Collect LTE DM Logs for 4G WAN

Contents

Introduction

This document describes steps to collect Diagnostic Monitor (DM) logs for 4G Wide Area Network (WAN) modules. It also discusses different commands to check DM logging information and provides Embedded Event Manager (EEM) script to enable and disable DM Logs based on some triggers.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- LTE Technology
- Configuration of LTE Technology on a Cisco Router

Components Used

The information in this document is based on these software and hardware versions:

- Cisco 4G fixed Routers
- Modules which support dual SIM feature

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Configure

Configure and Verify DM Log Collection

DM logs are used to capture data transactions between the modem and the network over the RF interface, which helps to troubleshoot 4G data connectivity or performance issues.

These commands needs to be configured to start the DM logs collection:

```
router#conf t
router(config)#controller cellular 0
router(config-controller)#lte modem dm-log rotation
router(config-controller)#lte modem dm-log filesize 20
router(config-controller)#lte modem dm-log size 60
router(config-controller)#lte modem dm-log filter flash:XYZ.sqf    <<<< Optional
router(config-controller)#lte modem dm-log enable
```

> **Note**: The **dm-log rotation** command creates multiple files of default size 20 MB. If this command is not enabled, DM log capture will stop after 3 files of 20 mb are created. Then you have to restart the DM logging again manually.

To disable DM log collection, these commands need to be configured:

```
router#conf t
router(config)#controller cellular 0
router(config-controller)#no lte modem dm-log enable
```

DM logs could be disabled after a fixed interval of time. This feature is available for routers with IOS 15.4(3) M1 onwards. This can be done with the help of these commands:

```
router#conf t
router(config)#controller cellular 0
router(config-controller)#lte modem dm-log autostop timer <time in minutes>
```

In order to autostop DM logs, when the Cellulat interface resets, these commands can be used:

```
router#conf t
router(config)#controller cellular 0
router(config-controller)#lte modem dm-log autostop link-down
```

In order to check the DM log information, these commands can be used:

```
router#show cellular 0 logs dm-log

Integrated DM logging is on
output path =  flash:                    <<<< destination file where logs are captured
filter = generic
maximum log size = 83886080
maximum file size = 2097152
log rotation = enabled
```

DM logs are captured in Router flash as shown in this command. It can also be displayed with the use of the these commands:

```
router#show flash | inc dm

8    115417 Aug 12 2016 10:20:12 +00:00 dmlog20160812-102012slot0.bin
```

EEM Script to Enable or Disable DM Logs

EEM script can be used to capture DM logs based on some triggers. You can configure EEM script which captures the logs whenever necessary and then turns off the logs after it captures the required information.

Example:

```
track 819 interface cellular 0 line-protocol
!
event manager applet LTE-Capture authorization bypass
event track 819 state down maxrun 8400
action 90 cli command "enable"

action 91 cli command "config t"

action 92 cli command "controller cellular 0"

action 93 cli command "lte modem dm-log enable"

action 94 cli command "end"
action 102 cli command "show cellular 0 all | append flash: test"
action 103 cli command "show ip mobile router | append flash:test"
action 104 cli command "show controller cellular 0 | append flash:test"
action 105 cli command "show dialer | append flash:test"
action 106 cli command "show interface cellular 0 | append flash:test"
action 112 syslog message "Captured Outputs"
action 113 wait 100
action 114 cli command "show log | append flash:test"
action 115 cli command "enable"
action 116 cli command "conf t"
action 117 cli command "controller cellular 0"
action 118 cli command "no lte modem dm-log enable"
action 119 syslog msg "DM-logging disabled"
action 120 cli command "end"
```

Verify

There is currently no verification procedure available for this configuration.

Troubleshoot

There is currently no specific troubleshooting information available for this configuration.

Related Information

- **4G LTE Software Configuration**
- **Technical Support & Documentation - Cisco Systems**