BullSequana Edge

Management Console User's Guide

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Atos

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Hardware

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Preface

This guide explains how to use the Machine Intelligence System Management (MISM) console to manage BullSequana Edge servers.

See The Bull support web site for the most up-to-date product information, documentation, firmware updates, software fixes and service offers: http://support.bull.com

Intended Readers

This guide is intended for use by system administrators and operators.

Chapter 1. Installing the MISM console

1.1. Introduction

The Machine Intelligence System Management (MISM) console allows the user to manage BullSequana Edge servers.

MISM is delivered as docker containers and is based on two open-source software:

- Ansible Tower to control servers through a graphical user interface
- Zabbix to monitor servers through a graphical user interface

1.2. Installing / Updating the MISM console

This section explains how to install the Machine Intelligence System Management (MISM) console on the system selected to host it.

There are two separate deliverables for MISM:

- MISM_full_<version>.tar.gz for full installation
- MISM_light_<version>.tar.gz for update, which contains only AWX playbooks, AWX plugins, Zabbix templates, Zabbix external scripts and shell scripts

Important **On an existing installation, tower-cli should be installed to run add_awx_playbooks.sh.**

1.2.1. Installing the MISM console

Prerequisites

- Docker CE version 17.12.0 or higher is installed and running

  https://docs.docker.com/install/
- Docker Compose version 1.24.0 or higher is installed

  https://docs.docker.com/compose/install/
- The MISM_full_<version>.tar.gz package is available

Estimated operation time

15 minutes

Procedure

1. Open a terminal window.
2. Go to the installation directory.
3. Extract the MISM file.

```
$ tar xzvf mism_full_<version>.tar.gz
```

4. Launch the installation.

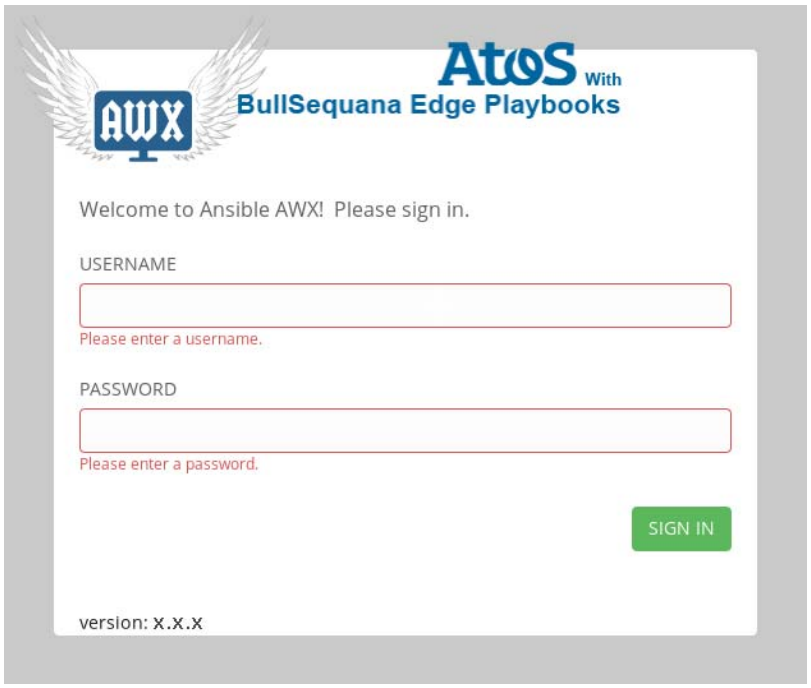
```
$ ./install.sh
```

Notes
- Performed on an existing installation, this operation preserves user data such as inventories and user accounts
- Ansible installation is optional

5. When the request to confirm the installation of Ansible appears, answer Yes or No as required.
6. Start the MISM console.

```
$ ./start.sh
```

7. Open a web browser.
8. Connect to the MISM console by entering the name or IP address of the MISM console in the address bar, using the https protocol.
9. Wait until the update is complete and the authentication page opens.



10. Add the playbooks.

```
$ ./add_awx_playbooks.sh
```

```
$ ./add_ansible_playbooks_and_plugins.sh
```

Note Performed on an existing installation, this operation preserves any playbook created by the user. However, any playbook from the BullSequana Edge Playbooks project that has been modified by the user is restored to its original state.

1.2.2. Updating the MISM console

Prerequisites

- Docker CE version 17.12.0 or higher is installed and running https://docs.docker.com/install/
- Docker Compose version 1.24.0 or higher is installed https://docs.docker.com/compose/install/
- The MISM_light_<version>.tar.gz package is available

Estimated operation time

15 minutes

Procedure

1. Open a terminal window.
2. Go to the installation directory.
3. Stop the MISM console.

```
$ ./stop.sh
```

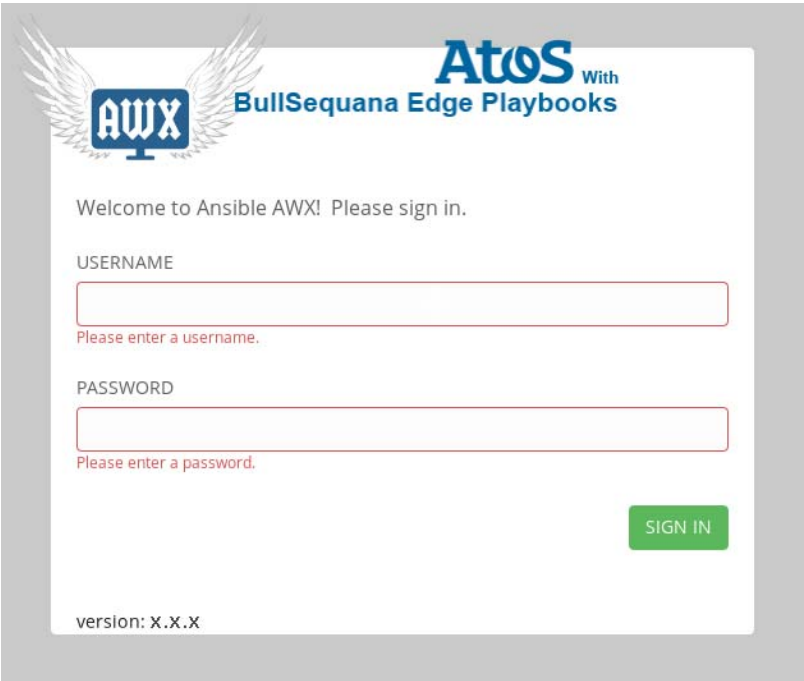
4. Extract the MISM file.

```
$ tar xzvf mism_light.<version>.tar.gz
```

5. Start the MISM console.

```
$ ./start.sh
```

6. Open a web browser.
7. Connect to the MISM console by entering the name or IP address of the MISM console in the address bar, using the https protocol.
8. Wait until the update is complete and the authentication page opens.



9. Add the playbooks.

```
$ ./add_awx_playbooks.sh
```

```
$ ./add_ansible_playbooks_and_plugins.sh
```

Note Performed on an existing installation, this operation preserves any playbook created by the user. However, any playbook from the BullSequana Edge Playbooks project that has been modified by the user is restored to its original state.

1.3. Controlling the MISM console

Note The commands are located in the MISM installation directory.

- To get the version of the installed MISM console, run the following command:

```
$ ./get_mism_version.sh
```

- To uninstall the MISM console, run the following command:

```
$ ./uninstall.sh
```

- To start the MISM console, run the following command:

```
$ ./start.sh
```

- To stop the MISM console, run the following command:

```
$ ./stop.sh
```

1.4. Changing the connection certificate

1. Stop the MISM console.
   a. Go to the MISM installation directory.
   b. Run the following command.

```
$ ./stop.sh
```

2. Go to the SSL directory.

```
$ cd ansible/awx_ssl
```

3. Generate 2048 private key.
   - Without a passphrase:

```
$ openssl genrsa -out nginx.key 2048
```

   - With a passphrase:

```
$ openssl genrsa -out nginx.key -passout stdin 2048
```

   The nginx.key file is generated.

4. Generate a request for a csr certificate.

```
$ openssl req -sha256 -new -key nginx.key -out nginx.csr -subj '/CN=awx.local'
```

   The nginx.csr file is generated.

5. Generate a crt certificate.

```
$ openssl x509 -req -sha256 -days 365 -in nginx.csr -signkey nginx.key -out nginx.crt
```

   The nginx.crt file is generated.

6. Start the MISM console.
   a. Go to the MISM installation directory.
   b. Run the following command.

```
$ ./start.sh
```

1.5. Configuring a proxy server

There is no proxy server delivered with the MISM console.

To configure a proxy server for the MISM console, perform the following operations:

1. Stop the MISM console.
   a. Go to the MISM installation directory.
   b. Run the following command.

```
$ ./stop.sh
```

2. Open the `docker-compose-mism.yml` file with a text editor.
3. In the `environment` sub-section of the `awx_web` section, add the following lines:

```
-------------------------------------------------------------------------
http_proxy: http://<proxy>:<port number>
https_proxy: https://<proxy>:<port number>
no_proxy: 127.0.0.1,localhost,zabbix-web,zabbix-server,zabbix-agent,awx_web,
awx_task,rabbitmq,postgres,memcached, <IP address>
-------------------------------------------------------------------------
```

4. In the `environment` sub-section of the `awx_task` section, add the following lines:

```
-------------------------------------------------------------------------
http_proxy: http://<proxy>:<port number>
https_proxy: https://<proxy>:<port number>
no_proxy: 127.0.0.1,localhost,zabbix-web,zabbix-server,zabbix-agent,awx_web,
awx_task,rabbitmq,postgres,memcached, <IP address>
-------------------------------------------------------------------------
```

5. Save and close the `docker-compose-mism.yml` file.
6. Start the MISM console.

```
$ ./start.sh
```

1.6. Recovering MISM databases

This section explains how to backup and restore the AWX and Zabbix databases.

Notes
- The commands are located in the MISM installation directory
- The backup files are located in the installation_directory/storage/pgadmin_bullsequana.com/ directory

Recovering an AWX database

- To backup the AWX database, run the following command:

```
$./backup_database.sh -t awx -f backup_file
```

- To restore the AWX database, run the following command:

```
$./restore_database.sh -t awx -f backup_file
```

Recovering a Zabbix database

- To backup the Zabbix database, run the following command:

```
$./backup_database.sh -t zabbix -f backup_file
```

- To restore the Zabbix database, run the following command:

```
$./restore_database.sh -t zabbix -f backup_file
```

Chapter 2. Controlling resources

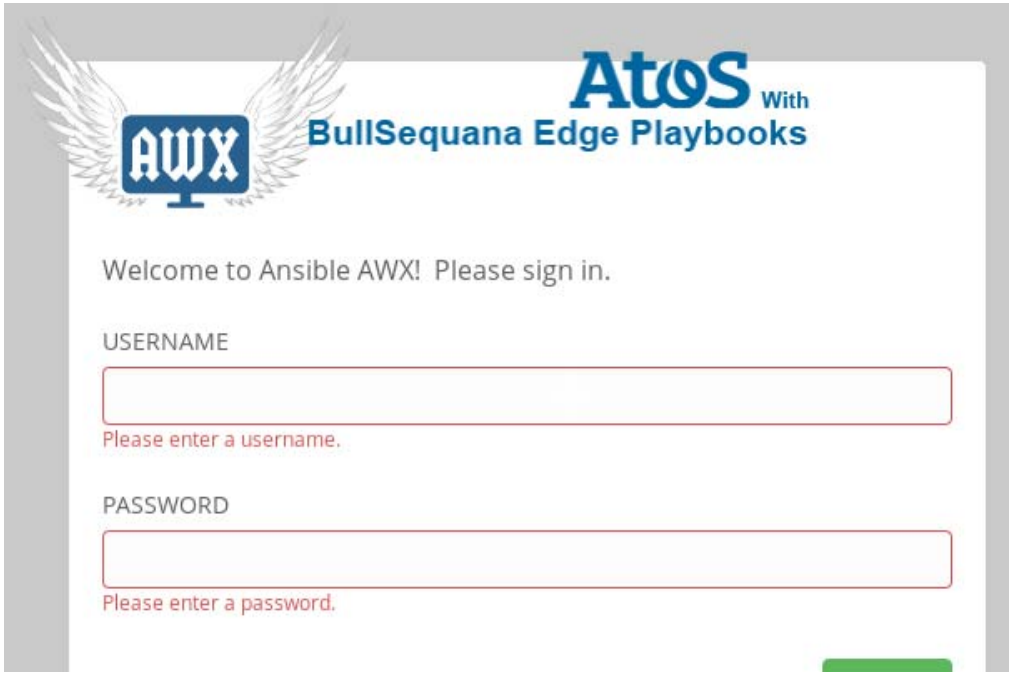
To control systems, the Machine Intelligence System Management (MISM) console uses the Ansible Tower framework. Ansible Tower is a graphically-enabled framework accessible via a web interface and a REST API endpoint for Ansible, the open source IT orchestration engine.

Important	**Consult the full Ansible Tower documentation before using the MISM console: https://docs.ansible.com/ansible-tower/**

2.1. Logging in

Procedure

1. Launch the web browser and enter the name or IP address of the MISM console using the https protocol. The authentication page opens.



Controlling console	
Username	Default name: mism
Password	Default password: mismpass

2. Complete the **Username** and **Password** fields and click **Sign in**. The **Dashboard** page opens.

What to do if an incident occurs?

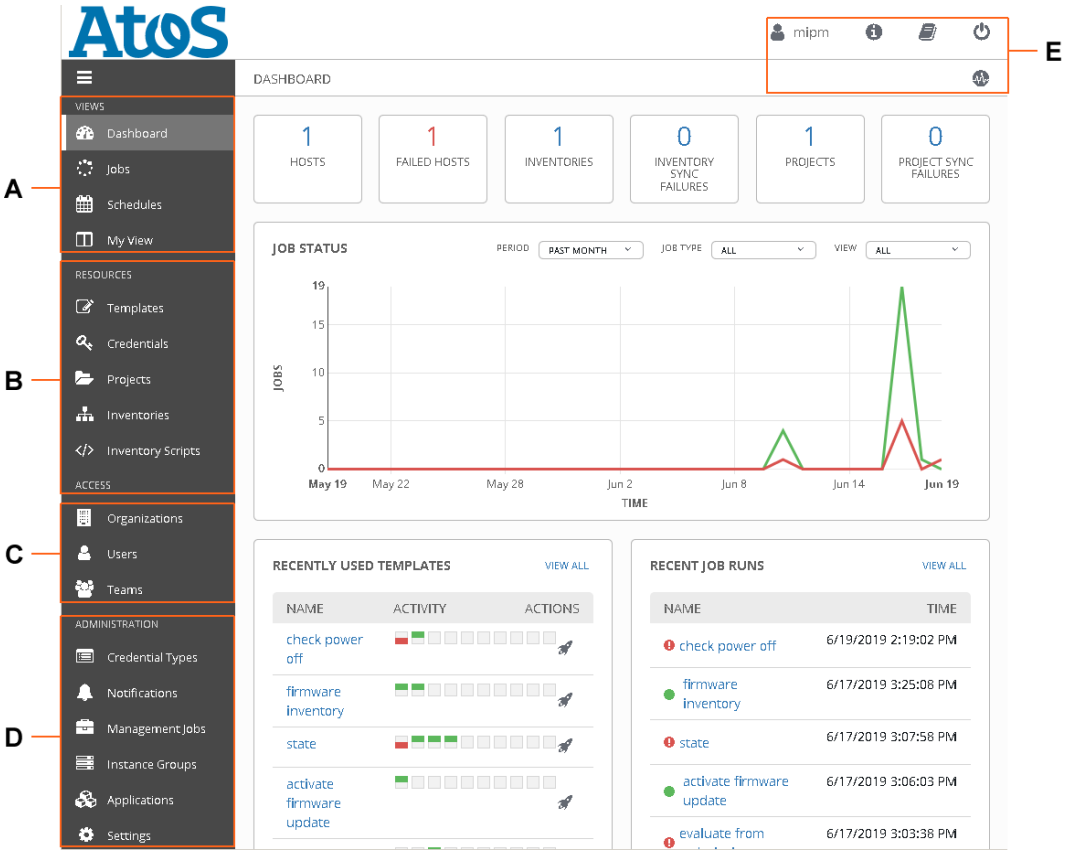
If the connection to the MISM console cannot be made or if the web pages are displayed incorrectly, one of the following problems may be the cause:

- Network failure
- Incorrect network settings
- Incorrect browser settings (proxy configuration)

Important	**It is strongly recommended to change the default mism user password once initial setup is completed, taking care to record the new account details for subsequent connections.**

2.2. Console description

2.2.1. Console overview



Mark	Description
A	Views
B	Resources
C	Access
D	Administration
E	Quick access

Features

Area	Description	Features
Quick access	Provides rapid access to frequently used features	User Account
		About
		Ansible Tower Documentation
		Log Out
		Activity Stream
Views	Provides access to resource monitoring features	Dashboard
		Jobs
		Schedules
		My View
Resources	Provides access to resource management and configuration features	Templates
		Credentials
		Projects
		Inventories
		Inventory Scripts
Access	Provides access to user management and permission setting features	Organizations
		Users
		Teams
Administration	Provides access to various administrative options	Credential Types
		Notifications
		Management Jobs
		Instance Groups
		Applications
		Settings

2.2.2. Delivery content

On delivery, the monitoring console contains the following elements:

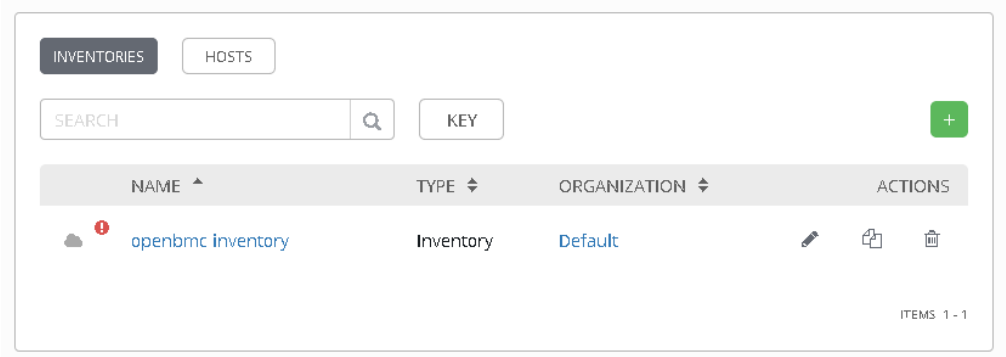
- The BullSequana Edge Playbooks project, which contains the delivered playbooks
- A collection of job templates, which are based on the provided playbooks
- The BullSequana Edge inventory, given as an example
- The Bull organization
- The BullSequana Edge group
- The BullSequana Edge Vault credential

2.3. Adding resources

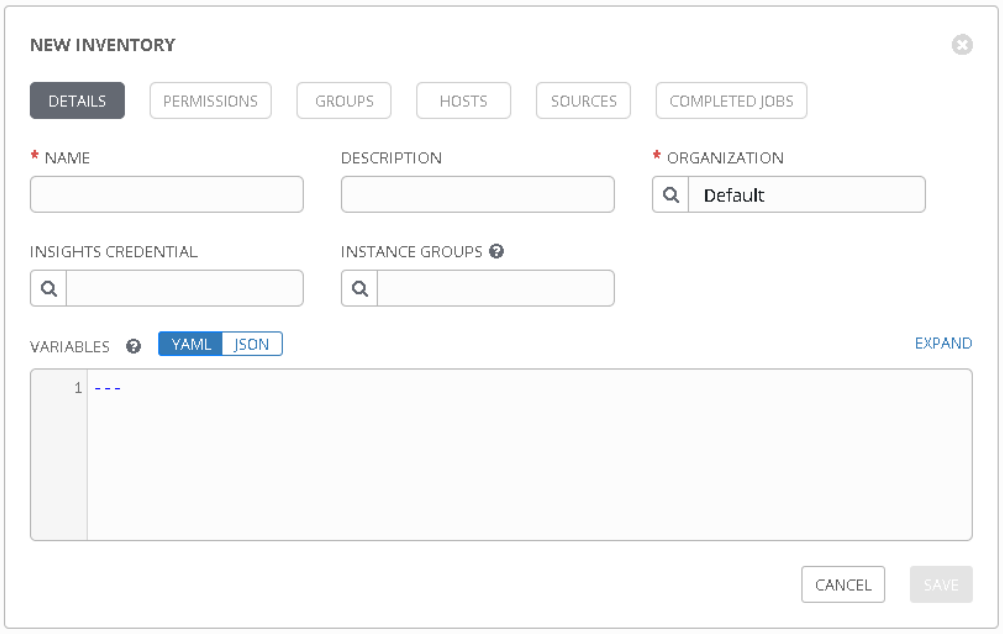
2.3.1. Creating an inventory

Note The Openbmc inventory is delivered as an example of how to set up an inventory.

1. From the left navigation bar, click **Inventories**. The **Inventories** page opens.



2. Click the green + and select **Inventory**. The **New Inventory** page opens.



3. Complete the **Name** and **Organization** fields.

4. Complete the **Variables** field.

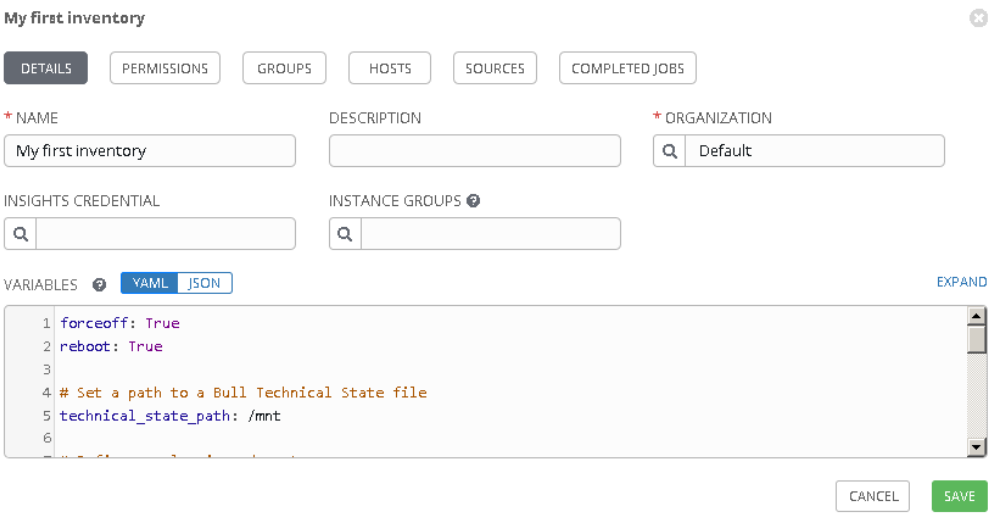
Variable	Description	BullSequana Edge inventory value
forceoff	Indicates if powering the server off is necessary during a job. Possible values: • True: the host is automatically powered off. • False: the host is not automatically powered off and the BIOS or CPLD update is effective only after the next power cycle.	True
power_cap	Provides the maximum value allowed for power consumption	Not defined
poweroff_countdown	Indicates the delay before checking that the host is successfully powered off (in seconds).	15
poweron_countdown	Indicates the delay before checking that the host is successfully powered on (in seconds).	15
reboot	Indicates if rebooting the BMC is necessary during a job. Possible values: • True: the BMC reboots automatically. • False: the BMC does not automatically reboot and the BMC update is effective only after the next reboot.	True
reboot_countdown	Indicates the delay before checking that the BMC rebooted successfully (in minutes).	3
rsyslog_server_ip	Provide the network parameters necessary for rsyslog	0.0.0.0
rsyslog_server_port		514
technical_state_path	Provides the path to the Technical State file when updating firmware	/host/mnt

Note If these variables are not defined in the inventory, they must be defined as extra variables when launching a job.

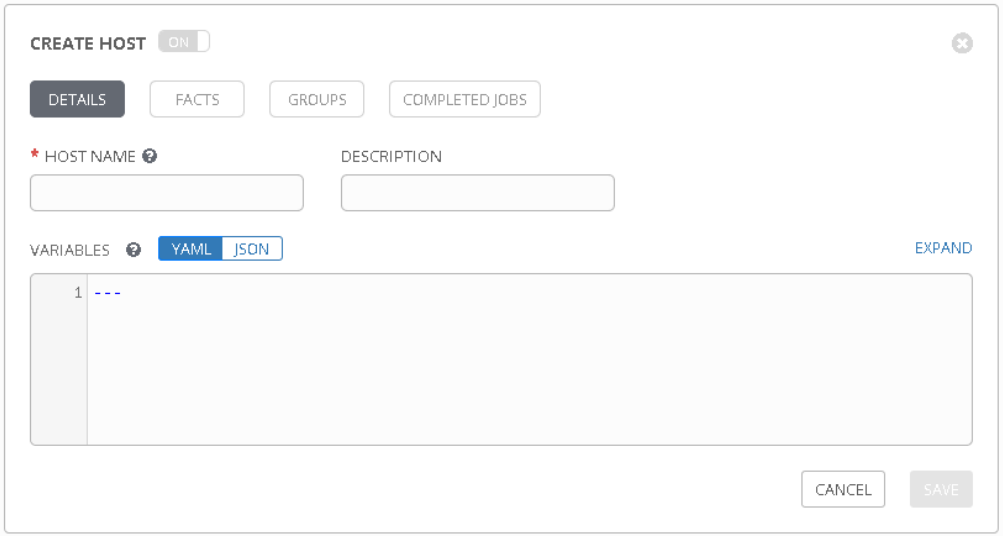
5. Complete the other fields as needed.
6. Click **Save**.

2.3.2. Adding a host to an inventory

1. From the **Inventories** page, click the newly created inventory. The inventory page opens.

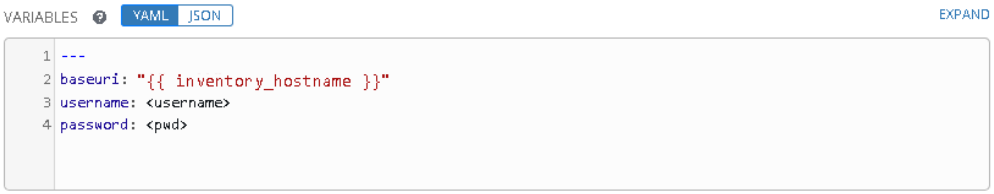


2. Click **Hosts**.
3. Click the green + button. The **Create Host** page opens.



4. Complete the **Host Name** field with the IP address of the server to be added.

5. Complete the **Variables** field with the mandatory variables.



Mandatory host variables	
baseuri	Write “{{inventory_hostname}}”
username	Write the host BMC username
password	Write the host BMC password

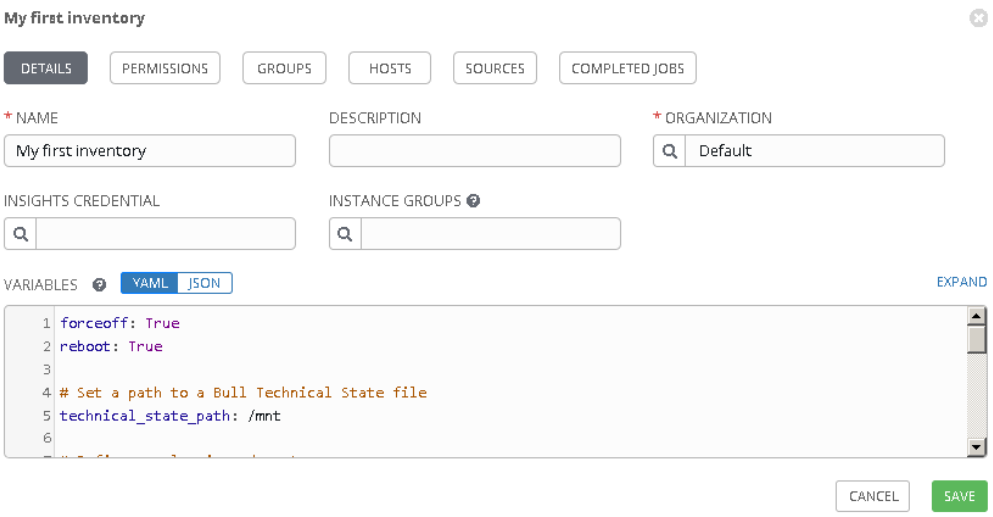
Note If the host BMC password is not indicated here, set up the job templates to prompt for it as an extra variable at launch.

See 2.5. Adding security if a encrypted password is necessary.

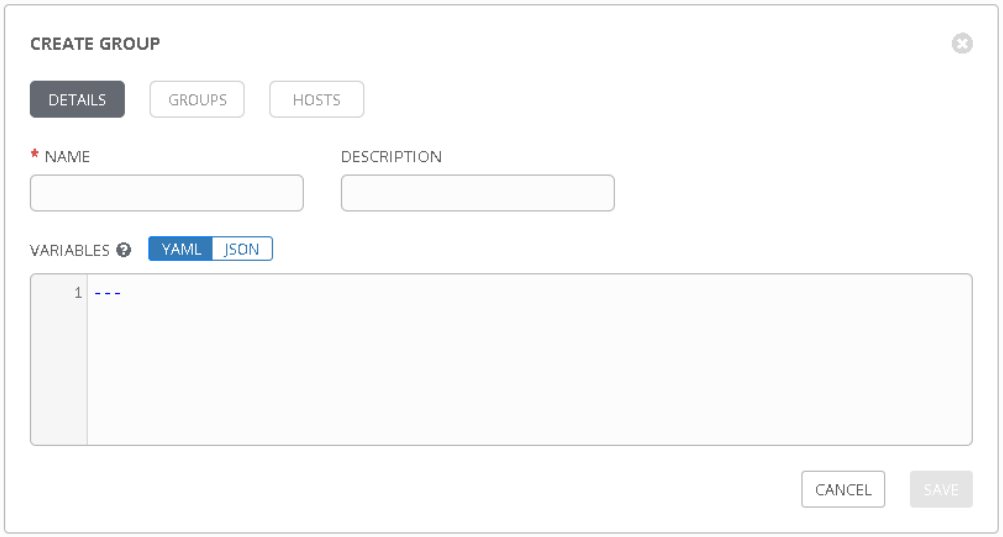
6. Click **Save**.

2.3.3. Creating a group of hosts in an inventory

1. From the **Inventories** page, click the inventory to be edited. The inventory page opens.

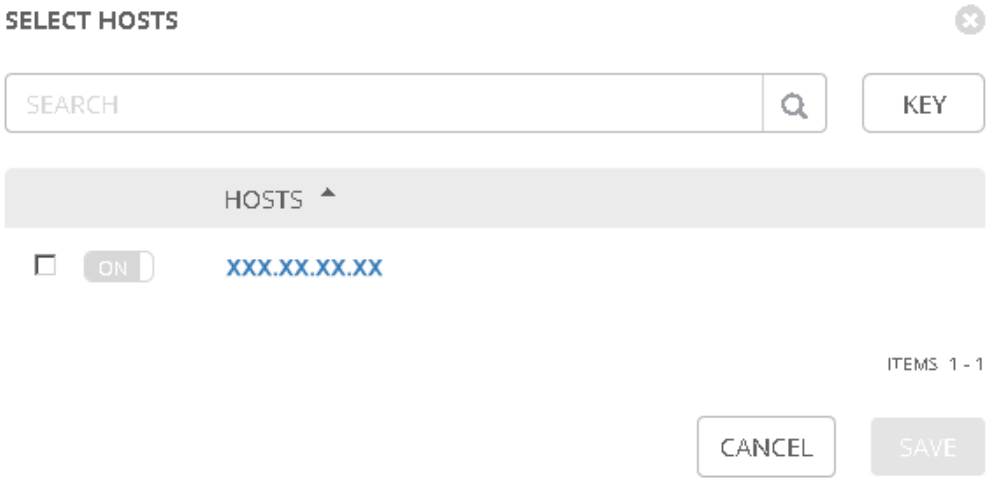


2. Click **Groups**.
3. Click the green + button. The **Create Group** page opens.



4. Complete the required fields and click **Save**.
5. Click **Hosts**.

6. Click the green + button and select **Existing Host**. The **Select Hosts** window opens.



7. Select the hosts to be added to the group and click **Save**.

2.4. Controlling resources

BullSequana Edge servers are controlled by launching jobs from different job templates.

2.4.1. Available job templates

The MISM console is delivered with a collection of job templates.

Name	Description	Necessary variables
Activate firmware updates	Activates newly uploaded firmware	• reboot • forceoff
BIOS Boot Mode	Retrieve BIOS boot information	None
BIOS Boot Source		
Check BMC alive	Checks that the BMC is running	
Check critical high and low alarms	Checks for high and low critical alarms in the system	
Check Power Off	Check the system power state	
Check Power On		
Check Rsyslog Server IP and Port	Checks that the syslog server IP address and port are identical to the ones defined in the inventory variables.	• rsyslog_server_ip • rsyslog_server_port
Check warning high and low alarms	Checks for high and low warning alarms in the system	None
Delete firmware image	Deletes a firmware image uploaded on the BMC	image
Evaluate firmware update from Technical State	Details what will be updated by the Technical State	technical_state_path
Firmware inventory - Active	Lists the firmware that has been uploaded and activated	None
Firmware inventory - Ready	Lists the firmware that has been uploaded but not activated	
FRU	Returns FRU information	
Get Rsyslog Server IP and Port	Retrieves syslog server information	
Immediate Shutdown	Powers off the system without waiting for software to stop	
LED	Returns the state of the module identification LED	
Logs	Retrieves the system logs	
Network	Lists the network interfaces	

Name	Description	Necessary variables
Orderly Shutdown	Stops all software on the system before removing power	
Power Cap	Returns the maximum value allowed for power consumption	None
Power On	Powers on the system	
Reboot BMC	Stops and starts the BMC again	
Rsyslog Server IP and Port	Retrieves syslog server information	
Sensors	Retrieves the sensor information	
Set BIOS Boot Mode to Regular	Select the BIOS boot mode	
Set BIOS Boot Mode to Safe		
Set BIOS Boot Mode to Setup		
Set BIOS Boot Source to Default	Select the BIOS boot source	
Set BIOS Boot Source to Disk		
Set BIOS Boot Source to External Media		
Set BIOS Boot Source to Network		
Set LED off	Turns the module identification LED off	
Set LED on	Turns the module identification LED on	
Set Power Cap off	Removes the possibility of setting a maximum value for power consumption	
Set Power Cap on	Sets a maximum value for power consumption	power_cap
Set Rsyslog Server IP	Set up the syslog server	rsyslog_server_ip
Set Rsyslog Server Port		rsyslog_server_port
State BMC	Check the state of the system components	None
State Chassis		
State Host		
System	Returns system information.	
Update firmware from file	Updates firmware from a file.	• file_to_update • reboot • forceoff

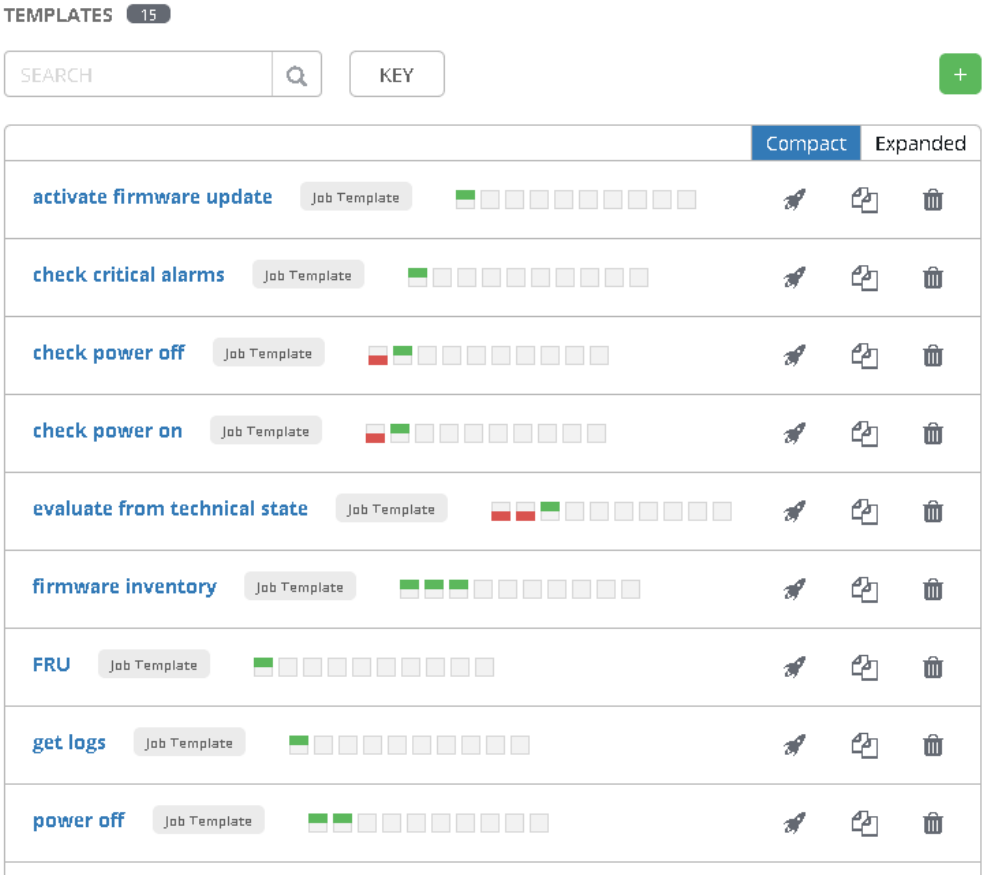
Name	Description	Necessary variables
Update firmware from Technical State	Updates all the system firmware from the Technical State.	• technical_state_path • reboot • forceoff
Upload firmware images from Technical State	Uploads all the system firmware from the Technical State	technical_state_path

2.4.2. Launching a job

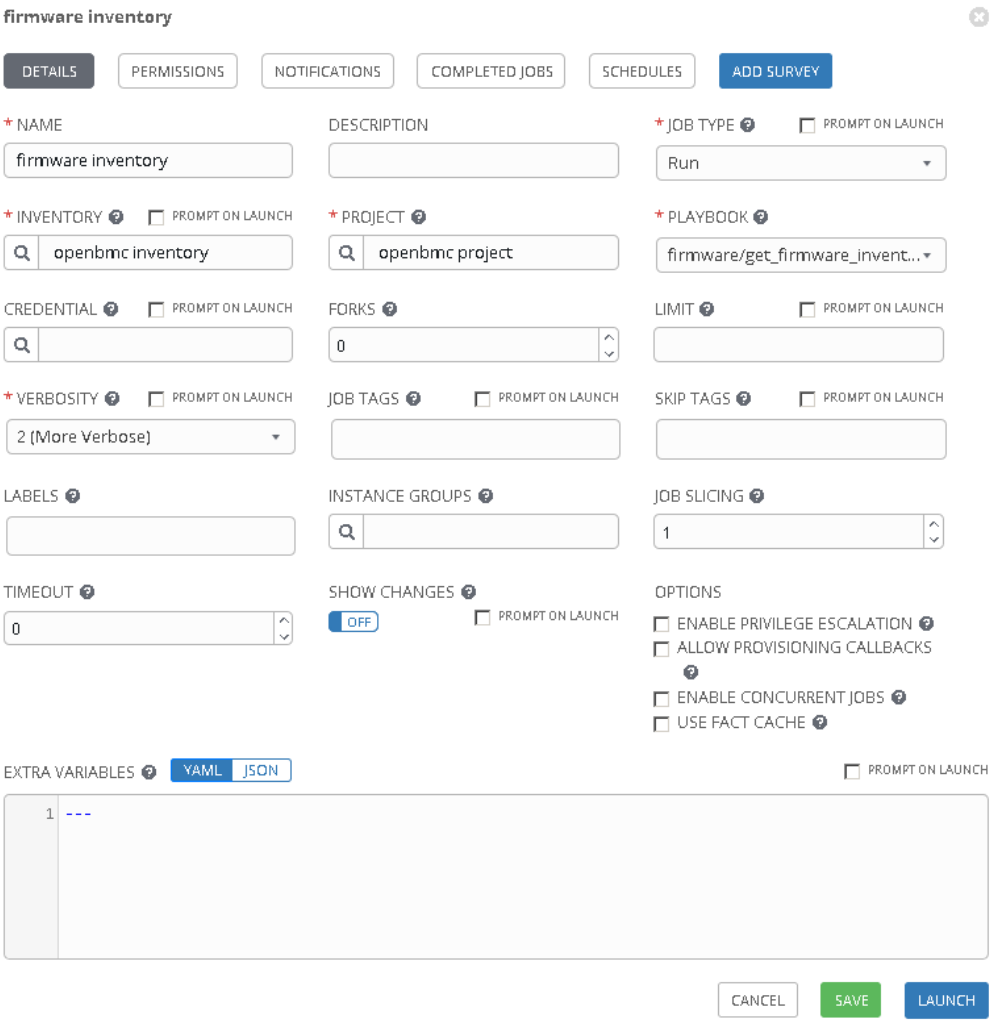
This section explains how to launch a job manually. Jobs can also be scheduled to launch automatically.

See The Ansible Tower documentation for more information: https://docs.ansible.com/ansible-tower/

1. Navigate to the **My View** or **Templates** page to display the job template list.



2. Click the required job template. The job template page opens.

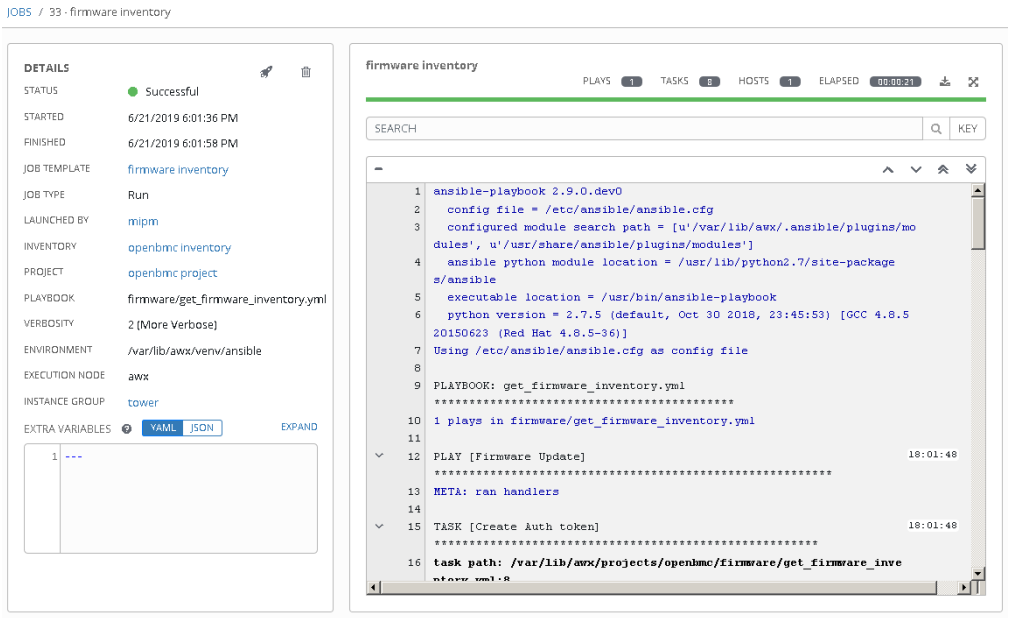


3. Complete the **Inventory** field with the inventory containing the hosts to be manipulated by the job.
4. If needed, complete the **Limit** field with a group in the selected inventory to further constrain the lists of hosts to be manipulated by the job.
5. Complete the **Extra variables** field.

See 2.4.1. Available job templates to review the variables needed for each job.

6. If the host password has not been provided as a host variable, select **Prompt at launch** next to the **Extra variables** field. The user will be asked to give the password as a variable when the job launches.
7. Click **Save**.

8. Click **Launch**. The **Jobs** page opens.



9. Consult the process and output of the job in the text window.
10. Click … to display hidden lines.

2.4.3. Scheduling a job

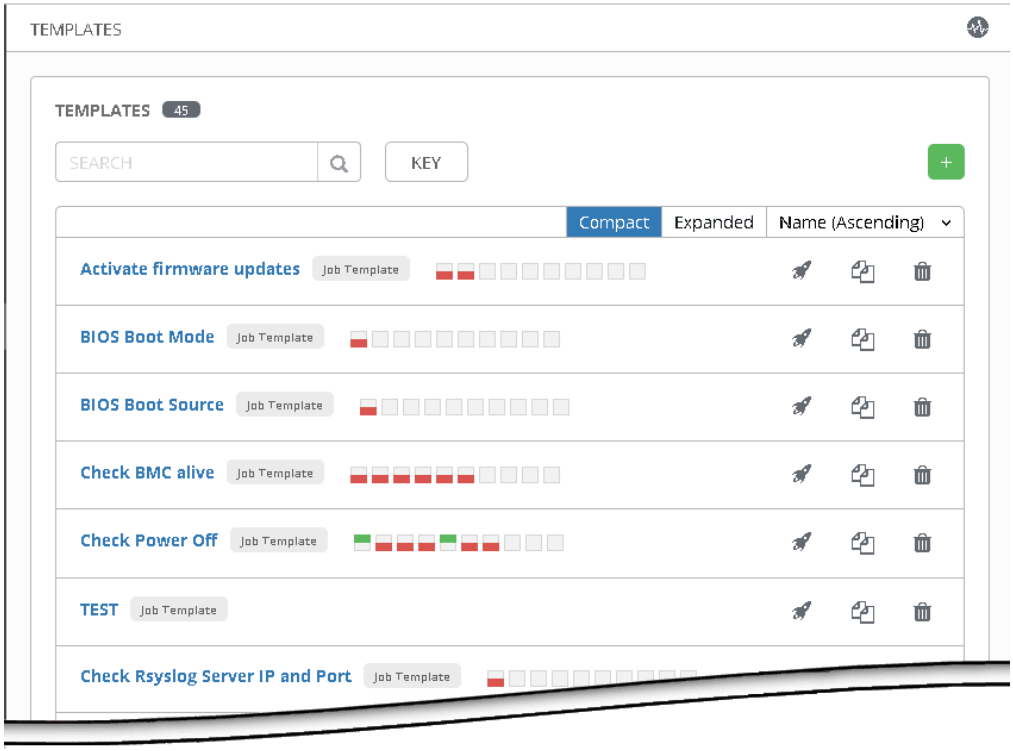
This section explains how to schedule a job so that it is launched automatically.

Note Job schedules are created from template, project or inventory resources.

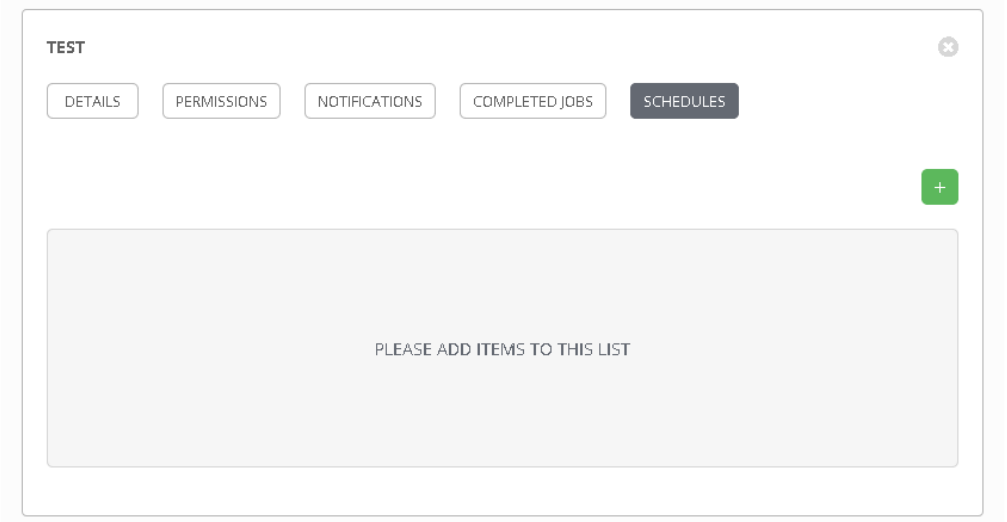
See The Ansible Tower documentation for more information: https://docs.ansible.com/ansible-tower/

1. From the left navigation bar, click a resource (Templates, Projects or Inventories). A new page opens.

Templates example

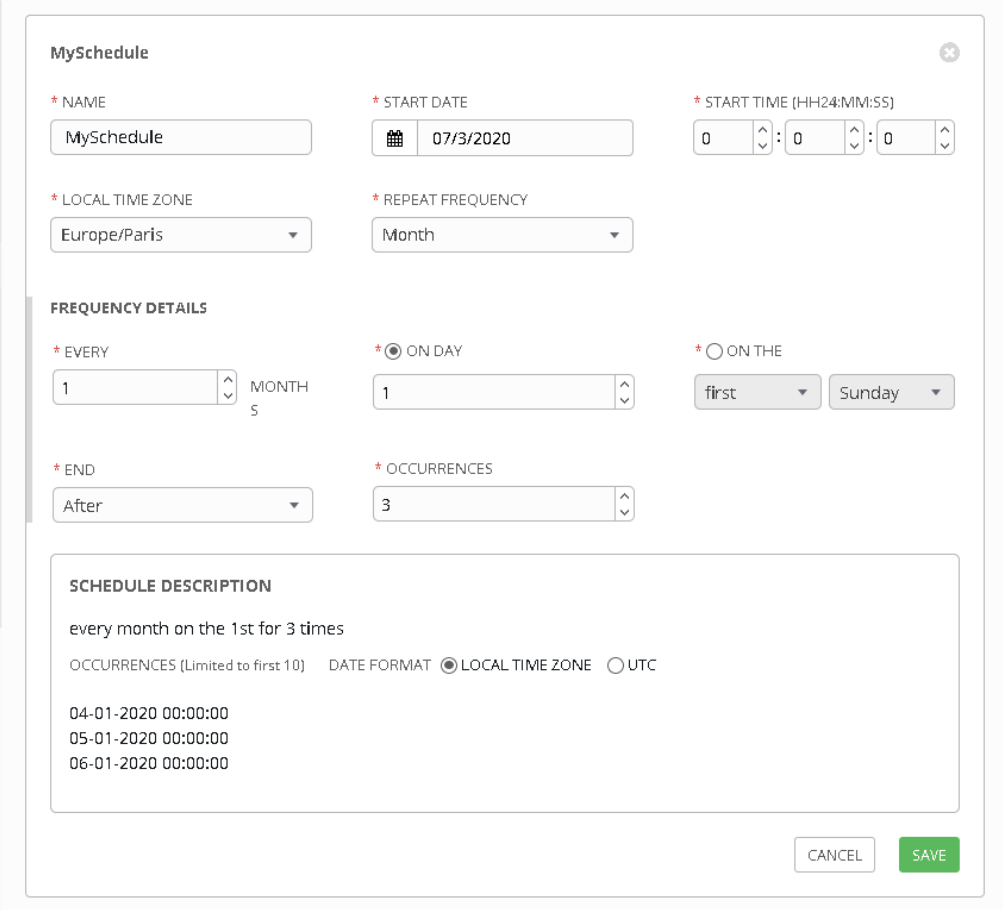


2. Click a resource.



3. Click the **Schedules** tab.
4. Complete the fields as required.

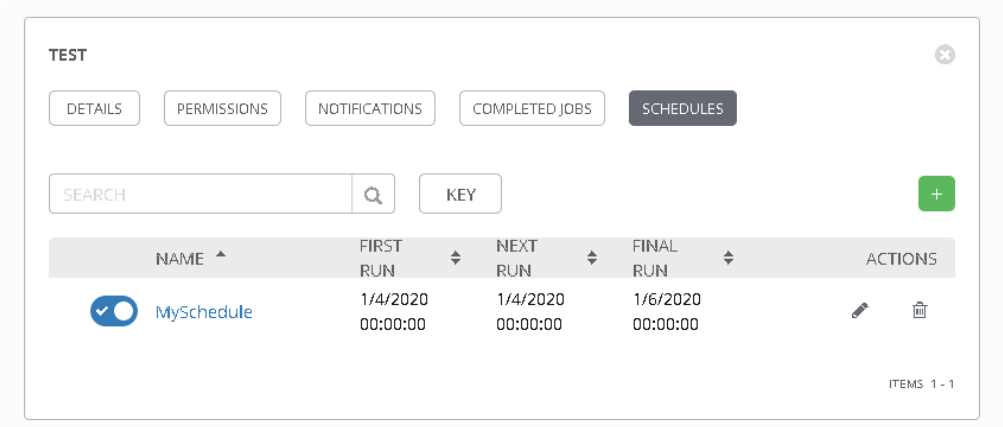
Example



Important The schedules must be set in UTC time.

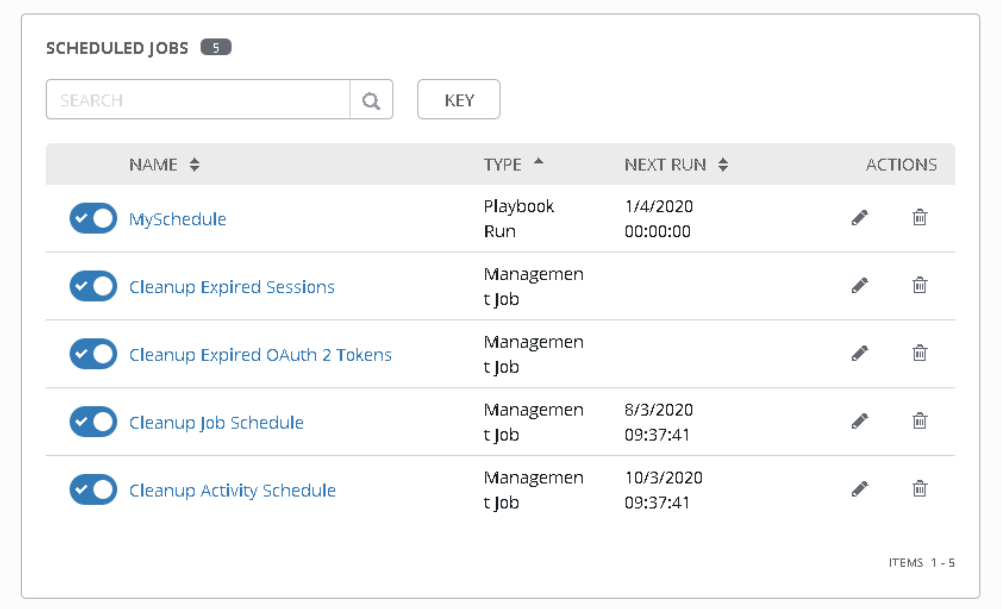
5. Click **Save** to complete changes.

The schedule is created for the resource.



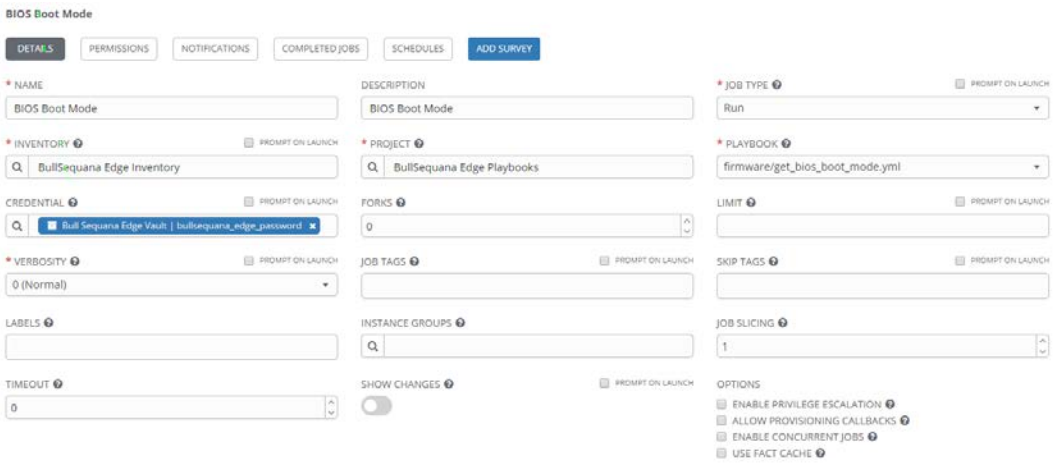
6. Use the toggle button to enable or disable the schedule.

7. From the left navigation bar, click **Schedules** to manage the scheduled jobs.



2.5. Adding security

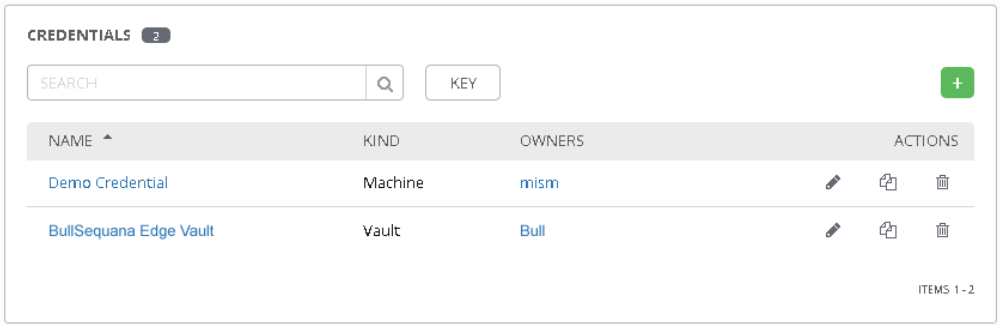
The BullSequana Edge Vault can be used to store encrypted passwords. On delivery, it is already associated with all the delivered job templates as a credential.



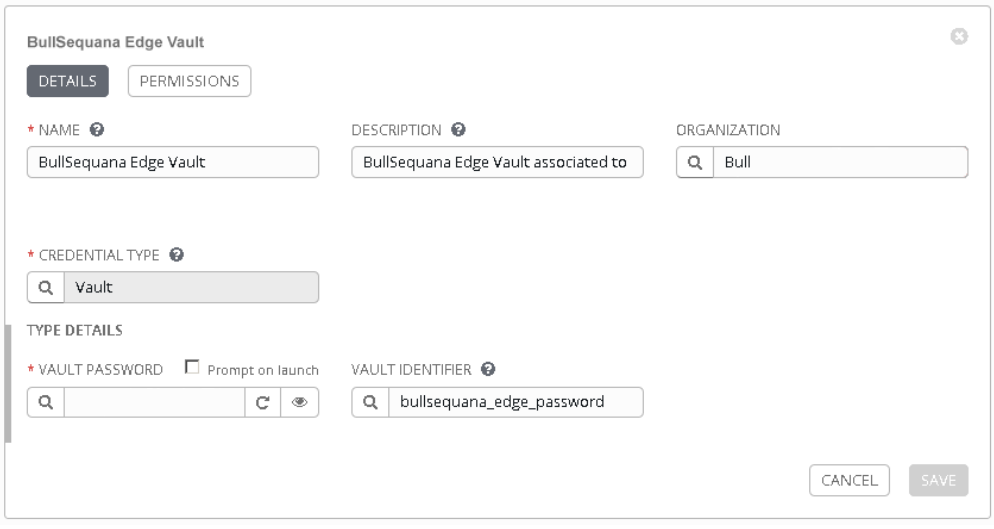
2.5.1. Creating a password for the BullSequana Edge Vault

The BullSequana Edge Vault initially has no defined password. To create one, perform the following actions:.

1. From the left navigation bar, click **Credentials**. The **Credentials** page opens.



2. Click **BullSequana Edge Vault**. The **BullSequana Edge Vault** page opens.



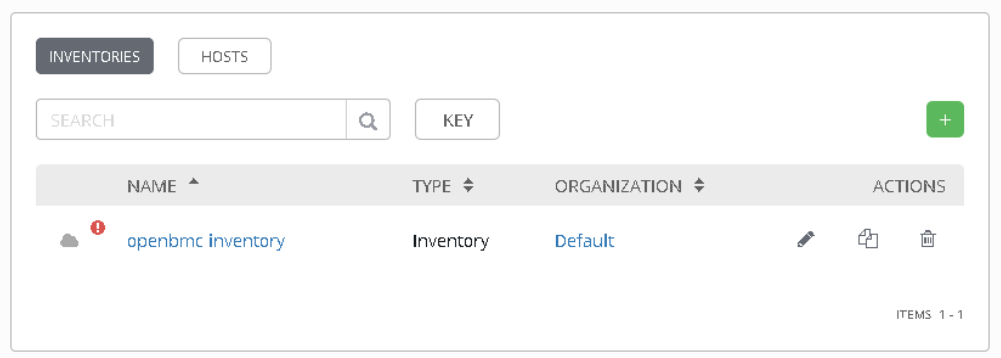
3. Complete the **Vault Password** field.
4. Click **Save**. The **Vault Password** field is now encrypted.

2.5.2. Creating an encrypted password for a host

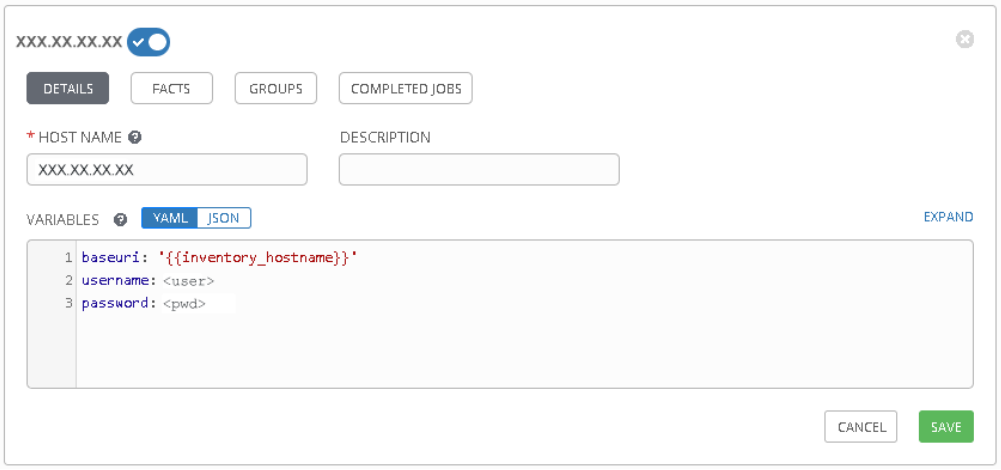
1. Choose a name for the password that is going to be encrypted.
2. Open a Terminal window.
3. Run the following command:

```
$ ./generate_encrypted_password_for_AWX.sh --name <password name> <host BMC password>
```

4. Enter the BullSequana Edge Vault password when asked. The encrypted password is generated.
5. From the left navigation bar, click **Inventories**. The **Inventories** page opens.



6. Click the inventory which contains the host to be edited. The inventory page opens.
7. Click **Hosts** and click the host to be edited. The host page opens.



8. Delete any previous passwords from the **Variables** field and add the following line.

```
---------------------------------------------------------------------------
password: '{{password name}}'
---------------------------------------------------------------------------
```

9. Click **Save**.

2.5.3. Deleting an encrypted password

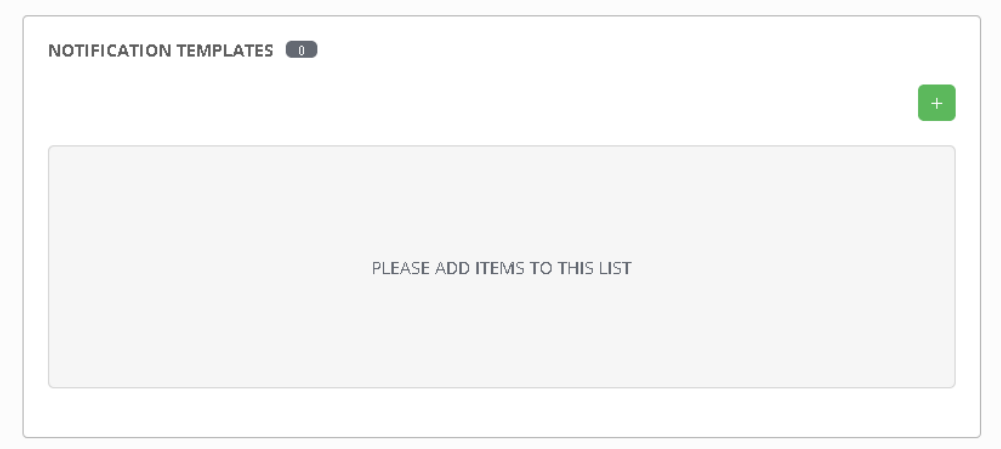
The encrypted passwords are stored in the `passwords.yml` file in the `/ansible/vars` sub-directory of the MISM installation directory. To delete one, perform the following actions:

1. Open the `passwords.yml` file in a text editor.
2. Locate the password to be deleted using the password name.
3. Delete the lines associated with the password.
4. Save and close the file.
5. Update the password in the host variables.

2.6. Setting up email alerts

2.6.1. Creating an email notification template

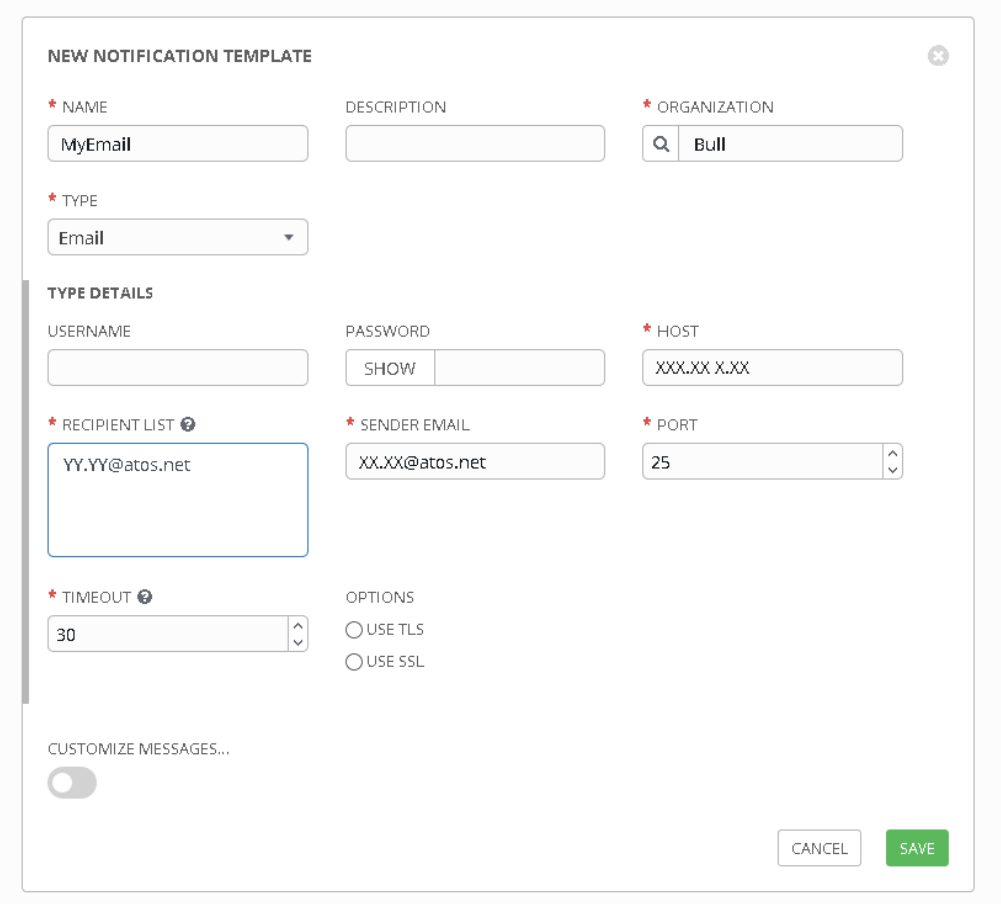
1. From the left navigation bar, click **Notifications**. The **Notifications** page opens.



2. Click the green +. A new page opens.
3. Complete the **Name** and the **organization** fields.
4. Select **Email** from the **Type** drop-down list.

5. Complete the fields as required.

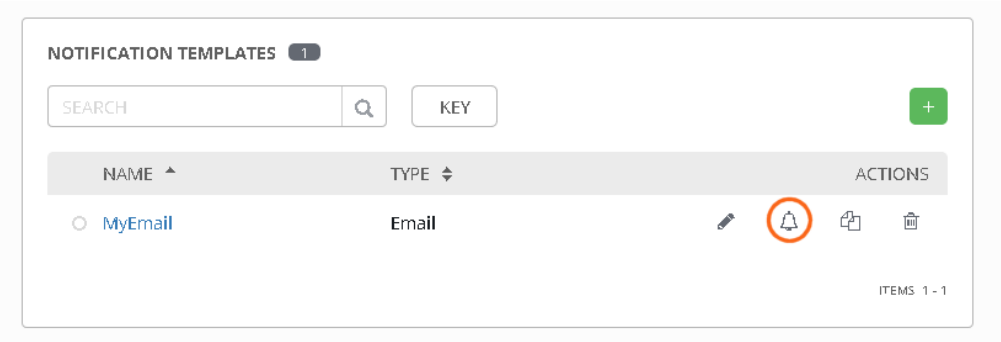
Example



Important **TLS and SSL options are mutually exclusive. Be sure to only select one option. Checking both causes the notification to fail with no warning message.**

6. Click **Save** to complete changes.

The notification template is created.

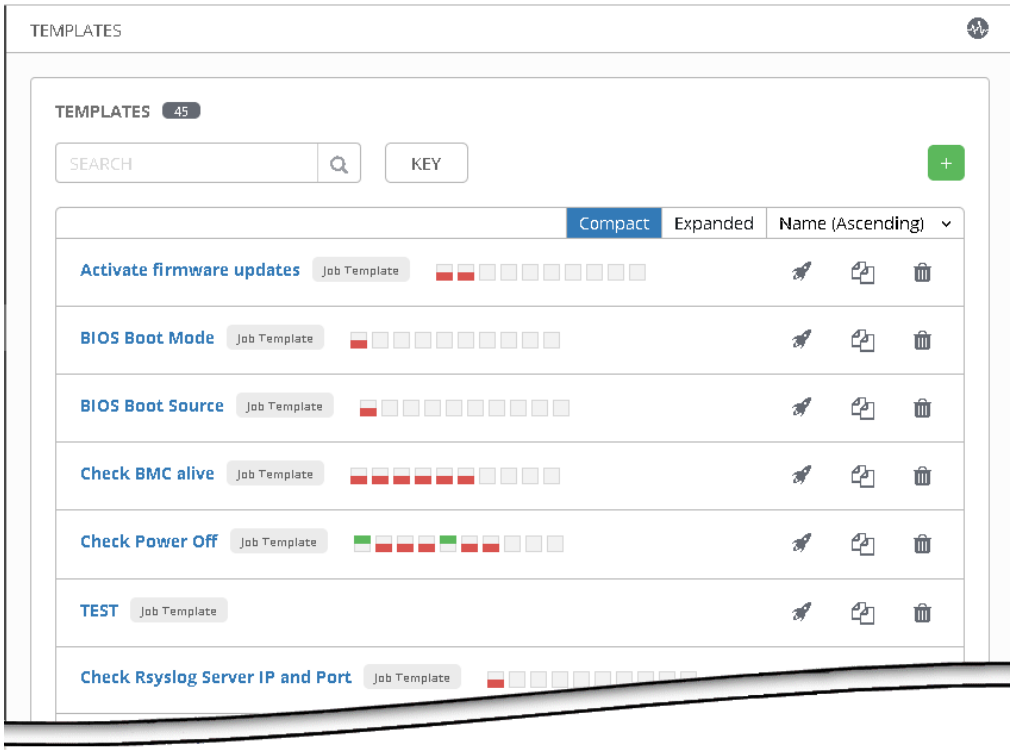


7. Click the test notification button to send a test email.

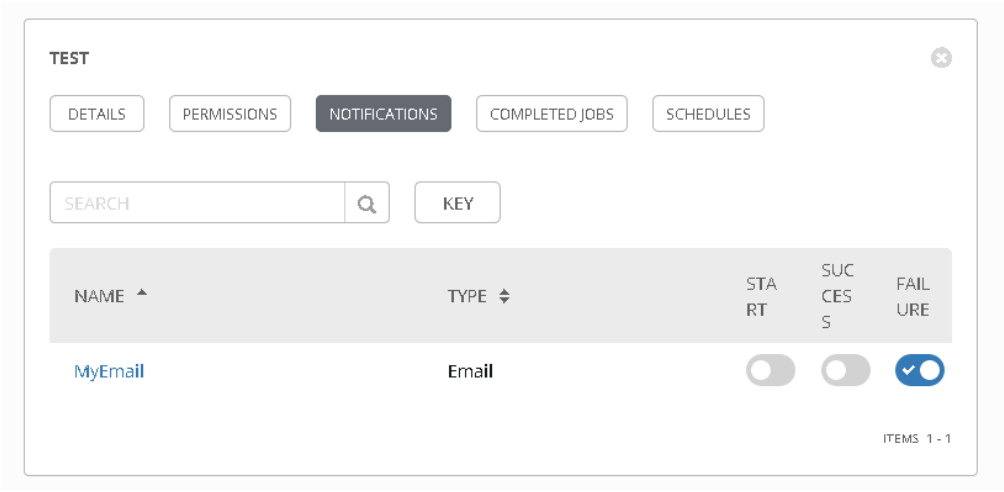
2.6.2. Assigning a notification to a job template

1. From the left navigation bar, click a resource (Templates, Projects or Inventories). A new page opens.

Templates example



2. Click a resource.
3. Click the **Notifications** tab.



4. Use the toggle buttons to enable or disable the events.

2.7. Performing basic operations

2.7.1. Performing power operations

Important	**The https protocol must always be used to connect to the MISM console.**

Powering servers on

1. Launch the **Power On** job.
2. Check that the job status is **Successful**.

   If the job status is **Failed**, check the output of the job in the text window.
3. Launch the **Check Power On** job.
4. Check that the job status is **Successful**.

   If the job status is **Failed**, check the output of the job in the text window.

W087  **WARNING**
W087:
The immediate reboot and shutdown buttons should only be used if the Operating System is unable to respond to an orderly reboot or shutdown request.
These sequences may result in data loss and file corruption.

Powering servers off

1. Select the power operation:
   - **Orderly Shutdown**
   - **Immediate Shutdown**
2. Launch the selected job.
3. Check that the job status is **Successful**.

   If the job status is **Failed**, check the output of the job in the text window.
4. Launch the **Check Power Off** job.
5. Check that the job status is **Successful**.

   If the job status is **Failed**, check the output of the job in the text window.

Rebooting BMCs

Important	**The date and time will be lost following a BMC reboot if they have been set manually. It is recommended to use NTP to set the date and time to preserve the settings when the BMC is rebooted.**

1. Launch the **Reboot bmc** job.
2. Check that the job status is **Successful**.

   If the job status is **Failed**, check the output of the job in the text window.
3. Launch the **Check BMC alive** job.
4. Check that the job status is **Successful**.

   If the job status is **Failed**, check the output of the job in the text window.

2.7.2. Updating firmware

Important

- **The BMC must be rebooted after an update of its firmware. If the reboot variable is set as False, it must be done manually for the update to be effective.**
- **The host must be powered off before updating the BIOS or CPLD firmware. If the forceoff variable is set as False, it must be done manually.**

2.7.2.1. Updating firmware globally

Two-step operation

1. **Review which firmware will be updated**

   1. Launch the **Evaluate firmware update from Technical State** job.

   Note The path to the Technical State file must be indicated as an inventory variable or as a job extra variable.

   2. Check that the job is **Successful**.

      If the job status is **Failed**, check the output of the job in the text window.

2. **Update the firmware**

   1. Launch the **Update firmware from Technical State** job.

   Note The following variables must be indicated as inventory variables or as job extra variables:

   - technical_state_path
   - reboot
   - forceoff

   2. Check that the job is **Successful**.

      If the job status is **Failed**, check the output of the job in the text window.

   3. Launch the **Firmware inventory - Active** job to get firmware versions.
   4. Check that the job is **Successful**.

      If the job status is **Failed**, check the output of the job in the text window.

Three-step operation

1. **Review which firmware will be updated**

   1. Launch the **Evaluate firmware update from Technical State** job to know which firmware will be updated.

   Note The path to the Technical State file must be indicated as an inventory variable or as a job extra variable.

   2. Check that the job is **Successful**.

      If the job status is **Failed**, check the output of the job in the text window.

2. **Upload the firmware**

   1. Launch the **Upload firmware images from Technical State** job.

   Note The path to the Technical State file must be indicated as an inventory variable or as a job extra variable.

   2. Check that the job is **Successful**.

      If the job status is **Failed**, check the output of the job in the text window.

   3. Launch the **Firmware inventory - Ready** job to get firmware versions.
   4. Check that the job is **Successful**.

      If the job status is **Failed**, check the output of the job in the text window.

3. **Activate the firmware**

   1. Launch the **Activate firmware updates** job.

   Note The following variables must be indicated as inventory variables or as job extra variables:

   - reboot
   - forceoff

   2. Check that the job is **Successful**.

      If the job status is **Failed**, check the output of the job in the text window.

   3. Launch the **Firmware inventory - Active** job to get firmware versions.
   4. Check that the job is **Successful**.

      If the job status is **Failed**, check the output of the job in the text window.

2.7.2.2. Updating firmware individually

1. Launch the **Update firmware from file** job.

Note The following variables must be indicated as inventory variables or as job extra variables:

- reboot
- forceoff
- file_to_update

2. Check that the job is **Successful**.

   If the job status is **Failed**, check the output of the job in the text window.

3. Launch the **Firmware inventory - Active** job to get firmware versions.

4. Check that the job is **Successful**.

   If the job status is **Failed**, check the output of the job in the text window.

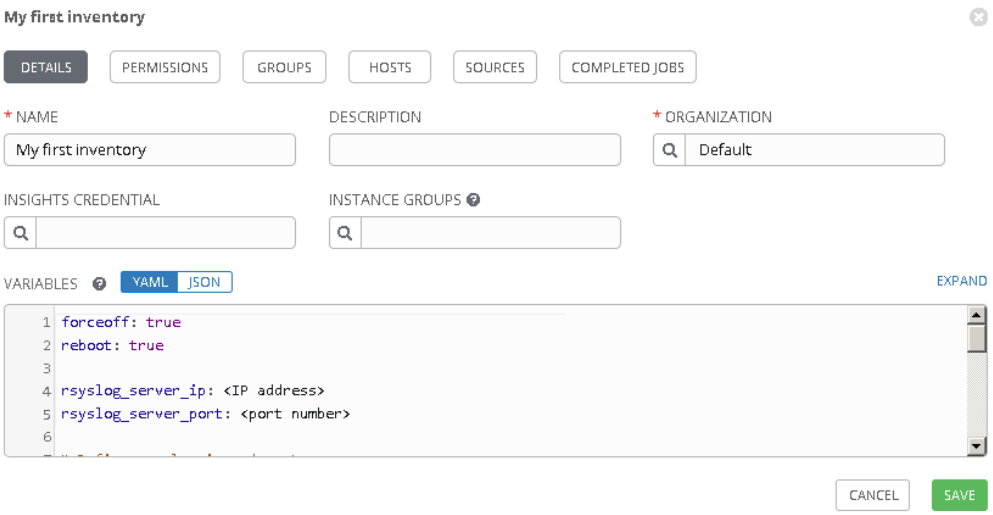
2.7.3. Enabling syslog forwarding

Prerequisites

The syslog server is configured for messaging

Procedure

1. Indicate the syslog server IP address and port as variables in the inventory.



2. Launch the **Set Rsyslog Server IP** job.
3. Check that the job is **Successful**.

   If the job status is **Failed**, check the output of the job in the text window.
4. Launch the **Set Rsyslog Server Port** job.
5. Check that the job is **Successful**.

   If the job status is **Failed**, check the output of the job in the text window.
6. Launch the **Check Rsyslog Server IP and Port** job to check the syslog server parameters.
7. Check that the job is **Successful**.

   If the job status is **Failed**, check the output of the job in the text window.

Chapter 3. Monitoring resources

To monitor systems, the Machine Intelligence System Management (MISM) console uses Zabbix. Zabbix is an enterprise-class open source distributed monitoring solution accessible via a web-based interface.

Important	**Consult the full Zabbix documentation before using the MISM console:** https://www.zabbix.com/documentation/current/manual

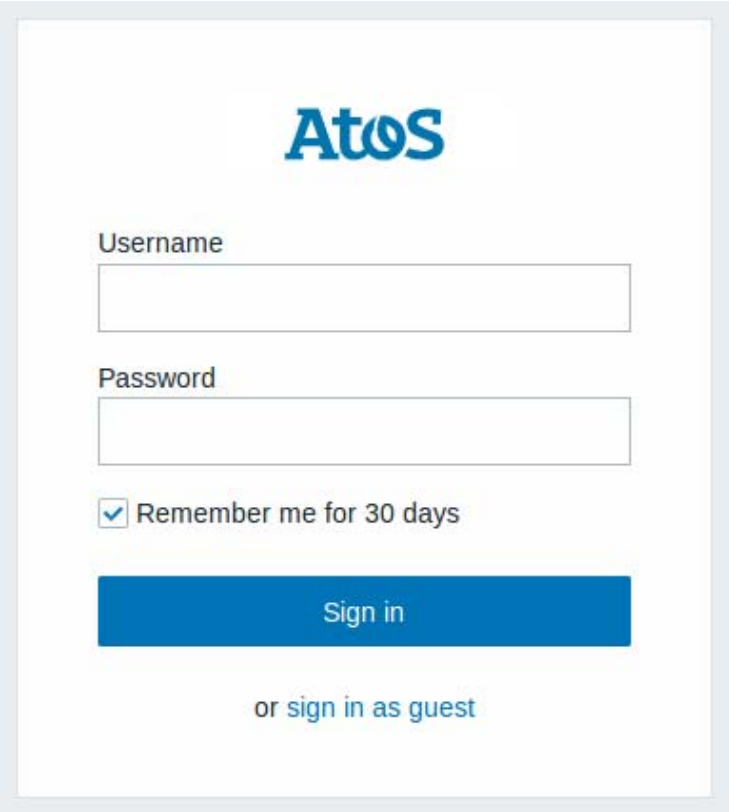
3.1. Logging in

Procedure

1. Launch the web browser and enter the name or IP address of the MISM console followed by the port number 4443 using the https protocol:

   https://<IP address>:4443

   The authentication page opens.



Monitoring console	
Username	Default name: Admin
Password	Default password: zabbix

2. Complete the **Username** and **Password** fields and click **Sign in**. The **Dashboard** page opens.

What to do if an incident occurs?

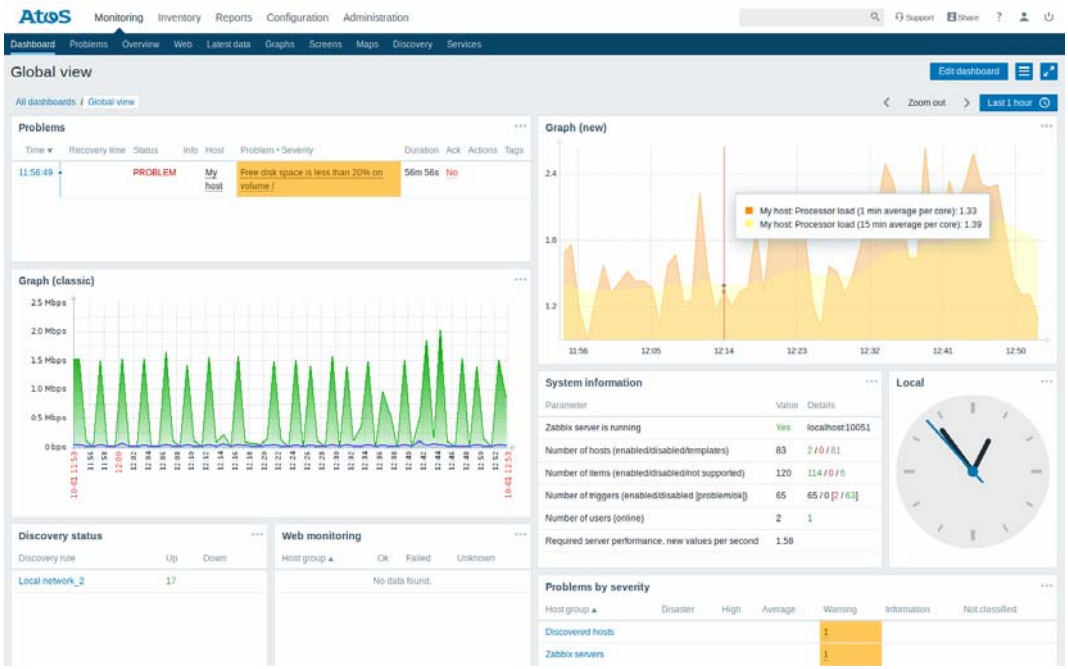
If the connection to the MISM console cannot be made or if the web pages are displayed incorrectly, one of the following problems may be the cause:

- Network failure
- Incorrect network settings
- Incorrect browser settings (proxy configuration)

Important	**It is strongly recommended to change the default Admin user password once initial setup is completed, taking care to record the new account details for subsequent connections.**

3.2. Console description

3.2.1. Console overview



Monitoring console description	
Menus	Five menus allow access to five families of features accessible from the associated tabs: Monitoring, Inventory, Reports, Configuration and Administration.
Tabs	Provides access to console features. Note that displayed features differ according to the selected menu.
Work pane	The work pane displays the information associated with the item selected in the menus.

Features

Menu	Description	Features
Monitoring	Provides access to the information the monitoring console is configured to gather, visualize and act upon.	Dashboard
		Problems
		Overview
		Web
		Latest data
		Graphs
		Screens
		Maps
		Discovery
		Services
Inventory	Provides access to host inventory details.	Overview
		Hosts
Reports	Provides access to predefined and user-customizable reports displaying system information, triggers and gathered data.	System information
		Availability report
		Triggers Top 100
		Audit
		Action log
		Notifications
Configuration	Allows to set up major functions: hosts and host groups, data gathering, data thresholds, sending problem notifications, creating data visualization and others.	Host groups
		Templates
		Hosts
		Maintenance
		Actions
		Event correlation
		Discovery
		Services
Administration	Provides access to administrative functions. This menu is available to Super Administrator users only.	General
		Proxies
		Authentication
		User Groups
		Users
		Media types
		Scripts
		Queue

3.2.2. Delivery content

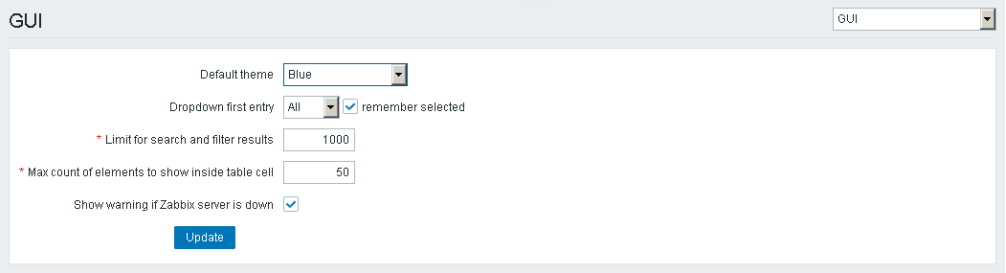
On delivery, the monitoring console contains two templates that allow Zabbix to be used to monitor BullSequana Edge servers:

- template-atos_openbmc-lld-zbxv4.xml, containing all metrics, triggers and discovery items.
- template-atos_openbmc-rsyslog-zbxv4.xml, containing the rsyslog info

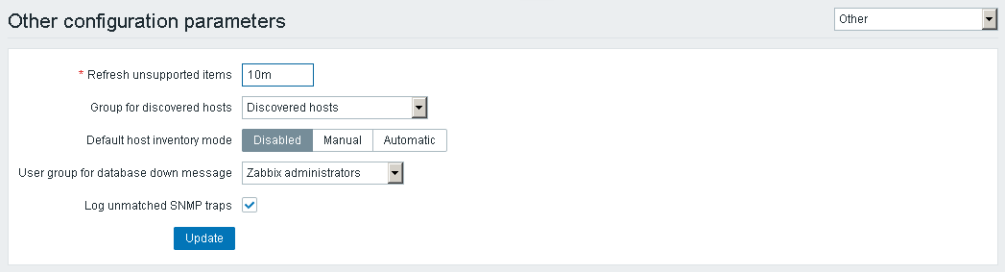
3.3. Preliminary configuration

3.3.1. Enabling automatic inventory

1. From the **Administration** menu, click the **General** tab. The **GUI** page opens.



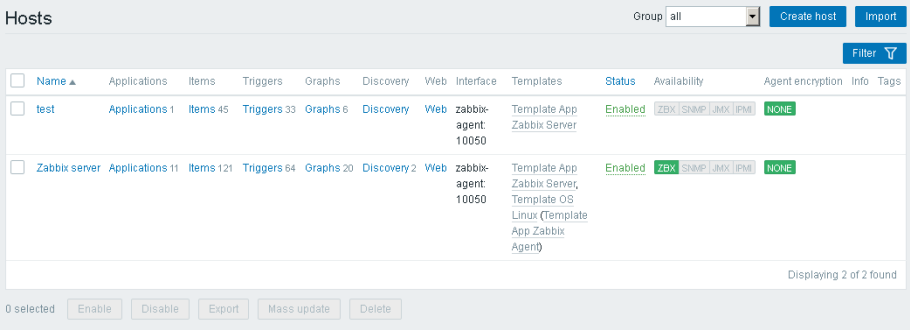
2. From the drop-down list on the right, click **Other**. The **Other configuration parameters** page opens.



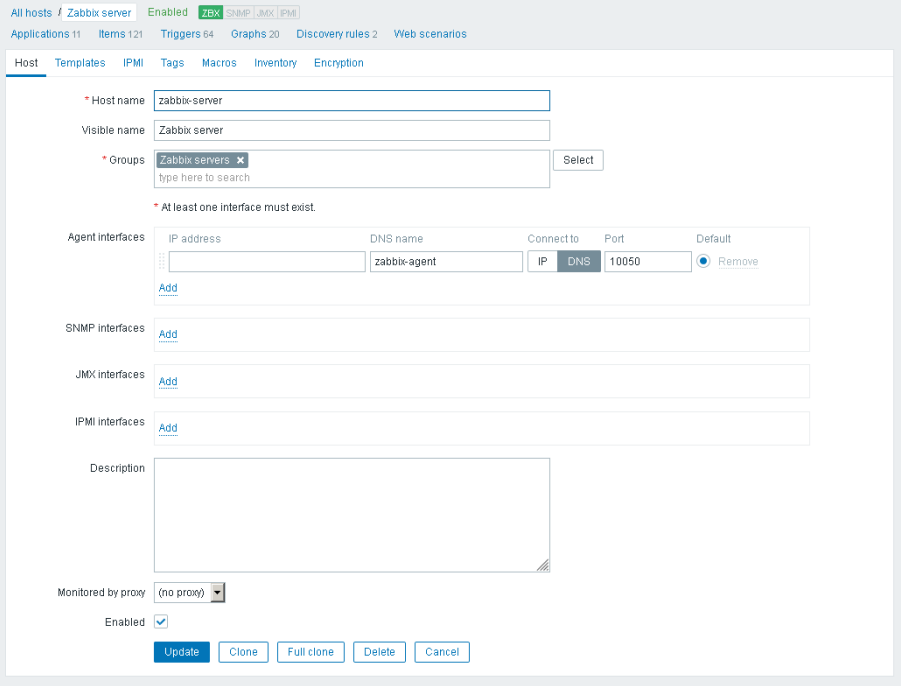
3. Click **Automatic** for **Default host inventory mode**.
4. Click **Update**.

3.3.2. Renaming the Zabbix server host

1. From the **Configuration** menu, click the **Hosts** tab. The **Hosts** page opens.



2. Click the **Zabbix server** line. The details of the host are displayed.



3. Complete the following fields.

Field	Value
Host name	zabbix-server
Visible name	Zabbix server

4. In the **Agent interfaces** section, perform the following actions:
   a. Click **DNS**.
   b. Complete the following fields.

Field	Value
IP address	Clear this field and leave it empty.
DNS name	zabbix-agent
Port	10050

5. Click **Update**.
6. Stop and restart the MISM console.

3.4. Managing the Atos LLD template

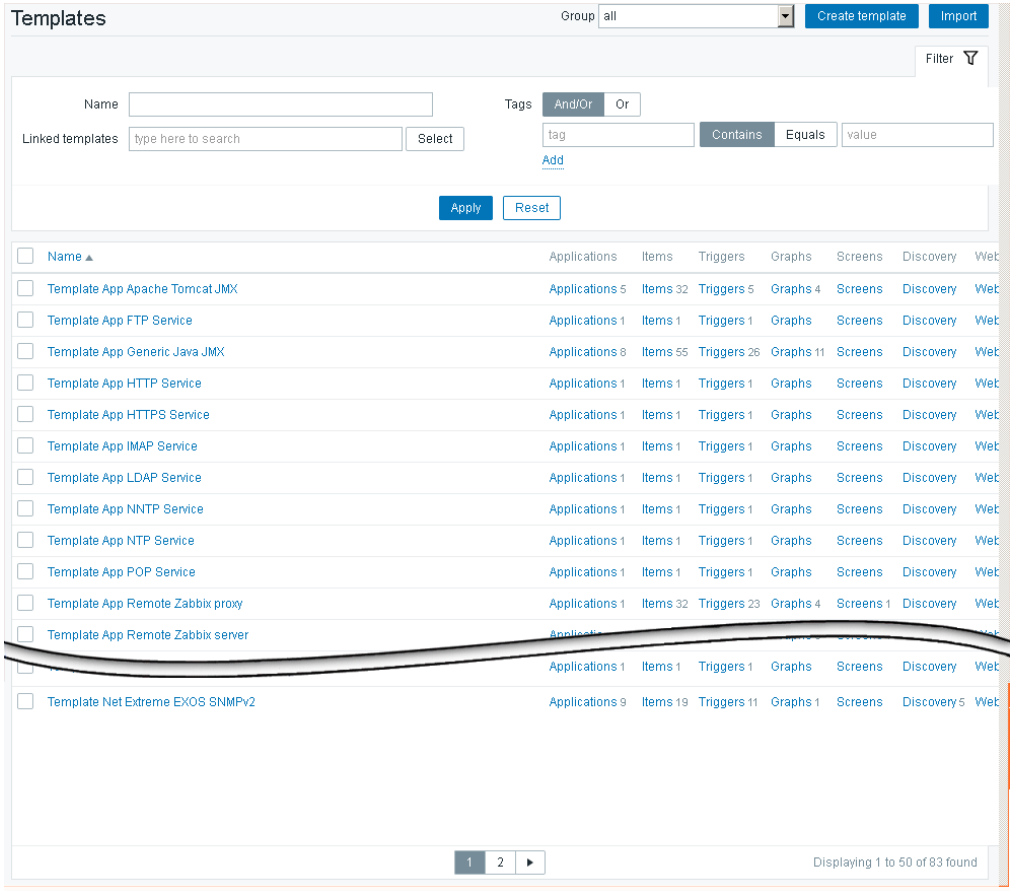
3.4.1. Template description

The template allows the following elements on the servers to be monitored:

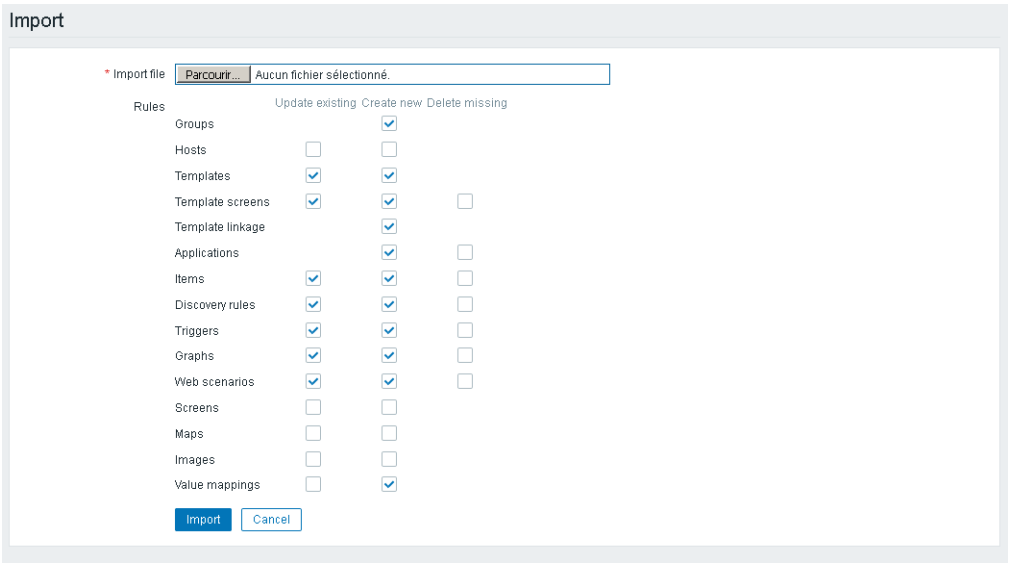
- Fan, temperature and voltage information in Discovery applications
- Four discovered triggers:
  - Critical high and low triggers, corresponding to Critical Alarm Thresholds for BullSequana Edge servers,that are enabled by default
  - Warning high and low triggers, corresponding to Warning Alarm Thresholds for BullSequana Edge servers, that are disabled by default

3.4.2. Importing the Atos LLD template

1. From the **Configuration** menu, click the **Templates** tab. The **Templates** page opens.



2. On the right-hand side of the screen, click **Import**. The **Import** page opens.



3. In **Import file** section, click **Browse** and indicate the path to the template.

Note The templates are delivered in a sub-directory of the MISM intallation directory: \zabbix\server\externalscripts. They can be copied to any local directory.

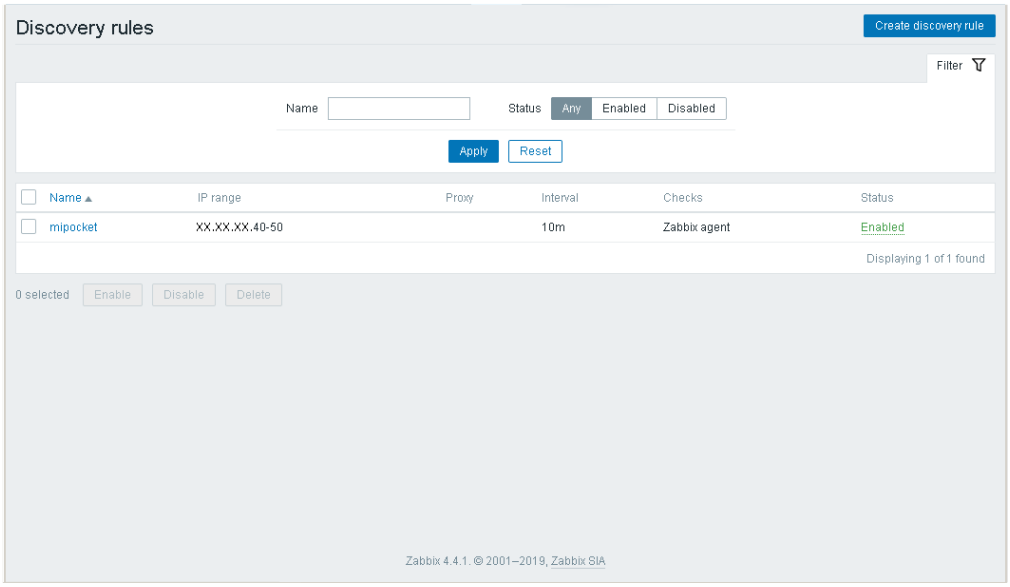
4. Click **Import**.

3.5. Adding resources

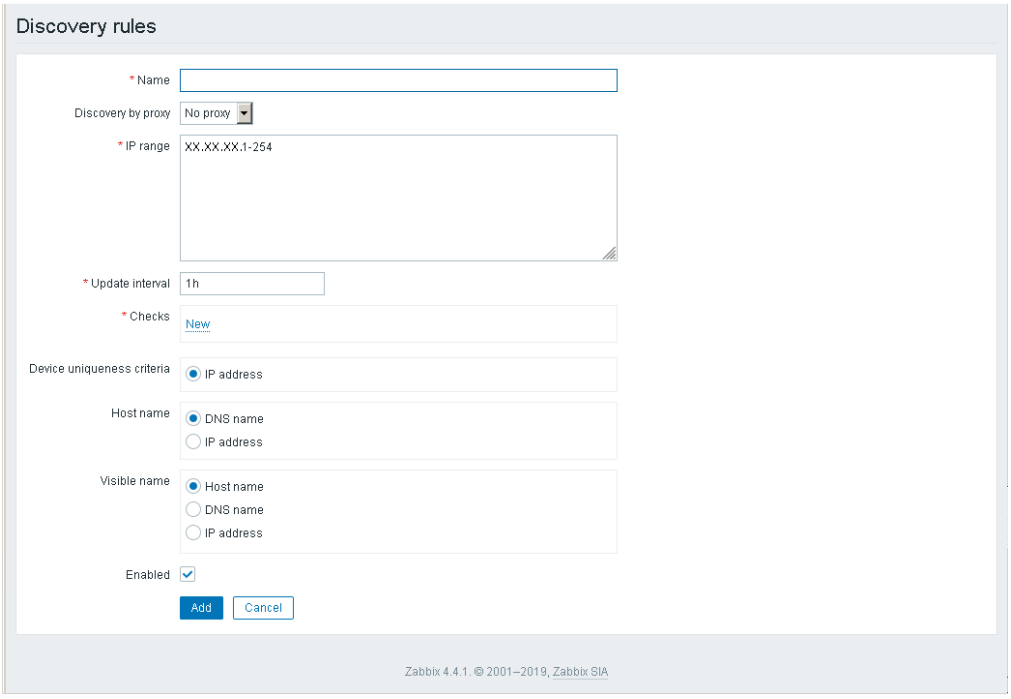
3.5.1. Adding hosts with the zabbix discovery service

3.5.1.1. Creating a discovery rule

1. From the **Configuration** menu, click the **Discovery** tab. The **Discovery rules** page opens.



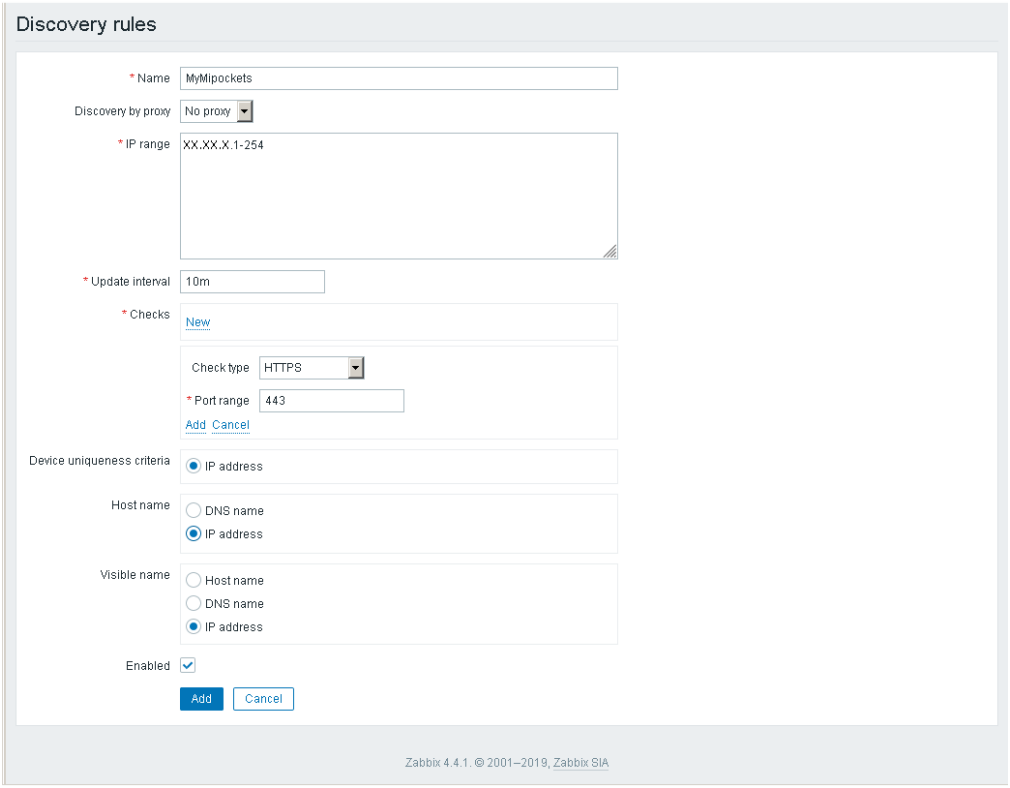
2. Click **Create discovery rule**. A new page opens.



3. Complete the **Name** field.
4. Complete the **IP range** field.
5. Modify the **Update interval** (default value: 1h).

6. In the **Checks** section, perform the following actions:
   a. Click **New**.
   b. Select **HTTPS** from the **Check type** drop-down list.
   c. Click **Add**.
7. Complete the **Host name** section as required.

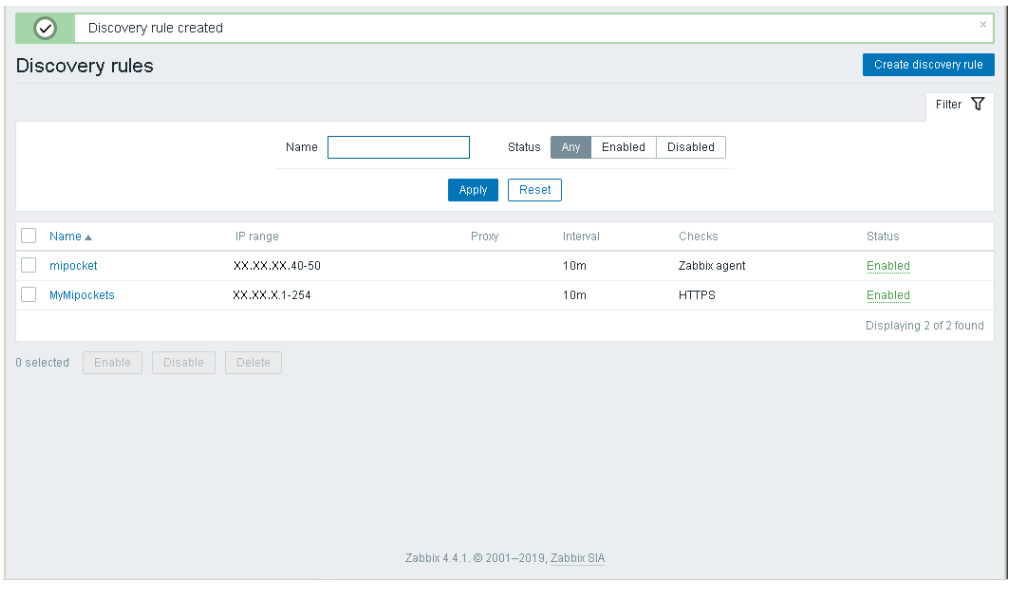
Example



8. Click **Add** to complete changes.

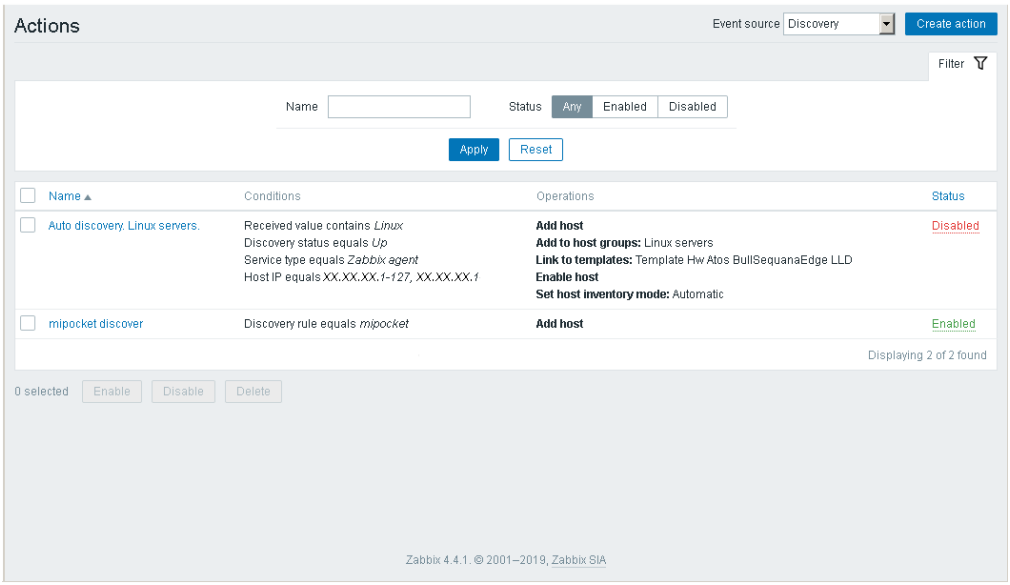
The discovery rule is created.

Example

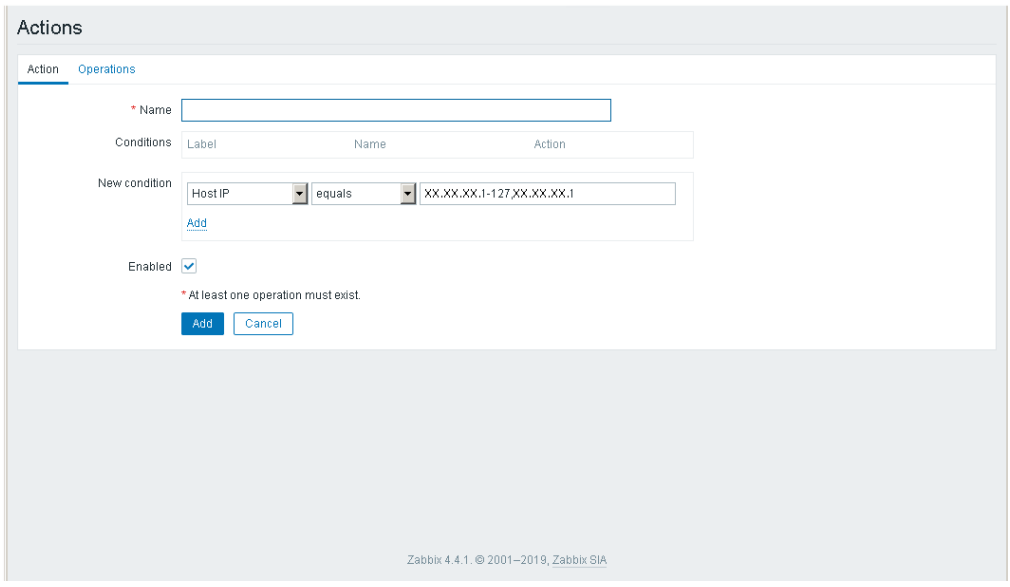


3.5.1.2. Creating an action linked to the discovery rule

1. From the **Configuration** menu, click the **Actions** tab. The **Actions** page opens.



2. From the **Event source** drop-down list, select **Discovery**.
3. Click the **Create action** button. A new page opens.



4. Complete the **Name** field.
5. Add a new condition.

In the **New condition** section, perform the following actions:

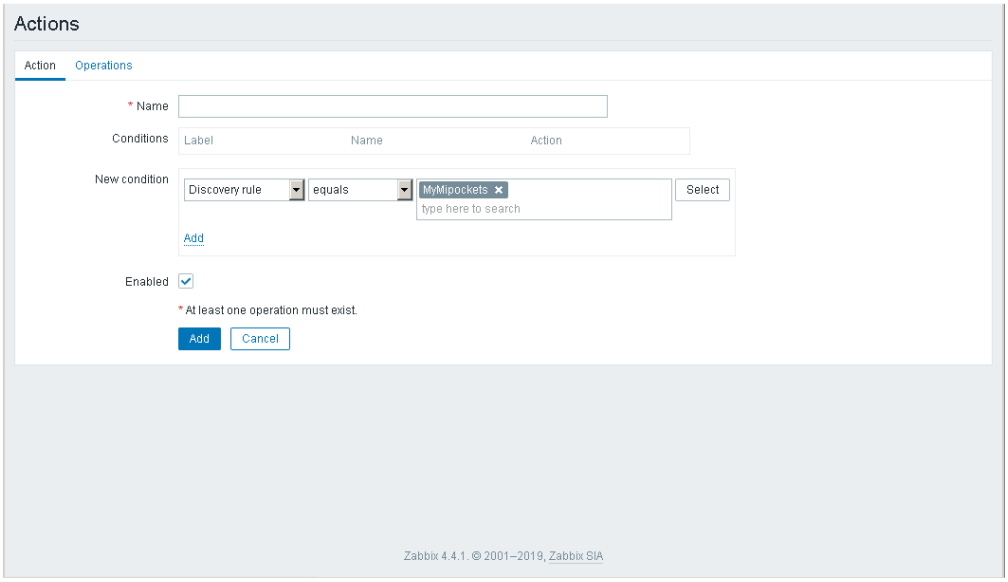
a. Select **Discovery rule** and **equals** from the drop-down lists.

b. Click **Select**.

c. Select the discovery rule previously created.

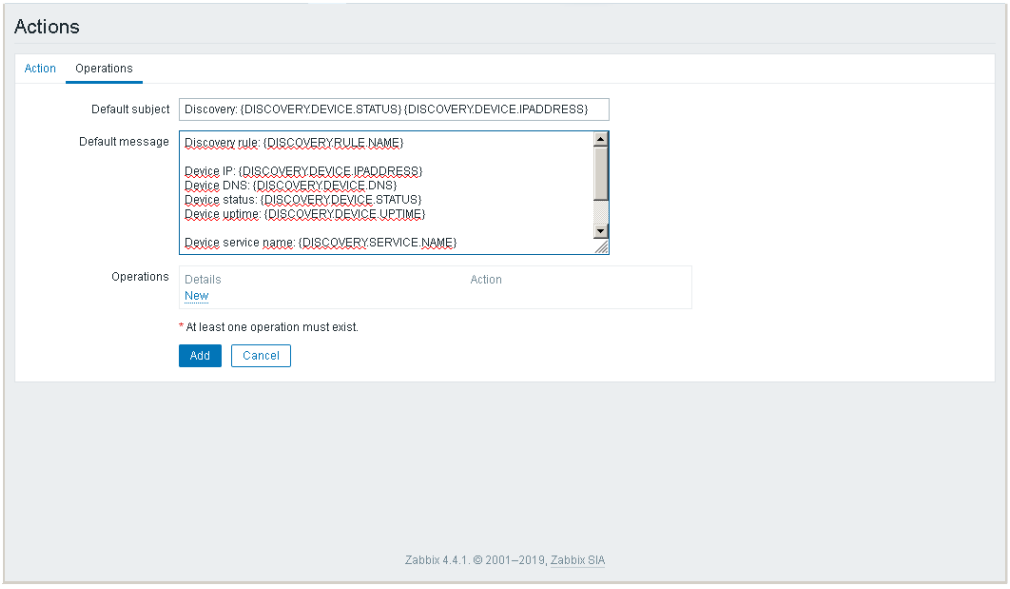
d. Click **Add**.

Example



4. Configure the operations

1. Click the **Operations** tab.



2. Add the operations.

   For each required operation, perform the following steps:

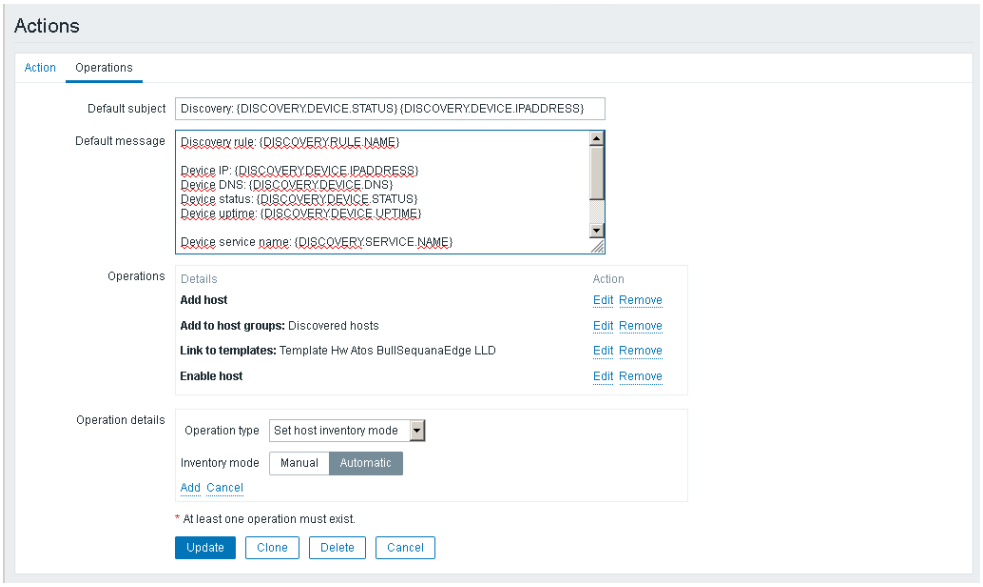
   a. In the **Operations** section, click **New**.

   b. In the **Operation details** section, perform the following actions:

      i. From the **Operation type** drop-down list, select an operation.

      ii. Click **Add**.

Example

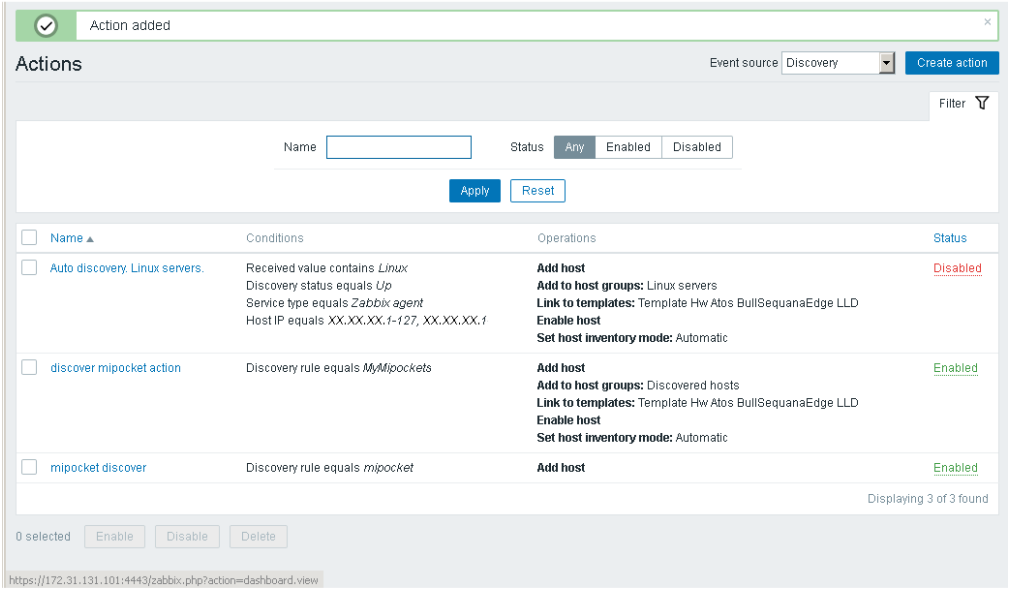


Important **When the Discovery action has been configured and enabled, it may later be disabled to prevent continuous host discovery and also to allow changes to be made to hosts.**

3. Save the action.

Click **Add** to complete changes.

Example

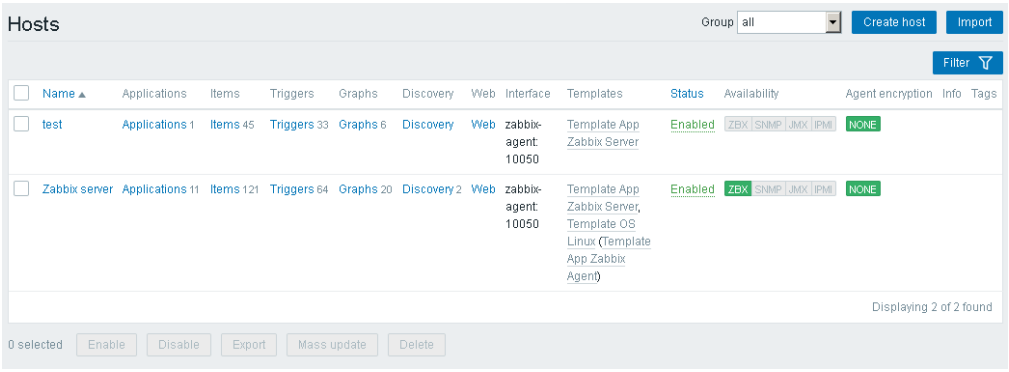


4. Complete the hosts with {$OPENBMC},{$USER}, {$PASSWORD}.

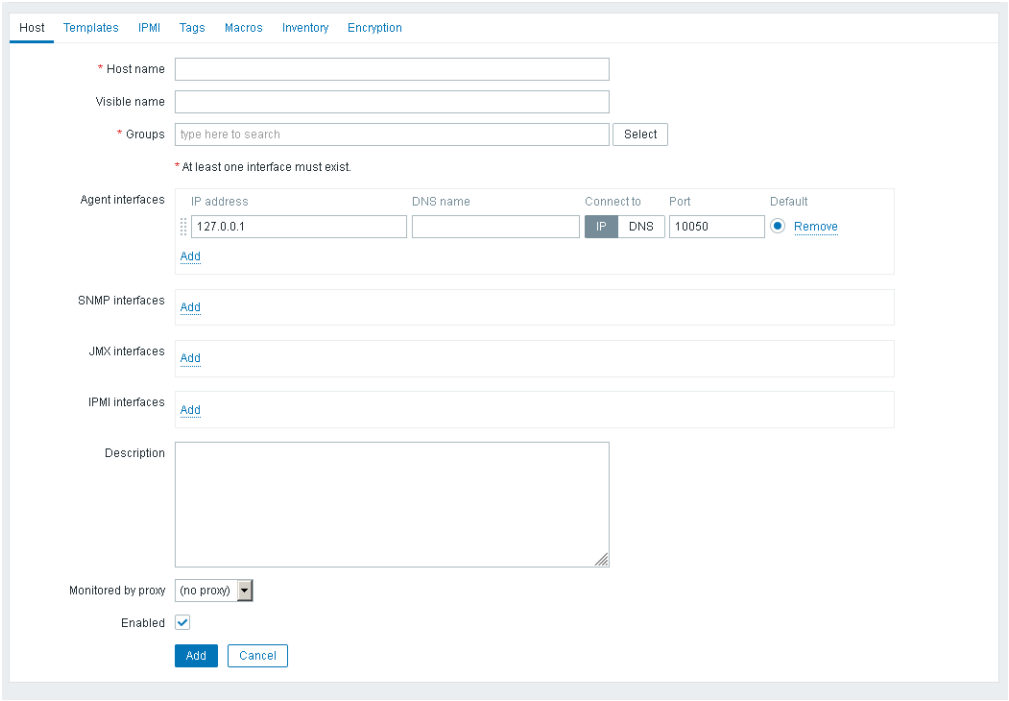
See 3.5.4. Filling Atos template macros

3.5.2. Adding a host manually

1. From the **Configuration** menu, click the **Hosts** tab. The **Hosts** page opens.



2. On the right-hand side of the screen, click **Create host**. The host creation page opens.



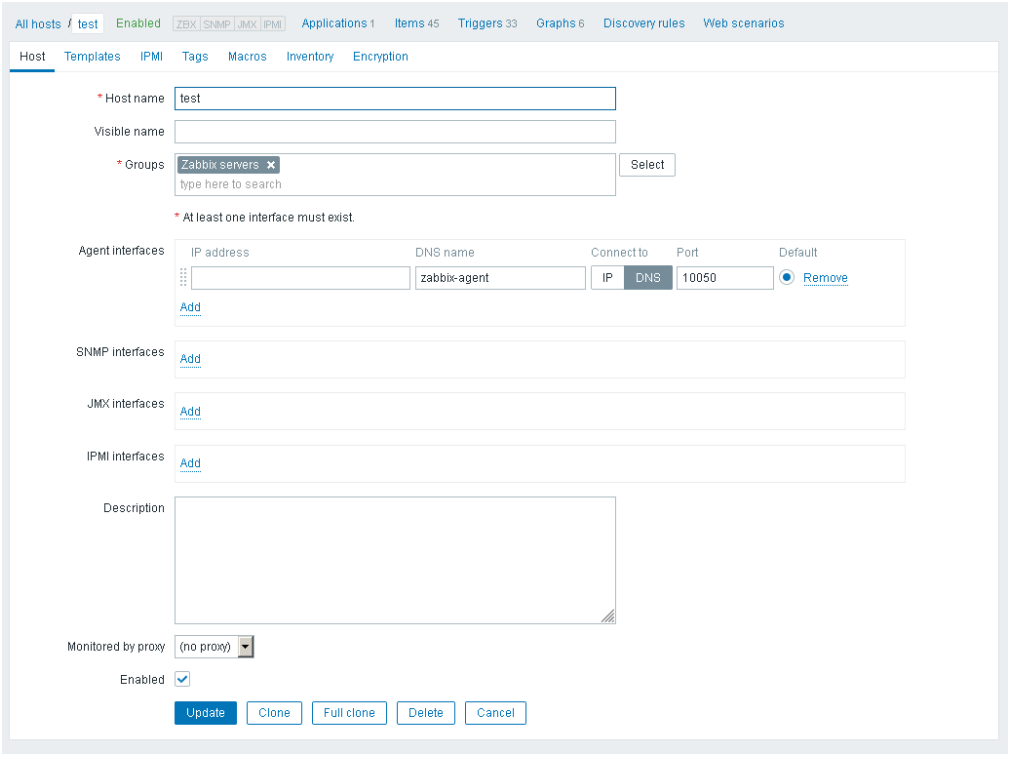
3. Complete the **Host name** with the host BMC IP address.
4. In the **Groups** section, click **Select** and select **Zabbix servers**.
5. In the **Agent interfaces** section, perform the following actions:
   a. Click **DNS**.
   b. Complete the following fields.

Field	Value
IP address	Clear this field and leave it empty.
DNS name	zabbix-agent
Port	10050

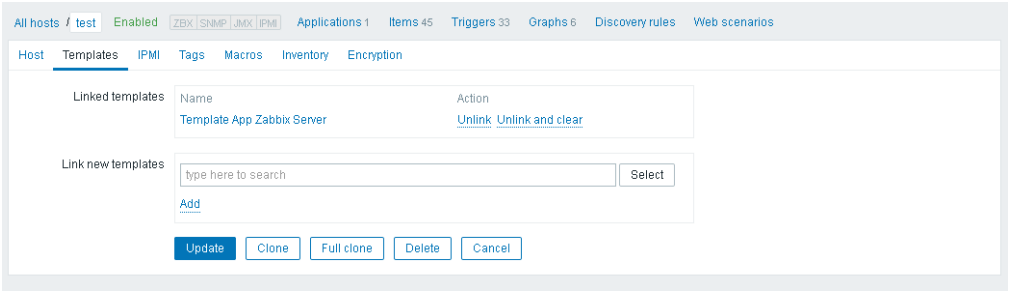
6. Click **Add**.

3.5.3. Linking a host to the Atos LLD template

1. From the **Hosts** page, click on the newly created host. The host details are displayed.



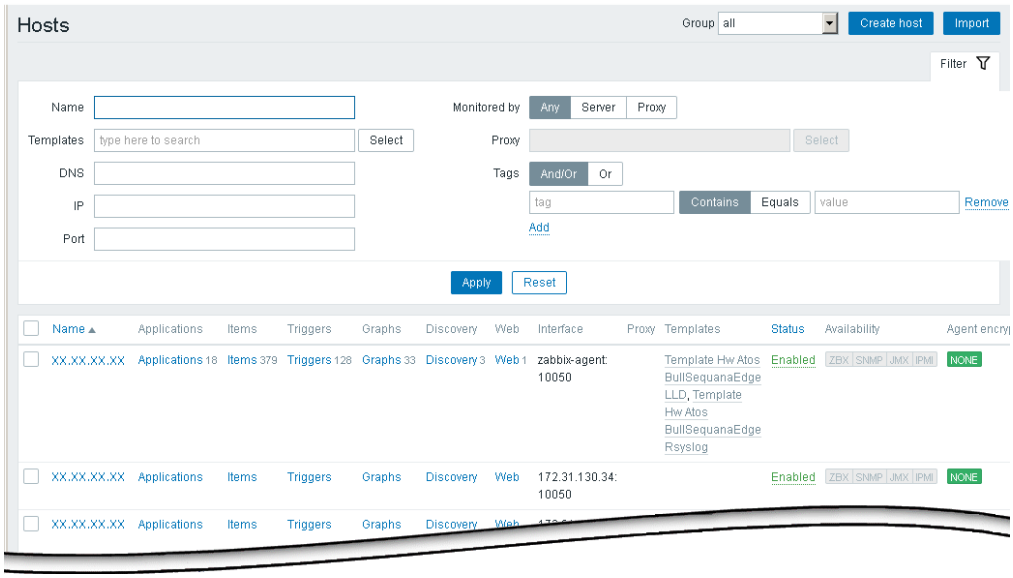
2. Click the **Template** tab above the host details. The host Template page opens.



3. In the **Link new templates** section, click **Select** and select the Atos LLD template.
4. Click **Add**. The Atos LLD template appears in the **Linked templates** section.
5. Click **Update**.

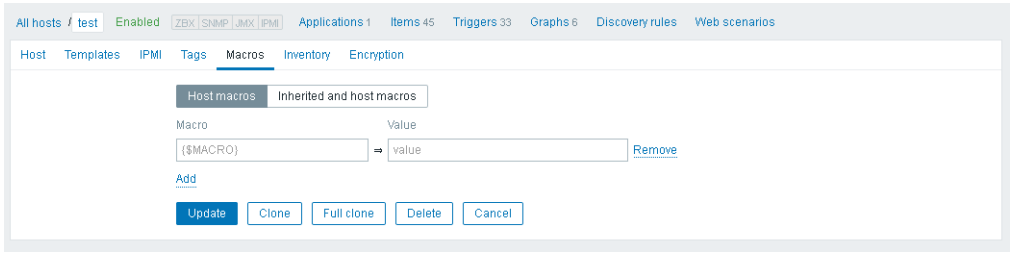
3.5.4. Filling Atos template macros

1. From the **Configuration** menu, click the **Hosts** tab. The **Hosts** page opens.



For each BullSequana Edge host, repeat the steps:

2. Click a host **Name**.
3. Click the **Macros** tab.



4. Add the Password, User and OpenBMC macros.

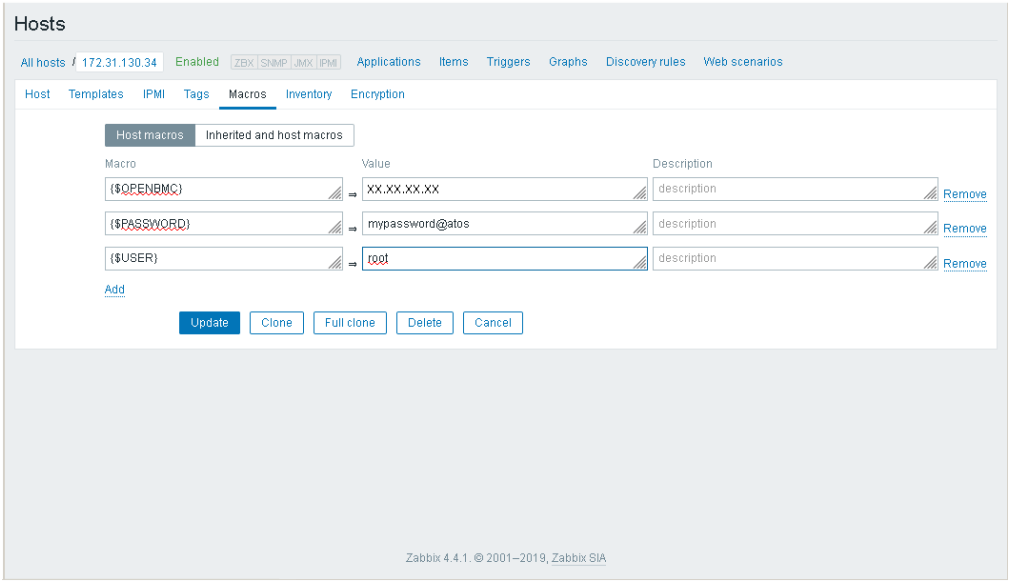
Macro	Value
{$PASSWORD}	Host OpenBMC password
{$USER}	Host OpenBMC username
{$OPENBMC}	Host BMC address

For each macro:

a. Complete the **Macro** and **Value** fields.

b. Click **Add**.

Example



See 3.6. Adding security if an encrypted password is necessary.

5. Click **Update** to complete changes.

3.6. Adding security

3.6.1. Activating PSK security

1. Open a Terminal window.
2. Go the MISM installation directory.
3. Generate an encryption key using the following command:

```
$ generate_psk_key_for_zabbix.sh
```

   The `zabbix_agentd.psk` file, containing the key, is generated in the `/etc/zabbix/agent/` directory.

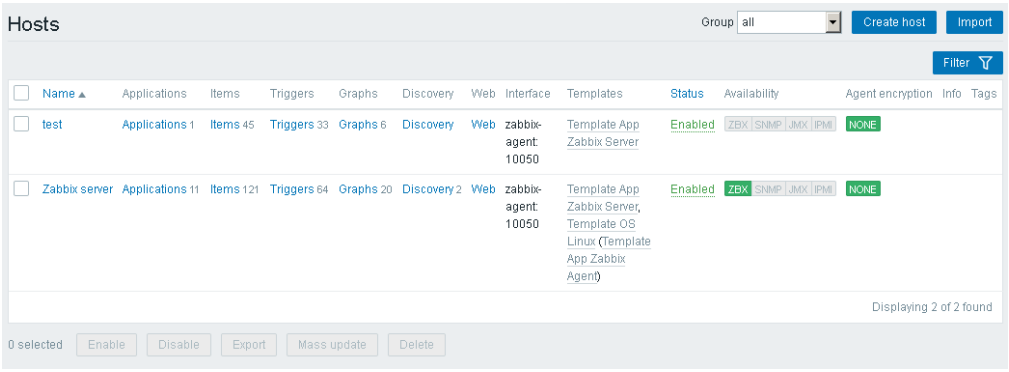
4. Go to the `/etc/zabbix/agent/` directory and open the `zabbix_agentd.conf` file with a text editor.
5. In the `TLS-RELATED PARAMETERS` section of the file, uncomment the following lines:

```
--------------------------------------------------------------------------
TLSConnect=psk
TLSAccept=psk
TLSPSKIdentity=PSK_Mipocket_Agent
TLSPSKFile=/etc/zabbix/zabbix_agentd.psk
--------------------------------------------------------------------------
```

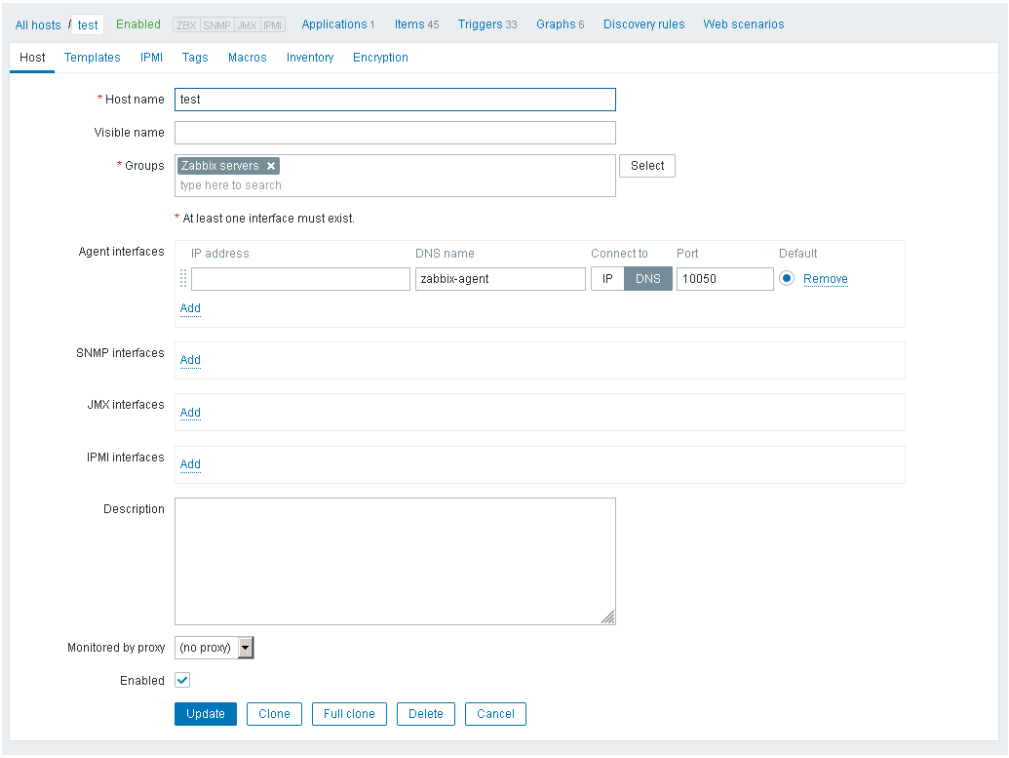
6. Save and close the file.
7. Stop and restart the MISM console.

3.6.2. Enabling PSK security for a host

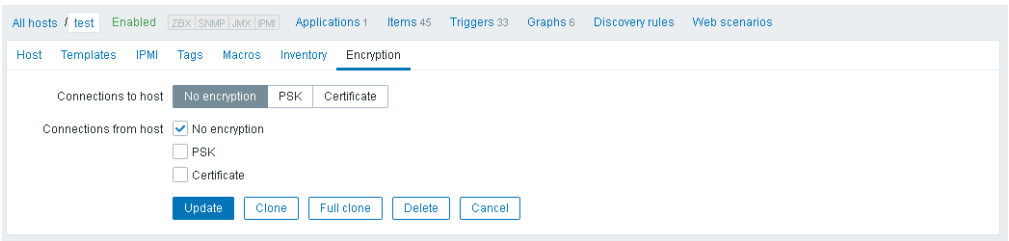
1. From the **Configuration** menu, click the **Hosts** tab. The **Hosts** page opens.



2. Click on the host. The host details are displayed.



3. Click the **Encryption** tab above the host details. The host Encryption page opens.



4. In the Connections to host section, click PSK.
5. In the Connections from host, select PSK.

6. Complete the following fields.

Field	Value
PSK Identity	PSK_Mipocket_Agent
echo PSK	Encryption key from the `zabbix_agentd.psk` file

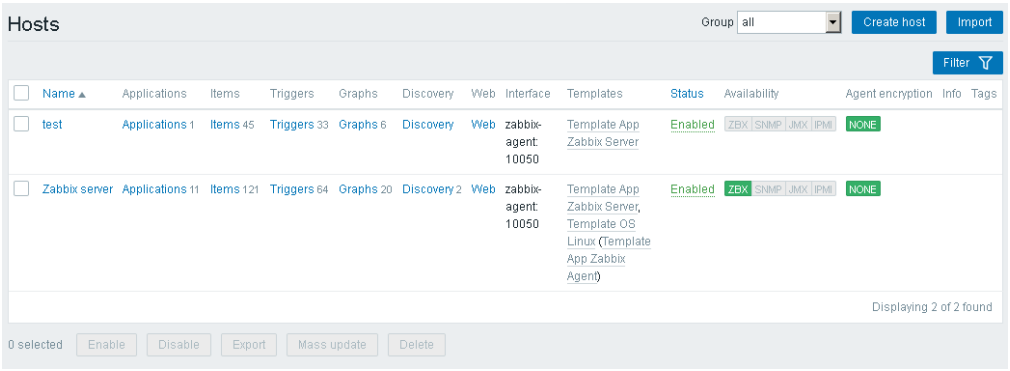
7. Click **Update**.
8. Stop and restart the MISM console.

3.6.3. Creating an encrypted password for a host

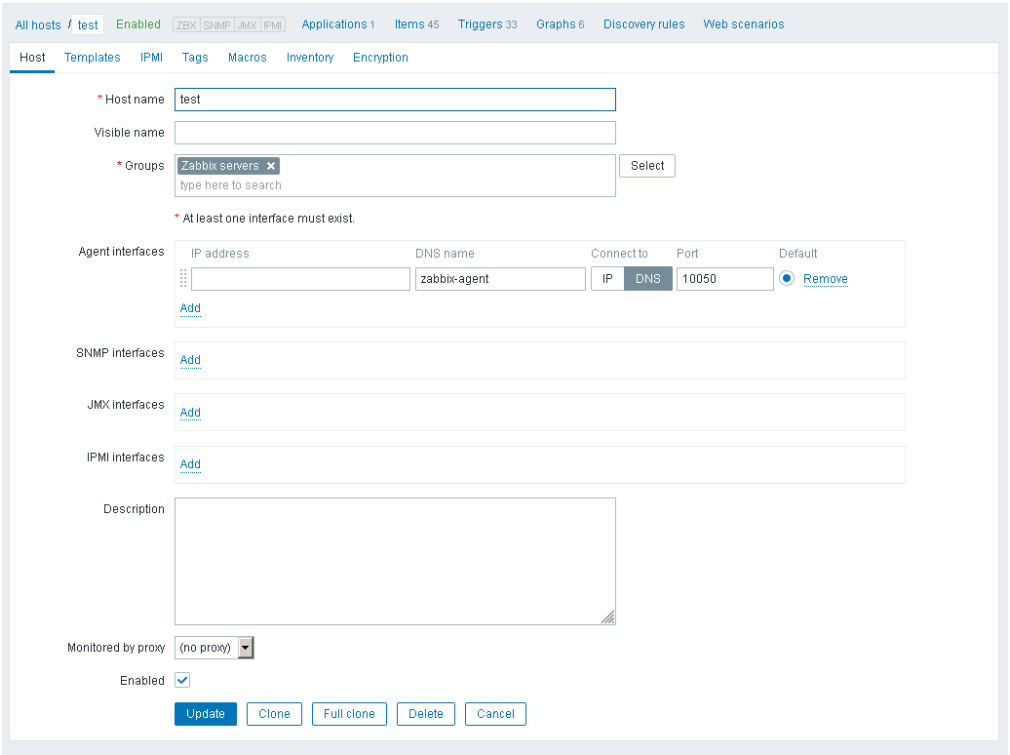
1. Go the MISM installation directory.
2. Generate an encrypted password using the following command:

```
$ generate_encrypted_password_for_zabbix.sh --password=<host BMC password>
```

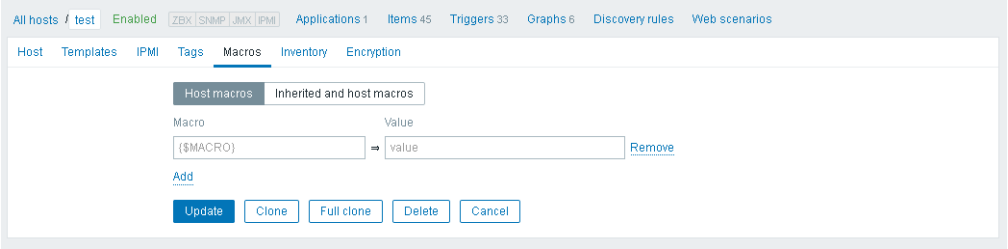
3. Copy the encrypted password.
4. From the **Configuration** menu, click the **Hosts** tab. The **Hosts** page opens.



5. Click the host. The host details are displayed.



6. Click the **Macros** tab above the host details. The host Macros page opens.

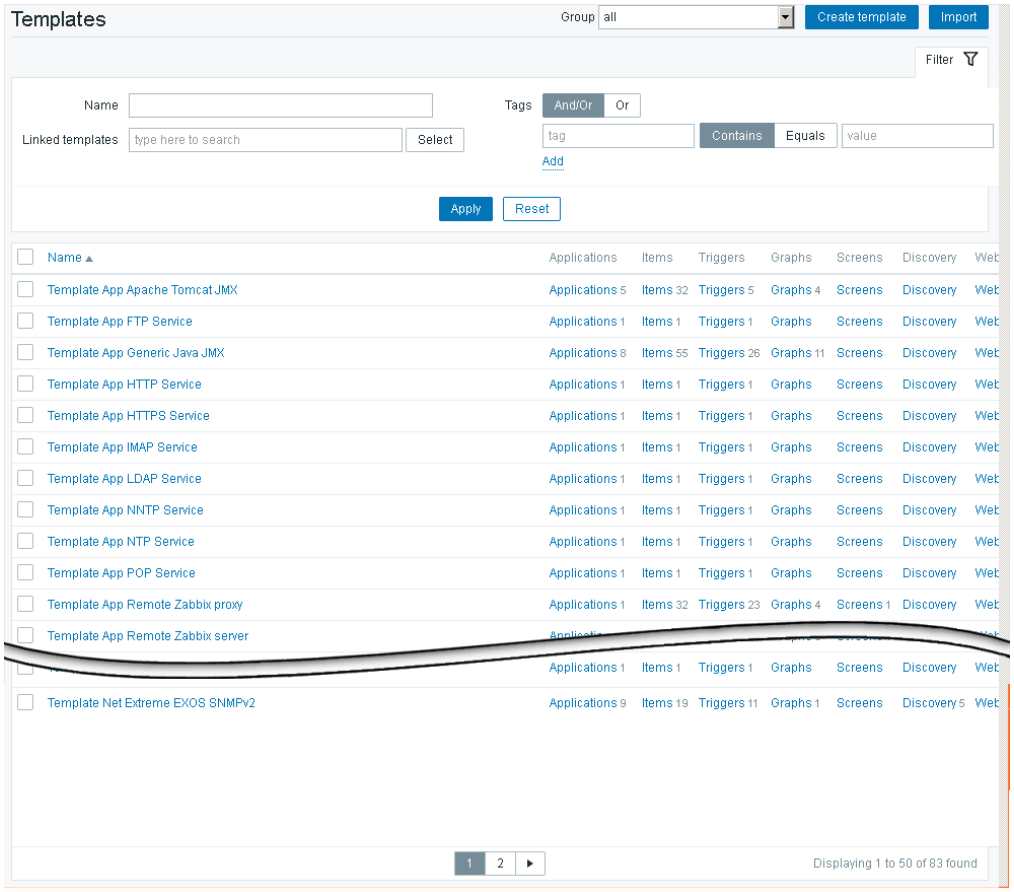


7. Paste the encrypted password in the **Value** field of the **{$PASSWORD}** macro.
8. Click **Update**.

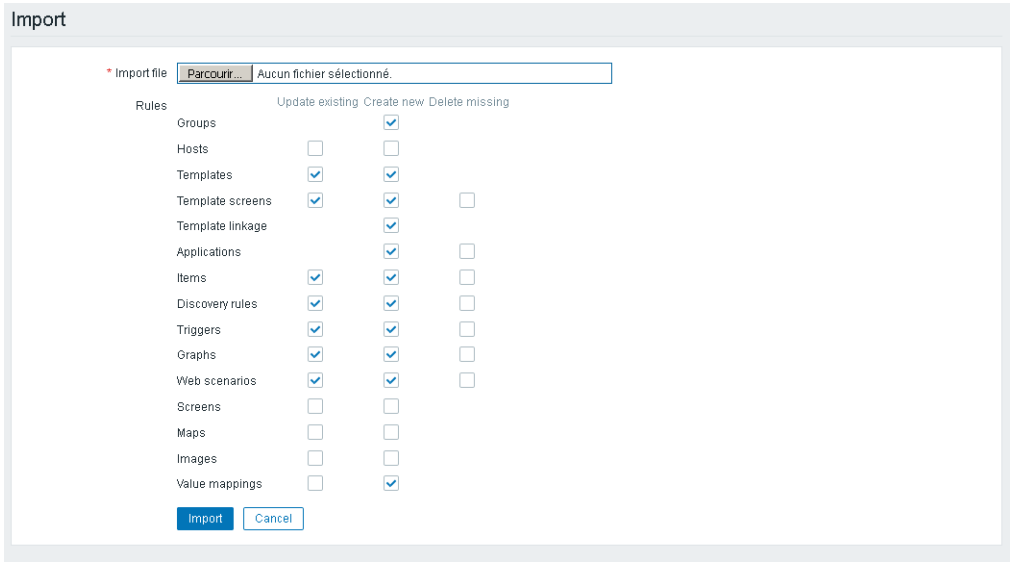
3.7. Enabling syslog forwarding

3.7.1. Importing the Atos Rsyslog template

1. From the **Configuration** menu, click the **Templates** tab. The **Templates** page opens.



2. On the right-hand side of the screen, click **Import**. The **Import** page opens.



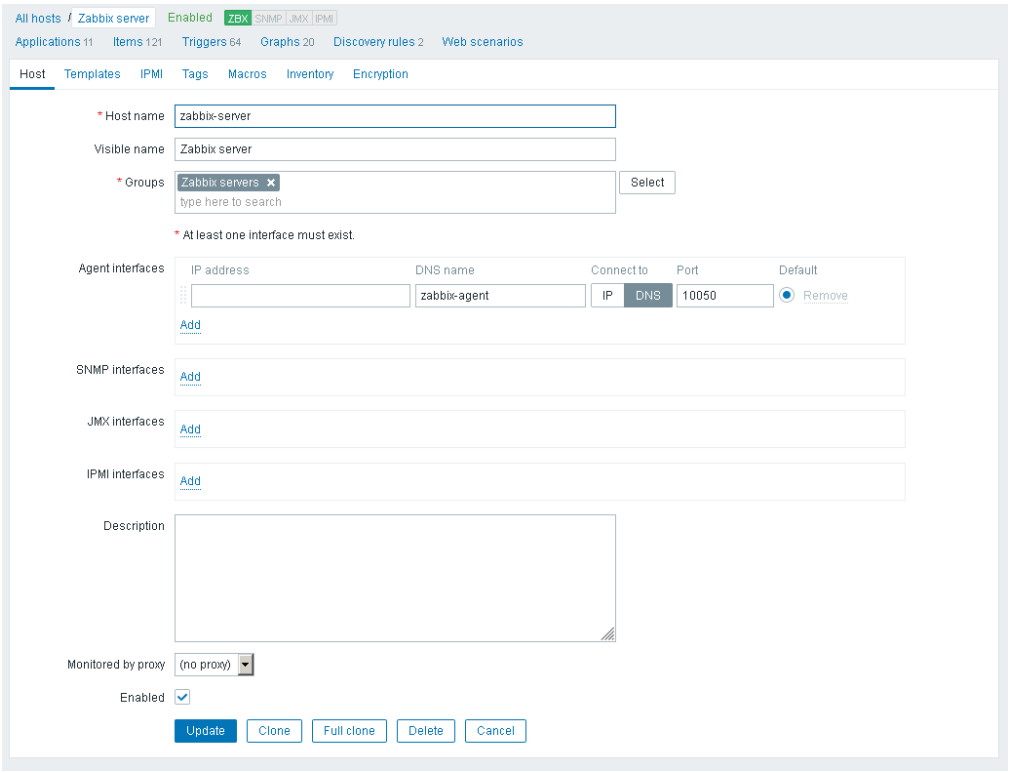
3. In the **Import file** section, click **Browse** and indicate the path to the template.

Note The templates are delivered in a sub-directory of the MISM installation directory: \zabbix\server\externalscripts. They can be copied to any local directory.

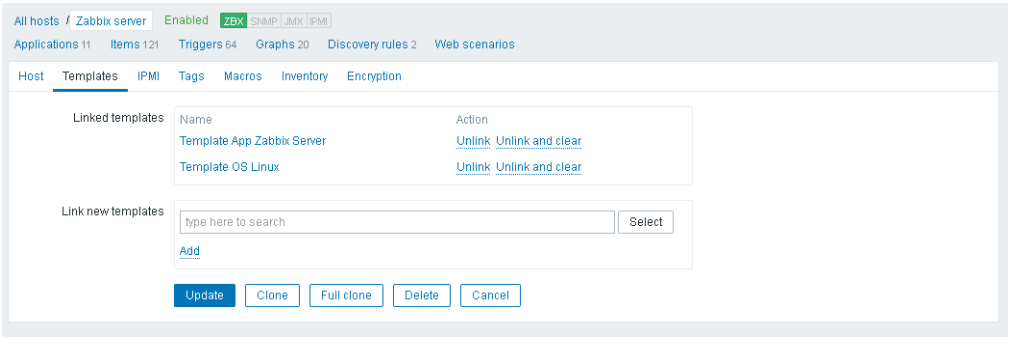
4. Click **Import**.

3.7.2. Linking the Zabbix server host to the Atos Rsyslog template

1. From the **Hosts** page, click on Zabbix server host. The host details are displayed.



2. Click the **Template** tab above the host details. The host Template page opens.



3. In the **Link new templates** section, click **Select** and select the Atos Rsyslog template.
4. Click **Add**. The Atos Rsyslog template appears in the **Linked templates** section.
5. Click **Update**.

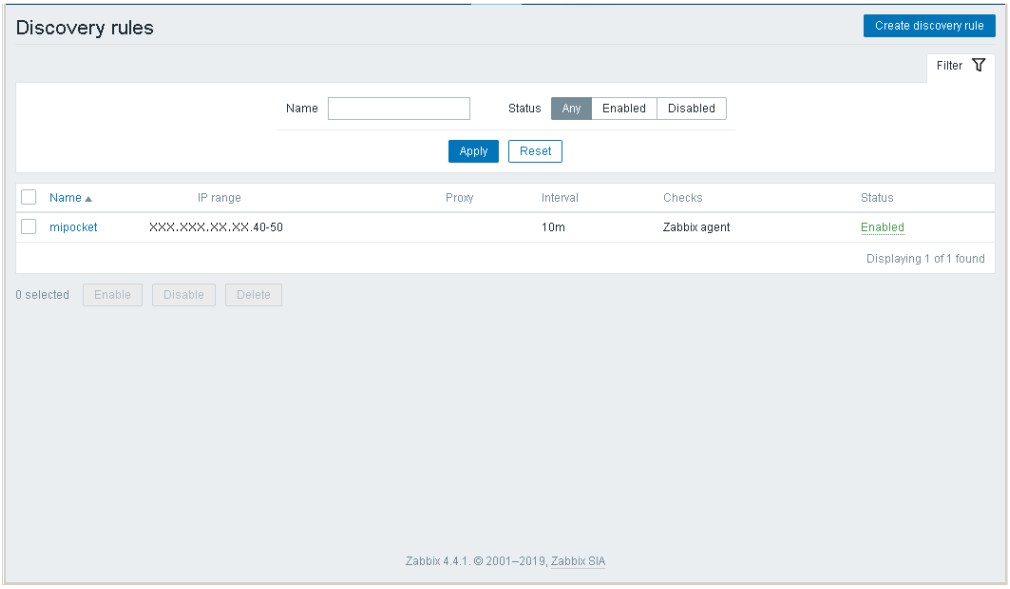
3.7.3. Displaying the logs

1. From the **Monitoring** menu, click the Dashboard tab. The last selected dashboard opens.
2. If the displayed dashboard is not the Rsyslog dashboard, click **All dashboards** and click Rsyslog dashboard in the dashboard list.

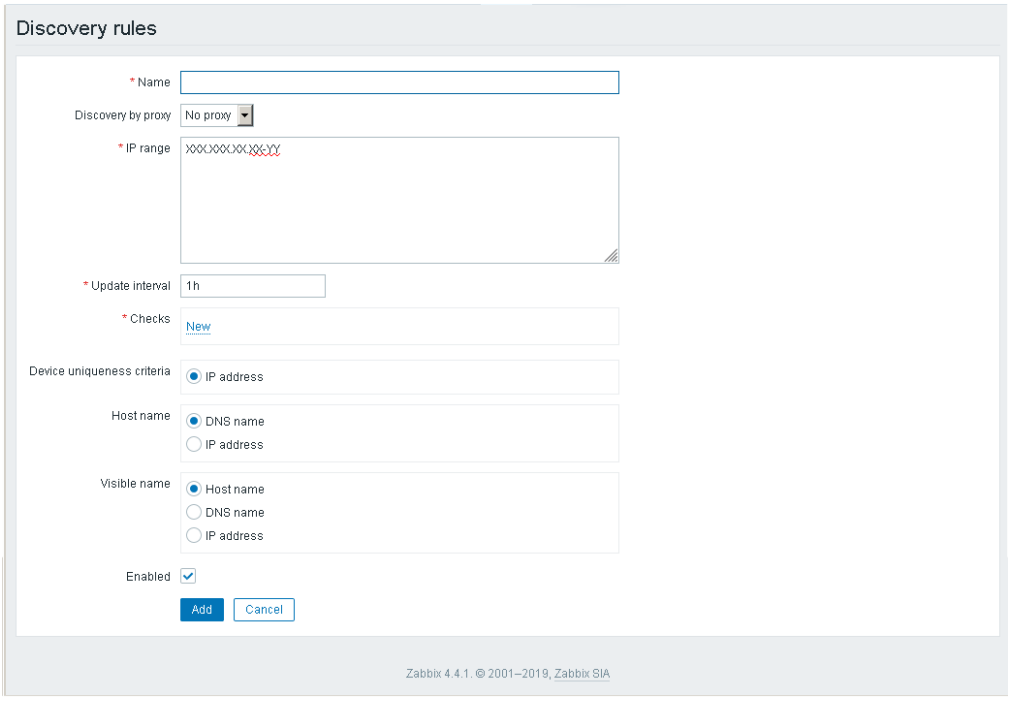
3.8. Configuring nmap

3.8.1. Creating a nmap discovery rule

1. From the **Configuration** menu, click the **Discovery** tab. The **Discovery rules** page opens.



2. Click the **Create Discovery rule** button. A new page opens.



3. Complete the **Name** and **IP range** fields.
4. Configure the check type.

In the **Checks** section, click **New** and perform the following actions:

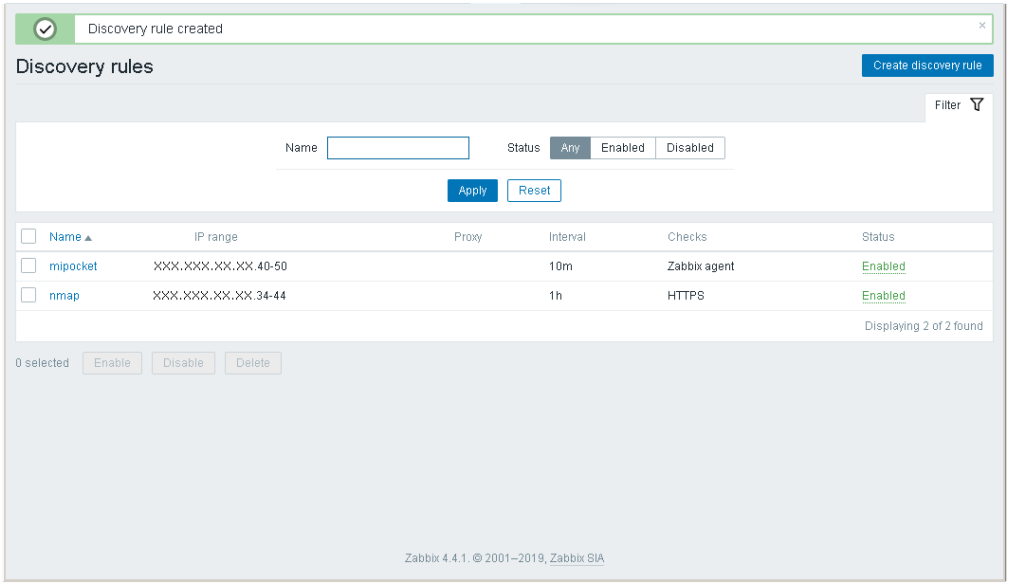
a. From the **Check type** drop-down list, select **HTTPS**.

b. Click **Add**.

5. Save the discovery rule.

Click **Add** to complete changes.

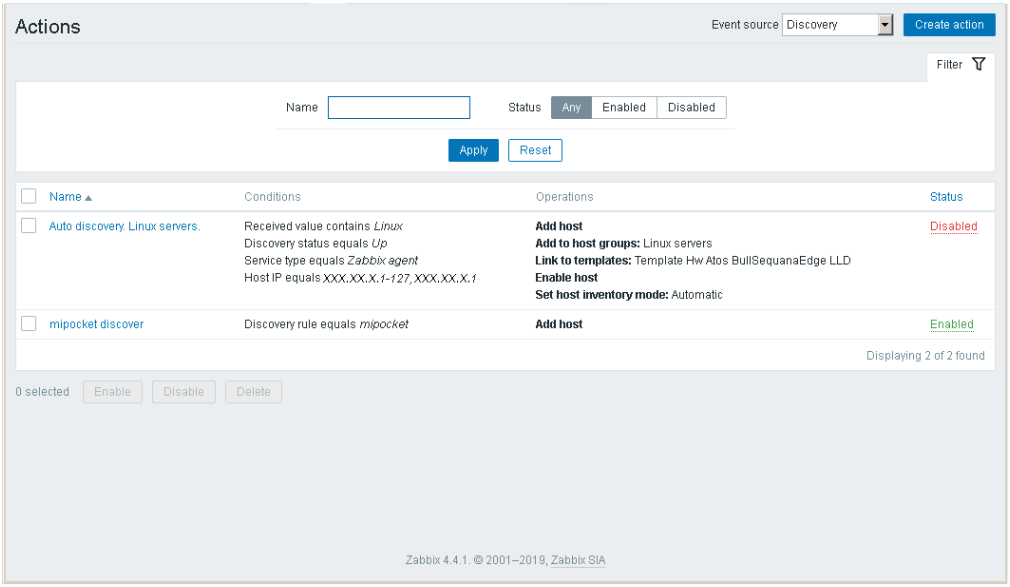
The nmap discovery rule is created.



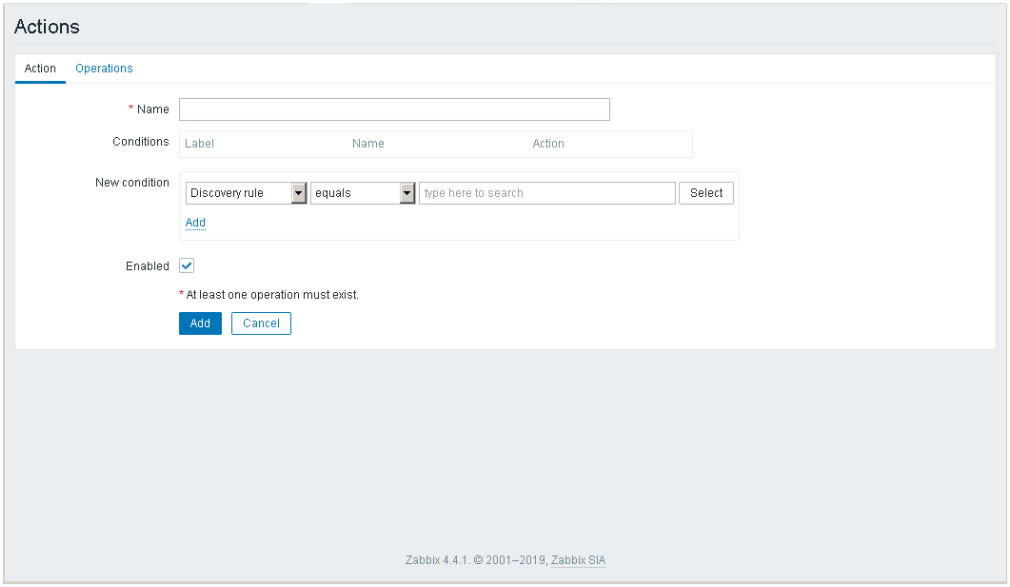
3.8.2. Creating a nmap action

1. Configure a new action

1. From the **Configuration** menu, click the **Actions** tab. The **Actions** page opens.



2. From the **Event source** drop-down list, select **Discovery**.
3. Click the **Create action** button. A new page opens.



4. Complete the **Name** field.
5. Add a new condition.

In the **New condition** section, perform the following actions:

a. Select **Discovery rule** and **equals** from the drop-down lists.

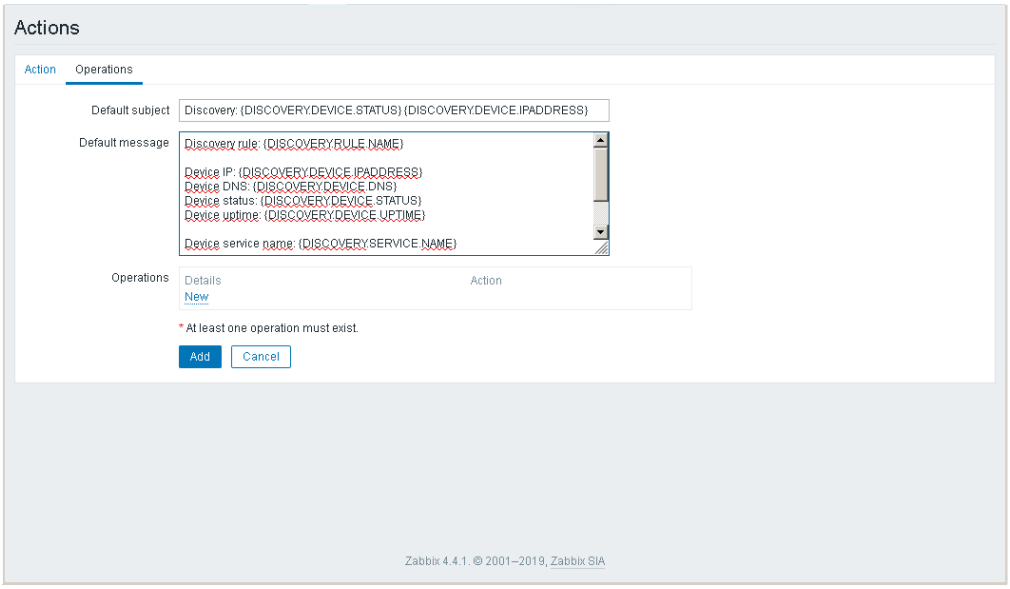
b. Click **Select**.

c. Select the nmap discovery rule.

d. Click **Add**.

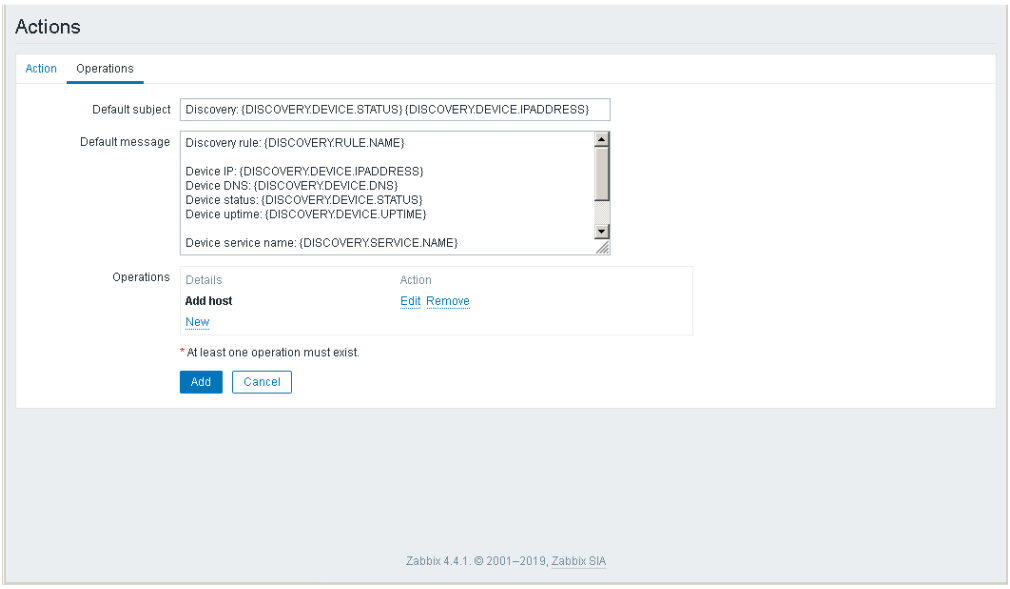
2. Configure the operations

1. Click the **Operations** tab.

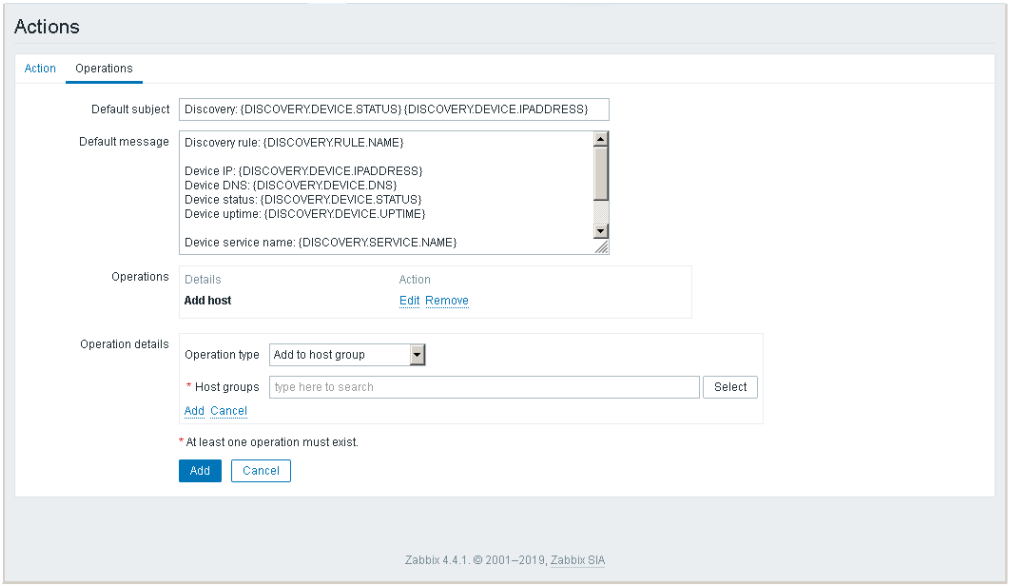


2. Add the **Add host** operation.
   a. In the **Operations** section, click **New**.
   b. In the **Operation details** section, perform the following actions:
      i. From the **Operation type** drop-down list, select **Add host**.
      ii. Click **Add**.

The **Add host** operation is added.

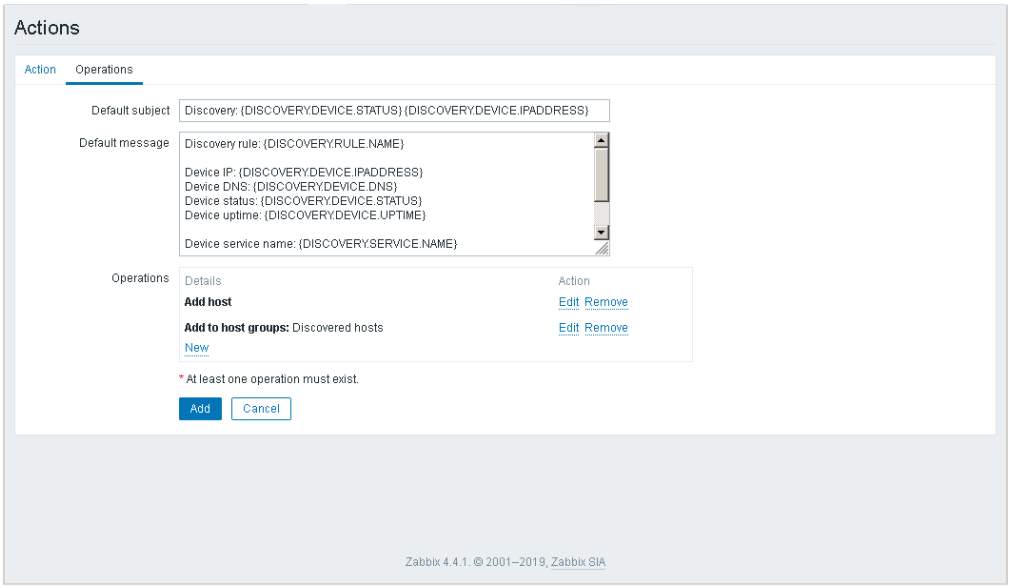


3. Add the **Add to host group** operation.
   a. In the **Operations** section, click **New**.
   b. In the **Operation details** section, perform the following actions:
      i. From the **Operation type** drop-down list, select **Add to host group**.



      ii. In the **Host groups** field, click **Select**.
      iii. Select **Discovered hosts**.
      iv. Click **Add**.

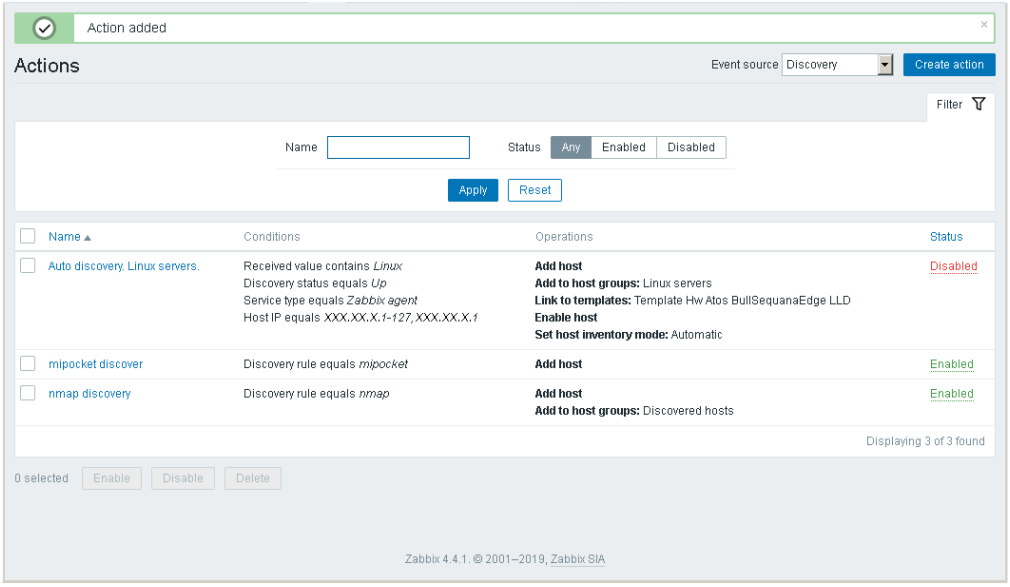
The **Add to host group** operation is added.



4. Save the action.

From the main page, click **Add** to complete changes.

The nmap discovery action is created.



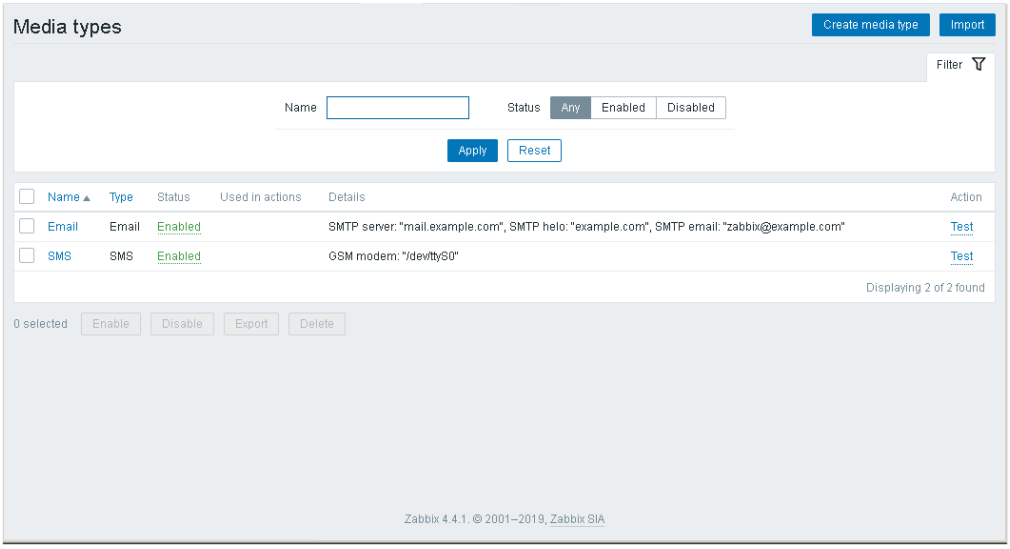
3. Check the hosts

From the **Configuration** menu, click **Hosts.**

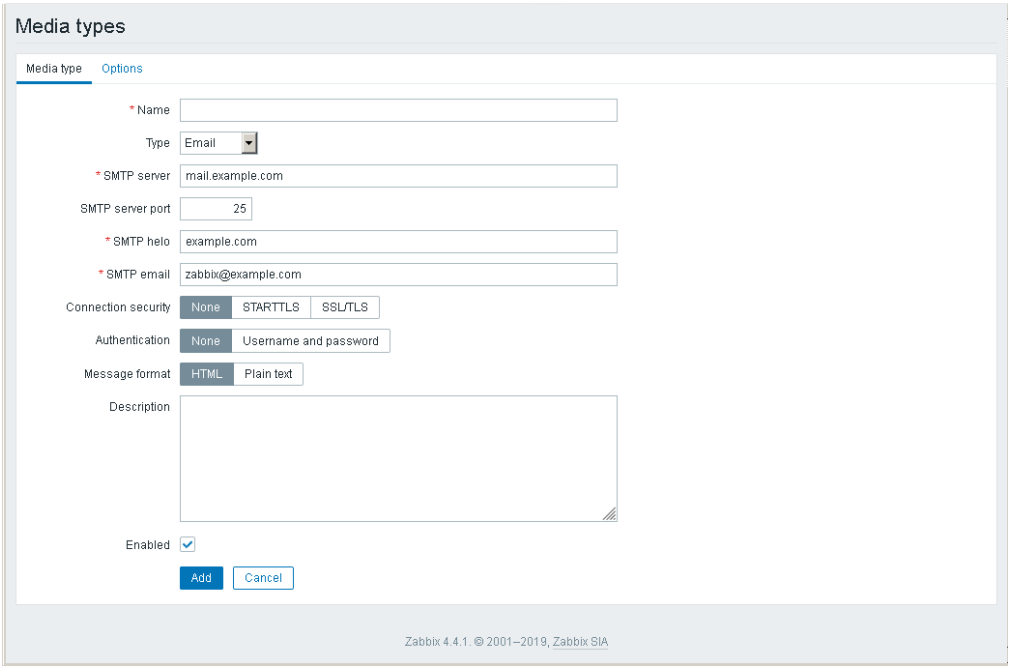
3.9. Setting up email alerts

3.9.1. Configuring an mail server

1. From the **Administration** menu, click the **Media types** tab. The **Media types** page opens.



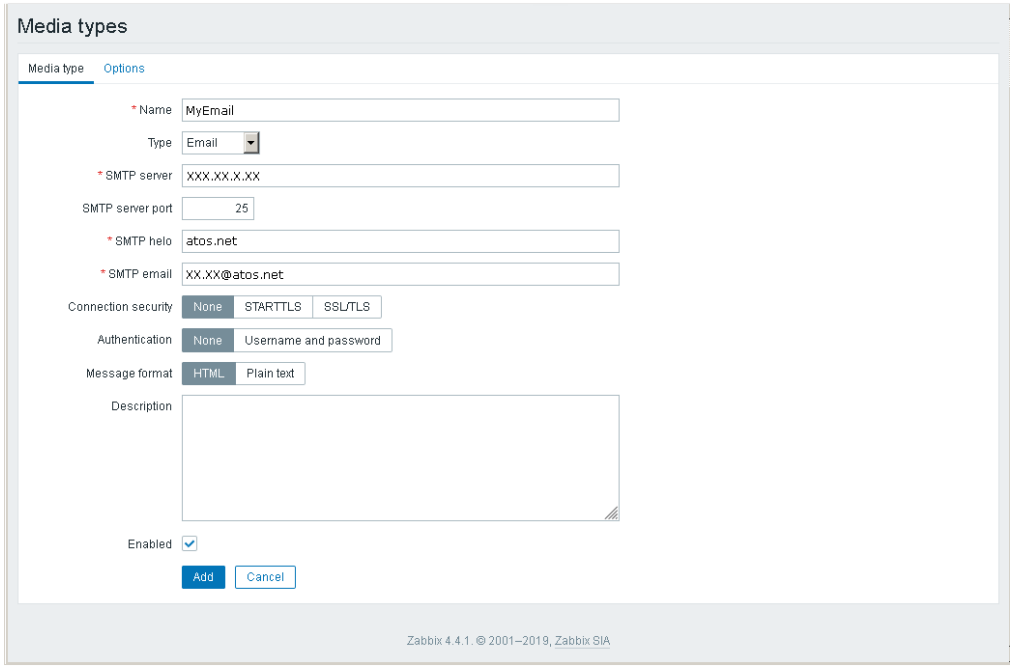
2. Click **Create media type**. A new page opens.



3. Complete the **Name** field.
4. Select **Email** from the **Type** drop-down list.

5. Complete the **SMTP server**, **SMTP helo** and **SMTP email** fields as required.

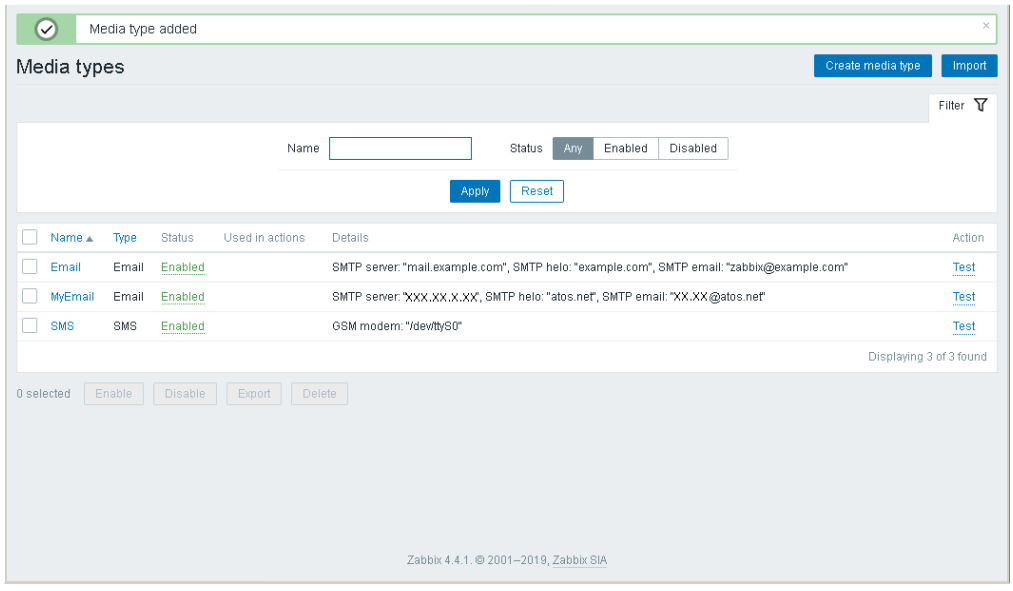
Example



6. Click **Add** to complete changes.

The media type is created.

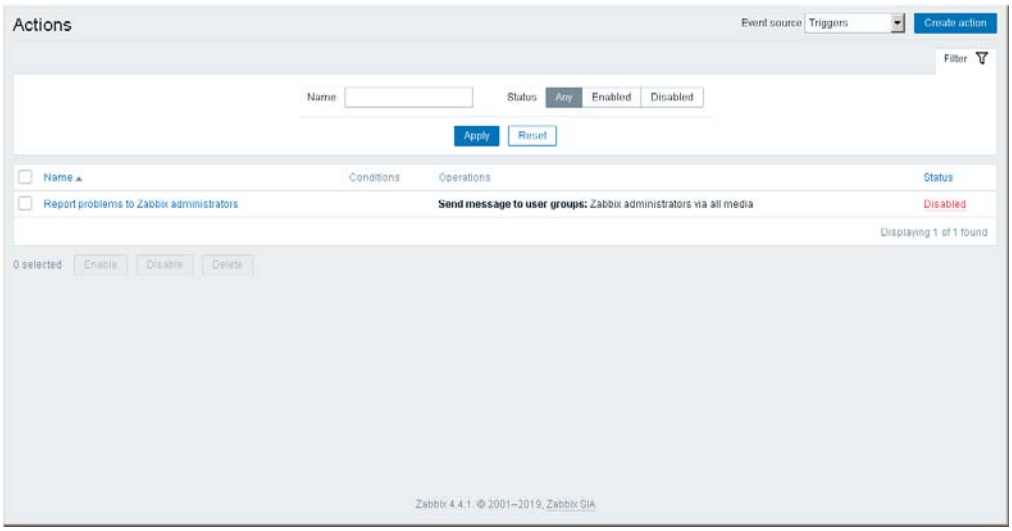
Example



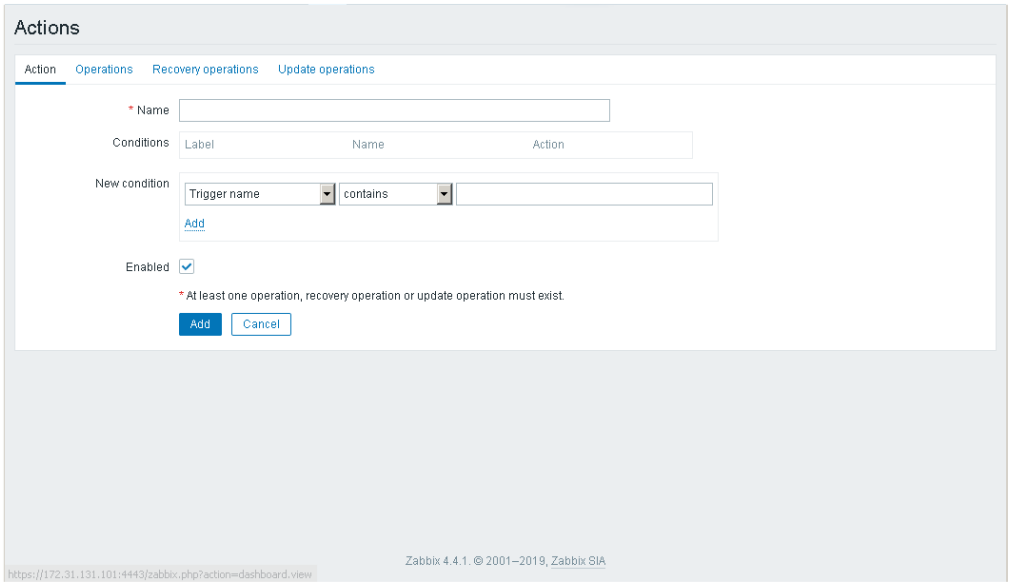
7. Click **Test** to send a test email.

3.9.2. Creating an action

1. From the **Configuration** menu, click the **Actions** tab. The **Actions** page opens.

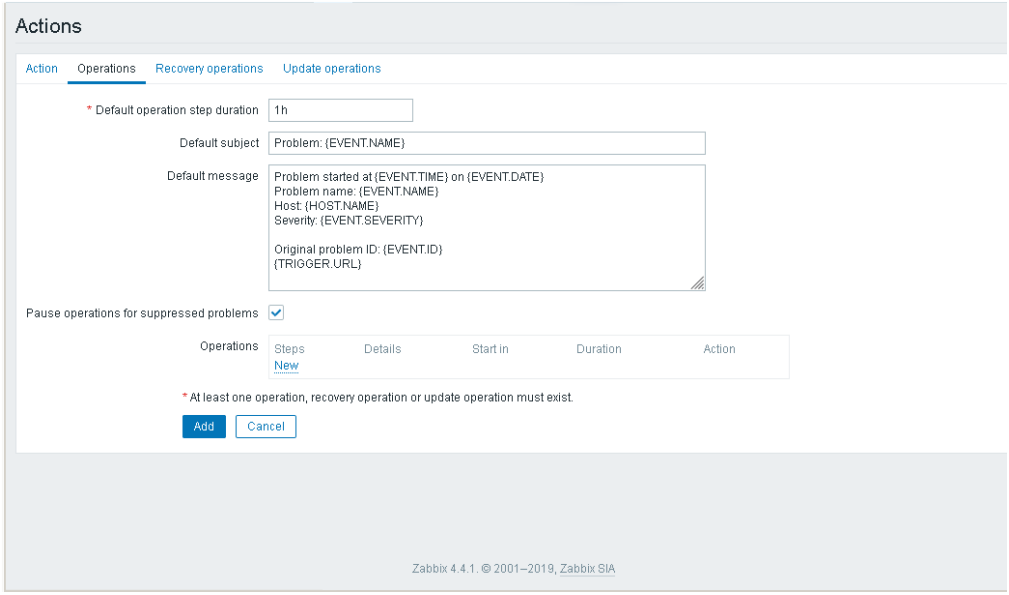


2. From the **Event source** drop-down list, select **Triggers**.
3. Click the **Create action** button. A new page opens.

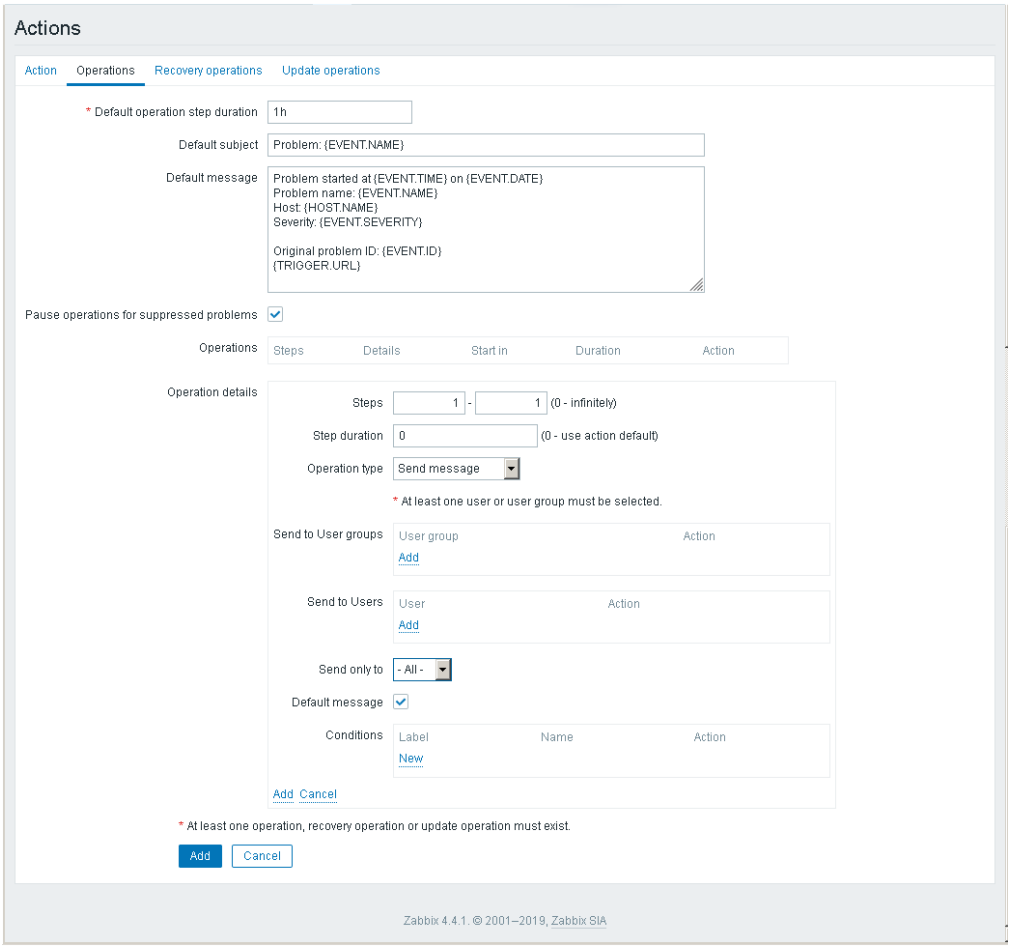


4. Complete the **Name** field.

5. Click the **Operations** tab.



6. In the **Operations** section, click **New**.



7. In the **Operation details** section, perform the following actions:

   a. Add the message recipient

   If the recipient is a user:

   i. In the **Send to Users** section, click **Add**.

   ii. Select the user required.

   If the recipient is a user group:

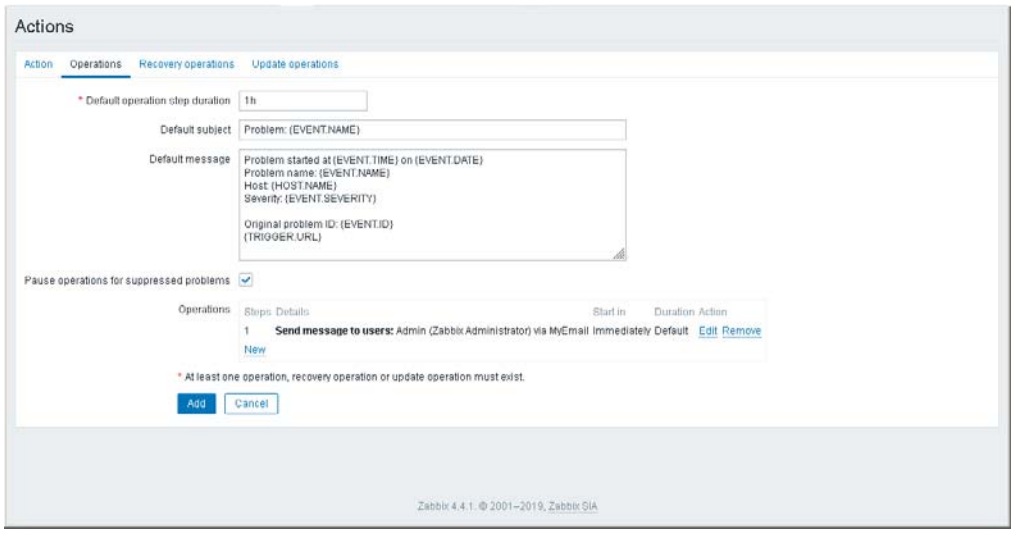
   i. In the **Send to User groups** section, click **Add**.

   ii. Select the user group required.

   b. From the **Send only to** drop-down list, select the media type previously created.

   c. Click **Add**.

Example

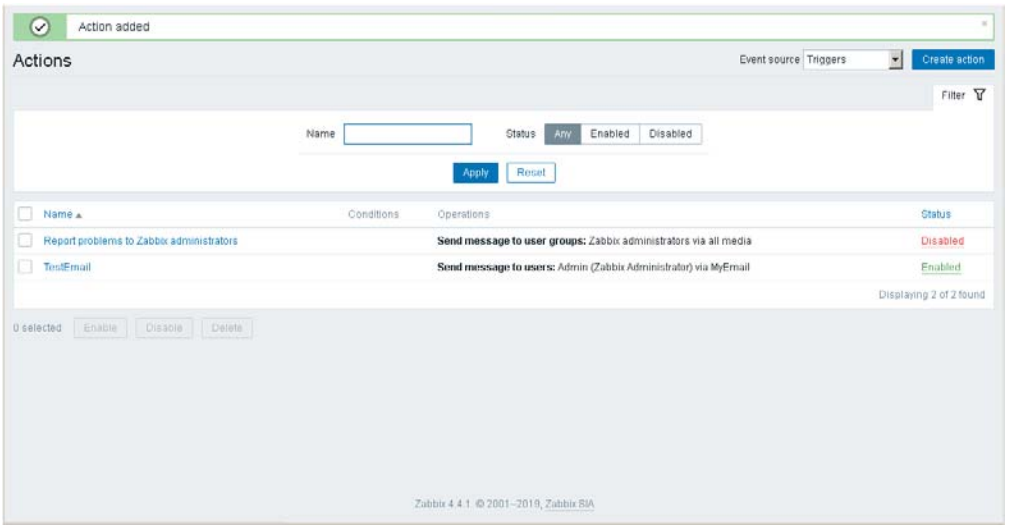


8. Save the action.

Click **Add** to complete changes.

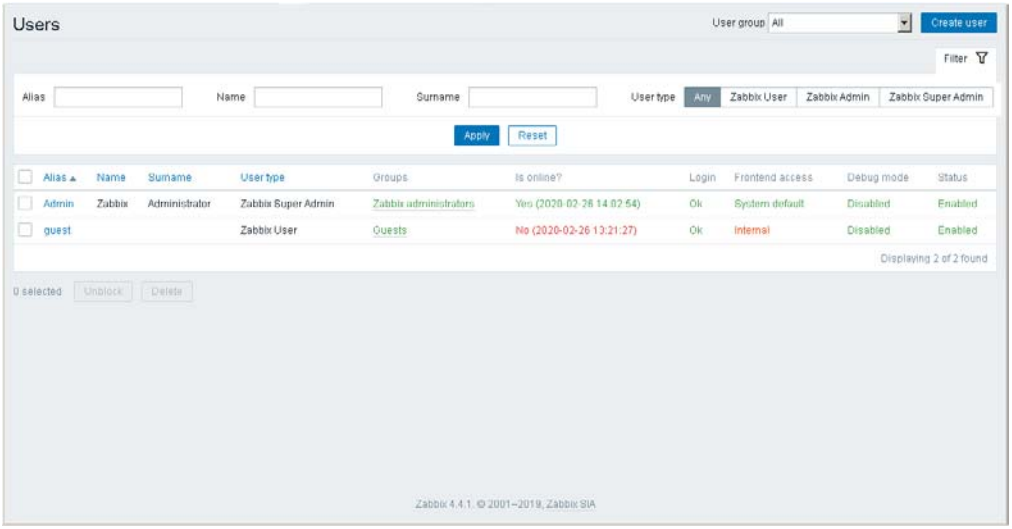
The action is created.

Example

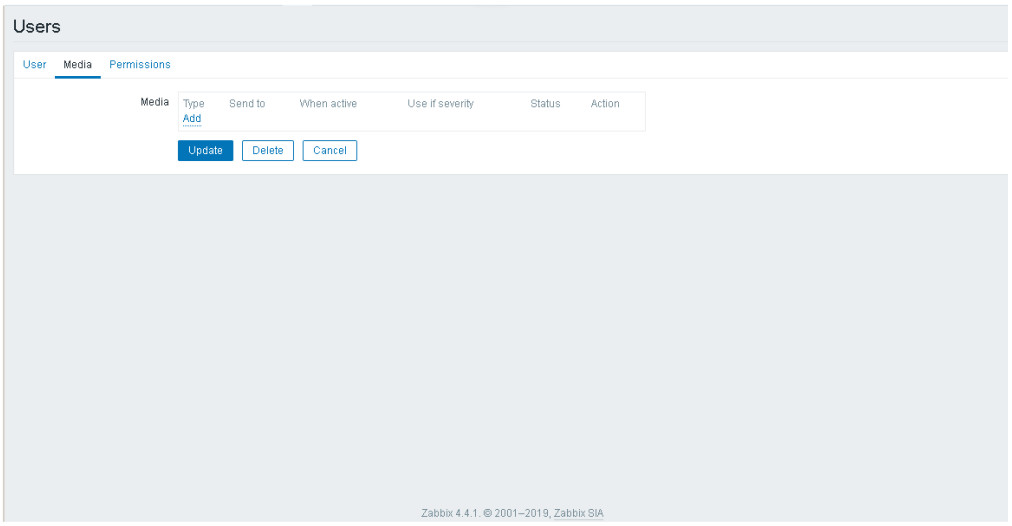


3.9.3. Configuring the user

1. From the **Administration** menu, click the **Users** tab. The **Users** page opens.

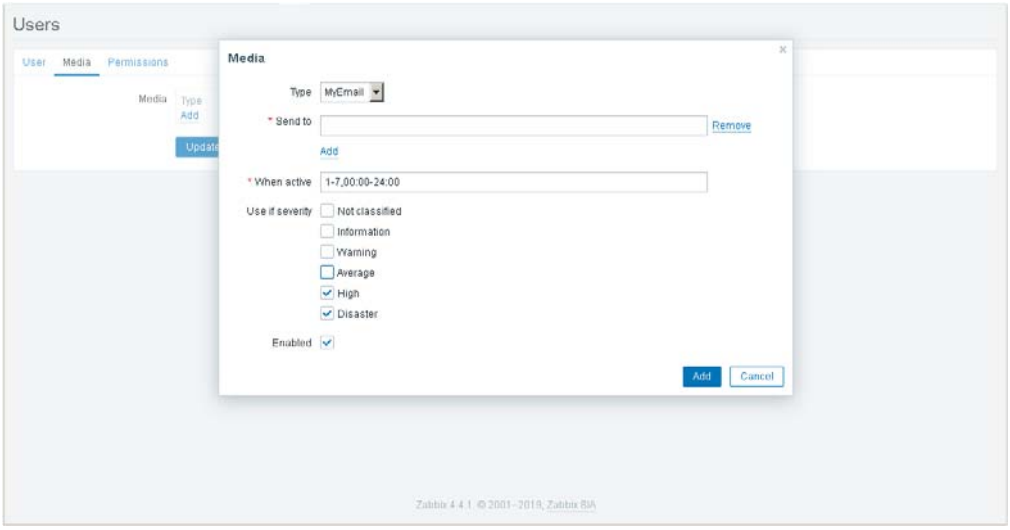


2. Select the user required. A new page opens.
3. Click the **Media** tab.



4. In the **Media** section, click **Add**. The **Media** page opens.

Example

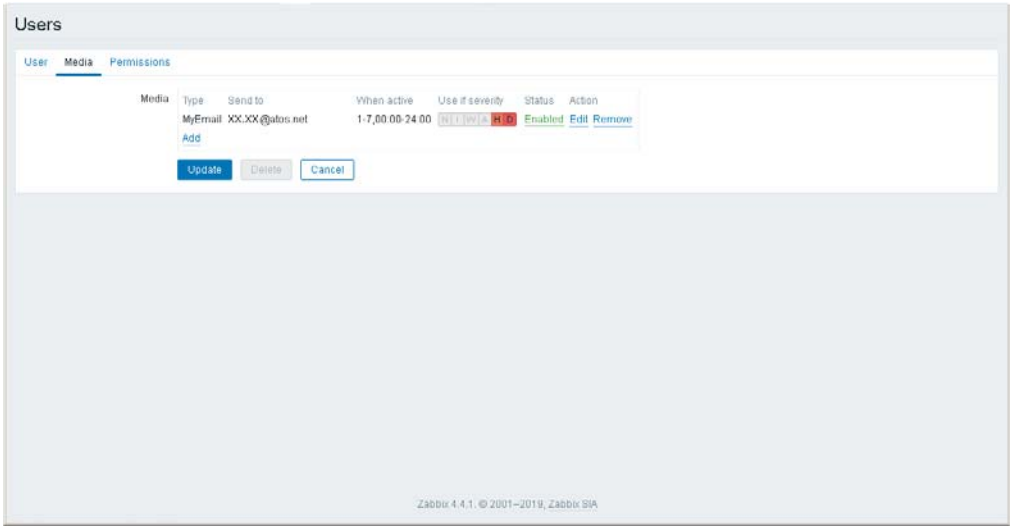


a. From the **Type** drop-down list, select the media type previously created.

b. Complete the fields as required.

c. Click **Add**.

Example



5. Click **Update** to complete changes.

3.10. Setting up SMS alerts

This procedure uses the zabbix-smsmode script. It allows a SMS to be sent via the smsmode provider.

Note The zabbix-smsmode script is delivered in a sub-directory of the MISM installation directory: \zabbix\server\alertscripts.

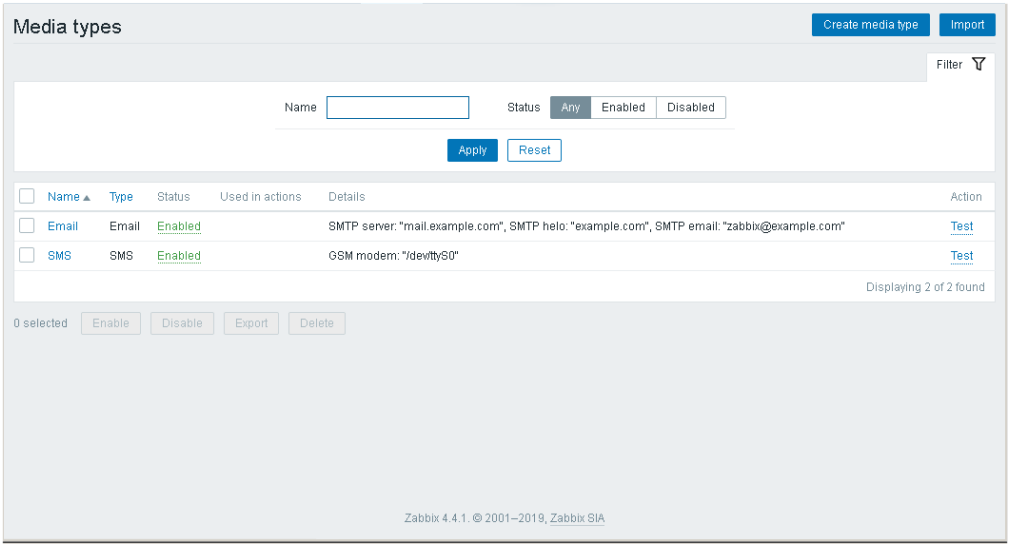
Prerequisites

- Zabbix-smsmode script is available.
- https://www.smsmode.com/en/ is accessible by the server.
- An access key has been created.

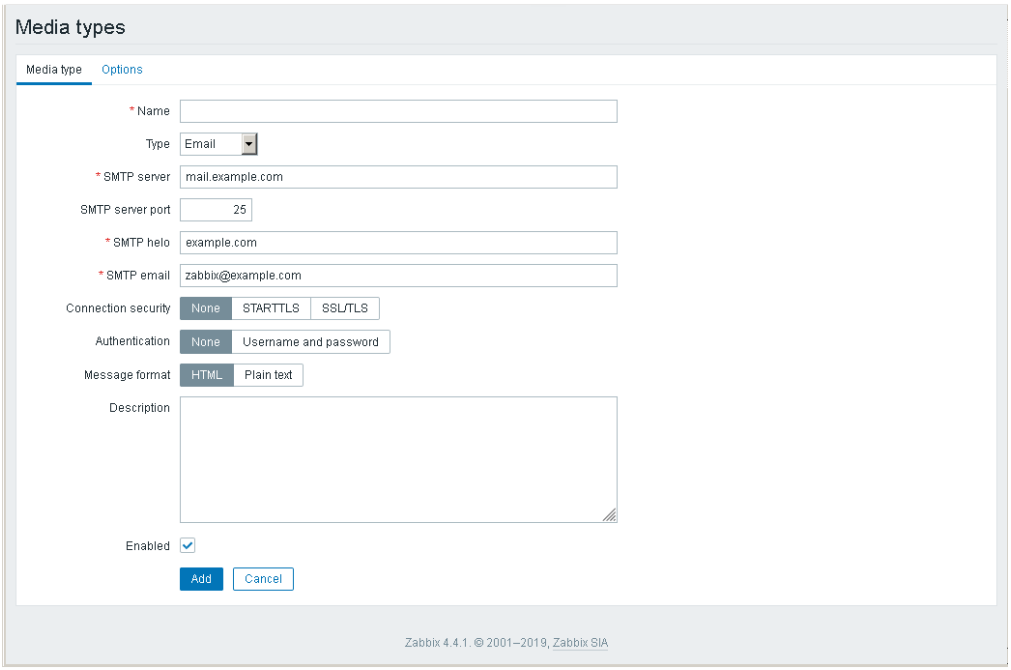
See The smsmode site to generate an access key: https://ui.smsmode.com/.

3.10.1. Configuring the SMS

1. From the **Administration** menu, click the **Media types** tab. The **Media types** page opens.



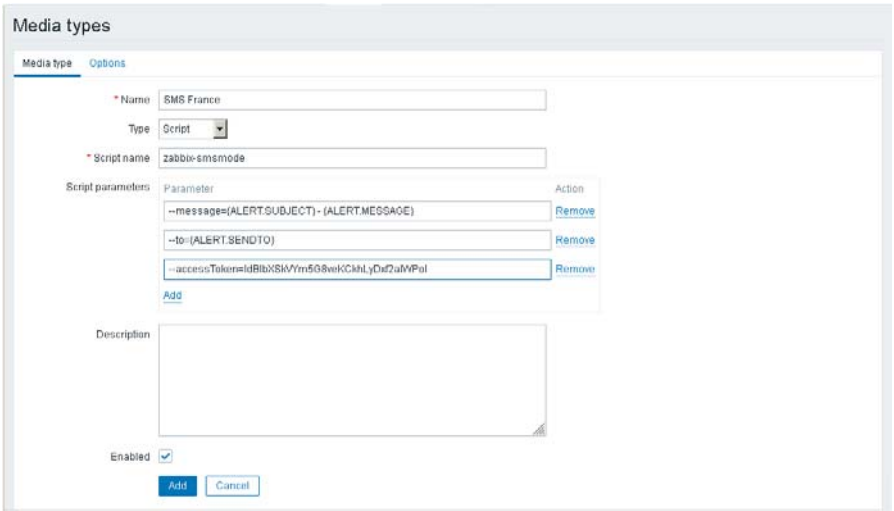
2. Click **Create media type**. A new page opens.



3. Complete the **Name** field.
4. Select **Script** from the **Type** drop-down list.
5. Enter **zabbix-smsmode** in the **Script name** field.
6. In the **Script parameters** section, add the following settings.

Parameter	Value
--message	{ALERT.SUBJECT} - {ALERT.MESSAGE}
--to	{ALERT.SENDTO}
--accessToken	Acces key generated by smsmode

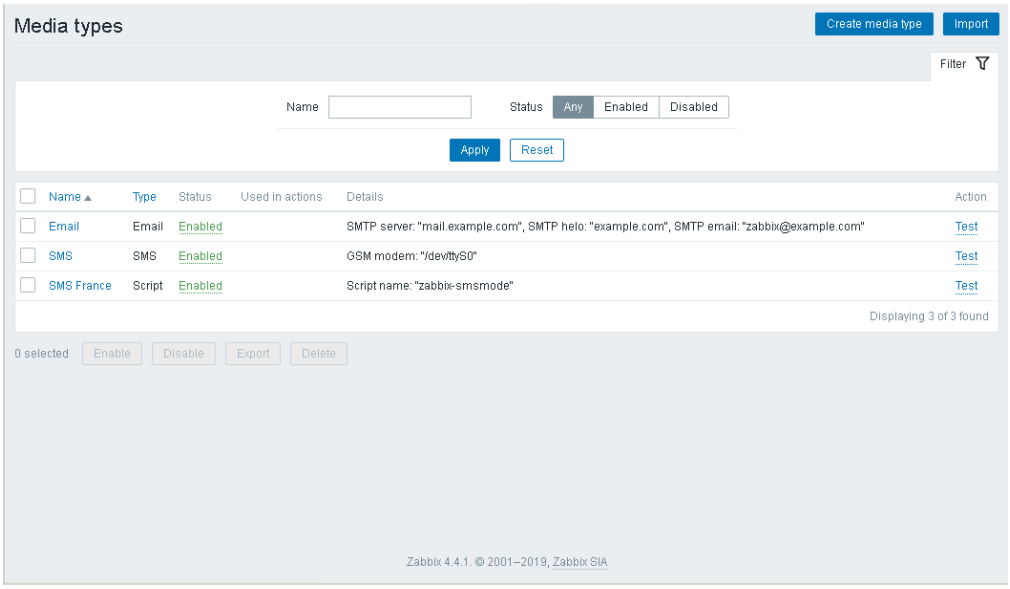
Example



7. Click **Add** to complete changes.

The media type is created.

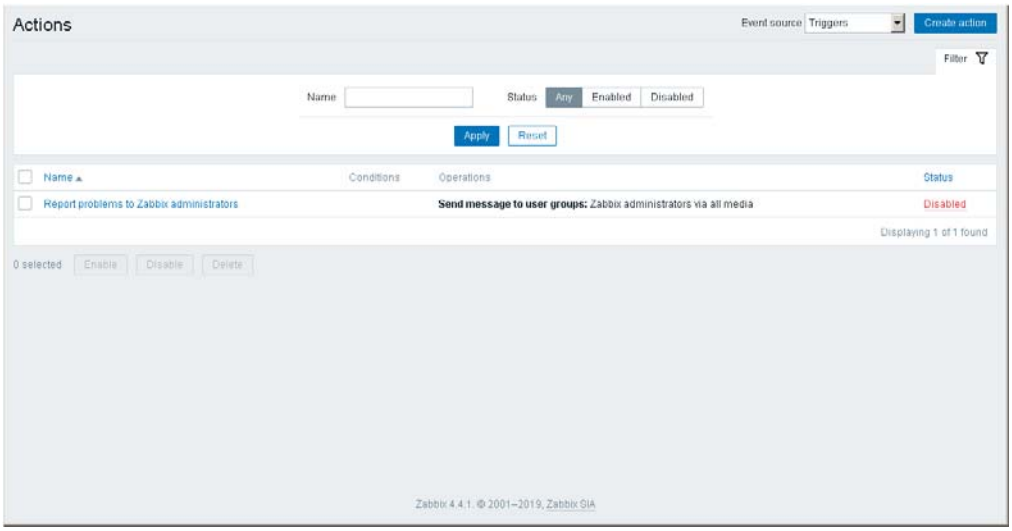
Example



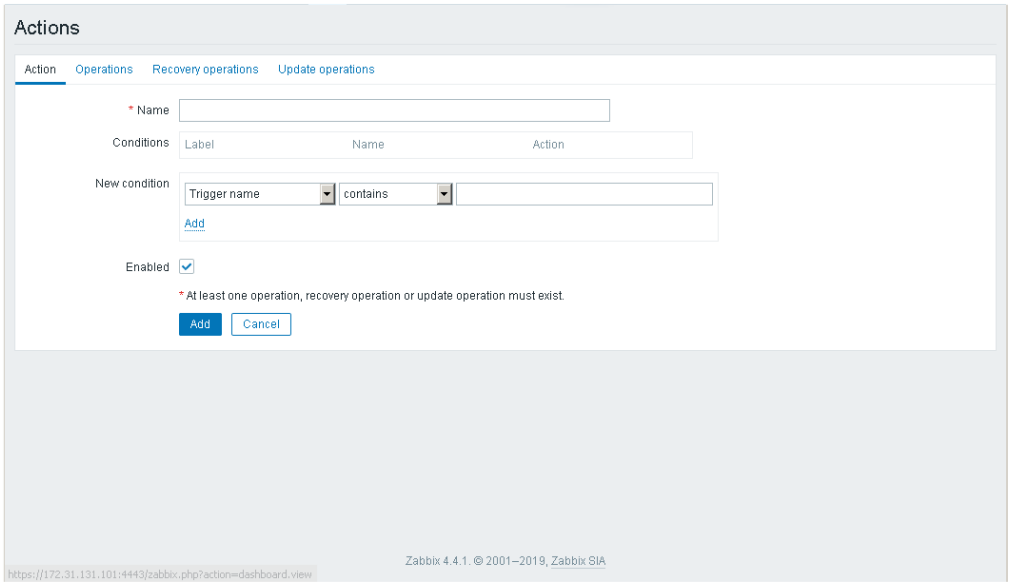
8. Click **Test** to send a test SMS.

3.10.2. Creating an action

1. From the **Configuration** menu, click the **Actions** tab. The **Actions** page opens.

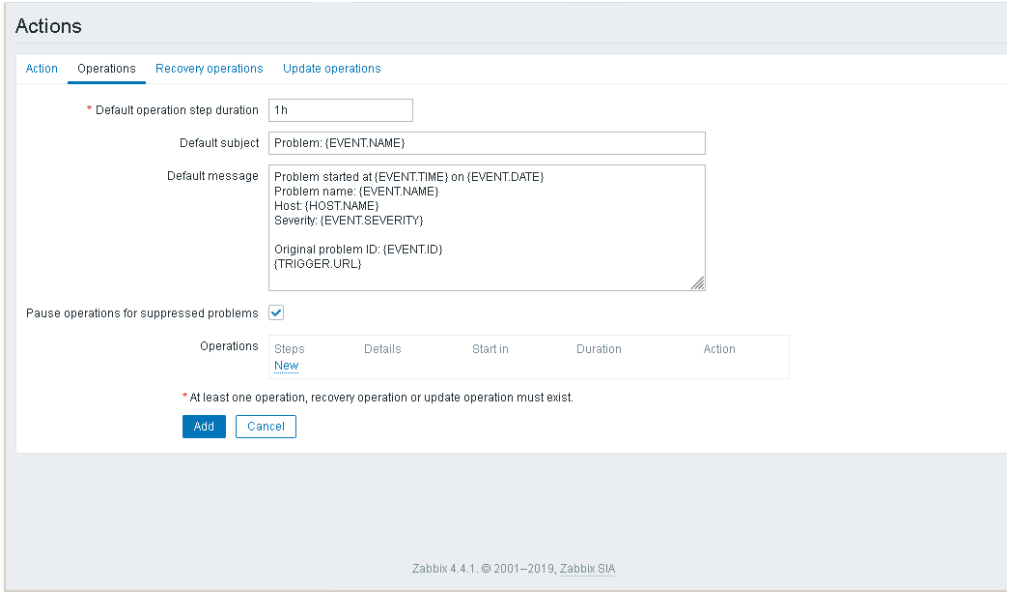


2. From the **Event source** drop-down list, select **Triggers**.
3. Click the **Create action** button. A new page opens.

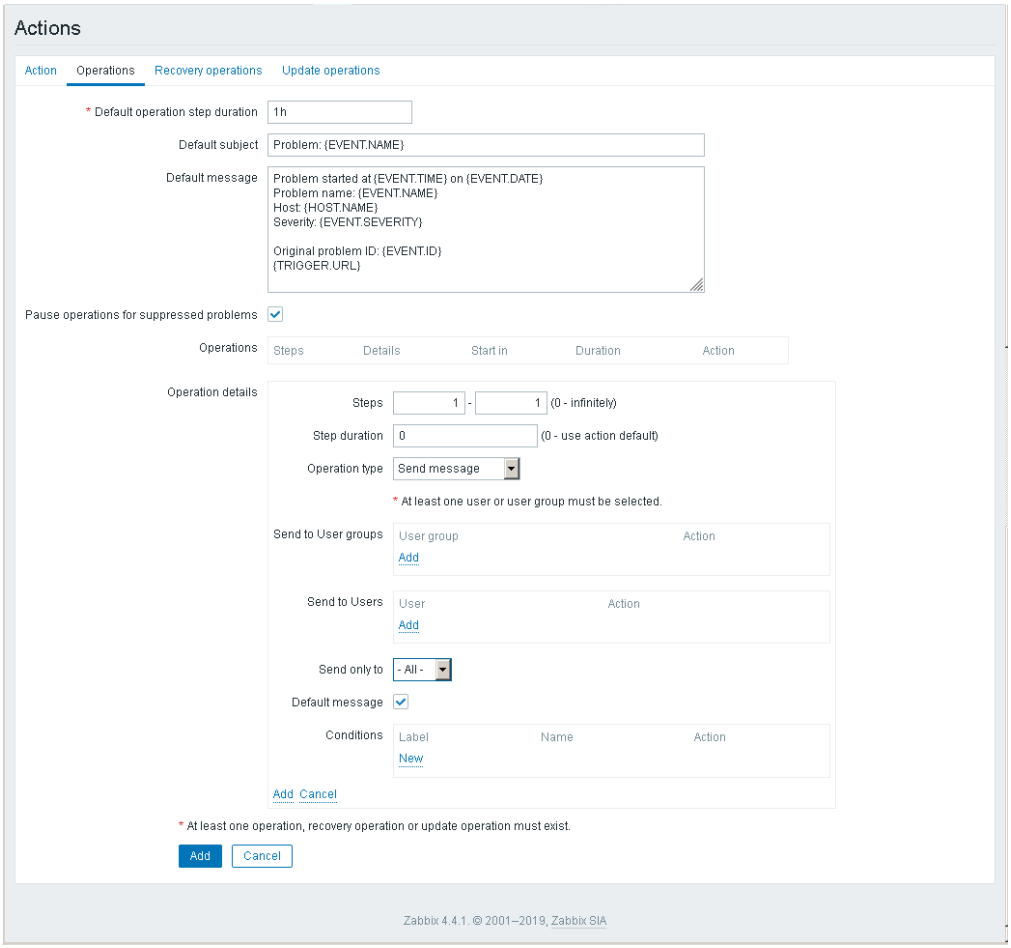


4. Complete the **Name** field.

5. Click the **Operations** tab.



6. In the **Operations** section, click **New**.



7. In the **Operation details** section, perform the following actions:

   a. Add the message recipient

   If the recipient is a user:

   i. In the **Send to Users** section, click **Add**.

   ii. Select the user required.

   If the recipient is a user group:

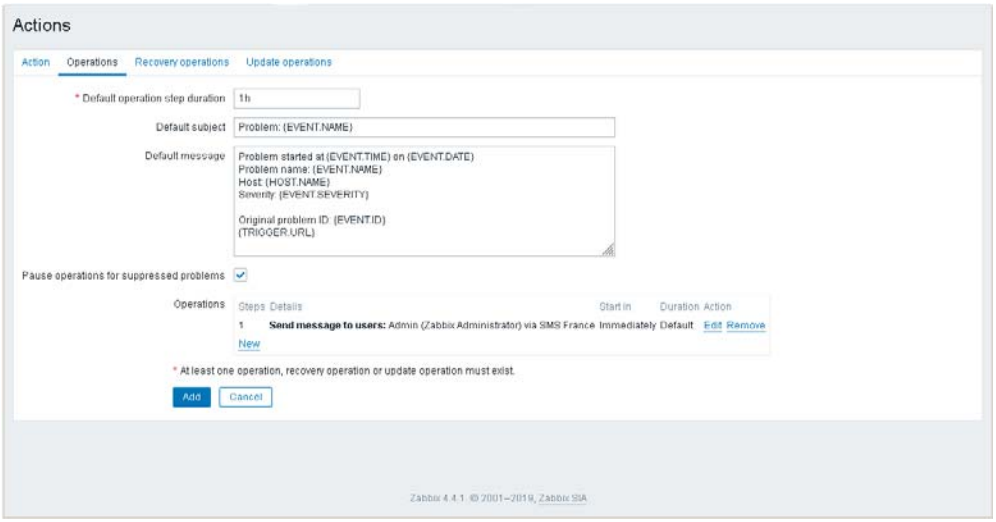
   i. In the **Send to User groups** section, click **Add**.

   ii. Select the user group required.

   b. From the **Send only to** drop-down list, select the media type previously created.

   c. Click **Add**.

Example

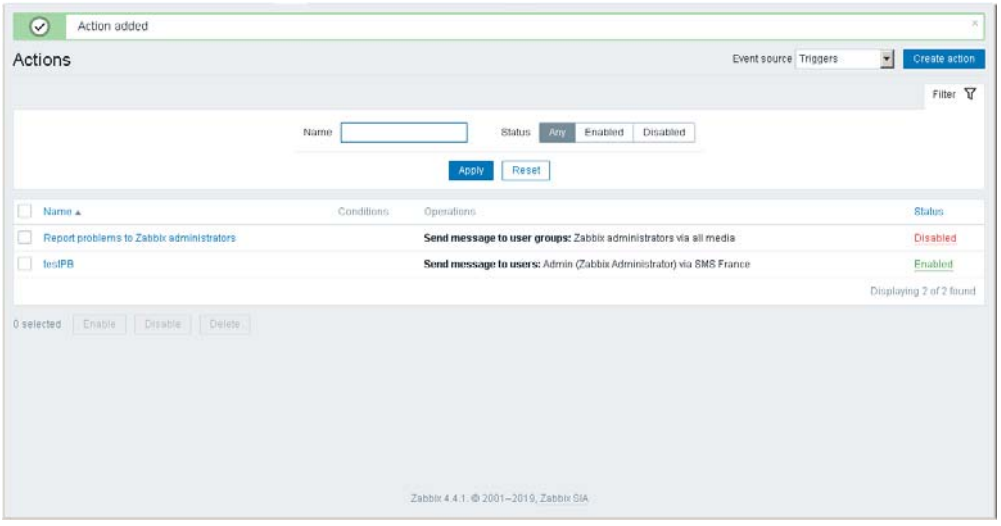


8. Save the action.

Click **Add** to complete changes.

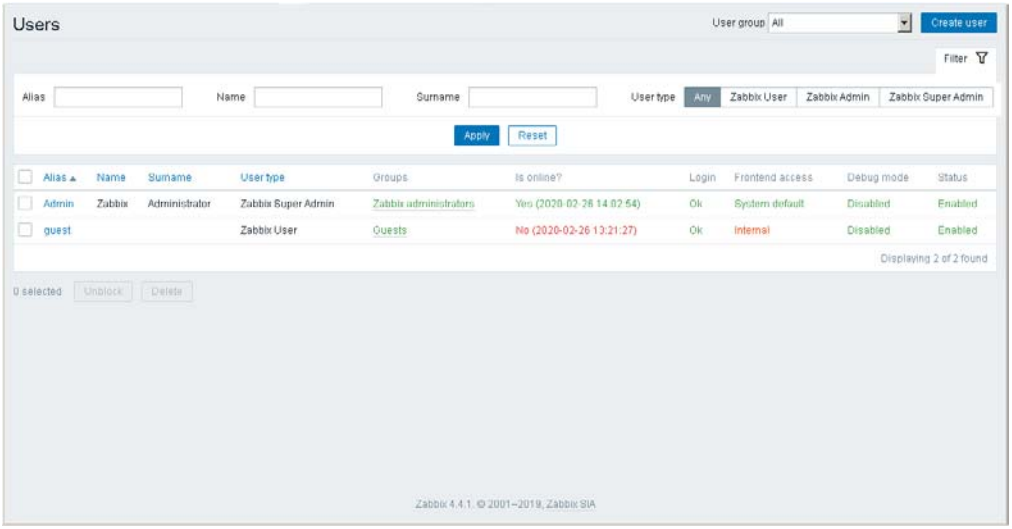
The action is created.

Example

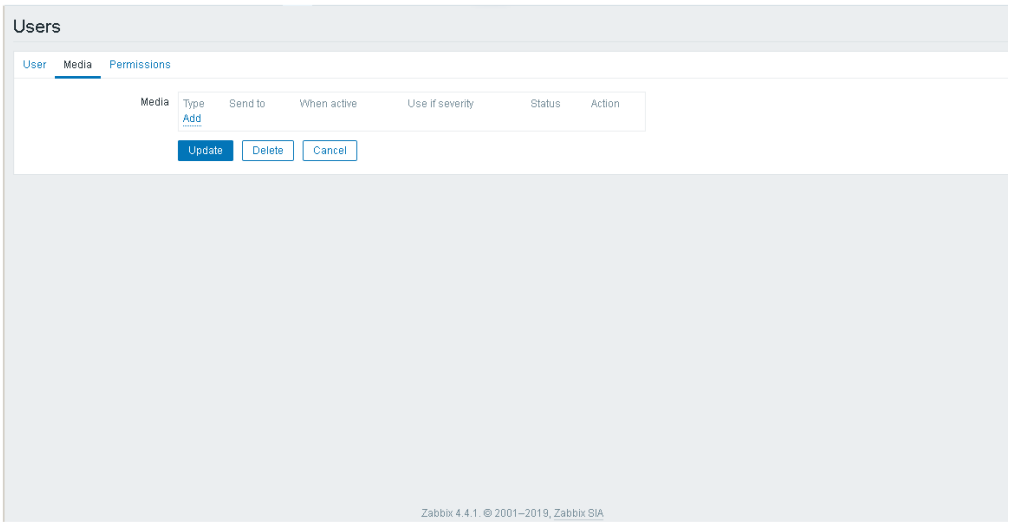


3.10.3. Configuring the user

1. From the **Administration** menu, click the **Users** tab. The **Users** page opens.

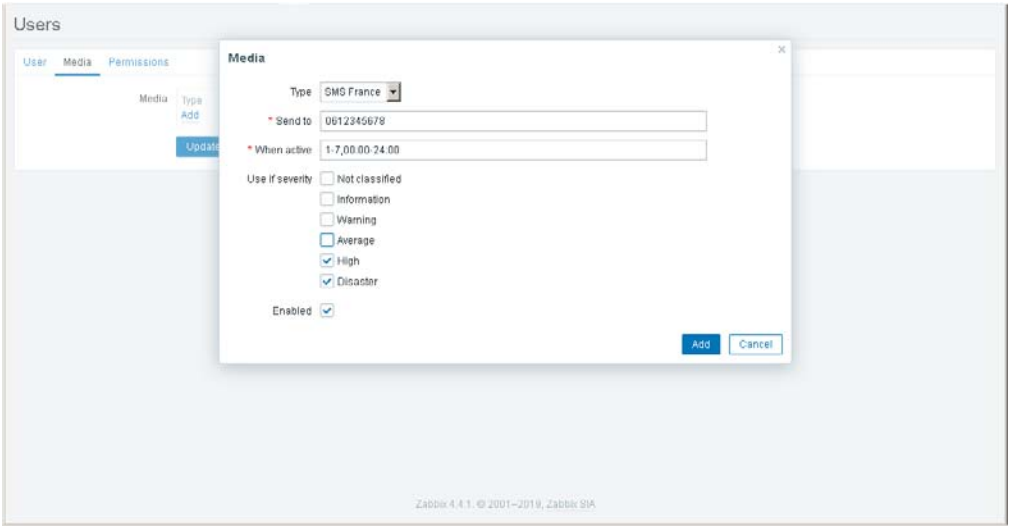


2. Select the user required. A new page opens.
3. Click the **Media** tab.



4. In the **Media** section, click **Add**. The **Media** page opens.

Example

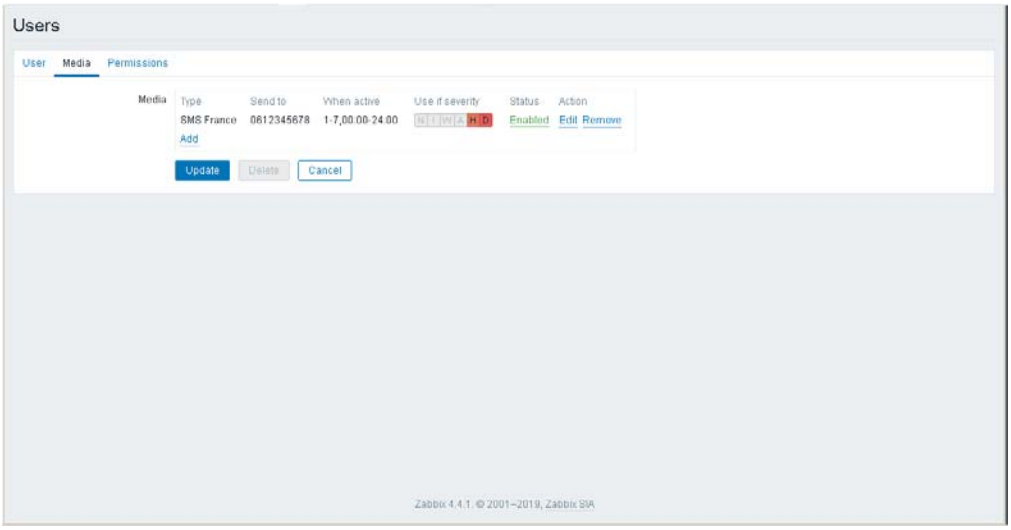


a. From the **Type** drop-down list, select the media type previously created.

b. Complete the fields as required.

c. Click **Add**.

Example



5. Click **Update** to complete changes.

3.11. Monitoring resources

See Zabbix documentation for more information: https://www.zabbix.com/documentation/4.4/manual/web_interface/frontend_sections/monitoring

Click the **Monitoring** menu to display the information.

3.11.1. Dashboard

Click the **Dashboard** tab to display summaries of all the important information.

A dashboard consists of widgets and each widget is designed to display information of a certain kind and source, which can be a summary, a map, a graph, the clock, etc.

Widgets are added and edited in the dashboard editing mode. Widgets are viewed in the dashboard viewing mode.

While in a single dashboard you can group widgets from various sources for a quick overview, it is also possible to create several dashboards containing different sets of overviews and switch between them.

The time period that is displayed in graph widgets is controlled by the time period section located above the widgets. The time period selector label, located to the right, displays the currently selected time period. Clicking the tab label expands and collapses the time period selector.

Note that when the dashboard is displayed in kiosk mode (accessible from the full screen mode) and widgets only are displayed, it is possible to zoom out the graph period by double clicking in the graph.

Host menu

Click a host in the **Problems** widget to bring up the host menu. It includes links to inventory, latest data, problems, graphs and screens for the host.

3.11.2. Problems

Click the **Problems** tab to display current problems. Problems are triggers that are in the Problem state.

Host menu

Click a host in the **Problems** section to bring up the host menu. It includes links to inventory, latest data, problems, graphs and screens for the host.

3.11.3. Overview

Click the **Overview** tab to display an overview of trigger states or a comparison of data for various hosts at once.

Host menu

Click a host in the **Overview** section (**Hosts: left**) to bring up the host menu. It includes links to inventory, latest data, problems, graphs and screens for the host.

3.11.4. Web

Click the **Web** tab to display current information about web scenarios.

3.11.5. Latest data

Click the **Latest data** tab to view the latest values gathered by items as well as to access various graphs for the items.

Host menu

Click a host in the **Latest data** section to bring up the host menu. It includes links to inventory, latest data, problems, graphs and screens for the host.

3.11.6. Graphs

Click the **Graphs** tab to display any custom graph that has been configured.

3.11.7. Screens

Click the **Screens** tab to configure, manage and view Zabbix global screens and slide shows.

Host menu

Click a host in the **Screens** section (in **Host issues** and **Host group issues** widgets) to bring up the host menu. It includes links to inventory, latest data, problems, graphs and screens for the host.

3.11.8. Maps

Click the **Maps** tab to configure, manage and view network maps.

Host menu

Click a host in the **Maps** section to bring up the host menu. It includes links to inventory, latest data, problems, graphs and screens for the host.

3.11.9. Discovery

Click the **Discovery** tab to review results of network discovery. Discovered devices are sorted by the discovery rule.

3.11.10. Services

Click the **Services** to review the status of IT infrastructure or business services.

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