



Cisco 3G and 4G Serviceability Enhancement User Guide

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**Release: Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T
OL-28033-02**

This user guide contains information on the following features available for Cisco 3G and 4G services starting with Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T:

- Integrated Modem DM Log Collection
- Integrated Modem Crashdump Collection
- Integrated Modem Log Error and Dump Collection

This document describes how to configure these serviceability enhancement features in Cisco IOS Release 15.2(4)M2, Cisco IOS Release 15.3(1)T, and later releases for Cisco 819, Cisco 880, and Cisco Integrated Services Router Generation 2 (ISR G2) platforms.

Finding Feature Information

Your software release may not support all the features documented in this user guide. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the [“Feature Information for 3G and 4G Serviceability Enhancement”](#) section on page 12.

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



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Prerequisites for 3G and 4G Serviceability Enhancement

Refer to the appropriate platform-specific documentations for any hardware, software, or knowledge prerequisites for the 3G and 4G serviceability enhancement feature.

For a list of platform-specific software configuration guides, see the [“Related Documents” section on page 10](#).

Restrictions for 3G and 4G Serviceability Enhancement

The following limitations and restrictions apply to Cisco 3G and 4G services starting with Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T:

- It is recommended to launch DM logging when the CPU utilization is below 75% to avoid DM packet loss.
- DM and crashdump logging cannot be enabled on multiple (E)HWICs simultaneously on Cisco ISR G2 platforms.

For more information on platform-specific restrictions and/or limitations, see the appropriate platform documentation. For a list of platform-specific software configuration guides, see the [“Related Documents” section on page 10](#).

How to Configure the 3G and 4G Serviceability Enhancement

- [Configuring Modem DM Log Collection, page 3](#)
- [Enabling Modem Crashdump Collection, page 5](#)
- [Displaying Modem Log Error and Dump Information, page 7](#)

Configuring Modem DM Log Collection

Diagnostic Monitor (DM) is a Qualcomm proprietary protocol. Diagnostic software tools, such as Sierra Wireless SwiLog and Qualcomm QXDM, are based on DM protocol. These tools can be used to capture data transactions between the modem and the network over the RF interface, which makes them useful tools for troubleshooting 3G and 4G data connectivity or performance issues.

For releases earlier than Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T, DM log collection requires a PC (which hosts the DM logging application) to be connected to the router either through serial diagnostic port on the HWIC faceplate or the fixed platform or some LAN/WAN port over the Internet.

As part of the 3G and 4G serviceability enhancement in Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T, DM log collection has been integrated into Cisco IOS, eliminating the need for an external PC and simplifying the DM log collection process.

To configure DM log collection, enter the following commands, starting in privileged EXEC mode.

SUMMARY STEPS

1. **configure terminal**
2. **controller cellular *slot/wic***
3. **{*cdma | gsm | lte*} modem dm-log {enable | filesize *size* | filter *location:filename* | output path *URL* | rotation | size *log-size*}**
4. **end**
5. **show cellular *unit* logs dm-log**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 2	controller cellular <i>slot/wic</i> Example: Router(config)# controller cellular 0/1	Enters cellular controller configuration mode.

	Command or Action	Purpose
Step 3	<pre>{cdma gsm lte} modem dm-log {enable filesize size filter location:filename output path URL rotation size log-size}</pre> <p>Example: Router(config-controller)# lte modem dm-log enable</p>	<p>Configures DM logging for CDMA, GSM, or LTE modem.</p> <ul style="list-style-type: none"> • enable—Enables DM logging. • filesize size—Specifies the maximum log file size, in MB. Range is from 1 to 64. Default is 20. • filter location:filename—Specifies the DM log filter file location and filename. The following are the valid values for the <i>location</i> parameter: flash0, flash1, flash, usbflash, usbflash0, or usbflash1. <p>Note If the DM log filter file is not specified, the generic filter file, which comes with the diagnostic software tool, will be used.</p> <p>Note The DM log filter file should be in SQF format.</p> <ul style="list-style-type: none"> • output path URL—Specifies the path where the DM logging output files will be stored. The default path is the router flash. • rotation—Enables log rotation. <p>Note The rotation option is only supported if the log files are stored in the router flash or USB flash.</p> <ul style="list-style-type: none"> • size log-size—Specifies the maximum log size, in MB. Range is from 0 to 1024. Default is 64.
Step 4	<pre>end</pre> <p>Example: Router(config-controller)# end</p>	<p>Returns to privileged EXEC mode.</p>
Step 5	<pre>show cellular unit logs dm-log</pre> <p>Example: Router# show cellular 0/1/0 logs dm-log</p>	<p>(Optional) Displays DM log configuration and statistics.</p> <ul style="list-style-type: none"> • unit—For HWIC, this is the router slot, WIC slot, and port separated by slashes (for example, 0/1/0). For fixed platform, this is the number 0.

Example

The following example shows how to specify the maximum log file size for CDMA:

```
Router(config-controller)# cdma modem dm-log filesize 8
```

The following example shows how to specify the filter file for GSM:

```
Router(config-controller)# gsm modem dm-log filter flash:SwiLogPlus_generic_filter_6.3.sqf
```

The following example shows how to specify the path where the DM log output files will be stored for LTE:

```
Router(config-controller)# lte modem dm-log output path ftp://@172.25.211.175/
```

The following example shows how to enable DM log rotation for CDMA:

```
Router(config-controller)# cdma modem dm-log rotation
```

The following example shows how to specify the maximum log size for GSM:

```
Router(config-controller)# gsm modem dm-log size 128
```

Enabling Modem Crashdump Collection

Modem crashdump collection is useful in debugging firmware crash. To collect crash data, the modem has to be pre-configured so that it will stay in memdump mode after a crash. Memdump mode is a special boot-and-hold mode for the memdump utility to collect crash data.

For releases earlier than Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T, crashdump collection requires the PC to be connected to the router using a USB cable or a special RJ45-USB cable on a non-HSPA+7 3G HWIC.

As part of the 3G and 4G serviceability enhancement in Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T, the crashdump collection utility is integrated into Cisco IOS.

To enable modem crashdump collection, perform the following steps.



Note

The integrated modem crashdump collection feature is supported only on 3G HSPA and 4G LTE based SKUs. This feature is not supported on 3G CDMA HWIC and fixed platforms.

Prerequisites

Ensure that the following prerequisites are met before attempting to enable crashdump logging:

- The modem needs to be provisioned for modem crashdump collection—it needs to be configured to operate in test mode. Contact Cisco TAC for details.
- The modem should be in crash state. Run tests that will result in modem firmware crash. A “MODEM_DOWN” message on the router console or syslog is indicative of modem firmware crash.



Note

After the modem firmware crashes, the modem is available for crashdump log collection only. Data calls cannot be made.

SUMMARY STEPS

1. `test {cell-host | cell-hwic} unit modem-crashdump {on location | off}`
2. `show cellular unit logs modem-crashdump`

DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><code>test {cell-host cell-hwic} unit modem-crashdump {on location off}</code></p> <p>Example: Router# test cell-host 0 modem-crashdump on flash:</p>	<p>Enables or disables modem crashdump collection.</p> <ul style="list-style-type: none"> • cell-host—Keyword for fixed platform. • cell-hwic—Keyword for HWIC on a modular platform. • unit—For HWIC, this is the router slot, WIC slot, and port separated by slashes (for example, 0/0/0). For fixed platform, this is the number 0. • on—Enables crashdump log collection. • location—Specifies the destination URL where the modem crashdump logs will be stored. The following are the valid values: flash0:, flash1:, flash:, or ftp:. • off—Disables crashdump log collection.
Step 2	<p><code>show cellular unit logs modem-crashdump</code></p> <p>Example: Router# show cellular 0 logs modem-crashdump</p>	<p>(Optional) Displays the modem crashdump protocol information, progress, and status.</p>

Example

The following example shows how to disable crashdump log collection for HWIC on a modular platform:

```
Router# test cell-hwic 0/0/0 modem-crashdump off
```

The following example shows how to enable crashdump log collection on a fixed platform with the logs stored on an FTP server:

```
Router# test cell-host 0 modem-crashdump on ftp://@172.25.211.175/
```

Displaying Modem Log Error and Dump Information

As part of the 3G serviceability enhancement in Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T, AT command strings (**at!err** and **at!gdump**) can be sent to the modem using Cisco IOS CLI rather than setting up a reverse telnet session to the cellular modem to obtain log error and dump information.

To obtain log error and dump information, perform the following steps.


Note

The modem log error and dump collection feature is supported only on 3G SKUs.

SUMMARY STEPS

1. **show cellular *unit* log error**
2. **test cellular *unit* modem-error-clear**

DETAILED STEPS

	Command or Action	Purpose
Step 1	show cellular <i>unit</i> log error Example: Router# show cellular 0/1/0 log error	Shows modem log error and dump information.
Step 2	test cellular <i>unit</i> modem-error-clear Example: Router# test cellular 0/1/0 modem-error-clear	(Optional) Clears out the error and dump registers. By default, error and dump registers are not cleared out after a read. This command changes the operation so that registers are cleared once they are read. As a result, the AT command strings are changed to “ at!errclr=-1 ” for CDMA and “ at!err=0 ” for GSM modems.

Configuration Examples for 3G and 4G Serviceability Enhancement

This section contains the following subsections:

- [Example: Sample Output for the show cellular logs dm-log Command, page 8](#)
- [Example: Sample Output for the show cellular logs modem-crashdump Command, page 8](#)
- [Example: Sample Output for the show cellular log error Command, page 9](#)
- [Example: Sample Output for the test cellular modem-error-clear Command, page 9](#)

Example: Sample Output for the show cellular logs dm-log Command

The following shows a sample output of the **show cellular logs dm-log** command:

```
Router# show cellular 0/1/0 logs dm-log
Integrated DM logging is on
output path = ftp://@172.25.211.175/
filter = generic
maximum log size = 67108864
maximum file size = 20971520
log rotation = disabled
7 packets sent to the modem, 3232 bytes, 0 errors
75 packets received from the modem, 57123 bytes, 0 input drops
75 packets stored in file system, 57123 bytes, 0 errors, 0 aborts
2 max rcv queue size
current file size = 57123
current log size = 57123
total log size = 57123
DM log files: (1 files)
ftp://@172.25.211.175/dmlog20120712-173831slot1.bin
```

Example: Sample Output for the show cellular logs modem-crashdump Command

The following shows a sample output of the **show cellular logs modem-crashdump** command:

```
Router# show cellular 0 logs modem-crashdump
Modem crashdump logging: off
Progress = 100%
Last known State = Getting memory chunks
Total consecutive NAKs = 0
Number of retries = 0
Memory Region Info:
1: Full SDRAM [Base:0x0, Length:0x2000000]
2: MDSP RAM A region [Base:0x91000000, Length:0x8000]
3: MDSP RAM B region [Base:0x91200000, Length:0x8000]
4: MDSP RAM C region [Base:0x91400000, Length:0xC000]
5: MDSP Register region [Base:0x91C00000, Length:0x28]
6: ADSP RAM A region [Base:0x70000000, Length:0x10000]
7: ADSP RAM B region [Base:0x70200000, Length:0x10000]
8: ADSP RAM C region [Base:0x70400000, Length:0xC000]
9: ADSP RAM I region [Base:0x70800000, Length:0x18000]
10: CMM Script [Base:0x6A350, Length:0x310]
Router#
```


Example: Sample Output for the show cellular log error Command

The following shows a sample output of the **show cellular log error** command:

```
Router# show cellular 0/1/0 log error
Cached info is displayed
```

```
at!err
```

```
00 4E hsu_conf_sel_nv 00536
01 9B uim 08280
02 FF rrcllcpie 15762
03 FF rrccspfscan 02169
04 4E dsatact 00696
05 4E dsatcmdp 01841
06 4D gsdi_convert 01526
07 04 rrccsputil 18579
08 02 cmss 03459
09 2D tmc 03825
```

```
OK
```

```
at!gcdump
```

```
No crash data available
```

```
OK
```

Example: Sample Output for the test cellular modem-error-clear Command

The following shows a sample output of the **test cellular modem-error-clear** command:

```
Router# test cellular 0/1/0 modem-error-clear
Cellular0/1/0 Dump/Error info before clear command
```

```
at!err
```

```
00 4E hsu_conf_sel_nv 00536
01 9C uim 08280
02 FF rrcllcpie 15762
03 FF rrccspfscan 02169
04 4E dsatact 00696
05 4E dsatcmdp 01841
06 4E gsdi_convert 01526
07 04 rrccsputil 18579
08 02 cmss 03459
09 2D tmc 03825
```

```
OK
```

```
at!gcdump
```

```
No crash data available
```

```
OK
```

```
Cellular0/1/0 Dump/Error registers cleared
```

```
Router#
```

Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	<i>Cisco IOS Master Commands List, All Releases</i>
Platform-Specific Software Configuration	<ul style="list-style-type: none"> • <i>Cisco 819 Integrated Services Routers Software Configuration Guide</i> • <i>Cisco 880 Series Integrated Services Router Software Configuration Guide</i> • <i>Cisco 3900 Series, 2900 Series, and 1900 Series Software Configuration Guide</i> • <i>Configuring Cisco EHWIC and 880G for 3.7G (HSPA+)/3.5G (HSPA)</i> • <i>Configuring Cisco EHWIC and 880G for 3G (EV-DO Rev A)</i> • <i>Configuring 3G Wireless WAN on Modular and Fixed ISRs (HWIC-3G-CDMA, HWIC-3G-CDMA-x, and PCEX-3G-CDMA-x)</i> • <i>Configuring 3G Wireless WAN on Modular and Fixed ISRs (HWIC-3G-GSM, HWIC-3G-HSPA, PCEX-3G-HSPA-x)</i> • <i>Configuring Cisco 4G LTE Wireless WAN EHWIC</i>
3G Deployment	<i>3G High-Speed WAN Interface Card Solution Deployment Guide</i>

Standards

Standard	Title
3GPP ¹	The Mobile Broadband Standard
3GPP2 ²	Third-Generation Partnership Project 2

1. All 3GPP and 3GPP2 standards are supported on 3G (1xRTT/EVDO and UMTS/HSPA) and 4G (LTE).
2. All 3GPP and 3GPP2 standards are supported on 3G (1xRTT/EVDO and UMTS/HSPA) and 4G (LTE).

MIBs

MIB	MIBs Link
No new or modified MIBs are supported by this feature, and support for existing MIBs has not been modified by this feature.	To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL:
Note Refer to platform documentations for the list of supported MIBs specific to your router.	http://www.cisco.com/go/mibs

RFCs

RFC	Title
No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature. Note Refer to platform documentations for the list of supported MIBs specific to your router.	—

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for 3G and 4G Serviceability Enhancement

Table 1 lists the release history for this feature.

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.



Note

Table 1 lists only the Cisco IOS software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Table 1 Feature Information for 3G and 4G Serviceability Enhancement

Feature Name	Releases	Feature Information
3G and 4G Serviceability Enhancement	Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T	<p>The 3G and 4G Serviceability Enhancement feature provides integrated modem DM logging, crashdump logging, and log error and dump collection capability as part of router utility. This feature is supported on Cisco 819, Cisco 880, and Cisco ISR G2 platforms.</p> <p>The following commands were introduced or modified:</p> <ul style="list-style-type: none"> • modem dm-log • show cellular log error • show cellular logs dm-log • show cellular logs modem-crashdump • test cellular modem-error-clear • test modem-crashdump

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Command Reference

This section documents the following new and modified commands for the 3G and 4G Serviceability Enhancement feature supported on Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T:

- [cdma modem dm-log](#)
- [gsm modem dm-log](#)
- [lte modem dm-log](#)
- [show cellular log error](#)
- [show cellular logs dm-log](#)
- [show cellular logs modem-crashdump](#)
- [test cellular modem-error-clear](#)
- [test modem-crashdump](#)

cdma modem dm-log

To enable and configure integrated DM logging, use the **cdma modem dm-log** command in controller cellular configuration mode. To disable DM logging, use the **no** form of this command.

```
cdma modem dm-log { enable | filesize size | filter location:filename | output path URL | rotation
  | size log-size }
```

```
no cdma modem dm-log
```

Syntax Description	
enable	Enables DM logging.
filesize <i>size</i>	Specifies maximum log file size, in MB. Range is from 1 to 64. Default is 20.
filter <i>location:filename</i>	Specifies the DM log filter file. Note If the DM log filter file is not specified, the generic filter file will be used. <ul style="list-style-type: none"> <i>location</i>—Specifies the location of the DM log filter file. The following are the valid values: flash0, flash1, flash, usbflash, usbflash0, or usbflash1. <i>filename</i>—Specifies the filename of the DM log filter file. Note DM log filter file should be in SQF format.
output path <i>URL</i>	Specifies the path where the DM logging output files will be stored. The default path is the router flash.
rotation	Enables log rotation. Log rotation is disabled by default. Note This option is only supported if the log files are stored in the router flash or USB flash.
size <i>log-size</i>	Specifies maximum log size, in MB. Range is from 0 to 1024. Default is 64. Note Specifying 0 as the maximum log file size means that there is no upper limit.

Command Default DM logging is disabled by default.

Command Modes Controller Cellular

Command History	Release	Modification
	Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T	This command was introduced.

Examples

The following example shows how to enable DM logging:

```
Router(config-controller)# cdma modem dm-log enable
```

The following example shows how to specify the maximum log file size:

```
Router(config-controller)# cdma modem dm-log filesize 8
```

The following example shows how to specify the filter file:

```
Router(config-controller)# cdma modem dm-log filter  
flash:SwiLogPlus_generic_filter_6.3.sqf
```

The following example shows how to specify the path where the DM log output files will be stored:

```
Router(config-controller)# cdma modem dm-log output path ftp://@172.25.211.175/
```

The following example shows how to enable DM log rotation:

```
Router(config-controller)# cdma modem dm-log rotation
```

The following example shows how to specify the maximum log size:

```
Router(config-controller)# cdma modem dm-log size 128
```

Related Commands

Command	Description
show cellular logs	Displays the status of DM logging.
dm-log	

gsm modem dm-log

To enable and configure integrated DM logging, use the **gsm modem dm-log** command in controller cellular configuration mode. To disable DM logging, use the **no** form of this command.

```
gsm modem dm-log { enable | filesize size | filter location:filename | output path URL | rotation
  | size log-size }
```

```
no gsm modem dm-log
```

Syntax Description

enable	Enables DM logging.
filesize <i>size</i>	Specifies maximum log file size, in MB. Range is from 1 to 64. Default is 20.
filter <i>location:filename</i>	Specifies the DM log filter file. Note If the DM log filter file is not specified, the generic filter file will be used. <ul style="list-style-type: none"> <i>location</i>—Specifies the location of the DM log filter file. The following are the valid values: flash0, flash1, flash, usbflash, usbflash0, or usbflash1. <i>filename</i>—Specifies the filename of the DM log filter file. Note DM log filter file should be in SQF format.
output path <i>URL</i>	Specifies the path where the DM logging output files will be stored. The default path is the router flash.
rotation	Enables log rotation. Log rotation is disabled by default. Note This option is only supported if the log files are stored in the router flash or USB flash.
size <i>log-size</i>	Specifies maximum log size, in MB. Range is from 0 to 1024. Default is 64. Note Specifying 0 as the maximum log file size means that there is no upper limit.

Command Default

DM logging is disabled by default.

Command Modes

Controller Cellular

Command History

Release	Modification
Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T	This command was introduced.

Examples

The following example shows how to enable DM logging:

```
Router(config-controller)# gsm modem dm-log enable
```

The following example shows how to specify the maximum log file size:

```
Router(config-controller)# gsm modem dm-log filesize 8
```

The following example shows how to specify the filter file:

```
Router(config-controller)# gsm modem dm-log filter flash:SwiLogPlus_generic_filter_6.3.sqf
```

The following example shows how to specify the path where the DM log output files will be stored:

```
Router(config-controller)# gsm modem dm-log output path ftp://@172.25.211.175/
```

The following example shows how to enable DM log rotation:

```
Router(config-controller)# gsm modem dm-log rotation
```

The following example shows how to specify the maximum log size:

```
Router(config-controller)# gsm modem dm-log size 128
```

Related Commands

Command	Description
show cellular logs dm-log	Displays the status of DM logging.

Ite modem dm-log

To enable and configure integrated DM logging, use the **lte modem dm-log** command in controller cellular configuration mode. To disable DM logging, use the **no** form of this command.

lte modem dm-log { **enable** | **filesize** *size* | **filter** *location:filename* | **output path** *URL* | **rotation** | **size** *log-size* }

no lte modem dm-log

Syntax Description

enable	Enables DM logging.
filesize <i>size</i>	Specifies maximum log file size, in MB. Range is from 1 to 64. Default is 20.
filter <i>location:filename</i>	Specifies the DM log filter file. Note If the DM log filter file is not specified, the generic filter file will be used. <ul style="list-style-type: none"> <i>location</i>—Specifies the location of the DM log filter file. The following are the valid values: flash0, flash1, flash, usbflash, usbflash0, or usbflash1. <i>filename</i>—Specifies the filename of the DM log filter file. Note DM log filter file should be in SQF format.
output path <i>URL</i>	Specifies the path where the DM logging output files will be stored. The default path is the router flash.
rotation	Enables log rotation. Log rotation is disabled by default. Note This option is only supported if the log files are stored in the router flash or USB flash.
size <i>log-size</i>	Specifies maximum log size, in MB. Range is from 0 to 1024. Default is 64. Note Specifying 0 as the maximum log file size means that there is no upper limit.

Command Default

DM logging is disabled by default.

Command Modes

Controller Cellular

Command History

Release	Modification
Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T	This command was introduced.

Examples

The following example shows how to enable DM logging:

```
Router(config-controller)# lte modem dm-log enable
```

The following example shows how to specify the maximum log file size:

```
Router(config-controller)# lte modem dm-log filesize 8
```

The following example shows how to specify the filter file:

```
Router(config-controller)# lte modem dm-log filter flash:SwiLogPlus_generic_filter_6.3.sqf
```

The following example shows how to specify the path where the DM log output files will be stored:

```
Router(config-controller)# lte modem dm-log output path ftp://@172.25.211.175/
```

The following example shows how to enable DM log rotation:

```
Router(config-controller)# lte modem dm-log rotation
```

The following example shows how to specify the maximum log size:

```
Router(config-controller)# lte modem dm-log size 128
```

Related Commands

Command	Description
show cellular logs dm-log	Displays the status of DM logging.

show cellular log error

To display log error and dump information, use the **show cellular log error** command in privileged EXEC mode.

show cellular *unit* log error

Syntax Description

<i>unit</i>	For HWIC, the router slot, WIC slot, and port separated by slashes (for example, 0/1/0). For fixed platform, the number 0.
-------------	---

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T	This command was introduced.

Usage Guidelines

The command usage is the same for Global System for Mobile Communications (GSM) and Code Division Multiple Access (CDMA) although the output is different for each.

This command is supported only on 3G SKUs.

Examples

The following is a sample output of the **show cellular log error** command for an HWIC on a modular platform:

```
Router# show cellular 0/1/0 log error
Cached info is displayed
```

```
at!err
```

```
00 4E hsu_conf_sel_nv 00536
01 9B uim 08280
02 FF rrcllcpcie 15762
03 FF rrcspfscan 02169
04 4E dsatact 00696
05 4E dsatcmdp 01841
06 4D gsdi_convert 01526
07 04 rrcsputil 18579
08 02 cmss 03459
09 2D tmc 03825
```

```
OK
```

```
at!gcdump
```

```
No crash data available
```

```
OK
```

Related Commands

Command	Description
test cellular modem-error-clear	Clears out error and dump registers after a read.

show cellular logs dm-log

To display DM log configuration and statistics, use the **show cellular logs dm-log** command in privileged EXEC mode.

show cellular *unit* logs dm-log

Syntax Description	<i>unit</i>	For HWIC, the router slot, WIC slot, and port separated by slashes (for example, 0/1/0). For fixed platform, the number 0.
Command Default	None	
Command Modes	Privileged EXEC	
Command History	Release	Modification
	Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T	This command was introduced.
Usage Guidelines	The command usage is the same for Global System for Mobile Communications (GSM), Code Division Multiple Access (CDMA), and Fourth-Generation Long-Term Evolution (4G LTE), although the output is different for each.	

Examples

The following is a sample output of the **show cellular logs dm-log** command for an HWIC on a modular platform:

```
Router# show cellular 0/1/0 logs dm-log
Integrated DM logging is on
output path = ftp://@172.25.211.175/
filter = generic
maximum log size = 67108864
maximum file size = 20971520
log rotation = disabled

7 packets sent to the modem, 3232 bytes, 0 errors
75 packets received from the modem, 57123 bytes, 0 input drops
75 packets stored in file system, 57123 bytes, 0 errors, 0 aborts
2 max rcv queue size

current file size = 57123
current log size = 57123
total log size = 57123
DM log files: (1 files)
ftp://@172.25.211.175/dmlog20120712-173831slot1.bin
```

Table 2 describes the significant fields shown in the display.

Table 2 Output Description for show cellular logs dm-log Command

Field	Description
output path	Path where the DM log output files will be stored.
filter	Filter file used.
maximum log size	Maximum log size.
maximum file size	Maximum log file size.
log rotation	Status of log rotation.

Related Commands

Command	Description
cdma modem dm-log	Enables and configures integrated DM logging for 3G CDMA.
gsm modem dm-log	Enables and configures integrated DM logging for 3G GSM.
lte modem dm-log	Enables and configures integrated DM logging for 4G LTE.

show cellular logs modem-crashdump

To display the modem crashdump protocol information, progress, and status, use the **show cellular logs modem-crashdump** command in privileged EXEC mode.

show cellular *unit* logs modem-crashdump

Syntax Description

<i>unit</i>	For HWIC, the router slot, WIC slot, and port separated by slashes (for example, 0/1/0). For fixed platform, the number 0.
-------------	---

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T	This command was introduced.

Usage Guidelines

The command usage is the same for Global System for Mobile Communications (GSM) and Fourth-Generation Long-Term Evolution (4G LTE), although the output is different for each.

Examples

The following is a sample output of the **show cellular logs modem-crashdump** command for a fixed platform:

```
Router# show cellular 0 logs modem-crashdump
Modem crashdump logging: off
Progress = 100%
Last known State = Getting memory chunks
Total consecutive NAKs = 0
Number of retries = 0
Memory Region Info:
1: Full SDRAM [Base:0x0, Length:0x2000000]
2: MDSP RAM A region [Base:0x91000000, Length:0x8000]
3: MDSP RAM B region [Base:0x91200000, Length:0x8000]
4: MDSP RAM C region [Base:0x91400000, Length:0xC000]
5: MDSP Register region [Base:0x91C00000, Length:0x28]
6: ADSP RAM A region [Base:0x70000000, Length:0x10000]
7: ADSP RAM B region [Base:0x70200000, Length:0x10000]
8: ADSP RAM C region [Base:0x70400000, Length:0xC000]
9: ADSP RAM I region [Base:0x70800000, Length:0x18000]
10: CMM Script [Base:0x6A350, Length:0x310]
Router#
```

Table 3 describes the significant fields shown in the display.

Table 3 Output Description for show cellular logs modem-crashdump Command

Field	Description
Modem crashdump logging	Crashdump logging status. <ul style="list-style-type: none"> on—Logging is in progress. off—Logging has been completed.
Progress	Percentage of log collected.
Last known State	Last known logging status.
Total consecutive NAKs	Number of consecutive negative responses returned by the modem.
Number of retries	Number of retries attempted by IOS in case the modem did not respond to the request.
Memory Region Info	Details of different crashdump regions returned by the modem. Contains the following information: <ul style="list-style-type: none"> Region name Base address Total length of memory region

Related Commands

Command	Description
test modem-crashdump	Enables modem crashdump collection.

test cellular modem-error-clear

To clear error and dump registers after they are read, use the **test cellular modem-error-clear** command in privileged EXEC mode.

test cellular *unit* modem-error-clear

Syntax Description	<i>unit</i>	For HWIC, the router slot, WIC slot, and port separated by slashes (for example, 0/0/0). For fixed platform, the number 0.
---------------------------	-------------	---

Command Default By default, error and dump registers are not cleared out after they are read.

Command Modes Privileged EXEC

Command History	Release	Modification
	Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T	This command was introduced.

Usage Guidelines This command clears out the error and dump registers once they are read. As a result, the AT command strings are changed to “**at!errclr=-1**” for CDMA and “**at!err=0**” for GSM.

This command is supported only on 3G SKUs.

Examples

The following example shows how to clear the error and dump registers after they are read using the **test cellular modem-error-clear** command:

```
Router# test cellular 0/1/0 modem-error-clear
Cellular0/1/0 Dump/Error info before clear command

at!err

00  4E hsu_conf_sel_nv  00536
01  9C uim              08280
02  FF rrcllpcpie      15762
03  FF rrccspfscan     02169
04  4E dsatact         00696
05  4E dsatcmdp        01841
06  4E gsdi_convert    01526
07  04 rrccsputil      18579
08  02 cmss            03459
09  2D tmc              03825

OK

at!gcdump

No crash data available

OK

Cellular0/1/0 Dump/Error registers cleared

Router#
```

Related Commands

Command	Description
show cellular log error	Displays log error and dump information.

test modem-crashdump

To enable modem crashdump collection, use the **test modem-crashdump** command in privileged EXEC mode.

```
test {cell-host | cell-hwic} unit modem-crashdump {on location | off}
```

Syntax Description		
cell-host		Keyword for fixed platform.
cell-hwic		Keyword for HWIC (modular platform).
<i>unit</i>		For HWIC, the router slot, WIC slot, and port separated by slashes (for example, 0/0/0). For fixed platform, the number 0.
on		Enables modem crashdump collection.
<i>location</i>		Specifies the destination URL where the modem crashdump logs will be stored. The following are the valid values: flash0: , flash1: , flash: , or ftp: .
off		Disables modem crashdump collection.

Command Default Modem crashdump is disabled by default.

Command Modes Privileged EXEC

Command History	Release	Modification
	Cisco IOS Release 15.2(4)M2 and Cisco IOS Release 15.3(1)T	This command was introduced.

Usage Guidelines There is no configuration associated with modem crashdump collection. The **test modem-crashdump** command enables the integrated modem crashdump collection feature.

Upon completion of the crashdump collection, the state and buffer pools are cleared for the next run. The crash data will be available in the router flash as multiple files, each corresponding to a memory region of the crash data.



Note

This feature is supported only on 3G HSPA and 4G LTE based SKUs. This is not supported on 3G CDMA HWIC and fixed SKUs.

Examples

The following example shows how to enable crashdump for HWIC on a modular platform with the logs saved on the router flash:

```
Router# test cell-hwic 0/0/0 modem-crashdump on flash:
```

The following example shows how to disable crashdump for HWIC on a modular platform:

```
Router# test cell-hwic 0/0/0 modem-crashdump off
```

The following sample output shows how to enable crashdump on a fixed platform and how to view the crash data saved on the specified location (in this case, the router flash):

```
Router# test cell-host 0 modem-crashdump on flash:
Crashdump logging has been started
Please do not remove power or reload router
until the logging is 100% complete.
Router#
Querying device parameters...
Querying Memory Debug Info...
1: Full SDRAM [Base:0x0, Length:0x2000000]
2: MDSP RAM A region [Base:0x91000000, Length:0x8000]
3: MDSP RAM B region [Base:0x91200000, Length:0x8000]
4: MDSP RAM C region [Base:0x91400000, Length:0xC000]
5: MDSP Register region [Base:0x91C00000, Length:0x28]
6: ADSP RAM A region [Base:0x70000000, Length:0x10000]
7: ADSP RAM B region [Base:0x70200000, Length:0x10000]
8: ADSP RAM C region [Base:0x70400000, Length:0xC000]
9: ADSP RAM I region [Base:0x70800000, Length:0x18000]
10: CMM Script [Base:0x6A350, Length:0x310]
Reading memory...
Saving to 'flash:crashdump_20120724-034053_sdram_dump.lst'...
Router# sh cell
10% Complete
20% Complete
30% Complete
40% Complete
50% Complete
60% Complete
70% Complete
80% Complete
90% Complete
Saving to 'flash:crashdump_20120724-034053_mdsp_rama.lst'...
Saving to 'flash:crashdump_20120724-034053_mdsp_ramb.lst'...
Saving to 'flash:crashdump_20120724-034053_mdsp_ramc.lst'...
Saving to 'flash:crashdump_20120724-034053_mdsp_regs.lst'...
Saving to 'flash:crashdump_20120724-034053_adsp_rama.lst'...
Saving to 'flash:crashdump_20120724-034053_adsp_ramb.lst'...
Saving to 'flash:crashdump_20120724-034053_adsp_ramc.lst'...
Saving to 'flash:crashdump_20120724-034053_adsp_rami.lst'...
Saving to 'flash:crashdump_20120724-034053_load.cmm'...
100% Complete
Router#

Router# dir flash:
Directory of flash:/

...
 20 -rw-   33554432 Jul 24 2012 03:42:26 +00:00
crashdump_20120724-034053_sdram_dump.lst
 18 -rw-     32768 Jul 24 2012 03:42:28 +00:00
crashdump_20120724-034053_mdsp_rama.lst
```

```

    10 -rw-      32768 Jul 24 2012 03:42:28 +00:00
crashdump_20120724-034053_mdsp_ramb.lst
    19 -rw-      49152 Jul 24 2012 03:42:30 +00:00
crashdump_20120724-034053_mdsp_ramc.lst
    21 -rw-         40 Jul 24 2012 03:42:30 +00:00
crashdump_20120724-034053_mdsp_regs.lst
    22 -rw-      65536 Jul 24 2012 03:42:30 +00:00
crashdump_20120724-034053_adsp_rama.lst
    23 -rw-      65536 Jul 24 2012 03:42:30 +00:00
crashdump_20120724-034053_adsp_ramb.lst
    24 -rw-      49152 Jul 24 2012 03:42:32 +00:00
crashdump_20120724-034053_adsp_ramc.lst
    25 -rw-      98304 Jul 24 2012 03:42:32 +00:00
crashdump_20120724-034053_adsp_rami.lst
    26 -rw-       784 Jul 24 2012 03:42:32 +00:00 crashdump_20120724-034053_load.cmm

260173824 bytes total (58339328 bytes free)
Router#

```

The following sample output shows how to enable crashdump on a fixed platform with the logs stored on an FTP server:

```

Router# test cell-host 0 modem-crashdump on ftp://@172.25.211.175/
Crashdump logging has been started
Please do not remove power or reload router
until the logging is 100% complete.
Router#
Querying device parameters...
Querying Memory Debug Info...
1: Full SDRAM [Base:0x0, Length:0x20000000]
2: MDSP RAM A region [Base:0x91000000, Length:0x8000]
3: MDSP RAM B region [Base:0x91200000, Length:0x8000]
4: MDSP RAM C region [Base:0x91400000, Length:0xC000]
5: MDSP Register region [Base:0x91C00000, Length:0x28]
6: ADSP RAM A region [Base:0x70000000, Length:0x10000]
7: ADSP RAM B region [Base:0x70200000, Length:0x10000]
8: ADSP RAM C region [Base:0x70400000, Length:0xC000]
9: ADSP RAM I region [Base:0x70800000, Length:0x18000]
10: CMM Script [Base:0x6A350, Length:0x310]
0% Complete
Writing crashdump_20120724-052105_sdram_dump.lst
Saving to 'ftp://172.25.211.175/crashdump_20120724-052105_sdram_dump.lst'...!!!!!!!!!!!!!!
10% Complete!!!!!!!!!!!!!!
20% Complete!!!!!!!!!!!!!!
30% Complete!!!!!!!!!!!!!!
40% Complete!!!!!!!!!!!!!!
50% Complete!!!!!!!!!!!!!!
60% Complete!!!!!!!!!!!!!!
70% Complete!!!!!!!!!!!!!!
80% Complete!!!!!!!!!!!!!!
90% Complete!!!!!!!!!!!!!!
Writing crashdump_20120724-052105_mdsp_rama.lst
Saving to 'ftp://172.25.211.175/crashdump_20120724-052105_mdsp_rama.lst'...!
Writing crashdump_20120724-052105_mdsp_ramb.lst
Saving to 'ftp://172.25.211.175/crashdump_20120724-052105_mdsp_ramb.lst'...!
Writing crashdump_20120724-052105_mdsp_ramc.lst
Saving to 'ftp://172.25.211.175/crashdump_20120724-052105_mdsp_ramc.lst'...!
Writing crashdump_20120724-052105_mdsp_regs.lst
Saving to 'ftp://172.25.211.175/crashdump_20120724-052105_mdsp_regs.lst'...!
Writing crashdump_20120724-052105_adsp_rama.lst
Saving to 'ftp://172.25.211.175/crashdump_20120724-052105_adsp_rama.lst'...!
Writing crashdump_20120724-052105_adsp_ramb.lst
Saving to 'ftp://172.25.211.175/crashdump_20120724-052105_adsp_ramb.lst'...!

```

```
Writing crashdump_20120724-052105_adsp_ramc.lst
Saving to 'ftp://172.25.211.175/crashdump_20120724-052105_adsp_ramc.lst'...!
Writing crashdump_20120724-052105_adsp_rami.lst
Saving to 'ftp://172.25.211.175/crashdump_20120724-052105_adsp_rami.lst'...!
Writing crashdump_20120724-052105_load.cmm
Saving to 'ftp://172.25.211.175/crashdump_20120724-052105_load.cmm'...!
100% Complete
Router#
```

Related Commands	Command	Description
	show cellular logs modem-crashdump	Displays modem crashdump protocol information, progress, and status.