Configure BFD in Secure Firewall Threat Defense with Flex-Config

Contents

Introduction

This document describes how to configure the BFD Protocol in Secure Firewall Management Center running 7.2 and earlier with Flex-Config.

Prerequisites

Border Gateway Protocol (BGP) configured in Cisco Secure Firewall Threat Defense (FTD) with Cisco Secure Firewall Management Center (FMC).

Requirements

Cisco recommends that you have knowledge of these topics:

-BGP protocol
-BFD concepts

Components Used

-Cisco Secure Firewall Management Center running 7.2 or earlier versions.

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

Bidirectional Forwarding Detection (BFD) is a detection protocol designed to provide fast-forwarding path failure detection times for all media types, encapsulations, topologies, and routing protocols.

Configure

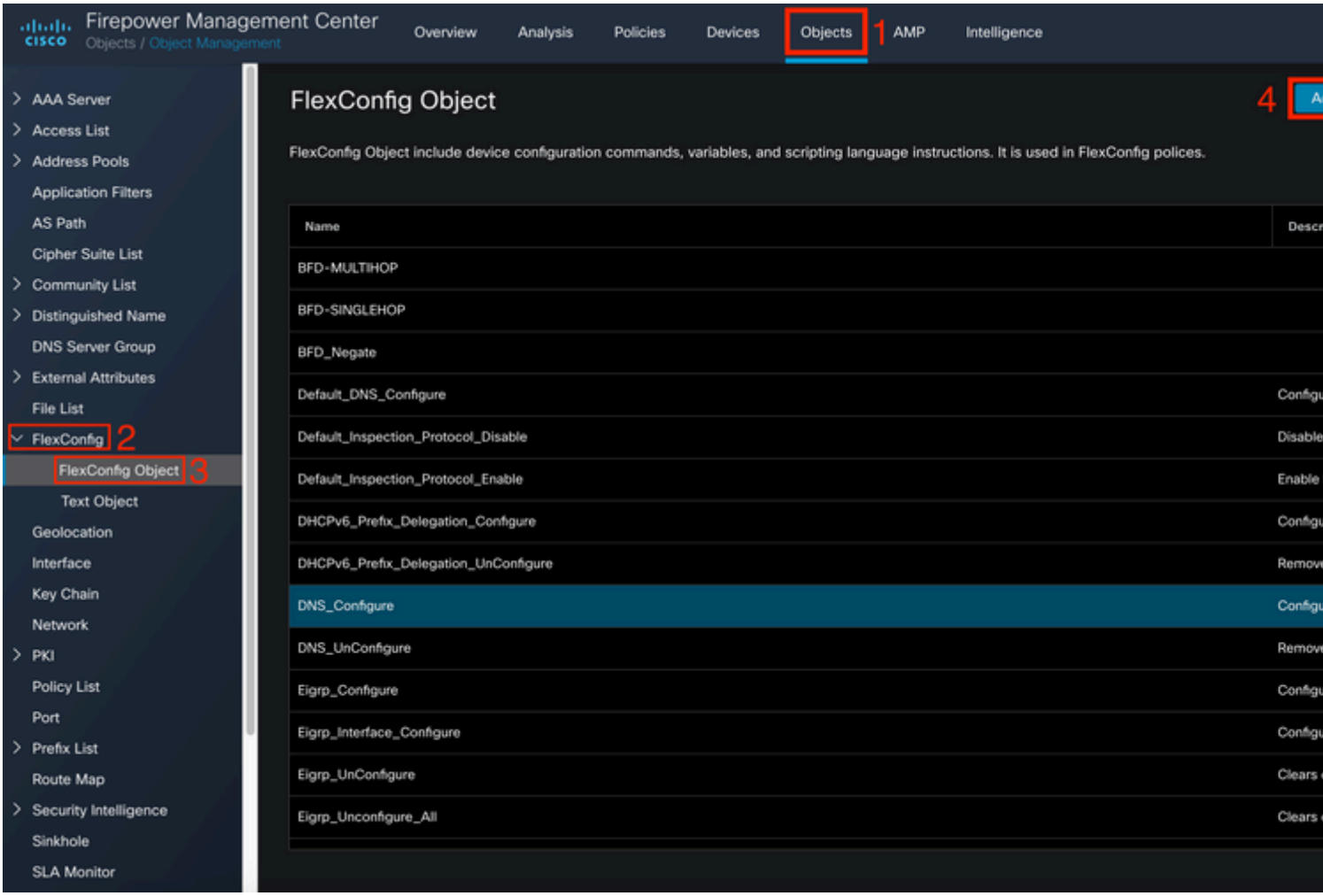
BFD configurations in FMC running versions 7.2 and earlier must be configured with Flex-Config policies and objects.

Step 1.

Create the BFD template through Flexconfig Object.

The BFD template specifies a set of BFD interval values. BFD interval values configured in the BFD template are not specific to a single interface. You can also configure authentication for single-hop and multi-hop sessions.

To Create the Flex-Config object, select the **Objects Tab** at the top, click the **FlexConfig** option on the left column, then click the **FlexConfig Object** option and then click on **Add FlexConfig Object**.



Step 2.

Add the parameters needed for the BFD Protocol:

The BFD template specifies a set of BFD interval values. BFD interval values configured in the BFD template are not specific to a single interface. You can also configure authentication for single-hop and multi-hop sessions.

```
bfd-template [single-hop | multi-hop] template_name
```

- single-hop - Specifies a single-hop BFD template.

- multi-hopâ€” Specifies a multi-hop BFD template.
- template_name â€” Specifies the template name. The template name cannot contain spaces.
- (Optional) Configure Echo on a single-hop BFD template.

Note: You can only enable Echo mode on a single-hop template.

Configure the intervals in the BFD template:

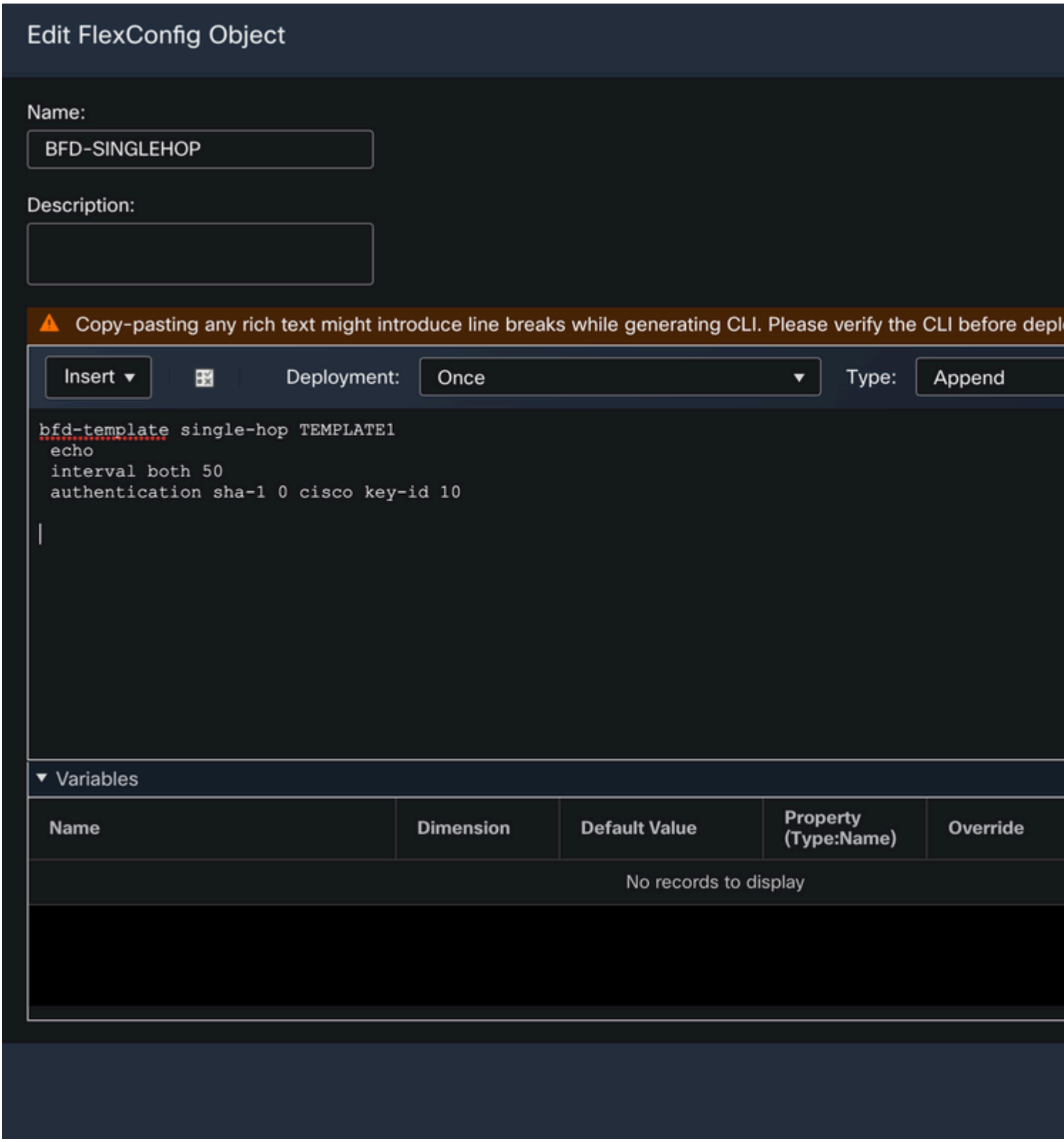
```
interval both milliseconds | microseconds {both | min-tx} microseconds | min-tx milliseconds echo
```

- bothâ€”Minimum transmit and receive interval capability.
- The interval in milliseconds. The range is 50 to 999.
- microsecondsâ€”Specifies the BFD interval in microseconds forbothandmin-tx.
- microseconds â€”The range is 50,000 to 999,000.
- min-txâ€—The minimum transmit interval capability.

Configure authentication in the BFD template:

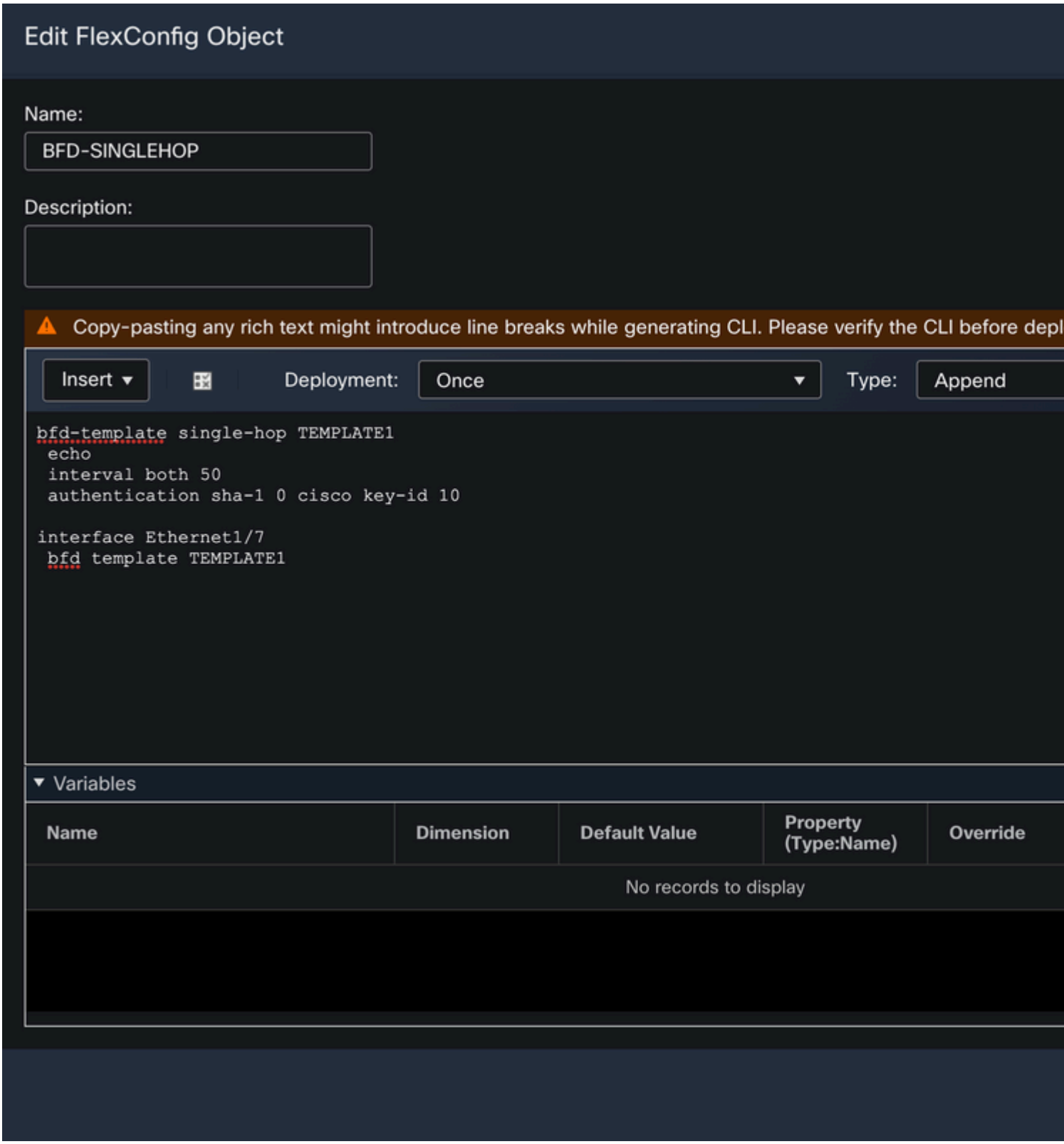
```
authentication {md5 | meticulous-mds | meticulous-sha-1 | sha-1}[0|8] wordkey-id id
```

- authenticationâ€” Specifies the authentication type.
- md5â€” Message Digest 5 (MD5) authentication.
- meticulous-md5â€— Meticulous keyed MD5 authentication.
- meticulous-sha-1â€— Meticulous keyed SHA-1 authentication.
- sha-1â€— Keyed SHA-1 authentication.
- 0|8â€—0 specifies that an UNENCRYPTED password follows. 8 specifies that an ENCRYPTED password follows.
- wordâ€—The BFD password (key), which is a single-digit password/key of up to 29 characters. Passwords starting with a digit followed by a whitespace are not supported, for example, 0 pass and 1 are not valid.
- key-idâ€—The authentication Key ID.
- idâ€—The shared key ID that matches the key string. The range is 0 to 255 characters.



Step 3.

Associate the BFD Template with the interface.



Note: Associate the BFD multi-hop template with a map of destinations.

Step 4 (Optional).

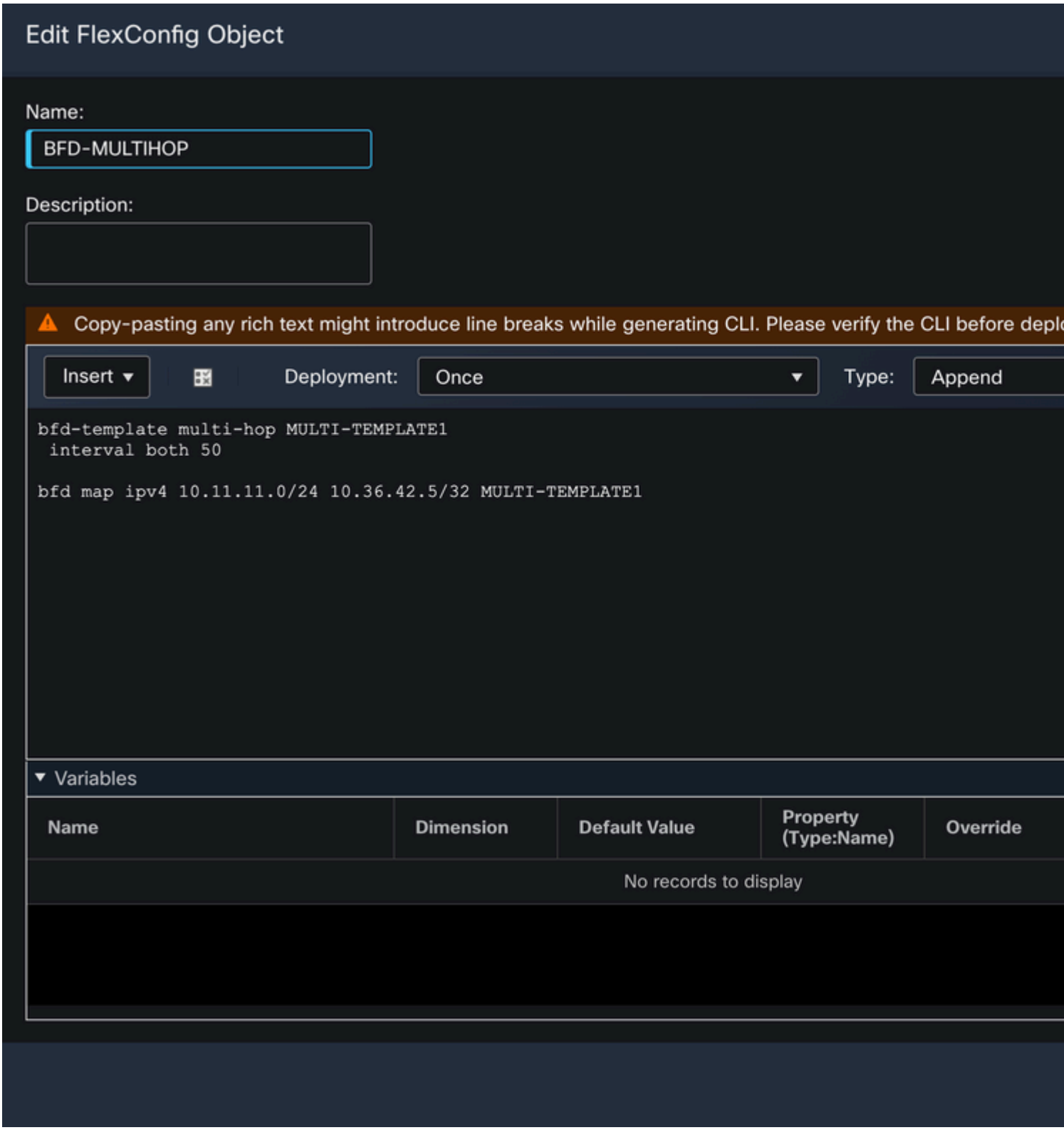
Create a BFD map containing destinations that you can associate with a multi-hop template. You must have a multi-hop BFD template already configured.

Associate the BFD multi-hop template with a map of destinations:

```
bfd map {ipv4 | ipv6} destination/cdir source/cdire template-name
```

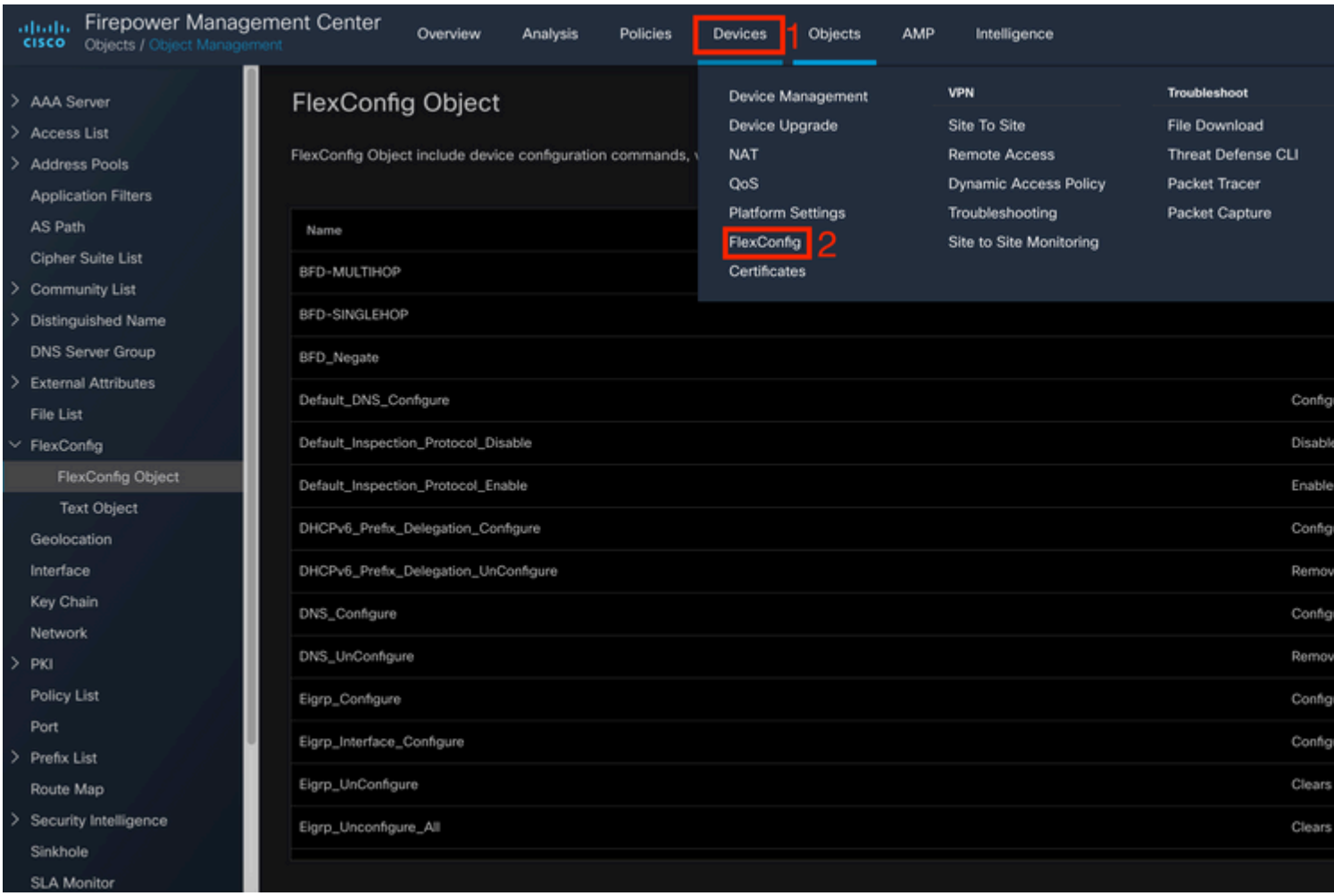
- ipv4â€” Configures an IPv4 address.
- ipv6â€” Configures an IPv6 address.
- destination/cdir â€” Specifies the destination prefix/length. The format is A.B.C.D/<0-32>.
- source/cdirâ€” Specifies the destination prefix/length. The format is X:X:X;X::X/<0-128>.
- template-name â€” Specifies the name of the multi-hop template associated with this BFD map.

Click the **Save** button to save the object.



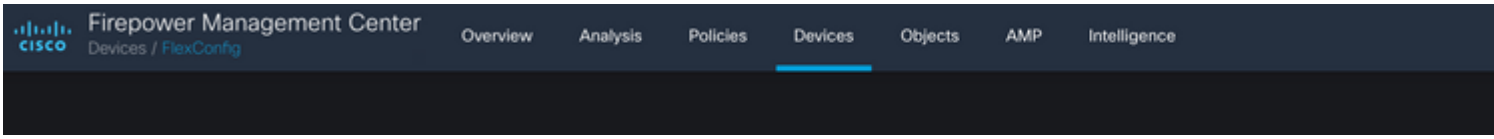
Step 5.

Click the **Devices** tab at the top, and select the **FlexConfig** option.



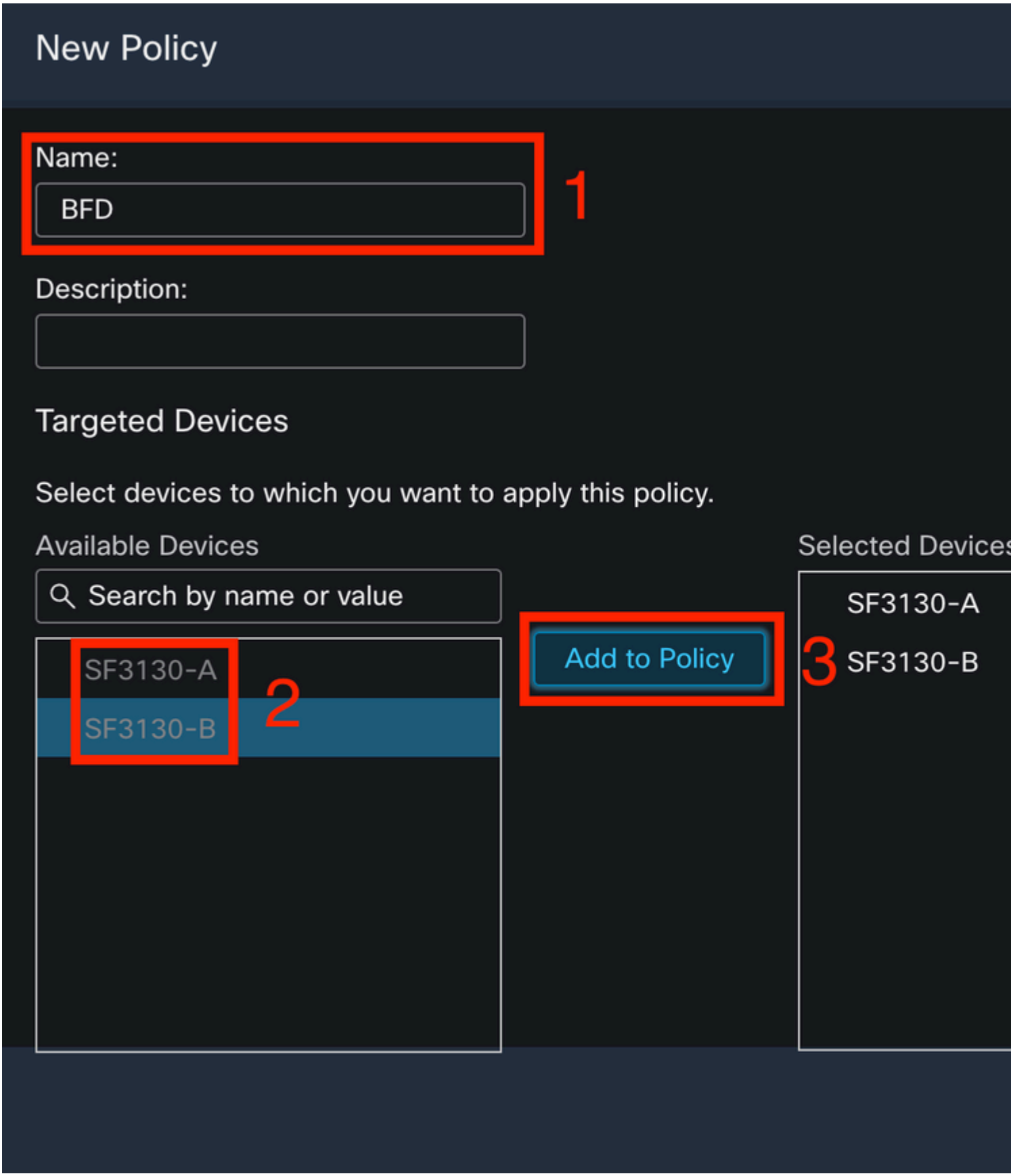
Step 6.

To create a new FlexConfig Policy, click the **New Policy** button.



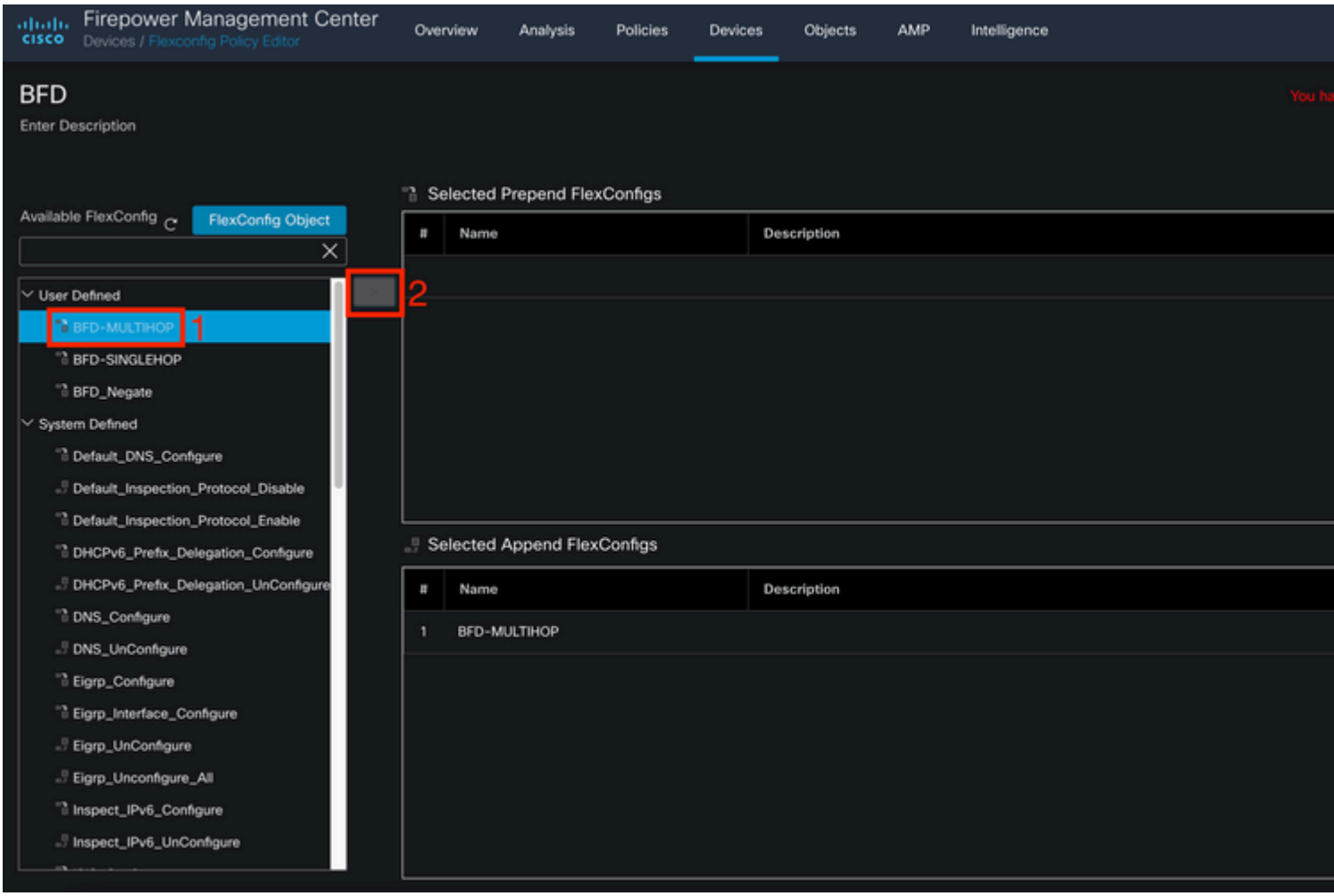
Step 7.

Name the policy and select the devices assigned to the policy. Click the **Add to Policy** then click the **Save**button.



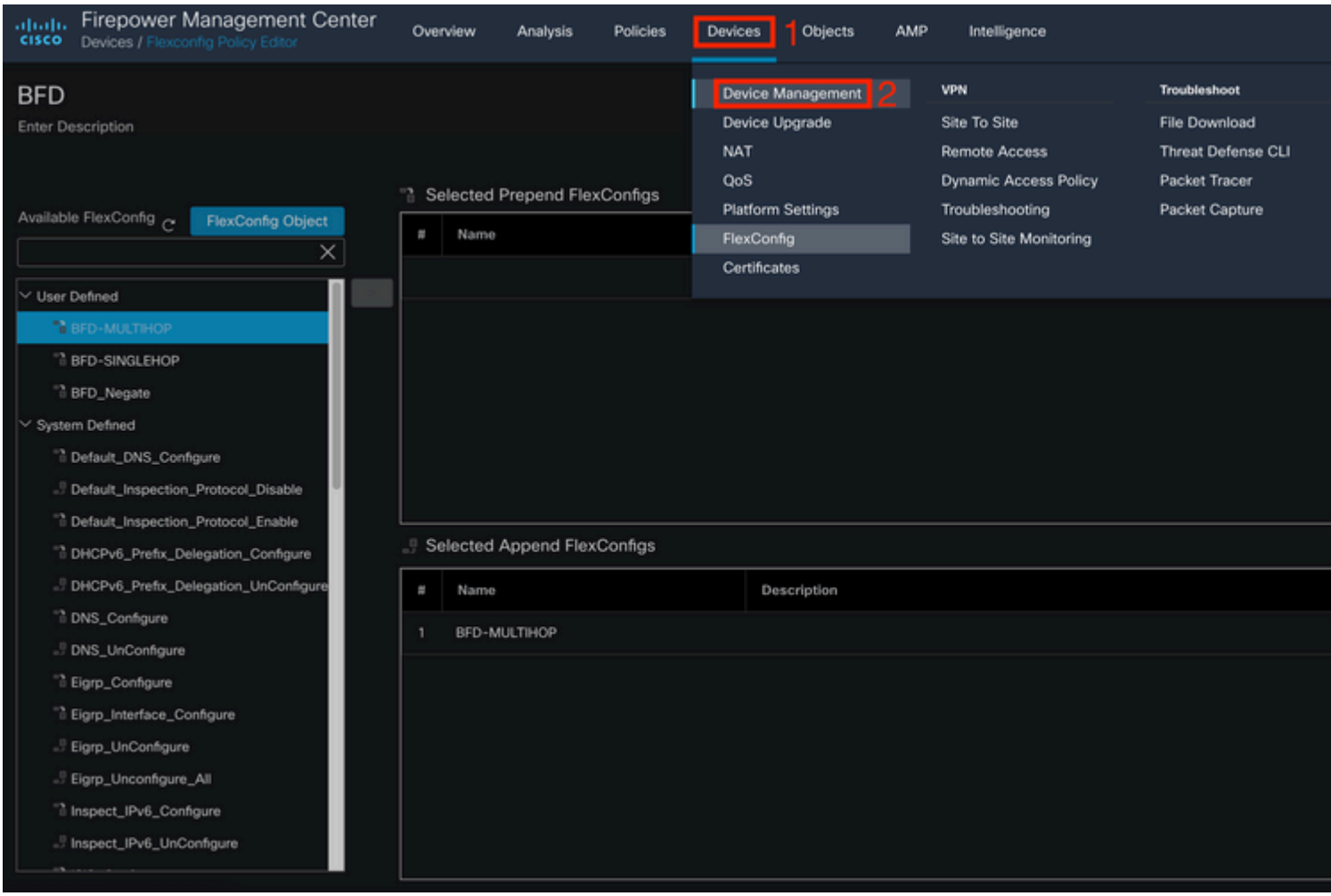
Step 8.

Select the FlexConfig Object on the left column and click the > button to add the object to the FlexConfig Policy, and click the **Save** button.



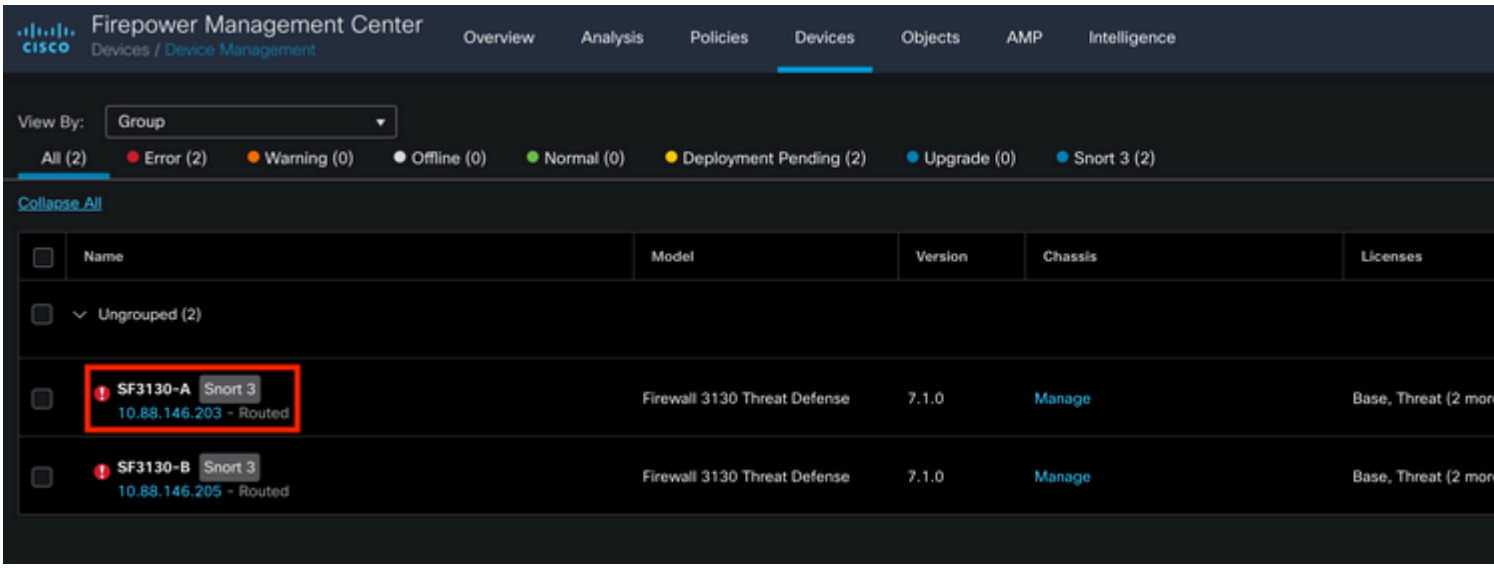
Step 9.

Click the **Devices** tab at the top and click the **Device Management** option.



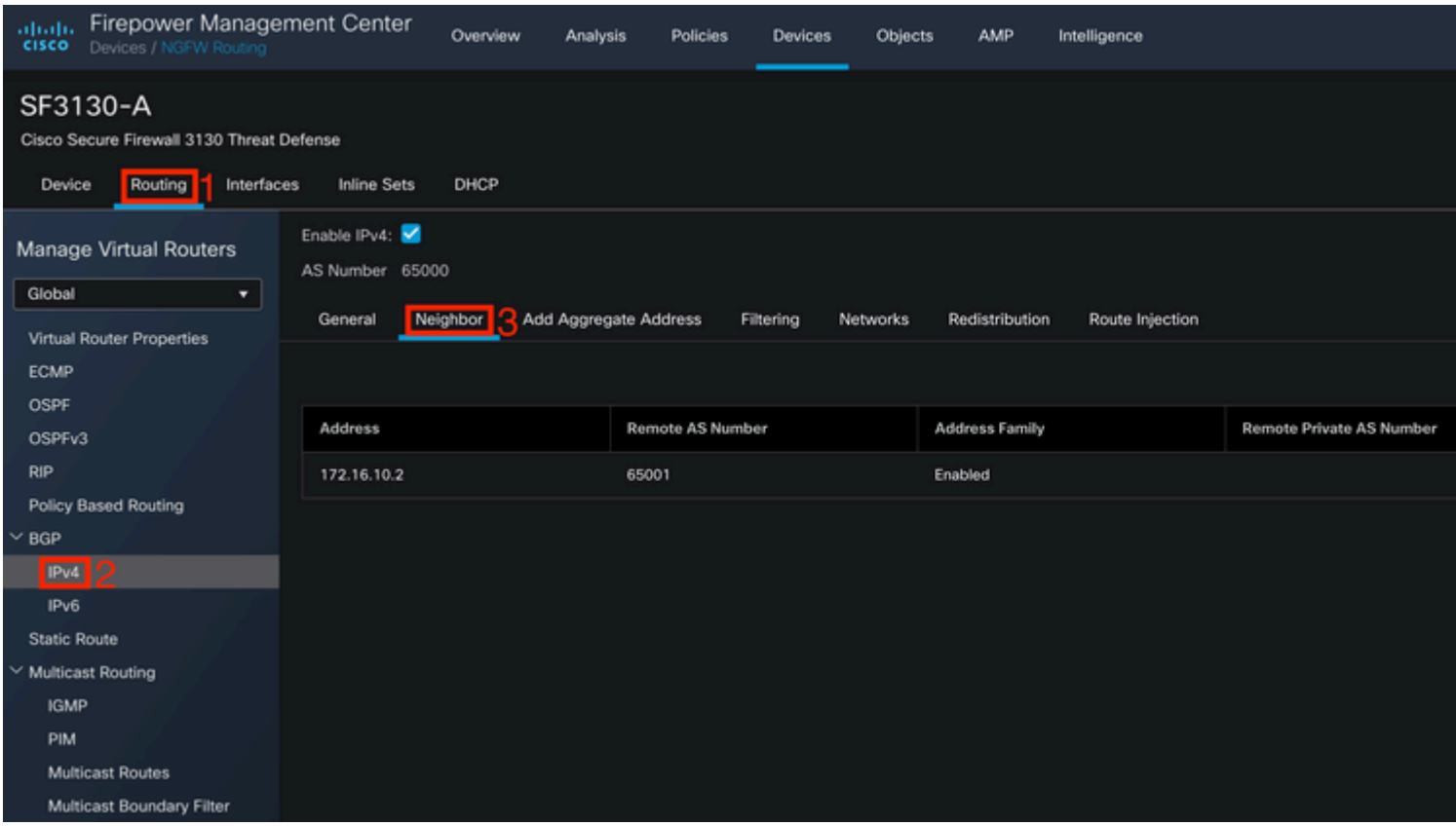
Step 10.

Select the device where the BFD configuration is going to be assigned.



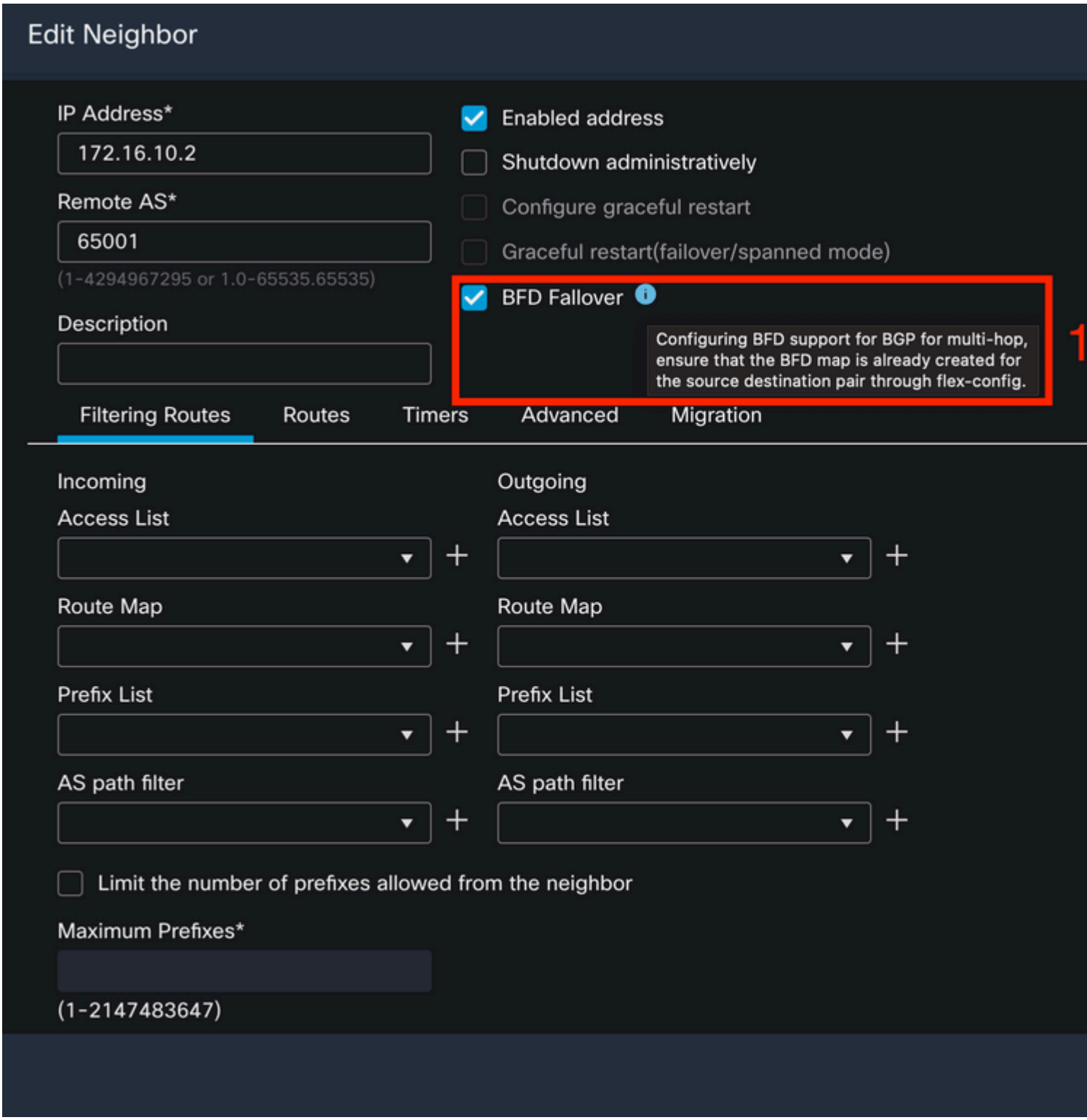
Step 11.

Click the Routing tab, then click the**IPv4** or **IPv6**, depending on your configuration in the BGP section on the left column, then click the **Neighbor** tab, and click the edit pencil button to edit it.



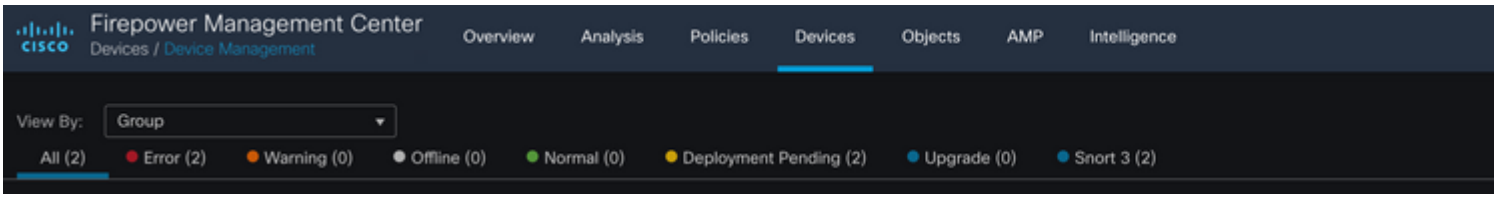
Step 12.

Select the **checkbox** for BFD fallover and click the **OK** button.



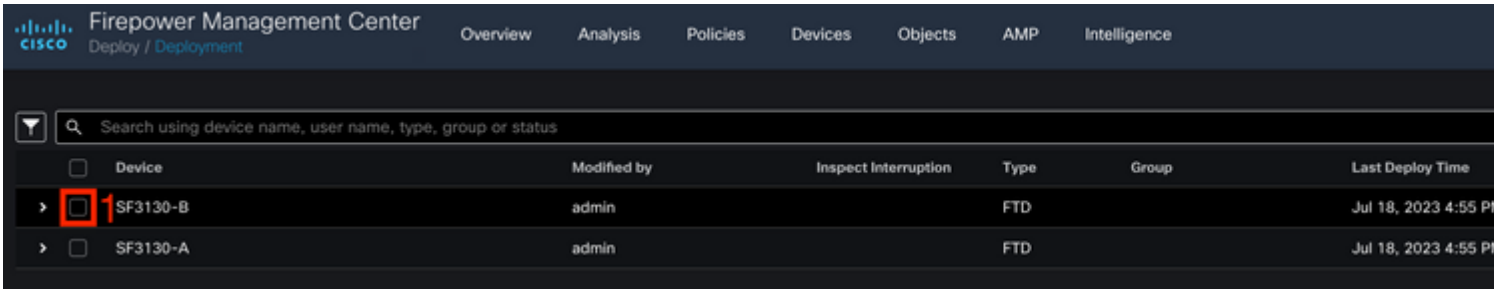
Step 13.

Click the **Deploy** button, then click the **Deployment** button.



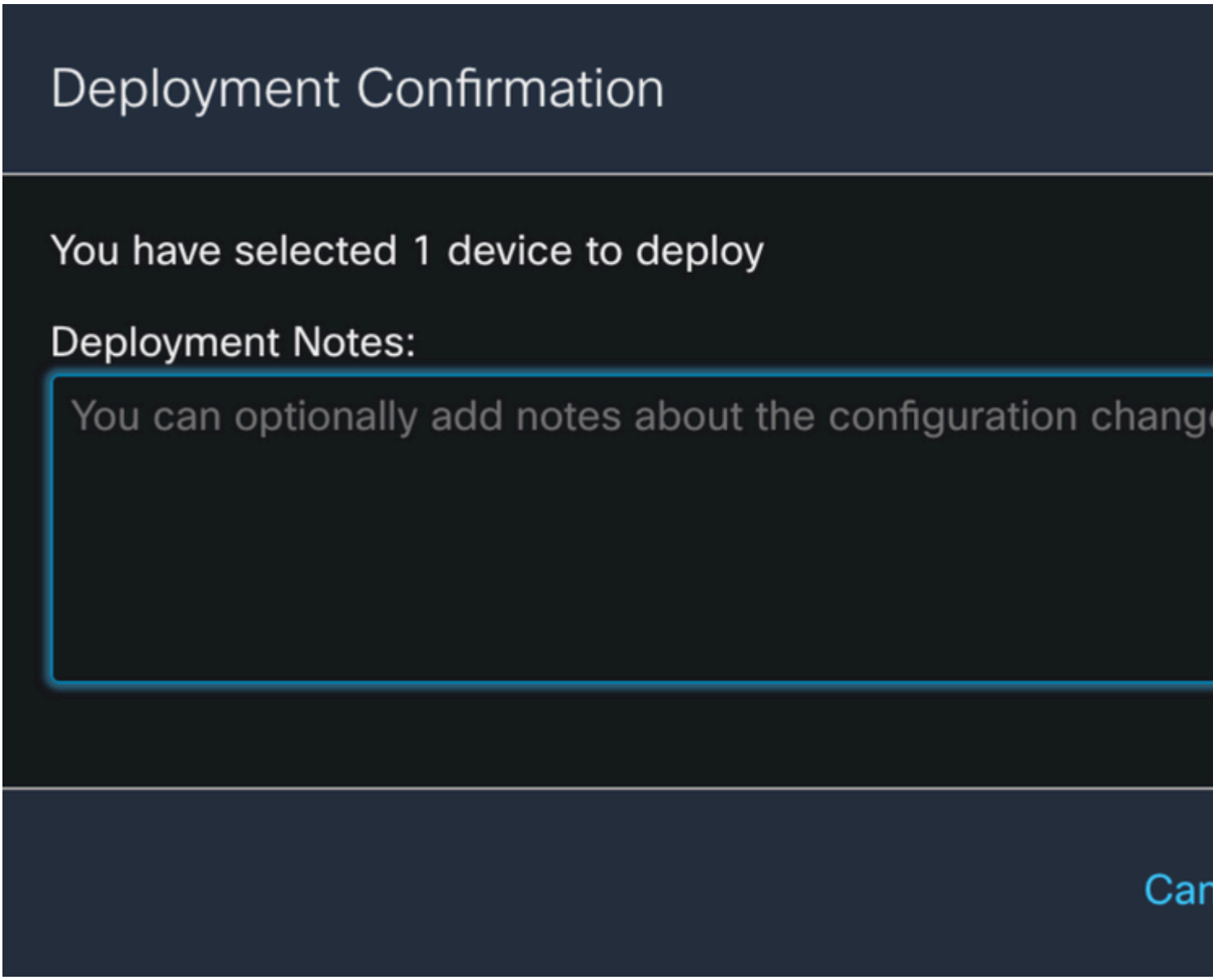
Step 14.

Select the device where the changes are going to be assigned by clicking the **checkbox**, and then click the**Deploy** button.



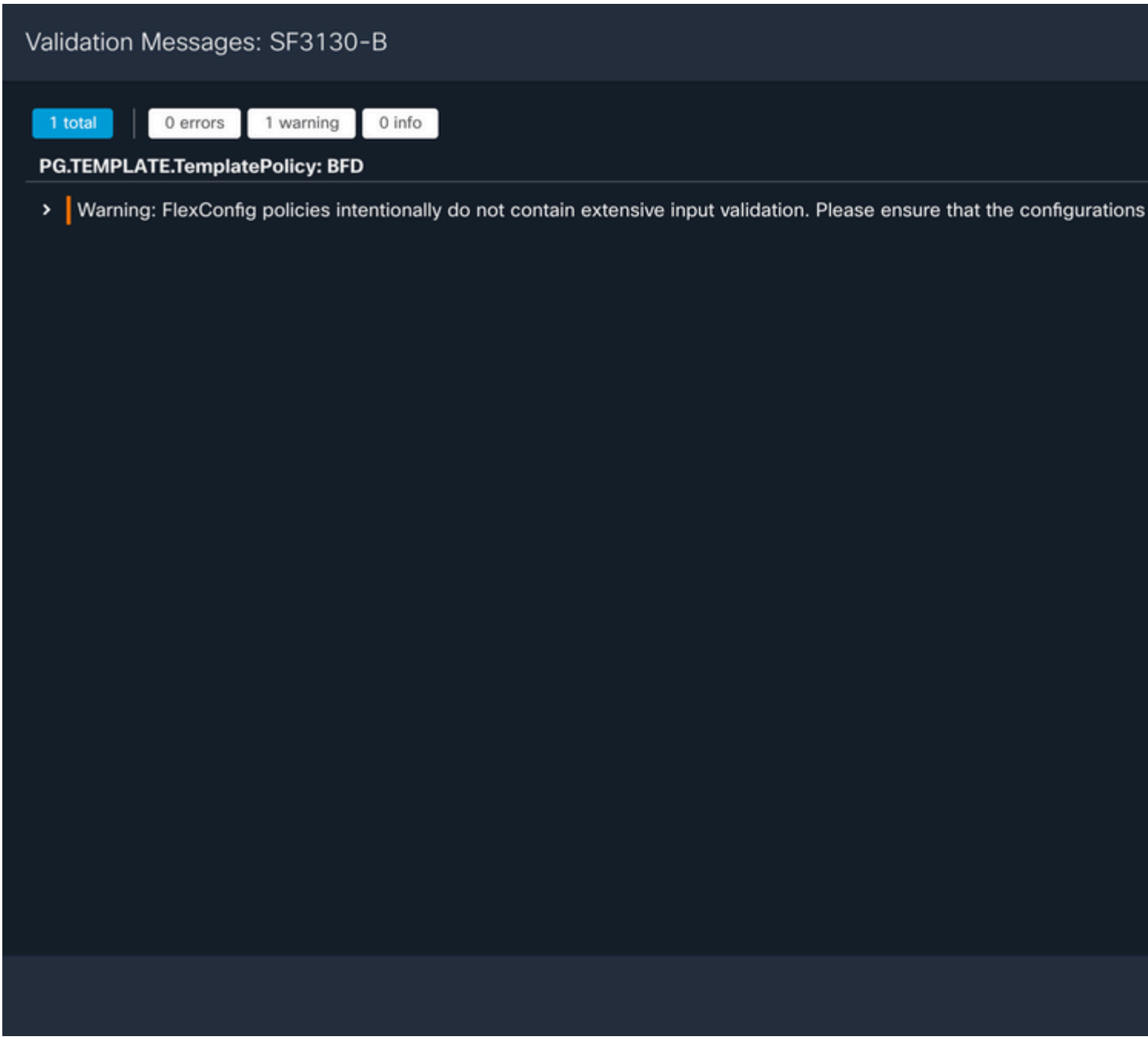
Step 15.

Click the **Deploy** button.



Step 16.

Click the **Deploy** button.



Note: The warning is expected and it is just informational.

Verify

Verify the BFD configuration and the status directly on the CLI session with the next commands.

```
<#root>

>

system support diagnostic-cli


Attaching to Diagnostic CLI ... Press 'Ctrl+a then d' to detach.
Type help or '?' for a list of available commands.
```

```
SF3130-A>

enable

Password:
SF3130-A#

show running-config | inc bfd

bfd-template single-hop Template
 bfd template Template
  neighbor 172.16.10.2 fall-over bfd single-hop

SF3130-A#

show bfd summary

                    Session          Up          Down
Total               1                1           0

SF3130-A#

show bfd neighbors


IPv4 Sessions
NeighAddr                                      LD/RD         RH/RS       State   Int
172.16.10.2                                     1/1          Up
```

Troubleshoot

There is currently no specific troubleshooting information available for this configuration.