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APPENDIX **A**

SME CLI Commands

The commands in this appendix apply to the Cisco MDS 9000 Family of multilayer directors and fabric switches. See the “Command Modes” section to determine the appropriate mode for each command.

SME Commands

This appendix contains an alphabetical listing of commands that are unique to the SME features.

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auto-volgrp

To configure the automatic volume grouping, use the **auto-volgrp** command. To disable this feature, use the **no** form of the command.

auto-volgrp

no auto-volgrp

Syntax Description This command has no arguments or keywords.

Defaults Disabled.

Command Modes SME cluster configuration submode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines If SME recognizes that the tape's barcode does not belong to an existing volume group, then a new volume group is created when automatic volume grouping is enabled.

Examples The following example enables automatic volume grouping:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# auto-volgrp
switch(config-sme-cl)#
```

The following example disables automatic volume grouping:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# auto-volgrp
switch(config-sme-cl)#
```

Related Commands	Command	Description
	show sme cluster	Displays SME cluster information.

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clear fc-redirect config

To delete a FC-Redirect configuration on a switch, use the **clear fc-redirect config** command.

```
clear fc-redirect config {vt vt-pwwn local-switch-only}
```

Syntax Description	vt vt-pwwn	local-switch-only
	Specifies the virtual target (VT) of the configuration to be deleted. The format is <i>hh:hh:hh:hh:hh:hh:hh:hh</i> .	Deletes the configuration only on the local switch.

Defaults None.

Command Modes EXEC mode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines This command deletes configurations (including active configurations) on the FC-Redirect created by applications such as SME and DMM. This command enables the host server to talk to the storage array, which directly bypasses the individual Intelligent Service Applications (ISAs), and causes data corruption.

You must use this command only as the last option to clear any leftover configurations that cannot be deleted from the application (SME and DMM).

Use this command while decommissioning the switch.

Examples The following example clears the FC-Redirect configuration on the switch:

```
switch# clear fc-redirect config vt 2f:ea:00:05:30:00:71:64
Deleting a configuration MAY result in DATA CORRUPTION.
Do you want to continue? (y/n) [n] y
```

Related Commands	Command	Description
	show fc-redirect active configs	Displays all active configurations on the switch.

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cluster

To configure a cluster feature, use the **cluster** command.

cluster enable

Syntax Description	enable	Enables or disables a cluster.
--------------------	--------	--------------------------------

Defaults	None.
----------	-------

Command Modes	Configuration mode.
---------------	---------------------

Command History	Release	Modification
	3.2(2)	This command was introduced.
	NX-OS 4.1(1b)	This command was deprecated.

Usage Guidelines	Starting from Cisco NX-OS 4.x release, the cluster command is replaced by the feature command.
------------------	--

Examples	The following example enables the SME clustering:
----------	---

```
switch# config terminal
switch(config)# cluster enable
switch(config)#
```

Related Commands	Command	Description
	show sme cluster	Displays information about the SME cluster.

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debug sme

To enable debugging for the SME features, use the **debug sme** command. To disable a debug command, use the **no** form of the command.

```
debug sme {all | demux vsan vsan id | deque | error | event vsan vsan id | ha vsan vsan id | trace vsan vsan id | trace-detail vsan vsan id | warning vsan vsan id | wwn-janitor {disable | enable | set-timer-value}}
```

```
no debug sme {all | demux vsan vsan id | deque | error | event vsan vsan id | ha vsan vsan id | trace vsan vsan id | trace-detail vsan vsan id | warning vsan vsan id | wwn-janitor {disable | enable | set-timer-value}}
```

Syntax Description

all	Enables debugging of all SME features.
demux	Enables debugging of SME message demux.
vsan <i>vsan id</i>	Restricts debugging to a specified VSAN ID. The range is 1 to 4094.
deque	Enables debugging of SME message dequeue.
error	Enables debugging of SME errors.
event	Enables debugging of SME finite state machine (FSM) and events.
ha	Enables debugging of SME high availability (HA).
trace	Enables debugging of SME trace.
trace-detail	Enables debugging of SME trace-detail.
warning	Enables debugging of SME warning.
wwn-janitor	Displays SME WWN janitor related information.
disable	Disables SME WWN janitor task timer.
enable	Enables SME WWN janitor task timer.
set-timer-value	Sets SME WWN janitor task timer value in microseconds. The range is from 2000 to 240000.

Defaults

None.

Command Modes

EXEC mode.

Command History

Release	Modification
3.2(2c)	This command was introduced.

Usage Guidelines

None.

Examples

The following example displays the system output from the **debug sme all** command:

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```

switch# debug sme all
2007 Sep 23 15:44:44.490796 sme: fu_priority_select: - setting fd[5] for select
  call
2007 Sep 23 15:44:44.490886 sme: fu_priority_select_select_queue: round credit(8
)
2007 Sep 23 15:44:44.490918 sme:      curr_q - FU_PSEL_Q_CAT_CQ, usr_q_info(2), p
  riority(7), credit(4), empty
2007 Sep 23 15:44:44.490952 sme: fu_priority_select: returning FU_PSEL_Q_CAT_MTS
  queue, fd(5), usr_q_info(1)
2007 Sep 23 15:44:44.491059 sme: sme_get_data_from_queue(1031): dequeued mts msg
  (34916564), MTS_OPC_DEBUG_WRAP_MSG
2007 Sep 23 15:44:44.491096 sme: fu_fsm_engine: line[2253]
2007 Sep 23 15:44:44.492596 sme: fu_fsm_execute_all: match_msg_id(0), log_alread
  y_open(0)

```

Related Commands

Command	Description
no debug all	Disables all debugging.
show sme	Displays all information about SME.

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discover

To initiate the discovery of hosts, use the **discover** command. To disable this feature, use the **no** form of the command.

discover host *host port* **target** *target port* **vsan** *vsan id* **fabric** *fabric name*

no discover host *host port* **target** *target port* **vsan** *vsan id* **fabric** *fabric name*

Syntax Description

host <i>host port</i>	Identifies the host port WWN. The format is <i>hh:hh:hh:hh:hh:hh:hh:hh</i> .
target <i>target port</i>	Identifies the target port WWN. The format is <i>hh:hh:hh:hh:hh:hh:hh:hh</i> .
vsan <i>vsan id</i>	Selects the VSAN identifier. The range is 1 to 4093.
fabric <i>fabric name</i>	Specifies the fabric for discovery. The maximum length is 32 characters.

Defaults

None.

Command Modes

SME cluster configuration submode.

Command History

Release	Modification
3.2(2c)	This command was introduced.

Usage Guidelines

If the **discover** command is issued on an existing host that could be configured or discovered, then SME deletes all the existing discovered LUNs, sends out a LOGO notification to the host, and does a discovery again.

Examples

The following example discovers a host and specifies a target, a VSAN, and a fabric for discovery:

```
switch# config t
switch(config)# sme cluster clustername1
switch(config-sme-cl)# discover host 20:00:00:00:c9:49:28:47 target
21:01:00:e0:8b:29:7e:0c vsan 2345 fabric sw-xyz
```

The following example disables the discovery feature:

```
switch# config t
switch(config)# sme cluster clustername1
switch(config-sme-cl)# no discover
```

Related Commands

Command	Description
show sme cluster	Displays information about the SME cluster.

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do

Use the **do** command to execute an EXEC-level **show** command from any configuration mode or submode.

do *command*

Syntax Description	<i>command</i>	Specifies the EXEC command to be executed.
---------------------------	----------------	--

Defaults	None.
-----------------	-------

Command Modes	All configuration modes.
----------------------	--------------------------

Command History	Release	Modification
	1.1(1)	This command was introduced.

Usage Guidelines	Use this command to execute EXEC level show commands while configuring your switch. After the EXEC command is executed, the system returns to the mode from which you issued the do command.
-------------------------	--

Examples	The following example displays the information about the cluster tape details in the SME tape volume configuration submode:
-----------------	---

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# tape-bkgrp group1
switch(config-sme-cl-tape-bkgrp)# tape-device devicename1
switch(config-sme-cl-tape-bkgrp-tapedevice)# do show sme cluster clustername1 tape detail
Tape t1 is online
  Is a Tape Drive
  Model is HP Ultrium 2-SCSI
  Serial Number is HUM4A00184
  Is configured as tape device b1 in tape group b1
  Paths
    Host 12:01:00:e0:8b:a2:08:90 Target 52:06:0b:11:00:20:4c:4c LUN 0x0000
    Is online
```

The following example displays the counters in the interface in the SME crypto tape volume group configuration submode:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# tape-bkgrp group1
switch(config-sme-cl-tape-bkgrp)# tape-volgrp t1
switch(config-sme-cl-tape-bkgrp-volgrp)# do show interface sme 3/1 description
sme3/1
  5 minutes input rate 0 bits/sec, 0 bytes/sec, 0.00 KB/sec
  5 minutes output rate 0 bits/sec, 0 bytes/sec, 0.00 KB/sec
```


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```
SME statistics
input 0 bytes, 5 second rate 0 bytes/sec, 0.00 KB/sec
  clear 0 bytes, encrypt 0 bytes, decrypt 0
  compress 0 bytes, decompress 0 bytes
output 0 bytes, 5 second rate 0 bytes/sec, 0.00 KB/sec
  clear 0 bytes, encrypt 0 bytes, decrypt 0
  compress 0 bytes, decompress 0 bytes
  compression ratio 0:0
flows 0 encrypt, 0 clear
clear luns 0, encrypted luns 0
errors
  0 CTH, 0 authentication
  0 key generation, 0 incorrect read
  0 incompressible, 0 bad target responses
```

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fabric

To add a fabric to the cluster, use the **fabric** command in the SME cluster configuration submode.

fabric *fabric name*

Syntax Description	
<i>fabric name</i>	Specifies the fabric name. The maximum length is 32 characters.

Defaults	
	None.

Command Modes	
	SME cluster configuration submode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines	
	None.

Examples	
	The following example adds a fabric named sw-xyz to a cluster: <pre>switch# config terminal switch(config)# sme cluster c1 switch(config-sme-cl)# fabric sw-xyz</pre>

Related Commands	Command	Description
	show sme cluster	Displays information about SME cluster.

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fabric-membership

To add a node to a fabric, use the **fabric-membership** command. To remove the node from the fabric, use the **no** form of the command.

fabric-membership *fabric name*

no fabric-membership *fabric name*

Syntax Description	<i>fabric name</i>	Specifies the fabric name. The maximum length is 32 characters.
--------------------	--------------------	---

Defaults	None.
----------	-------

Command Modes	SME cluster node configuration submode.
---------------	---

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines	Use the fabric-membership command to put a node in a fabric. This command has to be configured before the interface sme slot/port [force] command can be accepted. The command cannot be removed if the interface sme slot/port [force] command is enabled.
------------------	---

Examples	The following example specifies a fabric to which the node belongs:
----------	---

```
switch# config t
switch(config)# sme cluster clustername1
switch(config-sme-cl)# node local
switch(config-sme-cl-node)# fabric-membership f1
```

Related Commands	Command	Description
	interface sme	Configures the SME interface to a cluster.
	show interface sme	Displays interface information.
	shutdown	Enables or disables an interface.

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fc-redirect version2 enable



Note

For SME Disk clusters, all switches that are part of the cluster must have fc-redirect version 2 enabled.

To enable the version2 mode in FC-Redirect, use the **fc-redirect version2 enable** command in configuration mode. To disable the version2 mode in FC-Redirect, use the **no** form of the command.

fc-redirect version2 enable

no fc-redirect version2 enable

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

Configuration mode.

Command History

Release	Modification
3.3(1c)	This command was introduced.

Usage Guidelines

This command is used to increase scalability of FC-Redirect.

Disabling version2 mode after it is enabled in the fabric is not recommended. However, if you want to disable version2 mode, you cannot disable it until all FC-Redirect configurations are deleted. FC-Redirect configurations can be deleted only by deleting all corresponding application configurations.

The MDS switches running Cisco SAN-OS 3.2.x cannot be added to the fabric after the version2 mode is enabled. If the switches are added, all further FC-Redirect configuration changes will fail across the fabric. This could lead to traffic disruption for applications such as SME and DMM.

Use the **show fc-redirect configs** command to see the list of applications that create FC-Redirect configurations.

If version2 mode is enabled in the fabric and you want to move a switch to a different fabric, use the **clear fc-redirect decommission-switch** command before moving the switch to a different fabric. If not, all switches in the new fabric will be converted to version2 mode automatically.



Note

All switches in the fabric should be running SAN-OS Release 3.3.x or NX-OS 4.x. Ensure that there are no fabric changes or upgrades in progress. Use the **show fc-redirect peer-switches** command (UP state) to see all the switches in the fabric.

Examples

The following example shows how to enable version2 mode in FC-Redirect:

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```
switch# fc-redirect version2 enable
```

Please make sure to read and understand the following implications before proceeding further:

- 1) This is a Fabric wide configuration. All the switches in the fabric will be configured in Version2 mode. Any new switches added to the fabric will automatically be configured in version2 mode.
- 2) SanOS 3.2.x switches CANNOT be added to the Fabric after Version2 mode is enabled. If any 3.2.x switch is added when Version2 mode is enabled, all further FC-Redirect Configuration changes will Fail across the fabric. This could lead to traffic disruption for applications like SME.
- 3) If enabled, Version2 mode CANNOT be disabled till all FC-Redirect configurations are deleted. FC-Redirect configurations can be deleted ONLY after all the relevant application configurations are deleted. Please use the command 'show fc-redirect configs' to see the list of applications that created FC-Redirect configurations.
- 4) 'write erase' will NOT disable this command. After 'write erase' on ANY switch in the fabric, the user needs to do:

```
'clear fc-redirect decommission-switch'
```

on that that switch. Without that, if the user moves the switch to a different fabric it will try to convert all the switches in the fabric to Version2 mode automatically. This might lead to Error conditions and hence Traffic disruption.

Do you want to continue? (Yes/No) [No]Yes

Before proceeding further, please check the following:

- 1) All the switches in the fabric are seen in the output of 'show fc-redirect peer-switches' command and are in 'UP' state.
- 2) All switches in the fabric are running SanOS version 3.3.x or higher.
- 3) Please make sure the Fabric is stable ie.,
No fabric changes/upgrades in progress

Do you want to continue? (Yes/No) [No] Yes

Related Commands	Command	Description
	no fc-redirect version2 enable mode	Disables version2 mode in FC-Redirect.

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feature

To enable and disable SME features, use the **feature** command. To remove the feature, use the **no** form of the command.

feature { **cluster** | **sme** }

no feature { **cluster** | **sme** }

Syntax Description	cluster	Enables or disables the clustering feature.
	sme	Enables or disables the storage media encryption (SME) services.

Defaults Disabled.

Command Modes Configuration mode.

Command History	Release	Modification
	NX-OS 4.1(1b)	This command was introduced.

Usage Guidelines None.

Examples The following example shows how to enable clustering and configure SME services:

```
switch# config terminal
switch(config)# feature cluster
switch(config)# feature sme
switch(config)#
```

Related Commands	Command	Description
	show sme cluster	Displays SME cluster information.

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interface sme

To configure the SME interface on a switch, use the **interface sme** command. To remove the interface, use the **no** form of the command.

```
interface sme slot /port
```

```
no interface sme slot /port
```

Syntax Description

<i>slot</i>	Identifies the number of the MSM-18/4 module slot.
<i>port</i>	Identifies the number of the SME port.

Defaults

Disabled.

Command Modes

Configuration mode.

Command History

Release	Modification
3.2(2c)	This command was introduced.

Usage Guidelines

To use this command, clustering must be enabled using the **feature cluster** command and SME services must be activated using the **feature sme** command.

Once you have configured the interface, use the **no shutdown** command to enable the interface.

To delete the SME interface, you must first remove the switch from the cluster. Use the **no sme cluster** command to remove the switch from the cluster and then use the **no interface** command to delete the interface.

The interface commands are available in the **(config-if)** submode.

Examples

The following example configures and enables the SME interface on the MSM-18/4 module slot and the default SME port:

```
switch# config terminal
switch(config)# interface sme 3/1
switch(config-if)# no shutdown
```

Related Commands

Command	Description
show interface sme	Displays interface information.
shutdown	Enables or disables an interface.

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interface sme (SME cluster node configuration submode)

To add a SME interface from a local or a remote switch to a cluster, use the **interface sme** command. To delete the interface, use the **no** form of the command.

interface sme (*slot/port*) [**force**]

no interface sme (*slot/port*) [**force**]

Syntax Description

<i>slot</i>	Identifies the MSM-18/4 module slot.
<i>port</i>	Identifies the SME port.
force	(Optional) Forcibly clears the previous interface context in the interface.

Defaults

Disabled.

Command Modes

SME cluster node configuration submode.

Command History

Release	Modification
3.2(2c)	This command was introduced.

Usage Guidelines

You have to first configure a node using the **fabric-membership** command before this command can be executed.

To use this command, clustering must be enabled using the **feature cluster** command and SME services must be activated using the **feature sme** command.

To delete the SME interface, first remove the switch from the cluster. Use the **no sme cluster** command to remove the switch from the cluster and then use the **no interface** command to delete the interface.

Examples

The following example specifies the fabric to which the node belongs and then adds the SME interface (4/1) from a local switch using the **force** option:

```
switch# config t
switch(config)# sme cluster clustername1
switch(config-sme-cl)# node local
switch(config-sme-cl-node)# fabric-membership f1
switch(config-sme-cl-node)# interface sme 4/1 force
```

The following example specifies the fabric to which the node belongs and then adds the SME interface (4/1) from a remote switch using the **force** option:

```
switch# config t
switch(config)# sme cluster clustername1
switch(config-sme-cl)# node 171.71.23.33
switch(config-sme-cl-node)# fabric-membership f1
switch(config-sme-cl-node)# interface sme 4/1 fabric sw-xyz
```


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Related Commands	Command	Description
	fabric-membership	Adds the node to a fabric.
	show interface	Displays SME interface details.

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key-ontape

To configure keys on the tape mode and store the encrypted security keys on the backup tapes, use the **key-ontape** command. To disable this feature, use the **no** form of the command.

key-ontape

no key-ontape

Syntax Description This command has no arguments or keywords.

Defaults Disabled.

Command Modes SME cluster configuration submode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines This command allows the encrypted security keys to be stored on the backup tapes.



Note This feature is supported only for unique keys.

Before using this command, automatic volume grouping should be disabled by using the **auto-volgrp** command.

Examples The following example enables the key-ontape feature:

```
switch# config terminal
switch(config)# sme cluster clustername1
switch(config-sme-cl)# key-ontape
```

The following example disables the key-ontape feature:

```
switch# config terminal
switch(config)# sme cluster clustername1
switch(config-sme0-cl)# no key-ontape
```

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Related Commands	Command	Description
	no auto-volgrp	Disables automatic volume grouping.
	no shared-key	Specifies unique key mode.
	show sme cluster key	Displays information about cluster key database.
	show sme cluster <clustername> tape summary	Displays information about tapes.

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link-state-trap

To enable an Simple Network Management Protocol (SNMP) link state trap on an interface, use the **link-state-trap** command. To disable this feature, use the **no** form of the command.

link-state-trap

no link-state-trap

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes Interface configuration submode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines None.

Examples The following example enables the link-state-trap on the SME interface:

```
switch# config t
switch(config)# interface sme 4/1
switch(config-if)# link-state-trap
```

The following example disables the link-state-trap on the SME interface:

```
switch# config t
switch(config)# interface sme 4/1
switch(config-if)# no link-state-trap
```

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node

To configure SME switch, use the **node** command. To disable this command, use the **no** form of the command.

```
node {local | {A.B.C.D | X:X::X /n| DNS name}}
```

```
no node {local | {A.B.C.D | X:X::X /n| DNS name}}
```

Syntax Description

local	Configures the local switch.
<i>A.B.C.D</i>	Specifies the IP address of the remote switch in IPv4 format.
<i>X:X::X/n</i>	Specifies the IP address of the remote switch in IPv6 format.
<i>DNS name</i>	Specifies the name of the remote database.

Defaults

None.

Command Modes

SME cluster configuration submode.

Command History

Release	Modification
3.2(2c)	This command was introduced.

Usage Guidelines

None.

Examples

The following example adds the SME interface from a local switch:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# node local
switch(config-sme-cl-node)#
```

The following example adds the SME interface from a remote switch:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# node 171.71.23.33
switch(config-sme-cl-node)#
```

Related Commands

Command	Description
show sme cluster node	Displays SME node information about a local or remote switch.

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odrt.bin

To perform offline data recovery of tape encrypted by SME, use the **odrt.bin** command on Linux-based systems. This command allows you to recover data when the MSM-18/4 module or the Cisco MDS 9222i fabric switch is not available.

```
odrt.bin [--help][--version]{-h | -l | -r | -w}{if=input_device_or_file | of=output_device_or_file |
kf=key_export_file | verbose=level}
```

Syntax Description		
--help	(Optional)	Displays information on the tool.
--version	(Optional)	Displays the version of the tool.
-h		Reads and prints the tape header information on the tape.
-l		Lists all SCSI devices.
-r		Reads the tape device and writes data to intermediate files.
-w		Reads the intermediate files on disk and writes data to the tape.
if		Specifies the input device or file.
of		Specifies the output device or file
kf		Specifies the key export file name.
verbose		Specifies the level.

Defaults None.

Command Modes None. This command runs from the Linux shell.

Command History	Release	Modification
	3.3(1c)	This command was introduced.

Usage Guidelines The **odrt.bin** command operates in the following steps:

- **Tape-to-disk**– In this mode, the **odrt.bin** command reads the encrypted data from the tape and stores it as intermediate files on the disk. This mode is invoked with the **-r** flag. The input parameter is the tape device name and filename on the disk is the output parameter.
- **Disk-to-tape**– In this mode, the **odrt.bin** command reads intermediate files on the disk, decrypts and decompresses (if applicable) the data and writes the clear-text data to the tape. The decryption key is obtained from the volume group file that is exported from the Cisco Key Management Center (KMC). This mode is invoked with the **-w** flag. The input parameter is the filename on the disk and tape device name is the output parameter. The volume group file name (key export file) is also accepted as a parameter. Key export password needs to be entered at the command prompt.



Note For information on exporting volume groups, see [Chapter 7, “Configuring SME Key Management.”](#)

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Examples

The following command reads and prints the Cisco tape header information on the tape:

```
odrt -h if=/dev/sg0
```

The following example read the data on tape into intermediate files on disk:

```
odrt -r if=/dev/sg0 of=diskfile
```

The following command reads the encrypted/compressed data in intermediate files and writes back the decrypted/decompressed data to the tape:

```
odrt -w if=diskfile of=/dev/sg0 kf=c1_tb1_Default.dat
```

A sample output of the **odrt.bin** command follows:

```
[root@ips-host06 odrt]# ./odrt.bin -w if=c of=/dev/sg2 kf=sme_L700_IBMLTO3_Default.dat
verbose=3
Log file: odrt30072
Please enter key export password:
Elapsed 0:3:39.28, Read 453.07 MB, 2.07 MB/s, Write 2148.27 MB, 9.80 MB/s
Done
```

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rule

To specify the tape volume group regular expression, use the **rule** command. To disable this feature, use the **no** form of the command.

rule {**range** *range* | **regexp** *regular expression*}

no rule {**range** *range* | **regexp** *regular expression*}

Syntax Description	range <i>range</i>	Specifies the crypto tape volume barcode range. The maximum length is 32 characters.
	regexp <i>regular expression</i>	Specifies the volume group regular expression. The maximum length is 32 characters.

Defaults None.

Command Modes SME crypto tape volume group configuration submode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines None.

Examples The following example specifies the volume group regular expression:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# tape-bkgrp tbg1
switch(config-sme-cl-tape-bkgrp)# tape-volgrp tv1
switch(config-sme-cl-tape-bkgrp-volgrp)#rule regexp r1
```

Related Commands	Command	Description
	show sme cluster	Displays information about SME cluster.
	tape-bkgrp <i>groupname</i>	Configures crypto backup group.
	tape-volgrp <i>volume groupname</i>	Configures crypto backup volume group.

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scaling batch enable



Note

For SME Disk clusters, batching mode is automatically enabled.

To enable scalability in the SME configuration, use the **scaling batch enable** command. To disable this feature, use the **no** form of the command.

scaling batch enable

no scaling batch enable

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

SME cluster configuration submode.

Command History

Release	Modification
4.1(3)	This command was introduced.

Usage Guidelines

None.

Examples

The following example enables SME scalability:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# scaling batch enable
switch(config-sme-cl)#
```

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security-mode

To configure the SME security settings, use the **security-mode** command. To delete the security settings, use the **no** form of the command.

```
security-mode {basic | standard | advanced {schema threshold threshold total total }}
```

```
no security-mode {basic | standard | advanced {schema threshold threshold total total }}
```

Syntax Description

basic	Sets the SME security level to basic.
standard	Sets the SME security level to standard.
advanced	Sets the SME security level to advanced.
schema	Configures the recovery schema.
threshold <i>threshold</i>	Configures the recovery schema threshold. The limit is 2 to 3.
total <i>total</i>	Configures the recovery schema total. The limit is 5 to 5.

Defaults

None.

Command Modes

SME cluster configuration submode.

Command History

Release	Modification
3.2(2c)	This command was introduced.

Usage Guidelines

None.

Examples

The following example sets the security mode to basic:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# security-mode basic
```

The following example sets the security mode to advanced:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# security-mode advanced schema threshold 3 total 5
```

Related Commands

Command	Description
show sme cluster	Displays information about the security settings.

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setup

To run the basic setup facility, use the **setup** command.

```
setup ficon | sme
```

Syntax Description	Command	Description
	ficon	Runs the basic FICON setup command facility.
	sme	Runs the basic SME setup command facility.

Defaults	Value
	None.

Command Modes	Mode
	EXEC.

Command History	Release	Modification
	3.3(1c)	This command was introduced.

Usage Guidelines	Guidelines
	Use the setup sme command to create the sme-admin and sme-recovery roles for SME.

Examples	Example
	<p>The following example creates the sme-admin and sme-recovery roles:</p> <pre>switch(config)# setup sme Set up four roles necessary for SME, sme-admin, sme-stg-admin, sme-kmc-admin and sme-recovery? (yes/no) [no] yes If CFS is enabled, please commit the roles so that they can be available. SME setup done.</pre>

Related Commands	Command	Description
	show role	Displays information about the various SME role configurations.

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shared-keymode

To configure the shared key mode, use the **shared-keymode** command. To specify the unique key mode, use the **no** form of the command.

shared-keymode

no shared-keymode

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes SME cluster configuration submode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines The **shared-keymode** command generates a single key that is used for a group of backup tapes. The **no shared-keymode** command generates unique or specific keys for each tape cartridge.



Note

The shared unique key mode should be specified if you want to enable the key-ontape feature.

Examples The following example specifies the shared key mode:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# shared-keymode
```

The following example specifies the shared unique keymode:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# no shared-keymode
```

Related Commands	Command	Description
	show sme cluster	Displays SME cluster information.

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show debug

To display all SME-related debug commands configured on the switch, use the **show debug** command.

```
show debug {cluster {bypass | sap sap bypass} | sme bypass}
```

Syntax Description	Parameter	Description
	cluster	Displays all the debugging flags.
	bypass	Displays the bypass flags.
	sap <i>sap</i>	Displays all debugging flags of SAP. Specifies the SAP in the range from 1 to 65535.
	sme	Displays all the debugging flags of SME.

Defaults None.

Command Modes EXEC mode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines None.

Examples The following example shows all **debug** commands configured on the switch:

```
switch# show debug
ILC helper:
  ILC_HELPER errors debugging is on
  ILC_HELPER info debugging is on
```

Related Commands	Commands	Description
	debug sme	Debugs SME features.

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show fc-redirect active-configs

To display all active configurations on a switch, use the **show fc-redirect active-configs** command.

show fc-redirect active-configs

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines This command is used to verify if there are active configurations running on the switch during the following procedures:

- Downgrading from a Cisco SAN-OS 3.2(1) image (supporting FC-Redirect) to an older image where FC-Redirect is not supported.
- Decommissioning a local switch.



Note

Active configuration implies configurations created by applications running on the current switch or applications created on remote switches, except the targets and hosts connected to the local switch.

Examples

The following example displays the active configurations running on the switch:

```
switch# show fc-redirect active-configs
Config#1
=====
Appl UUID = 0x00D8 (ISAPI CFGD Service)
SSM Slot = 2
SSM Switch WWN = 20:00:00:05:30:00:90:9e (LOCAL)
Vt PWWN = 2f:ea:00:05:30:00:71:64
Tgt PWWN = 21:00:00:20:37:38:63:9e (LOCAL)
Local Host PWWN = 21:00:00:e0:8B:0d:12:c6
Config#2
=====
Appl UUID = 0x00D8 (ISAPI CFGD Service)
SSM Slot = 2
SSM Switch WWN = 20:00:00:05:30:00:90:9e (LOCAL)
Vt PWWN = 2f:ea:00:05:30:00:71:65
Tgt PWWN = 21:00:00:20:37:18:67:2c
Local Host PWWN = 21:00:00:e0:8B:0d:12:c6

Config#3
```

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```
=====  
App1 UUID = 0x00D8 (ISAPI CFGD Service)  
SSM Slot = 2  
SSM Switch WWN = 20:00:00:0d:EC:20:13:00 (REMOTE)  
Vt PWWN = 2f:ea:00:05:30:00:71:66  
Tgt PWWN = 21:00:00:20:37:18:64:92  
Local Host PWWN = 21:00:00:e0:8B:0d:12:c6
```

Related Commands

Command	Description
clear fc-redirect vt	Clears the active configurations on the local switch.

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show fc-redirect configs

To display all the current configuration mode on a switch, use the **show fc-redirect configs** command.

show fc-redirect configs

Syntax Description	This command has no arguments or keywords.
---------------------------	--

Defaults	None.
-----------------	-------

Command Modes	EXEC mode
----------------------	-----------

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines	None.
-------------------------	-------

Examples	The following example displays the current configuration mode on a switch:
-----------------	--

```
switch# show fc-redirect configs
Configuration Mode    = MODE_V1
Config#1
=====
Appl UUID            = 0x00D8 (ISAPI CFGD Service)
SSM Slot              = 2
SSM Switch WWN       = 20:00:00:05:30:00:90:9e (LOCAL)
Vt PWWN              = 2f:ea:00:05:30:00:71:61
Tgt PWWN              = 21:00:00:20:37:38:89:86
Host 1: Host PWWN    = 21:00:00:e0:8b:0d:12:c6
                   VI PWWN = 2f:ec:00:05:30:00:71:61

Config#2
=====
Appl UUID            = 0x00D8 (ISAPI CFGD Service)
SSM Slot              = 2
SSM Switch WWN       = 20:00:00:05:30:00:90:9e (LOCAL)
Vt PWWN              = 2f:ea:00:05:30:00:71:62
Tgt PWWN              = 21:00:00:20:37:38:a9:0a
Host 1: Host PWWN    = 21:00:00:e0:8b:0d:12:c7
                   VI PWWN = 2f:ec:00:05:30:00:71:62
```

Related Commands	Command	Description
	show fc-redirect active-configs	Displays all active configurations on a switch.

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show fc-redirect peer-switches

To display all the peer switches in the fabric running FC-Redirect, use the **show fc-redirect peer-switches** command.

show fc-redirect peer-switches

Syntax Description This command has no other keywords or arguments.

Defaults None.

Command Modes EXEC mode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines This command is used for verifying the fabric state and for troubleshooting.



Note To find the switch IP address for the list of switch WWNs, use the **show cfs peers** command.

Examples The following example displays the peer switches in the fabric running FC-Redirect:

```
switch# show fc-redirect peer-switches
-----
num          Switch WWN                State
-----
1           20:00:00:05:30:00:90:9e   UP
2           21:00:00:05:30:00:90:9f   DOWN
3           22:00:00:05:30:00:90:91   SYNCING
4           23:00:00:05:30:00:90:92   ERROR
```

This table shows FC-Redirect peer switches summaries.

Field	Description
Up	The peer switch is fully synced with the local switch.
Down	The communication with peer switch is broken.
Syncing	The local switch is syncing its configuration with the peer switch.
Error	Connection with peer switch is not available.

■ show fc-redirect peer-switches

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Related Commands	Command	Description
	clear fc-redirect vt	Clears the active configurations on the local switch.

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show interface sme

To display the information about SME interface, use the **show interface sme** command.

```
show interface sme slot/port {brief | counters brief | description}
```

Syntax	Description
<i>slot</i>	Identifies the number of the MSM-18/4 module slot.
<i>port</i>	Identifies the number of the SME port.
brief	Displays the brief information about SME interface.
counters	Displays the interface counters.
brief	Displays brief counter information.
description	Displays the description of the interface.

Defaults None.

Command Modes EXEC mode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines None.

Examples The following example displays the brief description of the SME interface:

```
switch# show interface sme 3/1 brief
```

```
-----
Interface      Status      Cluster
-----
sme3/1         up          c2
```

The following example displays the counters of the interface:

```
switch# show interface sme 3/1 description
sme3/1
 5 minutes input rate 0 bits/sec, 0 bytes/sec, 0.00 KB/sec
 5 minutes output rate 0 bits/sec, 0 bytes/sec, 0.00 KB/sec
SME statistics
  input 0 bytes, 5 second rate 0 bytes/sec, 0.00 KB/sec
  clear 0 bytes, encrypt 0 bytes, decrypt 0
  compress 0 bytes, decompress 0 bytes
  output 0 bytes, 5 second rate 0 bytes/sec, 0.00 KB/sec
  clear 0 bytes, encrypt 0 bytes, decrypt 0
  compress 0 bytes, decompress 0 bytes
  compression ratio 0:0
  flows 0 encrypt, 0 clear
```

show interface sme***Send documentation comments to mdsfeedback-doc@cisco.com***

```
clear luns 0, encrypted luns 0
errors
  0 CTH, 0 authentication
  0 key generation, 0 incorrect read
  0 incompressible, 0 bad target responses
```

Related Commands	Command	Description
	interface sme	Configures the SME interface on the switch.

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show role

To display the description about the various SME role configurations, use the **show role** command.

show role

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes EXEC mode.

Command History	Release	Modification
	3.3(1c)	This command was introduced.
	NX-OS 4.1(1b)	The sample output was changed.

Usage Guidelines Execute the **setup sme** command to set up the SME administrator and SME recovery roles and then use the **show role** command to display the role details.

Examples The following example displays the SME role configurations:

```
switch(config)# setup sme
Set up four roles necessary for SME, sme-admin, sme-stg-admin, sme-kmc-admin and
sme-recovery? (yes/no) [no] yes
If CFS is enabled, please commit the roles so that they can be available.
SME setup done.
```

```
switch# show role
Role: sme-admin
  Description: new role
  Vsan policy: permit (default)
-----
Rule   Type   Command-type  Feature
-----
1      permit show          sme
2      permit config    sme
3      permit debug     sme

Role: sme-stg-admin
  Description: new role
  Vsan policy: permit (default)
-----
Rule   Type   Command-type  Feature
-----
1      permit show          sme-stg-admin
2      permit config    sme-stg-admin
3      permit debug     sme-stg-admin
```

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```

Role: sme-kmc-admin
Description: new role
Vsan policy: permit (default)
-----
Rule      Type      Command-type      Feature
-----
1         permit   show              sme-kmc-admin
2         permit   config            sme-kmc-admin
3         permit   debug             sme-kmc-admin

```

```

Role: sme-recovery
Description: new role
Vsan policy: permit (default)
-----
Rule      Type      Command-type      Feature
-----
1         permit   config            sme-recovery-officer

```

Related Commands

Command	Description
setup sme	Sets up the SME administrator and SME recovery roles.

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show sme cluster

To display the information about the SME cluster, use the **show sme cluster** command.

```
show sme cluster {cluster name {detail | interface {detail | node {A.B.C.D | X:X::X | DNS name
sme slot/port } | sme slot/port | summary} | it-nexus | key database {detail | guid guid name
{detail | summary } | summary} | load-balancing | lun crypto-status | node {{A.B.C.D |
X:X::X | DNS name} | summary} | recovery officer {index | detail index | summary index} |
summary | tape {detail | summary} | tape-bkgrp tape group name volgrp volume group
name} | detail | summary }
```

Syntax Description

cluster <i>cluster name</i>	Displays SME cluster information. The maximum length is 32 characters.
detail	Displays SME cluster details.
interface	Displays information about SME cluster interface.
node	Displays information about SME cluster remote interface.
<i>A.B.C.D</i>	Specifies the IP address of the remote switch in IPv4 format.
<i>X:X::X</i>	Specifies the IP address of the remote switch in IPv6 format.
<i>DNS name</i>	Specifies the name of the remote database.
sme	Specifies the SME interface.
<i>slot</i>	Identifies the MSM-18/4 module slot.
<i>port</i>	Identifies the SME port.
interface summary	Displays SME cluster interface summary.
it-nexus	Displays the initiator to target connections (IT-nexus) in the SME cluster.
key database	Shows the SME cluster key database.
detail	Shows the SME cluster key database details
guid <i>guid name</i>	Displays SME cluster key database guid. The maximum length is 64.
summary	Displays SME cluster key database summary.
load-balancing	Displays the load balancing status of the cluster.
lun	Displays the logical unit numbers (LUNs) in a cluster.
crypto-status	Displays the crypto status of the LUNs.
node summary	Displays SME cluster node summary.
recovery officer detail	Displays SME cluster recovery officer detail.
recovery officer summary	Displays SME cluster recovery officer summary.
<i>index</i>	Specifies recovery officer index. The range is 1 to 8.
detail <i>index</i>	Specifies recovery officer detail index. The range is 1 to 8.
summary <i>index</i>	Specifies recovery officer summary index. The range is 1 to 8.
tape detail	Displays SME tape detail.
tape summary	Displays the tape summary.
tape-bkgrp <i>tape group name</i>	Displays the crypto tape backup group name. The maximum length is 32 characters.
volgrp <i>volume group name</i>	Displays tape volume group name. The maximum length is 32 characters.

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detail	Displays SME cluster details.
summary	Shows SME cluster summary.

Defaults None.

Command Modes EXEC mode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines None.

Examples The following example displays the configuration details about a cluster:

```
switch# show sme cluster c1
Cluster ID is 0x2b2a0005300035e1
Cluster status is online
Security mode is advanced
Total Nodes are 1
Recovery Scheme is 2 out of 5
Fabric[0] is Fabric_name-excall10
KMC server 10.21.113.117:8800 is provisioned, connection state is initializing

Master Key GUID is 10af119cfd79c17f-ee568878c049f94d, Version: 0
Shared Key Mode is Not Enabled
Auto Vol Group is Not Enabled
Tape Compression is Not Enabled
Tape Key Recycle Policy is Not Enabled
Key On Tape is Not Enabled
Cluster Infra Status : Operational
Cluster is Administratively Up
Cluster Config Version : 24
```

The following example displays the cluster interface information:

```
switch# show sme cluster clusternam1 interface it-nexus
-----
      Host WWN                VSAN    Status    Switch    Interface
      Target WWN
-----
10:00:00:00:c9:4e:19:ed,
2f:ff:00:06:2b:10:c2:e2      4093    online    switch    sme4/1
```


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The following example displays the specific recovery officer of a cluster:

```
switch# show sme cluster clusternam1 recovery officer
Recovery Officer 1 is set
  Master Key Version is 0
  Recovery Share Version is 0
  Recovery Share Index is 1
  Recovery Scheme is 1 out of 1
  Recovery Officer Label is
  Recovery share protected by a password

Key Type is master key share
  Cluster is clusternam1, Master Key Version is 0
  Recovery Share Version is 0, Share Index is 1
```

Related Commands

Command	Description
clear sme	Clears SME configuration.
show sme cluster	Displays information about SME cluster.

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show sme transport

To display the SME cluster transport information, use the **show sme transport** command.

show sme transport ssl trustpoint

Syntax Description	ssl	Displays transport Secure Sockets Layer (SSL) information.
	trustpoint	Displays transport SSL trustpoint information.

Defaults None.

Command Modes EXEC mode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines None.

Examples The following example displays the internal cluster errors:

```
switch# show sme transport ssl trustpoint
SME Transport SSL trustpoint is trustpoint-label
```

Related Commands	Command	Description
	clear sme	Clears SME configuration.
	show sme cluster	Displays all information of SME cluster.

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show tech-support sme

To display the information for SME technical support, use the **show tech-support sme** command.

show tech-support sme compressed bootflash: | tftp:

Syntax Description	compressed	Saves the compressed SME
	bootflash:	Specifies the filename that needs to be stored.
	tftp:	Specifies the filename that needs to be stored.

Defaults None.

Command Modes EXEC mode

Command History	Release	Modification
	3.3(1c)	This command was introduced.

Usage Guidelines None.

Examples The following example displays the information for SME technical support:

```
sw-sme-n1# show tech-support sme

'show startup-config'
version 4.1(1b)
username admin password 5 $1$jC/GIid6$PuNDstXwdAnwGaxxjdx150 role network-admin
no password strength-check
feature telnet
ntp server 10.81.254.131
kernel core target 0.0.0.0
kernel core limit 1
aaa group server radius radius
snmp-server user admin network-admin auth md5 0x7eedfdadb219506ca61b0e2957cc7ef5
priv 0x7eedfdadb219506ca61b0e2957cc7ef5 localizedkey
snmp-server host 171.71.49.157 informs version 2c public udp-port 2162
snmp-server enable traps license
snmp-server enable traps entity fru
device-alias database
  device-alias name sme-host-171-hba0 pwnn 21:01:00:e0:8b:39:d7:57
  device-alias name sme-host-171-hba1 pwnn 21:00:00:e0:8b:19:d7:57
  device-alias name sme-host-172-hba0 pwnn 21:01:00:e0:8b:39:c2:58
  device-alias name sme-host-172-hba1 pwnn 21:00:00:e0:8b:19:c2:58
  device-alias name sme-sanblaze-port0-tgt0 pwnn 2f:ff:00:06:2b:0d:39:08
  device-alias name sme-sanblaze-port0-tgt1 pwnn 2f:df:00:06:2b:0d:39:08
--More--
```

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shutdown (interface configuration submode)

To disable an SME interface, use the **shutdown** command. To enable the interface, use the **no** form of the command.

shutdown

no shutdown

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes Interface configuration submode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines The default state for SME interfaces is shutdown. Use the **no shutdown** command to enable the interface to carry traffic.

The **show interface** command shows that the SME interface is down until the interface is added to a cluster.

Examples The following example enables a SME interface:

```
switch# config t
switch(config)# interface sme 4/1
switch(config-if)# no shutdown
```

The following example disables a SME interface:

```
switch# config t
switch(config)# interface sme 4/1
switch(config-if)# shutdown
```

Related Commands	Command	Description
	show interface sme	Displays information about the SME interface.

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shutdown (SME cluster configuration submode)

To disable a cluster for recovery, use the **shutdown** command. To enable the cluster for recovery, use the **no** form of the command.

shutdown

no shutdown

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes SME cluster configuration submode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines To disable operation of a cluster for the purpose of recovery, use the **shutdown** command. To enable the cluster for normal usage, use the **no shutdown** command.

The default state for clusters is **no shutdown**. Use the **shutdown** command for cluster recovery. See the [Chapter 11, “SME Troubleshooting”](#) for additional details about recovery scenarios.

Examples The following example restarts the cluster after recovery is complete:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# no shutdown
```

The following example disables the cluster operation in order to start recovery:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# shutdown
```

Related Commands	Command	Description
	show sme cluster	Displays information about the SME cluster.

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sme

To enable or disable the SME services, use the **sme** command.

```
sme {cluster name | transport ssl trustpoint trustpoint label}
```

Syntax Description	Parameter	Description
	cluster	Configures the cluster.
	<i>name</i>	Identifies the cluster name.
	transport	Configures the transport information.
	ssl	Configures the transport SSL information.
	trustpoint	Configures the transport SSL trustpoint.
	<i>trustpoint label</i>	Identifies the trustpoint label.

Defaults Disabled.

Command Modes Configuration mode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines SME services must be enabled to take advantage of the encryption and security features. To use this command, you must enable SME clustering using the **feature cluster** command.

Examples The following example shows how to configure a cluster:

```
switch# config t
sw-sme-n1(config)# sme cluster clustername
sw-sme-n1(config-sme-cl)#
```

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ssl

To configure Secure Sockets Layer (SSL), use the **ssl** command. Use the **no** form of this command to disable this feature.

ssl kmc

no ssl kmc

Syntax Description	kmc	Enables SSL for Key Management Center (KMC) communication.
--------------------	-----	--

Defaults	None.
----------	-------

Command Modes	SME cluster configuration mode submode.
---------------	---

Command History	Release	Modification
	3.3(1c)	This command was introduced.

Usage Guidelines	None.
------------------	-------

Examples	The following example enables SSL:
----------	------------------------------------

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-c1)# ssl kmc
```

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tape-bkgrp

To configure a crypto tape backup group, use the **tape-bkgrp** command. To disable this feature, use the **no** form of the command.

tape-bkgrp *groupname*

no tape-bkgrp *groupname*

Syntax Description	<i>groupname</i>	Specifies the backup tape group. The maximum length is 31 characters.
--------------------	------------------	---

Defaults	None.
----------	-------

Command Modes	SME cluster configuration mode submode.
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Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines	<p>A tape volume group is a group of tapes that are categorized by function. For example, HR1 could be designated tape volume group for all Human Resources backup tapes.</p> <p>Adding tape groups allows you to select VSANs, hosts, storage devices, and paths that SME will use for encrypted data. For example, adding a tape group for HR data sets the mapping for SME to transfer data from the HR hosts to the dedicated HR backup tapes.</p>
------------------	--

Examples	The following example adds a backup tape group:
----------	---

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# tape-bkgrp group1
switch(config-sme-cl-tape-bkgrp)#
```

The following example removes a backup tape group:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# no tape-bkgrp group1
switch(config-sme-cl-tape-bkgrp)#
```

Related Commands	Command	Description
	clear sme	Clears SME configuration.
	show sme cluster	Displays information about the SME cluster.

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tape-compression

To configure tape compression, use the **tape-compression** command. To disable this feature, use the **no** form of the command.

tape-compression

no tape-compression

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes SME cluster configuration submode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines Use this command to compress encrypted data.

Examples The following example enables tape compression:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# tape-compression
```

The following example disables tape compression:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# no tape-compression
```

Related Commands	Command	Description
	clear sme	Clears SME configuration.
	show sme cluster	Displays information about the SME cluster.
	show sme cluster tape	Displays information about all tape volume groups or a specific group.

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tape-device

To configure a crypto tape device, use the **tape-device** command. To disable this feature, use the **no** form of the command.

tape-device *device name*

no tape-device *device name*

Syntax Description	<i>device name</i>	Specifies the name of the tape device.
---------------------------	--------------------	--

Defaults	None.	
-----------------	-------	--

Command Modes	SME tape volume configuration submode.	
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Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines	The tape device commands are available in the (config-sme-cl-tape-bkgrp-tapedevice) submode.	
-------------------------	---	--

Examples	The following example configures a crypto tape device:	
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```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# tape-bkgrp group1
switch(config-sme-cl-tape-bkgrp)# tape-device devicename1
switch(config-sme-cl-tape-bkgrp-tapedevice)#
```

The following example removes a crypto tape device:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# tape-bkgrp group1
switch(config-sme-cl-tape-bkgrp)# no tape-device devicename1
switch(config-sme-cl-tape-bkgrp-tapedevice)#
```

Related Commands	Command	Description
	clear sme	Clears SME configuration.
	show sme cluster	Displays information about the SME cluster.
	show sme cluster tape	Displays information about all tape volume groups or a specific group.

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tape-keyrecycle

To configure a tape key recycle policy, use the **tape-keyrecycle** command. To disable this feature, use the **no** form of the command.

tape-keyrecycle

no tape-keyrecycle

Syntax Description This command has no arguments or keywords.

Defaults None.

Command Modes SME cluster configuration submode.

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines SME allows you to recycle the tape keys. If you enable tape key recycling, all the previous instances of the tape key will be deleted.

Examples The following example enables tape key recycling:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# tape-keyrecycle
```

The following example disables tape key recycling:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# no tape-keyrecycle
```

Related Commands	Command	Description
	clear sme	Clears SME configuration.
	show sme cluster	Displays information about the SME cluster.

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tape-volgrp

To configure the crypto tape volume group, use the **tape-volgrp** command. To disable this command, use the **no** form of the command.

tape-volgrp *group name*

no tape-volgrp *group name*

Syntax Description	<i>group name</i>	Specifies the tape volume group name.
--------------------	-------------------	---------------------------------------

Defaults	None.
----------	-------

Command Modes	SME crypto backup tape group configuration submode.
---------------	---

Command History	Release	Modification
	3.2(2c)	This command was introduced.

Usage Guidelines	The tape volume group commands are available in the SME crypto tape volume group (config-sme-cl-tape-bkgrp-volgrp) submode.
------------------	--

Examples	The following example configures a crypto tape volume group:
----------	--

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# tape-bkgrp tbg1
switch(config-sme-cl-tape-bkgrp)# tape-volgrp tv1
switch(config-sme-cl-tape-bkgrp-volgrp)#
```

The following example removes a crypto tape volume group:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-cl)# tape-bkgrp tbg1
switch(config-sme-cl-tape-bkgrp)# no tape-volgrp tv1
```

Related Commands	Command	Description
	clear sme	Clears SME configuration.
	show sme cluster tape	Displays information about tapes.

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tune-timer

To tune the SME timers, use the **tune-timer** command. To disable this command, use the **no** form of the command.

```
tune-timer { global_lb_timer global_lb_timer_value | rscn_suppression_timer
rscn_suppression_timer_value | tgt_lb_timer tgt_lb_timer_value }
```

```
no tune-timer { global_lb_timer global_lb_timer_value | rscn_suppression_timer
rscn_suppression_timer_value | tgt_lb_timer tgt_lb_timer_value }
```

Syntax Description		
global_lb_timer		Specifies the global load-balancing timer value.
<i>global_lb_timer_value</i>		Identifies the timer value. The range is from 5 to 30 seconds. The default value is 5 seconds.
rscn_suppression_timer		Specifies the SME Registered State Change Notification (RSCN) suppression timer value.
<i>rscn_suppression_timer_value</i>		Identifies the timer value. The range is from 1 to 10 seconds. The default value is 5 seconds.
tgt_lb_timer		Specifies the target load-balancing timer value.
<i>tgt_lb_timer_value</i>		Identifies the timer value. The range is from 2 to 30 seconds. The default value is 2 seconds.

Defaults None.

Command Modes SME cluster configuration submode.

Command History	Release	Modification
	3.3(1c)	This command was introduced.

Usage Guidelines The **tune-timer** command is used to tune various SME timers such as the RSCN suppression, global load balancing, and target load-balancing timers. These timers should be used only in large scale setups. The timer values are synchronized throughout the cluster.

Examples The following example configures a global load-balancing timer value:

```
switch# config t
switch(config)# sme cluster c1
switch(config-sme-c1)# tune-timer tgt_lb_timer 6
switch(config-sme-c1)#
```

The following example configures a SME RSCN suppression timer value:

```
switch# config t
switch(config)# sme cluster c1
```

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```
switch(config-sme-cl)# tune-timer rscn_suppression_timer 2  
switch(config-sme-cl)#
```

The following example configures a target load balancing timer value:

```
switch# config t  
switch(config)# sme cluster c1  
switch(config-sme-cl)# tune-timer rscn_suppression_timer 2  
switch(config-sme-cl)#
```