

Configure Zabbix to Monitor FS Switches via SNMP

Models: S5860 Series
S3910 Series
S3900 Series
S3950 Series
S3700 Series
PoE+ Series
S5850 Series
S5800 Series
S5900 Series
S8050 Series

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1. Preface

Zabbix is an open-source monitoring software for networks and applications. It can monitor many network parameters and the health and integrity of servers, virtual machines, and any other kind of network device. This document will guide you to import the FS template in Zabbix and apply the template to monitor the FS Switches. The version of Zabbix in this document is 4.4.4 (CentOS Linux version is 7.7, Mysql version is 5.6.46), and taking FS-S5860 switch as an example to monitor the S5860-24XB-U switch.

2. Operation Guide

2.1 Operation Steps

- Configure SNMP function of the switch
- Log in to Zabbix to import the FS-S5860 template
- Create host group S5860-Switch and link FS-S5860 template
- Create host, link S5860-Switch host group, link FS-S5860 template
- Monitor host data

2.2 Operation Process

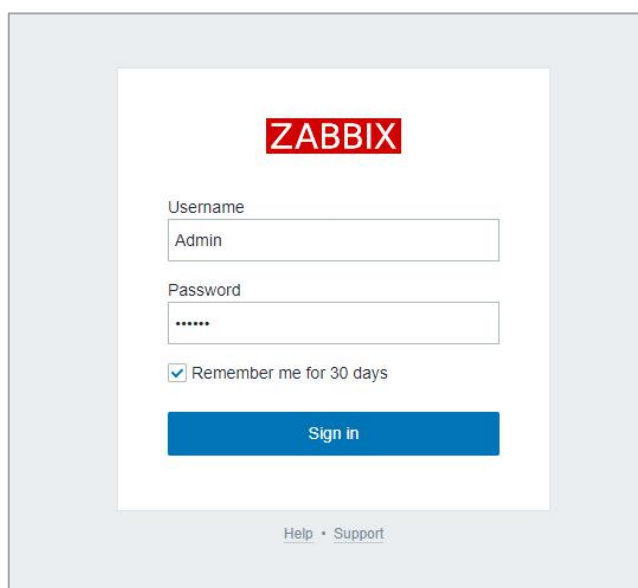
2.2.1 Configure the Switch

Take S5860-24XB-U as an example to configure the SNMP function

```
FS#configure terminal
FS(config)#snmp-server enable version v2c
FS(config)#snmp-server community Public ro
```

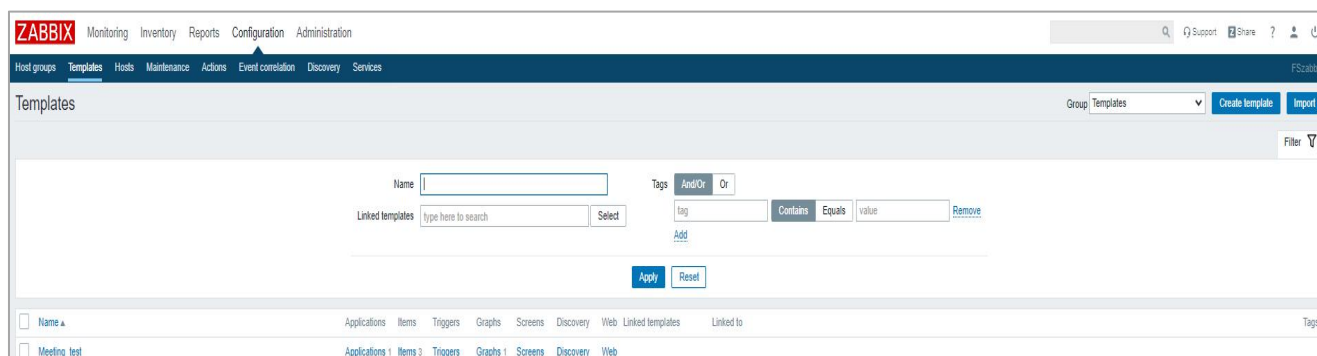
2.2.2 Log in to Zabbix to Import Templates

Step 1: Open Zabbix login interface and enter the user name and password to log in to the Zabbix software.



The image shows the Zabbix login interface. At the top, there is a red 'ZABBIX' logo. Below it, there are input fields for 'Username' (containing 'Admin') and 'Password' (containing six dots). A checkbox labeled 'Remember me for 30 days' is checked. A blue 'Sign in' button is positioned below the password field. At the bottom of the form, there are links for 'Help' and 'Support'.

Step 2: Select the **Templates** under Configuration category, and click **Import** in the upper right corner to enter the template import interface.



The image shows the Zabbix 'Templates' configuration page. The top navigation bar includes 'Monitoring', 'Inventory', 'Reports', 'Configuration', and 'Administration'. The 'Configuration' tab is active, and the 'Templates' sub-tab is selected. The main area is titled 'Templates' and features a search bar, a 'Group' dropdown set to 'Templates', and buttons for 'Create template' and 'Import'. Below these, there are fields for 'Name' and 'Tags' (with 'And/Or' and 'Or' options). A 'Linked templates' section includes a search box and a 'Select' button. At the bottom, there are 'Apply' and 'Reset' buttons. A table at the very bottom lists various template categories like 'Applications', 'Items', 'Triggers', 'Graphs', 'Screens', 'Discovery', 'Web', 'Linked templates', and 'Linked to'.

Step 3: Select the 'FS-S5860_zbx_templates', click the **Import** button to import it, and then you can see the FS-S5860 templates that have been successfully imported in the template list after the import success is displayed.

ZABBIX Monitoring Inventory Reports Configuration Administration

Host groups Templates Hosts Maintenance Actions Event correlation Discovery Services

Import

* Import file: FS-S5860_zbx_templates.xml

Rules	Update existing	Create new	Delete missing
Groups	☒	☒	☒
Hosts	☐	☒	☒
Templates	☐	☒	☒
Template screens	☐	☒	☐
Template linkage	☐	☒	☐
Applications	☐	☒	☐
Items	☐	☒	☐
Discovery rules	☐	☒	☐
Triggers	☐	☒	☐
Graphs	☐	☒	☐
Web scenarios	☐	☒	☐
Screens	☐	☒	☐
Maps	☐	☒	☐
Images	☐	☒	☐
Media types	☐	☒	☐
Value mappings	☐	☒	☐

ZABBIX Monitoring Inventory Reports Configuration Administration

Host groups Templates Hosts Maintenance Actions Event correlation Discovery Services

Templates

Name:

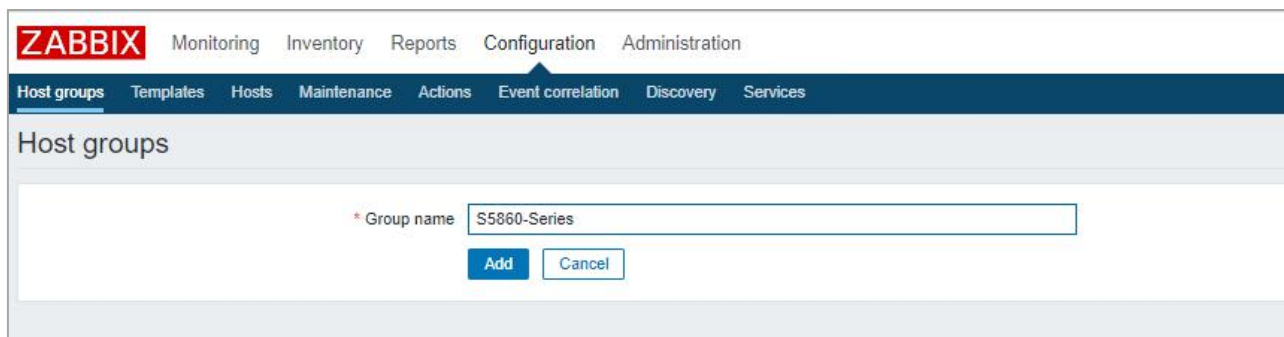
Tags: And/Or Or

Linked templates:

Name	Applications	Items	Triggers	Graphs	Screens	Discovery	Web	Linked templates	Linked to
FS-S5860	Applications 9	Items 50	Triggers 3	Graphs	Screens 1	Discovery 1	Web	Template Module	Interfaces SNMPv2

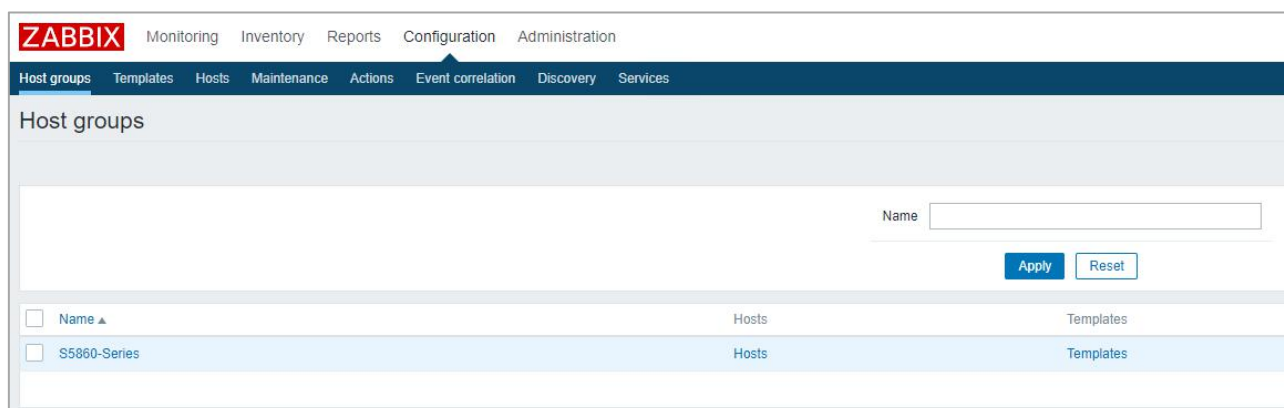
2.2.3 Create Host Groups

Step 1: Select the **host groups** and click the **Create host group** button in the upper-right corner.



The screenshot shows the Zabbix web interface with the 'Configuration' menu selected. The 'Host groups' sub-menu is active. A form titled 'Host groups' is displayed, featuring a text input field for 'Group name' containing the value 'S5860-Series'. Below the input field are two buttons: 'Add' and 'Cancel'.

Step 2: Create a host group named 'S5860-Series' host group, then view the successfully created host group.

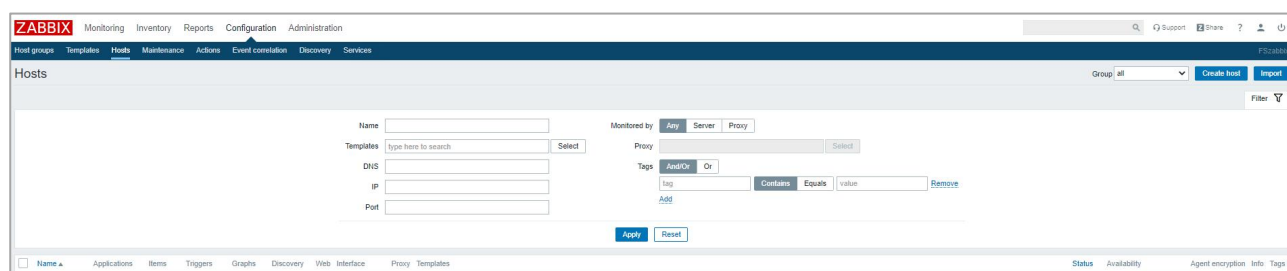


The screenshot shows the Zabbix web interface with the 'Host groups' sub-menu active. A table lists the created host groups. The table has columns for 'Name', 'Hosts', and 'Templates'. The first row shows 'S5860-Series' with 'Hosts' and 'Templates' listed. Above the table, there is a search bar labeled 'Name' and two buttons: 'Apply' and 'Reset'.

Name	Hosts	Templates
S5860-Series	Hosts	Templates

2.2.4 Create Hosts

Step 1: Enter **Hosts** page under **Configuration**, click on the **Create Host** button in the upper right corner to create the host.



The screenshot shows the Zabbix web interface with the 'Hosts' sub-menu active. A form titled 'Hosts' is displayed. It includes fields for 'Name', 'Templates', 'DNS', 'IP', and 'Port'. There are also dropdown menus for 'Monitored by' (set to 'Any'), 'Server', and 'Proxy'. A 'Tags' section allows adding tags with 'And/Or' and 'Or' buttons. At the bottom, there are 'Apply' and 'Reset' buttons.

Step 2: Create a host named S5860-24XB-U, select the S5860-Series host group, enter the management IP address of the switch in the SNMP interfaces, remove the check box before Use bulk requests, and click Add.

ZABBIX Monitoring Inventory Reports Configuration Administration

Host groups Templates **Hosts** Maintenance Actions Event correlation Discovery Services

Hosts

All hosts / S5860-24XB-U Enabled ZBX **SNMP** JMX IPMI Applications 43 Items 356 Triggers 139 Graphs 34 Discovery rules 1 Web scenarios

Host Templates IPMI Tags Macros Inventory Encryption

* Host name S5860-24XB-U

Visible name

* Groups S5860-Series ✕ Select
type here to search

* At least one interface must exist.

Agent interfaces IP address DNS name Connect to Port Default
[Add](#)

SNMP interfaces 10.32.104.140 IP DNS 161 ☒ Remove
☐ Use bulk requests [Add](#)

JMX interfaces [Add](#)

IPMI interfaces [Add](#)

Description

Monitored by proxy (no proxy) ▼

Enabled ☒

[Update](#) [Clone](#) [Full clone](#) [Delete](#) [Cancel](#)

Step 3: You can view the created hosts under the host list.

ZABBIX Monitoring Inventory Reports Configuration Administration

Host groups Templates **Hosts** Maintenance Actions Event correlation Discovery Services

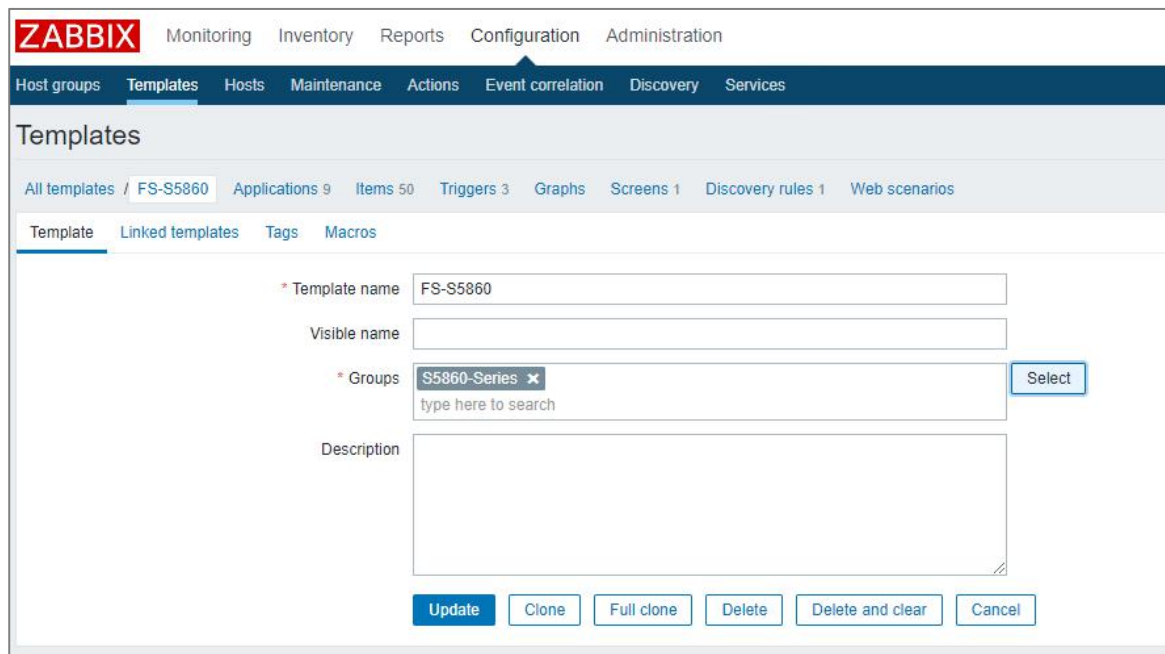
Group: all [Create host](#) [Import](#) [Filter](#)

Name Monitored by Any Server Proxy
Templates type here to search Select
DNS
IP
Port
Proxy Select
Tags And/Or Or
tag Contains Equals value Remove
Add
[Apply](#) [Reset](#)

☐ Name ▲	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability	Agent encryption	Info	Tags
☐ S5860-24XB-U	Applications 43	Items 356	Triggers 139	Graphs 34	Discovery 1	Web	10.32.104.140 161		FS-S5860 (Template Module Interfaces SNMPv2)	Enabled		SNMP JMX IPMI NONE		

2.2.5 Link Template and Host Group

Step 1: Link the S5860-Series host group in the FS-S5860 template.

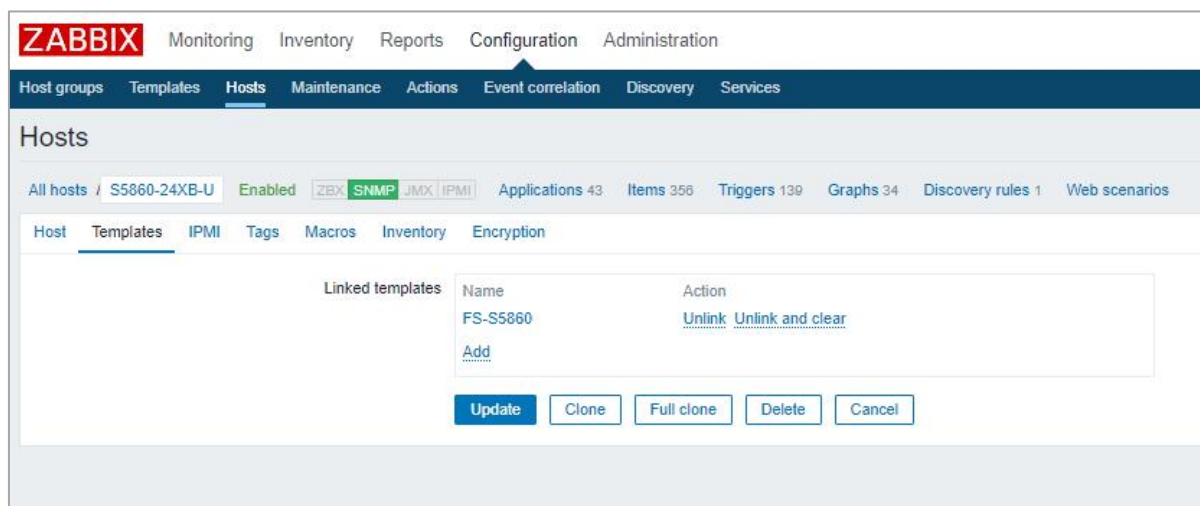


The screenshot shows the Zabbix web interface for editing a template. The breadcrumb trail is "All templates / FS-S5860". The sub-breadcrumb trail is "Applications 9 / Items 50 / Triggers 3 / Graphs / Screens 1 / Discovery rules 1 / Web scenarios". The "Template" tab is selected. The form contains the following fields:

- * Template name: FS-S5860
- Visible name: (empty)
- * Groups: S5860-Series (selected), with a "Select" button and a search input "type here to search".
- Description: (empty text area)

At the bottom, there are buttons: Update, Clone, Full clone, Delete, Delete and clear, and Cancel.

Step 2: Link FS-S5860 template under S5860-24XB-U host.



The screenshot shows the Zabbix web interface for editing a host. The breadcrumb trail is "All hosts / S5860-24XB-U". The sub-breadcrumb trail is "Enabled / ZBX / SNMP / JMX / IPMI / Applications 43 / Items 356 / Triggers 139 / Graphs 34 / Discovery rules 1 / Web scenarios". The "Host" tab is selected. The "Linked templates" section contains a table:

Name	Action
FS-S5860	Unlink Unlink and clear
Add	

At the bottom, there are buttons: Update, Clone, Full clone, Delete, and Cancel.

Step 3: Return to the host interface, you can view the information that has been linked to the template in the host.

The screenshot shows the Zabbix 'Hosts' configuration page. At the top, there's a navigation bar with links like Monitoring, Inventory, Reports, Configuration, and Administration. Below this, the 'Hosts' section has a search bar and a 'Filter' button. A form allows adding a new host with fields for Name, Templates (with a search bar), DNS, IP, and Port. There are also filters for Monitoring by (Any, Server, Proxy), Priority, and Tags (And/Or, Or, Contains, Equals, value, Remove). A table at the bottom lists existing hosts, including S5860-24XB-U, with columns for Name, Applications, Items, Triggers, Graphs, Discovery, Web, Interface, Proxy, Templates, Status, Availability, Agent encryption, and Info.

2.2.6 Monitoring Switch Data

Select S5860-Series Host groups and S5860-24XB-U Hosts, you can view that Zabbix has monitored the relevant information and data of the switch S5860-24XB-U.

The screenshot shows the Zabbix 'Latest data' page. It has a search bar and a 'Filter' button. Below the search bar, there are filters for Host groups (S5860-Series), Hosts (S5860-24XB-U), and Application. A table below the filters lists monitored data for the S5860-24XB-U host. The table has columns for Host, Name, Last check, Last value, and Change. The data is organized into sections for S5860-24XB-U and S5860-24XB-U, showing various interface metrics like Speed, Outbound packets with errors, Outbound packets discarded, Operational status, Interface type, Inbound packets with errors, Inbound packets discarded, Bytes sent, and Bytes received.

Host	Name	Last check	Last value	Change
S5860-24XB-U	Interface Mg0/1 (IP management Console) (9 items)			
	Interface Mg0/1 (IP management Console): Speed	11/20/2020 04:19:49 PM	1 Gbps	Graph
	Interface Mg0/1 (IP management Console): Outbound packets with errors	11/20/2020 04:46:41 PM	0	Graph
	Interface Mg0/1 (IP management Console): Outbound packets discarded	11/20/2020 04:43:07 PM	0	Graph
	Interface Mg0/1 (IP management Console): Operational status	11/20/2020 04:44:23 PM	down (2)	Graph
	Interface Mg0/1 (IP management Console): Interface type	11/20/2020 12:15:57 PM	ethernetCarnad (6)	Graph
	Interface Mg0/1 (IP management Console): Inbound packets with errors	11/20/2020 04:41:59 PM	0	Graph
	Interface Mg0/1 (IP management Console): Inbound packets discarded	11/20/2020 04:47:25 PM	0	Graph
	Interface Mg0/1 (IP management Console): Bytes sent	11/20/2020 04:46:15 PM	0 bps	Graph
	Interface Mg0/1 (IP management Console): Bytes received	11/20/2020 04:45:33 PM	0 bps	Graph
S5860-24XB-U	Interface Td0/1 (3 items)			
	Interface Td0/1: Speed	11/20/2020 04:04:16 PM	10 Gbps	Graph
	Interface Td0/1: Outbound packets with errors	11/20/2020 04:43:08 PM	0	Graph
	Interface Td0/1: Outbound packets discarded	11/20/2020 04:45:50 PM	0	Graph
	Interface Td0/1: Operational status	11/20/2020 04:47:50 PM	down (2)	Graph
	Interface Td0/1: Inbound packets with errors	11/20/2020 04:47:27 PM	0	Graph
	Interface Td0/1: Inbound packets discarded	11/20/2020 04:46:52 PM	0	Graph
	Interface Td0/1: Bytes sent	11/20/2020 04:46:42 PM	0 bps	Graph
	Interface Td0/1: Bytes received	11/20/2020 04:47:00 PM	0 bps	Graph

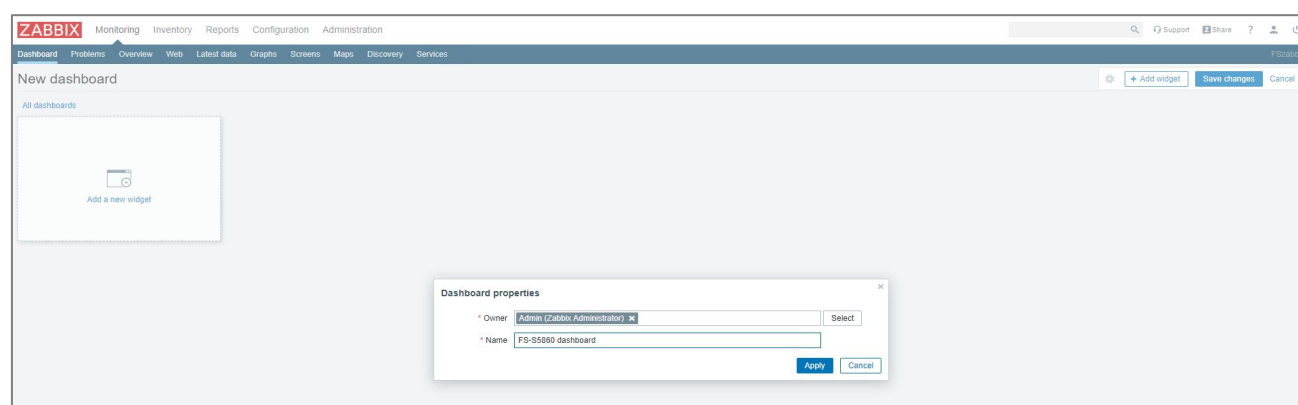
2.3 Zabbix Personalized Customization

Zabbix's Dashboard can display visualized information and data (overview, map, chart, clock, etc.). Here we take the creation of CPU utilization as an example.

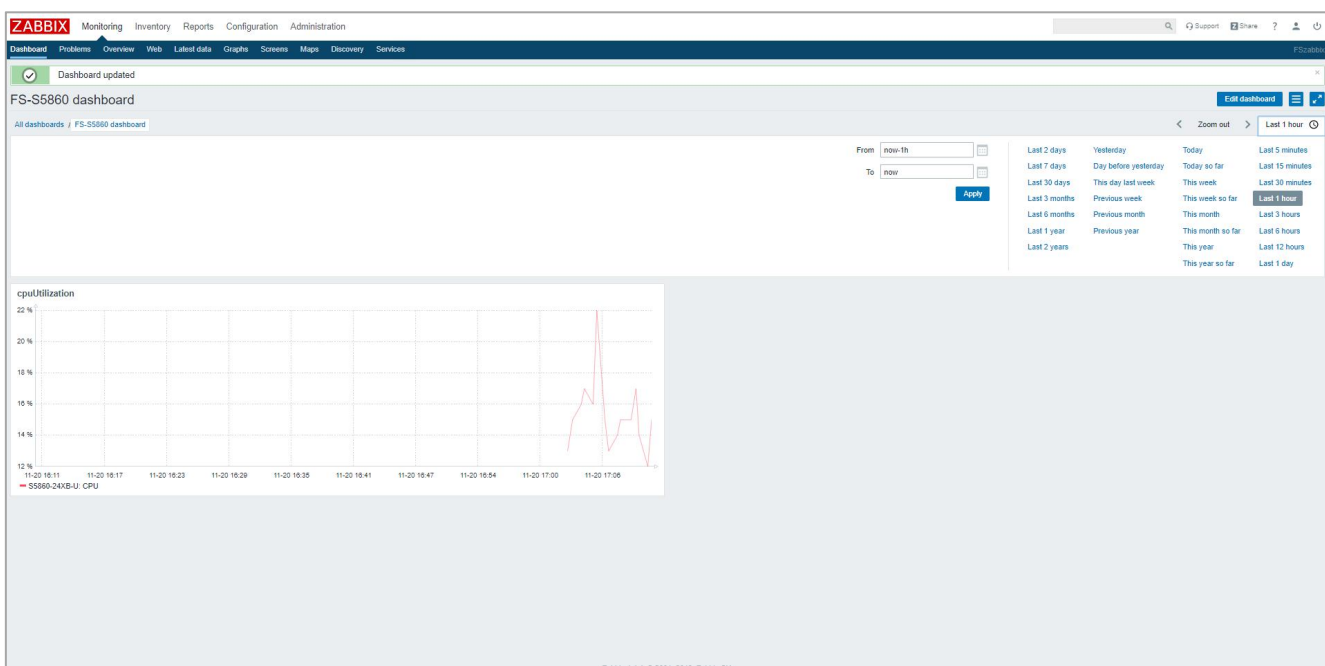
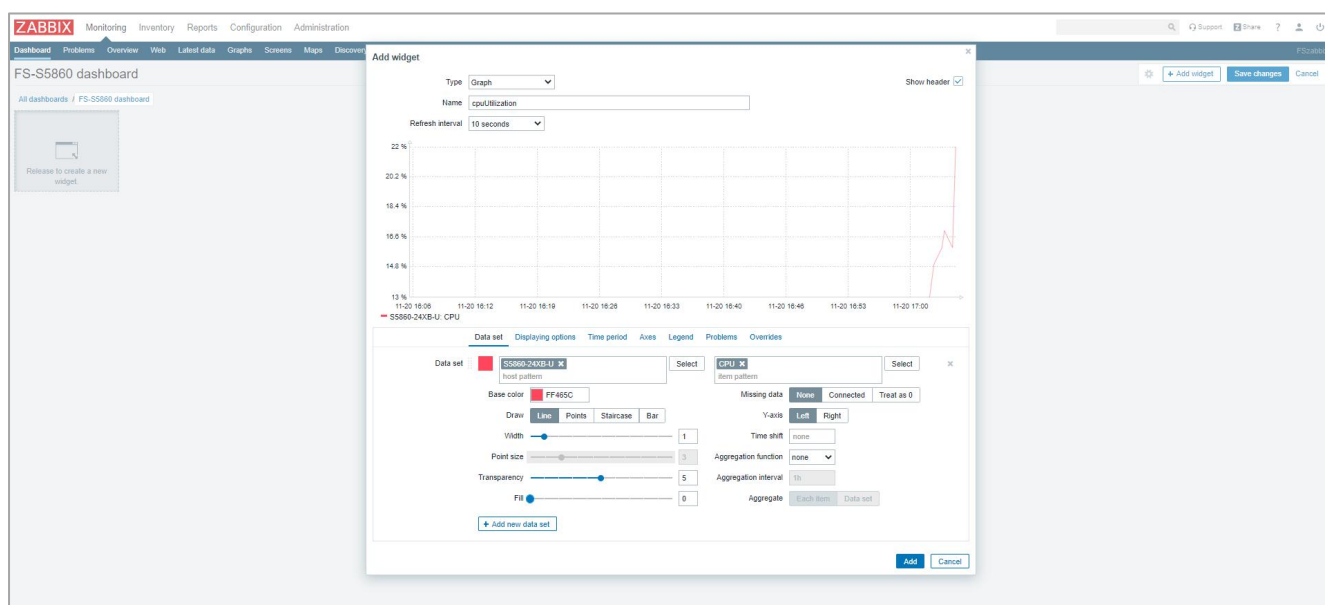
Step 1: Click Create dashboard in the upper right corner to create a dashboard.

The screenshot shows the Zabbix 'Dashboards' page. It has a search bar and a 'Filter' button. Below the search bar, there's a 'Create dashboard' button. A table below the button lists existing dashboards, including Global view and Zabbix server health. The table has columns for Name and Global view.

Step 2: Create a dashboard named FS-S5860 dashboard.

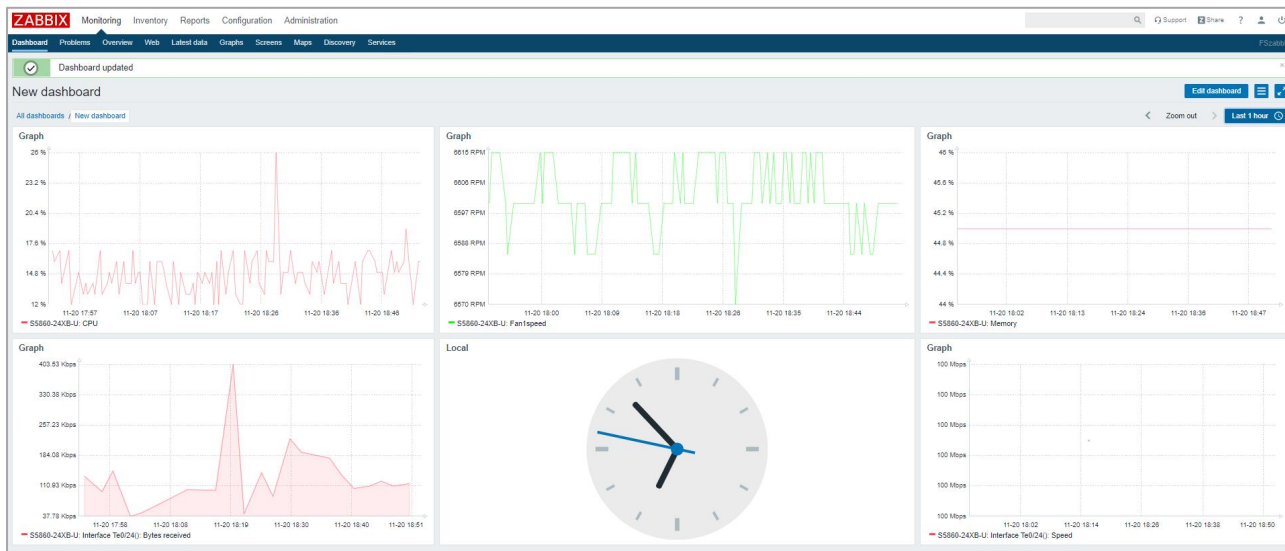


Step 3: Click anywhere on the dashboard to create a component, for example named as cpu Utilization, select S5860-24XB-U host pattern, CPU item pattern of Data set, and click Create.



Step 4: View the created components and save the dashboard.

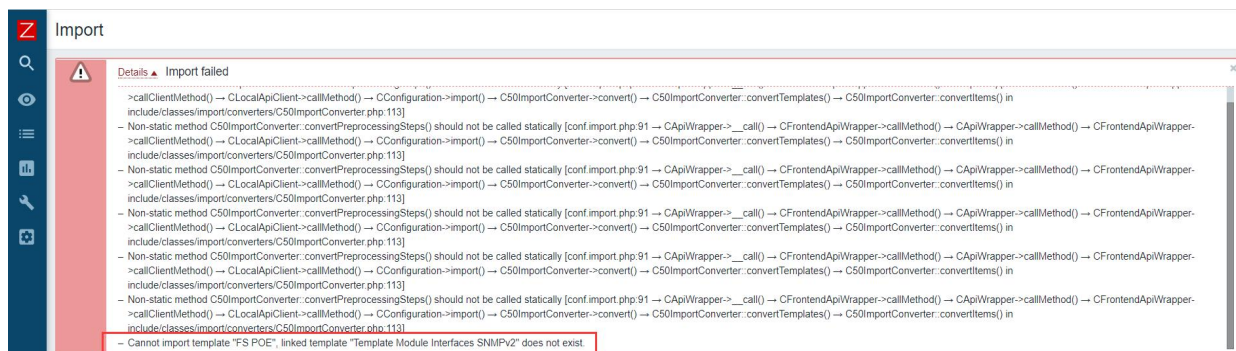
Of course, you can also configure the visualized information in the dashboard according to personal preferences.



2.4 FAQ

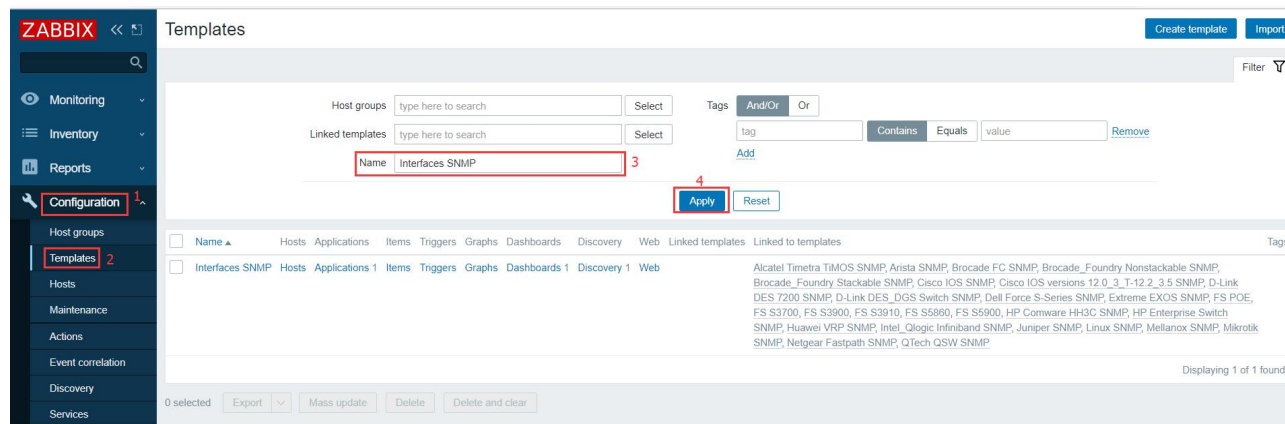
2.4.1 Template Import Failed

Due to the iteration of Zabbix version, the name of the public template provided by Zabbix may change. The template provided by FS refers to the public template "Template Module Interfaces SNMPv2". During the template import process, if the import fails, it prompts that the template is not found like below:

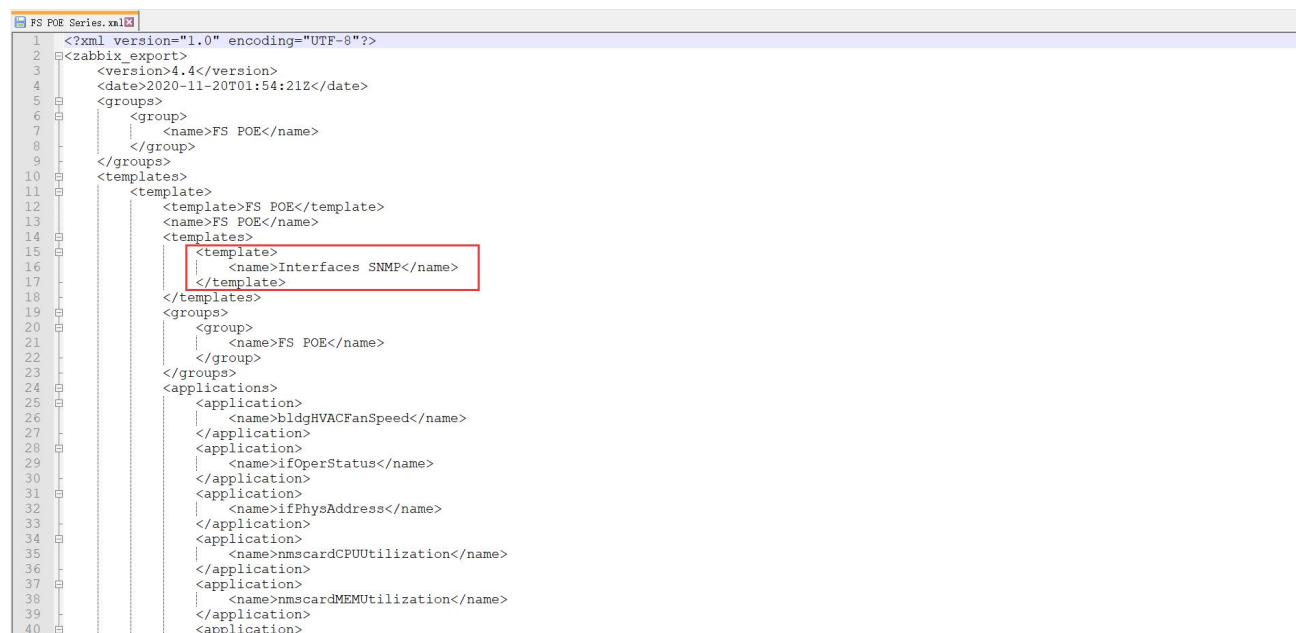


Pls refer to below solution:

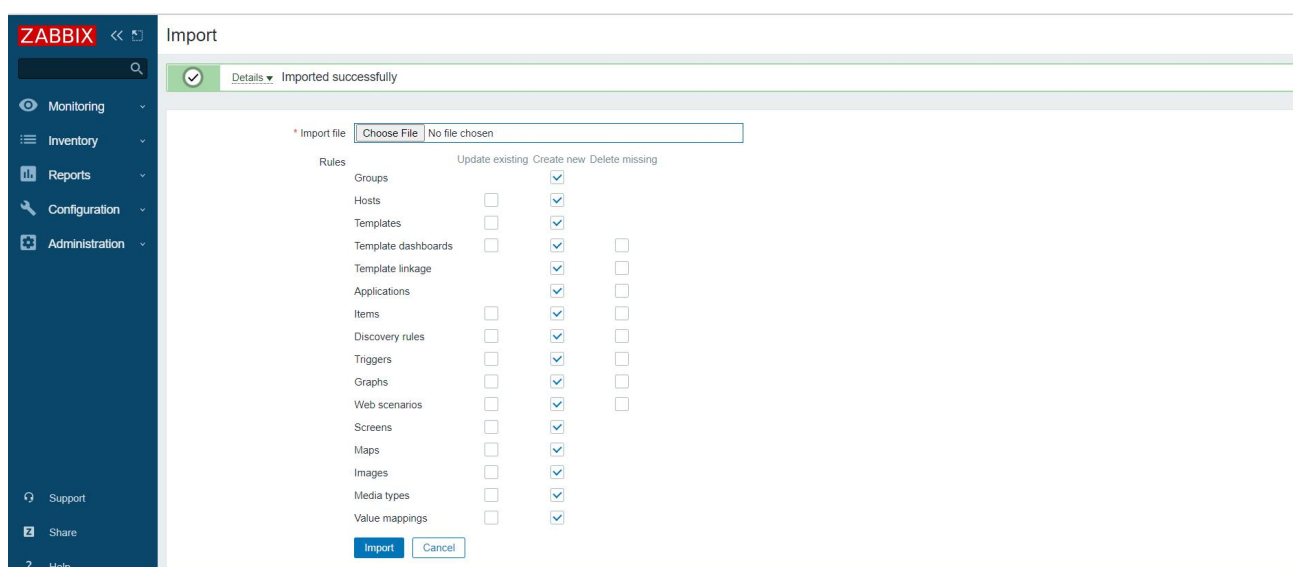
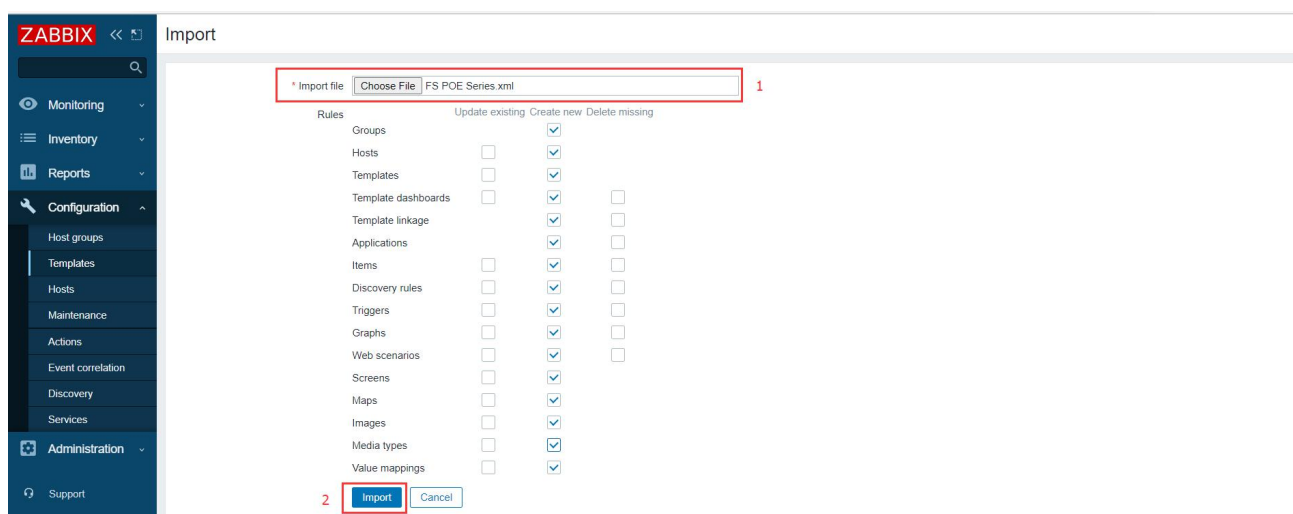
Step 1: Search for the keyword "Interfaces SNMP" in Zabbix, find the template, and record the template name.



Step 2: Edit the template in text mode and replace "Template Module Interfaces SNMPv2" with the searched template name.



Step 3: Save the modified template and re-import the template.



2.4.2 Monitor Host Failed

Due to the configuration of the SNMP community name of the switch(case-sensitive), the switch may not be monitored and managed by Zabbix, as shown in the following figure:

ZABBIX

Monitoring

Inventory

Reports

Configuration

Host groups

Templates

Hosts 2

Maintenance

Actions

Event correlation

Discovery

Services

Administration

Hosts

Create host Import

Filter

Host groups FS S3900

Monitored by Any Server Proxy

Templates type here to search

Proxy

Tags tag Contains Equals value Remove

Name S3900-24T4S-109

DNS

IP

Port

Apply Reset

Name	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability	Agent encryption	Info	Tags
S3900-24T4S-109	Applications 5	Items 30	Triggers	Graphs 8	Discovery 1	Web	192.168.1.109:161		FS S3900 (Interfaces SNMP)	Enabled	ZBX SNMP JMX IPMI	None		

0 selected

Enable

Disable

Export

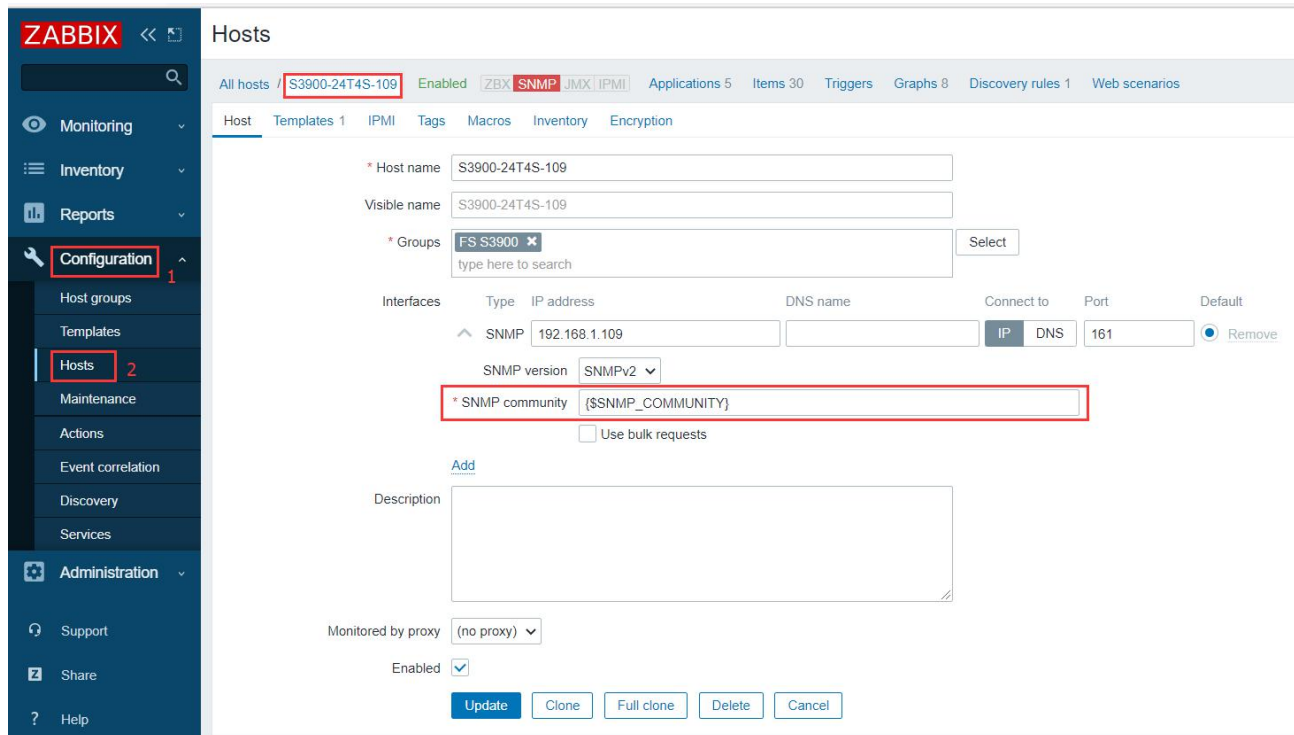
Mass update

Delete

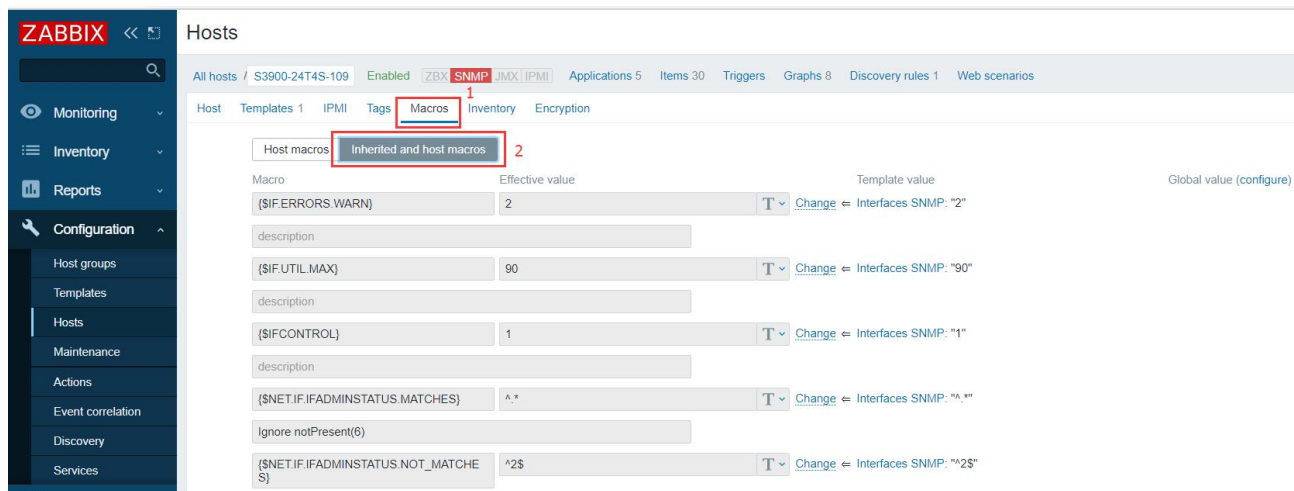
Timeout while connecting to "192.168.1.109:161"

Pls refer to below solution:

Step 1: View and record the Zabbix host SNMP community name configuration.



The screenshot shows the Zabbix web interface for configuring a host. The left sidebar has 'Configuration' and 'Hosts' highlighted. The main panel is titled 'Hosts' and shows the configuration for host 'S3900-24T4S-109'. The 'Host name' is 'S3900-24T4S-109', 'Visible name' is 'S3900-24T4S-109', and 'Groups' is 'FS S3900'. The 'Interfaces' table shows one interface: 'SNMP' with IP address '192.168.1.109', DNS name, and port '161'. The 'SNMP version' is 'SNMPv2'. The 'SNMP community' is '{SNMP_COMMUNITY}'. The 'Description' field is empty. The 'Monitored by proxy' is '(no proxy)' and 'Enabled' is checked. Buttons at the bottom include 'Update', 'Clone', 'Full clone', 'Delete', and 'Cancel'.



The screenshot shows the Zabbix web interface for configuring macros for the host 'S3900-24T4S-109'. The left sidebar has 'Configuration' and 'Hosts' highlighted. The main panel is titled 'Hosts' and shows the 'Macros' tab. The 'Host macros' section is expanded, showing a table of macros. The table has columns for 'Macro', 'Effective value', 'Template value', and 'Global value (configure)'. The macros listed are:

Macro	Effective value	Template value	Global value (configure)
{IFERRORS.WARN}	2	Change ← Interfaces SNMP: "2"	
{IFUTIL.MAX}	90	Change ← Interfaces SNMP: "90"	
{IFCONTROL}	1	Change ← Interfaces SNMP: "1"	
{NET.IFADMINSTATUS.MATCHES}	^.*	Change ← Interfaces SNMP: ".*"	
Ignore notPresent(6)			
{NET.IFADMINSTATUS.NOT_MATCHES}	^2\$	Change ← Interfaces SNMP: "2"	

ZABBIX

Monitoring

Inventory

Reports

Configuration

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Support

Share

Help

(\$NET.IF.IDESCR.NOT_MATCHES)

CHANGE_IF_NEEDED

T

Change ← Interfaces SNMP: "CHANGE_IF_NEEDED"

description

(\$NET.IF.NAME.MATCHES)

^.*\$

T

Change ← Interfaces SNMP: "^.*\$"

description

(\$NET.IF.NAME.NOT_MATCHES)

(^Software Loopback Interface|^NULL[0-9]*\$|^([Ll][0-9]*\$|^([Ss]ystem\$|^Nu[0-9]*\$|^veth[0-9a-z]+\$|^docker[0-9]*|br-[a-z0-9]{12}))

T

Change ← Interfaces SNMP: "(^Software Loopback Interface|^N...

Filter out loopbacks, nulls, docker veth links and docker0 bridge by default

(\$NET.IF.OPERSTATUS.MATCHES)

^.*\$

T

Change ← Interfaces SNMP: "^.*\$"

description

(\$NET.IF.OPERSTATUS.NOT_MATCHES)

^6\$

T

Change ← Interfaces SNMP: "^6\$"

Ignore notPresent(6)

(\$NET.IF.ITYPE.MATCHES)

.

T

Change ← Interfaces SNMP: ".*"

description

(\$NET.IF.ITYPE.NOT_MATCHES)

CHANGE_IF_NEEDED

T

Change ← Interfaces SNMP: "CHANGE_IF_NEEDED"

description

(\$SNMP_COMMUNITY)

public

T

Change ← FS S3900: "public"

← "public"

description

Add

Update

Clone

Full clone

Delete

Cancel

Step 2: Check whether the SNMP community name configuration of the switch is consistent with the Zabbix host SNMP community name configuration.

```
s3900-24T4S-109-1#show running-config
Building running configuration. Please wait...
!<version>0.0.2</version>
!<stackingDB>000000000000</stackingDB>
!<stackingMac>01_64-9d-99-10-35-6a_05</stackingMac>
!<stackingMac>00_00-00-00-00-00-00_00</stackingMac>
!<stackingMac>00_00-00-00-00-00-00_00</stackingMac>
!<stackingMac>00_00-00-00-00-00-00_00</stackingMac>
!<stackingMac>00_00-00-00-00-00-00_00</stackingMac>
!<stackingMac>00_00-00-00-00-00-00_00</stackingMac>
!
hostname s3900-24T4S-109
snmp-server community Public rw
```

```
S3900-24T4S-109-1#show running-config
Building running configuration. Please wait...
!<version>0.0.2</version>
!<stackingDB>0000000000000</stackingDB>
!<stackingMac>01_64-9d-99-10-35-6a_05</stackingMac>
!<stackingMac>00_00-00-00-00-00-00_00</stackingMac>
!<stackingMac>00_00-00-00-00-00-00_00</stackingMac>
!<stackingMac>00_00-00-00-00-00-00_00</stackingMac>
!<stackingMac>00_00-00-00-00-00-00_00</stackingMac>
!<stackingMac>00_00-00-00-00-00-00_00</stackingMac>
!<stackingMac>00_00-00-00-00-00-00_00</stackingMac>
!
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!
!
!
!
hostname S3900-24T4S-109
!
!
!
!
!
!
!
!
!
!
snmp-server community public rw
```

ZABBIX
Hosts
Create host Import

Monitoring

Inventory

Reports

Configuration

- Host groups
- Templates
- Hosts**
- Maintenance
- Actions
- Event correlation
- Discovery
- Services

Administration

Filter

Host groups

Templates

Name

DNS

IP

Port

Monitored by

Any Server Proxy

Proxy

Tags

And/Or Or

[Add](#)

☐	Name ▲	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability	Agent encryption	Info	Tags
☐	S3900-24T4S-109	Applications 5	Items 30	Triggers	Graphs 8	Discovery 1	Web	192.168.1.109: 161		FS S3900 (Interfaces SNMP)	Enabled	ZBX SNMP	MMX IPMI		None

0 selected

Displaying 1 of 1 found