Configure SNMP Syslog Traps for ASA and FTD

Contents

Introduction

This document describes how to configure the Simple Network Management Protocol (SNMP) traps to send Syslog messages on the Cisco Adaptive Security Appliance (ASA) and Firepower Threat Defense (FTD).

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Basic knowledge of Cisco ASA
- Basic knowledge of Cisco FTD
- Basic knowledge of the SNMP protocol

Components Used

The information in this document is based on the following software version:

- Cisco Firepower Threat Defense for AWS 6.6.0
- Firepower Management Center Version 6.6.0
- Cisco Adaptive Security Appliance Software Version 9.12(3)9

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Background Information

Cisco ASA and FTD have multiple capabilities to provide logging information. However, there are specific locations where a Syslog server is not an option. SNMP traps offer an alternative if there is an SNMP server available.

This is a useful tool to send specific messages for troubleshooting or monitoring purposes. For example, if there is a relevant problem that has to be tracked down during failover scenarios, SNMP traps for class ha on both FTD and ASA can be used to focus on those messages only.

Further information related to Syslog classes can be found in this document.

The purpose of this article is to provide configuration examples for ASA using Command Line Interface (CLI), FTD managed by FMC, and FTD managed by Firepower Device Manager (FDM).

If Cisco Defense Orchestrator (CDO) is used for FTD, this configuration has to be added to the FDM interface.

> **Caution**: For high syslog rates, it is recommended to configure a rate limit on syslog messages to prevent impact in other operations.

This is the information used for all the examples in this document.

SNMP Version: **SNMPv3**

SNMPv3 Group: **group-name**

SNMPv3 User: **admin-user** with HMAC SHA algorithm for authentication

SNMP Server IP address: **10.20.15.12**

ASA/FTD Interface to use to communicate with the SNMP Server: **Outside**

Syslog Message-ID: **111009**

Configure

ASA Configuration

These steps can be used to configure SNMP Traps on an ASA following the below information.

Step 1. Configure the messages to add to the Syslog List.

```
logging list syslog-list message 111009
```

Step 2. Configure SNMPv3 Server parameters.

```
snmp-server enable

snmp-server group group-name v3 auth
snmp-server user admin-user group-name v3 auth sha cisco123
```

Step 3. Enable SNMP traps.

```
snmp-server enable traps syslog
```

Step 4. Add the SNMP traps as a logging destination.

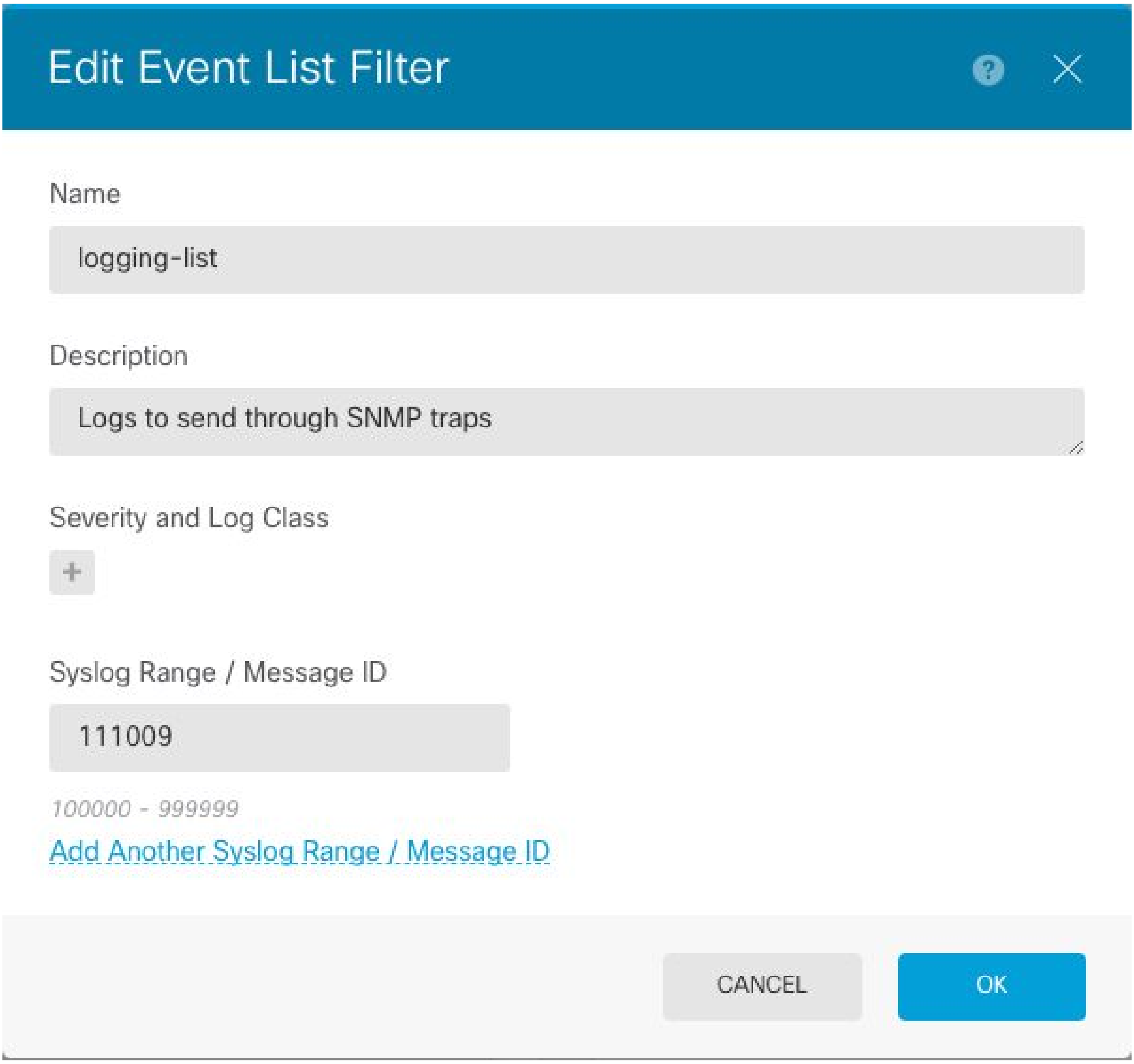
```
logging history syslog-list
```

FTD Configuration Managed by FDM

These steps can be used to configure a specific Syslog list to send to the SNMP server when FTD is managed by FDM.

Step 1. Navigate to **Objects > Event List Filters** and select on the **+** button.

Step 2. Name the Even List and include the relevant classes or message IDs. Then, select OK.



Name

logging-list

Description

Logs to send through SNMP traps

Severity and Log Class

Syslog Range / Message ID

111009

100000 - 999999

Step 3. Navigate to Advanced **Configuration > FlexConfig > FlexConfig Objects** from the FDM home screen and select the **+** button.

Create the next FlexConfig Objects with the listed information:

Name: **SNMP-Server**

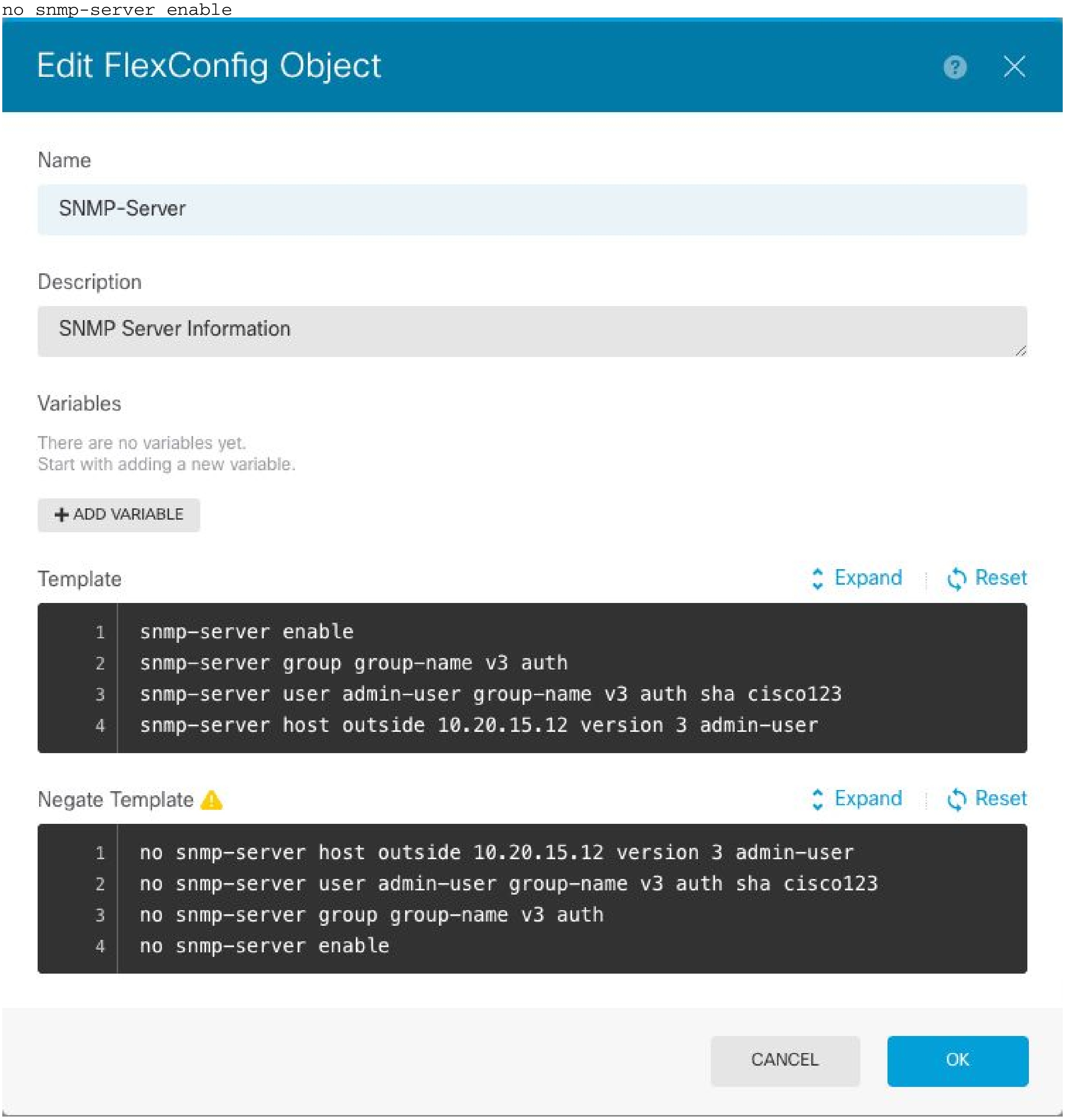
Description (Optional): **SNMP Server Information**

Template:

```
snmp-server enable
snmp-server group group-name v3 auth
snmp-server user admin-user group-name v3 auth sha cisco123
snmp-server host outside 10.20.15.12 version 3 admin-user
```

Negate Template:

```
no snmp-server host outside 10.20.15.12 version 3 admin-user
no snmp-server user admin-user group-name v3 auth sha cisco123
no snmp-server group group-name v3 auth
no snmp-server enable
```



Edit FlexConfig Object

Name: SNMP-Server

Description: SNMP Server Information

Variables

There are no variables yet.
Start with adding a new variable.

Template

```
snmp-server enable
snmp-server group group-name v3 auth
snmp-server user admin-user group-name v3 auth sha cisco123
snmp-server host outside 10.20.15.12 version 3 admin-user
```

Negate Template ⚠

```
no snmp-server host outside 10.20.15.12 version 3 admin-user
no snmp-server user admin-user group-name v3 auth sha cisco123
no snmp-server group group-name v3 auth
no snmp-server enable
```

Name: **SNMP-Traps**

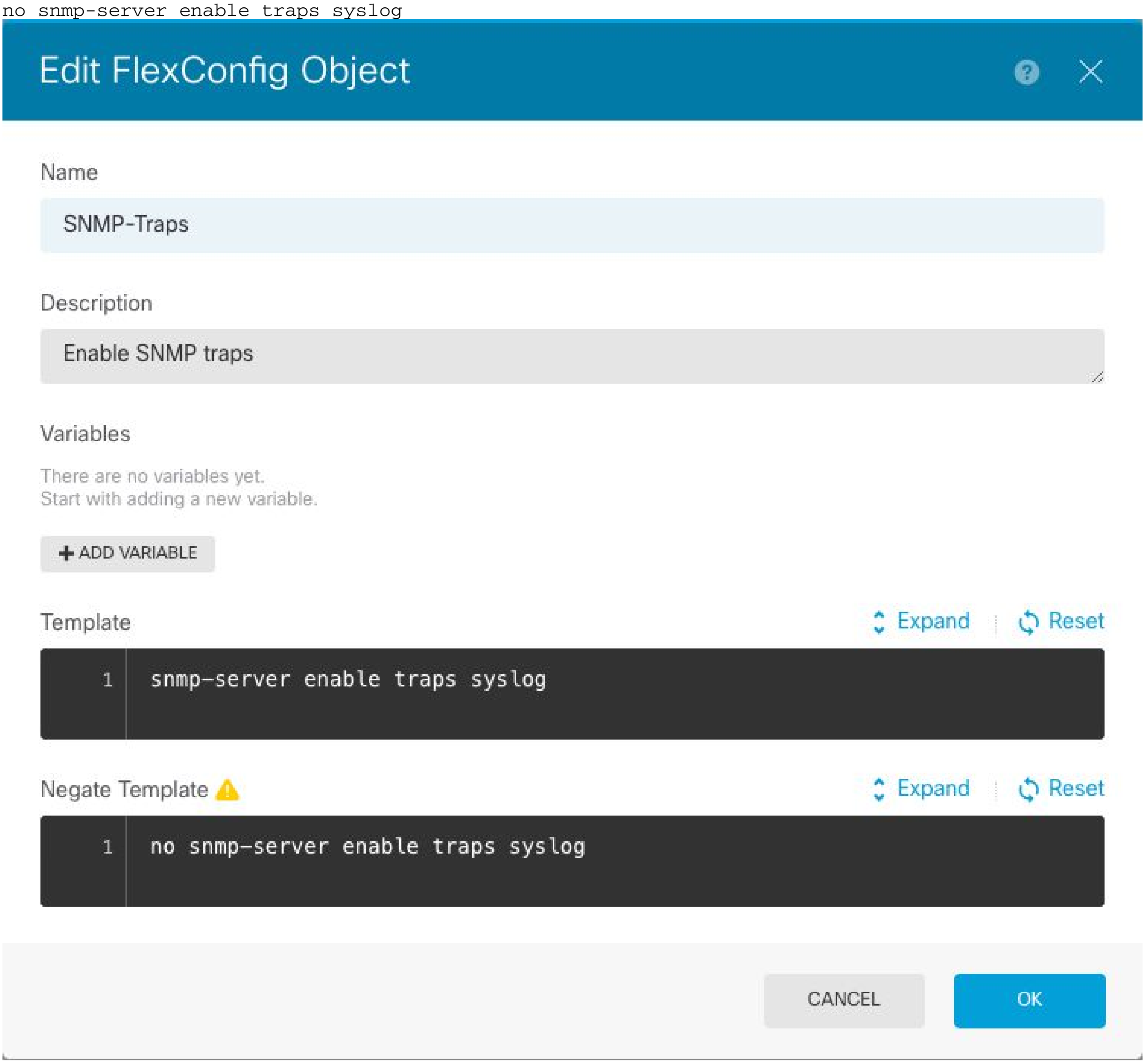
Description (Optional): **Enable SNMP Traps**

Template:

```
snmp-server enable traps syslog
```

Negate Template:

```
no snmp-server enable traps syslog
```



Name

SNMP-Traps

Description

Enable SNMP traps

Variables

There are no variables yet.
Start with adding a new variable.

Template

```
snmp-server enable traps syslog
```

Negate Template ⚠

```
no snmp-server enable traps syslog
```

Name: **Logging-history**

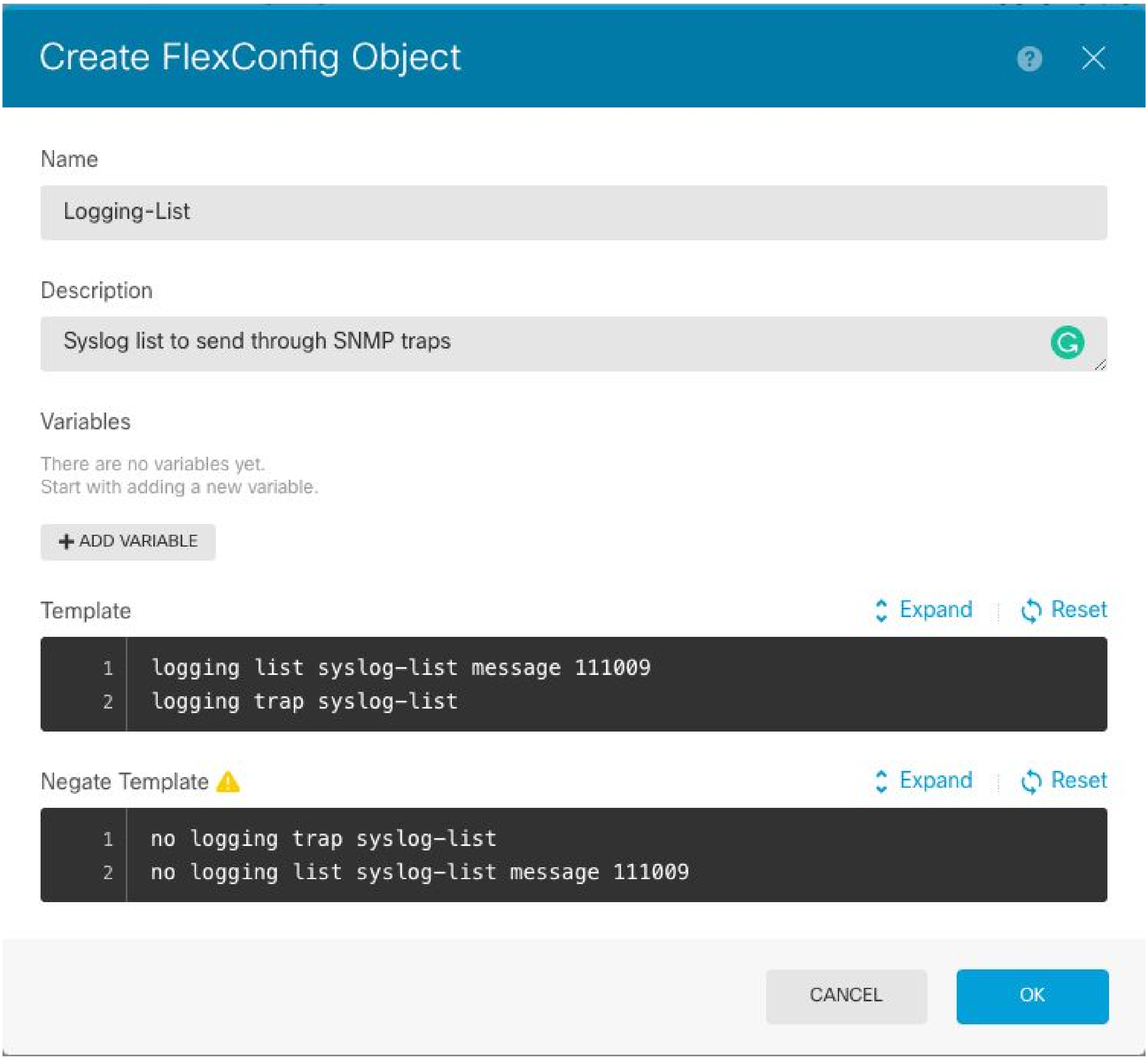
Description (Optional): **Object to set SNMP traps syslog messages**

Template:

```
logging history logging-list
```

Negate Template:

```
no logging history logging-list
```



Name: Logging-List

Description: Syslog list to send through SNMP traps

Variables

There are no variables yet.
Start with adding a new variable.

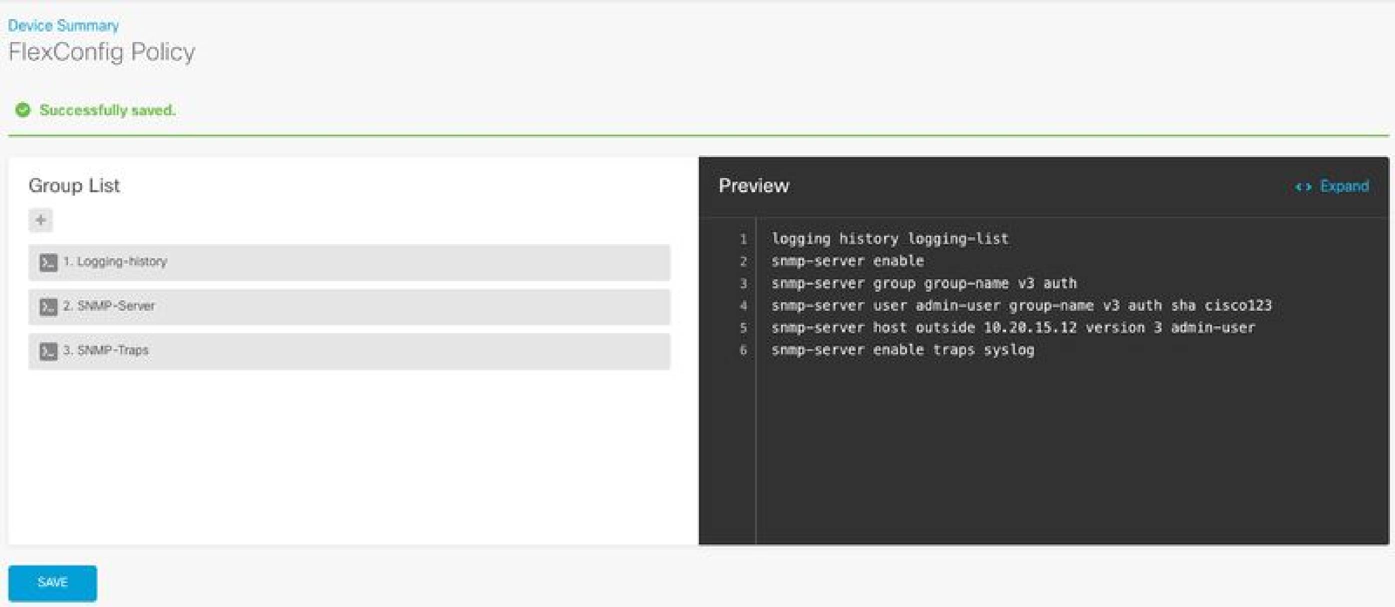
Template

```
logging list syslog-list message 111009
logging trap syslog-list
```

Negate Template

```
no logging trap syslog-list
no logging list syslog-list message 111009
```

Step 4. Navigate to **Advanced Configuration > FlexConfig > FlexConfig Policy** and add all the objects created in the previous step. The order is irrelevant as the dependant commands are included in the same object (SNMP-Server). Select **Save** once the three objects are there and the **Preview** section shows the list of commands.



Device Summary

FlexConfig Policy

Successfully saved.

Group List

1. Logging-history

2. SNMP-Server

3. SNMP-Traps

Preview

```
logging history logging-list
snmp-server enable
snmp-server group group-name v3 auth
snmp-server user admin-user group-name v3 auth sha cisco123
snmp-server host outside 10.20.15.12 version 3 admin-user
snmp-server enable traps syslog
```

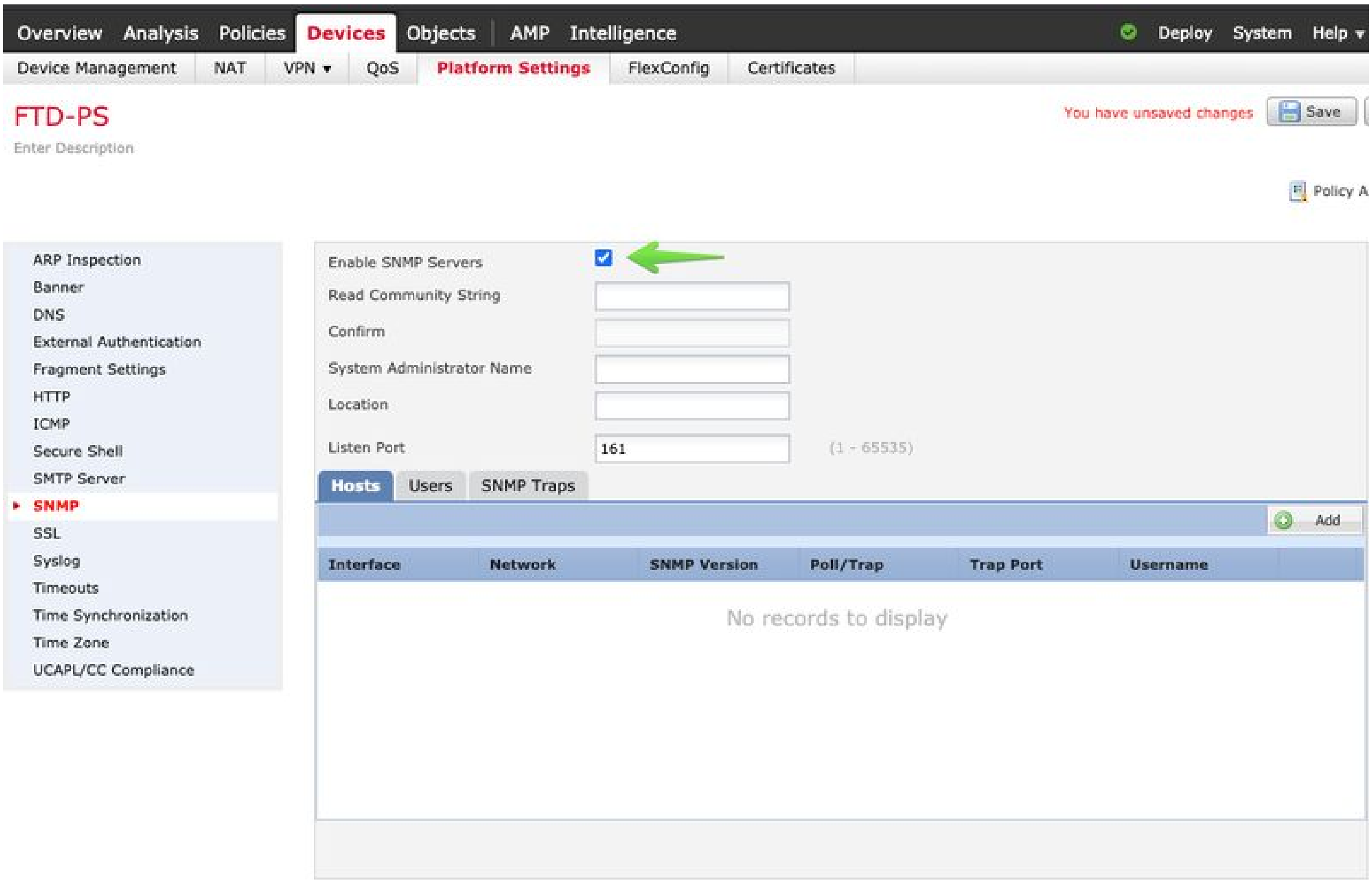
Step 5. Select the **Deploy** icon to apply changes.

FTD Configuration Managed by FMC

The examples above, illustrate similar scenarios as the previous but these changes are configured on the FMC and then deployed to an FTD managed by it. SNMPv2 can also be used. This article explains how to use set up an SNMP server with this version on FTD using FMC management.

Step 1. Navigate to **Devices > Platform Settings** and select **Edit** on the Policy assigned to the managed device to apply the configuration to.

Step 2. Navigate to **SNMP** and check the **Enable SNMP Servers** option.



Enable SNMP Servers ☑

Read Community String

Confirm

System Administrator Name

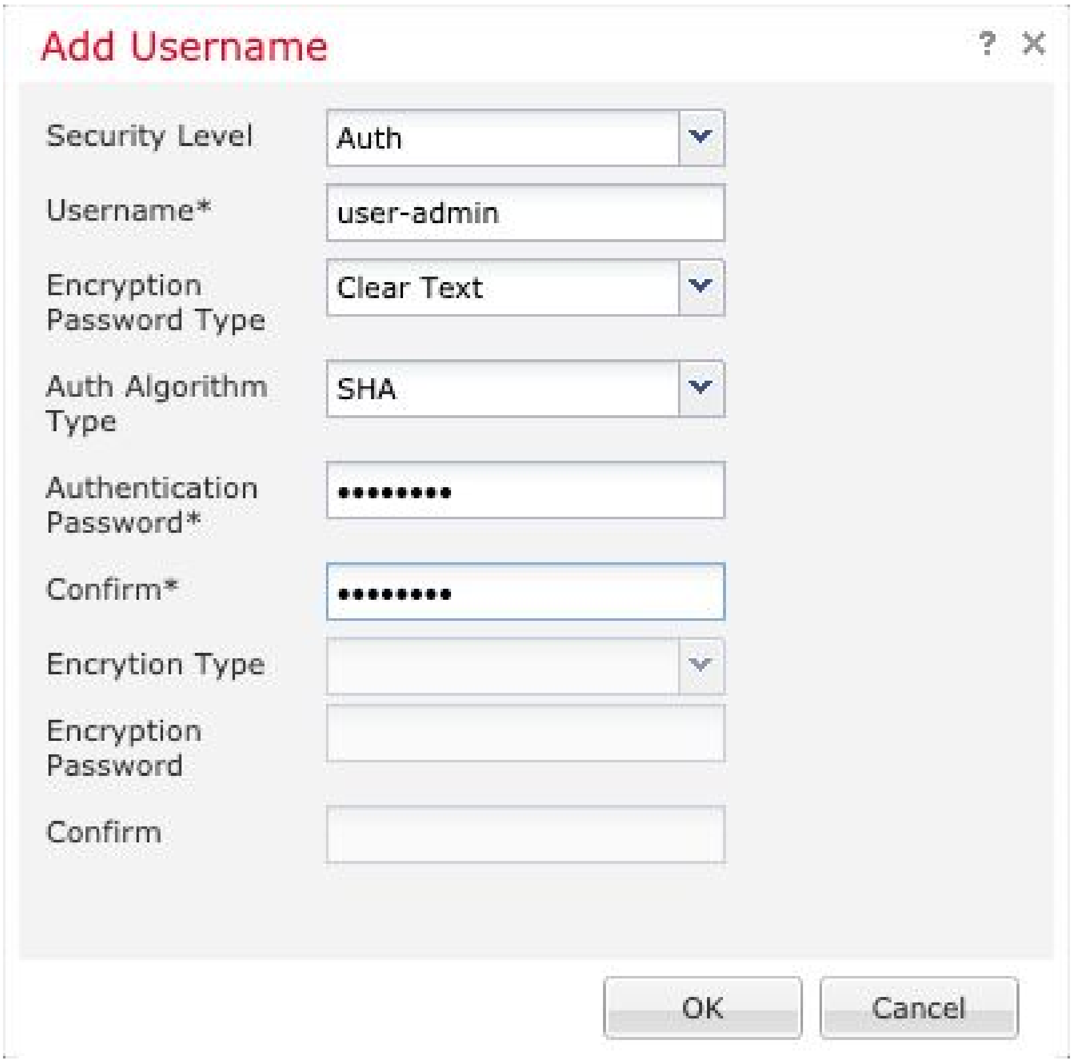
Location

Listen Port 161 (1 - 65535)

Interface	Network	SNMP Version	Poll/Trap	Trap Port	Username

No records to display

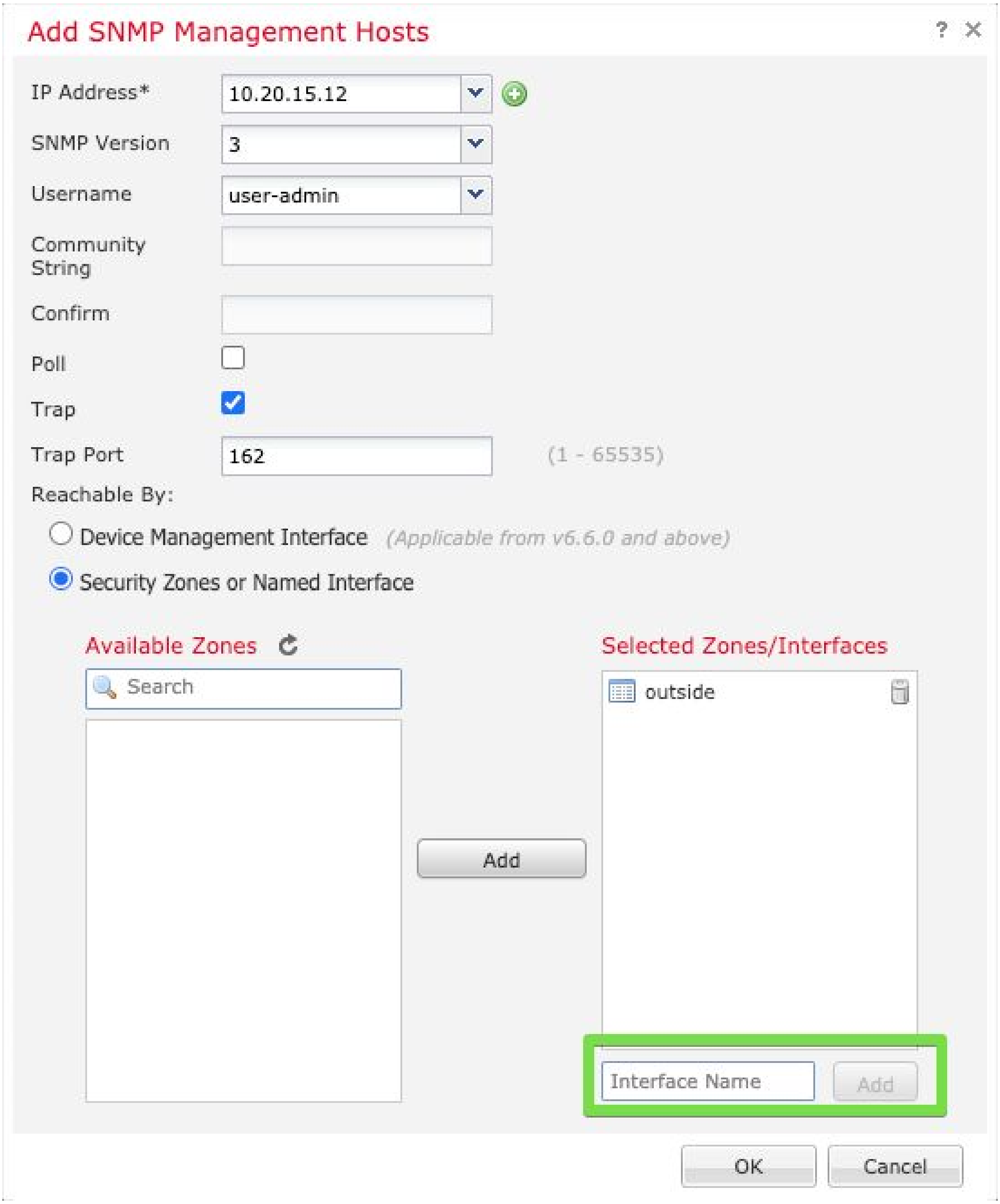
Step 3. Select the **Users** tab and select the **Add** button. Fill the User information.



Add Username

Security Level	Auth
Username*	user-admin
Encryption Password Type	Clear Text
Auth Algorithm Type	SHA
Authentication Password*	•••••••••
Confirm*	•••••••••
Encrytion Type	
Encryption Password	
Confirm	

Step 4. Select **Add** in the **Hosts** tab. Fill the information related to the SNMP Server. If you use an interface instead of a zone, ensure to manually add the interface name in the right corner section. Select OK once all the necessary information is included.



Add SNMP Management Hosts

IP Address*: 10.20.15.12

SNMP Version: 3

Username: user-admin

Community String:

Confirm:

Poll: □

Trap: ☑

Trap Port: 162 (1 - 65535)

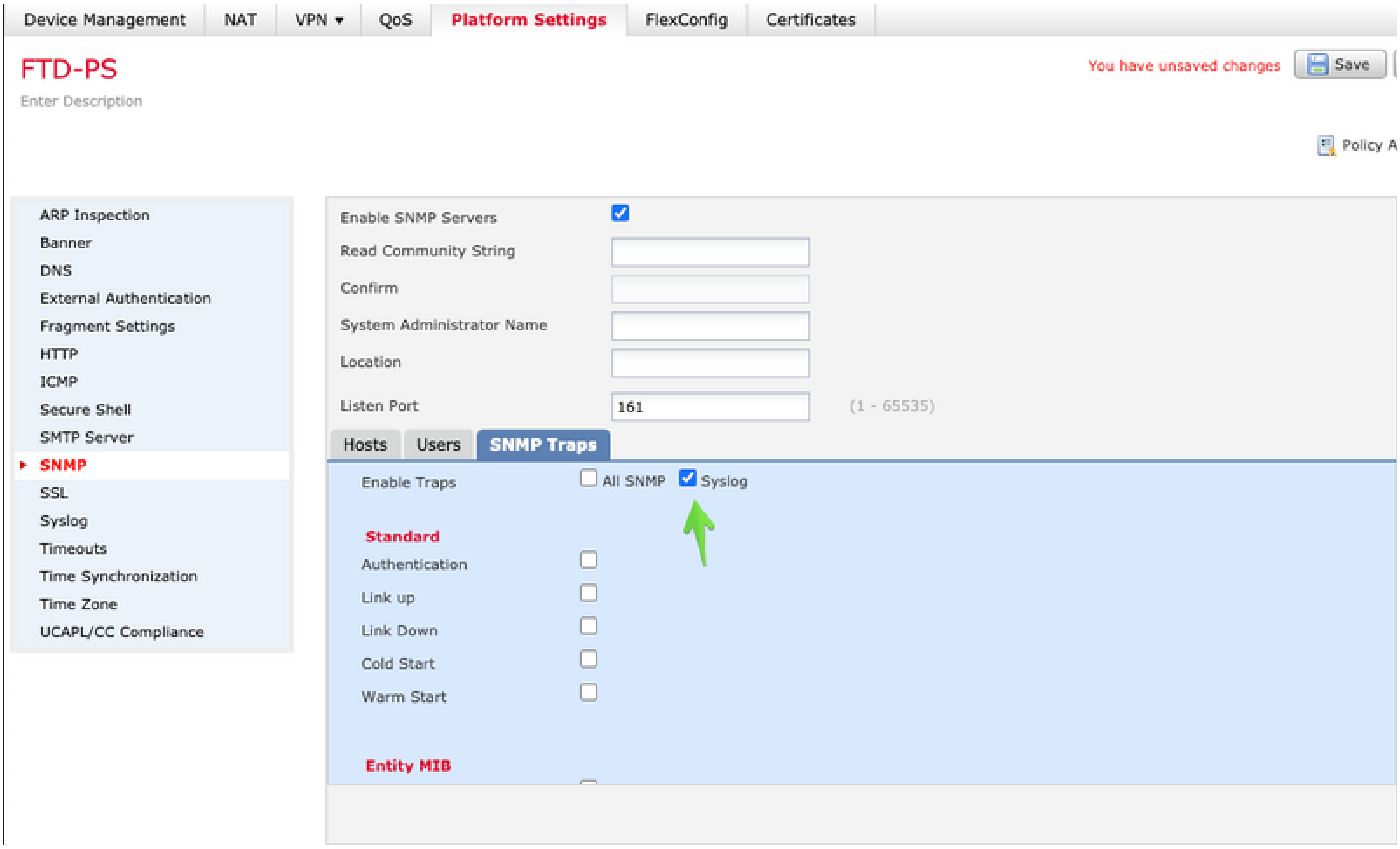
Reachable By:

○ Device Management Interface *(Applicable from v6.6.0 and above)*

● Security Zones or Named Interface

outside

Step 5. Select the **SNMP Traps** tab and check the **Syslog** box. Ensure to remove all the other traps checkmarks if those are not required.



FTD-PS

Enter Description

You have unsaved changes

Enable SNMP Servers ☑

Read Community String

Confirm

System Administrator Name

Location

Listen Port 161 (1 - 65535)

Enable Traps □ All SNMP ☑ Syslog

Standard

Authentication □

Link up □

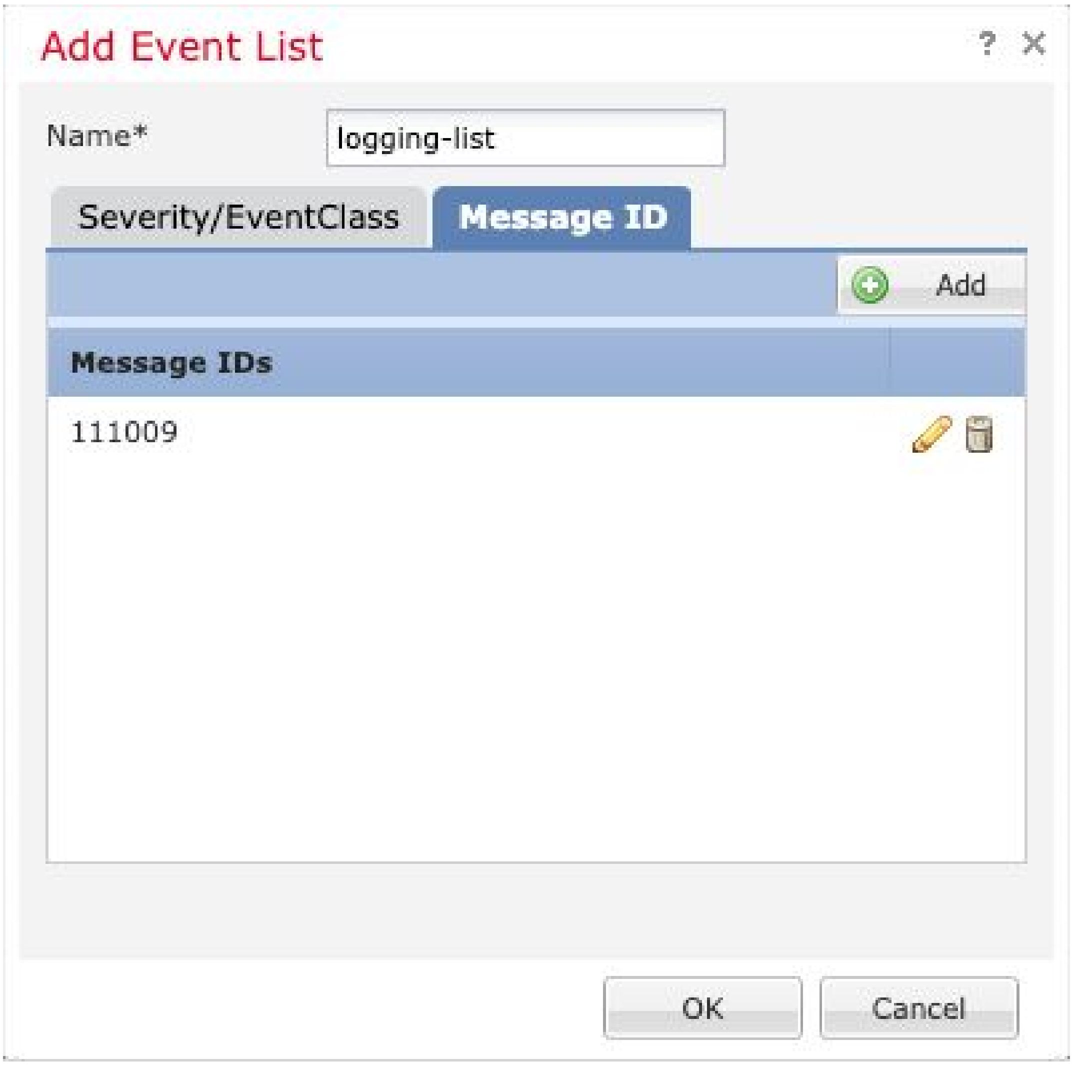
Link Down □

Cold Start □

Warm Start □

Entity MIB

Step 6. Navigate to **Syslog** and select the **Event Lists** tab. Select the **Add** button. Add a name and the messages to include in the list. Select **OK** to continue.



Add Event List

Name* logging-list

Message IDs

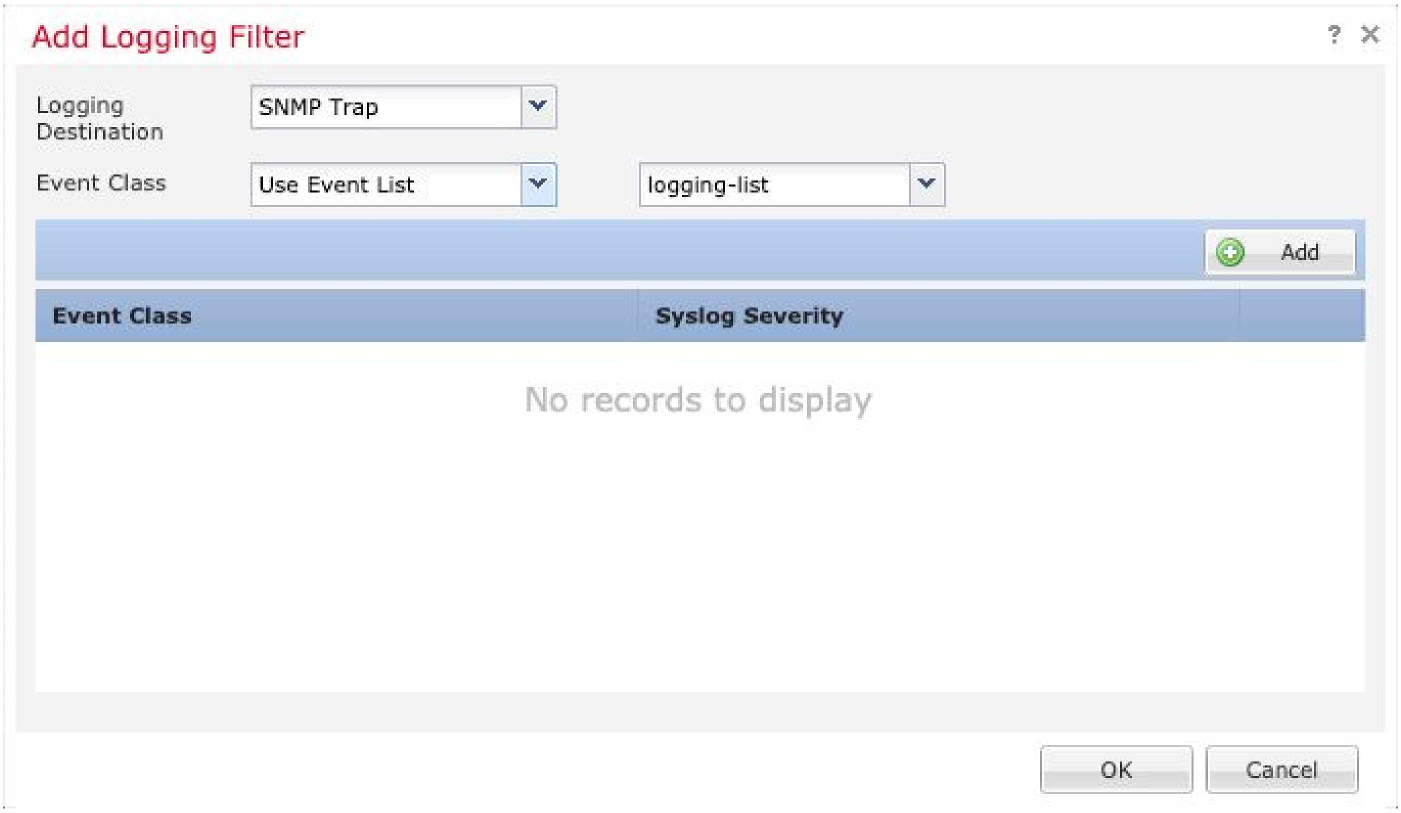
111009

Step 7. Select the **Logging Destinations** tab and select the **Add** button.

Change the Logging Destination to **SNMP Trap**.

Select **User Event List** and choose the event list created in Step 6 next to it.

Select **OK** to finish editing this section.



Add Logging Filter

Logging Destination: SNMP Trap

Event Class: Use Event List · logging-list

Event Class	Syslog Severity

No records to display

Step 8. Select the **Save** button and **Deploy** the changes to the managed device.

Verify

The commands below can be used in both FTD CLISH and ASA CLI.

Show snmp-server statistics

The "**show snmp-server statistics**" command provides information about how many times a trap has been sent. This counter can include other traps.

```
# show snmp-server statistics
0 SNMP packets input
0 Bad SNMP version errors
0 Unknown community name
0 Illegal operation for community name supplied
0 Encoding errors
0 Number of requested variables
0 Number of altered variables
0 Get-request PDUs
0 Get-next PDUs
0 Get-bulk PDUs
0 Set-request PDUs (Not supported)
```

```
2 SNMP packets output
0 Too big errors (Maximum packet size 1500)
0 No such name errors
0 Bad values errors
0 General errors
0 Response PDUs
 2 Trap PDUs
```

The message ID used in this example triggers every time a user executes a command. Every time a "show" command is issued, the counter increase.

Show logging setting

The "**show logging setting**" provides information about the messages sent by each destination. History logging indicates the counters for SNMP traps. The Trap logging statistics are related to Syslog hosts counters.

```
# show logging setting
Syslog logging: enabled
Facility: 20
Timestamp logging: enabled
Hide Username logging: enabled
Standby logging: disabled
Debug-trace logging: disabled
Console logging: disabled
Monitor logging: disabled
Buffer logging: level debugging, 30 messages logged
Trap logging: level debugging, facility 20, 30 messages logged
Global TCP syslog stats::
NOT_PUTABLE: 0, ALL_CHANNEL_DOWN: 0
CHANNEL_FLAP_CNT: 0, SYSLOG_PKT_LOSS: 0
PARTIAL_REWRITE_CNT: 0
Permit-hostdown logging: disabled
 History logging: list syslog-list, 14 messages logged
Device ID: disabled
Mail logging: disabled
ASDM logging: disabled
```

Issue the command "**show logging queue**" to ensure that no messages are being dropped.

```
# show logging queue

Logging Queue length limit : 512 msg(s)
0 msg(s) discarded due to queue overflow
0 msg(s) discarded due to memory allocation failure
Current 0 msg on queue, 231 msgs most on queue
```

Related Information

- Cisco ASA Series Syslog Messages
- CLI Book 1: Cisco ASA Series General Operations CLI Configuration Guide, 9.12
- Configure SNMP on Firepower NGFW Appliances