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|  | **xFusion Zabbix Template**  **V2.0**  **User Guide** | |  |  |
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| **Date** | **2022-01-30** |
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About This Document

Purpose

This document describes the functions and usage of the Zabbix plug-in. The Zabbix plug-in is provided as a Zabbix template. Users can directly use it or use it for secondary development. The Zabbix plug-in can be used to monitor the intelligent Baseboard Management Controller (iBMC), Hyper Management Module (HMM), Cabinet Control Unit (CCU), Enclosure Management Module (EMM), or Switch Board (SWI).

Intended Audience

This document is intended for:

* Technical support engineers
* System maintenance engineers

Symbol Conventions

The symbols that may be found in this document are defined as follows.

| Symbol | Description |
| --- | --- |
|  | Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. |
|  | Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. |
|  | Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. |
|  | Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results.  NOTICE is used to address practices not related to personal injury. |
|  | Calls attention to important information, best practices, and tips.  NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration. |

Change History

| Issue | Date | Description |
| --- | --- | --- |
| 01 | 2022-01-30 | This issue is the first official release. |

# Zabbix Template Introduction

The Zabbix plug-in is provided as a Zabbix template. Users can directly use it or use it for secondary development. The Zabbix plug-in can be used to monitor the iBMC, HMM, CCU, EMM, or SWI.

[1.1 Zabbix Compatibility Information](#_EN-US_TOPIC_0000001137056571)

[1.2 Zabbix Template Names](#_EN-US_TOPIC_0000001137056567)

## Zabbix Compatibility Information

For details about the Zabbix compatibility, see Table 1-1.

Compatibility information

| Managed Object | Compatible Zabbix Version | Version Dependency | Hardware Compatibility | Interface Protocol |
| --- | --- | --- | --- | --- |
| HMM | * Zabbix 3.4 * Zabbix 4.0 | HMM V686D or later | **Blade server**:   * E9000 | SNMP v2c |
| iBMC | * Zabbix 3.4 * Zabbix 4.0 * Zabbix 5.0 | V3/V5 server：iBMC V294 or later  V6 server：iBMC V3.03.07.09 or later | **Rack server**:   * RH1288 V3 * RH2288 V3 * RH2288H V3 * RH5885 V3 * RH8100 V3 * 1288H V5 * 2288H V5 * 2488 V5 * 2288 V5 * 1288H V6 * 2288H V6   **High-density server**:   * XH321 V3 * XH620 V3 * XH622 V3 * XH628 V3   **Heterogeneous server**:   * G560 V5   **Blade server**:   * CH121L V5 | SNMP v2c |
| CCU | * Zabbix 3.4 * Zabbix 4.0 * Zabbix 4.4 | CCU V156RC or later | - | SNMP v3 |
| EMM | * Zabbix 3.4 * Zabbix 4.2 | iBMC V380 or later | **Management module**:   * MM921 | * SNMP trap v2c * SNMP trap v3 |
| SWI | * Zabbix 3.4 * Zabbix 4.2 | iBMC V396 or later | **Switch module**:   * CX320 * CX621 | * SNMP trap v2c * SNMP trap v3 |

## Zabbix Template Names

* xFusion Server ValueMap V2.0.xml
* xFusion Server iBMC Template V1.3.xml
* xFusion Server iBMC Template V2.0.xml
* xFusion CCU Template V2.0.xml
* xFusion Server HMM Template V2.0.xml
* xFusion Chassis EMM Template V2.0.xml
* xFusion Chassis SWI Template V2.0.xml

# Template Functions

iBMC Template

**Monitoring** page:

* **Latest data** tab page: CPU, fan, hard disk, iBMC system information, memory, power supply, RAID controller card, and temperature
* **Problems and triggers** tab page: system health status, CPU status, fan status, power supply status, hard disk status, and memory status
* **Graphs** tab page: inlet temperature, power consumption, system CPU usage, averagePower, peakPower, presentSystemPower and system memory usage

**Inventory** page: type, name, OS, serial number, tag, and MAC address

HMM Template

**Monitoring** page:

* **Latest data** tab page: CPU, fan, power supply, switch, system information, and temperature
* **Problems and triggers** tab page: system health, chassis health, SMM health, blade status, fan status, power supply status, and switch status
* **Graphs** tab page: ambient temperature, inlet temperature, LSW temperature, outlet temperature, real-time chassis power, blade CPU power, blade inlet temperature, real-time blade power, and blade system CPU usage

**Inventory** page: type, name, OS, serial number, tag, and MAC address

CCU Template

**Monitoring** page:

* **Latest data** tab page: system software version, system hardware version, module name, MAC address, photoelectric liquid level sensor detection result, float liquid level sensor detection result, water sensor detection result, solenoid valve actuator detection result, door status sensor detection result, and temperature and humidity sensor detection result
* **Problems** tab page: photoelectric liquid level alarm, float liquid level alarm, liquid leakage alarm, proportional valve fault alarm, door status alarm, and temperature and humidity fault alarm
* **Graphs** tab page: temperature and humidity inside and outside the cabinet

**Inventory** page: system software version, system hardware version, module name, and MAC address

EMM/SWI Template

**Monitoring** page:

* **Latest data** tab page: alarm serial number, sensor name, event description, alarm severity, event code, event parameter 2, event parameter 3, server ID, server location, and alarm time of a trap event
* **Problems** tab page: alarm information about the trap event



If the EMM/SWI alarm severity is changed, you need to manually modify the corresponding template on the Zabbix WebUI. The procedure is as follows:

Log in to the Zabbix WebUI.

Choose **Configuration > Templates**. The **Templates** page is displayed.

In the template list, click **Triggers** in the row where the template is located. The **Triggers** page is displayed.

In the alarm list, click the name of the alarm to be modified. The page for modifying the alarm information is displayed.

Change the severity of the alarm event.

# Verify the software package

You need obtained software package for the Zabbix plug-in Templates and verified its integrity.

Obtain software package for the Zabbix plug-in Templates (for example, **xFusion\_Zabbix\_Template\_V2.0.zip**) and its SHA256 verification file (for example, **xFusion\_Zabbix\_Template\_V2.0.sha256.summ**) from [GitHub](https://github.com/Open-xFusion/Server_Plugin_Zabbix/tree/master/releases).

Verify the integrity of the Zabbix plug-in Templates software package(on Linux).

1. Go to the directory where the Templates installation package and SHA256 verification file are stored.
2. Run the **sha256sum -c < (grep** *software package name* *sha256 verification file name***)** command to verify the software package.

Example: **sha256sum -c <(grep xFusion\_Zabbix\_Template\_V2.0.zip xFusion\_Zabbix\_Template\_V2.0.sha256.sum)**

1. Check whether the verification result is **OK**.

* If yes, the software package has not been tampered with and can be used.
* If no, the software package has been tampered with. Obtain a new software package.

----End

# Template Configuration

[4.1 Configuring the iBMC, HMM, CCU, EMM, or SWI](#_EN-US_TOPIC_0000001137056565)

[4.2 Importing a Template](#_EN-US_TOPIC_0000001137056535)

[4.3 Configuring a Template](#_EN-US_TOPIC_0000001137056547)

[4.4 Adding a Host](#_EN-US_TOPIC_0000001137056541)

## Configuring the iBMC, HMM, CCU, EMM, or SWI

### Configuring the iBMC or HMM

Enable SNMPv2c.

Configure a community name.

----End

### Configuring the CCU

Configure the IP address, subnet mask, and gateway for the CCU.

Configure the SNMPv3 user name, authentication key, and encryption key for the CCU.

----End

### Configuring the EMM/SWI

Enable the SNMP trap protocol.

Configure the trap version (SNMPv2c or SNMPv3).

Set the trap mode to the precise alarm mode.

Configure the trap server.

----End

### Setting SNMP Trap

For the EMM/SWI, you need to set the SNMP trap on the Zabbix background.

Prerequisites

* SNMPTT, net-snmp, net-snmp-utils and net-snmp-perl of the latest versions have been installed on Zabbix.
* The firewall is disabled.

Procedure

The following uses SNMPTT as an example. For details, see the [official Zabbix website](https://www.zabbix.com/documentation/3.4/en/manual/config/items/itemtypes/snmptrap).

Log in to the Zabbix CLI.

Configure the Zabbix server or proxy server and edit the **zabbix\_server.conf** file.

1. Run the following command to open the **zabbix\_server.conf** file:

**vi** *zabbix\_server.conf file path*

Example: **vi /etc/zabbix/zabbix\_server.conf**

1. Edit the **zabbix\_server.conf** file.

StartSNMPTrapper=1   
SNMPTrapperFile=[TRAP FILE]

Run the following command to restart the Zabbix service:

**systemctl restart zabbix-server**

Log in to the [official xFusion website](https://support.xfusion.com/support/#/en/blade-servers/e9000-chassis-pid-19961380/software) to obtain the MIB file and add the file to the **/usr/share/snmp/mibs** directory.

Run the **vi /etc/snmp/snmp.conf** command to create the **/etc/snmp/snmp.conf** file and add the following content to the file:

mibdirs /usr/share/snmp/mibs   
mibs +ALL   
defversion 2c

Configure the **snmptrapd.conf** file.

1. Run the following command to open the **snmptrapd.conf** file:

**vi** *snmptrapd.conf file path*

Example: **vi /etc/snmp/snmptrapd.conf**

1. Configure the **snmptrapd.conf** file.

* Configure SNMPv2c or SNMPv3.
  1. # Configure SNMPv2c as follows:

authCommunity log,execute,net [SNMP trap community name]

* 1. # Configure SNMPv3 as follows:

createUser -e [SNMPv3 engine ID] [SNMP trap V3 user name] [SHA/MD5] [Authentication password] [AES/DES] [Encryption password]   
authUser log,execute,net [SNMP trap V3 user name]

* # Add SNMPTT as the trap processing program.

traphandle default /usr/sbin/snmptthandler

Run the following command to restart snmptrapd:

**systemctl status snmptrapd**

Configure SNMPTT and edit the **snmptt.ini** file.

1. Run the following command to open the **snmptt.ini** file:

**vi** *snmptt.ini file path*

Example: **vi /etc/snmp/snmptt.ini**

1. Edit the **snmptt.ini** file.

log\_enable = 1   
log\_file = [TRAP FILE]   
date\_time\_format = %Y/%m/%d %H:%M:%S   
net\_snmp\_perl\_enable = 1   
translate\_log\_trap\_oid = 2



* **0**: displays the OID as a number.
* **1**: displays the OID name.
* **2**: displays the name of the module to which the OID belongs and the module name.

Set the SNMP trap format and edit the **snmptt.conf** file.

1. Run the following command to open the **snmptt.conf** file:

**vi** *snmptt.conf file path*

Example: **vi /etc/snmp/snmptt.conf**

1. Edit the **snmptt.conf** file.

EVENT general .\* "General Event" Normal   
FORMAT ZBXTRAP $aA $+\*

Run the following command to restart SNMPTT:

**systemctl restart snmptt**

----End



For details about SNMPTT, see the [official SNMPTT website](http://snmptt.sourceforge.net/docs/snmptt.shtml#Command-line-arguments).

## Importing a Template

### Importing a ValueMap Template



The EMM/SWI does not involve this template.

Log in to [GitHub](https://github.com/Open-xFusion/Server_Plugin_Zabbix) and obtain the **xFusion Server ValueMap V2.0.xml** template.

Log in to the Zabbix WebUI.

Choose **Administration > General**.

Select **Value Mapping** from the drop-down list box in the upper right corner.

Click **Import**. The **Import** page is displayed.

Click **Import file** and select the template obtained in [Step 1](#li14212161522317).

Click **Import**.

----End

### Importing an iBMC, HMM, CCU, EMM, or SWI Template



The imported template is for reference only. You can modify it as required.

Log in to [GitHub](https://github.com/Open-xFusion/Server_Plugin_Zabbix) and obtain the **xFusion Server iBMC Template V1.3.xml**, **xFusion Server iBMC Template V2.0.xml**, **xFusion Server HMM Template V2.0.xml**, **xFusion CCU Template V2.0.xml**, **xFusion Chassis EMM Template V2.0.xml**, or **xFusion Chassis SWI Template V2.0.xml** template.

Log in to the Zabbix WebUI.

Choose **Configuration > Templates**. The **Templates** page is displayed.

Click **Import**. The **Import** page is displayed.

Click **Import file** and select the template obtained in [Step 1](#li12241127163910).

Click **Import**.

----End

## Configuring a Template

### Configuring an HMM or iBMC Template



The V1.3 template of iBMC corresponds to the server of V5 or previous versions, and the V2.0 template corresponds to the server of V6 version, please select as required.

Log in to the Zabbix WebUI.

Choose **Configuration > Templates**. The **Templates** page is displayed.

Click the name of the iBMC or HMM template that has been imported. The template configuration page is displayed.

Click **Macros** and set **{$SNMP\_COMMUNITY}** and **{$SNMP\_PORT}**.

* The value of **{$SNMP\_COMMUNITY}** is the community name configured in 4.1.1 Configuring the iBMC or HMM.
* Retain the default value 161 for **{$SNMP\_PORT}**.

Click **Update**.

----End

### Configuring a CCU Template

Log in to the Zabbix WebUI.

Choose **Configuration > Templates**. The **Templates** page is displayed.

Click the name of the xFusion CCU Template that has been imported. The template configuration page is displayed.

Click the **Macros** tab and set **{$SNMP\_AESPASS}**, **{$SNMP\_SHAPASS}**, **{$SNMP\_USERNAME}**, and **{$SNMP\_PORT}**.

* **{$SNMP\_AESPASS}**, **{$SNMP\_SHAPASS}**, and **{$SNMP\_USERNAME}** indicate the CCU SNMPv3 encryption key, authentication key, and user name configured in 4.1.2 Configuring the CCU.
* Retain the default value 161 for **{$SNMP\_PORT}**.

Click **Update**.

----End

## Adding a Host

Log in to the Zabbix WebUI.

Choose **Configuration > Hosts**. The **Hosts** page is displayed.

Click **Create host**. The page for creating a host is displayed.

**Host** sheet:

* **Host name**: Enter the host name.
* **Groups**: Select **xFusion Server**, **xFusion Chassis** or **xFusion CCU**.



* iBMC or HMM: Select **xFusion Server**.
* CCU: Select **xFusion CCU**.
* EMM or SWI: Select **xFusion Chassis.**
* **Agent interfaces**: Click **Remove** to remove the existing IP address information.
* **SNMP interfaces**: Click , set the IP address of the iBMC, CCU, HMM, EMM, or SWI and retain the default port number **161**.



* **Enabled**: Retain the default value.

**Templates** sheet**:**

* **Link new templates**: Click **Select**. In the upper right corner of the displayed page, select the corresponding group (**xFusion Server**, **xFusion Chassis**, or **xFusion CCU**) and select the required template. After the selection is complete, click .



**Inventory** sheet:

* Select **Automatic**.



The EMM/SWI does not involve the **Inventory** tab page.

Click .



----End

1. Obtaining Technical Support

To obtain assistance, contact technical support as follows:

* Contact customer service center at [support@xfusion.com](mailto:support@xfusion.com).
* Contact technical support personnel.