

Oracle® Retail Integration Bus

Integration Gateway Services Guide

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Primary Author: Sanal Parameshwaran

Contributing Author: Maria Andrew

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Oracle Retail Integration Bus Integration Gateway Services Guide, Release 16.0.

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Preface

The purpose of this document is to introduce you to Integration Gateway Services (IGS), a component that provides an integration infrastructure for external (third party) connectivity to the Oracle Retail Integration Bus (RIB).

Audience

This guide is for:

- Systems administration and operations personnel
- Systems analysts
- Integrators and implementation staff

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Related Documents

For more information, see the following documents in the Oracle Retail Integration Bus documentation set:

- *Oracle Retail Integration Bus Implementation Guide*
- *Oracle Retail Integration Bus Installation Guide*
- *Oracle Retail Integration Bus Operations Guide*
- *Oracle Retail Integration Bus Release Notes*
- *Oracle Retail Integration Bus Hospital Administration Guide*
- *Oracle Retail Integration Bus Security Guide*
- *Oracle Retail Integration Bus Support Tools Guide*

- *Oracle Retail Integration Bus Java Messaging Service (JMS) Console Guide*
- *Oracle Retail Enterprise Integration Guide*
- *Oracle Retail Functional Artifacts Guide*
- *Oracle Retail Functional Artifact Generator Guide*
- *Oracle Retail Service-Oriented Architecture Enabler Tool Guide*
- *Oracle Retail Integration Bus Data Model*
- *Oracle Retail Payload Mapper Guide*

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- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to re-create
- Exact error message received
- Screen shots of each step you take

Review Patch Documentation

When you install the application for the first time, you install either a base release (for example, 16.0) or a later patch release (for example, 16.0.1). If you are installing the base release and additional patch releases, read the documentation for all releases that have occurred since the base release before you begin installation. Documentation for patch releases can contain critical information related to the base release, as well as information about code changes since the base release.

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same part number, with a higher-numbered suffix. For example, part number E123456-02 is an updated version of a document with part number E123456-01.

If a more recent version of a document is available, that version supersedes all previous versions.

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Oracle Retail product documentation is available on the following web site:

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(Data Model documents are not available through Oracle Technology Network. You can obtain them through My Oracle Support.)

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Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

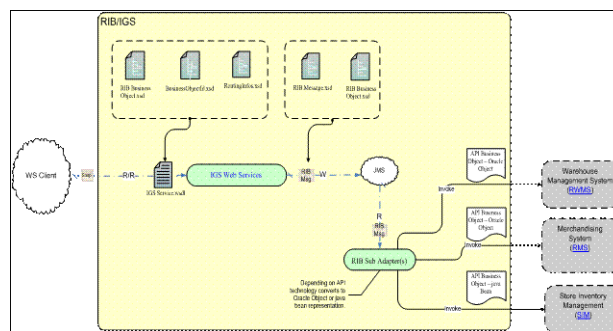
Introduction

The Integration Gateway Services (IGS) component provides an integration infrastructure for external (third party) connectivity to the Oracle Retail Integration Bus (RIB) in the form of a tested set of Web service providers and the configurations to connect to RIB and to ease the integration to RIB interfaces and RIB payloads.

The IGS component provides the integration to these RIB interfaces through standard request/response Web services using only the standard XSD based RIB message payloads.

There are 19 RIB message family interfaces included in IGS. They are selected as the interfaces most commonly used for custom integration to legacy systems. A Web service corresponds to each of the selected message families. Each service exposes the message types supported by the RIB message family.

The RIB Integration Gateway Services (IGS) component is an optional sub system and should be installed only after the core RIB components have been installed and verified. The following diagram describes the IGS logical architecture.



Prerequisites

The RIB Integration Gateway Service (IGS) component requires Oracle WebLogic Server 12c Release 12.2.1.0.0 and Java 8 64 bit with latest security updates.

Before you install this component, read the *Oracle Retail Integration Bus Implementation Guide* for the considerations and planning steps needed for the RIB IGS deployment to the WebLogic 12.2.1 Server. You should also make sure the environment variable JAVA-HOME points to Java 8 64 bit with latest security updates.

Prepare Oracle WebLogic 12.2.1 Server

The installation and base configuration of the Oracle WebLogic 12.2.1 Server is beyond the scope of this document. Work with the Oracle WebLogic 12.2.1 Server

administration team to determine the physical and logical placement of the RIB IGS component within the WebLogic 12.2.1 Server deployment.

Create the RIB IGS WebLogic 12.2.1 Managed Server

Take the following step to prepare the Oracle WebLogic 12.2.1 Server to install the `igs-service-<version>.ear`:

Create a new managed server in which to deploy `igs-service-<version>.ear`. Oracle recommends (but does not require) that the `.ear` file name be used (without the extension) along with an underscore.

For example, if the `.ear` file name were `igs-service-<version>.ear`, the instance name should be `igs-service_server`.

Add the server start argument for IGS managed server from WLS console where managed server is configured and update the `startWeblogic.sh` and `startManagedWeblogic.sh` script under `$Domain_Home/bin` with below argument.

```
JAVA_
OPTIONS="-Doracle.retail.soa.enabler.service.provider.engine.ServiceProviderImp
lLookupFactory.interceptor=com.oracle.retail.igs.integration.service.DynamicServicePr
oviderImpl
```

Install Integration Gateway Services

This chapter discusses steps to install IGS under RIB_HOME (rib-home/tools-home/integration-bus-gateway-services).

Run the IGS under RIB_HOME

Take the following steps to run IGS under RIB_HOME:

1. Download the IntegrationGatewayService<version>ForAll<version>Apps_eng_ga.tar and untar it under rib-home/tools-home.

```
cd rib-home/tools-home/  
tar -xvf IntegrationGatewayService<version>ForAll<version>Apps_eng_ga.tar
```

2. Go to rib-home/tools-home/integration-bus-gateway-services/conf and edit the IgsConfig.properties as follows:
 - a. Change the value of WlsUrl to point to the WebLogic 12.2.1 server where IGS is going to be deployed. The port in the WlsUrl should be the AdminServer port.
 - b. Change the value of WlsTarget to the managed server name where IGS is going to be deployed (for example, igs-service_server).
3. Go to rib-home/tools-home/integration-bus-gateway-services/bin. Run the igs-install.sh.
4. Restart the WebLogic managed server.
5. After installation, restrict access to the integration-bus-gateway-services directory with this command:

```
chmod -R 700 .
```

All of the items in Step 3 also can be performed separately, as follows.

1. Go to rib-home/tools-home/integration-bus-gateway-services/bin. Run the igs-admin.sh -setup-igs to set up the environment. Running this script verifies whether the attempted IGS installation is from within the rib-home or in standalone mode; the pre-configuration cleanup is based on this mode.

```
sh igs-admin.sh -setup-igs
```

2. Go to rib-home/tools-home/integration-bus-gateway-services/bin. Run the igs-admin.sh -setup-security-credential to set up the WebLogic username and password information in a secure credential store.

```
sh igs-admin.sh -setup-security-credential
```

3. Go to `IGS_HOME/integration-bus-gateway-services/bin`. Run the `igs-admin.sh -prepare` to prepare the `igs-service-<version>.ear`, based on the number of channels and configured AQ JMS.

```
sh igs-admin.sh -prepare
```

4. Go to `rib-home/tools-home/integration-bus-gateway-services/bin`. Run the `igs-admin.sh -configure` to configure the WebLogic 12.2.1 server with the AQ JMS server information listed in the `rib-deployment-env-info.xml`.

```
sh igs-admin.sh -configure
```

5. Go to `rib-home/tools-home/integration-bus-gateway-services/bin`. Run the `igs-admin.sh -deploy` to deploy the `igs-service-<version>.ear` to the WebLogic 12.2.1 server.

```
sh igs-admin.sh -deploy
```

6. Restart the WebLogic managed server.
7. Restrict access to the IGS folder with a command like:

```
cd $RIB-HOME/tools-home/integration-bus-gateway-services
```

```
chmod -R 700 .
```

8. If the `igs-service-<version>.ear` must be undeployed, run the `rib-home/tools-home/integration-bus-gateway-services/bin/igs-admin.sh -undeploy` to undeploy an `igs-service-<version>.ear`.

```
sh igs-admin.sh -undeploy
```

Note: The log files are located here: `RIB-HOME/tools-home/integration-bus-gateway-services/log`

If any changes are made to the `rib-deployment-env-info.xml` or the `rib-<app>-adapters.xml`, the `-prepare`, `-configure`, and `-deploy` steps, must be executed.

Verify the IGS Application Installation Using the Administration Console

Take the following steps to verify the IGS installations using the Oracle WebLogic 12.2.1 Administration Console:

Note: The Test Client link is visible when the server is in Development mode.

1. Navigate to the Deployments page.
2. On the Summary of Deployments page, locate the `igs-service`.
3. To expand the tree, click the + beside the `igs-service`.
4. Locate the Web Services section.
5. Click any Web service (for example, `ASNInPublishingService`) to navigate to the settings for `ASNInPublishingService` page.
6. Select the **Testing** tab.

7. To expand the tree, click the + beside the service name.
8. Locate the Test Client link. Navigate to the WebLogic 12.2.1 Test Client page.
9. Select the Ping operation. Enter test data in the string arg0: text box. Click **Ping**.
10. The test page includes the request message and the response message.

Customize Integration Gateway Services

This chapter discusses how to use the Oracle Retail SOA Enabler (RSE) and Artifact Generator (AG) tools to customize an Integration Gateway Services (IGS) service. Customizing an IGS service also means customizing the API for RIB and the subscribing application. While this guide focuses only on the IGS end of the process, all activities must be completed for a working message flow.

Prerequisites

For a successful customization, it is important to understand the tools and approaches described in each of the referenced documents. The process is complex and requires knowledge of tools as well as the end-point Oracle Retail application, RIB, and IGS products.

IGS customization requires a number of considerations and planning steps. Planning helps prevent reinstallation or reverting the RIB and IGS due to operational or performance problems.

The following helps to ensure a successful customization of the RIB and the IGS:

- A functional RIB environment without customizations.
- Familiarity with core RIB concepts, components, and architecture, including an understanding of all the following:
 - Oracle database 12c (12 x) triggers, RIB adapters, RIB Message envelope, RIB message payloads, and the functionality of GETNXT () and CONSUME () stored procedures.
 - The integration message flow paths.
 - The RIB life cycle.
 - The physical and logical requirements and limitations of the RIB components.
 - RIB operational considerations.

The tools used in the customization and extensions of the RIB are documented separately. The primary tools are the Oracle Retail Functional Artifact Generator and the Oracle Retail SOA Enabler.

This guide assumes that you have created the development environment for IGS, and that the RIB installation (rib-home) has working versions of the RSE and Artifact Generator tools.

Note: See the *Oracle Retail Integration Bus Installation Guide*, the *Oracle Retail Integration Bus Operations Guide*, the *Oracle Retail Service-Oriented Architecture Enabler Tool Guide*, and the *Oracle Retail Functional Artifact Generator Guide* for installation and configuration instructions.

RSE and AG-Overview and Relationship

The RSE and AG are companion tools, particularly in the creation and customization of Web service providers. Generally available documents exist for each tool to describe installation, configuration, and use; they include extensive examples. These documents, combined with the *Oracle Retail Integration Bus Implementation Guide*, cover the recommended practices and provide examples for customizing business objects. With each release, Quality Assurance testing is completed on the tools and associated documentation, including each example cited.

The RSE and AG tools work only with Oracle Retail Business Objects, release 13.1.x (and higher). They do not work with objects from earlier releases (for example, 13.0.x and 12.x). This restriction is due to the uptake of Business Object standards that support versioning, and customization and extension.

The tools enforce this separation and will not permit anything except the best practices documented in the Oracle Retail Artifact Standards. This rule helps to preserve changes when a new release is issued. When applying business object upgrades, customers can easily preserve changes by simply applying them over the new base objects.

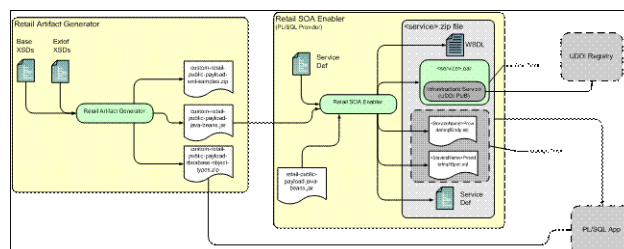
The AG is designed to allow customers to create extensions to base objects using the specified hooks, or to create entirely custom objects that meet Oracle Retail standards. The tools enforce these standards.

Note: See the *Oracle Retail Functional Artifact Guide* for information on standards.

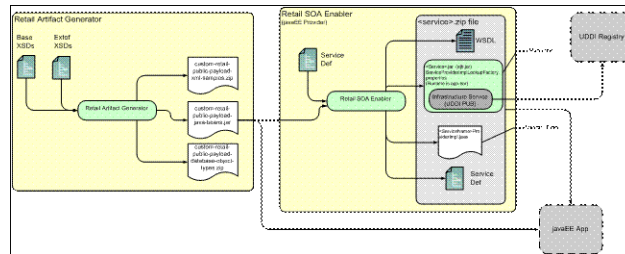
For the creation of a Web service provider, the RSE tool expects as one of its inputs one of the outputs of the AG tool to design time artifacts. There is a runtime relationship as well, as shown in the diagrams below, which illustrates the relationships for a Java EE and PL/SQL Web Service Provider.

Note: RSE supports Java EE and PL/SQL. This document uses RSE only for the Java side. The Artifact Generator creates all artifacts for both PL/SQL and Java EE.

PL/SQL Provider



JavaEE Provider



Artifact Generator Inputs and Outputs

The inputs to the AG are the base GA business objects, and the custom or extended base objects. The GA base objects are installed as part of the AG installation and configuration. The creation of extensions or custom XSDs are covered in the *Oracle Retail Functional Artifact Generator Guide*, including:

- Base XSDs and Extof XSDs
- Custom XSDs

The following are AG outputs:

- custom-retail-public-payload-java-beans-<version>.jar
- custom-retail-public-payload-database-object-types-<version>.zip

RSE Inputs and Outputs

The input for creating a service provider is a Service Definition Library XML file containing details about the Web services that must be created, the generally available business objects, and the output of the AG for extensions or custom XSDs.

For example:

The RSE tool references JAXB created java beans based on the BO source schema XSDs. These beans are contained in the retail-public-payload-java-beans-<version>.jar.

The RSE tool uses Oracle Retail BOs from retail-public-payload-java-beans-<version>.jar and custom BOs from custom-retail-public-payload-java-beans-<version>.jar.

The retail-public-payload-java-beans-<version>.jar file is created using the Retail Artifact Generator from the source BO XSDs. The retail-public-payload-java-beans-<version>.jar file is packaged in RSE. It does not need to be updated as part of the customization process.

The retail-public-payload-java-beans-<version>.jar file also contains the source XSDs themselves, which will be used, along with the XSDs in the optional custom-retail-public-payload-java-beans-<version>.jar, by the deployed service to validate all requests and responses against.

Outputs include the following:

- The deployable .ear with the WSDL conforming to the objects referenced in the ServiceProviderDefLibrary.xml.
- The PL/SQL or Java EE API templates that include hooks for talking to the services. These API templates contain placeholders for business logic and references to the Business Objects created by the AG.

- A copy of the ServiceProviderDefLibrary.xml.
- A static version of the service WSDL.
- The decorator services.

Extend an Existing IGS Web Service Provider

The most common use case in customization is to add new elements to existing messages. This section covers that use case. The *Oracle Retail Integration Bus Implementation Guide* covers the same use case with examples for the Oracle Retail Integration Bus (RIB).

The *Oracle Retail Service-Oriented Architecture Enabler Tool Guide* and the *Oracle Retail Functional Artifact Generator Guide* contain detailed examples that are not repeated here. However, they are referred to as needed in the solution approach sections. The IGS component is constructed using the AG and RSE tools, so customization of IGS is a straightforward extension of that process.

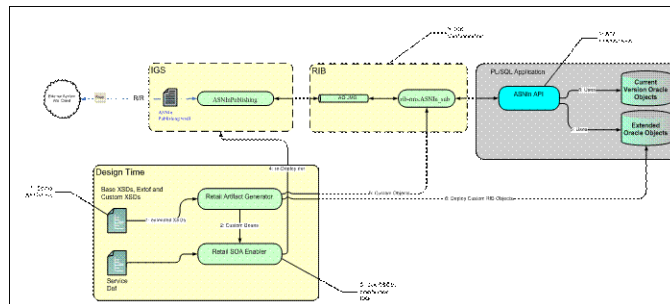
Use Case Scenario

The business has determined that the IGS ASNIn Service must include a new element, Fiscal ID. The Oracle Retail deployment has Oracle Retail RMS as the end-point (Subscriber) and a third party system as the source (Publisher).

The business objects for the IGS Web services are packaged and shipped (as generally available) with the Oracle Retail base objects in RetailFuncArtifact<version>ForAll<version>Apps_eng_ga.tar.

Approach

The following diagram describes the approach.



Artifact Generator Work

The following set of steps assumes installation and configuration of the AG and the RSE in the RIB installed rib-home/tools locations and that the file locations are relative to that installation. For alternative installations and locations, see the *Oracle Retail Artifact Generator Guide* and make adjustments as needed to these steps.

1. Using the Artifact Generator tool, extend the XSDs and generate the custom database 12c (12 x) objects and the custom-beans. Because this is a base object, it will have been installed with the AG tool.

Note: See "Addition of Optional Elements" in Chapter 3 of the *Oracle Retail Artifact Generator Guide*.

2. Locate the correct ExtOfASNInDesc.xsd file.

```
find input-xsd -name ExtOfASNInDesc.xsd
```

3. Edit the ExtOfASNInDesc.xsd file to add the following:

```
<xs:element name="ExtOfASNInDesc">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="fiscal_id" type="varchar23">
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:simpleType name="varchar23">
  <xs:restriction base="xs:string">
    <xs:maxLength value="5"/>
  </xs:restriction>
</xs:simpleType>
```

4. Create the Java Payload and OO.

```
Type java -classpath ./integration-lib/*: groovy.ui.GroovyMain
com/oracle/retail/integration/artifact/generator/GenArtifacts.groovy -g
generateCustom
```

5. For the IGS effort, the focus is on using the custom-retail-public-payload-java-beans-`<version>`.jar in the IGS application.

Note: The custom RIB objects are used in the application and RIB. See the *Oracle Retail Integration Bus Implementation Guide* for more information on customization of RIB. Both RIB and IGS must be customized with the same custom-retail-public-payload-java-beans-`<version>`.jar file for a working message flow.

Prepare RSE

Take the following steps to prepare the RSE tool:

1. Merge the IGS GA business objects with the new AG generated custom business objects and regenerate the IGS ear file.
 - a. Create a customization location and sub-folders (for example, /workarea/igs-customization).
 - Create /workarea/igs-customization/jar_update_area
 - Create /workarea/igs-customization/input_file
 - Create /workarea/igs-customization/output_file
 - b. Extract the needed files from the igs-service-`<version>`.ear file.
 - jar xvf igs-service-`<version>`.ear
 - Copy lib/ igs-services-impl-`<version>`.jar to /workarea/igs-customization/input_file.
 - Copy payload-lib/custom-igs-bo-`<version>`.jar to /workarea/igs-customization/input_file folder.
 - c. Extract the needed files from the igs-service-ejb.jar file.

```
jar xvf igs-service-ejb.jar
```

Copy META-INF/com.oracle.retail.soa.enabler.ServiceDef.xml to
/workarea/igs-customization/input_file.

- d. Copy custom-retail-public-payload-java-beans-<version>.jar generated by the Functional Artifact Generator, to /workarea/igs-customization/jar_update_area.
 - e. Change directory to /workarea/igs-customization/jar_update_area.
 - f. Extract the contents of custom-igs-bo-<version>.jar

```
jar -xf ../input_file/custom-igs-bo-<version>.jar
```
 - g. Update the custom-retail-public-payload-java-beans-<version>.jar file with the contents of custom-igs-bo-<version>.jar

```
jar -ufM custom-retail-public-payload-java-beans-<version>.jar co* ME*
```
2. Merge the IGS GA business objects with the new AG generated custom business objects and regenerate the IGS ear file.
- a. Go to RSE Service Provider tab and choose the following options:
Web Service Type = SOAP
Service Provider Type = JavaEE
Service def library XML =
/workarea/igs-customization/input_file/com.oracle.retail.soa.enabler.ServiceDef.xml
Custom BO jar =
/workarea/igs-customization/jar_update_area/custom-retail-public-payload-java-beans-<version>.jar
Service impl jar =
/workarea/igs-customization/input_file/igs-services-impl-<version>.jar
 - b. Do not provide a value for localization BO jar.
 - c. Click **Generate**.
 - d. Save the output igs_JavaEEServiceProvider.zip to
/workarea/igs-customization/output_file/
 - e. Extract igs_JavaEEServiceProvider.zip in current directory (output_file).
Go to output_file directory
unzip igs_JavaEEServiceProvider.zip -d igs_JavaEEServiceProvider

Deploy the Customized IGS

Take the following steps to deploy the igs-service-<version>.ear from rib-home:

1. Copy /workarea/igs-customization/output_file/igs_JavaEEServiceProvider/igs-service-<version>.ear to the rib-home/tools-home/integration-bus-gateway-services/ear folder.
2. Change directory to rib-home/tools-home/integration-bus-gateway-services/bin.
3. Run igs installer:igs-install.sh.

4. Restart the WebLogic managed server.
5. Restrict access to the IGS folder with a command like:


```
cd $RIB-HOME/tools-home/integration-bus-gateway-services
chmod -R 700 .
```

Note: Make sure the WebLogic 12.2.1 Server is up and running before attempting to install igs-service-<version>.ear.

Test the Customized IGS

The following steps are covered in detail in other RIB documentation.

Note: The use of Hermes JMS is covered in the My Oracle Support document, *How to Connect Hermes JMS to Oracle AQ* (ID 837999.1).

Take the following steps to test the customized IGS:

1. Examine the new customized ASNIn WSDL.
2. Start HermesJMS and browse AQ JMS topic etASNIn.
3. Use SOAP user interface to publish a customized ASNInDesc message.
4. View the customized message in AQ using Hermes.

Add a New Service to IGS

This section discusses the procedure to add an entirely new Web service to the IGS. This guide assumes that the family for which a new Web service is to be created is already available in the RIB systems, and edge applications can subscribe the messages from those family topics.

Consider the scenario, business decided to add a new service for the family "CoReturn" to IGS, which is not currently available.

Prepare RSE

Take the following steps to prepare the RSE tool:

1. Create a customization location and sub-folders (for example, /workarea/igs-customization).
 - Create /workarea/igs-customization/input_file.
2. Extract the needed files from the igs-service-<version>.ear file. This file is located in the "ear" folder of the IGS archive.
 - `jar xvf igs-service-<version>.ear`
 Copy lib/igs-services-impl-<version>.jar to
 /workarea/igs-customization/input_file.
3. Copy payload-lib/custom-igs-bo-<version>.jar to /workarea/igs-customization/input_file.
4. Edit the serviceDef file to add new service for the family "CoReturn".

- jar xvf igs-service-ejb-<version>.jar
- Copy META-INF/com.oracle.retail.soa.enabler.ServiceDef.xml to /workarea/igs-customization/input_file.
- Edit the copied ServiceDef.xml file to add new service. In this use case for the family "CoReturn" following service definition to be added.

```

<service name="CoReturnPublishing">
    <documentation>An external system will publish CoSale onto the RIB
system. RMS will subscribe to CoReturn information and updates the database
tables depending upon the validity of the records enclosed within the
message.
        Topic Name : etCOReturn
        Subscribers : COReturn_sub (RMS).
    </documentation>
    <operation name="publishCustRetSaleCreateUsing">
        <documentation> This Operation invokes the publishing of
"Create" event for the CoSale.</documentation>
        <input type="CustRetSaleDesc">
            <documentation>
                CustRetSaleDesc RBO complies with the XML schema
CustRetSaleDesc.xsd, for more information on RBO structure and semantics
please refer to the associated XSD.
            </documentation>
            <header headerName="businessObjecId"
type="com.oracle.retail.integration.bus.gateway.services.businessobjectid.v
1.BusinessObjectId" headerRequired="false"/>
            </input>
            <output type="ServiceOpStatus" custom="true">
                <documentation>
                    ServiceOpStatus object represents the acknowledgment from
the service. It encloses the information about the Successful or Failed
stataus of the publish event.
                </documentation>
            </output>
            <fault faultType="PublishingWSFaultException">
                <documentation>Throw this exception when a "soap:Server"
side publish problem occurs.</documentation>
            </fault>
            <fault faultType="IllegalStateWSFaultException" >
                <documentation>Throw this exception when an unknown
"soap:Server" side problem occurs.</documentation>
            </fault>
        </operation>
    </service>

```

5. Extract the ServiceConfig.properties file from igs-services-impl-<version>.jar
jar -xvf igs-services-impl-<version>.jar ServiceConfig.properties
6. Edit ServiceConfig.properties file located in igs-services-impl-<version>.jar to add jms topic for the new service to publish messages. The topic name corresponding to a family can be found at rib-integration-flows.xml file. This xml is available with rib functional artifact deployment. The link could be as, <http://host:port/rib-func-artifact/integration/rib-integration-flows.xml>. In the case of the COReturn service, the topic is etCOReturn.
7. Update the igs-services-impl-<version>.jar with updated ServiceConfig.properties.
jar -ufM igs-services-impl-<version>.jar ServiceConfig.properties.

8. Generate javaEEServiceProvider archives using updated serviceDef file. Go to deployed RSE tool. Select RSE Service Provider tab and choose the following options:
 - Web Service Type = SOAP
 - Service Provider Type = JavaEE.
 - Service def library XML =
/workarea/igs-customization/input_file/com.oracle.retail.soa.enabler.ServiceDef.xml
 - Custom BO jar =
/workarea/igs-customization/input_file/custom-igs-bo-<version>.jar
 - Service impl jar =
/workarea /igs-customization/input_file/igs-services-impl-<version>.jar
9. Do not provide a value for localization BO jar.
10. Click **Generate**.
11. Save the output igs_JavaEEServiceProvider.zip to
/workarea /igs-customization/output_file/
12. Extract igs_JavaEEServiceProvider.zip in current directory (output_file).
 - Go to output_file directory.
 - unzip igs_JavaEEServiceProvider.zip -d igs_JavaEEServiceProvider

Deploy the Customized IGS

Take the following steps to deploy igs-service-<version>.ear from rib-home:

1. Copy /workarea/igs-customization/output_file/igs_JavaEEServiceProvider/igs-service-<version>.ear to the rib-home/tools-home/integration-bus-gateway-services/ear folder.
2. Change directory to rib-home/tools-home/integration-bus-gateway-services/bin.
3. Run igs installer:igs-install.sh.
4. Restart the WebLogic managed server.
5. Restrict access to the IGS folder with a command like:

```
cd $RIB-HOME/tools-home/integration-bus-gateway-services
chmod -R 700 .
```

Note: Make sure WebLogic 12.2.1 Server is up and running before attempting to install igs-service-<version>.ear.

Test the Customized IGS

The following steps are covered in detail in other RIB documentation.

Note: The use of Hermes JMS is covered in the My Oracle Support document, *How to Connect Hermes JMS to Oracle AQ* (ID 837999.1).

Take the following steps to test the customized IGS:

1. Examine the new COReturn WSDL.
2. Start HermesJMS and browse AQ JMS topic etCOReturn.
3. Use SOAP user interface to publish a COReturnDesc message.
4. View the message in AQ using Hermes.

IGS and Clustering (High Availability)

Integration Gateway Services are stateless and hence can be deployed in clustered environments.

Thread Value

The thread value is managed by IGS. The max channel number is configured in ServiceConfig.properties located in igs-services-impl-<version>.jar, and is updated by the igs-install.sh script, or the igs-admin.sh -prepare script.

Routing Information

IGS services should be called with routing information in the Soap header. RIB uses this information along with the business object Id to route the service calls to various destinations. Here is an example of an IGS SOAP message with Routing Information in the header. The Routing Information snippet is in bold letters.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://www.oracle.com/retail/integration/bus/gateway/services/BusinessObjectId/v1"
xmlns:v11="http://www.oracle.com/retail/integration/bus/gateway/services/RoutingInfos/v1"
xmlns:v12="http://www.oracle.com/retail/igs/integration/services/ASNOutPublishingService/v1"

xmlns:v13="http://www.oracle.com/retail/integration/base/bo/ASNOutDesc/v1">
  <soapenv:Header>
    <b>v1:BusinessObjectId>98766</b><b>v1:BusinessObjectId>
    <b>v11:RoutingInfos> <!--Zero or more repetitions: -->
      <b>v11:routingInfo>
        <b>name>from_phys_loc</b>
        <b>value>1</b>
        <b>v11:detail>
          <b>v11:dtl_name>from_phys_loc_type</b><b>v11:dtl_name>
          <b>v11:dtl_value>w</b><b>v11:dtl_value>
```

```

    </v11:detail>
  </v11:routingInfo>
<v11:routingInfo>
  <name>to_phys_loc</name>
  <value>s_loc_1</value>
  <v11:detail>
    <v11:dtl_name>to_phys_loc_type</v11:dtl_name>
    <v11:dtl_value>s</v11:dtl_value>
  </v11:detail>
</v11:routingInfo>
<v11:routingInfo>
  <name>facility_type</name>
  <value>PROD</value>
</v11:routingInfo>
</v11:RoutingInfos>
</soapenv:Header>
<soapenv:Body>
  <v12:publishASNOutCreateUsingASNOutDesc> <!--Optional: -->
    <v13:ASNOutDesc>
      <v13:schedule_nbr>8</v13:schedule_nbr>
      <v13:auto_receive>a</v13:auto_receive>
      <v13:to_location>jqofVPæ±</v13:to_location>
      <v13:from_location>DxZvzWæ±</v13:from_location>
      <v13:asn_nbr>pBLuagRBLOIbAjLNzNHqkLClwmæ±</v13:asn_nbr>
      <v13:asn_type>a</v13:asn_type>
      <v13:container_qty>6</v13:container_qty>
      <v13:bol_nbr>ySwcdqfJLoZDDæ±</v13:bol_nbr>
      <v13:shipment_date>2008-12-23T17:27:51</v13:shipment_date>
      <v13:est_arr_date>2008-12-23T17:27:51</v13:est_arr_date>
      <v13:ship_address1>HwLlbGroæ±</v13:ship_address1>
      <v13:ship_address2>KjVlæ±</v13:ship_address2>
      <v13:ship_address3>æ±</v13:ship_address3>
      <v13:ship_address4>plæ±</v13:ship_address4>
      <v13:ship_address5>æ±</v13:ship_address5>
      <v13:ship_city>zeæ±</v13:ship_city>
      <v13:ship_state>a</v13:ship_state>
      <v13:ship_zip>lQXoaWhzIewLSHMaYSiYAbvCEIæ±</v13:ship_zip>
    </v13:ASNOutDesc>
  </v12:publishASNOutCreateUsingASNOutDesc>
</soapenv:Body>
</soapenv:Envelope>

```

```

<v13:ship_country_id>a</v13:ship_country_id>
<v13:trailer_nbr>LgvamYcQæ±</v13:trailer_nbr>
<v13:seal_nbr>yThCPXEIæ±</v13:seal_nbr>
<v13:transshipment_
nbr>xMKXnbWifsBSmgPLwLyMxiWLPJæ±</v13:transshipment_nbr>
<v13:ASNOutDistro>
  <v13:distro_nbr>VBoEwQæ±</v13:distro_nbr>
  <v13:distro_doc_type>a</v13:distro_doc_type>
  <v13:cust_order_nbr>jnveQSbVZtlAIAGaQGjisæ±</v13:cust_order_nbr>
  <v13:fulfill_order_nbr>aVjQVDqDPMæ±</v13:fulfill_order_nbr>
  <v13:consumer_direct>a</v13:consumer_direct>
<v13:ASNOutCtn>
  <v13:final_location>PwkJygæ±</v13:final_location>
  <v13:container_id>sjlkOzhQkassAOJoæ±</v13:container_id>
  <v13:container_weight>12.4</v13:container_weight>
  <v13:container_length>12.4</v13:container_length>
  <v13:container_width>12.4</v13:container_width>
  <v13:container_height>12.4</v13:container_height>
  <v13:container_cube>12.2</v13:container_cube>
  <v13:expedite_flag>a</v13:expedite_flag>
  <v13:in_store_date>2008-12-23T17:27:51</v13:in_store_date>
  <v13:tracking_nbr>dQnSDeQCfiytpdMmnPoKTæ±</v13:tracking_nbr>
  <v13:freight_charge>20.4</v13:freight_charge>
  <v13:master_container_id>zfKcepZCSilooFwiaæ±</v13:master_
container_id>
<v13:ASNOutItem>
  <v13:item_id>SRnrJdLRnvtEllijdjHGsaæ±</v13:item_id>
  <v13:unit_qty>12.4</v13:unit_qty>
  <v13:gross_cost>20.4</v13:gross_cost>
  <v13:priority_level>1</v13:priority_level>
  <v13:order_line_nbr>4</v13:order_line_nbr>
  <v13:lot_nbr>eNQKYwMLæ±</v13:lot_nbr>
  <v13:final_location>HEuXHBæ±</v13:final_location>
  <v13:from_disposition>æ±</v13:from_disposition>
  <v13:to_disposition>æ±</v13:to_disposition>
  <v13:voucher_number>LxIZqBAFiyJSæ±</v13:voucher_number>
  <v13:voucher_expiration_date>2008-12-7:27:51</v13:voucher_
expiration_date>

```

```

        <v13:container_qty>6</v13:container_qty>
        <v13:comments> dIeiæ±</v13:comments>
        <v13:unit_cost>20.4</v13:unit_cost>
        <v13:base_cost>20.4</v13:base_cost>
        <v13:weight>12.4</v13:weight>
        <v13:weight_uom>æ±</v13:weight_uom>
    </v13:ASNOutItem>
    <v13:comments> STINVIEZæ±</v13:comments>
    <v13:weight>12.4</v13:weight>
    <v13:weight_uom>æ±</v13:weight_uom>
    <v13:carrier_shipment_nbr>EVHHCpBEjkiFPuvæ±</v13:carrier_
shipment_nbr>
    <v13:original_item_id>ghsKCYMTIOHSMeuVQRzyUæ±</v13:original_
item_id>
    </v13:ASNOutCtn>
    <v13:comments> wgæ±</v13:comments>
</v13:ASNOutDistro>
<v13:comments>OEmCazvSQuVfXXvbSyqæ±</v13:comments>
<v13:carrier_code>æ±</v13:carrier_code>
<v13:carrier_service_code>dqæ±</v13:carrier_service_code> <!--Optional:
-->
    </v13:ASNOutDesc>
</v12:publishASNOutCreateUsingASNOutDesc>
</soapenv:Body>
</soapenv:Envelope>

```

Secure Integration Gateway Services

IGS services can be secured by attaching Web service policies to the service. When the services are secured, the service consumers call the services with credentials and/or certificates. If the Retail Service Backbone (RSB) is installed in your enterprise, the IGS services are called via the RSB layer. In that case, the RSB should also be secured. Since the Web service invocation syntax and credentials have to satisfy the security policies at each layer, a set of policies are identified and supported by RSB that are compatible from the consumer to RSB and then to the provider (IGS in this case). These compatible policies are called Policy A and Policy B. Although the services can be secured with any of the Web services policies, the scripting and automation support is available only for policies included in Policy A and Policy B. We believe these configurations satisfy most of the common security requirements of the customers. Any requirements outside these configurations will have to be configured manually.

Policy A is SSL with UsernameToken. The transport layer of the service invocation uses https for this policy. The consumers will have to provide the username and password for invoking the service. Policy B is message protection with UsernameToken. Policy B should be called with http. The encryption is at the message level, instead of transport layer.

IGS services can be secured in the same way as any other Web service provided by Oracle Retail is secured.

Note: For more information on securing the IGS services, see the *Oracle Retail Service Backbone Security Guide*.

