



# Configuring SDM Templates

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## Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.

## Information About Configuring SDM Templates

### SDM Templates

You can use SDM templates to configure system resources to optimize support for specific features, depending on how your device is used in the network. You can select a template to provide maximum system usage for some functions.

These templates are supported on your device:

- **Advanced**—The advanced template is available on all supported images for this release. It maximizes system resources for features like netflow, multicast groups, security ACEs, QoS ACEs, and so on.

- **VLAN**—The VLAN template is available only on the LAN Base license. The VLAN template disables routing and supports the maximum number of unicast MAC addresses. It would typically be selected for a Layer 2 device.

After you change the template and the system reboots, you can use the **show sdm prefer** privileged EXEC command to verify the new template configuration. If you enter the **show sdm prefer** command before you enter the **reload** privileged EXEC command, the **show sdm prefer** command shows the template currently in use and the template that will become active after a reload.

The default is the advanced template.

**Table 1: Approximate Number of Feature Resources Allowed by Templates**

Resource	Advanced	VLAN
Number of VLANs	4094	4094
Unicast MAC addresses	32 K	32 K
Overflow unicast MAC addresses	512	512
IGMP groups and multicast routes	4 K	4 K
Overflow IGMP groups and multicast routes	512	512
• Directly connected routes	32 K	32 K
• Indirectly connected IP hosts	8 K	8 K
Policy-based routing ACEs	1024	0
QoS classification ACEs	3 K	3 K
Security ACEs	3 K	3 K
Netflow ACEs	1024	1024
Input Microflow policer ACEs:	256 K	0
Output Microflow policer ACEs:	256 K	0
FSPAN ACEs	256	256
Tunnels:	256	0
Control Plane Entries:	512	512
Input Netflow flows:	8 K	8 K

Resource	Advanced	VLAN
Output Netflow flows:	16 K	16 K
SGT/DGT entries:	4 K	4 K
SGT/DGT Overflow entries:	0	512

**Note**

When the switch is used as a Wireless Mobility Agent, the only template allowed is the advanced template.

The tables represent approximate hardware boundaries set when a template is selected. If a section of a hardware resource is full, all processing overflow is sent to the CPU, seriously impacting switch performance.

## SDM Templates and Switch Stacks

In a switch stack, all stack members must use the same SDM template that is stored on the active switch. When a new switch is added to a stack, the SDM configuration that is stored on the active switch overrides the template configured on an individual switch.

You can use the `show switch` privileged EXEC command to see if any stack members are in SDM mismatch mode. This example shows the output from the `show switch` privileged EXEC command when an SDM mismatch exists:

*Switch* #`show switch`

# How to Configure SDM Templates

## Configuring SDM Templates

### Configuring the Switch SDM Template

#### Setting the SDM Template

#### SUMMARY STEPS

1. `configure terminal`
2. `sdm prefer { advanced | vlan }`
3. `end`
4. `reload`

## DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>configure terminal</b>  <b>Example:</b> Switch> <b>configure terminal</b>	Enters global configuration mode.
<b>Step 2</b>	<b>sdm prefer { advanced   vlan }</b>  <b>Example:</b> Switch(config)# <b>sdm prefer advanced</b>	Specifies the SDM template to be used on the switch. The keywords have these meanings: <ul style="list-style-type: none"> <li>• <b>advanced</b> —Supports advanced features such as Netflow.</li> <li>• <b>vlan</b> —Maximizes VLAN configuration on the switch with no routing supported in hardware.</li> </ul> <b>Note</b> The <b>no sdm prefer</b> command and a default template is not supported.
<b>Step 3</b>	<b>end</b>  <b>Example:</b> Switch(config)# <b>end</b>	Returns to privileged EXEC mode.
<b>Step 4</b>	<b>reload</b>  <b>Example:</b> Switch# <b>reload</b>	Reloads the operating system.

## Monitoring and Maintaining SDM Templates

Command	Purpose
show sdm prefer	Displays the SDM template in use.
reload	Reloads the switch to activate the newly configured SDM template.
no sdm prefer	Sets the default SDM template.

# Configuration Examples for Configuring SDM Templates

## Examples: Configuring SDM Templates

This example shows how to configure the VLAN template:

## Examples: Displaying SDM Templates

This is an example output showing the advanced template information:

```
Switch# show sdm prefer
Showing SDM Template Info

This is the Advanced template.
Number of VLANs: 4094
Unicast MAC addresses: 32768
Overflow Unicast MAC addresses: 512
IGMP and Multicast groups: 8192
Overflow IGMP and Multicast groups: 512
Directly connected routes: 32768
Indirect routes: 8192
Security Access Control Entries: 3072
QoS Access Control Entries: 2816
Policy Based Routing ACEs: 1024
Netflow ACEs: 1024
Input Microflow policer ACEs: 256
Output Microflow policer ACEs: 256
Flow SPAN ACEs: 256
Tunnels: 256
Control Plane Entries: 512
Input Netflow flows: 8192
Output Netflow flows: 16384
These numbers are typical for L2 and IPv4 features.
Some features such as IPv6, use up double the entry size;
so only half as many entries can be created.
```

Switch#

This is an example output showing the VLAN template information:

```
Switch# show sdm prefer vlan
Showing SDM Template Info

This is the VLAN template for a typical Layer 2 network.
Number of VLANs: 4094
Unicast MAC addresses: 32768
Overflow Unicast MAC addresses: 512
IGMP and Multicast groups: 8192
Overflow IGMP and Multicast groups: 512
Directly connected routes: 32768
Indirect routes: 8192
Security Access Control Entries: 3072
QoS Access Control Entries: 3072
Policy Based Routing ACEs: 0
Netflow ACEs: 1024
Input Microflow policer ACEs: 0
Output Microflow policer ACEs: 0
Flow SPAN ACEs: 256
```

```

Tunnels:                                0
Control Plane Entries:                   512
Input Netflow flows:                     16384
Output Netflow flows:                    8192

```

These numbers are typical for L2 and IPv4 features.  
Some features such as IPv6, use up double the entry size;  
so only half as many entries can be created.

Switch#

## Additional References for SDM Templates

### Related Documents

Related Topic	Document Title
SDM command reference	<i>System Management Command Reference (Catalyst 3650 Switches)</i>
VLAN configuration guide	<i>VLAN Configuration Guide (Catalyst 3850 Switches)</i>

### Standards and RFCs

Standard/RFC	Title
None	—

### MIBs

MIB	MIBs Link
All supported MIBs for this release.	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: <a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a>

**Technical Assistance**

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	<a href="http://www.cisco.com/support">http://www.cisco.com/support</a>

## Feature History and Information for Configuring SDM Templates

Release	Modification
Cisco IOS XE 3.3SE	This feature was introduced.

