

How To Debug Events Coming from a Cable Modem Using Cable Manager

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Introduction

This document explains how you can enable, check, and troubleshoot the Simple Network Management Protocol (SNMP) traps coming from cable modems that go to Cisco Cable Manager.

Note: To use the information in this document, it is assumed that all the devices have been correctly discovered by the application. If not, please see the links in the Related Information section.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

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

- Cisco Cable Manager version 2.0.
- Cisco Element Manager Framework version 3.1.

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.

Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

Enabling the Different Debug Settings

Increasing the Common Debug Level for the Entire Cisco Element Manager Framework

By default, debug entries are not included in log files. In order to see log messages of DEBUG severity (this includes all other severities), a change needs to be made to the loggercommon.include file located in the /opt/cemf/config/init directory.

By default, the loggingLevelMask is set to 10. Changing this setting to 15 causes all DEBUG level messages to be logged. Cisco Element Manager Framework processes then needs to be restarted (for details on how to do this, see the links under the Related Information section).

Cisco Element Manager Framework provides logging information using log files located under <cemf-dir>/logs. Of all the log files, the file named cb1Ctrl.log is of primary importance.

Enabling SNMP Debugging and Logging

Changing the debug level does not enable the raw SNMP logging. To do this, edit the /opt/cemf/config/processes/S10coreSnmpProcesses file so that it looks like this:

```
process {
    name "BRASS"
    path "/opt/cemf/snmp15.2.1.7/md5nodes/solaris_sun4.bin/brassagt"
    args "-nosubagent -d -erall -tracefile /tmp/brass.log"
    runlevel 310
    type STD
    restart YES background YES
}
```

This logs all the SNMP information into /tmp/brass.log. After you make the necessary changes, Cisco Element Manager Framework processes then needs to be restarted (for details on how to do this, see the links under the Related Information section).

Enabling the Debug on the CMTS

To see the SNMP packets on the Cable Modem Terminal Server (CMTS) (UBR 72xx), you need to enable the debug using the **debug snmp packets** command on the command line interface (CLI) of the CMTS. If you are connected using a Telnet session, then you also need to add the **terminal monitor** command.

Debugging Traps Coming from a Cable Modem

After the application has discovered all the devices, you must use the SNMP template in Cisco Cable Manager to enable the SNMP cable traps. This is explained in Enabling a Cable Modem Online/Offline Trap.

Note: You must do this even if you see the line `snmp-server enable traps cable`. This is because the template also sends a specific **snmpset** command to the CMTS. As a result, it sends a trap when a Cable Modem (CM) (UBR9xx) goes offline. (For more information on the **snmpset** command, refer to the variable `cdxCmtsCmOnOffTrapEnable` in CISCO-DOCS-EXT-MIB.my MIB .

To do the test, reload a CM and check whether the OnOff trap is forwarded to Cisco Cable Manager. Each of the following debugs/logging helps you determine where the problem lies.

On the CMTS

Note: If you do not see the output below, this means that the CMTS is not properly configured:

CM is powered off:

```
20:40:49: SNMP: Queuing packet to 172.17.246.93
20:40:49: SNMP: V1 Trap, ent ciscoDocsExtMIB.2, addr 172.17.246.140, gentrap 6,
spectrap 1
docsIfCmtsCmStatusEntry.2.16387 = 00 02 B9 6F FA 23
docsIfCmtsCmStatusEntry.3.16387 = 191.0.110.7
docsIfCmtsCmStatusEntry.4.16387 = 11
docsIfCmtsCmStatusEntry.5.16387 = 10
cdxCmCpeEntry.5.6.0.2.185.111.250.35 = 3
cdxCmtsCmStatusExtEntry.1.16387 = 1
```

CM is powered on:

```
20:42:01: SNMP: Queuing packet to 172.17.246.93
20:42:01: SNMP: V1 Trap, ent ciscoDocsExtMIB.2, addr 172.17.246.140, gentrap 6,
spectrap 1
docsIfCmtsCmStatusEntry.2.16387 = 00 02 B9 6F FA 23
docsIfCmtsCmStatusEntry.3.16387 = 191.0.110.7
docsIfCmtsCmStatusEntry.4.16387 = 11
docsIfCmtsCmStatusEntry.5.16387 = 10
cdxCmCpeEntry.5.6.0.2.185.111.250.35 = 3
cdxCmtsCmStatusExtEntry.1.16387 = 12
```

The variable `cdxCmtsCmStatusExtEntry` values are explained in the `CISCO-DOCS-EXT-MIB.my MIB` :

- Offline(1): modem considered offline.
- Online(12): modem registered, enabled for data.

On the Cisco Cable Manager Server

In the SNMP /tmp/brass.log debug file, you can see the following lines.

Note: If you do not see the output below, but you do see the above debugs, this means that the communication between the CMTS and the server is down or the Bilingual Request and Security Subsystem (BRASS)-process is not running.

CM is powered off:

```
ProcessIncomingTRAP
...
Incoming SnmpMessage
  Version: SNMPv1
  Community: public
Incoming Pdu
  Type: SNMPv1 Trap
  Enterprise: enterprises.9.9.116.2
  Agent Address: ac 11 f6 8d
  Generic Trap Type = 6
  Specific Trap Type = 1
  Time Ticks = 45275581
Incoming Varbind List
  transmission.127.1.3.3.1.2.1 = 00 02 b9 6f fa 23
  transmission.127.1.3.3.1.3.1 = 191.0.110.7
  transmission.127.1.3.3.1.4.1 = 8
  transmission.127.1.3.3.1.5.1 = 7
```

```
enterprises.9.9.116.1.3.1.1.5.6.0.2.185.111.250.35 = 1
enterprises.9.9.116.1.3.2.1.1.1 = 1
process_incoming_vltrap
...
```

CM is powered on:

```
ProcessIncomingTRAP
...
Incoming SnmpMessage
  Version: SNMPv1
  Community: public
Incoming Pdu
  Type: SNMPv1 Trap
  Enterprise: enterprises.9.9.116.2
  Agent Address: ac 11 f6 8d
  Generic Trap Type = 6
  Specific Trap Type = 1
  Time Ticks = 45282697
Incoming Varbind List
  transmission.127.1.3.3.1.2.1 = 00 02 b9 6f fa 23
  transmission.127.1.3.3.1.3.1 = 191.0.110.7
  transmission.127.1.3.3.1.4.1 = 8
  transmission.127.1.3.3.1.5.1 = 7
  enterprises.9.9.116.1.3.1.1.5.6.0.2.185.111.250.35 = 1
  enterprises.9.9.116.1.3.2.1.1.1 = 12
process_incoming_vltrap
...
```

In the logfile /opt/cemf/logs/cblCtrl.log, you should see the following lines:

Note: If you do not see the lines, but you do see the above debugs, this means that there is a problem with the Cisco Cable Manager installation.

CM is powered off:

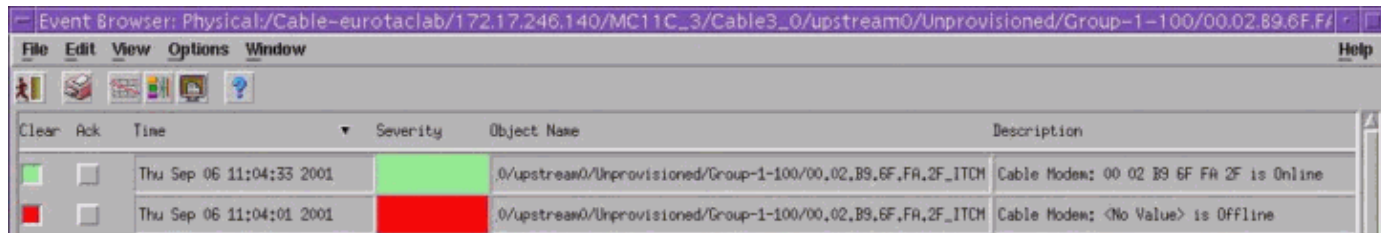
```
06/09/2001 10:50:41 cblCtrl : INFO PROCESSING TRAP :
enterprise = 1.3.6.1.4.1.9.9.116.2, generic = 6, specific = 1
06/09/2001 10:50:42 cblCtrl : INFO Received trap from object ID[0x00000101:0x000010a5]
06/09/2001 10:50:42 cblCtrl : INFO Received onlineOffline trap
06/09/2001 10:50:42 cblCtrl : INFO Varbind attrId[0x00000007:0x02801195]
CM MacAddress[00 02 B9 6F FA 23]
06/09/2001 10:50:42 cblCtrl : INFO Varbind attrId[0x00000007:0x0280107a]
CM status Value[1]
06/09/2001 10:50:42 cblCtrl : INFO getCableModemParent Succeeded
06/09/2001 10:50:42 cblCtrl : INFO Raising OFFLINE trap,
UBR [172.17.246.140] parent of CM[00.02.B9.6F.FA.23]
06/09/2001 10:50:42 general : ERROR AlarmDirectoryUserInterface::
addAlarmsWithSuccessesReturn
Default result function called - invoking addAlarmsReturn
06/09/2001 10:50:42 cblCtrl : INFO controller.cc:2481 Controller::addAlarmsReturn
All alarms were added successfully
```

CM is powered on:

```
06/09/2001 10:51:54 cblCtrl : INFO PROCESSING TRAP : enterprise = 1.3.6.1.4.1.9.9.116.2,
generic = 6, specific = 1
06/09/2001 10:51:55 cblCtrl : INFO Received trap from object ID[0x00000101:0x000010a5]
06/09/2001 10:51:55 cblCtrl : INFO Received onlineOffline trap
06/09/2001 10:51:55 cblCtrl : INFO Varbind attrId[0x00000007:0x02801195]
CM MacAddress[00 02 B9 6F FA 23]
06/09/2001 10:51:55 cblCtrl : INFO Varbind attrId[0x00000007:0x0280107a]
CM status Value[12]
06/09/2001 10:51:55 cblCtrl : INFO Raising ONLINE trap, assuming UBR [172.17.246.140]
```

```
parent of CM[00.02.B9.6F.FA.23]
06/09/2001 10:51:55 general : ERROR AlarmDirectoryUserInterface::
addAlarmsWithSuccessesReturn
Default result function called - invoking addAlarmsReturn
06/09/2001 10:51:55 cblCtrl : INFO controller.cc:2481 Controller::addAlarmsReturn
All alarms were added successfully
```

When you look in the Viewer while the CM is reloaded, you see that it goes red and then back to green as expected. You can see the trap in more detail by right-clicking on **CM > Tools > Open Event Browser**. Then select **View > Event History**. You should see an image like this:



Clear	Ack	Time	Severity	Object Name	Description
<input type="checkbox"/>	<input type="checkbox"/>	Thu Sep 06 11:04:33 2001	Green	.0/upstream0/Unprovisioned/Group-1-100/00.02.B9.6F.FA.2F_ITCM	Cable Modem: 00 02 B9 6F FA 2F is Online
<input type="checkbox"/>	<input type="checkbox"/>	Thu Sep 06 11:04:01 2001	Red	.0/upstream0/Unprovisioned/Group-1-100/00.02.B9.6F.FA.2F_ITCM	Cable Modem: <No Value> is Offline

Related Information

- [Getting Started \(See the section entitled Discovering Objects and Devices.\)](#)
- [Cisco EMF Auto Discovery](#)
- [Administering CEMF Workstations](#)
- [Managing Cisco Routers \(See the section entitled Enabling and Configuring SNMP Traps.\)](#)
- [Event Browser](#)
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