



CHAPTER 1

Getting Started

This chapter describes how to start using the Mediation Interface of Cisco Hosted Collaboration Mediation (HCM). You can manage services through a variety of associated requests or operations.

The various requests and operations are explained in:

- [Chapter 2, “Understanding Provision Web Service Interface”](#)
- [Chapter 3, “Understanding Product Catalog Web Service Interface”](#)

This guide also includes feature descriptions, sample Extensible Markup Language (XML) code, typical workflow steps, and other relevant information.

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Audience

This guide is intended to be a technical resource for application developers who want to use the Mediation Interface, to provision Cisco Hosted Collaboration Solution (HCS) deployments and implementations.

To use this guide, you need to have an advanced level of understanding of Internet network design, operation, and terminology. You also need to understand the basic concepts of HCM.

You should also understand high-level programming languages such as Java, or an equivalent language, and know the following:

- XML and XML Schema
- Web Service Definition Language (WSDL)
- Web Services
- Socket programming

- Web Services standards:
 - WS-Notification
 - WS-Enumeration
 - WS-Resources

In most cases, the Mediation Interface operations, correlate to HCM operations.

You should have a basic understanding of Cisco HCS.

Feature Summary

The Mediation Interface provides the following:

- Management of HCM infrastructure:
- Management of subscriber objects.
- Single entry point for client systems to issue commands to HCM.
- Ability to:
 - Submit work orders for infrastructure products and for subscribers.
 - Query inventory.
 - Configure products.
 - Configure subscriber services.
 - Retrieve list data using WS-Notification and WS-Enumeration specification recommendations.
 - Query the status of any northbound interface (NBI) request that is accepted by the HCM server.

Functional Architecture

The Mediation Interface functional architecture consists of:

- WSDL/XSD files with Simple Object Access Protocol (SOAP) HTTP bindings that expose the NBI requests and XML-based data models for all northbound services.
- The Mediation Interface that receives, tracks, and manages the results of all NBI requests.

Client Requirements

The Mediation Interface uses Web Services standards. The client must satisfy the following requirements:

- Must be able to connect to HCM using HTTP and HTTPS.
- Must either be a Web Services Consumer or have a Web Services Consumer installed to receive a notification.
- To make a request, the client does not have to be Web Services-based; it can be a plain Java client.

Mediation Interface Web Services Resources

All services exposed by the Mediation Interface are defined, using WSDL/XSD with SOAP HTTP bindings and exposed as Web Services.

The Mediation Interface Web Services are based on Axis 2.1.3 Web Services framework, using XML Beans data binding.

The Mediation Interface client initiates a request and response transaction to the server. If the response does not complete the request, a WS-Notification is sent to a specified server or servlet when the request is completed.

Requested bulk data is retrieved by WS-Enumeration standard requests and responses.

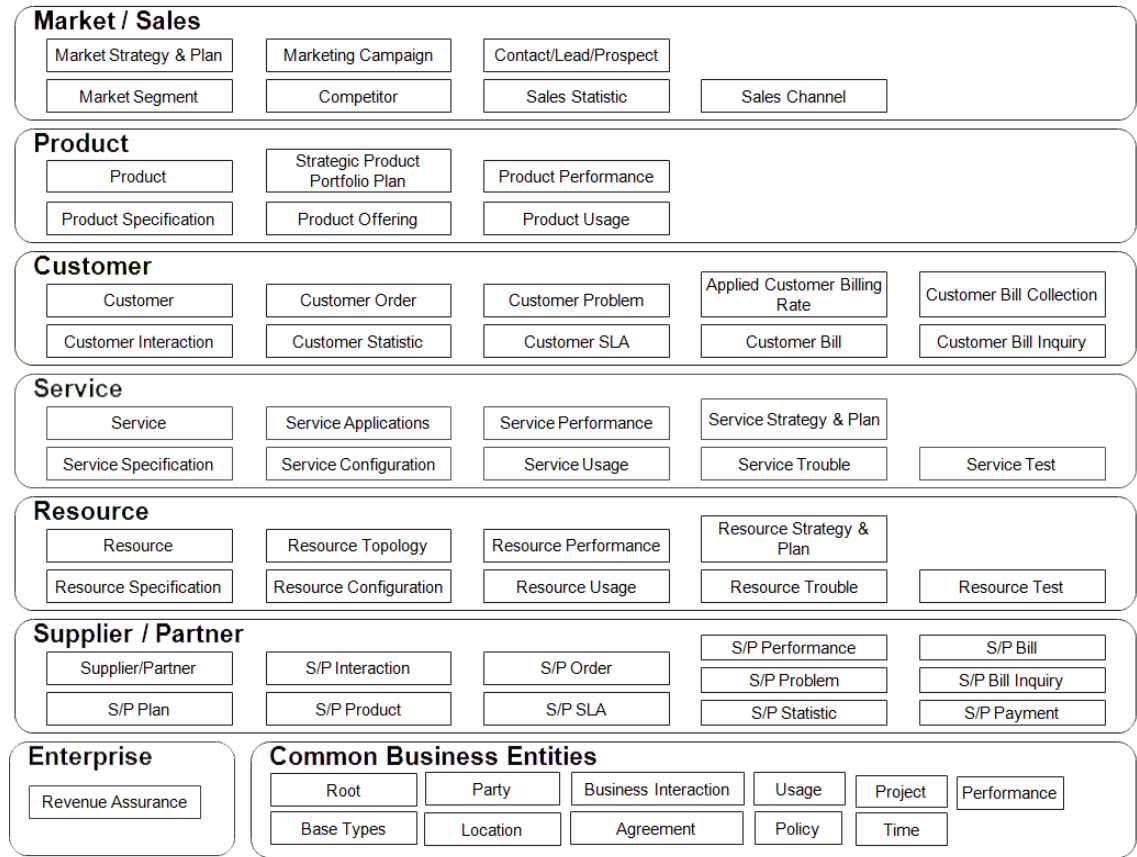
TM Forum Shared Information/Data Model Overview

The TM Forum Shared Information/Data Model (SID) is used as the foundation data model and the version used is Information Framework Phase VIII.

HCM will implement the SID as its common model to create and maintain the data interoperability layer in HCS. HCM reconciles semantic differences among applications through real-time mediation. This enables you to modify or replace components without making major changes to other components in the architecture.

See [Figure 1-1](#) for the TM Forum SID Domains.

Figure 1-1 TM Forum SID Domains

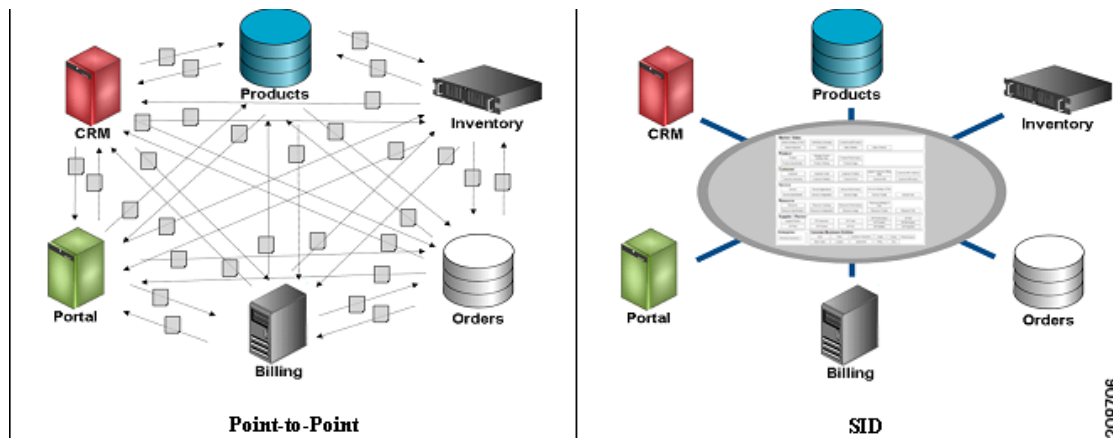


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Mapping each application and service interface point-to-point, adds complexity. Mapping to the SID, significantly reduces complexity and provides an inherent layer of abstraction. This ensures consistent interpretation of data across diverse services and data sources, within the HCM architecture.

See Figure 1-2 for an example of the point-to-point integration and SID integration.

Figure 1-2 Integration Scenarios



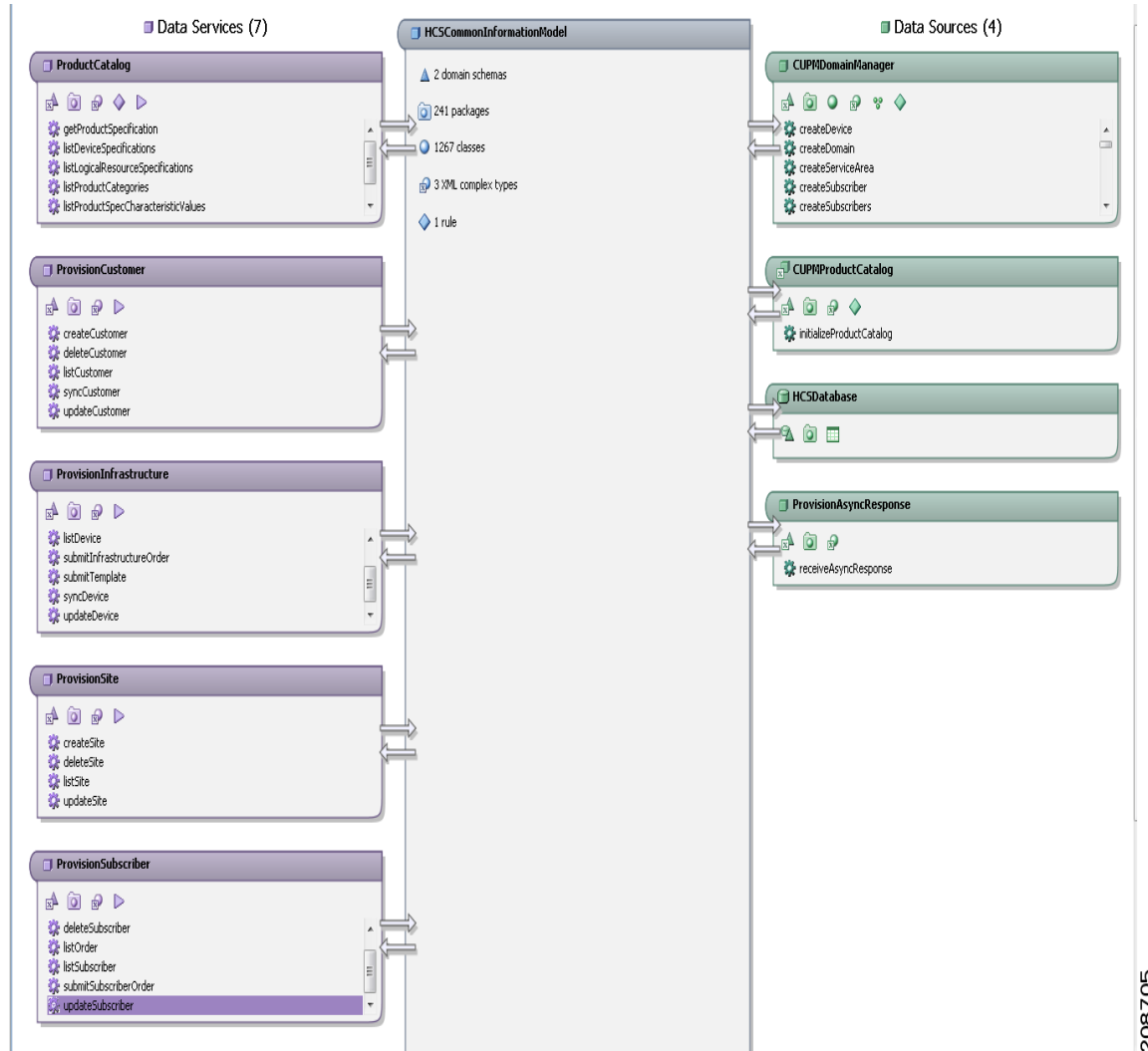
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HCM Data Exchange Model

Figure 1-3 shows the HCM Data Exchange Mode that contains:

- HCM Common Information Model
- Data Sources
- Data Services

Figure 1-3 HCM Data Exchange Model



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Asynchronous Response Message Patterns

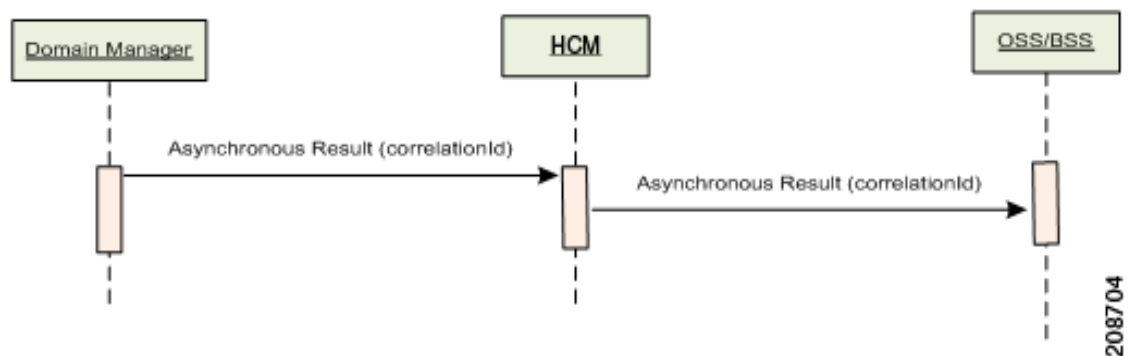
Sometimes service requests to the domain managers may result in long-running transactions. The domain managers use a mechanism to facilitate both request/reply and notification type patterns.

HCM invokes an operation on the domain manager and passes a parameter to the endpoint. The result from the request is posted in this endpoint.

For each operation invocation, the domain manager responds with an immediate acknowledgment that returns a response object. This response object has an identifier that is used to correlate the result. This identifier is passed back to the Operations Support Systems (OSS)/Business Support Systems (BSS) in the same thread of execution.

In cases where HCM orchestrates calls to multiple operations on domain managers, a collection of identifiers are passed back to the OSS/BSS.

Figure 1-4 Asynchronous Message Flow



HCM exposes a service with a single operation where each domain manager posts result notifications, that are sent to the OSS/BSS, where the request originated. The parameter to the service operation is the result type for the respective domain manager.

HCM generates a SID-based WSDL to the OSS/BSS, which describes the service interface where HCM posts the SID-based result that is transformed from the data received from the domain manager. This WSDL is implemented in HCM as a data source.

This HCM client must implement `HCSProvisionAsyncResponse.wsdl` to receive notifications. See [Appendix A, “HCSProvisionAsyncResponse.wsdl File”](#) for the `ProvisionAsyncResponse` file.