



Fault Management

This chapter contains the following information:

- CGM Alarms
- CGM Traps
- Heartbeat Polling
- ATM Interface Faults

CGM Alarms

CGM enables you to identify faults or alarms generated by a Cisco 12000 GSR. Within the Map Viewer, you are notified of alarms on individual objects by the colored status dots next to each managed object. The following table details all status colors and their related severities.

Table 12-1 Severity Colors

Color	Severity of Alarm
Red	Critical
Orange	Major
Yellow	Minor
Cyan	Warning
Green	No Alarms (Normal)
Blue	Card Decommissioned or Not Installed
White	Informational
Dark green	Pre-Provisioned

Alarms are propagated up the object hierarchy, and are reflected up to the highest level. For example, say a critical (red) alarm occurs on an interface. If you do not have the chassis map open, and if the interface text is not apparent, how would you know an alarm had occurred at that level? The answer is: propagation. The interface alarm would be propagated up the hierarchy to site level. This means that whatever level you are working at, you will see that an alarm has occurred. You can follow the path to discover where the alarm exists.

**Note**

You can complement CGM by adding the Event Manager application. Among other features, the Event Manager enables you to set thresholds for certain system parameters and to monitor any supported CGM MIB variables.

Viewing Alarms

You can open the Event Browser (**Events**) in two different ways:

- To view all alarms on all objects, click the **Events** application.
 - The Query Editor window appears. Set your query within the tabs provided. The Event Browser then displays all alarms matching your query criteria.
- To view a specific alarm on one object, open the Map Viewer application (**Viewer**), right-click the object that generated the alarm, then choose **Tools>Open Event Browser**. Only the selected object or alarm is displayed. If you wish, you can open the Query Editor from this window to modify your criteria. To access the Query Editor from the Event Browser window, simply click the **Query Editor** icon in the toolbar.

Figure 12-1 Query Editor Icon



For detailed information on the Query Editor, refer to the *Cisco EMF User Guide*.

CGM Traps

When a fault occurs on a managed object in the network, CGM receives immediate notification, through a “trap” that is sent through the network. This trap manifests itself as an alarm in CGM. The following areas support traps in CGM:

- Power supply
- Voltage
- Temperature
- Fan status

A trap on any of these objects can be one of three severity types:

- Failed or critical, as applicable
- Warning or caution
- Ok

When an alarm situation gets fixed, CGM detects the fixed situation and an “ok” trap is sent through the network, which clears the alarm.

Heartbeat Polling

Heartbeat polling takes place automatically when you commission a chassis. The chassis and all objects within the chassis are polled every five minutes. There are two types of heartbeat polling: Connectivity Management and Operational Status Polling.

The Heartbeat Polling section covers the following areas:

- Connectivity Management
- Operational Status Polling
- Heartbeat Polling—Inactive Interfaces

Connectivity Management

Connectivity Management—The chassis polls the management interface to see if there is management connectivity, for a Chassis, this is every 60 seconds. If management connectivity is lost, the chassis goes into a lost comms state and this state ripples down to all subchassis objects. The chassis continues to poll. If it detects re-establishment, it puts the chassis state back to the relevant state and this state ripples down to all subchassis objects as well.

Operational Status Polling

Operational Status Polling—Occurs at module and interface levels. Each module and interface polls for its own operational status, for Modules\Interfaces, this is every 5 minutes. If a module detects that its operational status is down, it goes into an Errored state. This Errored state does not propagate down to PVCs, SVCs, and subinterfaces. The interface polls for up or down status as well. If an interface goes down, you can see this in the Generic Interface Status window.

Heartbeat Polling—Inactive Interfaces

You can stop heartbeat polling on an individual interface by decommissioning the interface. You might want to do this if you have interfaces that are not yet connected or live. For example, when you commission a chassis, subchassis discovery is automatically initiated. If you have pre-deployed interfaces that are not yet live, these are discovered and put into an Errored state, after no connectivity is detected on them. An alarm is also be raised on the interface. To correct this situation, you need to decommission the inactive interface and clear the alarm manually.

Performance logging

Heartbeat polling will be unaffected if an object is in the performance logging state.

ATM Interface Faults

The ATM Interface Faults section covers the following areas:

- Viewing the ATM Interface Faults Window

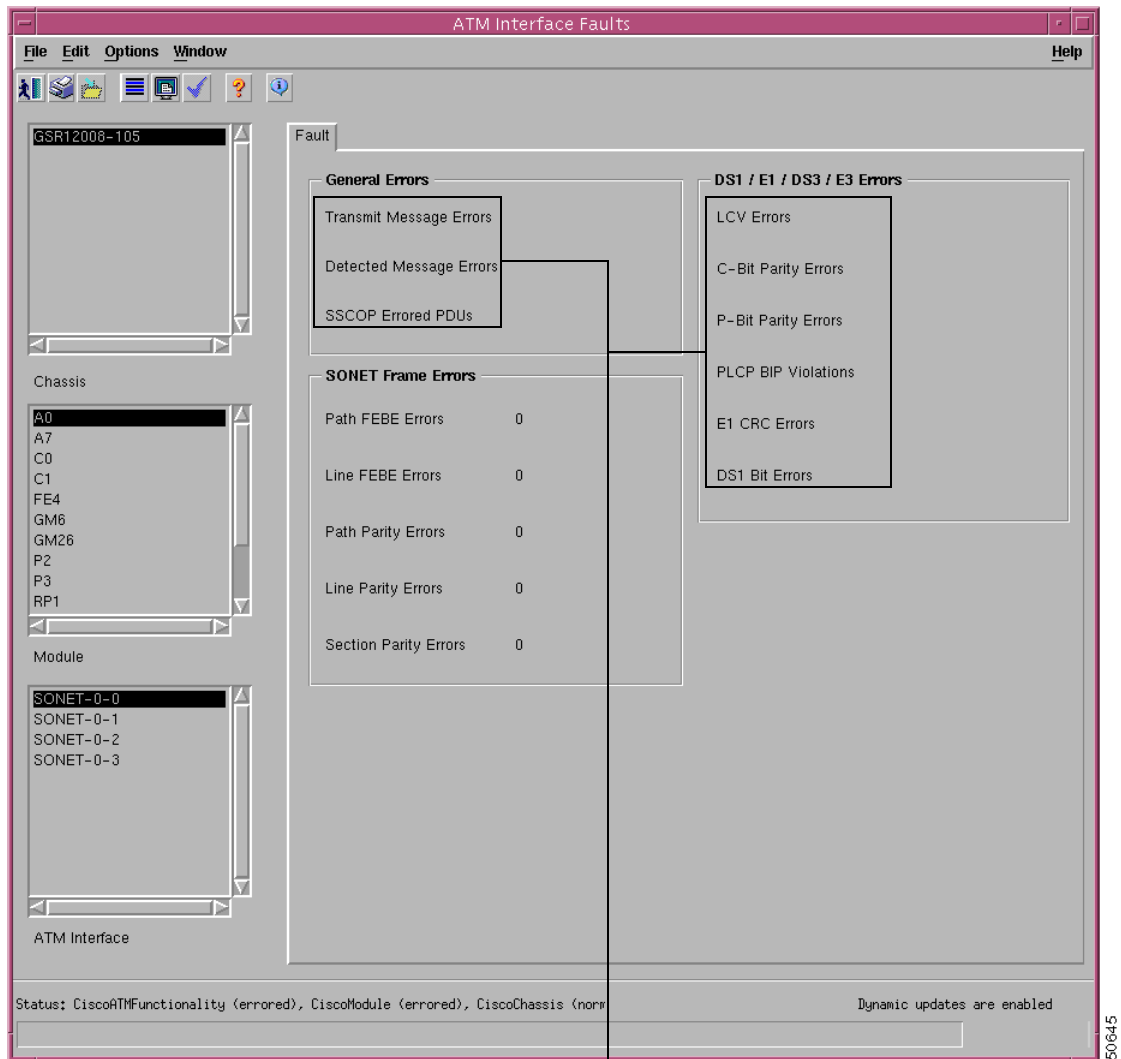
- ATM Interface Faults Window—Detailed Description

Viewing the ATM Interface Faults Window

To view the ATM Interface Faults window, follow these steps:

- Step 1** Right-click on a selected ATM interface, then choose **CGM Management>Physical>Interface>ATM>Fault**. The ATM Interface Faults window appears.

Figure 12-2 ATM Interface Faults Window



Not applicable for CGM

- Step 2** Select the appropriate chassis, module, and ATM interface from the lists displayed at the left-hand-side of the window. The fault information is displayed for the selected ATM interface.

ATM Interface Faults Window—Detailed Description

The ATM Interface Faults window contains a single Fault tab.

Fault Tab

The Fault tab (see Figure 12-2) contains three areas: General Errors, SONET Frame Errors, and DS1/E1/DS3/E3 Errors.

General Errors

The General Errors area is not applicable to CGM.

SONET Frame Errors

The SONET Frame Errors area displays the following information:

Path FEBE Errors—Number of G1 (path FEBE) errors on the physical interface.

Line FEBE Errors—Number of Z2 (line FEBE) errors on the physical interface.

Path Parity Errors—Number of B3 (BIP) errors on the physical interface.

Line Parity Errors—Number of B2 (BIP) errors on the physical interface.

Section Parity Errors—Number of B1 (BIP) errors on the physical interface.

DS1/E1/SD3/E3 Errors

The DS1/E1/DS3/E3 Errors area is not applicable to CGM.

