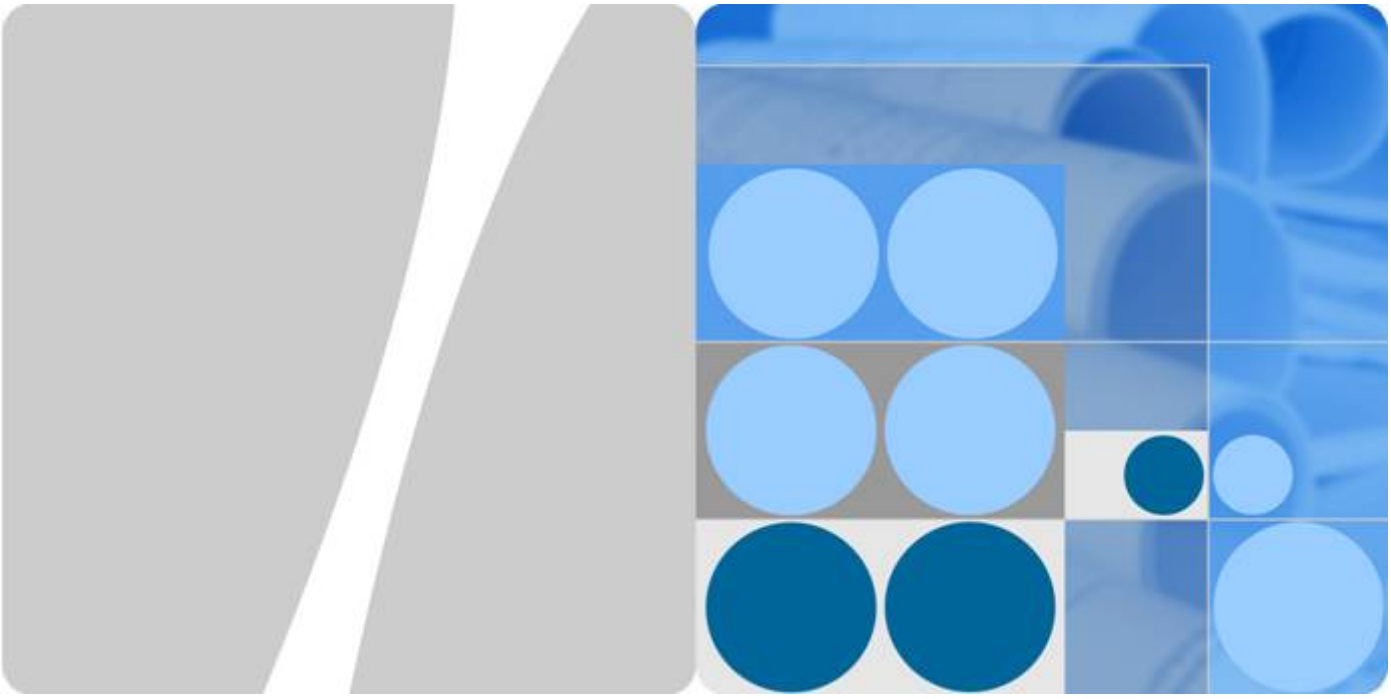

## eSDK Enterprise Storage Plugins

## 2.0.RC3

# Quick Guide (Nagios)

**Issue** 01

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**HUAWEI TECHNOLOGIES CO., LTD.**

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# About This Document

## Purpose

This document describes the procedure for installing, configuring, and uninstalling the Huawei eSDK Array Management Plug-in for Nagios (Nagios plug-in for short) and the procedure for implementing device surveillance.

## Intended Audience

This document is intended for:

ISV software development engineers

## Symbol Conventions

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

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

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# 1 Overview

Nagios is a free open-source network surveillance tool used to efficiently monitor status of switches, routers, printers, as well as Windows, Linux, and UNIX hosts.

The Huawei eSDK Array Management Plug-in (for Nagios) is installed in the Nagios tool. After the installation, the Nagios tool can manage Huawei devices, as well as keep the system information, LUNs, alarms, and controllers of device components under surveillance.

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# 2 Installation Preparation

2.1 Installation Procedure

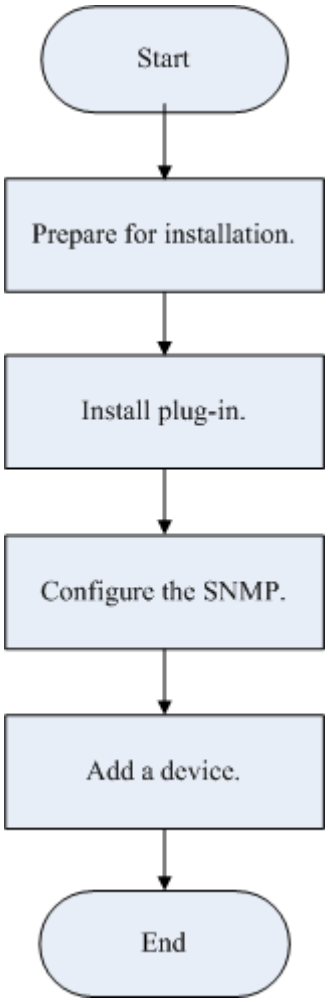
2.2 Device Types and Versions

2.3 Software and Tools

## 2.1 Installation Procedure

**Figure 2-1** shows the Nagios plug-in installation flowchart.

**Figure 2-1** Nagios plug-in installation flowchart




# 2.2 Device Types and Versions

You can query the version mapping table of eSDK plug-ins to obtain the storage system versions. To obtain the version mapping table, log in to **http://support.huawei.com/enterprise/en/index.html**. In the search box, enter **eSDK Enterprise Storage Plugins** to search for and download the *eSDK Enterprise Storage Plugins x.x.xxx Version Mapping*. x.x.xxx indicates the version number.

# 2.3 Software and Tools

## Software Requirements

Before installing the Nagios plug-in, ensure that the system meets the following requirements:

- Operating system Supports SUSE Linux Enterprise Server 10 SP2 64-bit.
- The Nagios tool is Python-2.7.7 or later.
- The following third-party plug-in packages exist on the Nagios server:

- **ply-x.x.tar.gz**
- **pyasn1-x.x.x.tar.gz**
- **pycryptodome-x.x.x.tar.gz**
- **pysmi-x.x.x.tar.gz**
- **pysnmp-x.x.x.tar.gz**

- The installation package of the Nagios plug-in **eSDK_Storage_Nagios_X.X.XX.zip** has been obtained.

  **NOTE**

  X.X.XX indicates the version number, obtain the installation package with this manual before installation.

  The version of pycryptodome-x.x.x.tar.gz must be 3.4.5 or later.

  The version of ply-x.x.tar.gz must be 3.9 or later.

  The version of pyasn1-x.x.x.tar.gz must be 0.2.3 or later.

  The version of pysmi-x.x.x.tar.gz must be 0.1.2 or later.

  The version of pysnmp-x.x.x.tar.gz must be 4.3.5 or later.

  The version of the installation package varies according to site requirements.

  You can download software by visiting **https://support.huawei.com/enterprise/en/software/index.html**, choosing **Cloud Storage > Tools and Platform > eSDK Enterprise Storage Plugins.**

The installation sequence of the third-party dependencies is ply> pyasnl> pycryptodome> pysmi> pysnmp. The installation of plug-in package on the left of ">" precedes that of plug-in package on the right.

Perform the following operations to install third-party plug-ins:

1. Log in to the Nagios server as the **root** user.
2. Run the corresponding command to go to the directory for storing third-party plug-in packages. For example, run the following command to go to directory **/home**:
   ```
   cd /home
   ```
3. Run the following command to decompress the corresponding plug-in package:
   ```
   tar -zxvf ply-3.9.tar.gz
   ```
4. Run the following commands to go to the directory generated after the decompression and install plug-in pysnmp:
   ```
   cd ply-3.9
   python setup.py install
   ```
5. Run the **cd /home** command to go back to the directory for storing third-party plug-in packages. Repeat **3** and **4** to install third-party plug-ins pycrypto and pysnmp one by one.

## Data Preparation

**Table 2-1** lists the data required for Nagios plug-in installation.

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**Table 2-1** Installation data table

| Item | Function | Example |
| --- | --- | --- |
| IP address of the Nagios server | For accessing the server where the Nagios tool is installed and installing the Nagios plug-in. | 10.170.102.192 |
| Path for uploading the installation package to the Nagios server | For storing the Nagios plug-in installation package on the Nagios server. | /home |
| Nagios tool installation path | For installing the Nagios plug-in on the Nagios server. | /usr/local/nagios |
| User name for logging in to the Nagios server | For accessing the SUSE operating system of the Nagios server. | root |
| Password for logging in to the Nagios server | For accessing the SUSE operating system of the Nagios server. | Huawei@123 |

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| Item | Function | Example |
| --- | --- | --- |
| Basic information about the managed array | A device is under the surveillance of the Nagios system after its information is configured on the Nagios server. The information to be prepared is as follows:<br>● IP address of a managed device<br>● SNMP version<br>– If the version is v2c, you need to prepare read and write SNMP community strings used for communication with the Nagios server.<br>– If the version is v3, you need to prepare USM user information, including the user name, authentication protocol, and data encryption protocol. The value of the authentication protocol can be MD5, SHA, or none, and that of the data encryption protocol can be AES, DES, 3DES, or none. | ● 188.188.1.100<br>● v3<br>– sam<br>– MD5<br>– DES |

## Tool Preparation

Prepare the PuTTY software.

# 3 Installation and Deployment

3.1 Installing the Nagios Plug-in

3.2 Configuring the SNMP

3.3 Adding Devices

## 3.1 Installing the Nagios Plug-in

This topic describes how to install the Nagios plug-in. After the installation, Huawei devices are under the surveillance of the Nagios system.

### Prerequisites

- The plug-in installation package has been uploaded to the Nagios server.
- Third-party plug-ins have been installed. For details about how to install them, see **2.3 Software and Tools**.
- You have logged in to the Nagios server as the **root** user.

### Procedure

**Step 1** Run the following command to go to the directory where the plug-in installation package resides (for example, /home), and decompress the installation package:

```
cd /home
unzip eSDK_Storage_Nagios_X.X.XX.zip
cd eSDK_Storage_Nagios_X.X.XX
tar -zxf "Huawei eSDK Array Management Plug-in (for Nagios).gz"
```

The **Huawei eSDK Array Management Plug-in (for Nagios)** folder is generated after the package is decompressed.

**Step 2** Run the following commands to go to the directory generated after the decompression and install the plug-in:

```
cd /home/eSDK_Storage_Nagios_X.X.XX
cd "Huawei eSDK Array Management Plug-in (for Nagios)"
python setup.py install 10.170.102.192 /usr/local/nagios
```

Parameters used in the preceding commands are described as follows:

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- *10.170.102.192* indicates the IP address of the Nagios server. Set this parameter based on site requirements. The value can not be *127.0.0.1*.
- */usr/local/nagios* indicates the installation path of the Nagios tool. Set this parameter based on site requirements.

**----End**

# 3.2 Configuring the SNMP

Before using Nagios tool to monitor Huawei storage devices, you need to configure SNMP community strings or USM accounts for Huawei storage devices. If SNMP community strings or USM accounts have been configured, skip this step.

The items that need to be configured vary with the SNMP versions of storage devices.

- If SNMP v1 or v2 is used, you need to configure SNMP community strings.
- If SNMP v3 is used, you need to configure USM accounts, including account names, authentication protocols, and authentication keys.

## Configuring the SNMP Community Strings

**Step 1** Run a shell command to log in to the storage device.

**Step 2** Enable SNMP v1 and v2c.

These two options are disabled by default. You need to manually enable them by running the following commands:

```
admin:/>change snmp version v1v2c_switch=On
CAUTION: You are about to enable SNMPv1 and SNMPv2c. But you are advised to use
the secure SNMPv3 protocol only.
Do you wish to continue?(y/n)y
Command executed successfully.
```

**Step 3** Run the following command to configure the SNMP community strings.

```
admin:/>change snmp community read_community=**********
write_community=************
Command executed successfully
```

**NOTE**

1. This command is used to set the read community string and write community string at the same time. The read community string and write community string cannot be the same.
2. When adding devices, you need to use the read community string to connect to the storage device.

**----End**

## Configuring the USM Account

**Step 1** Run a shell command to log in to the storage device.

**Step 2** Run the following command to configure the USM account.

```
admin:/>add snmp usm user_name=kaimse authenticate_protocol=MD5
private_protocol=3DES
Please input your authenticate password:**********
Please input your authenticate password again:**********
Please input your private password:**********
Please input your private password again:**********
CAUTION: You are advised to set the USM account using secure authenticate
```

```
protocol SHA and data encryption protocol AES.
Do you wish to continue?(y/n)y
 Command executed successfully.
```

NOTE

When adding devices, you need to use the USM account to connect to the storage device.

**----End**

# 3.3 Adding Devices

After the Nagios plug-in is installed, you can manually add Huawei devices requiring surveillance on the Nagios server. You can repeat the following operations to add multiple devices or perform the following operations to add multiple controllers of a device.

## Prerequisites

- The Nagios plug-in has been installed. For details, see **3.1 Installing the Nagios Plug-in**.
- The to-be-added device has been configured with SNMP community strings or the USM account.
- The information about added devices has been obtained.
- You have logged in to the Nagios server as the **root** user.

## Procedure

**Step 1** Run the following command to go to the directory generated after the installation package is decompressed:

```
cd /home/eSDK_Storage_Nagios_X.X.XX
cd "Huawei eSDK Array Management Plug-in (for Nagios)"
```

**Step 2** Run the following command to add a device:

```
python setup.py add device IP device name
```

- **device IP** indicates the IP address of a managed device. Set this parameter based on site requirements. IP addresses of controllers belonging to the same device can be configured and separated with commas (,), for example, 188.188.1.100,188.188.1.101. Set the same community strings and the USM account for the controllers. For details, see **3.2 Configuring the SNMP**. This parameter can not be set to IP addresses of multiple devices.

  If the device model is OceanStor 18000 series, you only need to configure the IP address of the SVP.
- **device name** is the device name displayed on the surveillance platform, not the actual host name of the managed device. The host name can contain only letters, digits, and hyphens (-) and cannot start or end with a hyphen (-).

**Step 3** Complete configurations as prompted. **Table 3-1** describes related configuration items.

NOTE

Enter information as prompted. Letters entered are case insensitive.

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**Table 3-1** Description of configuration items

| Screen Prompt | Operation |
| --- | --- |
| `input the version of snmp (v2c or v3):` | Enter the SNMP version.<br>● If the version is **v2c**, complete configurations according to **Table 3-2**. Then go to the next step.<br>● If the version is **v3**, complete configurations according to **Table 3-3**. Then go to the next step. |
| `do you want to add?(Y/N)` | Enter **Y** to confirm adding a device. |

**Table 3-2** Configuration items for v2c

| Screen Prompt | Operation |
| --- | --- |
| `input the get community:`<br>`input the get community again:` | Enter the read SNMP community string used for communication with the Nagios server. |
| `input the set community:`<br>`input the set community again:` | Enter the write SNMP community string used for communication with the Nagios server. |

**Table 3-3** Configuration items for v3

| Screen Prompt | Operation |
| --- | --- |
| `input the usm user:` | Enter the USM user name. |
| `input the authenticate protocol(None,MD5,SHA):` | Enter an authentication protocol. The optional values are displayed in parentheses. For example, enter MD5. |
| `input the private protocol(None,AES,DES,3DES):` | Enter a data encryption protocol. The optional values are displayed in parentheses. For example, enter DES. |
| `input the authenticate protocol key:`<br>`input the authenticate protocol key again:` | Enter the authentication protocol password.<br>The two messages are not displayed when the authentication protocol is none. |

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| Screen Prompt | Operation |
| --- | --- |
| `input the private protocol key:`<br>`input the private protocol key again:` | Enter the data encryption protocol password.<br>The two messages are not displayed when the data encryption protocol is none. |

The device is added if the following information is displayed:

```
Start the verification information, please wait...
Verify the success for information
Running configuration check...Stopping nagios: .done.
Starting nagios: done.
setup.py=> [info] add success.
Done.
```

**----End**

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# 4 Device Surveillance

This topic describes the device surveillance services of the Nagios, including LUN information, system information, and alarm information surveillance.

## Prerequisites

- The Nagios plug-in has been installed and devices have been added. For details, see **3.1 Installing the Nagios Plug-in** and **3.3 Adding Devices**.
- You have logged in to the web page of the Nagios.

## Context

If you need to add other Huawei devices to the Nagios during device surveillance, refer to **3.3 Adding Devices**.

## Procedure

**Step 1** In the navigation tree on the left, choose **Current Status** > **Services**.

**Step 2** In the **Service Status Details For All Hosts** list on the right pane, check the information about all devices under surveillance and device component status.

| Host | Service | Status | Last Check | Duration | Attempt | Status Information |
|---|---|---|---|---|---|---|
| 130-131 | CheckTcpToStor | OK | 06-15-2017 18:35:38 | 0d 15h 57m 3s | 1/1 | All the controllers of the storage are connected properly: |
| | StorageAlarms | OK | 06-15-2017 18:36:27 | 0d 15h 56m 14s | 1/1 | OK-no alarm detected |
| | StorageBBU | OK | 06-15-2017 18:37:16 | 0d 15h 55m 25s | 1/1 | |
| | StorageBasicInformation | OK | 06-15-2017 18:38:05 | 0d 15h 54m 36s | 1/1 | |
| | StorageControllers | OK | 06-15-2017 18:38:54 | 0d 15h 53m 46s | 1/1 | |
| | StorageDisk | OK | 06-15-2017 18:40:38 | 0d 15h 52m 57s | 1/1 | |
| | StorageFan | OK | 06-15-2017 18:40:32 | 0d 15h 52m 8s | 1/1 | |
| | StorageFan | OK | 06-15-2017 18:40:32 | 0d 15h 53m 43s | 1/1 | |
| | StorageFileSystem | OK | 06-15-2017 18:41:23 | 0d 15h 52m 54s | 1/1 | |
| | StorageLun | OK | 06-15-2017 18:32:08 | 0d 15h 52m 5s | 1/1 | |
| | StoragePool | OK | 06-15-2017 18:43:01 | 0d 15h 41m 15s | 1/1 | |
| | StoragePower | WARNING | 06-15-2017 18:43:51 | 0d 15h 50m 26s | 1/1 | |
| | StorageShareNFS | OK | 06-15-2017 18:35:53 | 0d 15h 59m 58s | 1/1 | |

BBU

| BBU ID | Location | Health Status | Running Status |
|---|---|---|---|
| 0.0A.0 | CTE0.0 | Normal | Online |
| 0.0A.3 | CTE0.3 | Normal | Online |

BasicInformation

| DeviceId | Device Type | Health Status | Used Capacity | Total Capacity | version |
|---|---|---|---|---|---|
| 2102350BSB10G7000002 | 5600 V3 | Normal | 2213.74GB(21%) | 10485.98GB | V300R003C20 |

Controllers

| ControllerID | Health Status | Running Status | Cpu Usage | Memory Usage |
|---|---|---|---|---|
| 0A | Normal | Online | 4% | 77% |
| 0B | Normal | Online | 5% | 78% |

There are 20 Disks are normal

| ID | Health Status | Running Status | Disk Type | Disk Location | Capacity |
|---|---|---|---|---|---|
| 32 | Normal | Online | SAS | DAE000.0 | 563176 MB |
| 33 | Normal | Online | SAS | DAE000.1 | 563176 MB |
| 34 | Normal | Online | SAS | DAE000.2 | 563176 MB |
| 35 | Normal | Online | SAS | DAE000.3 | 563176 MB |
| 36 | Normal | Online | SAS | DAE000.4 | 568376 MB |
| 37 | Normal | Online | SAS | DAE000.5 | 568376 MB |
| 38 | Normal | Online | SAS | DAE000.6 | 568376 MB |
| 39 | Normal | Online | SAS | DAE000.7 | 568376 MB |
| 40 | Normal | Online | SAS | DAE000.8 | 568376 MB |
| 41 | Normal | Online | SAS | DAE000.9 | 568376 MB |
| 42 | Normal | Online | SAS | DAE000.10 | 568376 MB |
| 43 | Normal | Online | SAS | DAE000.11 | 568376 MB |
| 44 | Normal | Online | SAS | DAE000.12 | 568376 MB |
| 45 | Normal | Online | SAS | DAE000.13 | 568376 MB |
| 46 | Normal | Online | SAS | DAE000.14 | 568376 MB |
| 50 | Normal | Online | SAS | DAE000.18 | 852857 MB |
| 51 | Normal | Online | SSD | DAE000.19 | 386929 MB |
| 53 | Normal | Online | SSD | DAE000.21 | 386929 MB |
| 54 | Normal | Online | SSD | DAE000.22 | 386929 MB |
| 55 | Normal | Online | SSD | DAE000.23 | 386929 MB |

Fan

| FanID | Location | Health Status | Running Status | Running Level |
|---|---|---|---|---|
| 0.0A.0 | CTE0.A.FAN 0 | Normal | Running | low |
| 0.0A.1 | CTE0.A.FAN 1 | Normal | Running | low |
| 0.0A.2 | CTE0.A.FAN 2 | Normal | Running | low |
| 0.0B.0 | CTE0.B.FAN 0 | Normal | Running | low |
| 0.0B.1 | CTE0.B.FAN 1 | Normal | Running | low |
| 0.0B.2 | CTE0.B.FAN 2 | Normal | Running | low |
| 1.0A.0 | DAE000.PSU 0 | Normal | Running | low |
| 1.0A.1 | DAE000.PSU 1 | Normal | Running | low |

Fan

| FanID | Location | Health Status | Running Status | Running Level |
|---|---|---|---|---|
| 0.0A.0 | CTE0.A.FAN 0 | Normal | Running | low |
| 0.0A.1 | CTE0.A.FAN 1 | Normal | Running | low |
| 0.0A.2 | CTE0.A.FAN 2 | Normal | Running | low |
| 0.0B.0 | CTE0.B.FAN 0 | Normal | Running | low |
| 0.0B.1 | CTE0.B.FAN 1 | Normal | Running | low |
| 0.0B.2 | CTE0.B.FAN 2 | Normal | Running | low |
| 1.0A.0 | DAE000.PSU 0 | Normal | Running | low |
| 1.0A.1 | DAE000.PSU 1 | Normal | Running | low |

There are 33 FileSystems are normal : Only 20 pieces of data can be displayed, due to the display limit.

| ID | Name | Health Status | Running Status | Alloc Type | Capacity |
|---|---|---|---|---|---|
| 0 | mxj_fs0000 | Normal | Online | Thin | 81920 MB |
| 1 | mxj_fs0001 | Normal | Online | Thin | 81920 MB |
| 2 | FileSystemhp0000 | Normal | Online | Thin | 5120 MB |
| 3 | FileSystemhp0001 | Normal | Online | Thin | 5120 MB |
| 4 | 111111 | Normal | Online | Thin | 2048 MB |
| 7 | 111 | Normal | Online | Thin | 2048 MB |
| 12 | FileSystem013_m | Normal | Online | Thin | 5120 MB |
| 15 | 11 | Normal | Online | Thin | 2048 MB |
| 19 | FileSystem020 | Normal | Online | Thin | 17179869184 MB |
| 20 | testfilesystem | Normal | Online | Thin | 8192 MB |
| 34 | NFCuse | Normal | Online | Thin | 8192 MB |
| 52 | Filesystem_030_new1 | Normal | Online | Thin | 1024 MB |
| 54 | lxyfs | Normal | Online | Thin | 1024 MB |
| 58 | FileSystem059 | Normal | Online | Thin | 1024 MB |
| 73 | xcfile | Normal | Online | Thin | 5120 MB |
| 302 | FileSystem303 | Normal | Online | Thin | 20480 MB |
| 307 | xc3file | Normal | Online | Thin | 5120 MB |
| 384 | share_ecc52ad7_7336_4ef7_8630_d4bcd7a9e043 | Normal | Online | Thin | 1024 MB |
| 385 | share_4f9186c8_9874_4ea8_8676_d9e424a511fcb | Normal | Online | Thin | 1024 MB |
| 388 | share_7620091a_7b49_4522_b0b2_4d732488bc81 | Normal | Online | Thin | 1024 MB |

There are 670 LUNs are normal : Only 20 pieces of data can be displayed, due to the display limit.

| ID | Name | Health Status | Running Status | Pool Name | Lun Type | Capacity |
|---|---|---|---|---|---|---|
| 5 | dat-xc3xunij-vmdk-ce7220f1 | Normal | Online | xc1 | Thin LUN | 1024 MB |
| 6 | mxj_lun | Normal | Online | mxj_test03 | Thick LUN | 136192 MB |
| 8 | mxj_001 | Normal | Online | mxj_test03 | Thick LUN | 51200 MB |
| 9 | ZB_LUN010-104 | Normal | Online | ZB-StoragePool011-104 | Thick LUN | 0 MB |
| 10 | ZB_LUN011-104 | Normal | Online | ZB-StoragePool011-104 | Thick LUN | 0 MB |
| 11 | LUN012 | Normal | Online | ZB-StoragePool011-104 | Thick LUN | 10240 MB |
| 13 | LUN_15a3c6f5c67_0 | Normal | Online | ZB-StoragePool011-104 | Thick LUN | 1024 MB |
| 14 | XCLun | Normal | Online | xcCCC01 | Thick LUN | 0 MB |
| 16 | dat-xc03xunij-000001..-17f922d8 | Normal | Online | xc1 | Thin LUN | 1024 MB |
| 17 | xc02PE | Normal | Online | xcccc002 | Thick LUN | 0 MB |
| 18 | xc03 | Normal | Online | xcccc03 | Thick LUN | 0 MB |
| 21 | xc123 | Normal | Online | xc126 | Thick LUN | 0 MB |
| 22 | 0x6366672d7863e8999ae68b9fe69cba2d6163363762623866 | Normal | Online | xc126 | Thin LUN | 4096 MB |
| 23 | 0x6461742d7863e8999ae68b9fe69cba2e766d646b2d3030353264376436 | Normal | Online | xc126 | Thin LUN | 2048 MB |
| 24 | LUN025 | Normal | Online | xc1 | Thick LUN | 1024 MB |
| 25 | 0314 | Normal | Online | StoragePoolzxh1 | Thick LUN | 1024 MB |
| 26 | cfg-Juncreate1-02-6b51e7bf | Normal | Online | ZB-StoragePool011-104 | Thin LUN | 4096 MB |
| 27 | cfg-Juncreate1-01-bbc5061e | Normal | Online | ZB-StoragePool011-104 | Thin LUN | 4096 MB |
| 28 | dat-Juncreate1-01.vmdk-6dbea95f | Normal | Online | ZB-StoragePool011-104 | Thick LUN | 20480 MB |
| 29 | dat-Juncreate1-02.vmdk-a73fc526 | Normal | Online | ZB-StoragePool011-104 | Thick LUN | 20480 MB |

There are 47 StoragePools are normal : Only 20 pieces of data can be displayed, due to the display limit.

| ID | Name | Health Status | Running Status | Total Capacity | Subscribed Capacity | Free Capacity |
|---|---|---|---|---|---|---|
| 0 | 0x7863e5908ce6ada532 | Normal | Online | 3072 MB | 1344 MB | 1728 MB |
| 1 | xc1 | Normal | Online | 10240 MB | 9088 MB | 1152 MB |
| 2 | xc10226 | Normal | Online | 2048 MB | 128 MB | 1920 MB |
| 3 | mxj_test03 | Normal | Online | 281600 MB | 210880 MB | 69696 MB |
| 4 | 0xe689b9e98781e5858be99a86 | Normal | Online | 307200 MB | 163776 MB | 143424 MB |
| 5 | 03131file | Normal | Online | 69632 MB | 13312 MB | 56320 MB |
| 6 | xc126 | Normal | Online | 133120 MB | 96320 MB | 35776 MB |
| 7 | xcpool | Normal | Online | 51200 MB | 48424 MB | 2776 MB |
| 8 | StoragePool009-ming | Normal | Online | 520192 MB | 513536 MB | 6656 MB |
| 10 | ZB-StoragePool011-104 | Normal | Online | 102400 MB | 101952 MB | 448 MB |
| 11 | StoragePoolzxh1 | Normal | Online | 34816 MB | 26816 MB | 6976 MB |
| 12 | xcCCC01 | Normal | Online | 30720 MB | 30720 MB | 0 MB |
| 13 | xcccc002 | Normal | Online | 215040 MB | 128 MB | 214912 MB |
| 14 | xcccc03 | Normal | Online | 35840 MB | 12236 MB | 23604 MB |
| 15 | StoragePoolT1 | Normal | Online | 8192 MB | 2432 MB | 5760 MB |
| 17 | 0311111111 | Normal | Online | 6144 MB | 4096 MB | 2048 MB |
| 18 | mxj_fs | Normal | Online | 102400 MB | 7168 MB | 95232 MB |
| 19 | xcpool1 | Normal | Online | 10240 MB | 5120 MB | 5120 MB |
| 20 | xcvmfs | Normal | Online | 122880 MB | 122048 MB | 832 MB |
| 21 | luncopypool | Normal | Online | 8192 MB | 6208 MB | 1984 MB |

Power

| PowerID | Health Status | Running Status | Power Type |
|---|---|---|---|
| 0.0A.0 | No input | Offline | Direct Current |
| 0.0A.1 | Normal | Online | Direct Current |
| 1.0A.0 | Normal | Online | Direct Current |
| 1.0A.1 | Normal | Online | Direct Current |

ShareNFS

| ShareID | FileSystemID | Description | Local Path |
|---|---|---|---|
| 2 | 2 | | /FileSystemhp0000/ |
| 3 | 15 | | /11/ |
| 6 | 0 | Jackie for test | /mxj_fs0000/quota_mxj0000 |
| 9 | 12 | | /FileSystem013_m/ |
| 10 | 73 | | /xcfile/ |
| 11 | 302 | | /FileSystem303/ |
| 12 | 307 | | /xc3file/ |
| 29 | 384 | | /share_ecc52ad7_7336_4ef7_8630_d4bcd7a9e043/ |
| 30 | 385 | | /share_4f9186c8_9874_4ea8_8676_d9e424a511fcb/ |
| 33 | 388 | | /share_7620091a_7b49_4522_b0b2_4d732488bc81/ |
| 35 | 390 | | /share_90543e48_8cdd_4eab_867e_5efcf0e7a057/ |
| 37 | 392 | | /fs_oyh/ |
| 41 | 396 | | /share_a29390ce_3420_4a8c_be6a_02d67ac01bed/ |
| 51 | 7 | | /111/ |

**Table 4-1** Device information

| Column Name | Description | Remark |
| --- | --- | --- |
| Host | Displays the host names of devices under surveillance. | You can click a host name to check device details. |
| Service | Displays the components of devices under surveillance. | You can click a component to check its status.<br>Components include:<br>● CheckTcpToStor: checks whether the device is accessible.<br>● StorageAlarms: alarm information<br>● StorageBBU: BBU information.<br>● StorageBasicInformation: system information<br>● StorageControllers: controller information<br>● StorageDisk: disk information<br>● StorageFan: fan information<br>● StorageFileSystem: file system information<br>● StorageLun: LUN Information<br>● StoragePool: storage pool information<br>● StoragePower: power information |
| Status | Displays the overall status of components under surveillance. | Possible values are:<br>● OK: normal<br>● WARNING: partially abnormal<br>● CRITICAL: overall abnormal<br>● Unkown: unknown |
| Status Information | Displays the status of components under surveillance. | None. |

Status of each component may be:

- Whether status of each controller is normal (CheckTcpToStor):
  - If all controllers are normally connected, the following information is displayed:
    ```
    All the controllers of the storage are connected properly.
    ```
  - If one or more controllers are abnormally connected, the following information is displayed:
    ```
    The controllerIp:['10.10.188.188'] is connected properly; the
    controllerIp: ['10.10.188.189'] is not connected properly;
    ```
  - If all controllers are abnormally connected, the following information is displayed:
    ```
    The storage can not be connected properly;
    ```
- System information:

| DeviceId | Device Type | Health Status | Used Capacity | Total Capacity | version |
|---|---|---|---|---|---|
| 2102350BSB10G7000003 | 5600 V3 | Normal | 1344.56GB(9%) | 13642.89GB | V300R006C00 |

- LUN information:

There are 47 StoragePools are normal : Only 20 pieces of data can be displayed, due to the display limit.

| ID | Name | Health Status | Running Status | Total Capacity | Subscribed Capacity | Free Capacity |
|---|---|---|---|---|---|---|
| 0 | 0x7863e5908ce6ada532 | Normal | Online | 3072 MB | 1344 MB | 1728 MB |
| 1 | xc1 | Normal | Online | 10240 MB | 9088 MB | 1152 MB |
| 2 | xc10226 | Normal | Online | 2048 MB | 128 MB | 1920 MB |
| 3 | mxj_test03 | Normal | Online | 281600 MB | 210880 MB | 69696 MB |
| 4 | 0xe689b9e9878fe5858be99a86 | Normal | Online | 307200 MB | 163776 MB | 143424 MB |
| 5 | 0313file | Normal | Online | 69632 MB | 13312 MB | 56320 MB |
| 6 | xc126 | Normal | Online | 133120 MB | 96320 MB | 35776 MB |
| 7 | xcplkl | Normal | Online | 51200 MB | 48424 MB | 2776 MB |
| 8 | StoragePool009-ming | Normal | Online | 520192 MB | 513536 MB | 6656 MB |
| 10 | ZB-StoragePool011-104 | Normal | Online | 102400 MB | 101952 MB | 448 MB |
| 11 | StoragePoolzxh1 | Normal | Online | 34816 MB | 26816 MB | 6976 MB |
| 12 | xcCCC01 | Normal | Online | 30720 MB | 30720 MB | 0 MB |
| 13 | xcccc002 | Normal | Online | 215040 MB | 128 MB | 214912 MB |
| 14 | xcccc03 | Normal | Online | 35840 MB | 12236 MB | 23604 MB |
| 15 | StoragePoolT1 | Normal | Online | 8192 MB | 2432 MB | 5760 MB |
| 17 | 0311111111 | Normal | Online | 6144 MB | 4096 MB | 2048 MB |
| 18 | mxj_fs | Normal | Online | 102400 MB | 7168 MB | 95232 MB |
| 19 | xcpool1 | Normal | Online | 10240 MB | 5120 MB | 5120 MB |
| 20 | xcvmfs | Normal | Online | 122880 MB | 122048 MB | 832 MB |
| 21 | luncopypool | Normal | Online | 8192 MB | 6208 MB | 1984 MB |

  - If there are **N** LUNs on the array and all of them are normal, the following information is displayed:
    ```
    There are N LUNs are normal
    ```
  - If there are **N** LUNs on the array and **M** of them are normal, the following information is displayed:
    ```
    There are M LUNs are normal and N-M not normal
    ```
  - If there is no LUN on the array, the following information is displayed:
    ```
    There is no LUN on the Storage device
    ```
  - Due to the front-end display limit of Nagios, only 20 pieces of data can be displayed. As a result, if there are more than 20 LUNs exist on the array, LUNs in the abnormal states will be displayed preferentially and only 20 LUNs can be displayed.
- Controller information:

| ControllerID | Health Status | Running Status | Cpu Usage | Memory Usage |
|---|---|---|---|---|
| 0A | Normal | Online | 7% | 81% |
| 0B | Normal | Online | 17% | 81% |

- Disk information:

There are 10 Disks are normal and 2 not normal

| ID | Health Status | Running Status | Disk Type | Disk Location | Capacity |
|---|---|---|---|---|---|
| 32 | Normal | Online | NL_SAS | DAE000.0 | 1890754 MB |
| 33 | Normal | Online | NL_SAS | DAE000.1 | 1890754 MB |
| 34 | Normal | Online | NL_SAS | DAE000.2 | 1890754 MB |
| 35 | Normal | Online | NL_SAS | DAE000.3 | 1890754 MB |
| 36 | Fault | Offline | NL_SAS | DAE000.4 | 1866785 MB |
| 37 | Normal | Online | NL_SAS | DAE000.5 | 3792494 MB |
| 38 | Normal | Online | NL_SAS | DAE000.6 | 1895954 MB |
| 39 | Fault | Offline | NL_SAS | DAE000.7 | 1866785 MB |
| 40 | Normal | Online | NL_SAS | DAE000.8 | 1895954 MB |
| 41 | Normal | Online | NL_SAS | DAE000.9 | 3792494 MB |
| 42 | Normal | Online | NL_SAS | DAE000.10 | 3792494 MB |
| 43 | Normal | Online | NL_SAS | DAE000.11 | 3792494 MB |

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- If there are **N** disks on the array and all of them are normal, the following information is displayed:
  ```
  There are N Disks are normal
  ```
- If there are **N** disks on the array and **M** of them are normal, the following information is displayed:
  ```
  There are M Disks are normal and N-M not normal
  ```
- If there is no disk on the array, the following information is displayed:
  ```
  No disk detected.
  ```
- Due to the front-end display limit of Nagios, only 20 pieces of data can be displayed. As a result, if there are more than 20 disks exist on the array, disks in the abnormal states will be displayed preferentially and only 20 disks can be displayed.

- Storage pool information:

There are 4 StoragePools are normal

| ID | Name | Health Status | Running Status | Total Capacity | Subscribed Capacity | Free Capacity |
|---|---|---|---|---|---|---|
| 0 | storagepool001_58.141 | Normal | Online | 3145728 MB | 3776 MB | 3139904 MB |
| 1 | StoragePool002 | Normal | Online | 1048576 MB | 2048 MB | 1046528 MB |
| 2 | StoragePool002_58.141 | Normal | Online | 1048576 MB | 0 MB | 1048576 MB |
| 3 | StoragePool | Normal | Online | 1150976 MB | 0 MB | 1150976 MB |

- If there are *N* storage pools on the array and all of them are normal, the following information is displayed:
  ```
  There are N StoragePools are normal
  ```
- If there are *N* storage pools on the array and *M* of them are normal, the following information is displayed:
  ```
  There are M StoragePools are normal and N-M not normal
  ```
- If there is no storage pool on the array, the following information is displayed:
  ```
  No storagePool detected.
  ```
- Due to the front-end display limit of Nagios, only 20 pieces of data can be displayed. As a result, if there are more than 20 storage pools exist on the array, storage pools in the abnormal states will be displayed preferentially and only 20 storage pools can be displayed.

- File system information:

There are 2 FileSystems are normal

| ID | Name | Health Status | Running Status | Alloc Type | Capacity |
|---|---|---|---|---|---|
| 0 | Test_fileSystem011 | Normal | Online | Thin | 102400 MB |
| 1 | ZB_filesystem001 | Normal | Online | Thick | 1024 MB |

- If there are *N* file systems on the array and all of them are normal, the following information is displayed:
  ```
  There are N FileSystems are normal
  ```
- If there are *N* file systems on the array and *M* of them are normal, the following information is displayed:
  ```
  There are M FileSystems are normal and N-M not normal
  ```
- If there is no file system on the array, the following information is displayed:
  ```
  No fileSystem detected
  ```
- Due to the front-end display limit of Nagios, only 20 pieces of data can be displayed. As a result, if there are more than 20 file systems exist on the array, file systems in the abnormal states will be displayed preferentially and only 20 file systems can be displayed.

Dorado and S6800T does not support this service

- BBU information:

| BBU ID | Location | Health Status | Running Status |
|---|---|---|---|
| 0.0A.0 | CTE0.0 | Normal | Online |
| 0.0A.3 | CTE0.3 | Normal | Online |

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- Power information:

| PowerID | Health Status | Running Status | Power Type |
|---|---|---|---|
| 0.0B.0 | Normal | Online | Direct Current |
| 0.0B.1 | Normal | Online | Direct Current |
| 1.0B.0 | No input | Offline | Direct Current |
| 1.0B.1 | Normal | Online | Direct Current |

- Fan information:

| FanID | Location | Health Status | Running Status | Running Level |
|---|---|---|---|---|
| 0.0A.0 | CTE0.A.FAN 0 | Normal | Running | low |
| 0.0A.1 | CTE0.A.FAN 1 | Normal | Running | low |
| 0.0A.2 | CTE0.A.FAN 2 | Normal | Running | low |
| 0.0B.0 | CTE0.B.FAN 0 | Normal | Running | low |
| 0.0B.1 | CTE0.B.FAN 1 | Normal | Running | low |
| 0.0B.2 | CTE0.B.FAN 2 | Normal | Running | low |
| 1.0B.0 | DAE000.FAN 0 | Normal | Running | low |
| 1.0B.1 | DAE000.FAN 1 | Normal | Running | low |
| 1.0B.2 | DAE000.PSU 0 | Normal | Running | low |
| 1.0B.3 | DAE000.PSU 1 | Normal | Running | low |

- Shared NFS information:

| ShareID | FileSystemID | Description | Local Path |
|---|---|---|---|
| 1 | 0 | | /FileSystem_Ran0010000/ |
| 2 | 131 | | /FileSystem_Ran0010001/ |
| 3 | 133 | | /FileSystem_Ran0010002/ |

  - Dorado and S6800T does not support this service.

- The information displayed when an alarm is reported is as follows:

| AlarmLevel | AlarmId | Time | Description |
|---|---|---|---|
| Warning | 0xF00E00014 | 2016-09-22 05:40:35 | No backup link is configured for the remote device (name Huawei.Storage, serial number 2102350BSJ10EC000002). |
| Critical | 0xF00B003D | 2016-09-21 07:16:09 | The SNAP LUN (name 1, ID 1) of the storage pool (name 1, ID 1) is faulty. |

- The information displayed when no alarm is reported is as follows:

```
OK - no alarm detected
```

**----End**

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# 5 Maintenance Operations

5.1 Updating Device Information

5.2 Deleting a Device

5.3 Uninstalling the Nagios Plug-in

## 5.1 Updating Device Information

After devices have been added, you can update their information.

### Prerequisites

- The devices have been added. For details, see **3.3 Adding Devices**.
- The current information about managed devices has been obtained.
- You have logged in to the Nagios server as the **root** user.

### Procedure

**Step 1** Run the following command to go to the directory generated after the installation package is decompressed:

```
cd /home/eSDK_Storage_Nagios_X.X.XX
cd "Huawei eSDK Array Management Plug-in (for Nagios)"
```

**Step 2** Run the following command to update device information:

```
python setup.py update device name
```

**device name** is the device name displayed on the surveillance platform, not the actual host name of the managed device. The host name can contain only letters, digits, and hyphens (-) and cannot start or end with a hyphen (-).

**Step 3** Complete configurations as prompted. **Table 5-1** describes related configuration items.

**NOTE**

Enter information as prompted. Letters entered are case insensitive.

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**Table 5-1** Description of configuration items

| Screen Prompt | Operation |
| --- | --- |
| `input the new host name:` | Enter the new device name displayed on the surveillance page. |
| `input the version of snmp (v2c or v3):` | Enter the SNMP version.<br>● If the version is **v2c**, complete configurations according to **Table 5-2**. Then go to the next step.<br>● If the version is **v3**, complete configurations according to **Table 5-3**. Then go to the next step. |
| `are you sure update this server?(Y/N)` | Enter **Y** to confirm updating device information. |

**Table 5-2** Configuration items for v2c

| Screen Prompt | Operation |
| --- | --- |
| `input the get community:`<br>`input the get community again:` | Enter the read SNMP community string used for communication with the Nagios server. |
| `input the set community:`<br>`input the set community again:` | Enter the write SNMP community string used for communication with the Nagios server. |

**Table 5-3** Configuration items for v3

| Screen Prompt | Operation |
| --- | --- |
| `input the usm user:` | Enter the USM user name. |
| `input the authenticate protocol(None,MD5,SHA):` | Enter an authentication protocol. The optional values are displayed in parentheses. For example, enter MD5. |
| `input the private protocol(None,AES,DES,3DES):` | Enter a data encryption protocol. The optional values are displayed in parentheses. For example, enter DES. |

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| Screen Prompt | Operation |
| --- | --- |
| `input the authenticate protocol key:`<br>`input the authenticate protocol key again:` | Enter the authentication protocol password.<br>The two messages are not displayed when the authentication protocol is none. |
| `input the private protocol key:`<br>`input the private protocol key again:` | Enter the data encryption protocol password.<br>The two messages are not displayed when the data encryption protocol is none. |

If the following information is displayed, the device information is successfully updated:

```
Running configuration check...Stopping nagios: .done.
Starting nagios: done.
setup.py=> [info] update success.
Done.
```

**----End**

# 5.2 Deleting a Device

You can delete added devices from the Nagios server.

## Prerequisites

- The devices have been added. For details, see **3.3 Adding Devices**.
- You have logged in to the Nagios server as the **root** user.

## Procedure

**Step 1** Run the following command to go to the directory generated after the installation package is decompressed:

```
cd /home/eSDK_Storage_Nagios_X.X.XX
cd "Huawei eSDK Array Management Plug-in (for Nagios)"
```

**Step 2** Run the following command to delete a device that has been added.

```
python setup.py delete device name
```

**device name** is the device name displayed on the surveillance platform, not the actual host name of the managed device. The host name can contain only letters, digits, and hyphens (-) and cannot start or end with a hyphen (-).

The following information is displayed:

```
are you sure delete this server?(Y/N)
```

**Step 3** Enter **Y** to delete the added device.

If the following information is displayed, the device is successfully deleted:

```
setup.py=> [info] delete success.
Done.
```

**----End**

# 5.3 Uninstalling the Nagios Plug-in

This topic describes how to uninstall the Nagios plug-in.

## Prerequisites

- The Nagios plug-in has been installed.
- Log in to the Nagios server as the **root** user.

## Procedure

**Step 1** Run the following commands to go to the Nagios plug-in installation directory:

```
cd /home/eSDK_Storage_Nagios_X.X.XX
cd "Huawei eSDK Array Management Plug-in (for Nagios)"
```

**Step 2** Run the following command to uninstall the Nagios plug-in:

```
python setup.py uninstall
```

The following information is displayed:

```
are you sure to uninstall?(Y/N)
```

**Step 3** Enter **y** and press **Enter**.

**Step 4** Determine whether to reserve historical logs based on actual requirements when the following information is displayed:

```
Do you want to retain history log?(Y/N)
```

- If historical logs needs to be reserved, enter **y** and press **Enter**.
- If historical logs does not need to be reserved, enter **n** and press **Enter**.

The system starts to uninstall the Nagios plug-in. After the Nagios plug-in is uninstalled, the following information is displayed:

```
setup.py=> [info] uninstall success.
Done.
```

**----End**

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# 6 FAQ

6.1 What Can I Do If the Surveillance Page Times Out?

6.2 What Can I Do If XML Characters Are Displayed in Alarms on the Surveillance Page?

6.3 What Can I Do If the Alarm Information Is Not Displayed, and Other Surveillance Items Are Normal?

6.4 What Can I Do When a Cleared Alarm Is Still Displayed on the Surveillance Page?

6.5 What Can I Do When Exception Occurs on the Host of the Surveillance Page While Other Services Are Normal After a Device of the OceanStor 18000 Are Added?

6.6 What Can I Do When the GUI Cannot Be Displayed If the Nagios Service Is Not Started After the VM Is Powered Off and then Powered On?

6.7 Is It a Problem that SNMPv2c Is Displayed on the Trap IP Management Interface of the Device When the Device Is Added to Nagios in SNMPv3 Mode?

## 6.1 What Can I Do If the Surveillance Page Times Out?

### Symptom

The surveillance page of the Nagios tool times out, and message "Service check timed out after 60.01 seconds" is displayed.

### Solution

**Step 1** Log in to the Nagios server as the **root** user.

**Step 2** Run the following command to go to the **etc** directory:

```
cd /usr/local/nagios-4.0.4/etc
```

**Step 3** Run the **vi nagios.cfg** command to configure timeout intervals.

1. Press **i**, and change the value of the following parameter to a larger one:

   service_check_timeout=**600**

   The timeout interval is expressed in seconds.

2. Press **Esc** to exit the input mode.
3. Run the **:wq** command to save and exit the **nagios.cfg** file.

**Step 4** Modify the data collection interval.

**NOTICE**

After you add, update, or delete an array each time, the **hw_server.cfg** file will be regenerated. You must modify the data collection interval after you add, update, or delete an array.

1. Run the following command to open the **hw_server.cfg** file.
```
cd /usr/local/nagios-4.0.4/etc/huawei   vi hw_server.cfg
```
2. Press **i** and change the value of the following parameter to a larger one:

   normal_check_interval=**5**

   The data collection interval is expressed in minutes. The data collection interval after modification must be larger than the modified timeout interval.
3. Press **Esc** to exit the input mode.
4. Run the **:wq** command to save and exit the **hw_server.cfg** file.

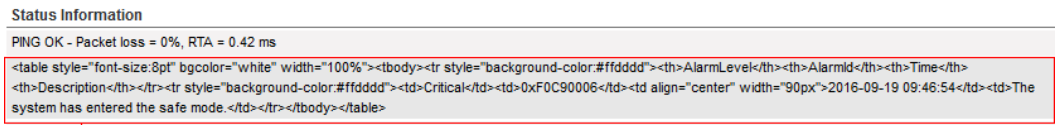
**Step 5** Run the **service nagios restart** command to restart the Nagios service so that the change can take effect.

**----End**

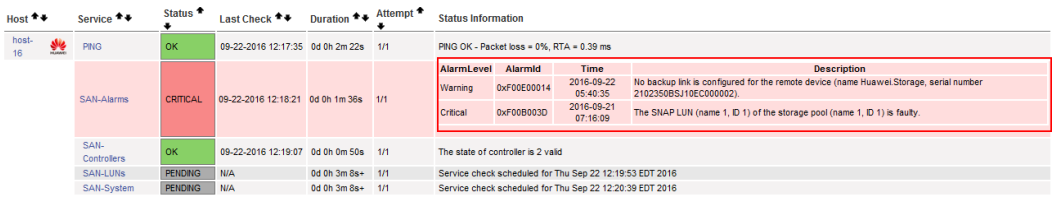
# 6.2 What Can I Do If XML Characters Are Displayed in Alarms on the Surveillance Page?

## Symptom

On the surveillance page of the Nagios tool, XML characters instead of tables are displayed under **Status Information** in alarms, as shown in the following figure.




Normal results are as follows:




## Solution

**Step 1** Log in to the Nagios server as the **root** user.

**Step 2** Run the following command to go to the **etc** directory:

```
cd /usr/local/nagios-4.0.4/etc
```

**Step 3** Run the **vi cgi.cfg** command to modify the HTML escape tag value.

1. Press **i**, and change the value of **escape_html_tags** to **0**.

   escape_html_tags=0

   The values of **escape_html_tags** are described as follows:

   - **0** indicates that HTML escape will be performed.
   - **1** indicates that HTML escape will not be performed.

2. Press **Esc** to exit the input mode.
3. Run the **:wq** command to save and exit the **cgi.cfg** file.

**Step 4** Run the **service nagios restart** command to restart the Nagios service so that the change can take effect.

**----End**

# 6.3 What Can I Do If the Alarm Information Is Not Displayed, and Other Surveillance Items Are Normal?

## Symptom

While checking the device surveillance information with Nagios, the alarm information shows up on the device, but there is no alarm information on the web page of the Nagios, and other surveillance items are normal displayed.

## Possible Cause

The SNMP service is turned on after the device is added.

## Solution

Restart the plug-in service. For details, please see**6.1 What Can I Do If the Surveillance Page Times Out?**

# 6.4 What Can I Do When a Cleared Alarm Is Still Displayed on the Surveillance Page?

## Symptom

When the Nagios tool is used to view the device monitoring information, information about an alarm that has been cleared is displayed on the WebUI of Nagios.

## Possible Cause

Nagios has not received information about the alarm clearing due to network or program exceptions. As a result, information is not updated in time on the WebUI.

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## Solution

1. Log in the Nagios server as user **root**.
2. Go to the save directory of alarm files.
```
cd /usr/local/nagios-4.0.4/var/huawei/
```
3. Run the **ll** command to view all files and find the file of the cleared alarm.

   The alarm file naming format is "controller IP address/array IP address + alarm ID."
4. Delete the alarm file.
```
rm Alarm file name
```
5. Restart the plug-in service. For details,please see **6.1 What Can I Do If the Surveillance Page Times Out?**

# 6.5 What Can I Do When Exception Occurs on the Host of the Surveillance Page While Other Services Are Normal After a Device of the OceanStor 18000 Are Added?

## Symptom

A device of the OceanStor 18000 is added using the Nagios tool. When you view the surveillance information of the device on the Nagios surveillance page, except for a Host connection failure, other surveillance functions are normal on this device.

## Cause

Ping operations on the devices of the OceanStor 18000 are prohibited.

## Solution

You can try to configure that the SVP of the device of the OceanStor 18000 series can be pinged as follows:

**Step 1** Directly log in to the SVP system using the KVM of the array. Press Ctrl+Alt+F1 to go to the CLI, or run the **ssh *IP* (management IP address of the SVP)+port 20** command to log in to the Linux page of the host.

```
[c:\~]$ ssh svp_user@100.199.250.199 20                                <1. Use
SSH to log in to the system and run the ssh SVP management IP+port 20 command.
>      Connecting to 100.199.250.199...   Connection established.   To escape to
local shell, press Ctrl+Al+].                                <2. Enter the
password of user svp_user.>      Authorized users only. All activities may be
monitored and reported.   WARNING!  The remote SSH server rejected X11 forwarding
request.   Last login: Thu Jan 28 14:46:56 2017 from
100.90.10.133                                <3. Go to the Euler svp_user
page.>         Welcome to Euler Linux!      svp_user@SVP:~>  su root        <4.
Run the su root command to switch to user root and enter the password of user
root.>   Password:
```

**Step 2** Run the **iptables -L** command to check the firewall rules.

If the**DROP icmp** package exists in the firewall rules, Ping operations are prohibited in the SVP system configuration.

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```
Chain OUTPUT (policy ACCEPT)   target       prot opt source
destination   DROP         icmp --  anywhere         anywhere         icmp type 0
code 0
```

**Step 3** Set the SVP system to allow Ping operations.

1. Run the following command to delete the configuration that prohibits Ping operations.
```
iptables -D OUTPUT -o br4 -p icmp -m icmp --icmp-type 0/0 -j DROP
iptables -P INPUT ACCEPT
```
2. Run the **iptables -L** command to check whether the configuration that prohibits Ping operations in the firewall rules are deleted.

   If Drop information is not found under **Chain OUTPUT (policy ACCEPT)**, the configuration that prohibits Ping operations is deleted successfully.

   Chain OUTPUT (policy ACCEPT) target prot opt source destination Chain tiny_reject_func (0 references) target prot opt source destination
3. Open the cmd CLI and perform the PIng operation to the management IP address of the SVP. If the following output is displayed, the Ping operation succeeds.

```
ping 100.199.250.199   Pinging 100.199.250.199 with 32 bytes of data:   Reply
from 100.199.250.199: bytes=32 time=1ms TTL=61   Reply from 100.199.250.199:
bytes=32 time=1ms TTL=61   ......
```

**----End**

## Follow-Up Operations

If devices of the OceanStor 18000 series do not need to be under surveillance, you need to restore the configuration that prohibits Ping operations of the SVP as follows:

**Step 1** Directly log in to the SVP system using the KVM of the array. Press Ctrl+Alt+F1 to go to the CLI, or run the **ssh *IP* (management IP address of the SVP)+port 20** command to log in to the Linux page of the host.

**Step 2** Run the following command to add the configuration that prohibits Ping operations.

```
iptables -A OUTPUT -o br4 -p icmp -m icmp --icmp-type 0/0 -j DROP
```

**Step 3** Run the **iptables -L** command to check whether the configuration that prohibits Ping operations in the firewall rules are added.

**Step 4** If Drop information is found under Chain OUTPUT (policy ACCEPT), the configuration that prohibits Ping operations is added successfully.

```
Chain OUTPUT (policy ACCEPT)   target       prot opt source
destination   DROP         icmp --  anywhere         anywhere         icmp type 0
code 0
```

**Step 5** Open the cmd CLI and perform the PIng operation to the management IP address of the SVP. If the following output is displayed, the Ping operation is prohibited.

**----End**

```
ping 100.199.250.199   Pinging 100.199.250.199 with 32 bytes of data:   Request
timed out.   ......
```

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## 6.6 What Can I Do When the GUI Cannot Be Displayed If the Nagios Service Is Not Started After the VM Is Powered Off and then Powered On?

If the Nagios service is not started after a VM is powered off and then powered on, the GUI cannot be opened. In such conditions, you need to log in to the Nagios server and run commands to start the Apache service.

**Step 1** Log in the Nagios server.

**Step 2** Run the **/usr/local/httpd-2.4.7/bin/apachectl start** command.

**Step 3** If **httpd (pid 4245) already running** is displayed, the interface cannot be opened. Run the **/usr/local/httpd-2.4.7/bin/apachectl restart** command to restart the Apache server.

**----End**

## 6.7 Is It a Problem that SNMPv2c Is Displayed on the Trap IP Management Interface of the Device When the Device Is Added to Nagios in SNMPv3 Mode?

No, it is not. Because the alarms are pushed using SNMPv2, Nagios can be obtained in either v2 or v3 mode.

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# 7 Glossary and Abbreviation

| | |
|---|---|
| Controller | Core module that processes services in a storage system. It contains physical components such as system-level CPUs and memory. |
| LUN | Logical Unit Number |
| SNMP | Simple Network Management Protocol |
| eSDK | Ecosystem Software Development Kit |
| IP | Internet Protocol |
| ISV | Independent Software Vendors |

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