

Report on Zabbix Installation and Usage on Nokia Routers badaouiMu

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1 Introduction

This report details the steps for installing and using Zabbix 6.0 on Ubuntu 20.04 for monitoring Nokia routers.

2 Zabbix Installation

The following procedure describes how to install Zabbix using MySQL as the database and Nginx as the web server.

- `wget https://repo.zabbix.com/zabbix/6.0/ubuntu/pool/main/z/zabbix-release/zabbix-release_6.0-4+ubuntu20.04_all.deb`
- `sudo dpkg -i zabbix-release_6.0-4+ubuntu20.04_all.deb`
- `sudo apt update`
- `sudo apt install zabbix-server-mysql zabbix-frontend-php zabbix-nginx-conf zabbix-sql-scripts zabbix-agent`
- `sudo apt install mysql-server`

3 MySQL Database Configuration

The database for Zabbix can be created using the following commands.

```
sudo mysql -uroot -p
# mysql> create database zabbix character set utf8mb4 collate utf8mb4 bin;
# mysql> create user zabbix@localhost identified by 'password';
# mysql> grant all privileges on zabbix.* to zabbix@localhost;
# mysql> set global log_bin_trust_function_creators = 1;
# mysql> quit;
```

Then, the SQL scripts for Zabbix are imported into the database.

- `sudo zcat /usr/share/zabbix-sql-scripts/mysql/server.sql.gz | mysql --default-character-set=utf8mb4 -uzabbix -p zabbix`

Finally, the `log_bin_trust_function_creators` parameter is reset to its default value.

```
sudo mysql -uroot -p
# mysql> set global log_bin_trust_function_creators = 0;
# mysql> quit;
```

4 Zabbix and Nginx Configuration

The configuration of Zabbix and Nginx is done by modifying the configuration files as follows.

```
sudo nano /etc/zabbix/zabbix_server.conf
# Change DBPassword=password
```

```
sudo nano /etc/zabbix/nginx.conf
Uncomment 'listen 8080; '
Uncomment 'server_name example.com; '
```

5 Starting Services

The Zabbix, Nginx, and PHP services are then started and enabled at system startup.

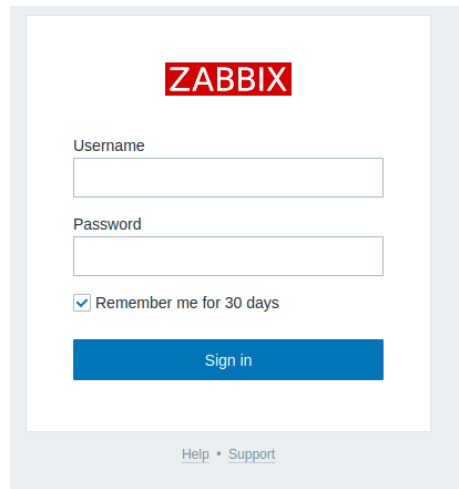
```
sudo systemctl restart zabbix-server zabbix-agent nginx php7.4-fpm
sudo systemctl enable zabbix-server zabbix-agent nginx php7.4-fpm
```

Zabbix is now installed and ready to be used for monitoring Nokia routers. For more information on configuring Zabbix, please refer to the Zabbix documentation. (<https://www.zabbix.com/fr/download>)

6 Using Zabbix for Monitoring Nokia Routers

Following the installation of Zabbix, we access the site `http://localhost:8080` to enter the Zabbix web interface.

Upon first connection, an interface appears to choose the password. Then, we are directed to the following interface:



ZABBIX

Username

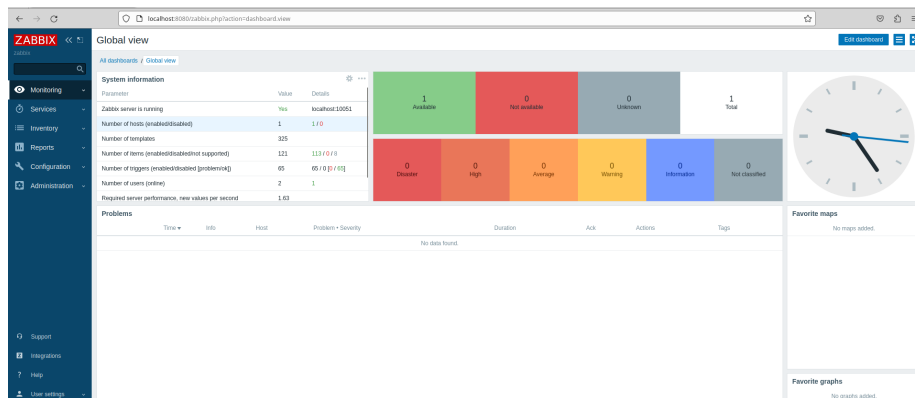
Password

☒ Remember me for 30 days

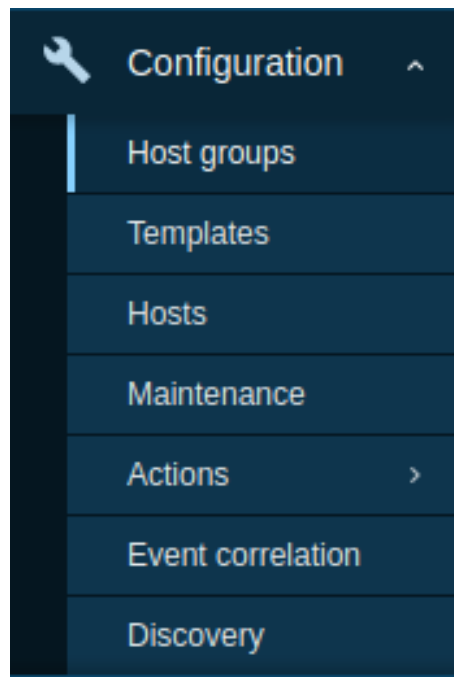
Sign in

[Help](#) • [Support](#)

By default, the username is "admin". After authentication, we arrive at the main interface which includes a dashboard. A server is already monitored by default, it's the server where Zabbix is installed.



To add a Nokia router, we must first create a group. We go to the left panel and select "Configuration > Host group".



Then, we name the group.

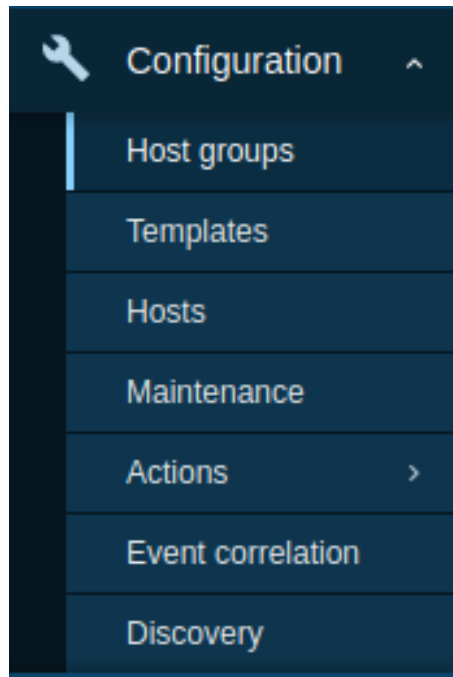
Host groups

* Group name

Add

Cancel

We return to the panel and select "Hosts".



This interface displays all hosts and we then click on "New Host" at the top right.

Name	Items	Triggers	Graphs	Discovery	Web interface	Proxy	Templates	Status	Availability	Agent encryption	Info	Tags
Zabbix server	Items 121	Triggers 95	Graphs 24	Discovery 4	Web	127.0.0.1:10050	Linux by Zabbix agent, Zabbix server health	Enabled	20%	Green		

We fill in the necessary information: displayed name, IP address, SNMP port, group, and the template.

New host

Host

IPMI

Tags

Macros

Inventory

Encryption

Value mapping

* Host name

BNG_1

Visible name

BNG_1

Templates

Alcatel Timetra TIMOS by SNMP

type here to search

Select

* Groups

Nokia_Router

type here to search

Select

Interfaces

Type	IP address	DNS name	Connect to	Port	Default
SNMP	192.168.100.100		IP	DNS	161

Remove

* SNMP version

SNMPv2

* SNMP community

{SNMP_COMMUNITY}

Use bulk requests

☒

Add

Description

Monitored by proxy

(no proxy)

Enabled

☒

Add

Cancel

For the template, it is imperative to choose the one from Nokia, otherwise we won't get anything.

Templates

×

Host group

Templates/Network devices

×

Select

☐ Name

☒ Alcatel Timetra TIMOS by SNMP

☐ Arista by SNMP

☐ Brocade FC by SNMP

☐ Brocade_Foundry Nonstackable by SNMP

☐ Brocade_Foundry Stackable by SNMP

☐ Cisco ASA by SNMP

☐ Cisco Catalyst 3750V2-24FS by SNMP

☐ Cisco Catalyst 3750V2-24PS by SNMP

☐ Cisco Catalyst 3750V2-24TS by SNMP

☐ Cisco Catalyst 3750V2-48PS by SNMP

☐ Cisco Catalyst 3750V2-48TS by SNMP

☐ Cisco IOS by SNMP

☐ Cisco IOS prior to 12.0_3_T by SNMP

☐ Cisco IOS versions 12.0_3_T-12.2_3.5 by SNMP

☐ Cisco Meraki dashboard by HTTP

☐ Cisco Meraki device by HTTP

☐ Cisco Meraki organization by HTTP

☐ Cisco Nexus 9000 Series by SNMP

☐ D-Link DES 7200 by SNMP

Select

Cancel

Finally, we need to configure the community for SNMPv2, otherwise the username and password for SNMPv3.

New host

×

Host

IPMI

Tags

Macros 1

Inventory

Encryption

Value mapping

Host macros

Inherited and host macros

Macro	Value	Description	
<code>{SNMP_COMMUNITY}</code>	public	description	Remove

Add

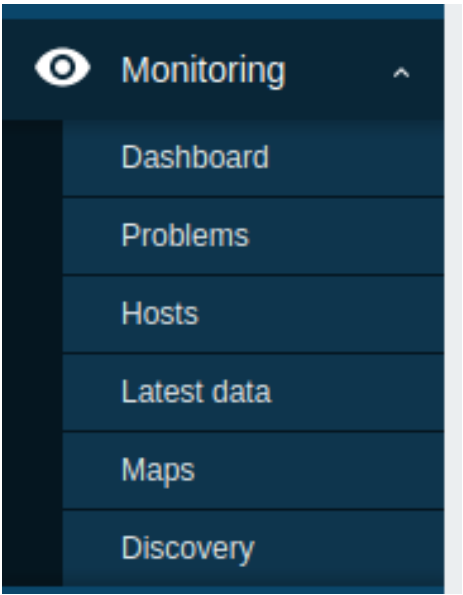
Add

Cancel

We return to the host page and we must wait a bit until the color of SNMP turns green.

<input type="checkbox"/> Name ▾	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability	Agent encryption
<input type="checkbox"/> BNG_1	Items 19	Triggers 9	Graphs 3	Discovery 6	Web	192.168.100.100:161		Alcatel-Timera TMOS by SNMP	Enabled	99%	None
<input type="checkbox"/> Zabbix server	Items 121	Triggers 65	Graphs 24	Discovery 4	Web	127.0.0.1:10050		Linux by Zabbix agent, Zabbix server health	Enabled	100%	None

We then go to the panel and select Monitoring > Host.



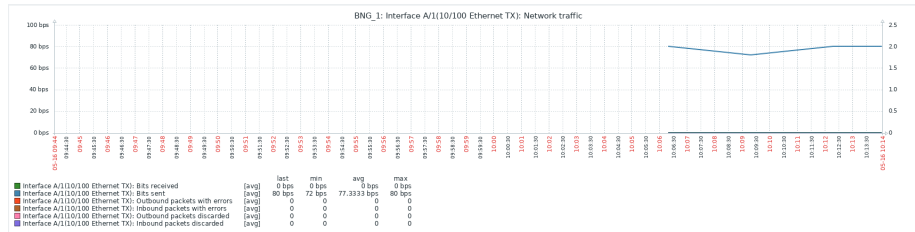
We choose our host and we get all the possible information.

<input type="checkbox"/> Host	Name ▾	Last check	Last value	Change	Tags	Info
<input type="checkbox"/> BNG_1	Available memory 📊	55s	764 MB		component:memory	Graph
<input type="checkbox"/> BNG_1	CPU utilization 📊	55s	6 %	-1 %	component:cpu	Graph
<input type="checkbox"/> BNG_1	Hardware model name 📄				component:system	History
<input type="checkbox"/> BNG_1	ICMP loss 📊	55s	0 %		component:health component:network	Graph
<input type="checkbox"/> BNG_1	ICMP ping 📊	55s	Up (1)		component:health component:network	Graph
<input type="checkbox"/> BNG_1	ICMP response time 📊	55s	2.8ms	+0.42ms	component:health component:network	Graph
<input type="checkbox"/> BNG_1	Memory utilization 📊	38s	39.4895 %	+0.0009629 %	component:memory	Graph
<input type="checkbox"/> BNG_1	Operating system 📄				component:os	History
<input type="checkbox"/> BNG_1	SNMP agent availability 📊	37s	available (1)		component:health component:network	Graph
<input type="checkbox"/> BNG_1	SNMP traps (fallback) 📄				component:network	History
<input type="checkbox"/> BNG_1	System contact details 📄	55s			component:system	History
<input type="checkbox"/> BNG_1	System description 📄	55s	TMOS-C-14.0.R9-qmvd8...		component:system	History
<input type="checkbox"/> BNG_1	System location 📄	55s			component:system	History
<input type="checkbox"/> BNG_1	System name 📄	55s	vsm		component:system	History
<input type="checkbox"/> BNG_1	System object ID 📄	55s	No.3.6.1.4.1.6527.1.3.3		component:system	History
<input type="checkbox"/> BNG_1	Total memory 📊	40s	1.23 GB	+21 KB	component:memory	Graph
<input type="checkbox"/> BNG_1	Uptime (hardware) 📊	25s	00:00:00		component:system	Graph
<input type="checkbox"/> BNG_1	Uptime (network) 📊	25s	00:05:54	+00:00:30	component:network	Graph
<input type="checkbox"/> BNG_1	Used memory 📊	55s	498.59 MB	+21 KB	component:memory	Graph

We also find real-time graphs.



For interfaces, we also have real-time traffic.



For these graphs, we have the possibility to choose the time axis we want.

