

Configure Zabbix to Monitor N5860 and N8560 Series Switches via SNMP

Models: N5860-48SC; N8560-48BC; N8560-32C; N8560-64C

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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 N5860-48SC switch as an example to monitor the N5860-48SC switch.

2. Operation Guide

2.1 Operation Steps

- Configure SNMP function of the switch
- Log in to Zabbix to import the "FS N5860 Series" template
- Create host group FS N5860 and link "FS N5860 Series" template
- Create host, link FS N5860 host group, link "FS N5860 Series" template
- Monitor host data

2.2 Operation Process

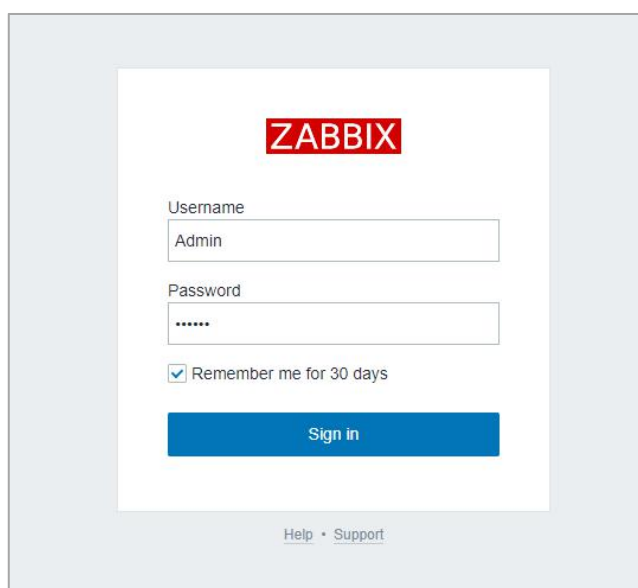
2.2.1 Configure the Switch

Take N5860-48SC as an example to configure the SNMP function

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

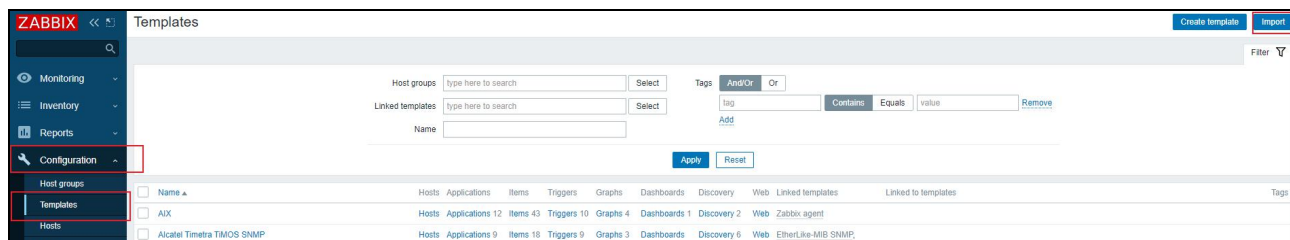
2.2.2 Log in to Zabbix to Import Templates

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

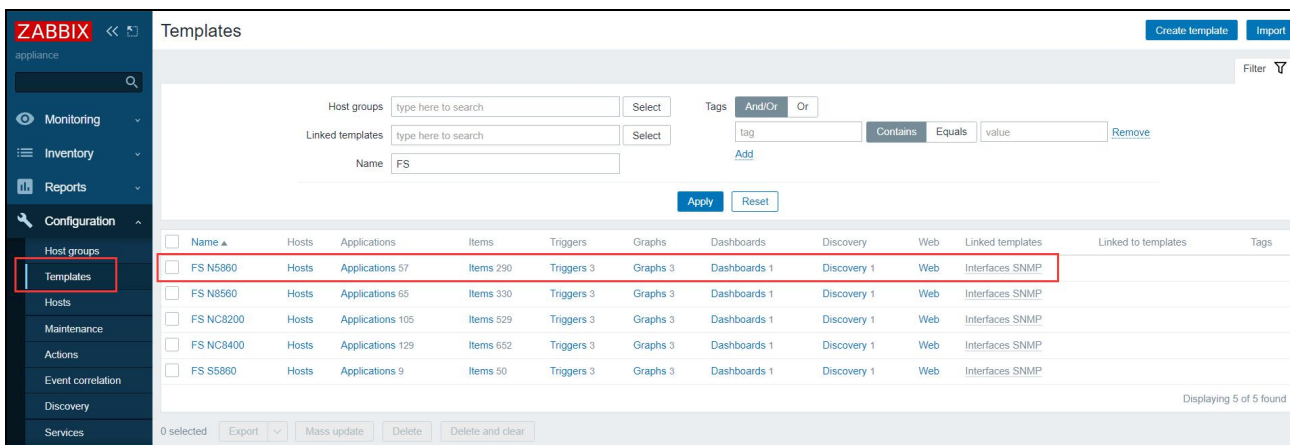
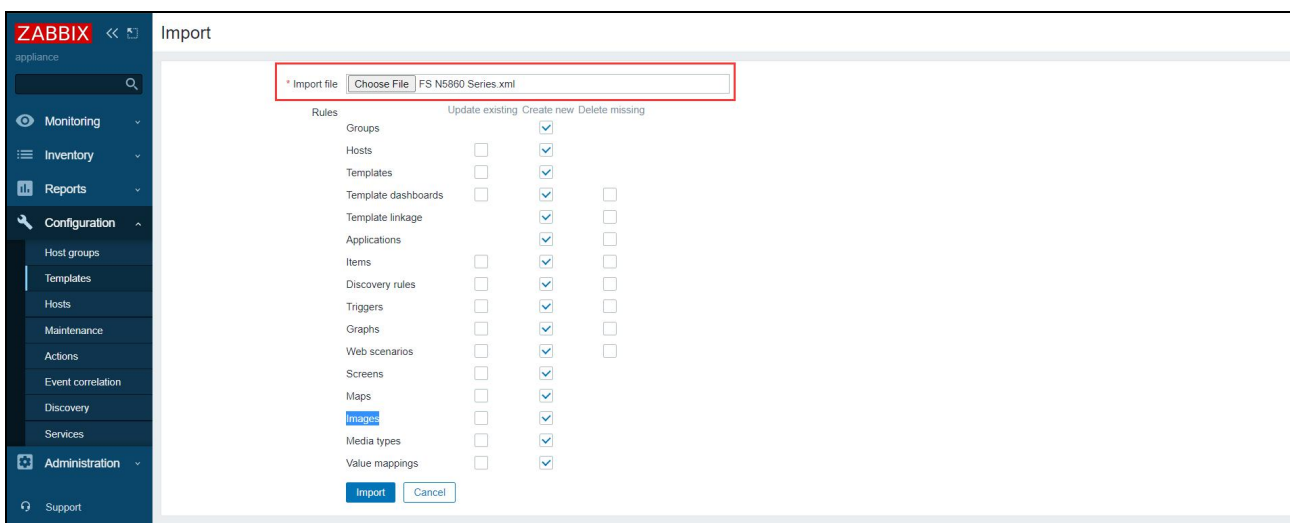


The image shows the Zabbix login interface. At the top, the word "ZABBIX" is displayed in a red box. Below it, there are two input fields: "Username" with the value "Admin" and "Password" with masked characters "*****". A checkbox labeled "Remember me for 30 days" is checked. Below these fields is a blue "Sign in" button. At the bottom of the interface, 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.

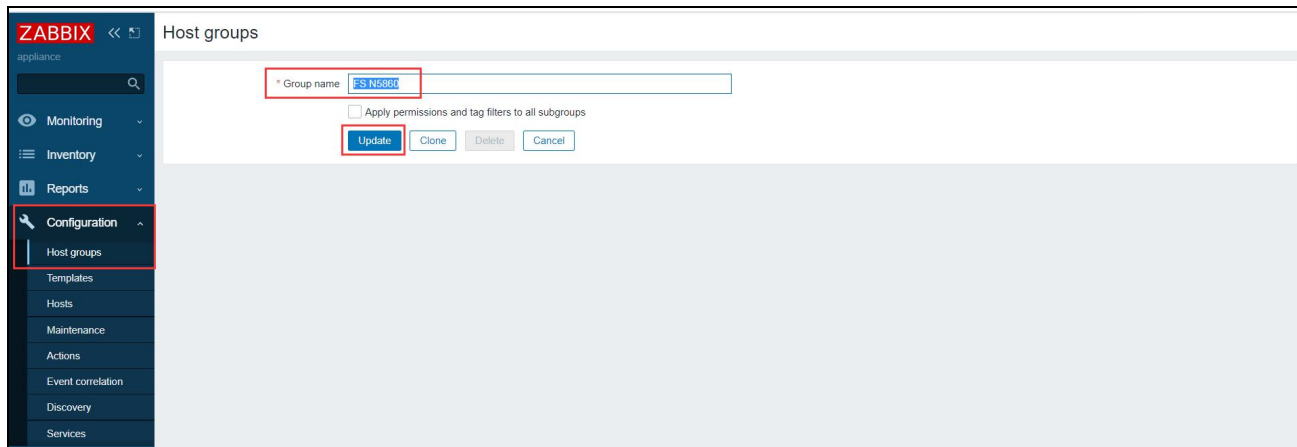


Step 3: Select the 'FS N5860 Series', click the **Import** button to import it, and then you can see the "FS N5860 Series" templates that have been successfully imported in the template list after the import success is displayed.



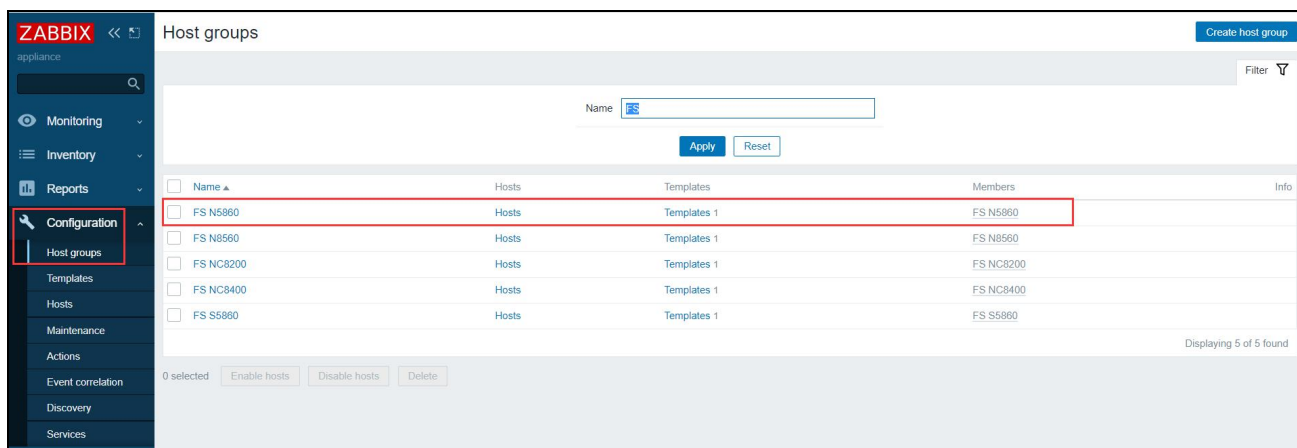
2.2.3 Create Host Groups

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. On the left sidebar, the 'Configuration' menu is expanded, and 'Host groups' is selected. In the main content area, the 'Host groups' page is displayed. At the top, there is a form with a 'Group name' field containing 'FS N5860'. Below this field, there is a checkbox labeled 'Apply permissions and tag filters to all subgroups'. To the right of the checkbox are four buttons: 'Update' (highlighted with a red box), 'Clone', 'Delete', and 'Cancel'.

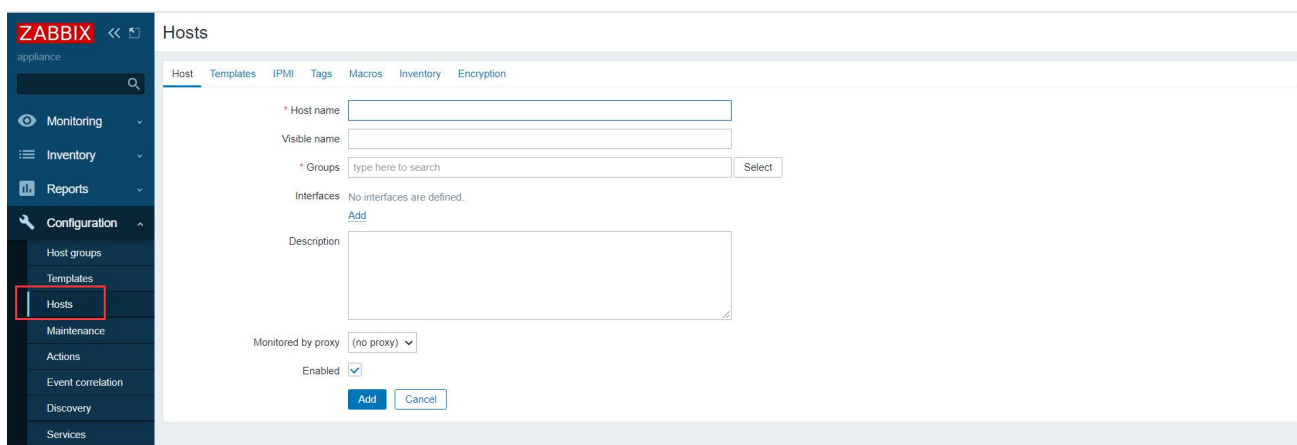
Step 2: Create a host group named 'FS N5860' host group, then view the successfully created host group.



The screenshot shows the Zabbix web interface. On the left sidebar, the 'Configuration' menu is expanded, and 'Host groups' is selected. In the main content area, the 'Host groups' page is displayed. At the top right, there is a 'Create host group' button. Below this, there is a search bar with the text 'Name' and a filter icon. Below the search bar, there is a table with the following columns: Name, Hosts, Templates, Members, and Info. The table contains five rows of data, with the first row highlighted by a red box. The first row is for the host group 'FS N5860', which has 'Hosts' as the host type, 'Templates 1' as the template, and 'FS N5860' as the member. The other rows are for 'FS N8560', 'FS NC8200', 'FS NC8400', and 'FS S5860'. At the bottom of the table, there is a status bar that says '0 selected' and buttons for 'Enable hosts', 'Disable hosts', and 'Delete'.

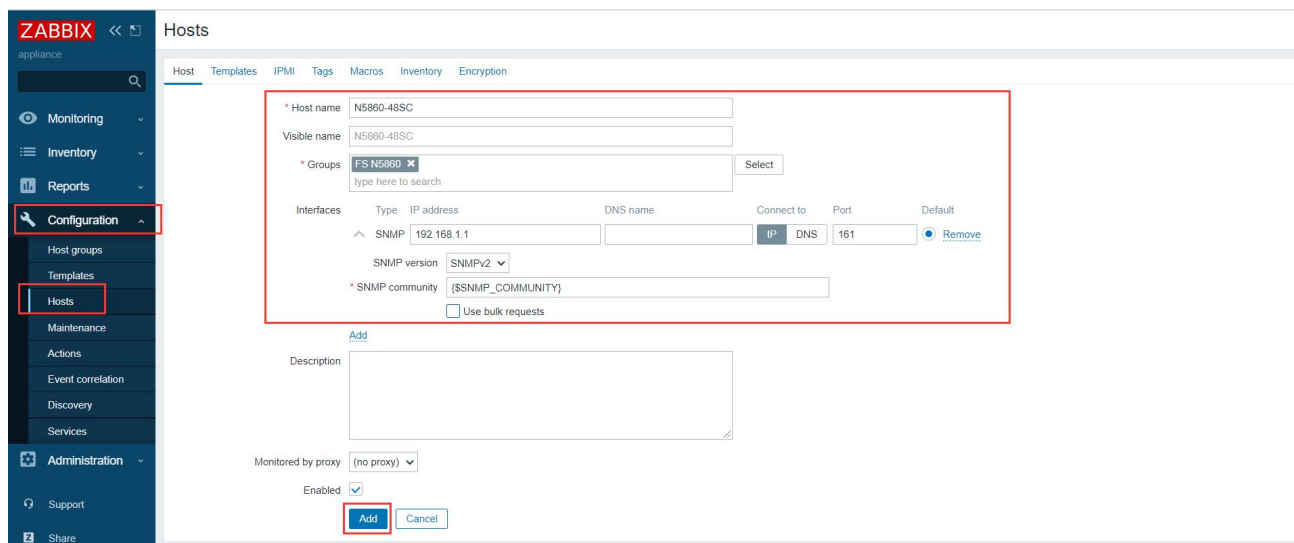
2.2.4 Create Hosts

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. On the left sidebar, the 'Configuration' menu is expanded, and 'Hosts' is selected. In the main content area, the 'Hosts' page is displayed. At the top, there is a 'Create Host' button. Below this, there is a form with the following fields: 'Host name' (required), 'Visible name', 'Groups' (with a search bar and a 'Select' button), 'Interfaces' (with a note 'No interfaces are defined.' and an 'Add' button), 'Description', 'Monitored by proxy' (set to '(no proxy)'), and 'Enabled' (checked). At the bottom of the form, there are 'Add' and 'Cancel' buttons.

Step 2: Create a host named N5860-48SC, select the FS N5860 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.



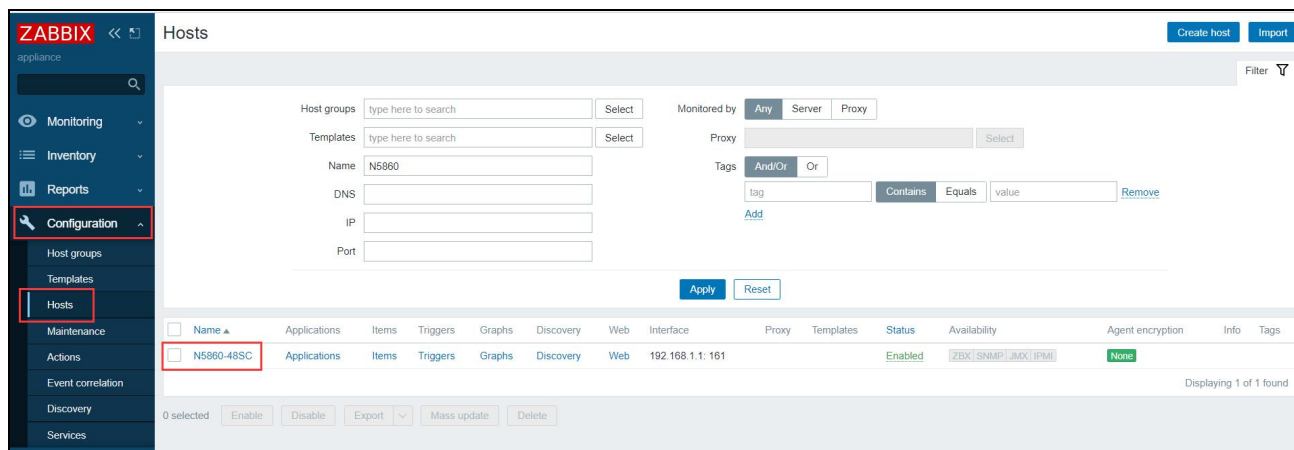
The screenshot shows the Zabbix 'Hosts' configuration page. The left sidebar has 'Configuration' and 'Hosts' highlighted. The main form is for creating a new host. A red box highlights the following fields:

- * Host name: N5860-48SC
- Visible name: N5860-48SC
- * Groups: FS N5860 (selected)
- Interfaces table:

Interfaces	Type	IP address	DNS name	Connect to	Port	Default
SNMP	192.168.1.1		IP	DNS	161	☒ Remove
- SNMP version: SNMPv2
- * SNMP community: (\$SNMP_COMMUNITY)
- ☐ Use bulk requests

Below the red box, there is a 'Description' text area, 'Monitored by proxy' dropdown (set to 'no proxy'), 'Enabled' checkbox (checked), and 'Add' and 'Cancel' buttons.

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



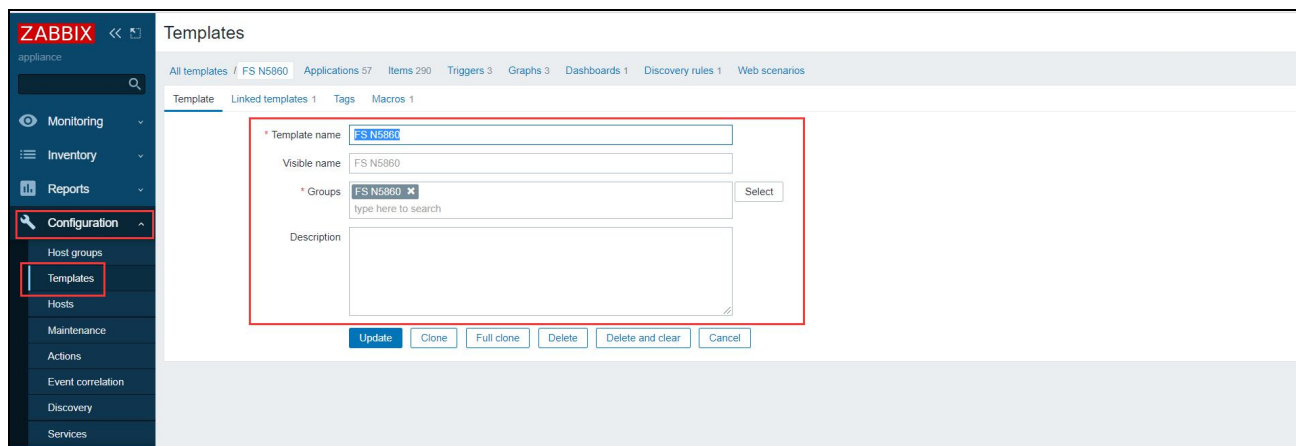
The screenshot shows the Zabbix 'Hosts' list page. The left sidebar has 'Configuration' and 'Hosts' highlighted. The main area shows a list of hosts. A red box highlights the first host in the list:

Name	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability	Agent encryption	Info	Tags
☒ N5860-48SC							192.168.1.1: 161			Enabled	ZBX SNMP JMX IPMI	None		

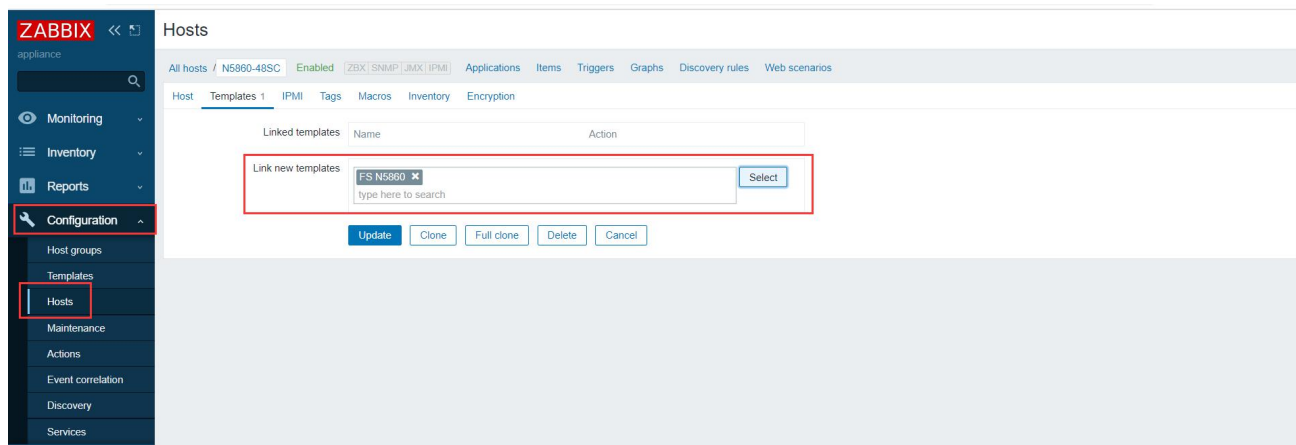
At the bottom, there is a summary bar showing '0 selected' and buttons for 'Enable', 'Disable', 'Export', 'Mass update', and 'Delete'.

2.2.5 Link Template and Host Group

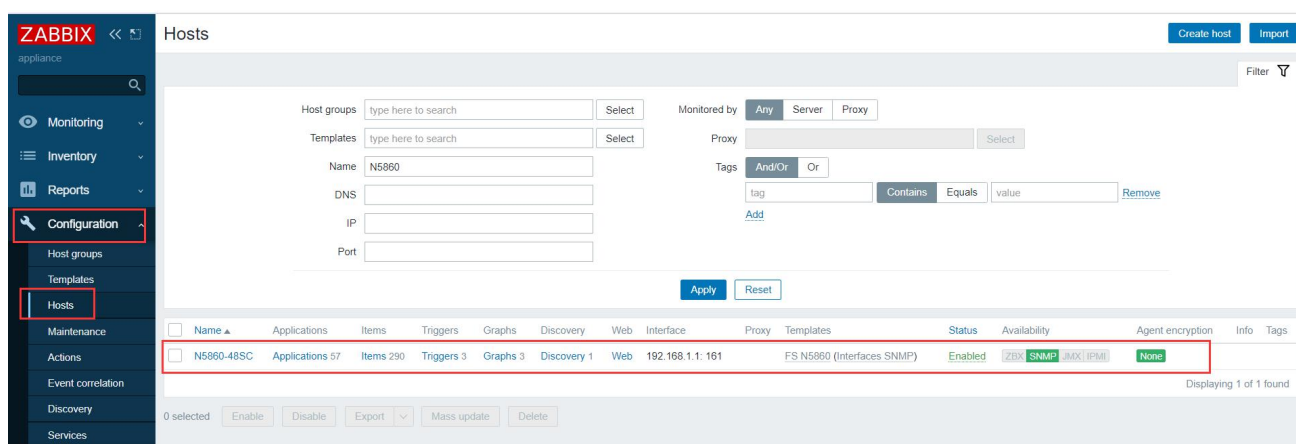
Step 1: Link the FS N5860 host group in the “FS N5860 Series” template.



Step 2: Link “FS N5860 Series” template under N5860-48SC host.

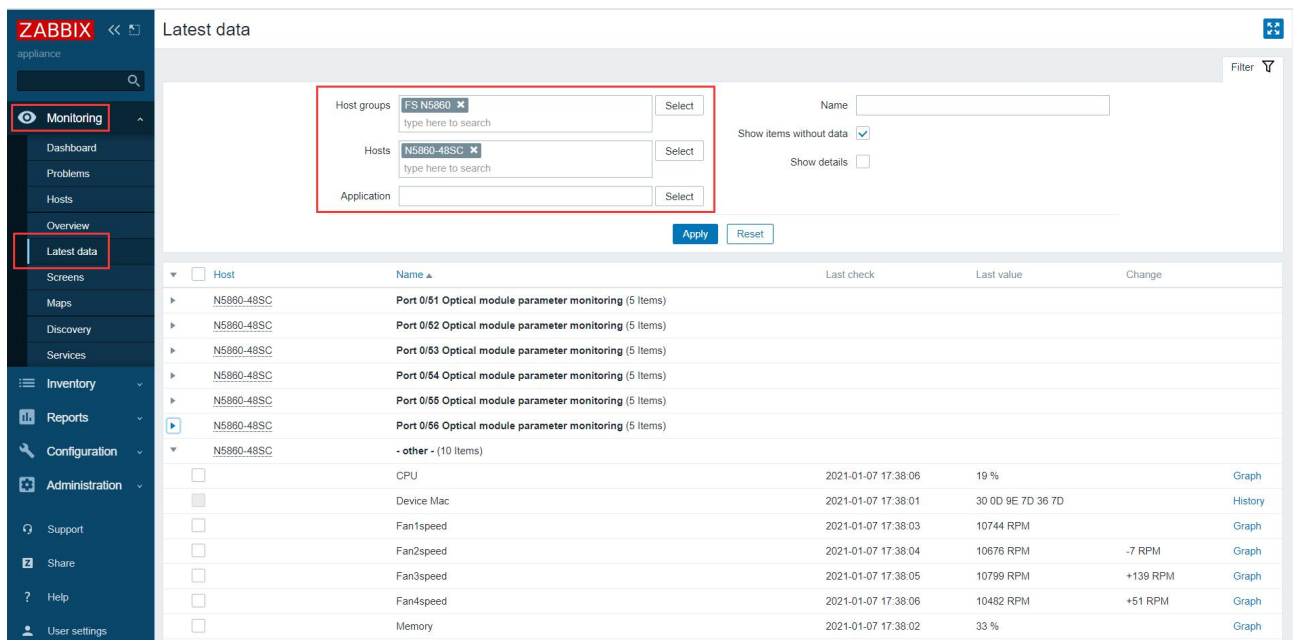


Step 3: Return to the host interface, you can view the information that has been linked to the template in the host.



2.2.6 Monitoring Switch Data

Select FS N5860 Host groups and N5860-48SC Hosts, you can view that Zabbix has monitored the relevant information and data of the switch N5860-48SC.



Latest data

Host groups: FS N5860 (type here to search) Select

Hosts: N5860-48SC (type here to search) Select

Application: Select

Name:

Show items without data: ☒

Show details: ☐

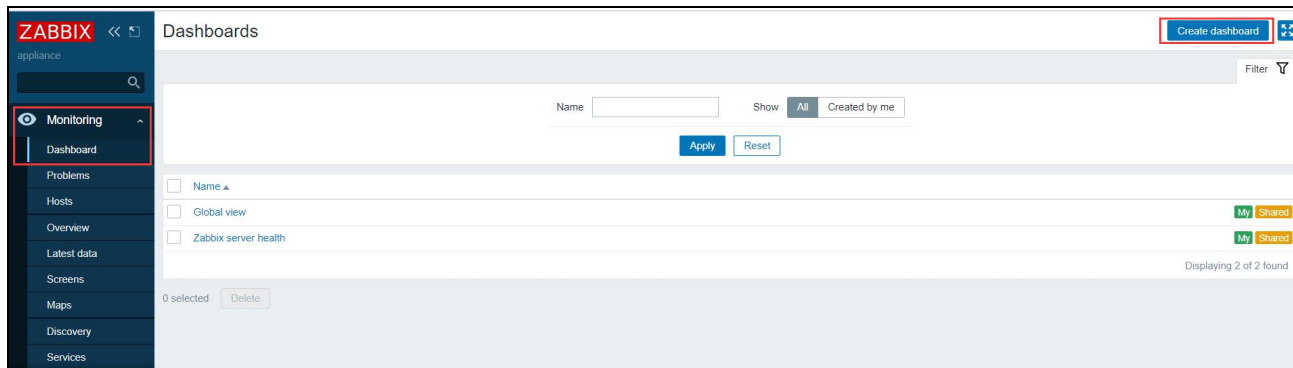
Apply Reset

Host	Name	Last check	Last value	Change
N5860-48SC	Port 0/51 Optical module parameter monitoring (5 items)			
N5860-48SC	Port 0/52 Optical module parameter monitoring (5 items)			
N5860-48SC	Port 0/53 Optical module parameter monitoring (5 items)			
N5860-48SC	Port 0/54 Optical module parameter monitoring (5 items)			
N5860-48SC	Port 0/55 Optical module parameter monitoring (5 items)			
N5860-48SC	- other - (10 items)			
☐	CPU	2021-01-07 17:38:06	19 %	Graph
☐	Device Mac	2021-01-07 17:38:01	30 0D 9E 7D 36 7D	History
☐	Fan1speed	2021-01-07 17:38:03	10744 RPM	Graph
☐	Fan2speed	2021-01-07 17:38:04	10676 RPM	-7 RPM Graph
☐	Fan3speed	2021-01-07 17:38:05	10799 RPM	+139 RPM Graph
☐	Fan4speed	2021-01-07 17:38:06	10482 RPM	+51 RPM Graph
☐	Memory	2021-01-07 17:38:02	33 %	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.



Dashboards

Create dashboard

Name: Show: All Created by me

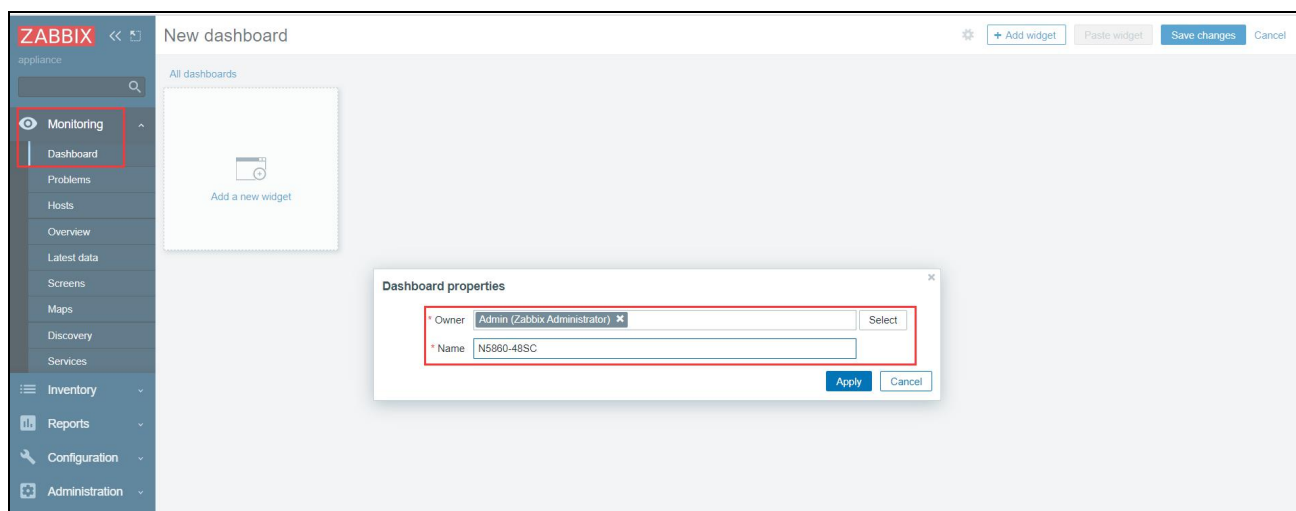
Apply Reset

Name	My	Shared
Global view	☐	☐
Zabbix server health	☐	☐

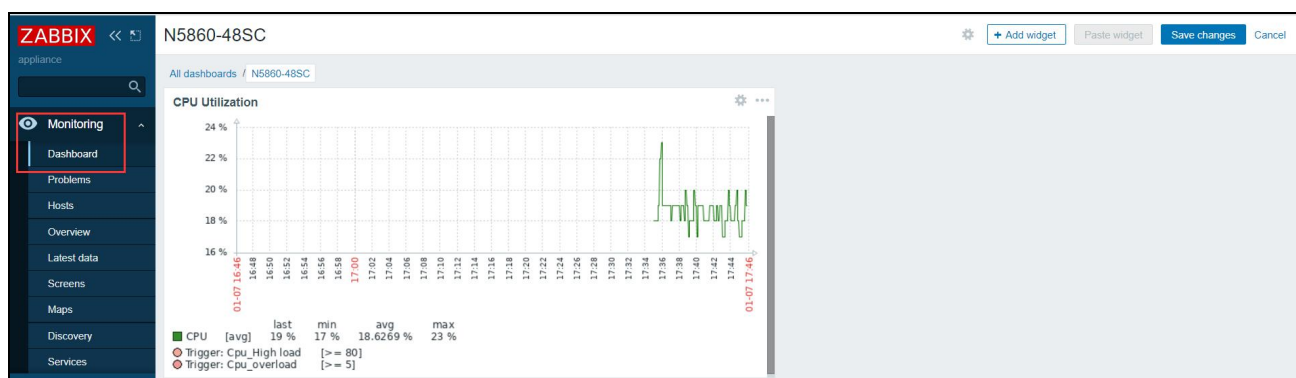
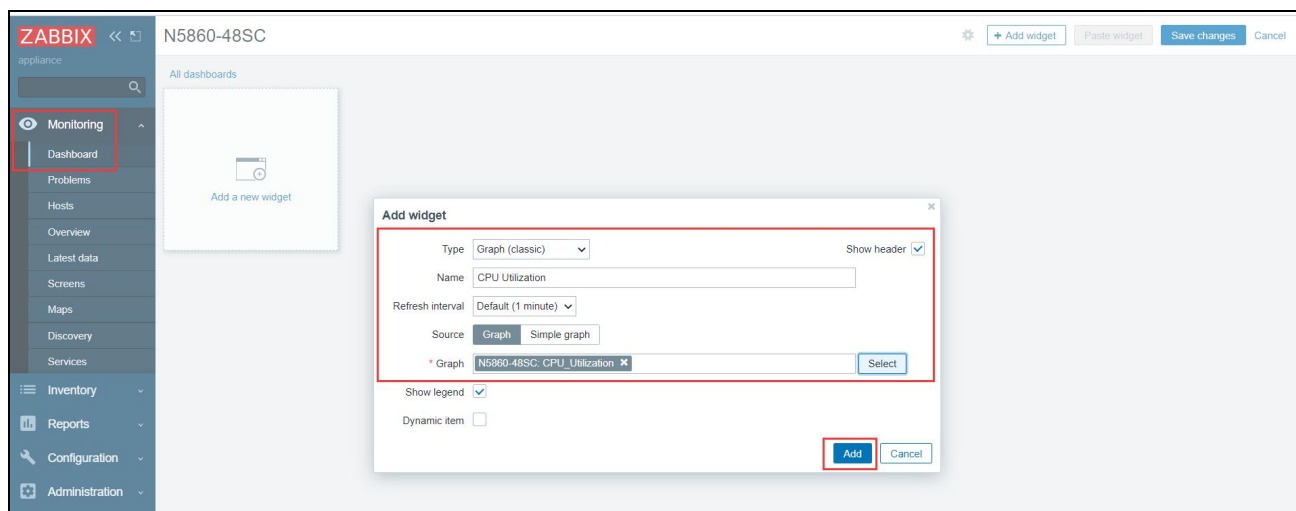
0 selected Delete

Displaying 2 of 2 found

Step 2: Create a dashboard named N5860-48SC dashboard.

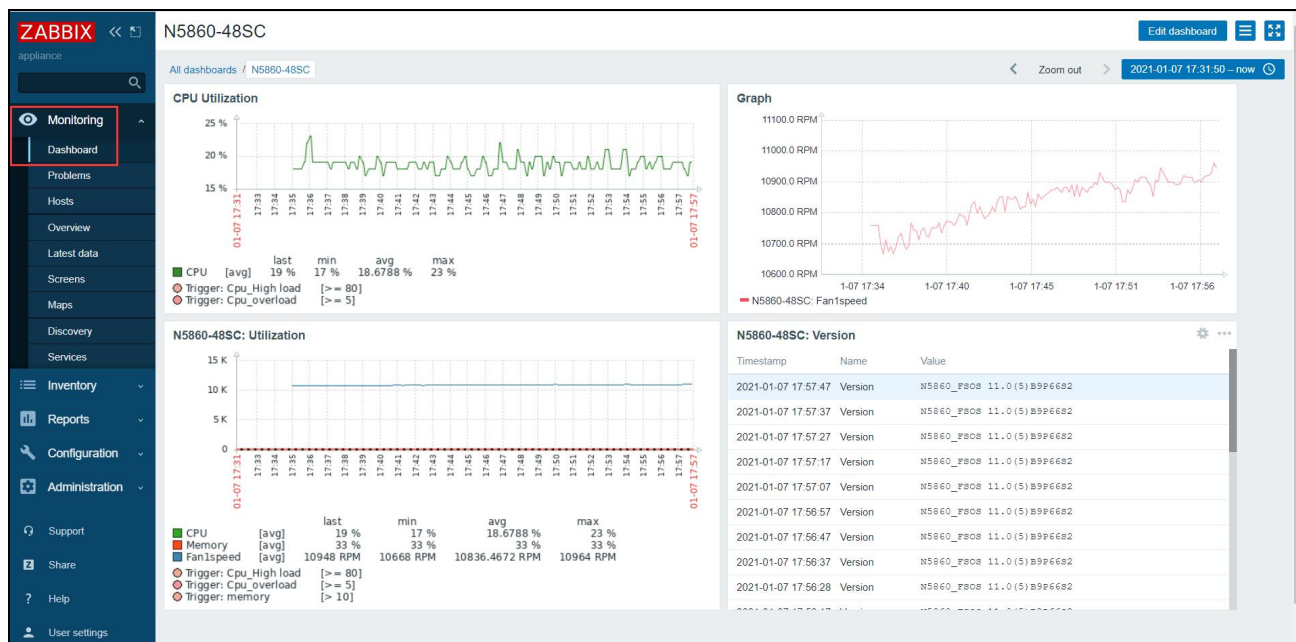


Step 3: Click anywhere on the dashboard to create a component, for example named as cpu Utilization, select N5860-48SC host pattern, CPU item pattern of Data set, and click Create.



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

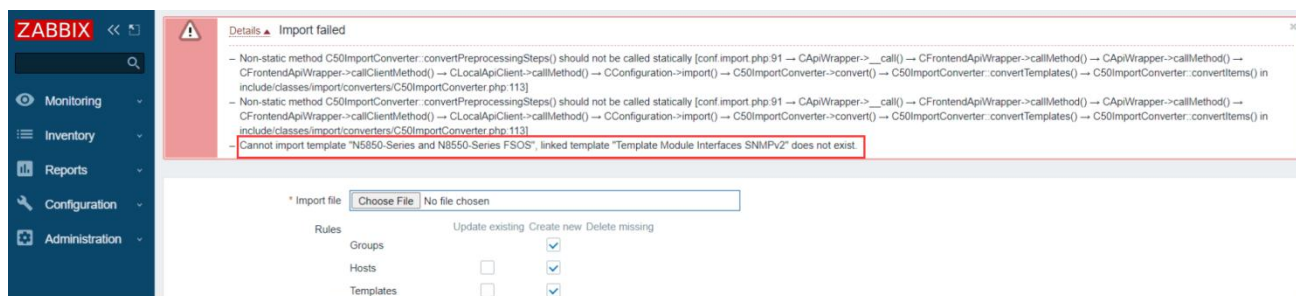
Of course, you can also configure the visualized information in the dashboard according to personal preferences.



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.

The screenshot shows the Zabbix web interface. In the left sidebar, 'Configuration' is selected, and 'Templates' is highlighted. The main panel displays the 'Templates' section. At the top, there are search fields for 'Host groups' and 'Linked templates'. Below these, a search for 'Interfaces SNMP' is shown, with a red box around the search term and a red '3' next to it. The 'Apply' button is highlighted with a red '4'. The table below shows one result: 'Interfaces SNMP'.

Name	Hosts	Applications	Items	Triggers	Graphs	Dashboards	Discovery	Web	Linked templates	Linked to templates	Tags
Interfaces SNMP											Alcatel T1000 T1000 SNMP, Arista SNMP, Brocade FC SNMP, Brocade Foundry Nonstackable SNMP, Brocade Foundry Stackable SNMP, Cisco IOS SNMP, Cisco IOS versions 12.0_3_T-12.2_3.5 SNMP, D-Link DES T200 SNMP, D-Link DES_DGS Switch SNMP, Dell Force S-Series SNMP, Extreme EXOS SNMP, FS POE, FS S3700, FS S3900, FS S3910, FS S5800, FS S5900, HP Comware H3C SNMP, HP Enterprise Switch SNMP, Huawei VRP SNMP, Intel_Qlogic Infiniband SNMP, Juniper SNMP, Linux SNMP, Mellanox SNMP, Mikrotik SNMP, Netgear Fastpath SNMP, QTech QSW SNMP

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

```

<template>
  <template>N5850-Series and N8550-Series FSOS</template>
  <name>N5850-Series and N8550-Series FSOS</name>
  <templates>
    <template>
      <name>Interfaces SNMP</name>
    </template>
  </templates>
  <groups>
    <group>

```

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

ZABBIX << Import

* Import file N5850-Series and N8550-Series FSOS.xml 1

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

2

ZABBIX << Import

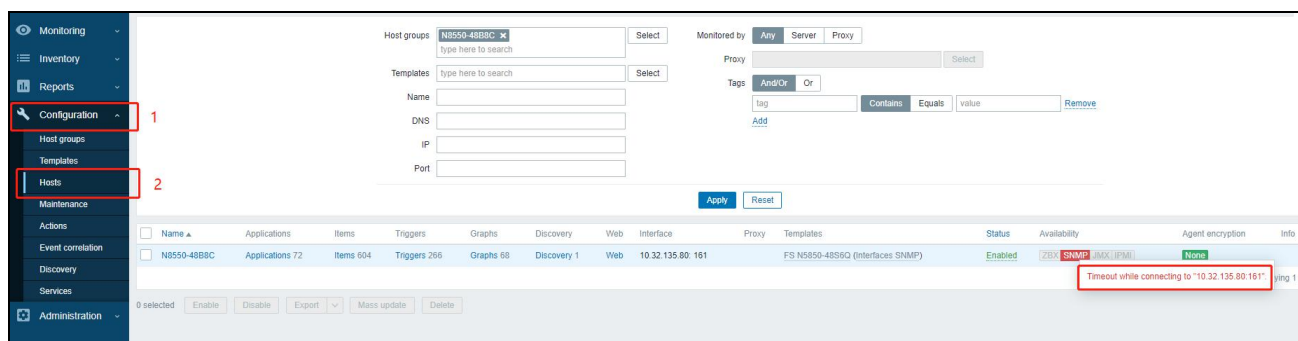
☒ Imported successfully

* Import file No file chosen

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

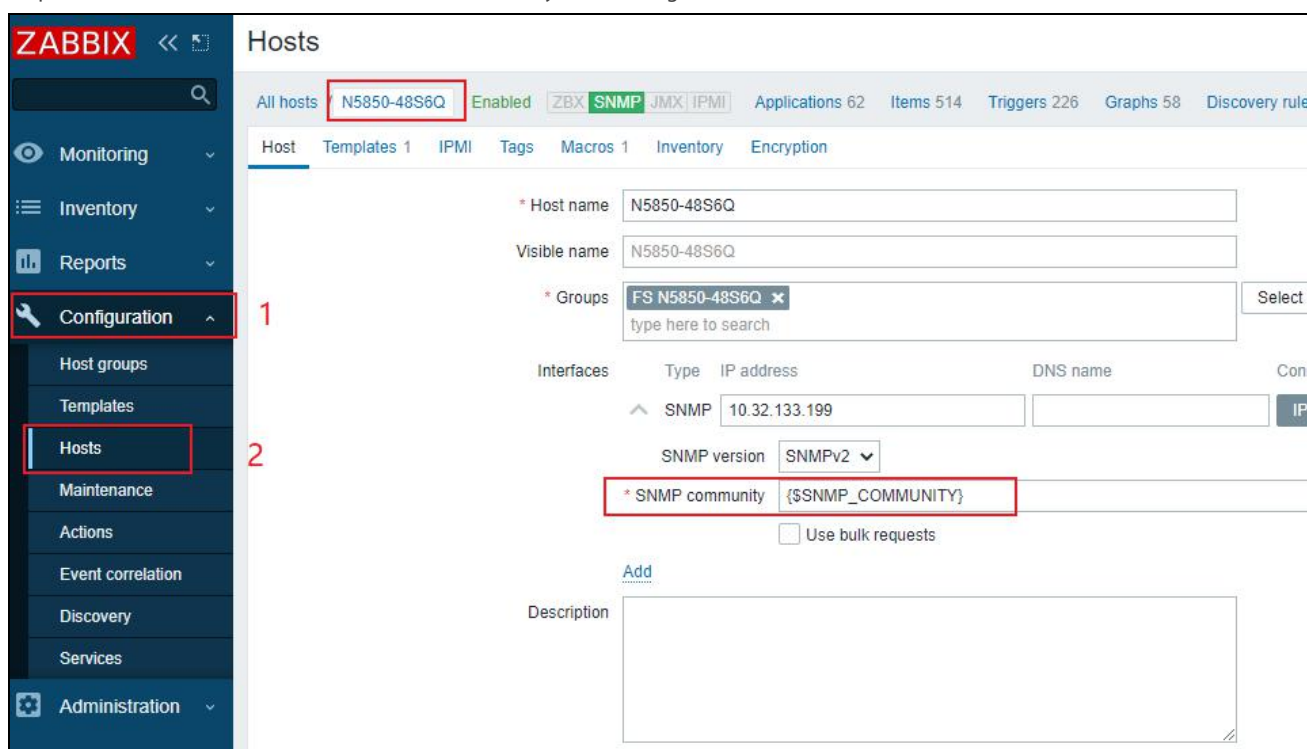
2.4.2 Monitor Host Failed

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:



Pls refer to below solution :

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



Hosts

All hosts / **N5850-48S6Q** Enabled ZBX **SNMP** JMX IPMI Applications 62 Items 514 Triggers 226 Graphs 58 Discovery rules 1 Web scenarios

Host Templates 1 IPMI Tags **Macros 1** Inventory Encryption

Host macros **Inherited and host macros** 2

Macro	Effective value	Template value
{\$IF.ERRORS.WARN}	2	Interfaces SNMP: "2"
{\$IF.UTIL.MAX}	90	Interfaces SNMP: "90"
{\$IF.CONTROL}	1	Interfaces SNMP: "1"
{\$NET.IF.IFADMINSTATUS.MATCHES}	^.*	Interfaces SNMP: "^.*"

Configuration

Host groups
Templates
Hosts
Maintenance
Actions
Event correlation
Discovery
Services
Administration

Support

{\$NET.IF.IFDESCR.NOT_MATCHES}	CHANGE_IF_NEEDED	Interfaces SNMP: "CHANGE_IF_NEEDED"
{\$NET.IF.IFNAME.MATCHES}	^.*\$	Interfaces SNMP: "^.*\$"
{\$NET.IF.IFNAME.NOT_MATCHES}	(^Software Loopback Interface^NULL[0-9]?\$ ^([Ll])?[0-9]?\$ ^([Ss])?system\$ ^Nu[0-9]?\$ ^veth[0-9a-z]+-docker[0-9]+ br-[a-z0-9]{12}\$)	Interfaces SNMP: "(^Software Loopback Interface^N..."
Filter out loopbacks, nulls, docker veth links and docker0 bridge by default		
{\$NET.IF.IFOPERSTATUS.MATCHES}	^.*\$	Interfaces SNMP: "^.*\$"
{\$NET.IF.IFOPERSTATUS.NOT_MATCHES}	^6\$	Interfaces SNMP: "6\$"
Ignore notPresent(6)		
{\$NET.IF.IFTYPE.MATCHES}	.*	Interfaces SNMP: ".*"
{\$NET.IF.IFTYPE.NOT_MATCHES}	CHANGE_IF_NEEDED	Interfaces SNMP: "CHANGE_IF_NEEDED"
{\$SNMP_COMMUNITY}	Public	FS N5850-48S6Q: "public"

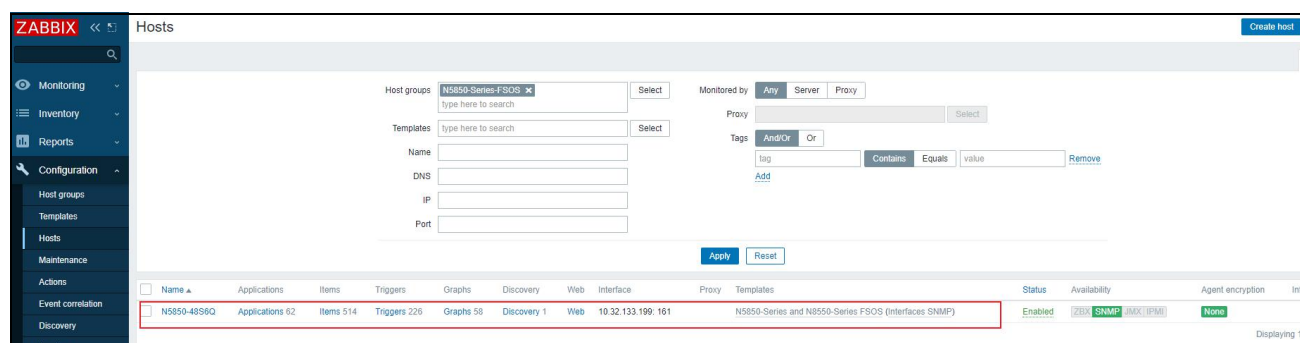
Step 2: Check whether the SNMP community name configuration of the switch is consistent with the Zabbix host SNMP community name configuration.

```
N5850-48S6Q#show run
!Device running configuration:
!version V100R201
!2001/01/04 16:58:56
!
hostname N5850-48S6Q
!
username admin group administrators password $1$skijv$b1P5gEaeX6
!
snmp community Public ro plain view internet
!
vlan 1
!
line console 1
```


Step 3: Modify the SNMP community name configuration of the switch to keep it consistent with the Zabbix host SNMP community name configuration.

```
N5850-48S6Q(config)#snmp community public ro
N5850-48S6Q(config)#end
N5850-48S6Q#show run
!Device running configuration:
!version V100R201
!2001/01/04 16:59:46
!
hostname N5850-48S6Q
!
username admin group administrators password $1$kiyv$b1P5gEaeX6wG6eQLeT3Di0
!
vlan 1
!
line console 1
length 24
monitor
timeout 10 0
login authentication local
```

Step 4: Wait for Zabbix to reconnect to the host, and finally connect to the host successfully.



The screenshot shows the Zabbix web interface. On the left is a sidebar with navigation links: Monitoring, Inventory, Reports, Configuration (Host groups, Templates, Hosts, Maintenance), Actions, Event correlation, and Discovery. The main area is titled 'Hosts' and contains a form for adding or editing a host. The 'Host groups' dropdown is set to 'N5850-Series-FSOS'. The 'Monitored by' dropdown is set to 'Any'. The 'Tags' section shows 'tag' with 'Contains' and 'value' fields. Below the form is a table of hosts. The first row is highlighted with a red border:

Name	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability	Agent encryption	Info
N5850-48S6Q	Applications 62	Items 514	Triggers 229	Graphs 58	Discovery 1	Web	10.32.133.199:161		N5850-Series and N5850-Series FSOS (Interfaces SNMP)	Enabled	ZBX SNMP	None	

At the bottom right of the table, it says 'Displaying 1 of'.



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