

APPENDIX **A**

SANTap CLI Command Reference

The Cisco MDS SANTap feature provides CLI commands that support scripting and advanced operations.

This appendix contains a list of alphabetically arranged commands that are unique to Cisco MDS SANTap.

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clear santap module

To clear SANTap information, use the **clear santap module** command.

```
clear santap module slot-number {avt avt-pwwn [lun avt-lun] | itl target-pwwn host-pwwn |  
  session session-id}
```

Syntax Description		
<i>slot-number</i>		Specifies the Storage Services Module (SSM) module number. The range is 1 through 13.
avt <i>avt-pwwn</i>		Removes the appliance virtual target (AVT) pWWN. The format is <i>hh:hh:hh:hh:hh:hh:hh:hh</i> .
lun <i>avt-lun</i>		(Optional) Removes the appliance virtual target (AVT) LUN. The format is <i>0xhhhh[:hhhh[:hhhh[:hhhh]]]</i> .
itl <i>target-pwwn</i> <i>host-pwwn</i>		Removes the SANTap Initiator Target LUN (ITL) triplet. The format of the <i>target-pwwn</i> and the <i>host-pwwn</i> is <i>hh:hh:hh:hh:hh:hh:hh:hh</i> .
session <i>session-id</i>		Removes a session. The range for session ID is 0 through 2147483647.

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

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

Command History	Release	Modification
	3.0(1)	This command was introduced.

Usage Guidelines	None.
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Examples	The following example shows how to remove a SANTap session:
----------	---

```
switch# clear santap module 13 session 2020
```

Related Commands	Command	Description
	santap module	Configures the mapping between the Storage Services Module (SSM) and the VSAN where the appliance is configured.
	show santap module	Displays the configuration and statistics of the SANTap feature.

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clear ssm-nvram santap module

To clear the SANTap configuration for a specific slot stored on the supervisor flash, use the **clear ssm-nvram santap module** command in the configuration mode.

clear ssm-nvram santap module *slot*

Syntax Description	<i>slot</i> Displays SANTap configuration for a module in the specified slot.	
Defaults	None.	
Command Modes	EXEC mode.	
Command History	Release	Modification
	3.2(1)	This command was introduced.
Usage Guidelines	None.	
Examples	The following example shows how to clear the SANTap configuration for a slot 2: switch# clear ssm-nvram santap module 2	
Related Commandss	Command	Description
	ssm enable feature	Enables the SANTap feature on the SSM.

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santap module

To configure the mapping between the Storage Services Module (SSM) and the VSAN where the appliance is configured, use the **santap module** command in configuration mode. To disable this feature, use the **no** form of the command.

```
santap module slot-number { appl-vsan vsan-id [cvt-name cvt-name] |
dvt target-pwwn target-pwwn target-vsan target-vsan-id dvt-name dvt-name dvt-vsan
dvt-vsan-id [dvt-port port-number] [lun-size-handling enable/disable] [io-timeout
timeout-value ] }
```

```
no santap module slot-number { appl-vsan vsan-id [cvt-name cvt-name] |
dvt target-pwwn target-pwwn }
```

Syntax Description

<i>slot-number</i>	Specifies the slot number of the SSM where the control virtual target (CVT) is created.
appl-vsan <i>vsan-id</i>	Specifies the appliance VSAN identification number used to communicate with the appliance. The range is 1 to 4093.
cvt-name <i>cvt-name</i>	(Optional) Specifies the control virtual target (CVT) name. The maximum size is 80 characters.
dvt	Configures the data virtual target (DVT).
target-pwwn <i>target-pwwn</i>	Specifies the target pWWN for the DVT. The format is <i>hh:hh:hh:hh:hh:hh:hh:hh</i> .
target-vsan <i>target-vsan-id</i>	Specifies the target VSAN for the DVT. The range for the real <i>target-vsan-id</i> is 1 through 4093.
dvt-name <i>dvt-name</i>	Specifies the DVT name. The maximum size is 80 characters.
dvt-vsan <i>dvt-vsan-id</i>	Specifies the DVT VSAN. The range for the <i>dvt-vsan-id</i> is 1 through 4093.
dvt-port <i>port-number</i>	(Optional) Specifies the DVT port. The range for the port number is 1 through 32.
lun-size-handling <i>enable/disable</i>	(Optional) Enables or disables LUN size handling. Specify 1 to enable or 0 to disable LUN size handling, with the default being enable.
io-timeout <i>timeout-value</i>	(Optional) Specifies the I/O timeout value. The range is 10 to 200 seconds, with the default being 10 seconds.

Defaults

Disabled.
The IO-timeout is 10 seconds.
Lun-size-handling is Enabled.

Command Modes

Configuration mode.

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Command History	Release	Modification
	2.1(1a)	This command was introduced.
	3.0(1)	Added the following options: cvt-name , dvt , target-pwwn , target-vsan , dvt-name , dvt-vsan , dvt-port , lun-size-handling , and io-timeout .

Usage Guidelines

To access this command, you must first enable the SANTap feature on the SSM using the **ssm enable feature** command.

When the **lun-size-handling** option is set (enabled), the maximum logical block addressing (LBA) for DVT LUN is set to 2 TB. As a result, there is no issue with LUN resizing.



Note

You can delete the **dvt target-pwwn** option using the **no santap module slot dvt target-pwwn** command. Other **dvt** options are not supported by the **no** form of the command.

Examples

The following example shows the configuration of the SSM where the SANTap feature is enabled and the VSAN used to communicate with the appliance:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# santap module 1 appl-vsan 1
```

Related Commands

Command	Description
show santap module	Displays the configuration and statistics of the SANTap feature.
ssm enable feature	Enables the SANTap feature on the SSM.

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santap module dvt target

To configure SANTap target pWWN on a DVT, use the **santap module dvt target-pwwn** command in configuration mode.

santap module *slot-number* **dvt target-pwwn** *target-pwwn* **target-vsan** *target-vsan-id* **dvt-name** *dvt-name* **dvt-vsan** *dvt-vsan-id* [**dvt-port** *port-number*]

Syntax Description		
<i>slot-number</i>		Specifies the slot number of the SSM where the control virtual target (CVT) is created.
dvt		Configures the data virtual target (DVT).
target-pwwn <i>target-pwwn</i>		Specifies the target pWWN for the DVT. The format is <i>hh:hh:hh:hh:hh:hh:hh:hh</i> .
target-vsan <i>target-vsan-id</i>		Specifies the target VSAN for the DVT. The range for the real <i>target-vsan-id</i> is 1 through 4093.
dvt-name <i>dvt-name</i>		Specifies the DVT name. The maximum size is 80 characters.
dvt-vsan <i>dvt-vsan-id</i>		Specifies the DVT VSAN. The range for the <i>dvt-vsan-id</i> is 1 through 4093.
dvt-port <i>port-number</i>		(Optional) Specifies the DVT port. The range for the port number is 1 through 32.

Defaults None.

Command Modes Configuration mode.

Command History	Release	Modification
	2.1(1a)	This command was introduced.
	3.0(1)	Added the following options: cvt-name , dvt , target-pwwn , target-vsan , dvt-name , dvt-vsan , and dvt-port

Usage Guidelines To access this command, you must first enable the SANTap feature on the SSM using the **ssm enable feature** command.



Note

You can delete **dvt target-pwwn** using the **no santap module slot dvt target-pwwn** command. Other **dvt** options are not supported by the **no** form of the command.

Examples The following example shows how to configure SANTap target pwwn on a DVT:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# santap module 1 dvt target-pwwn 50:06:0e:80:03:81:32:36 target-vs
an 9 dvt-name MYDVT dvt-vsan 12 dvt-port 1
```

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Related Commands	Command	Description
	show santap module	Displays the configuration and statistics of the SANTap feature.
	ssm enable feature	Enables the SANTap feature on the SSM.

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show santap module

To display the SANTap configuration on the Storage Services Module (SSM), use the **show santap module** command in EXEC mode.

```
show santap module slot {avt [name | brief] | avtlun | cvt [cvt-id | brief] | dvt [name | brief] |
dvtlun | [name | brief] | session [session-id | brief] | tech-support}
```

Syntax Description		
<i>slot</i>		Displays SANTap configuration for a module in the specified slot.
avt <i>name</i>		Displays the appliance virtual target (AVT) configuration. (Optional) Specifies the user name.
brief		(Optional) Displays a brief format version of the display.
avtlun		Displays the appliance AVT LUN configuration.
cvt		Displays the control virtual target (CVT) configuration.
<i>cvt-id</i>		(Optional) Specifies a user configured CVT ID. The range is 1 to 65536.
dvt		Displays the data virtual target (DVT) configuration.
dvtlun		Displays the DVT LUN configuration.
session		Displays the SANTap session information.
<i>session-id</i>		(Optional) Specifies a user configured session ID. The range is 1 to 65536.
tech-support		Displays information for technical support.

Defaults None.

Command Modes EXEC mode.

Command History	Release	Modification
	2.1(1a)	This command was introduced.
	3.1(2)	Added the tech-support option.

Usage Guidelines None.

Examples The following example displays the SANTap AVT configuration:

```
switch# show santap module 2 avt
```

```
AVT Information :
  avt pwn       = 2a:4b:00:05:30:00:22:25
  avt nwn       = 2a:60:00:05:30:00:22:25
  avt id        = 12
  avt vsan      = 4
  avt if_index  = 0x1080000
  hi pwn       = 21:00:00:e0:8b:07:61:aa
```

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```
tgt pwwn      = 22:00:00:20:37:88:20:ef
tgt vsan      = 1
```

The following example displays the SANTap AVT LUN configuration:

```
switch# show santap module 2 avtlun
```

```
AVT LUN Information :
  avt pwwn      = 2a:4b:00:05:30:00:22:25
  avt lun       = 0x0
  xmap id       = 16
  avt id        = 12
  tgt lun       = 0x0
```

The following example displays the SANTap CVT configuration:

```
switch# show santap module 2 cvt
```

```
CVT Information :
  cvt pwwn      = 25:3c:00:05:30:00:22:25
  cvt nwwn      = 25:3d:00:05:30:00:22:25
  cvt id        = 1
  cvt xmap_id   = 2
  cvt vsan      = 10
```

The following example displays the SANTap DVT configuration:

```
switch# show santap module 2 dvt
```

```
DVT Information :
  dvt pwwn      = 22:00:00:20:37:88:20:ef
  dvt nwwn      = 20:00:00:20:37:88:20:ef
  dvt id        = 3
  dvt mode      = 3
  dvt vsan      = 3
  dvt fp_port   = 0
  dvt if_index  = 0x1080000
  dvt name      = MYDVT
```

The following example displays the SANTap DVTLUN configuration:

```
switch# show santap module 2 dvtlun
```

```
DVT LUN Information :
  dvt pwwn      = 22:00:00:20:37:88:20:ef
  dvt lun       = 0x0
  xmap id       = 8
  dvt id        = 3
  dvt mode      = 0
  dvt vsan      = 3
  tgt pwwn      = 22:00:00:20:37:88:20:ef
  tgt lun       = 0x0
  tgt vsan      = 1
```

The following example displays the SANTap configuration session:

```
switch# show santap module 2 session
```

```
Session Information :
  session id    = 1
  host pwwn     = 21:00:00:e0:8b:07:61:aa
  dvt pwwn      = 22:00:00:20:37:88:20:ef
  dvt lun       = 0x0
  tgt pwwn      = 00:00:00:00:00:00:00:00
  tgt lun       = 0x0
```

■ show santap module

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```

adt pwwn      = 77:77:77:77:77:77:77:77
adt lun       = 0x0
num ranges    = 0
dvt id        = 0
vdisk id      = 0
session state = 0
mrl requested = 1
pwl requested = 1
iol requested = 0

```

The following example displays information for technical support:

```
switch# show santap module 4 tech-support
```

```

DVT Information :
dvt pwwn      = 22:00:00:20:37:39:b1:00
dvt nwwn      = 20:00:00:20:37:39:b1:00
dvt id        = 0x83fe924
dvt mode      = 3
dvt vsan      = 1
dvt if_index  = 0x1180000
dvt fp_port   = 1
dvt name      = MYDVT3
dvt tgt-vsan  = 2
dvt io timeout      = 10 secs
dvt lun size handling = 1
dvt app iofail behaviour = 0
dvt quiesce behavior = 0
dvt tgt iofail behavior = 0
dvt appio failover time = 0 secs
dvt inq data behavior = 0

```

```

DVT Information :
dvt pwwn      = 22:00:00:20:37:88:20:ef
dvt nwwn      = 20:00:00:20:37:88:20:ef
dvt id        = 0x8405bbc
dvt mode      = 3
dvt vsan      = 1
dvt if_index  = 0x1186000
dvt fp_port   = 7
dvt name      = MYDVT3
dvt tgt-vsan  = 2
dvt io timeout      = 10 secs
dvt lun size handling = 1
dvt app iofail behaviour = 0
dvt quiesce behavior = 0
dvt tgt iofail behavior = 0
dvt appio failover time = 0 secs
dvt inq data behavior = 0

```

```

DVT Information :
dvt pwwn      = 22:00:00:20:37:39:87:70
dvt nwwn      = 20:00:00:20:37:39:87:70
dvt id        = 0x8405b2c
dvt mode      = 3
dvt vsan      = 3
dvt if_index  = 0x118c000
dvt fp_port   = 13
dvt name      = MYDVT3
dvt tgt-vsan  = 2
dvt io timeout      = 10 secs
dvt lun size handling = 1
dvt app iofail behaviour = 0
dvt quiesce behavior = 0

```

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```
dvt tgt iofail behavior    = 0
dvt appio failover time   = 0 secs
dvt inq data behavior     = 0
```

CVT Information :

```
cvt pwwn      = 29:5d:33:33:33:33:36
cvt nwwn      = 29:5e:33:33:33:33:36
cvt id        = 0x83b11e4
cvt xmap_id   = 0x83b1204
cvt vsan      = 2
cvt name      =
```

```
-----
VSAN                USAGE COUNT
-----
2                    4
switch#
```

Table A-1 describes the significant fields shown in the previous displays.

Table A-1 *show santap Field Descriptions*

Field	Description
app lun	Displays the appliance LUN.
app pwwn	Displays the appliance port world wide name.
app vsan	Displays the appliance VSAN number.
avt id	Displays the AVT ID number.
avt if_index	Displays the AVT interface index number.
avt lun	Displays the AVT LUN.
avt nwwn	Displays the AVT node port world wide name.
avt pwwn	Displays the AVT port world wide name
avt vsan	Displays the AVT VSAN number.
cvt id	Displays the CVT ID number.
cvt nwwn	Displays the CVT node port world wide name.
cvt pwwn	Displays the CVT port world wide name
cvt vsan	Displays the CVT VSAN number.
cvt xmap_id	Displays the CVT Xmap ID number.
dvt fp_port	Displays the DVT fabric port number.
dvt id	Displays the DVT.
dvt if_index	Displays the DVT interface index number.
dvt lun	Displays the DVT LUN.
dvt mode	Displays the DVT mode.
dvt name	Displays the DVT name.
dvt nwwn	Displays the DVT node port world wide name.
dvt pwwn	Displays the DVT port world wide name.
dvt vsan	Displays the DVT VSAN number.
host pwwn	Displays the host port world wide name.

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Table A-1 *show santap Field Descriptions (continued)*

Field	Description
num ranges	Displays the number ranges.
session id	Displays the session ID number.
session state	Displays the session state.
tgt lun	Displays the target LUN.
tgt pwwn	Displays the target port world wide name.
tgt vsan	Displays the target VSAN number.
vdisk id	Displays the virtual disk ID number.
xmap id	Displays the Xmap ID number.

Related Commands

Command	Description
santap module	Configures the mapping between the SSM and the VSAN where the appliance is configured.

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show santap module dvt brief

To display the SANTap Data Virtual Target (DVT) configuration in a brief format on the Storage Service Module (SSM), use the **show santap module dvt brief** command in the EXEC mode.

show santap module dvt brief *slot*

Syntax Description	<i>slot</i> Displays SANTap configuration for a module in the specified slot.				
Defaults	None.				
Command Modes	EXEC mode.				
Command History	<table> <tr> <th>Release</th><th>Modification</th></tr> <tr> <td>3.2(1)</td><td>This command was introduced.</td></tr> </table>	Release	Modification	3.2(1)	This command was introduced.
Release	Modification				
3.2(1)	This command was introduced.				
Usage Guidelines	None.				

Examples

The following example displays the SANTap module DVT brief information for slot 13:

```
switch# show santap module 13 dvt brief
```

```
-----
DVT WWN                DVT ID                MD  DVT VSAN    DVTIFIDX
-----
50:06:0e:80:00:c3:e0:46 139639316                3   30          0x1604000
```

```
switch# attach module 13
```

```
Attaching to module 13 ...
```

```
To exit type 'exit', to abort type '$.'
```

```
Bad terminal type: "xterm". Will assume vt100.
```

The following example displays the SANTap vttbl DVT configuration.

```
switch# attach module 2
```

```
module-3# show santap vttbl dvt 50:00:1f:e1:50:0c:3b:09
```

```
DVT Entry :
```

```
Activated          : FALSE
```

```
Number LUNs       : 16
```

```
Possible Hosts    :
```

```
hi_pwwn = 10:00:00:00:c9:3f:90:21 : 4 LUNs
```

```
hi_pwwn = 10:00:00:00:c9:4c:c0:e5 : 2 LUNs
```

```
hi_pwwn = 21:00:00:e0:8b:0c:7d:21 : 2 LUNs
```

```
hi_pwwn = 10:00:00:00:c9:56:ed:f2 : 2 LUNs
```

```
hi_pwwn = 50:06:0b:00:00:60:2a:a0 : 4 LUNs
```

```
hi_pwwn = 21:00:00:e0:8b:92:62:92 : 2 LUNs
```

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The following example displays the SANTap vttbl DVT host configuration:

```
switch# show santap vttbl dvt 50:00:1f:e1:50:0c:3b:09 host 10:00:00:00:c9:3f:90:21
HI-LIST Entry :
    State                : PRLI
    UA Power On          : 1
    FIT Created          : 1
    NVP Index            : 0x10000000c93f9021

    HI-LUNS Entry :
        Number of LUNs    : 4
        DVT ID            : 0x83f978c
        HI Index          : 0
        LUNs Installed    : TRUE
        Target Lun, DVT Lun pairs :

        (0, 0) (1, 1) (2, 2) (3, 3)
```

Related Commands	Command	Description
	show santap vttbl	Displays the SANTap VTTBL configuration.

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show santap vttbl dvt

To display the host information logged into the Data Virtual Target (DVT) and the LUNs exposed to the hosts, use the **show santap vttbl dvt** command in the EXEC mode.

show santap vttbl dvt *dvt_pwwn*

Syntax Description	<i>dvt_pwwn</i>	Displays the pWWN information for DVT.
--------------------	-----------------	--

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

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

Command History	Release	Modification
	3.2(1)	This command was introduced.

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

Examples The following example displays the host information logged into the DVT:

```
module-2# show santap vttbl dvt 50:06:04:82:cc:ab:31:8c
```

```
DVT Entry :
  Activated      : TRUE
  Number LUNs    : 96
  Possible Hosts :
    hi_pwwn = 10:00:00:00:c9:63:a0:47 : 48 LUNs
    hi_pwwn = 10:00:00:00:c9:63:9f:b7 : 48 LUNs
    hi_pwwn = 10:00:00:00:c9:63:a1:cc : 0 LUNs
    hi_pwwn = 10:00:00:00:c9:63:a1:a6 : 0 LUNs
```

Related Commands	Command	Description
	show santap vttbl	Displays the SANTap VTTBL configuration.
	show santap vttbl dvt host	Displays the login status of the host on a DVT.

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show santap vttbl dvt host

To display the login status of the host on a Data Virtual Target (DVT), use the **show santap vttbl dvt host** command in the EXEC mode.

show santap vttbl dvt dvt_pwwn host host_pwwn

Syntax Description	<i>dvt_pwwn</i>	Displays the pWWN information for DVT.
	<i>host_pwwn</i>	Displays the pWWN information for host.

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

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

Command History	Release	Modification
	3.2(1)	This command was introduced.

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

Examples	The following example displays the login status of the host on a DVT:
----------	---

module-2# **show santap vttbl dvt 50:06:01:60:41:e0:0a:3f host 21:00:00:e0:8b:9a:07:a3**

```

HI-LIST Entry  :
  State        : PRLI
  UA Power On  : 1
  FIT Created   : 1
  NVP Index    : 0x210000e08b9a07a3

HI-LUNS Entry  :
  Number of LUNs : 21
  DVT ID         : 0x83f977c
  HI Index       : 5
  LUNs Installed : FALSE
  Target Lun, DVT Lun pairs :

(0, 1280) (1, 1281) (2, 1282) (3, 1283) (4, 1284) (5, 1285) (6, 1286) (7, 1287)
(8, 1288) (9, 1289) (10, 1290) (11, 1291) (12, 1292) (13, 1293) (14, 1294) (15, 1295)
(16, 1296) (17, 1297) (18, 1298) (19, 1299) (20, 1300)

```

Related Commands	Command	Description
	show santap vttbl	Displays the SANTap VTTBL configuration.

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ssm enable feature santap module

To enable SANTap on a particular module in a SSM, use the **ssm enable feature santap module** command in configuration mode. To disable this feature, use the **no** form of the command.

ssm enable feature santap module *slot-number*

no ssm enable feature santap module *slot-number*

Syntax Description	<i>slot-number</i> Specifies the slot number of the SSM where SANTap is enabled.					
Defaults	None.					
Command Modes	Configuration mode.					
Command History	<table><tr><th>Release</th><th>Modification</th></tr><tr><td>2.1(1a)</td><td>This command was introduced.</td></tr></table>		Release	Modification	2.1(1a)	This command was introduced.
Release	Modification					
2.1(1a)	This command was introduced.					
Usage Guidelines	None.					
Examples	The following example shows the configuration of SANTap on an SSM: <pre>switch# config terminal Enter configuration commands, one per line. End with CNTL/Z. switch(config)# ssm enable feature santap module 1</pre>					
Related Commands	<table><tr><th>Command</th><th>Description</th></tr><tr><td>no ssm enable feature</td><td>Disables the SANTap feature on the SSM.</td></tr></table>		Command	Description	no ssm enable feature	Disables the SANTap feature on the SSM.
Command	Description					
no ssm enable feature	Disables the SANTap feature on the SSM.					

■ ssm enable feature santap module

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