Overview of CTM GateWay/CORBA

This chapter provides an overview of CTM GateWay/CORBA. It includes the following information:

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CTM is a highly advanced optical transport domain manager. Open interfaces to Operations Support Systems (OSSs) using industry-standard protocols make CTM a flexible building block in legacy as well as next-generation OSS infrastructures. The CTM GateWay/CORBA product is a CORBA northbound interface that complies with the TMF CORBA specification for network management layer-element management layer (NML-EML) interfaces.

A programming technology for distributed computing, CORBA enables components of various application programs to communicate with one another regardless of their implementation characteristics—programming language, operating system, machine, location, and so on. CTM GateWay/CORBA allows service providers to implement a programmatic interface between CTM and various OSS tools in the back office. Such interfaces enable next-generation flow-through equipment and circuit management, including inventory, provisioning, and assurance functions.

For each NE that CTM manages, the CTM GateWay/CORBA option provides higher-layer management systems with fault, inventory, and performance information, plus configuration and circuit provisioning capabilities. CTM GateWay/CORBA supports up to eight simultaneous sessions with higher-layer management systems.

CTM GateWay/CORBA supports the following NEs in CTM R9.1:

- MGX 8880/8850/8830
- ONS 15200
- ONS 15216
- ONS 15305
- ONS 15310 CL
- ONS 15310 MA SDH
- ONS 15310 MA SONET
- ONS 15327
- ONS 15454 SDH
1.1 Features of CTM GateWay/CORBA

CTM GateWay/CORBA supports the following TM.814 modules:

- Inventory
  - Element management system (EMS)
  - Multilayer subnetwork
  - Managed element
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1.2 CTM GateWay/CORBA Fault Management

CTM GateWay/CORBA forwards all the fault notifications received from managed NEs and all CTM alarms to the network management system (NMS) through the notification service. Information about the notification service is available on the OMG website at www.omg.org.

Note

The NMS retrieves all active alarms on the EMS and on managed element objects. The NMS filters alarms based on probable cause, perceived severity, and managed element name.

1.3 Overview of CORBA Services

CTM GateWay/CORBA uses two CORBA services—naming service and notification service. The naming service is required for CTM GateWay/CORBA to function. If the notification service is not available, alarm and event notifications are not forwarded to the OSS. By default, the naming and notification services are installed on the CTM server during the GateWay/CORBA installation. However,
the CORBA services can be located anywhere as long as they are accessible from the CTM server on which CTM GateWay/CORBA is installed. The OSS application(s) must also use the same instances of the naming service and the notification service.

### 1.3.1 Naming Service

CTM GateWay/CORBA and the other CTM server processes must use a naming service in order to operate. CTM GateWay/CORBA includes the OpenFusion naming service product. By default, CTM GateWay/CORBA is configured to use OpenFusion. However, you can configure CTM GateWay/CORBA and the CTM server to use a different centralized naming service. For more information, see B.6 Using Multiple Naming Servers, page B-4.

### 1.3.2 Notification Service

CTM GateWay/CORBA must use a CORBA notification service to report faults and events. CTM GateWay/CORBA includes the PrismTech OpenFusion notification service product, and is configured by default to use it. As with the naming service, you can configure CTM GateWay/CORBA to use a different notification service. For more information, see A.1 Overview of Notifications, page A-1.

The following scenarios describe possible configurations of the naming and notification services.

**Scenario 1: Naming and Notification Services Installed on the CTM Server**

The naming and notification services are installed on the CTM server workstation as shown in the following figure.

*Figure 1-2 Naming and Notification Services on the CTM Server Workstation*

![Figure 1-2 Naming and Notification Services on the CTM Server Workstation](image)

The notification service must be installed on the CTM server workstation with the CTM server processes. CTM GateWay/CORBA is configured to use this notification service. The NMS processes must be configured to use the notification and naming services on the CTM server workstation.
Scenario 2: Naming and Notification Services Installed on the NMS Workstation

The naming and notification services are installed on the NMS workstation as shown in the following figure.

*Figure 1-3  Naming and Notification Services on the NMS Workstation*

The CTM server processes and CTM GateWay/CORBA must be configured to use the naming and notification services on the NMS workstation.
### Scenario 3: Naming and Notification Services Installed on Independent Servers

The naming and notification services are installed on independent servers as shown in the following figure.

#### Figure 1-4 Naming and Notification Services on Independent Servers

![Diagram showing independent servers and services](image)

The CTM server processes, CTM GateWay/CORBA, and the NMS processes must be configured to use the naming and notification services on independent workstations.

### 1.4 Information Model

The information model used by the CTM GateWay/CORBA northbound interface is based on the TMF NML-EML CORBA interface—TMF.814 v3.0. This standard is available to TMF members from the TMF website. The information model allows the EMS to provide an abstraction layer between the EMS and the NMS. This standard is generic and is, therefore, applicable to many different EMS and NE implementations. Customers implementing a TMF-compliant CORBA interface between a specific NMS and CTM must use the CTM GateWay/CORBA product, and will require specific information on what API features are implemented and how those features should be used.

### 1.5 Summary

As a state-of-the-art EMS, CTM can provide a CORBA-based interface between itself and an NMS. This functionality is provided by a separately purchasable option—CTM GateWay/CORBA. CTM GateWay/CORBA provides a TMF-compliant CORBA interface in accordance with the TMF NML-EML specification composed of TMF.513, TMF.608, and TMF.814. CTM GateWay/CORBA
includes naming and notification services. Customers can use the bundled naming and notification services or their own services in various configurations. CTM GateWay/CORBA brings the service provider one step closer to full OSS automation.