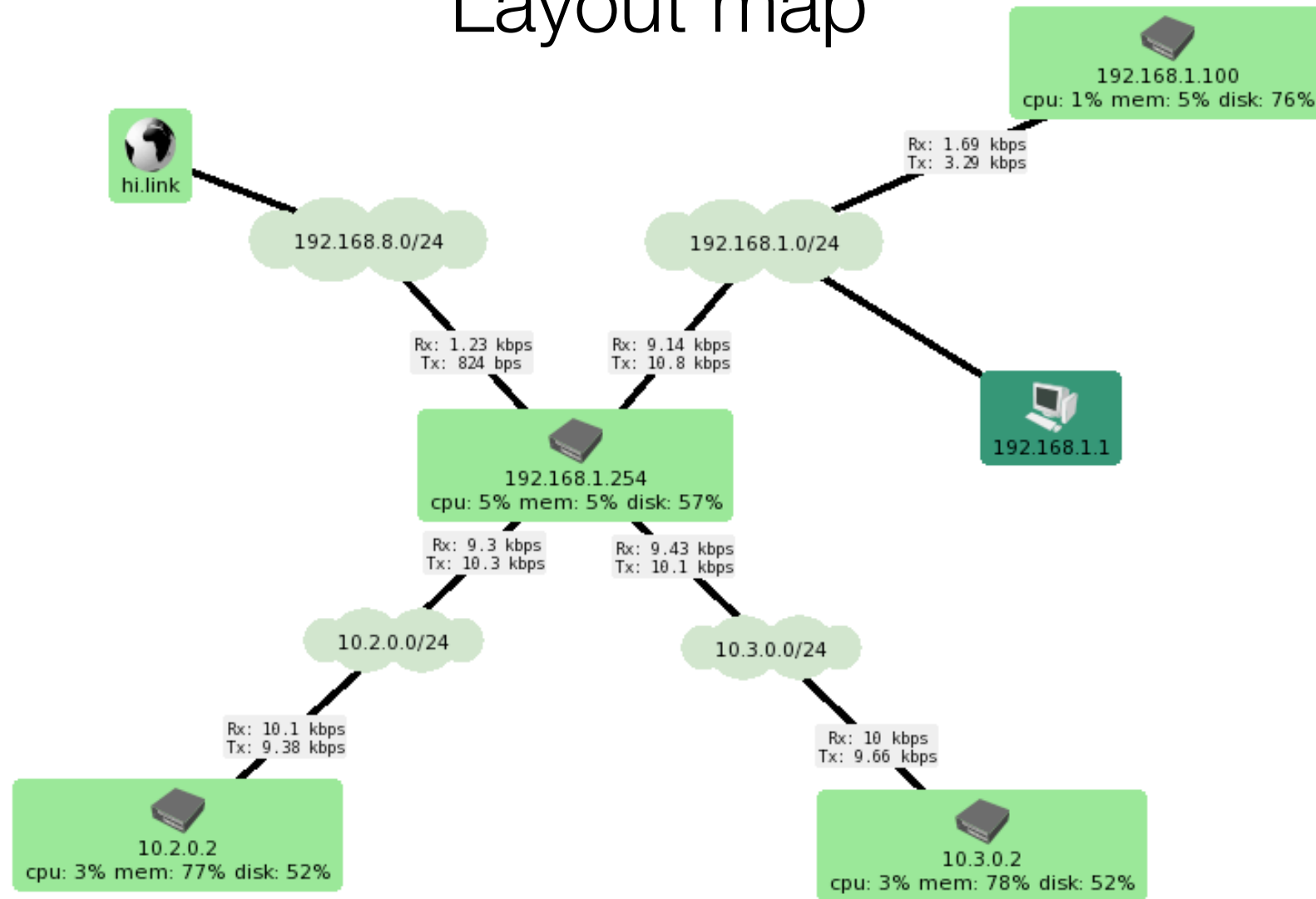
- Twee vensters naast elkaar of onder elkaar



- Selekteer tweede venster of sleep uit Menu
- Rechtsklik op Menu-> Open los venster

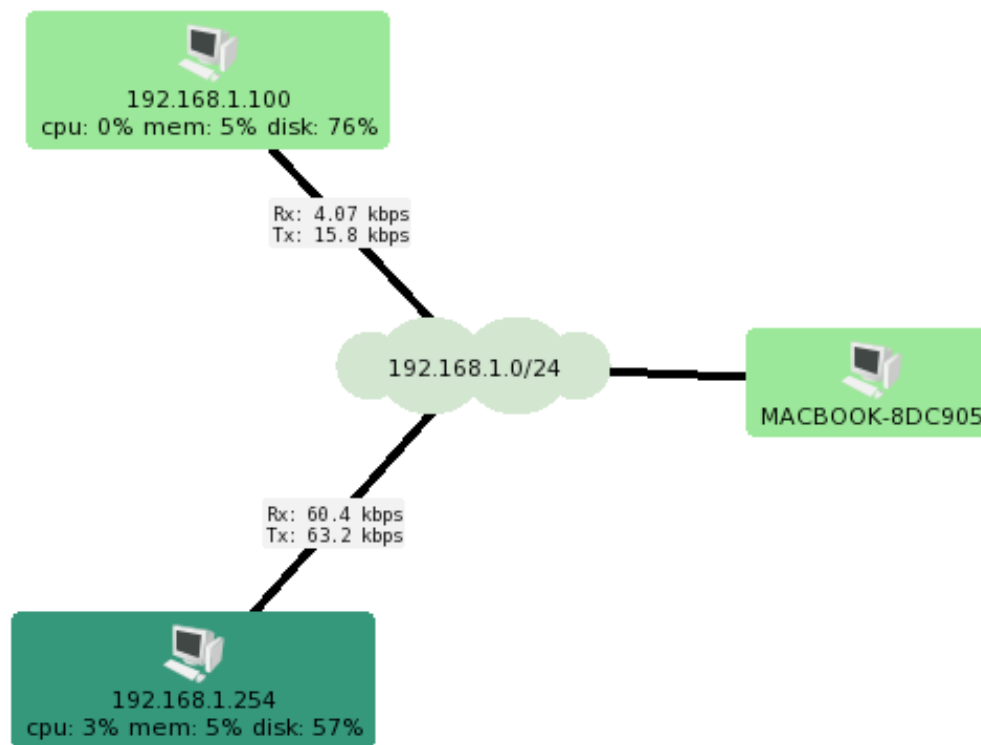
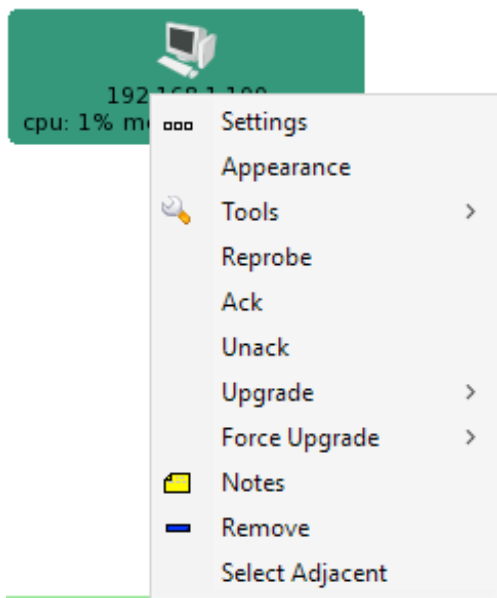


Layout map



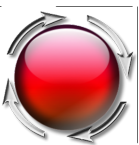
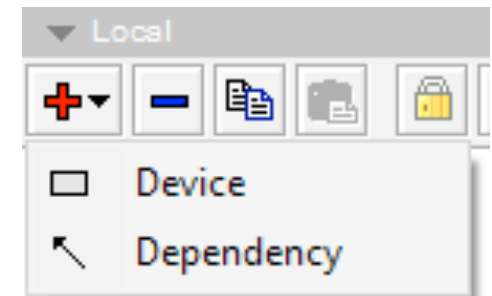
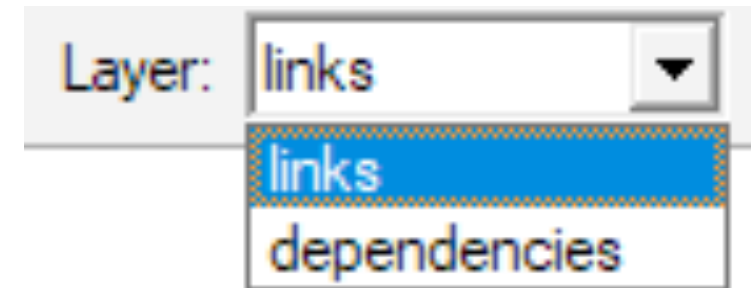
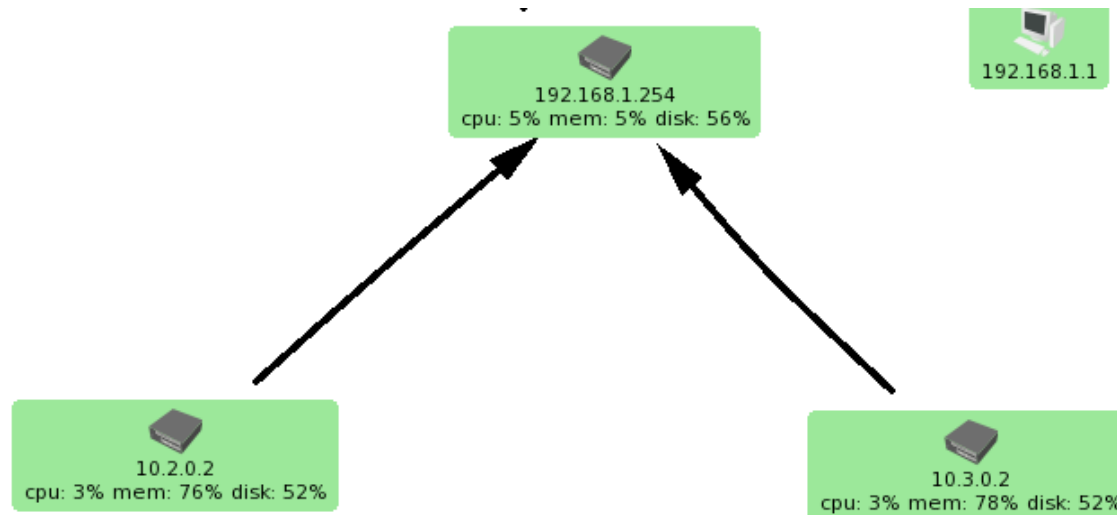
Layout map

- Aanwijzen geeft Grafiek
- Dubbelklik->Device settings
- Rechter muis->submenu:



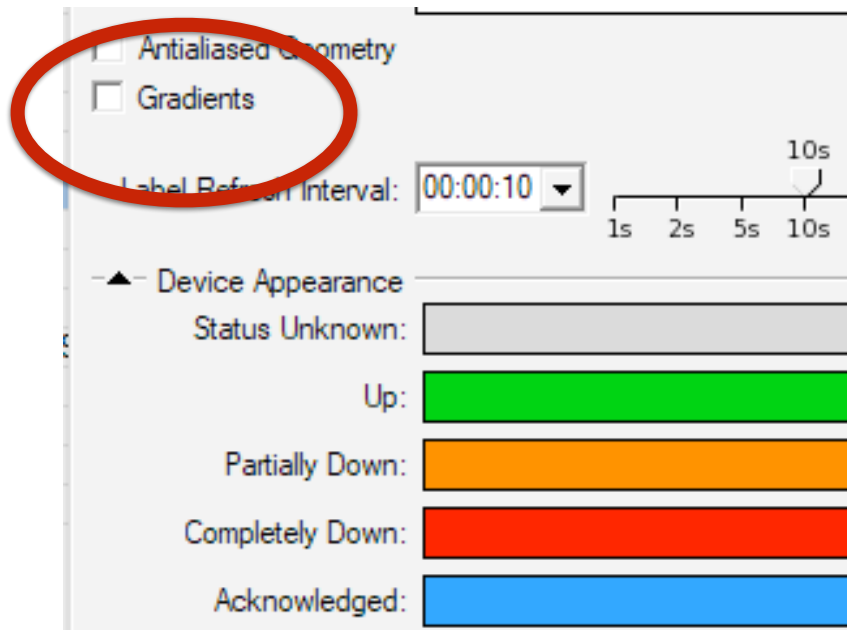
Layout dependancies

- Aangeven wie van wie afhankelijk is om voor de hand liggende meldingen te voorkomen bij upgrade/reboot bijvoorbeeld



Map settings

- Gradients->verloopt van kleur/ vaste kleur



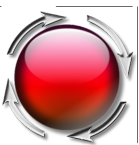
- Alle "Down" worden zichtbaar:



Map settings

- Label = wat aangegeven wordt (ServicesDown)
- Tooltip = wat zichtbaar is als je hem aanwijst

	▼ Insert Variable Insert Oid Functions...
Label:	<code>[Device.Name] [device_performance()][Device.ServicesDown]</code>
	▼ Insert Variable Insert Oid Functions...
Tooltip:	<code>Device [Device.Name] ([Device.Type]) IP: [Device.AddressesCommaList] MAC: [Device.MacAddressesCommaList] [services_info()][snmp_name()][snmp_description()][snmp_uptime()]</code>



Map settings



hAP lite (R4)

ssh, routeros management, mikrotik, cpu, memory, disk, ftp, http



hAP lite (R4)

ssh, routeros management, mikrotik, cpu, memory, disk, ftp



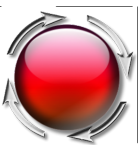
hAP lite (R4)

cpu: 6% mem: 72% disk: 52%
cpu, memory



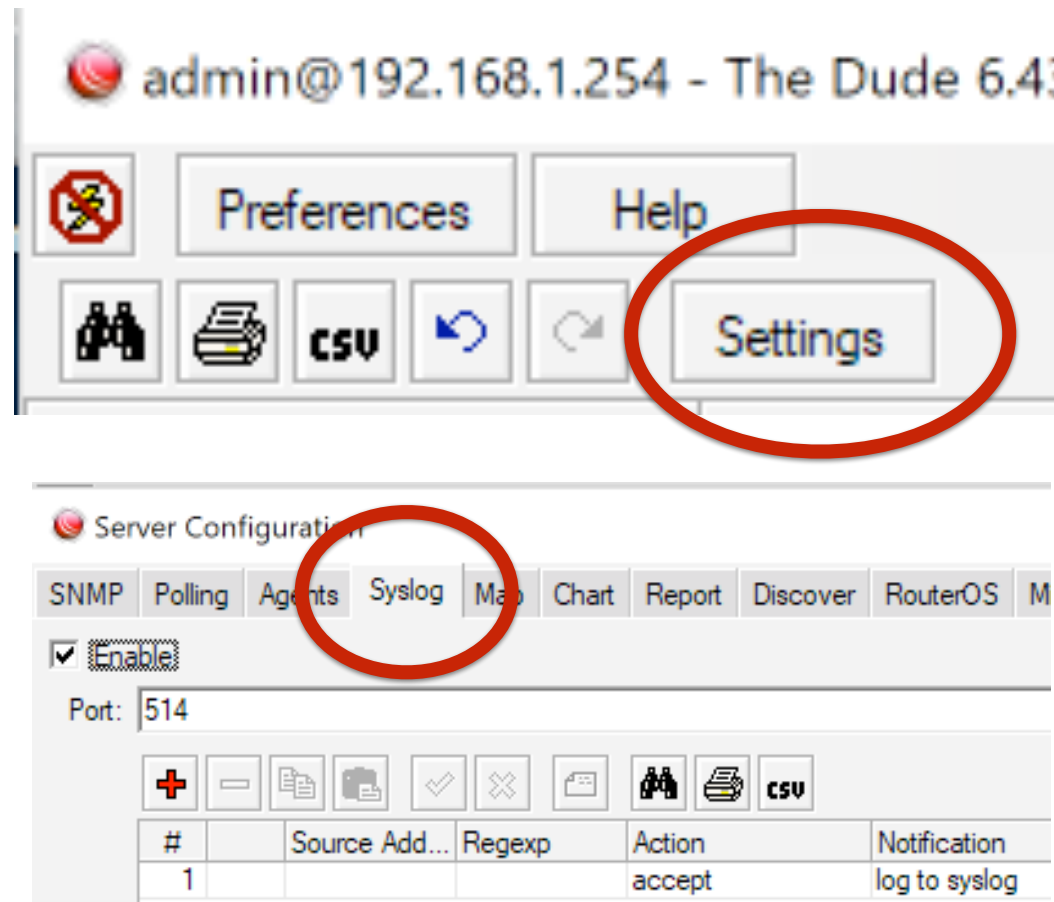
hAP lite (R4)

cpu: 0% mem: 72% disk: 52%



Syslog

- Default 1 regel: accept alles

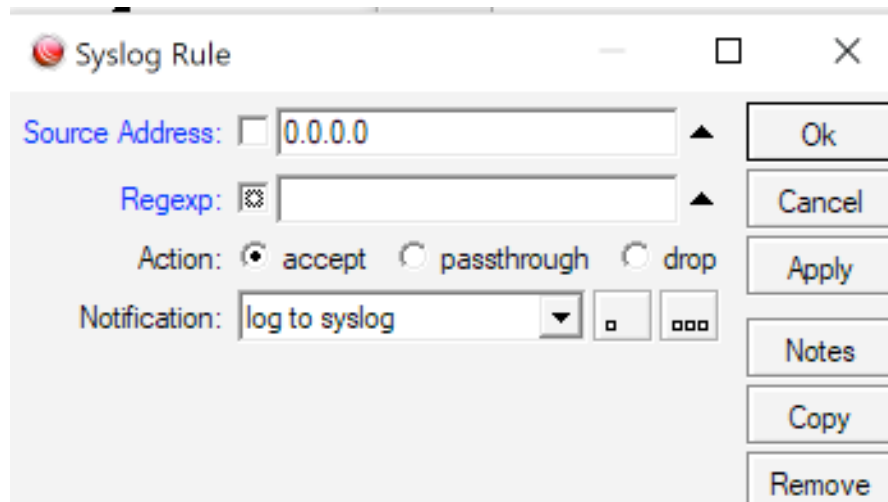


The screenshot shows the Mikrotik WinBox interface. At the top, the user is logged in as 'admin@192.168.1.254 - The Dude 6.4.3'. Below the login bar, there are buttons for 'Preferences' and 'Help'. In the next row, there are icons for 'Binoculars', 'Printer', 'CSV', 'Refresh', and 'Settings'. The 'Settings' button is circled in red. Below this, the 'Server Configuration' section is visible. It has tabs for 'SNMP', 'Polling', 'Agents', 'Syslog', 'Map', 'Chart', 'Report', 'Discover', 'RouterOS', and 'M'. The 'Syslog' tab is selected and circled in red. Under the 'Syslog' tab, there is a checkbox labeled 'Enable' which is checked. Below the checkbox, the 'Port' is set to '514'. At the bottom, there is a table with columns: '#', 'Source Add...', 'Regex', 'Action', and 'Notification'. There is one row with the following data:

#	Source Add...	Regex	Action	Notification
1			accept	log to syslog

Syslog

- Veranderen:
 - Source adres: ip van device die je accepteert
 - Regexp.: filteren van regels uit de log die geaccepteerd worden



Syslog Rule

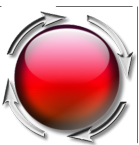
Source Address: ☐ 0.0.0.0

Regexp: ☐

Action: ☒ accept ☐ passthrough ☐ drop

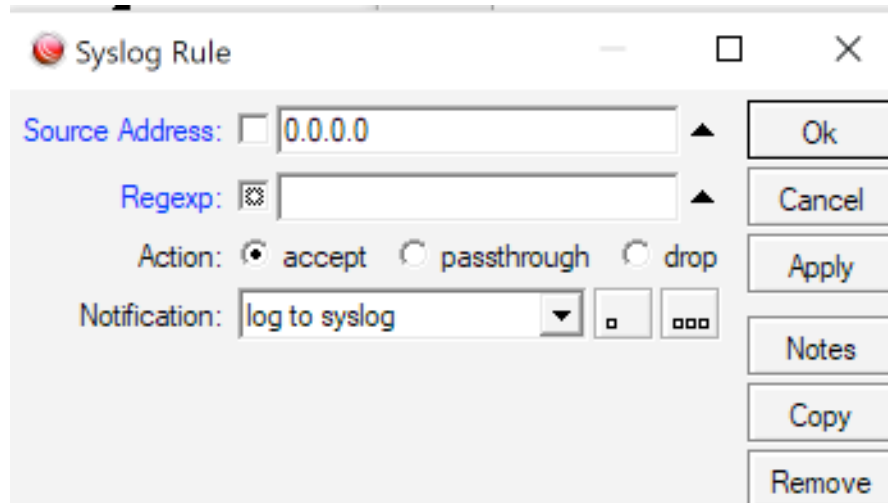
Notification: log to syslog

Ok Cancel Apply Notes Copy Remove

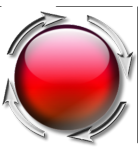


Syslog

- Accept = doe Notification en stop
- Passthrough = doe Notification en ga naar volgende regel
- Drop = doe niets en stop

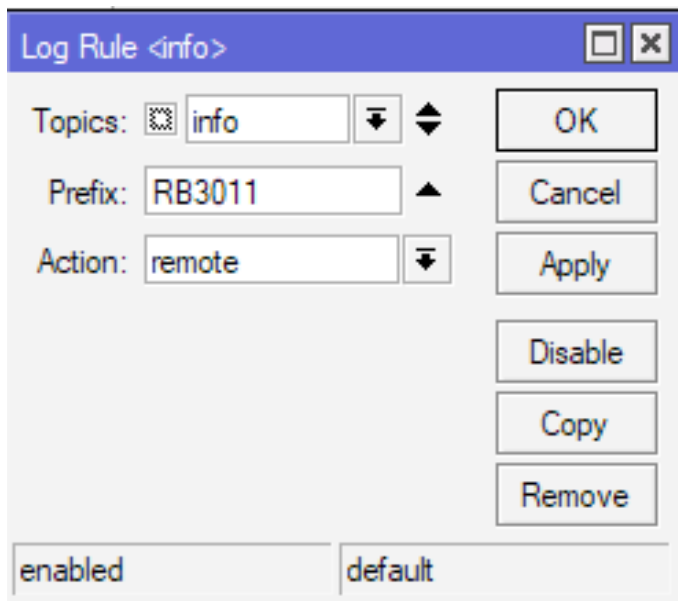


- Log to Syslog = Menu->Log



Enable logging

- Winbox->System->Logging
- Add Rule->remote en change prefix om te herkennen
- Action->Remote Address = Dude server IP



Log Rule <info>

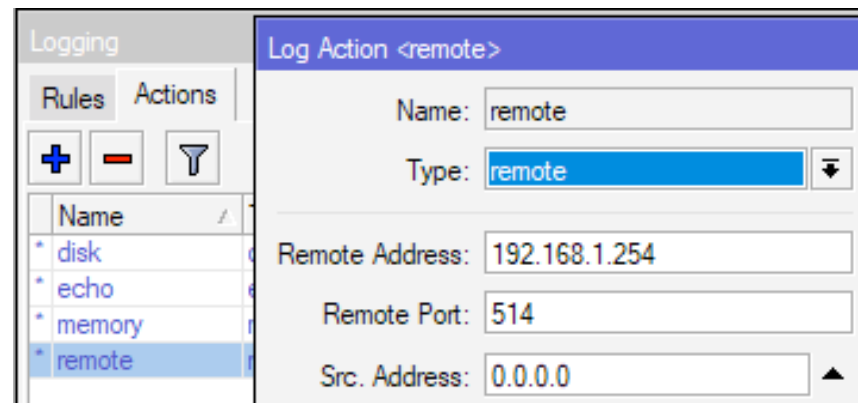
Topics: ☒ info

Prefix: RB3011

Action: remote

OK Cancel Apply Disable Copy Remove

enabled default



Logging

Rules Actions

+ - Filter

Name
* disk
* echo
* memory
* remote

Log Action <remote>

Name: remote

Type: remote

Remote Address: 192.168.1.254

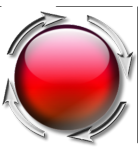
Remote Port: 514

Src. Address: 0.0.0.0

Functions

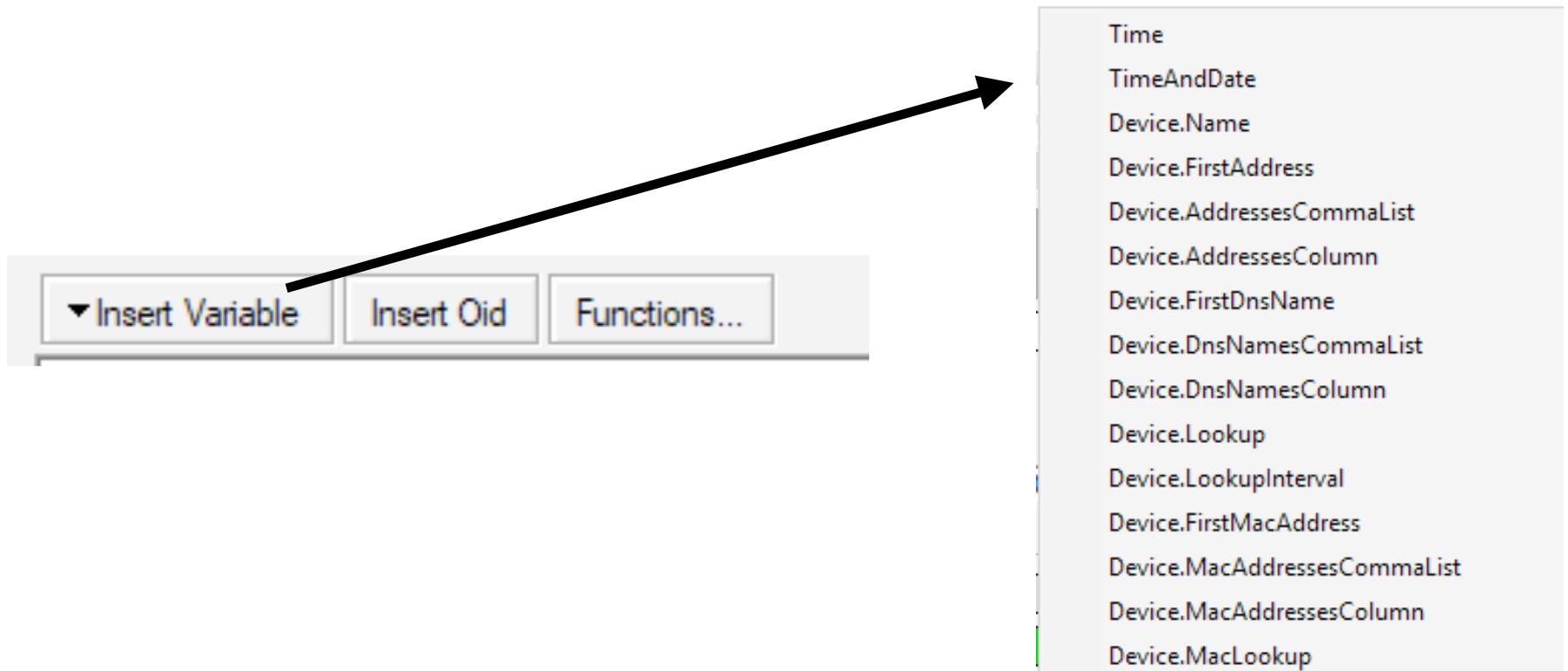
- Bestaande functies gebruiken of zelf toevoegen
- Maakt gebruik van voorgedefinieerd “keywords”:
 - max, min, average, array_find, if, string_find etc.
- En zelfgemaakt functies: bijv. device_performance:

```
if(string_size(cpu_mem_disk()) > 0,  
  concatenate(cpu_mem_disk(), ""),""  
)
```



Insert Variables

- Op diverse plaatsen kunnen voorgedefinieerde variabelen , Oid en Function's worden toegevoegd

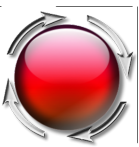


RouterOS commando's

- Zelf ook RouterOS commando's toe te voegen:

```
[ros_command(":put ([/system health get temperature].\" C\")")]
```

- Begin-Eind = [en]
- ros_command = RouterOS commando
- Begin-Eind = (“ en “)
- Commando =:put ([en])
- ROS commando = /system health get temperature



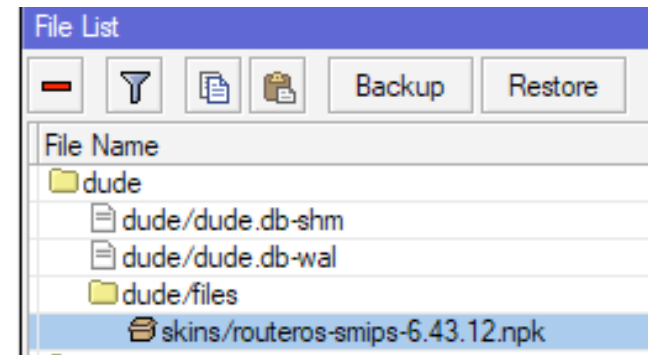
SNMP oid

- Systeem naam opvragen via SNMP:
 - [oid("iso.org.dod.internet.mgmt.mib-2.system.sysDescr.0")]
- Of via nummer:
 - [oid("1.3.6.1.2.1.1.1.0")]
 - Laatste .0 = get value

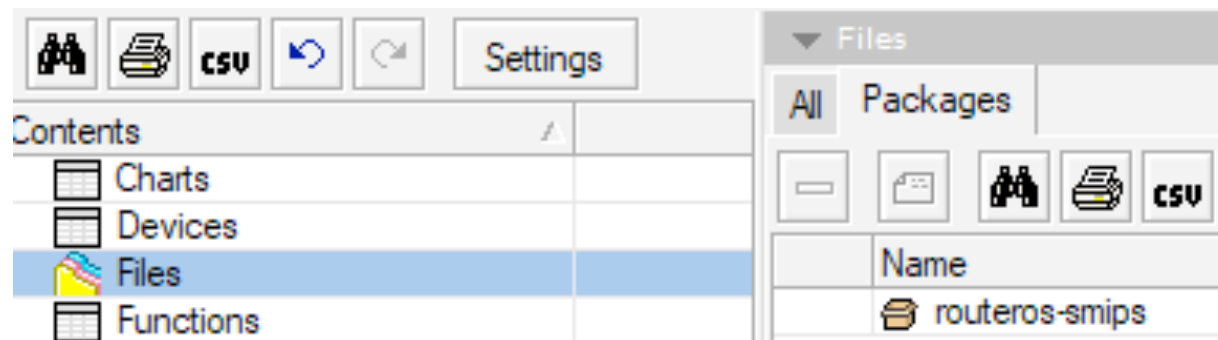


Upgrading

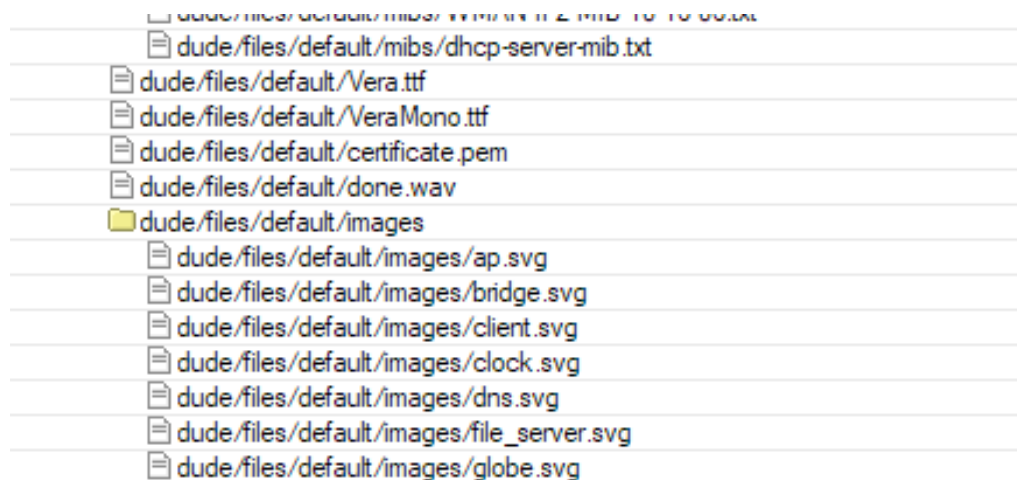
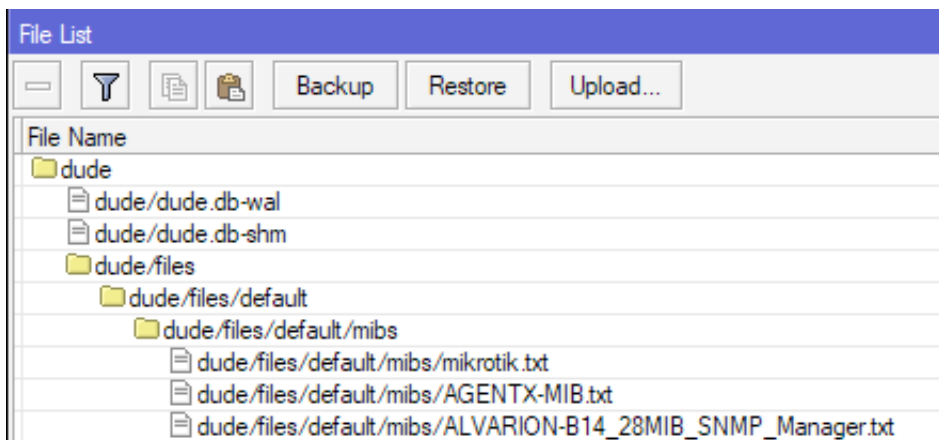
- Upload packages via Winbox in Files menu
- folder: /dude/files



- Worden zichtbaar in Dude->Files->Packages

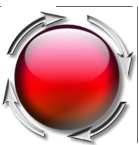


File structuur



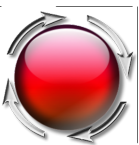
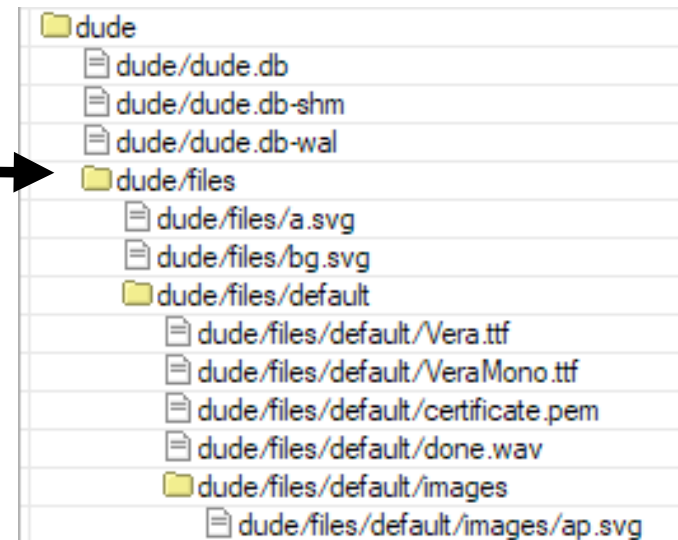
dude/files/bg.svg	.svg file	80.9 KiB
dude/dude.db	.db file	3652.0 KiB

- dude/files/default/mibs = MIBS
- dude/files/default/images = images voor devices
- dude/files/dude.db = de algemene database



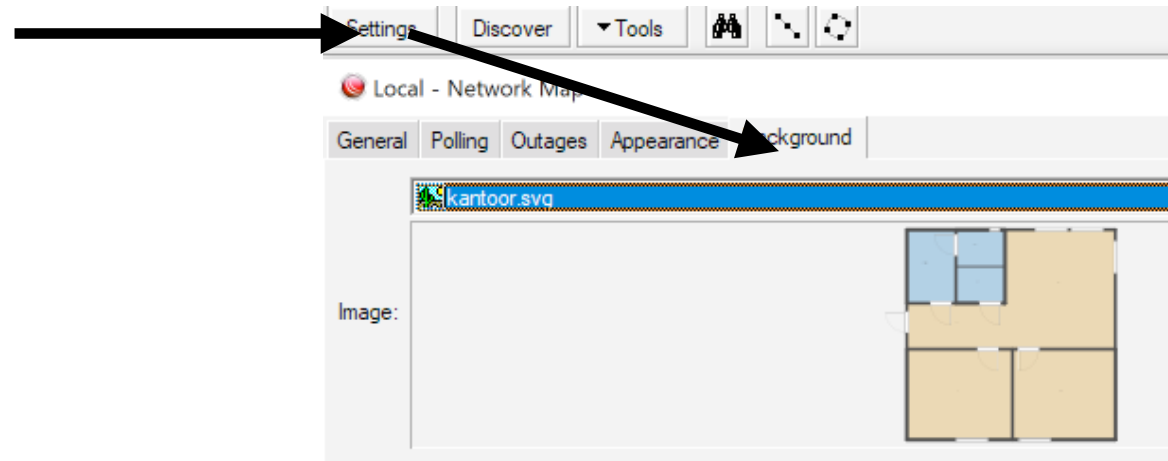
Files, MIBS, Images

- Images en MIBS uploaden via Winbox->Files
- Images in svg: scaled vector graphics
- Upload folder
- Images zijn groter en kleiner te maken in Dude zelf

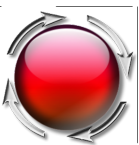
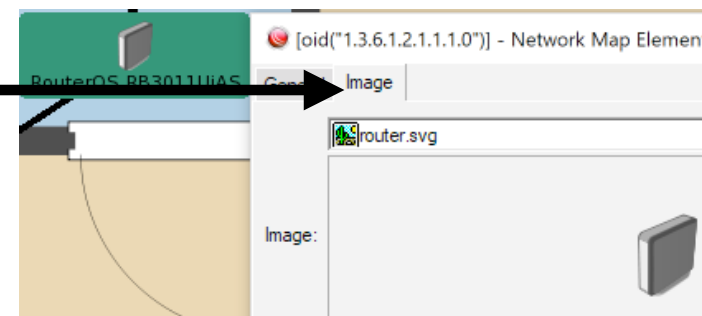


Images

- Background

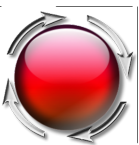
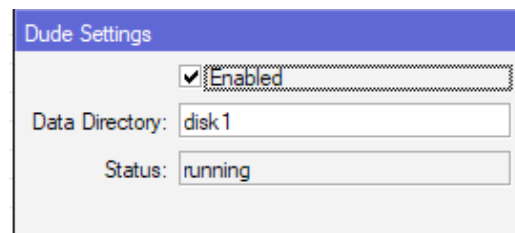


- Device->Rechtsklik->appearance->image



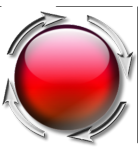
Database locatie

- Verander de database locatie, standaard staat deze naar de interne disk
- Indien db al bestaat:
 - Disable dude (Winbox->dude->settings->disable)
 - Verplaats dude.db naar gewenste lokatie (bijv. disk1)
 - Alleen de db dus niet de rest
 - /dude set data-directory=disk1
- Enable Dude



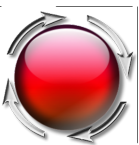
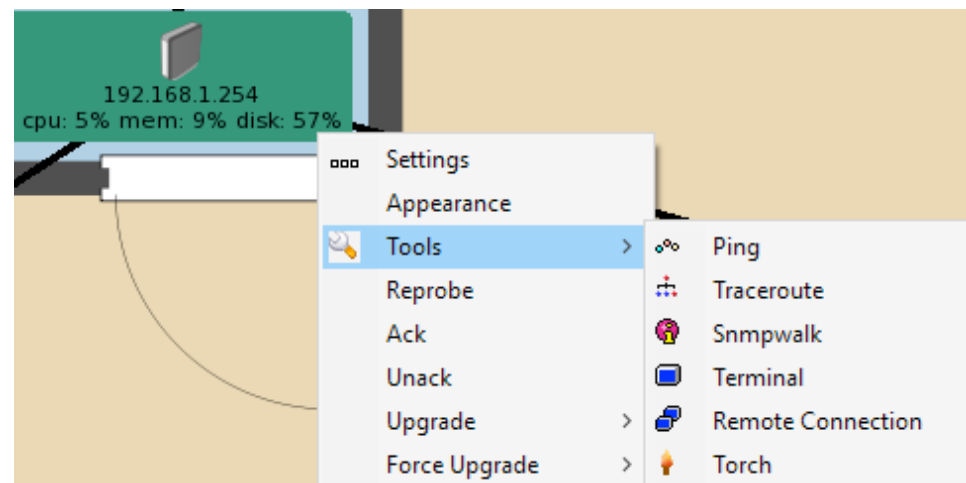
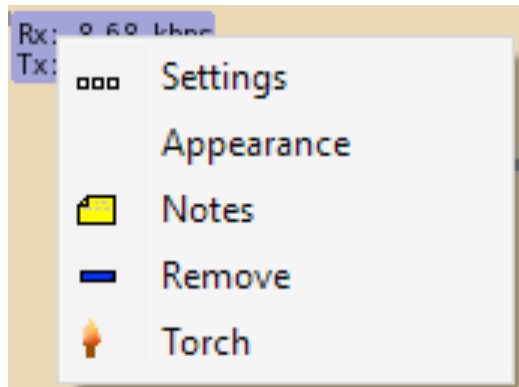
Database backup

- Backup database:
 - Disk1 = externe disk aangesloten op USB bijvoorbeeld
 - Winbox->CLI->/dude export-db backup-file=disk1/dude-bu.db
 - Importeer = /dude import-db backup-file=disk1/dude-bu.db



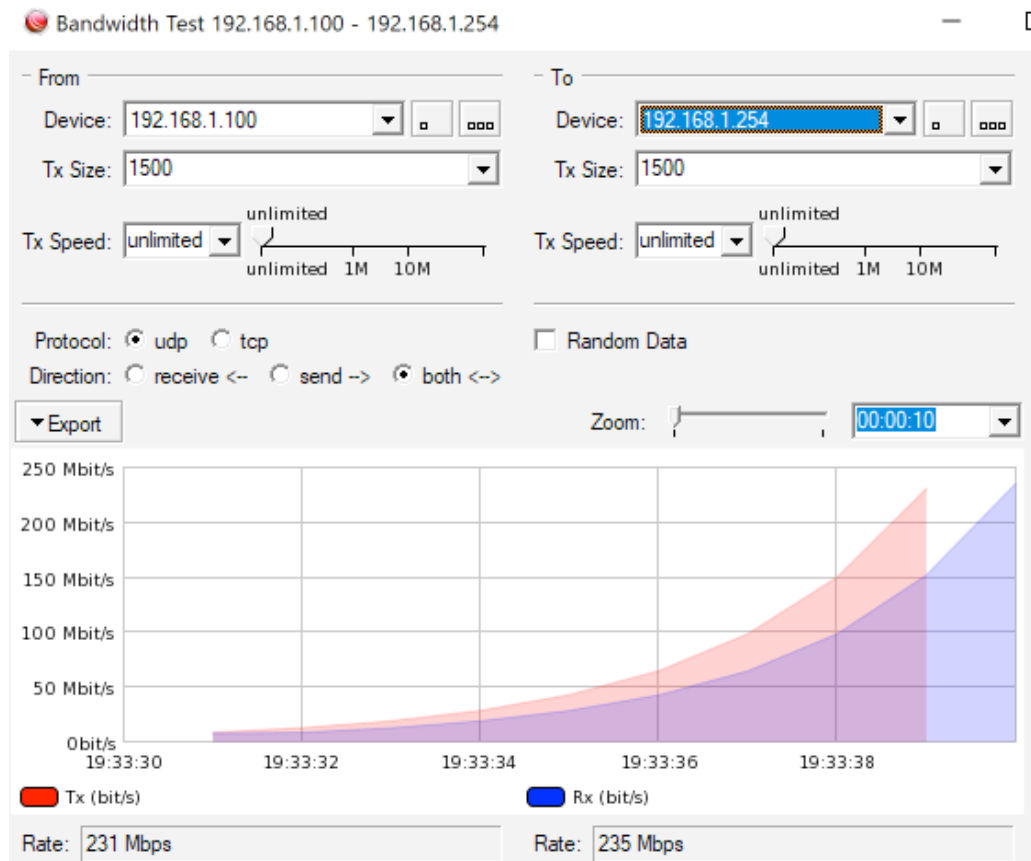
Torch

- Twee opties:
 - Direct op interface of op Device->Rechtsklik->Tools



Bandwith test

- Op Device->Rechtsklik->Tools->Bandwith test



SNMP Walk

- Selekteer IP->Start

Snmp Walk 192.168.1.254

From: 192.168.1.254 To: 192.168.1.254 Profile: v2-public

Type: ☒ all ☐ subtree ☐ specific oid

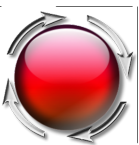
Timeout: 3000 ms Tries: 3

Start Stop Close

List Tree Table

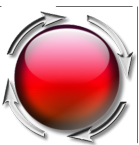
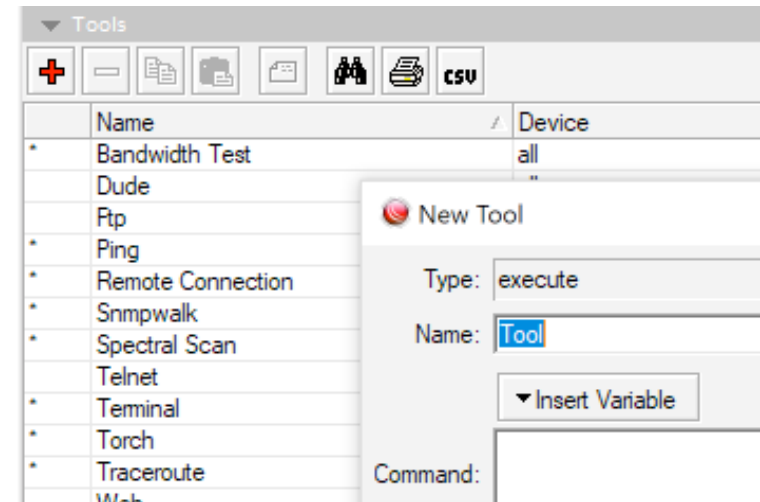
Module: all

Oid	Type	Value
iso.std.iso8802.ieee802dot1.ieee802dot1mibs.IldpMIB.IldpObjects.IldpLocalSystemData.IldpLocSysName.0	octet string	R1
iso.std.iso8802.ieee802dot1.ieee802dot1mibs.IldpMIB.IldpObjects.IldpLocalSystemData.IldpLocSysDesc.0	octet string	MikroTik RouterOS 6.43.12 (stable) RB30
iso.std.iso8802.ieee802dot1.ieee802dot1mibs.IldpMIB.IldpObjects.IldpLocalSystemData.IldpLocSysCapSupported.0	integer	20



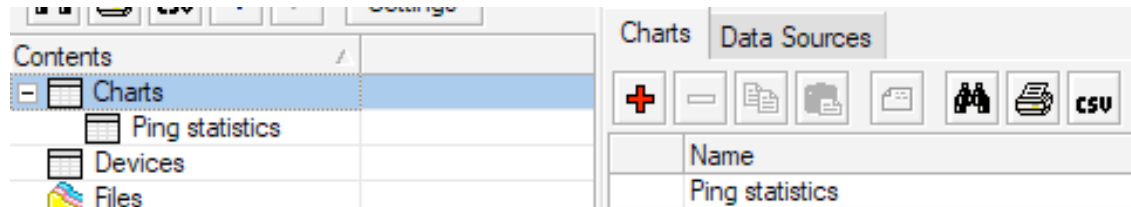
Tools toevoegen

- Dubbelklik Menu->Tools->+
- Voeg bijvoorbeeld Winbox toe:
 - Code = het pad naar Winbox
 - Variabelen te gebruiken
- C:\Users\henk\Desktop\winbox.exe [Device.FirstAddress]
[Device.UserName] "[Device.Password]"
- Zoals in Settings per Device ingegeven

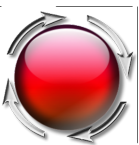


Charts

- Eigen grafieken aanmaken voor overzicht
- Op basis van Data Sources
- Dubbelklik Menu->Charts->+

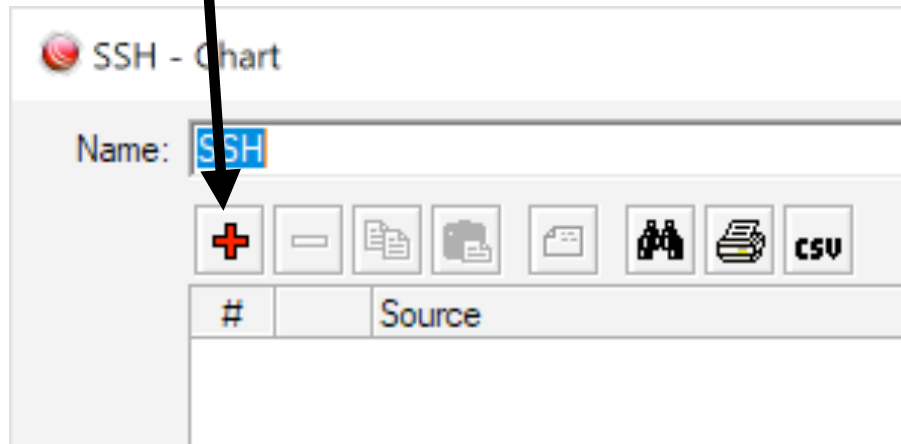


- Ontwerp kaart op basis van Data Sources



Charts

- Kaart naam geven:
- Verschijnt in lijst->Dubbelklik
- Voeg Data Sources toe



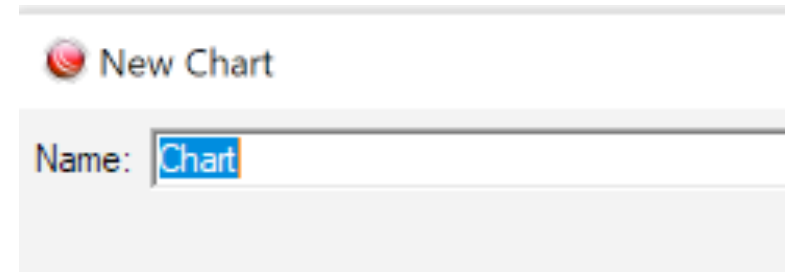
SSH - Chart

Name: SSH

+

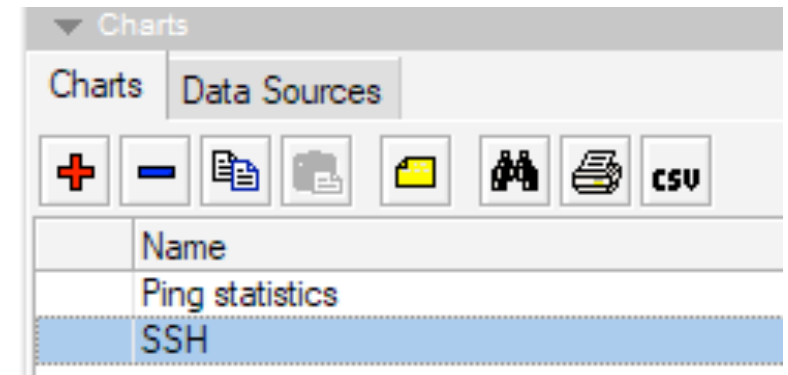
-

Source

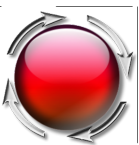


New Chart

Name: Chart



Charts	
	Name
	Ping statistics
	SSH



Charts

- Bepaal kleur etc.

Deze Source Alle Sources

New Chart Line

Source: ssh @ RB3011

Line Style: 1 pt

Line Color: [Green]

Line Opacity: 30 %

Fill Color: [Green]

Fill Opacity: 30 %

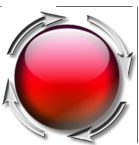
Ok Cancel Apply Notes Copy Remove



Eigen Data Source

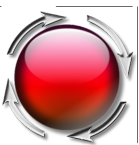
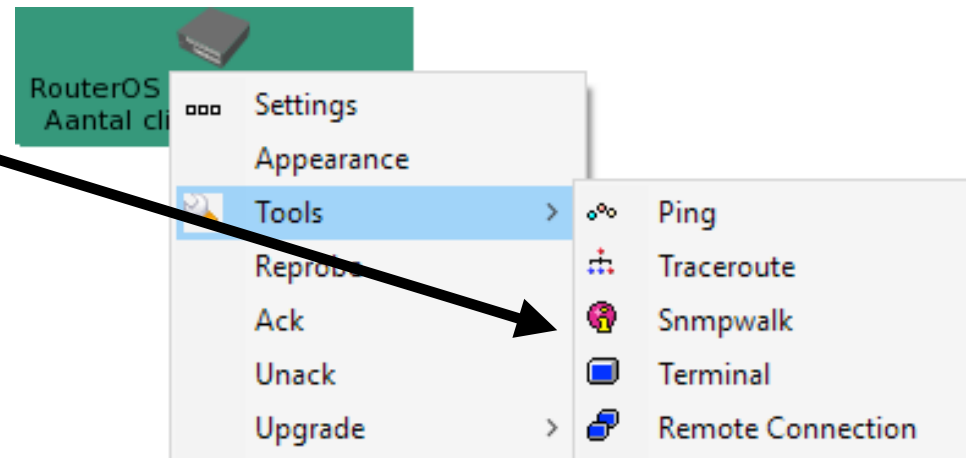
- Zelf definiëren m.b.v. Functions of direct Code invullen

The screenshot shows the 'Data Sources' window in the 'Charts' section. The window has a toolbar with icons for adding, removing, and managing data sources. The 'General' tab is selected, showing a list of data sources on the left and a configuration panel on the right. The configuration panel includes a 'General' tab with a checked 'Enabled' checkbox, and fields for 'Name' (Data Source), 'Unit', 'Device' (none), and 'Code'.



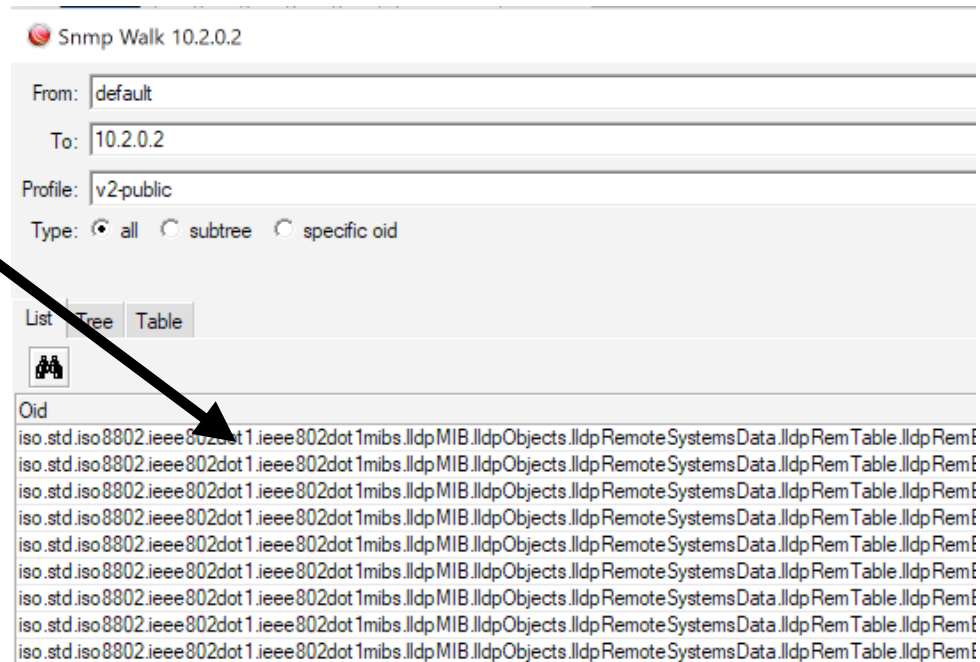
Eigen Data Source

- `ros_command("/interface wireless registration-table print count-only where interface=wlan1")`
- `oid ("....")`
- Gebruik snmpwalk in tool

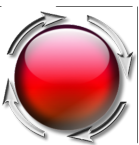
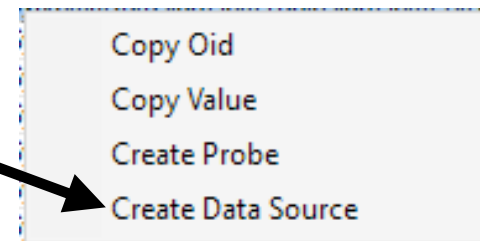


Eigen Data Source

- Zoek in lijst

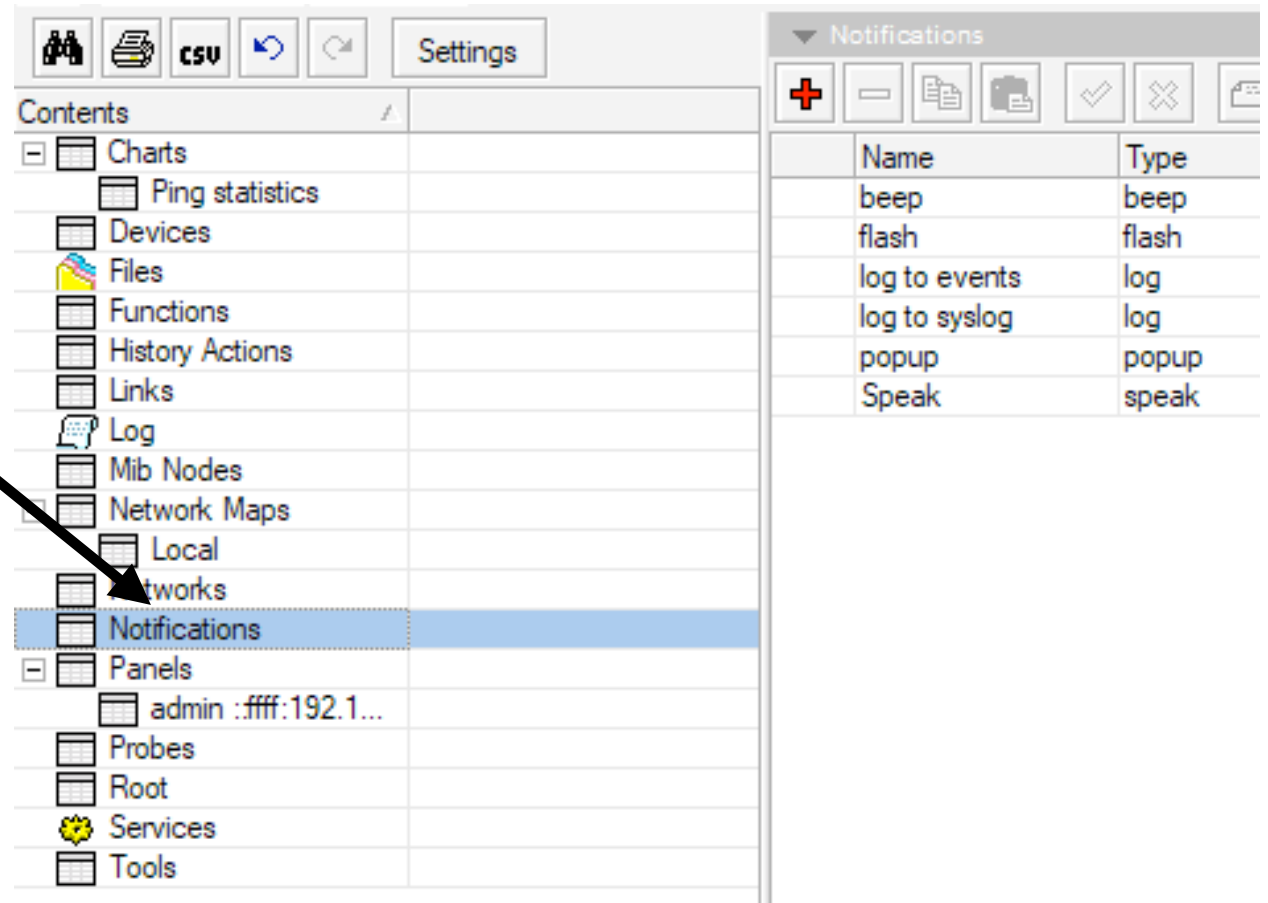


- Rechtsklik->Create Source



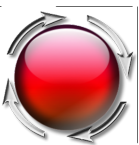
Notifications

- Meldingen die gebruikt kunnen worden in verschillende menu's
- Toevoegen:
 - Dubbelklik->+



The screenshot shows the Mikrotik WinBox interface. On the left, the 'Contents' menu is visible with 'Notifications' highlighted. An arrow points from the text 'verschillende menu's' to the 'Notifications' menu item. On the right, the 'Notifications' panel is open, displaying a table of notification types.

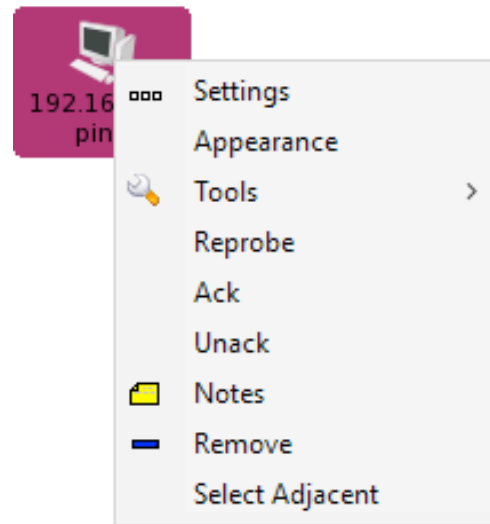
Name	Type
beep	beep
flash	flash
log to events	log
log to syslog	log
popup	popup
Speak	speak



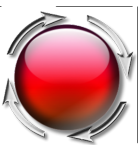
Outages

- Via Menu->Services: tabblad Outages
- Algemeen overzicht van alle down/up meldingen in een lijst

- In Layout:



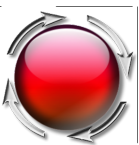
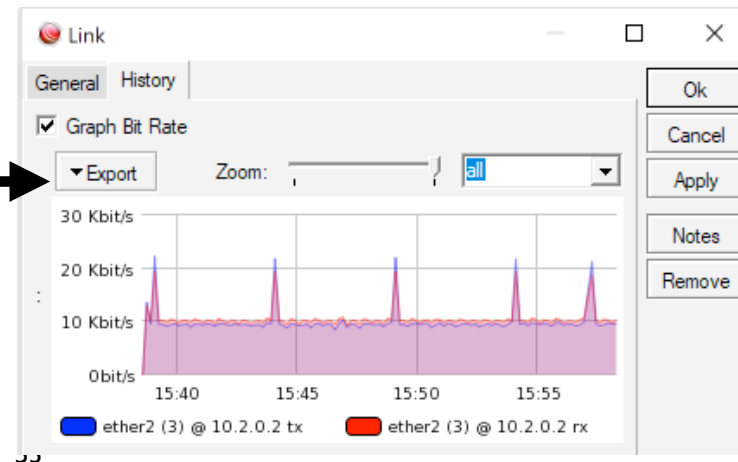
- Rechtsklik: Ack



Links

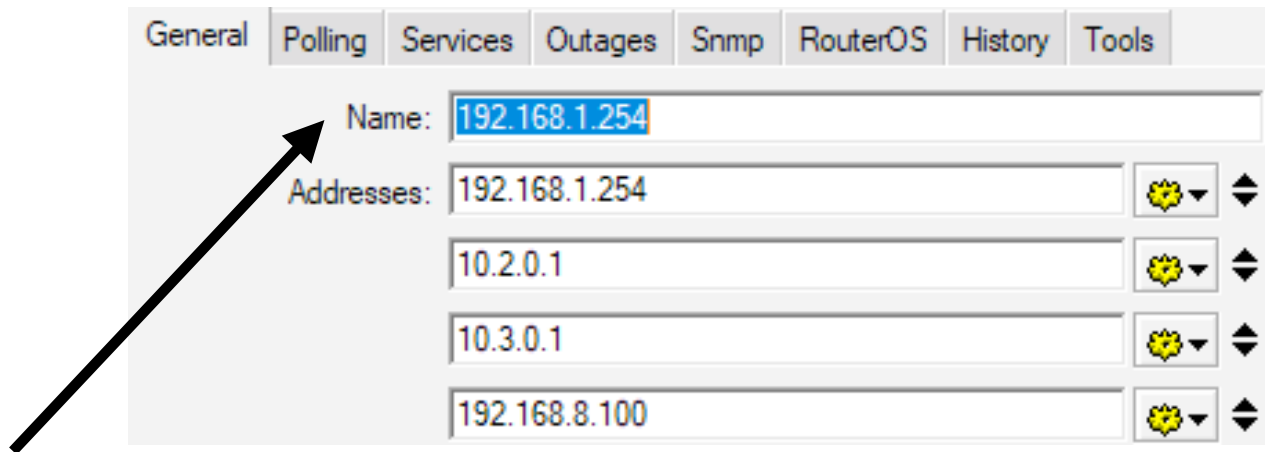
- Verbindingen tussen device's
 - Niet automatisch gevonden dan zelf toevoegen
 - Wireless links naar Internet bijvoorbeeld
- Klik menu (in Layout)->+ en sleep tussen twee devices
 - Bestaande link, dubbelklik: type en grafieken te zien

- Export opties



Devices veranderen

- Dubbelklik op Device in layout
- Overzicht van veel info
- Bijvoorbeeld gevonden IP adressen:

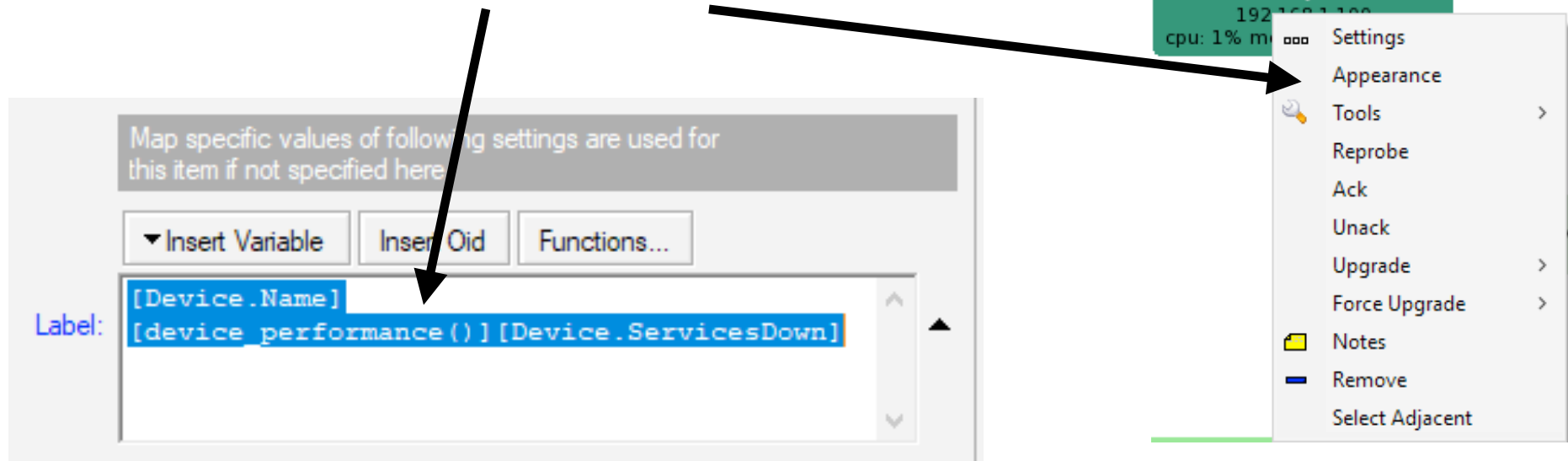


- Naam in layout aanpassen



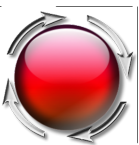
Devices appearance

- Label via Functions te veranderen



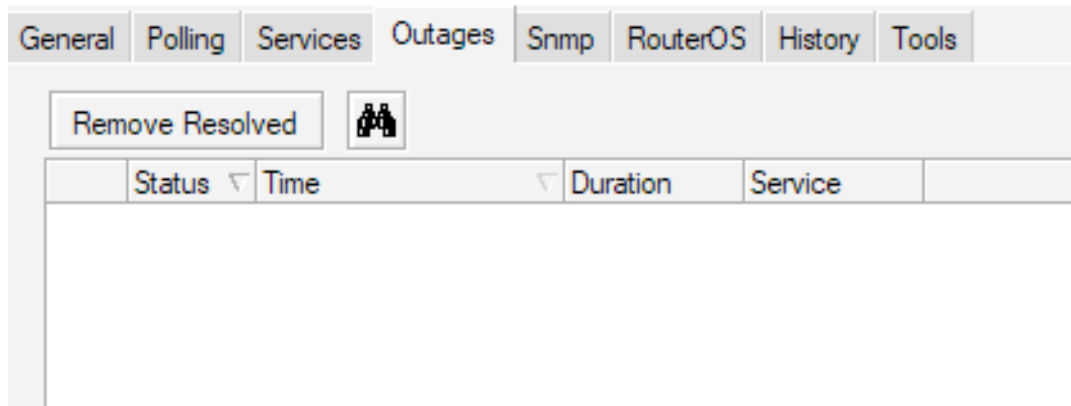
The image shows two parts of the Mikrotik WinBox interface. On the left, a configuration window for a device's appearance is open. It has a header that says 'Map specific values of following settings are used for this item if not specified here'. Below this are three buttons: 'Insert Variable', 'Insert Oid', and 'Functions...'. The 'Label' field is highlighted in blue and contains the text '[Device.Name] [device_performance()] [Device.ServicesDown]'. An arrow points from the 'Functions...' button to the 'device_performance()' function in the label. On the right, a context menu is open for a device icon. The menu items are: Settings, Appearance, Tools, Reprobe, Ack, Unack, Upgrade, Force Upgrade, Notes, Remove, and Select Adjacent. An arrow points from the 'Appearance' menu item to the configuration window on the left.

- [ros_command("/interface wireless registration-table print count-only where interface=wlan1")]

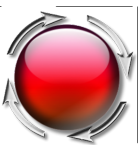
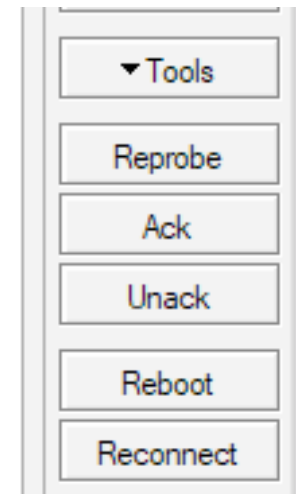


Devices bekijken

- Outages: up/down meldingen



- Meldingen bevestigen/verwijderen
 - Ack/Unack
- Nogmaals checken (Reprobe)



Aangepaste layout

