C H A P T E R 7

Configuring SDM Templates

This chapter describes how to configure the Switch Database Management (SDM) templates on the Cisco ME 3400E Ethernet Access switch. SDM template configuration is supported only when the switch is running the metro IP access image.

Note For complete syntax and usage information for the commands used in this chapter, see the command reference for this release.

This chapter consists of these sections:

Understanding the SDM Templates

If the switch is running the metro IP access image, you can use SDM templates to optimize system resources in the switch to support specific features, depending on how the switch is used in the network. The SDM templates allocate TCAM resources to support different features. You can select the default template to balance system resources or select the layer-2 template to support only Layer 2 features in hardware.

Note Switches running the metro access image support only the layer-2 template

- Layer-2—The layer-2 template maximizes system resources for Layer 2 functionality and does not support routing. You should use this template when the switch is being used for Layer-2 forwarding. When you select the layer-2 template on a switch running the metro IP access image, any routing is done through software, which overloads the CPU and severely degrades routing performance.
- Default—The default template gives balance to all functions: Layer 2 and Layer 3 (routing). This template is available only on switches running the metro IP access image. If you do not use the default template when routing is enabled on the switch, any routing is done through software, which overloads the CPU and severely degrades routing performance.

interfaces and approximately 1024 VLANs and represent the 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.

Table 7-1   Approximate Number of Feature Resources Allowed by Each Template

Resource	Layer-2	Default
Unicast MAC addresses	8 K	5 K
IPv4 IGMP groups + multicast routes (default only)	–	1 K
IP v4 IGMP groups (layer-2 only)	1 K	–
IPv4 multicast routes (layer-2 only)	0	–
IPv4 IGMP groups and multicast routes	1 K	–
IPv4 unicast routes	0	9 K
• Directly connected IPv4 hosts	–	5 K
• Indirect IPv4 routes	–	4 K
IPv4 policy-based routing ACEs[1]	0	0.5 K
IPv4 or MAC QoS[2] ACEs	0.5 K	0.5 K
IPv4 or MAC security ACEs	1 K	1 K

1. Access control entries

2. Quality of service

Configuring the Switch SDM Template

These sections contain this configuration information:

Default SDM Template

The default template for a switch running the metro IP access image is the default template.

The default (and only) template supported on switches running the metro access image is the layer-2 template.

SDM Template Configuration Guidelines

Follow these guidelines when selecting and configuring SDM templates:

- You must reload the switch for the configuration to take effect.
- If you are using the switch for Layer 2 features only, select the layer-2 template.

- **sdm prefer**
  default

-

Setting the SDM Template

Beginning in privileged EXEC mode, follow these steps to use the SDM template to select a template on a switch running the metro IP access image:

	Command	Purpose
Step 1	**configure terminal**	
Step 2	**sdm prefer** {**default**	**layer-2**}	Specify the SDM template to be used on the switch:
		The keywords have these meanings:
		- **default**—Gives balance to all functions.
		- **layer-2**—Supports Layer 2 functionality and does not support routing on the switch.
Step 3	**end**	Return to privileged EXEC mode.
Step 4	**reload**	Reload the operating system.

After 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.

This is an example of an output display when you have changed the template to the layer-2 template and have not reloaded the switch:

```
Switch# show sdm prefer
The current template is "default" template.
 The selected template optimizes the resources in
 the switch to support this level of features for
 8 routed interfaces and 1024 VLANs.

  number of unicast mac addresses:            5K
  number of IPv4 IGMP groups + multicast routes:   1K
  number of IPv4 unicast routes:              9K
    number of directly-connected IPv4 hosts:   5K
    number of indirect IPv4 routes:            4K
  number of IPv4 policy based routing aces:   0.5K
  number of IPv4/MAC qos aces:                0.5K
  number of IPv4/MAC security aces:           1K
On next reload, template will be "layer-2" template.
```

no sdm prefer

This example shows how to configure a switch with the layer-2 template.

```
Switch(config)# sdm prefer layer-2
              end
     reload
Proceed with reload? [confirm]
```

Displaying the SDM Templates

```
Switch#
The current template is "default" template.
 The selected template optimizes the resources in
 the switch to support this level of features for
 8 routed interfaces and 1024 VLANs.

  number of unicast mac addresses:             5K
  number of IPv4 IGMP groups + multicast routes:  1K
  number of IPv4 unicast routes:               9K
    number of directly-connected IPv4 hosts:   5K
    number of indirect IPv4 routes:            4K
  number of IPv4 policy based routing aces:    0.5K
  number of IPv4/MAC qos aces:                 0.5K
  number of IPv4/MAC security aces:            1K


Switch#
"layer-2" template:
 The selected template optimizes the resources in
 the switch to support this level of features for
 8 routed interfaces and 1024 VLANs.

  number of unicast mac addresses:             8K
  number of IPv4 IGMP groups:                  1K
  number of IPv4 multicast routes:             0
  number of IPv4 unicast routes:               0
  number of IPv4 policy based routing aces:    0
  number of IPv4/MAC qos aces:                 0.5K
  number of IPv4/MAC security aces:            1K
```