



CHAPTER 8

Installing IDSM-2



Note

All IPS platforms allow ten concurrent CLI sessions.

This chapter lists the software and hardware requirements of IDSM-2, and describes how to remove and install it. It contains the following sections:

- [Specifications, page 8-1](#)
- [Software and Hardware Requirements, page 8-2](#)
- [Minimum Supported IDSM-2 Configurations, page 8-2](#)
- [Using the TCP Reset Interface, page 8-3](#)
- [Front Panel Features, page 8-3](#)
- [Installation and Removal Instructions, page 8-4](#)
- [Enabling Full Memory Tests, page 8-12](#)
- [Resetting IDSM-2, page 8-13](#)
- [Powering IDSM-2 Up and Down, page 8-15](#)

Specifications

[Table 8-1](#) lists the specifications for IDSM-2.

Table 8-1 IDSM-2 Specifications

Specification	Description
Dimensions (H x W x D)	1.18 x 15.51 x 16.34 in. (30 x 394 x 415 mm)
Weight	Minimum: 3 lb (1.36 kg) Maximum: 5 lb (2.27 kg)
Operating temperature	+32° to +104°F (+0° to +40°C)
Nonoperating temperature	-40° to +167°F (-40° to +75°C)
Humidity	10% to 90%, noncondensing

Software and Hardware Requirements

The following are the IDSM-2 software and hardware requirements:

- Catalyst software release 7.5(1) or later with Supervisor Engine 1A with MSFC2
- Catalyst software release 7.5(1) or later with Supervisor Engine 2 with MSFC2 or PFC2
- Cisco IOS software release 12.2(14)SY with Supervisor Engine 2 with MSFC2
- Cisco IOS software release 12.1(19)E or later with Supervisor Engine 2 with MSFC2
- Cisco IOS software release 12.1(19)E1 or later with Supervisor Engine 1A with MSFC2
- Cisco IOS software release 12.2(14)SX1 with Supervisor Engine 720
- Cisco IDS software release 4.0 or later
- Any Catalyst 6500 series switch chassis or 7600 router

Minimum Supported IDSM-2 Configurations


Note

The following matrix is not intended to recommend any particular version, but rather lists the earliest supported versions.

Table 8-2 lists the minimum supported configurations for IDSM-2.

Table 8-2 Minimum Catalyst 6500 Software Version for IDSM-2 Feature Support

Catalyst/IDSM-2 Feature	Catalyst Software				Cisco IOS Software			
	Sup1	Sup2	Sup32	Sup720	Sup1	Sup2	Sup32	Sup720
SPAN	7.5(1)	7.5(1)	8.4(1)	8.1(1)	12.1(19)E1	12.1(19)E1 12.2(18)SXF1	12.2(18)SXF1	12.2(14)SX1
VACL capture ¹	7.5(1)	7.5(1)	8.4(1)	8.1(1)	12.1(19)E1	12.1(19)E1 12.2(18)SXF1	12.2(18)SXF1	12.2(14)SX1
ECLB with VACL capture ²	8.5(1)	8.5(1)	8.5(1)	8.5(1)	N/A	12.2(18)SXF4	12.2(18)SXF1	12.2(18)SXE1
Inline interface pairs	8.4(1)	8.4(1)	8.4(1)	8.4(1)	N/A	12.2(18)SXF4	12.2(18)SXF4	12.2(18)SXE1
ECLB with inline interface pairs	8.5(1)	8.5(1)	8.5(1)	8.5(1)	N/A	12.2(18)SXF4	12.2(18)SXF4	12.2(18)SXF4
Inline VLAN pairs	8.4(1)	8.4(1)	8.4(1)	8.4(1)	N/A	12.2(18)SXF4	12.2(18)SXF4	12.2(18)SXF4
ECLB with inline VLAN pairs	8.5(1)	8.5(1)	8.5(1)	8.5(1)	N/A	12.2(18)SXF4	12.2(18)SXF4	12.2(18)SXF4

1. Requires PFC2/3 or MSFC2/3.

2. Requires PFC2/3 or MSFC2/3.

Using the TCP Reset Interface

The IDSM-2 has a TCP reset interface—port 1. The IDSM-2 has a specific TCP reset interface because it cannot send TCP resets on its sensing ports.

If you have reset problems with the IDSM-2, and the switch is running Catalyst software, try the following:

- If the sensing ports are access ports (a single VLAN), you need to configure the reset port to be in the same VLAN.
- If the sensing ports are dot1q trunk ports (multi-VLAN), the sensing ports and reset port all must have the same native VLAN, and the reset port must trunk all the VLANs being trunked by both the sensing ports.



Note In Cisco IOS when the IDSM-2 is in promiscuous mode, the IDSM-2 ports are always dot1q trunk ports (even when monitoring only 1 VLAN), and the TCP reset port is automatically set to a trunk port and is not configurable.

Front Panel Features

IDSM-2 has a status indicator and a Shutdown button. [Figure 8-1](#) shows the front panel features.

Figure 8-1 IDSM-2 Front Panel



[Table 8-3](#) describes the IDSM-2 states as indicated by the status indicator.

Table 8-3 Status Indicator

Color	Description
Green	All diagnostics tests pass—IDSM-2 is operational.
Red	A diagnostics test other than an individual port test failed.
Amber	IDSM-2 is running through its boot and self-test diagnostics sequence, or IDSM-2 is disabled, or IDSM-2 is in the shutdown state.
Off	IDSM-2 power is off.

To prevent corruption of IDSM-2, you must use the **shutdown** command to shut it down properly. For instructions on properly shutting down IDSM-2, see Step 1 of [Removing IDSM-2, page 8-10](#). If IDSM-2 does not respond, firmly press the Shutdown button on the faceplate and wait for the Status indicator to turn amber. The shutdown procedure may take several minutes.

**Caution**

Do not remove IDSM-2 from the switch until the module shuts down completely. Removing the module without going through a shutdown procedure can corrupt the application partition on the module and result in data loss.

Installation and Removal Instructions

All Catalyst 6500 series switches support hot swapping, which lets you install, remove, replace, and rearrange modules without turning off the system power to the switch. When the system detects that a module has been installed or removed, it runs diagnostic and discovery routines, acknowledges the presence or absence of the module, and resumes system operation with no operator intervention.

**Caution**

You must first shut down IDSM-2 before removing it from a Catalyst 6500 series switch. For the procedure for removing an IDSM-2 from a Catalyst 6500 series switch, see [Removing IDSM-2, page 8-10](#).

This section contains the following topics:

- [Required Tools, page 8-4](#)
- [Slot Assignments, page 8-5](#)
- [Installing IDSM-2, page 8-5](#)
- [Verifying Installation, page 8-9](#)
- [Removing IDSM-2, page 8-10](#)

Required Tools

**Note**

You must have at least one supervisor engine running in the Catalyst 6500 series switch with IDSM-2. For more information, refer to the [Catalyst 6500 Series Switch Installation Guide](#).

You need the following tools to install IDSM-2 in the Catalyst 6500 series switches:

- Flat-blade screwdriver
- Wrist strap or other grounding device
- Antistatic mat or antistatic foam

Whenever you handle IDSM-2, always use a wrist strap or other grounding device to prevent serious damage from ESD. For more information, see [Working in an ESD Environment, page 1-35](#).

**Warning**

Only trained and qualified personnel should be allowed to install, replace, or service this equipment. Statement 1030

Slot Assignments

**Note**

The Catalyst 6509-NEB switch has vertical slots numbered 1 to 9 from right to left. Install IDSM-2 with the component side facing to the right.

The Catalyst 6006 and 6506 switch chassis each have six slots. The Catalyst 6009 and 6509 switch chassis each have nine slots. The Catalyst 6513 switch chassis has 13 slots. You can install IDSM-2 in the following ways:

- You can install IDSM-2 in any slot that is not used by the supervisor engine.
- You can install up to eight IDSM-2s in a single chassis.

**Caution**

Install module filler plates (blank module carriers) in the empty slots to maintain consistent airflow through the switch chassis.

**Note**

IDSM-2 works with any supervisor engine using SPAN, but the copy capture feature with security VACLs requires that the supervisor engine has the PFC or the MSFC option.

Installing IDSM-2

To install IDSM-2 in the Catalyst 6500 series switch, follow these steps:

Step 1

Make sure that you take necessary ESD precautions.

**Warning**

During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not touch the backplane with your hand or any metal tool, or you could shock yourself.

Step 2

Choose a slot for IDSM-2.

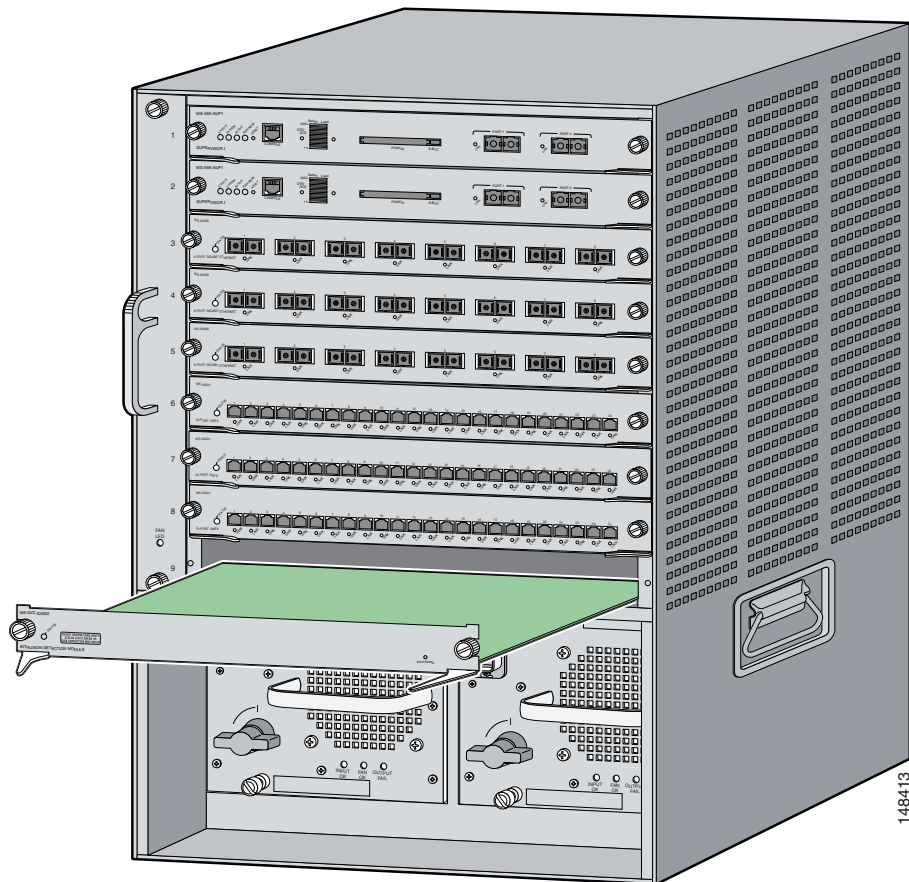
**Note**

You can install IDSM-2 in any slot that is not reserved for a supervisor engine or other module. Refer to your switch documentation for information about which slots are reserved for the supervisor engine or other modules.

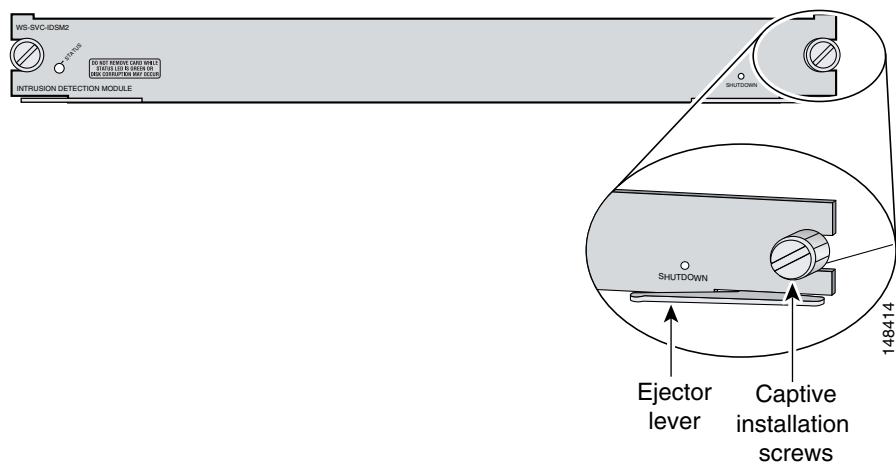
Step 3

Remove the installation screws (use a screwdriver, if necessary) that secure the filler plate to the desired slot.

- Step 6** Place IDSM-2 in the slot by aligning the notch on the sides of the IDSM-2 carrier with the groove in the slot.



- Step 7** Keeping IDSM-2 at a 90-degree orientation to the backplane, carefully push it into the slot until the notches on both ejector levers engage the chassis sides.



- Step 8** Using the thumb and forefinger of each hand, simultaneously pivot in both ejector levers to fully seat IDSM-2 in the backplane connector.

**Caution**

Always use the ejector levers when installing or removing IDSM-2. A module that is partially seated in the backplane causes the system to halt and subsequently crash.

**Note**

If you perform a hot swap, the console displays the message `Module x has been inserted`. This message does not appear, however, if you are connected to the Catalyst 6500 series switch through a Telnet session.

Step 9 Use a screwdriver to tighten the installation screws on the left and right ends of IDSM-2.

Step 10 Verify that you have correctly installed IDSM-2 and can bring it online.

Step 11 Initialize IDSM-2.

Step 12 Configure the switch for command and control access to IDSM-2.

Step 13 Upgrade IDSM-2 to the most recent Cisco IDS software.

Step 14 Set up IDSM-2 to capture IPS traffic.

You are now ready to configure IDSM-2 for intrusion prevention.

For More Information

- For more information on ESD-controlled environments, see [Working in an ESD Environment](#), page 1-35.
- For the procedure for verifying IDSM-2 installation, see [Verifying Installation](#), page 8-9.
- For the procedure for using the **setup** command to initialize IDSM-2, see [Initializing the Sensor](#), page 10-1.
- For the procedure for configuring the switch for command and control access to IDSM-2, refer to [Configuring the Catalyst 6500 Series Switch for Command and Control Access to the IDSM-2](#).
- For the procedure for obtaining and installing the most recent IPS software, see [Obtaining Cisco IPS Software](#), page 12-1.
- For the procedure for configuring IDSM-2 to capture IPS traffic, refer to [Configuring IDSM-2](#).
- For the procedure for using HTTPS to log in to IDM, refer to [Logging In to IDM](#).
- For the procedures for configuring intrusion prevention on your sensor, refer to the following guides:
 - [Installing and Using Cisco Intrusion Prevention System Device Manager 6.2](#)
 - [Installing and Using Cisco Intrusion Prevention System Manager Express 6.2](#)
 - [Configuring the Cisco Intrusion Prevention System Sensor Using the Command Line Interface 6.2](#)

Verifying Installation

Use the **show module** command to verify that the switch acknowledges IDSM-2 and has brought it online.



Note

It is normal for the status to read `other` when IDSM-2 is first installed. After IDSM-2 completes the diagnostics routines and comes online, the status reads `ok`. Allow up to 5 minutes for IDSM-2 to come online.

To verify the installation, follow these steps:

Step 1 Log in to the console.

Step 2 Verify that IDSM-2 is online:

- Catalyst Software

```
console> (enable) show module
Mod Slot Ports Module-Type           Model           Sub Status
-----
 1   1    2    1000BaseX Supervisor      WS-X6K-SUP1A-2GE  yes ok
15   1    1    Multilayer Switch Feature WS-F6K-MSFC       no  ok
 2   2   48    10/100BaseTX Ethernet      WS-X6248-RJ-45   no  ok
 3   3   48    10/100/1000BaseT Ethernet  WS-X6548-GE-TX   no  ok
 4   4   16    1000BaseX Ethernet        WS-X6516A-GBIC   no  ok
 6   6    8    Intrusion Detection Mod    WS-SVC-IDSM2     yes ok

Mod Module-Name           Serial-Num
-----
 1                      SAD041308AN
15                      SAD04120BRB
 2                      SAD03475400
 3                      SAD073906RC
 4                      SAL0751QYN0
 6                      SAD062004LV

Mod MAC-Address(es)      Hw   Fw   Sw
-----
 1  00-d0-c0-cc-0e-d2 to 00-d0-c0-cc-0e-d3 3.1  5.3.1  8.4(1)
   00-d0-c0-cc-0e-d0 to 00-d0-c0-cc-0e-d1
   00-30-71-34-10-00 to 00-30-71-34-13-ff
15 00-30-7b-91-77-b0 to 00-30-7b-91-77-ef 1.4  12.1(23)E2 12.1(23)E2
 2  00-30-96-2b-c7-2c to 00-30-96-2b-c7-5b 1.1  4.2(0.24)V 8.4(1)
 3  00-0d-29-f6-01-98 to 00-0d-29-f6-01-c7 5.0  7.2(1)  8.4(1)
 4  00-0e-83-af-15-48 to 00-0e-83-af-15-57 1.0  7.2(1)  8.4(1)
 6  00-e0-b0-ff-3b-80 to 00-e0-b0-ff-3b-87 0.102 7.2(0.67) 5.0(0.30)

Mod Sub-Type           Sub-Model           Sub-Serial  Sub-Hw  Sub-Sw
-----
 1  L3 Switching Engine  WS-F6K-PFC         SAD041303G6 1.1
 6  IDS 2 accelerator board WS-SVC-IDSUPG      .          2.0
console> (enable)
```

- Cisco IOS Software

```
router# show module
Mod Ports Card Type           Model           Serial No.
-----
 1   48  48 port 10/100 mb RJ-45 ethernet  WS-X6248-RJ-45  SAD0401012S
 2   48  48 port 10/100 mb RJ45          WS-X6348-RJ-45  SAL04483QBL
```

```

3 48 SFM-capable 48 port 10/100/1000mb RJ45 WS-X6548-GE-TX SAD073906GH
6 16 SFM-capable 16 port 1000mb GBIC WS-X6516A-GBIC SAL0740MMYJ
7 2 Supervisor Engine 720 (Active) WS-SUP720-3BXL SAD08320L2T
9 1 1 port 10-Gigabit Ethernet Module WS-X6502-10GE SAD071903BT
10 3 Anomaly Detector Module WS-SVC-ADM-1-K9 SAD084104JR
11 8 Intrusion Detection System WS-SVC-IDS2 SAD05380608
13 8 Intrusion Detection System WS-SVC-IDS2-2 SAD072405D8

Mod MAC addresses Hw Fw Sw Status
-----
1 00d0.d328.e2ac to 00d0.d328.e2db 1.1 4.2(0.24)VAI 8.5(0.46)ROC Ok
2 0003.6c14.e1d0 to 0003.6c14.e1ff 1.4 5.4(2) 8.5(0.46)ROC Ok
3 000d.29f6.7a80 to 000d.29f6.7aaf 5.0 7.2(1) 8.5(0.46)ROC Ok
6 000d.ed23.1658 to 000d.ed23.1667 1.0 7.2(1) 8.5(0.46)ROC Ok
7 0011.21a1.1398 to 0011.21a1.139b 4.0 8.1(3) 12.2(PIKESPE Ok
9 000d.29c1.41bc to 000d.29c1.41bc 1.3 Unknown Unknown PwrDown
10 000b.fcf8.2ca8 to 000b.fcf8.2caf 0.101 7.2(1) 4.0(0.25) Ok
11 00e0.b0ff.3340 to 00e0.b0ff.3347 0.102 7.2(0.67) 5.0(1) Ok
13 0003.feab.c850 to 0003.feab.c857 4.0 7.2(1) 5.0(1) Ok

Mod Sub-Module Model Serial Hw Status
-----
7 Policy Feature Card 3 WS-F6K-PFC3BXL SAD083305A1 1.3 Ok
7 MSFC3 Daughterboard WS-SUP720 SAD083206JX 2.1 Ok
11 IDS 2 accelerator board WS-SVC-IDSUPG . 2.0 Ok
13 IDS 2 accelerator board WS-SVC-IDSUPG 0347331976 2.0 Ok

Mod Online Diag Status
-----
1 Pass
2 Pass
3 Pass
6 Pass
7 Pass
9 Unknown
10 Not Applicable
11 Pass
13 Pass
router#

```

Removing IDSM-2

This procedure describes how to remove IDSM-2 from the Catalyst 6500 series switch.



Warning

Only trained and qualified personnel should be allowed to install, replace, or service this equipment. Statement 1030



Caution

Before removing IDSM-2, be sure to perform the shutdown procedure. If IDSM-2 is not shut down correctly, you could corrupt the software.



Warning

During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not touch the backplane with your hand or any metal tool, or you could shock yourself.

To remove IDSM-2, follow these steps:

Step 1 Shut down IDSM-2 by one of these methods:

- Log in to the IDSM-2 CLI and enter **reset powerdown**.



Note The **reset powerdown** command performs a shut down but does not remove power from IDSM-2. To remove power from IDSM-2, use the **set module power down *module_number*** command.

- Log in to the switch CLI and enter one of the following commands:

- For Catalyst software:

```
set module shutdown module_number
```

- For Cisco IOS software:

```
hw-module module module_number shutdown
```

- Shut down IDSM-2 through IDM.
- Press the Shutdown button.



Note Shutdown may take several minutes.



Caution

If IDSM-2 is removed from the switch chassis without first being shut down, or the chassis loses power, you may need to reset IDSM-2 more than once. If the module fails to respond after three reset attempts, boot the maintenance partition, and perform the instructions for restoring the application partition.

Step 2 Verify that IDSM-2 shuts down. Do not remove IDSM-2 until the status indicator is amber or off.

Step 3 Use a screwdriver to loosen the installation screws at the left and right sides of IDSM-2.

Step 4 Grasp the left and right ejector levers and simultaneously pull the left lever to the left and the right lever to the right to release IDSM-2 from the backplane connector.

Step 5 As you pull IDSM-2 out of the slot, place one hand under the carrier to support it.



Caution

Do not touch the printed circuit boards or connector pins.

Step 6 Carefully pull IDSM-2 straight out of the slot, keeping your other hand under the carrier to guide it.



Note Keep IDSM-2 at a 90-degree orientation to the backplane (horizontal to the floor).

Step 7 Place IDSM-2 on an antistatic mat or antistatic foam.

Step 8 If the slot is to remain empty, install a filler plate (part number 800-00292-01) to keep dust out of the chassis and to maintain proper airflow through the module compartment.

**Warning**

Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place. Statement 1029

For More Information

- For more information on ESD-controlled environments, see [Working in an ESD Environment, page 1-35](#).
- For the procedure for resetting IDSM-2, see [Resetting IDSM-2, page 8-13](#).
- For the procedure for restoring the application partition, see [Installing the IDSM-2 System Image, page 13-27](#).
- For the procedure for powering IDSM-2 up and down, see [Powering IDSM-2 Up and Down, page 8-15](#).

Enabling Full Memory Tests

When IDSM-2 initially boots, by default it runs a partial memory test. You can enable a full memory test in Catalyst software and Cisco IOS software. This section describes how to enable memory tests, and contains the following topics:

- [Catalyst Software, page 8-12](#)
- [Cisco IOS Software, page 8-13](#)

Catalyst Software

Use the **set boot device *boot_sequence module_number mem-test-full*** command to enable a full memory test. The full memory test takes about 12 minutes. To enable a full memory test, follow these steps:

Step 1 Log in to the console.

Step 2 Enter privileged mode:

```
console> enable
```

Step 3 Enable the full memory test.

```
console> (enable) set boot dev cf:1 3 mem-test-full
Device BOOT variable = cf:1
Memory-test set to FULL
Warning: Device list is not verified but still set in the boot string.
console> (enable) set boot dev hdd:1 3 mem-test-full
Device BOOT variable = hdd:1
Memory-test set to FULL
Warning: Device list is not verified but still set in the boot string.
console> (enable)
```

The **set boot device** command can either contain **cf:1** or **hdd:1**.

Step 4 Reset IDSM-2. The full memory test runs.



Note A full memory test takes more time to complete than a partial memory test.

Cisco IOS Software

Use the **hw-module module *module_number* reset mem-test-full** command to enable a full memory test. The full memory test takes about 12 minutes. To enable a full memory test, follow these steps:

Step 1 Log in to the console.

Step 2 Enable the full memory test.

```
router# hw-module module 9 reset mem-test-full
Device BOOT variable for reset = <empty>
Warning: Device list is not verified.

Proceed with reload of module?[confirm]
% reset issued for module 9
router#
```

Step 3 Reset IDSM-2.

The full memory test runs.



Note A full memory test takes more time to complete than a partial memory test.

Resetting IDSM-2

If for some reason you cannot communicate with IDSM-2 through SSH, Telnet, or the switch **session** command, you must reset IDSM-2 from the switch console. The reset process requires several minutes. This section describes how to reset IDSM-2, and contains the following topics:

- [Catalyst Software, page 8-14](#)
- [Cisco IOS Software, page 8-14](#)

Catalyst Software

To reset IDSM-2 from the CLI, follow these steps:

Step 1 Log in to the console.

Step 2 Enter privileged mode.

```
console> enable
```

Step 3 Reset IDSM-2 to the application partition or the maintenance partition.

```
console> (enable) reset module_number [hdd:1 | cf:1]
```



Note If you do not specify either the application partition (hdd:1 the default) or the maintenance partition (cf:1), IDSM-2 uses the boot device variable.

Example

```
console> (enable) reset 3
2003 Feb 01 00:18:23 %SYS-5-MOD_RESET: Module 3 reset from console//
Resetting module 3... This may take several minutes.
2003 Feb 01 00:20:03 %SYS-5-MOD_OK: Module 3 is online.
console> (enable)
```



Caution

If IDSM-2 is removed from the switch chassis without first being shut down, or the chassis loses power, you may need to reset IDSM-2 more than once. If IDSM-2 fails to respond after three reset attempts, boot the maintenance partition, and perform the instructions for restoring the application partition.

Cisco IOS Software

Use the **hw-module module slot_number reset [hdd:1 | cf:1]** command in EXEC mode to reset IDSM-2. The reset process takes several minutes. IDSM-2 boots into the boot partition you specify. If you do not specify the boot string, the default boot string is used.

To reset IDSM-2 from the CLI, follow these steps:

Step 1 Log in to the console.

Step 2 Reset IDSM-2.

```
router# hw-module module module-number reset [hdd:1 | cf:1]
```



Note If you do not specify either the application partition (**hdd:1** the default) or the maintenance partition (**cf:1**), IDSM-2 uses the boot device variable.

Example

```
router# hw-module module 8 reset
Device BOOT variable for reset =
```

```
Warning: Device list is not verified.
Proceed with reload of module? [confirm]
% reset issued for module 8
router#
```

Powering IDSM-2 Up and Down

You can remove and restore power to IDSM-2 through the switch CLI. This section describes how to power IDSM-2 up and down through the switch CLI, and contains the following sections:

- [Catalyst Software, page 8-15](#)
- [Cisco IOS Software, page 8-15](#)

Catalyst Software



Note

The IDSM-2 CLI **reset powerdown** command performs a shut down, but does not remove power from IDSM-2.

Once you power off IDSM-2, you must power it on through the switch CLI. To power IDSM-2 on and off from the switch CLI, follow these steps:

- Step 1** Log in to the console.
- Step 2** Enter privileged mode:
- ```
console> enable
```
- Step 3** Power on IDSM-2:
- ```
console> (enable) set module power up module_number
```
- Step 4** Power off IDSM-2:
- ```
console> (enable) set module power down module_number
```
- 

## Cisco IOS Software



### Note

The IDSM-2 CLI **reset powerdown** command performs a shut down, but does not remove power from IDSM-2.

---

Once you power off IDSM-2, you must power it on through the switch CLI. To power IDSM-2 on and off from the switch CLI, follow these steps:

---

**Step 1** Log in to the console.

**Step 2** Enter configure terminal mode:

```
router# configure terminal
```

**Step 3** Power on IDSM-2:

```
router(config)# power enable module module_number
```

**Step 4** Power off IDSM-2:

```
router(config)# no power enable module module_number
```

---