Oracle® Application Integration Architecture

Installation Guide

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Contents

Preface

Audience vii
Accessing Oracle Communications Documentation vii
Documentation Accessibility vii
Diversity and Inclusion vii

1 Oracle AIA Installation Overview

About Oracle AIA and Oracle Communications Solutions Integrations 1-1
Overview of Oracle AIA Installation Procedure 1-1
About Pre-Built Integrations Options 1-2
About Pre-Built Integrations Deployment 1-2
- About Co-Deployment for Functional Interoperability 1-2
- About Security Policies 1-3
- About Undeploying Pre-Built Integrations 1-3
- About Deploying in Clustered Environments 1-3

Directory Placeholders Used in This Guide 1-4

2 Oracle AIA System Requirements

Software Requirements 2-1
Hardware Requirements 2-1
Information Requirements 2-2

3 Oracle AIA Pre-Installation Tasks

Pre-Installation Tasks 3-1
- Enabling Unicode Support on UNIX 3-1
- Deploying JCA Resource Adapter 3-2
- Configuring the Timeout Values 3-2
- Creating Oracle Data Integrator Repositories 3-3
- Cluster Pre-Installation Tasks 3-3
  - Configuring Node Manager Startup 3-3

Restarting Servers With Pending Configuration Changes 3-4
Adding Servers to the Oracle HTTP Server Configuration File 3-4
Disabling Web Services Endpoint Failover 3-6
Configuring the WebLogic Servers 3-7
Checking the Node Manager and SOA Server Status 3-8

4 Installing Oracle AIA

About Installing Oracle AIA 4-1
Installation Assumptions 4-1
Installing Oracle AIA by Using Interactive Install 4-1
Installing Oracle AIA by Using Silent Install 4-3
Preparing the SOA Domain 4-4
Copying Domain Configuration Files 4-4
Updating the Domain 4-4

5 Configuring and Deploying Pre-Built Integrations

About Configuring Pre-Built Integrations 5-1
Configuring Pre-Built Integrations by Using Active Configuration 5-1
Configuring Pre-Built Integrations by Using Silent Configuration 5-5
Deploying Pre-Built Integrations 5-6
Pre-Deployment Tasks 5-6
Deploying Pre-Built Integrations 5-7
Troubleshooting Configuration and Deployment 5-8
Unique Constraint Violation for Agent Assisted Billing Care 5-8
Deployment Error for Metadata Service Tablespace 5-8

6 Oracle AIA Post-Installation Tasks

Overview of Oracle AIA Post-Installation Tasks 6-1
Post-Installation Tasks for All Pre-Built Integrations 6-1
Suppressing Auto-Retry and Preventing Multiple Error Notifications and Trouble Tickets 6-1
Reapplying Backed Up Customizations 6-2
Post-Installation Tasks for Multiple Pre-Built Integrations 6-3
Configuring Siebel CRM 6-3
Enabling UTC Date Format in Siebel CRM 6-3
Configuring Session Pool Manager 6-3
Configuring Routing Rules for Co-Deployed Pre-Built Integrations 6-4
Agent Assisted Billing Care Post-Installation Tasks 6-4
Order to Cash Post-Installation Tasks 6-5

Disabling Product Attribute Validation in OSM Order to Activate Cartridges 6-5
Adding the Singleton Property 6-5
Supporting Message Priority 6-6
Updating the BRM Internal ID in the Oracle AIA Application Registry 6-6
Adding the No Authentication Security Policy to the Product Class Service 6-7
Specifying Valid Phone Number Format in BRM 6-8
Development Post-Installation Tasks 6-8
Changing Oracle AIA Deployment Passwords 6-8
Adding Oracle AIA to a New Node of an Existing SOA Cluster 6-9
Making Upgrade-Safe Composite Customizations 6-10
Managing Oracle AIA Files in the MDS Repository 6-13
Downloading Files from the MDS Repository 6-13
Uploading Changed Files to the MDS Repository 6-14
Splitting Cross-reference Tables 6-15

7 Verifying Oracle AIA Installation

Verifying File Creation 7-1
Verifying Logs 7-1
Verifying Composite Deployment 7-2
Verifying Session Pool Manager Connection 7-7
Verifying Security Policy Attachment 7-7

8 Upgrading to Oracle AIA 12.3

About Upgrading to Oracle AIA 12.3 8-1
Pre-Upgrade Tasks 8-1
Upgrading to Oracle AIA 12.3 8-2
Post-Upgrade Tasks 8-2
Setting JVM Parameters for Siebel CRM 8-2
Migrating Custom Data 8-3
Migrating Database Tables 8-5

9 Uninstalling Oracle AIA

About Uninstalling Pre-Built Integrations 9-1
Undeploying Pre-Built Integrations 9-1
Uninstalling Oracle AIA 9-3
Cleaning the Environment 9-3
Removing Oracle AIA Artifacts from the WebLogic Server 9-4
Deleting Oracle AIA Files 9-5
Deleting Oracle AIA Metadata 9-5

Deleting Oracle AIA Security Policies 9-6
Verifying Uninstallation 9-6

Preface

This document describes how to install, configure, deploy, upgrade, and uninstall Oracle Application Integration Architecture (Oracle AIA) pre-built integrations.

Audience

This document is intended for system administrators and system integrators who install and configure Oracle AIA.

Accessing Oracle Communications Documentation

Oracle AIA documentation and additional Oracle documentation, such as documentation for the Oracle applications that Oracle AIA integrates, is available from Oracle Help Center:

http://docs.oracle.com

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

1

Oracle AIA Installation Overview

This chapter provides an overview of the Oracle Application Integration Architecture (Oracle AIA) pre-built integrations installation procedure.

About Oracle AIA and Oracle Communications Solutions Integrations

Oracle AIA is an Oracle Communications Solutions Integrations framework that provides pre-built integrations using standard integration patterns, business processes, orchestration logic, and common objects and services to connect Oracle applications.

Oracle Communications Solutions Integrations is a set of integration frameworks, technologies, and tools that lets you design and build integrations that connect Oracle applications to support end-to-end business processes for communications service providers across operations support systems and business support systems.

Overview of Oracle AIA Installation Procedure

Oracle AIA installation consists of the following tasks:

1. Planning your installation, reviewing system requirements, and installing required prerequisite software. See "Oracle AIA System Requirements".
2. Performing pre-installation tasks. See "Oracle AIA Pre-Installation Tasks ".
3. Installing Oracle AIA:
    a. Downloading the Oracle AIA media pack.
    b. Running the Installer. See "Installing Oracle AIA ".

       The Installer copies the installation files for all Oracle AIA pre-built integrations to the chosen installation directory.
    c. Running the Configuration Wizard and running deployment scripts. See "Configuring and Deploying Pre-Built Integrations ".

       You choose which pre-built integration options to configure and deploy.

       The Configuration Wizard updates the Oracle AIA properties file with your system details. The deployment scripts deploy the pre-built integrations and their configuration details to the integration server.
4. Performing post-installation tasks. See "Oracle AIA Post-Installation Tasks ".
5. Verifying the installation. See "Verifying Oracle AIA Installation ".

About Pre-Built Integrations Options

The Installer copies the files for all of the pre-built integrations and installs all of the infrastructure components required to support these options, including standard data objects and service definitions.

After copying the files using the Installer, you configure any of the following pre-built integration options for Oracle Communications using the Configuration Wizard:

- Order to Cash option for Oracle Siebel CRM
- Agent-Assisted Billing Care

You can configure a single option at a time or multiple options at the same time.

After configuring a pre-built integration, you deploy it to the integration server using a deployment script. The Installer provides deployment scripts for the pre-built integration options.

When you configure pre-built integrations using the Configuration Wizard, you can only provide information about one instance of each application. After completing configuration with the Configuration Wizard, you can manually configure pre-built integrations to connect to multiple application instances. You must customize the deployment commands to configure the specific pre-built integrations to connect to multiple application instances.

For an example of configuring Oracle AIA to connect to multiple instances of an application, see the section about configuring multiple BRM instances for communications integrations in *Oracle Application Integration Architecture Order to Cash Integration Pack Implementation Guide*.

About Pre-Built Integrations Deployment

You deploy pre-built integrations by running scripts that use deployment plans. Each pre-built integration comes with a main deployment plan, an optional supplementary deployment plan, and an optional conditional policy file.

About Co-Deployment for Functional Interoperability

You can deploy two or more functionally interoperable pre-built integrations on the same Oracle Service Oriented Architecture (SOA) instance. This co-deployment allows the integration services to work together to fulfill end-to-end business processes. The Order to Cash pre-built integration can be co-deployed.

For more information about functional interoperability, including which pre-built integrations are functionally interoperable, see *Oracle AIA Functional Interoperability Configuration Guide*.

To install multiple options that are not functionally interoperable, you must install each option on a separate SOA instance. If you install unsupported combinations on a single SOA instance, you are responsible for making custom changes to accommodate any resulting functional impact on common components, such as routing rules.

About Security Policies

Oracle AIA composites are protected by authentication through Oracle Web Services Manager security policies. When you deploy pre-built integrations, the default policies are automatically applied as follows:

- Global security policies are automatically attached to all composites matching the Oracle AIA naming conventions.
- Local security policies are automatically attached to composites whose security requirements differ from the global policy or whose name does not match the Oracle AIA naming conventions.

For more information on how global and local security policies are attached during deployment, see the discussion of working with security in *Oracle Fusion Middleware Developer's Guide for Oracle SOA Core Extension*.

Oracle recommends the following:

- Harden the services with message protection in your production environment. Before modifying the default security policies, you must understand Oracle Web Services Management security policy configuration and the global and local deployment strategies. Changes to the default policies without proper understanding could impact the integration's expected behavior.
- Do not completely disable default security policies.
- Validate that the default security policies are correctly deployed before running your production system.

For more information about security policies, see *Oracle Fusion Middleware Securing Web Services and Managing Policies with Oracle Web Services Manager*.

About Undeploying Pre-Built Integrations

To undeploy a pre-built integration, you must undeploy all options included in it by using the undeployment plan. The undeployment plan and the **AIAInstallProperties.xml** file are passed as parameters to the Oracle AIA Install Driver for un-deployment.

See "Uninstalling Oracle AIA" for more information about undeploying and uninstalling pre-built integrations.

About Deploying in Clustered Environments

You can deploy pre-built integrations directly to an existing SOA cluster.

You deploy pre-built integrations to nodes that were configured when setting up the SOA cluster. The nodes may be spread across different physical servers for higher availability, or the nodes may be on the same physical server for greater throughput.

For more information about deployment topology and setting up SOA clusters, see *Oracle Fusion Middleware Enterprise Deployment Guide for Oracle SOA Suite*. For more information about preparing a SOA cluster for pre-built integrations, see "Cluster Pre-Installation Tasks".

Because the deployment is targeted to the entire cluster, you run the deployment scripts only once for the entire cluster. The scripts deploy the pre-built integrations to all nodes of the cluster at the same time.

Directory Placeholders Used in This Guide

The placeholders in Table 1-1 are used in this guide.

Table 1-1 Placeholders Used in This Guide

Placeholder	Directory Description
Install_home	The directory in which the Oracle AIA software is installed. This is typically the Oracle base directory for AIA Communications and it should be outside the Home directory of Oracle Service Oriented Architecture (SOA). This directory includes the **comms_home** directory, which the **commsenv** script sets as the COMMS_HOME environment variable.
MW_home	The directory in which Oracle Fusion Middleware components are installed. This directory contains the base directory for Oracle WebLogic Server, among other files and directories.
domain_home	The directory that contains the configuration for the domain onto which Oracle AIA is deployed. The default is *MW_home***/user_projects/domains/***domain_name* (where *domain_name* is the name of the Oracle AIA domain), but it is frequently set to some other directory at installation.

2
Oracle AIA System Requirements

This chapter specifies the software, hardware, and information requirements for installing Oracle Application Integration Architecture (Oracle AIA).

Software Requirements

All Oracle AIA installations require the following prerequisite software:

- Oracle Database 19.3
- Oracle Service Oriented Architecture (SOA) Suite 12.2.1.4.

> **Note:**
>
> Also, apply patch 30499299.

- Oracle Fusion Middleware Infrastructure 12.2.1.4, which includes Oracle WebLogic Server, Oracle Metadata Services, Oracle Application Development Framework, Oracle Web Services Manager and Oracle Data Integrator

  In clustered environments, use a shared file system mounted on each server in the cluster. See *Oracle Fusion Middleware High Availability Guide* for more information about shared storage.
- Java Development Kit 8
- In clustered environments, Oracle HTTP Server

Each pre-built integration uses a variety of applications in addition to the prerequisite software.

This guide assumes that you have installed and configured the prerequisite software as described in the documentation for that software available from Oracle Help Center.

Review the compatible versions of software and applications in the Oracle AIA Compatibility Matrix available on My Oracle Support at:

`http://support.oracle.com/epmos/faces/DocumentDisplay?id=2226851.1`

You can also review certifications and supported versions of software and applications by searching for your pre-built integration options on the **Certifications** tab of My Oracle Support.

Hardware Requirements

Table 2-1 describes the required disk space on the machine where you are installing Oracle AIA and the required memory on the server where you are deploying Oracle AIA.

Table 2-1 Disk Space and Memory Requirements for Oracle AIA

Component	Requirements
Hard disk	150 GB
Server memory	16 GB

Information Requirements

This section describes the information that you will be required to provide while installing and configuring Oracle AIA. You define these values when you install and configure the applications which Oracle AIA integrates.

Some information described in the tables in this section is required for multiple pre-built integrations, as indicated before each table.

If convenient, you can use the **Value** column of the tables in this section to write the values for your specific installation so that you have it available when you run the Installer.

Table 2-2 describes the information required by the Oracle AIA Installer. The information in all other tables in this section is required by the Configuration Wizard.

Table 2-2 Oracle AIA Installer Information Requirements

Information Type	Description	Value
Oracle AIA installation directory	The directory where you will install the Oracle AIA software.	-
Inventory directory	The path to the location where your Oracle Central Inventory is located. If a central inventory does not exist, the Installer will create one at the specified location. In UNIX environments, you can select a directory. In Windows environments, the directory is loaded from the system registry.	-
Operating System group	The operating system group that will own the Oracle AIA files.	-

Table 2-3 describes the information needed to connect to the Oracle WebLogic Server SOA domain and administration server for the integration. You will deploy the Oracle AIA infrastructure components to this domain. You need this information for all pre-built integration options.

Table 2-3 WebLogic Server Domain Connection Information

Information Type	Description	Value
Domain location	The path to your SOA domain. This is automatically populated in the Configuration Wizard when you run the **source aiaenv.sh** command.	-

Table 2-3 (Cont.) WebLogic Server Domain Connection Information

Information Type	Description	Value
Domain name	The name of your SOA domain. This is automatically populated in the Configuration Wizard when you run the **source aiaenv.sh** command.	-
Administration server host name	The host of the administration server for your SOA domain. This is automatically populated in the Configuration Wizard when you run the **source aiaenv.sh** command.	-
Administration server port	The port assigned to the administration server. This is automatically populated in the Configuration Wizard when you run the **source aiaenv.sh** command.	-
Administrator user name	The user name of the WebLogic Server administrator.	-
WebLogic administrator password	The password for the WebLogic Server administrator user.	-
SOA managed server or cluster name	The name of the primary SOA managed server or the name of the SOA cluster. This is automatically populated in the Configuration Wizard when you run the **source aiaenv.sh** command.	-
SOA managed server host or proxy URL	The host of the SOA managed server or the proxy URL for the cluster. This is automatically populated in the Configuration Wizard when you run the **source aiaenv.sh** command.	-
SOA managed server port or cluster proxy port	The port assigned to the SOA managed server or cluster proxy. This is automatically populated in the Configuration Wizard when you run the **source aiaenv.sh** command.	-
Shared directory for Oracle AIA cluster	For clustered domains, enter or browse to the shared domain directory for the cluster. For non-clustered domains, this field is disabled.	-

Table 2-4 describes the information needed to connect to the SOA database. This can be an Oracle Real Application Clusters database. You need this information for all pre-built integration options.

Table 2-4 SOA Database Connection Information

Information Type	Description	Value
SOA database administrator user name	The database administration user. This may be an Oracle RAC database user. For example: **sys**	-
SOA database administrator password	The password for the database administration user.	-

Table 2-4 (Cont.) SOA Database Connection Information

Information Type	Description	Value
SOA database system user name	The database system user. For example: **soa-infra**	-
SOA database system password	The password for the database system user.	-
SOA database system role	The role for the database system user. For example: **SYS**	-
SOA database JDBC URL	The URL to connect to the SOA database. For SID, specify the URL in the following format: **jdbc**:**oracle**:**thin**:@***//host*:*port*:*sid* For Service Name, specify the URL in the following format: **jdbc**:**oracle**:**thin**:@*//host*:*port*/*service_name* For TNS_ADMIN, specify the URL in the following format: **jdbc**:**oracle**:**thin**:@*database_name*?**TNS_ADMIN**=*tns_admin_location*. **Note**: Ensure that the TNS_ADMIN folder contains database configuration files. It may also contain SSL configuration files if SSL is enabled.	-

Table 2-5 describes the information needed to connect to the Siebel CRM database and the server on which Siebel CRM is deployed.

You need this information for the following pre-built integration options:

- Order to Cash for Siebel CRM
- Agent Assisted Billing Care

Table 2-5 Siebel CRM Server and Database Connection Information

Information Type	Description	Value
Siebel CRM host name	The DNS name of the Siebel CRM host. For example: **siebel.example.com**	-
Siebel CRM port	The port assigned to Siebel CRM. For example: **80**	-
Siebel CRM protocol	The internet protocol used to connect to the Siebel CRM server. For example: **http**	-

Table 2-5 (Cont.) Siebel CRM Server and Database Connection Information

Information Type	Description	Value
Siebel Enterprise Server name	The name of the Siebel Enterprise Server on which Siebel CRM is installed. For example: **siebel** **Note:** To support the Update Account flow, this value must be in lowercase.	-
Siebel Enterprise Application Integration (Siebel EAI) user	The Siebel EAI user that makes EAI web service calls. For example: **sadmin**	-
Siebel EAI user password	This password for the Siebel EAI user.	-
Siebel CRM server version	The version of Siebel CRM to which you are connection. This value cannot be longer than 10 characters. For example: **21.2.0.0**	-
Siebel CRM language	The language used by the Siebel application. For example: **enu**	-
Siebel CRM database host	The IP address or DNS name of the Siebel CRM database host. For example: **siebeldb.example.com**	-
Siebel CRM database port	The port assigned to the Siebel CRM database. For example: **1521**	-
Siebel CRM database SID	The Siebel CRM database system ID. For example: **orcl**	-
Siebel CRM database user	The database user with permissions to load the Siebel Enterprise Integration Manager database tables. For example: **sadmin**	-
Siebel CRM database password	The password for the database user.	-

Table 2-5 (Cont.) Siebel CRM Server and Database Connection Information

Information Type	Description	Value
Siebel Database JDBC URL	The URL to connect to the Siebel database. For SID, specify the URL in the following format: **jdbc**:**oracle**:**thin**:@**//***host*:*port*:*sid* For Service Name, specify the URL in the following format: **jdbc**:**oracle**:**thin**:@//*host*:*port*/*service_name* For TNS_ADMIN, specify the URL in the following format: **jdbc**:**oracle**:**thin**:@*database_name*?**TNS_ADMIN**=*tns_admin_location* **Note**: Ensure that the TNS_ADMIN folder contains database configuration files. It may also contain SSL configuration files if SSL is enabled.	-

Table 2-6 describes the information needed to connect to the Session Pool Manager proxy. This information is needed only when your Siebel CRM server is outside of a firewall. If all your servers are within the firewall, you do not need this information.

You need this information for the following pre-built integrations, when the Siebel CRM server is outside the firewall:

- Order to Cash for Siebel CRM
- Agent Assisted Billing Care

Table 2-6 Session Pool Manager Proxy Connection Information

Information Type	Description	Value
Session Pool Manager proxy host	The host name for the Session Pool Manager proxy. For example: **proxyhost.example.com**	-
Session Pool Manager proxy port	The port assigned to the Session Pool Manager proxy. For example: **1521**	-

Table 2-7 describes the information needed to access OSM. Depending on your OSM deployment topology, some of these values might be the same.

You need this information for the Order to Cash for OSM pre-built integration option.

Table 2-7 OSM Server Connection Information

Information Type	Description	Value
OSM version	The version of OSM to which you are connecting. This value must be 10 characters or fewer. For example: **7.4.1.0.0**	-
OSM Customer Order Management (OSM COM) administrator user name	The OSM COM administrator's user name. For example: **osmcomadmin** **Note**: The Configuration Wizard uses OSM CFS instead of OSM COM.	-
OSM COM administrator password	The password for the OSM COM administration user.	-
OSM Service Order Management (SOM) administrator user name	The OSM SOM administrator's user name. Depending on your OSM system topology, this may be the same user as the OSM COM administrator. For example: **osmsomadmin** **Note**: The Configuration Wizard uses OSM Provisioning instead of OSM SOM	-
OSM SOM administrator password	The password for the OSM SOM administration user.	-
OSM COM WebLogic Server JMS queue host	The WebLogic Server host used for accessing inbound JMS queues for OSM COM. For example: **omscomjms.example.com**	-
OSM COM WebLogic Server JMS queue port	The port assigned to the WebLogic Server host used for accessing inbound JMS queues for OSM COM. For example: **7080**	-
OSM COM WebLogic Server JMS queue URL	The URL used for accessing inbound JMS queues for OSM COM. This is optional and overrides host and port, commonly used to access OSM cloud native deployments over HTTP. For example: `http://t3.instance.rodod.osm.org:80`	-
OSM COM WebLogic Server JMS queue user name	The WebLogic Server user for accessing inbound JMS queues for OSM COM. For example: **osm**	-
OSM COM WebLogic Server JMS queue password	The password for the WebLogic Server user for accessing inbound JMS queues for OSM COM.	-

Table 2-7 (Cont.) OSM Server Connection Information

Information Type	Description	Value
OSM SOM WebLogic Server JMS queue host	The WebLogic Server host used for accessing inbound JMS queues for OSM SOM. For example: **osmprovjms.example.com**	-
OSM Provisioning WebLogic Server JMS queue port	The port assigned to the WebLogic Server host used for accessing inbound JMS queues for OSM SOM. For example: **7080**	-
OSM Provisioning WebLogic Server JMS queue URL	The URL used for accessing inbound JMS queues for OSM SOM. This is optional and overrides host and port, commonly used to access OSM cloud native deployments over HTTP. For example: `http://t3.instance.rodod.osm.org:80`	
OSM Provisioning WebLogic Server JMS queue user name	The WebLogic Server user for accessing inbound JMS queues for OSM SOM. For example: **osmlf**	-
OSM Provisioning WebLogic Server JMS queue password	The password for the WebLogic Server user for accessing inbound JMS queues for OSM SOM.	-

Table 2-8 describes the information needed to connect to BRM.

You need this information for the following pre-built integration options:

- Order to Cash for BRM
- Agent Assisted Billing Care

Table 2-8 BRM Connection Information

Information Type	Description	Value
BRM server version	The version of BRM to which you are connecting. This value must be 10 characters or fewer. For example: **12.0.0.3.0**	-
BRM Connection Manager host	The IP address or DNS name of the BRM server's primary Connection Manager. For example: **brmcm.example.com**	-

Table 2-8 (Cont.) BRM Connection Information

Information Type	Description	Value
BRM Connection Manager port	The port assigned to the BRM server's primary Connection Manager. For example: **12600**	-
BRM database host	The IP address or DNS name of the Oracle Database Advanced Queuing database instance where the BRM Synchronization Queue Manager Data Manager (DM_AQ) is configured. For example: **brmdb.example.com**	-
BRM database port	The port assigned to the Oracle Database Advanced Queuing database instance. For example: **1521**	-
BRM Advanced Queuing database SID	The Oracle Database Advanced Queuing database system ID. For example: **orcl**	-
BRM Advanced Queuing database user name	The Oracle Database Advanced Queuing database user name. For example: **PIN** **Note:** To support the Product Lifecycle Management flow, this value must be uppercase.	-
BRM Advanced Queuing database password	The password for the Oracle Database Advanced Queuing user.	-
BRM Advanced Queuing database queue name	The name of the queue configured for DM_AQ. For example: **AQ_QUEUE**	-
BRM Database JDBC URL	The URL to connect to the BRM database. For SID, specify the URL in the following format: **jdbc**:**oracle**:**thin**:@**//***host*:*port*:*sid* For Service Name, specify the URL in the following format: **jdbc**:**oracle**:**thin**:@//*host*:*port*/*service_name* For TNS_ADMIN, specify the URL in the following format: **jdbc**:**oracle**:**thin**:@*database_name*?**TNS_ADMIN**=*tns_admin_location* **Note**: Ensure that the TNS_ADMIN folder contains database configuration files. It may also contain SSL configuration files if SSL is enabled.	-

Table 2-9 describes the information needed to connect to Oracle Data Integrator and the Oracle Data Integrator master and work repositories. Contact your Oracle Data Integrator administrator for this information.

If you are connecting to an existing work repository, the Installer automatically populates the repository information.

You need this information for the Agent Assisted Billing Care pre-built integration option.

Table 2-9 Oracle Data Integrator Connection Information

Information Type	Description	Value
Path to Oracle Data Integrator	The path to the directory where the Oracle Data Integrator agent is installed. For example, *domain_home***/bin**. **Note:** This must be a different domain than your SOA domain.	-
Path for exported Domain Value Mappings (DVMs)	Enter the path of a directory to which DVMs will be exported. For example: *Install_home***/comms_home/source/soainfra/apps/AIAMetaData/dvm** You can change this path after installation by updating the **odi.dvm.path** property in the **AIAInstallProperties.xml file**.	-
Oracle Data Integrator user	The Oracle Data Integrator administrator's user name. For example: **SUPERVISOR**	-
Oracle Data Integrator password	The password for the Oracle Data Integrator administration user.	-
Master repository database host	The DNS name of the master repository database host. For example: **odim.example.com**	-
Master repository database port	The port assigned to the master repository database. For example: **1521**	-
Master repository database SID	The master repository database system ID. For example: **oracle**	-
Master repository database user	The master repository database user. For example: **ODI_REPO**	-
Master repository database password	The master repository database password.	-
Work repository name	The name of the Oracle Data Integrator work repository for integration artifacts. For example: **WORKREP**	-

Table 2-9 (Cont.) Oracle Data Integrator Connection Information

Information Type	Description	Value
Oracle Data Integrator agent application name	The application name for the standalone or Java EE agent. For example: **oraclediagent** **Note:** The application name for a standalone agent is always **oraclediagent**.	-
Oracle Data Integrator agent port	The port assigned to the agent. For example: **20910**	-

Table 2-10 describes the information needed for the Oracle AIA cross-reference database. This information is only required the first time you configure Oracle AIA for all pre-built integration options.

Table 2-10 Cross-Reference Database Information

Information Type	Description	Value
Cross-reference schema name	The name of the cross-reference schema. For example: *Domian_name*_**COMMS_XREF**	-
Cross-reference schema password	The password used to access the cross-reference schema.	-
SOA database administration user	The administrator user name for the SOA database. For example: **sys** **Note:** The Configuration Wizard automatically populates this field with the user name you enter on the SOA Database Details page.	-
SOA database administration user password	The password for the SOA database administrator.	-
SOA database administration user role	The role of the SOA database administrator. For example: **SYS** **Note:** The Configuration Wizard automatically populates this field with the role you enter on the SOA Database Details page.	-
Cross-reference schema default tablespace	The name of the default tablespace that is created for the cross-reference schema. **Note**: Check with your database administrator who creates the tablespace and fine tunes it after analyzing load and performance. This field is not validated during the installation because it is not possible to verify the tablespace before creating a user.	-

Table 2-10 (Cont.) Cross-Reference Database Information

Information Type	Description	Value
Cross-reference schema temporary tablespace	The name of the temporary tablespace that is created for the cross-reference schema. **Note**: Check with your database administrator who creates the tablespace and fine tunes it after analyzing load and performance. This field is not validated during the installation because it is not possible to verify the tablespace before creating a user.	-
Cross-reference schema JDBC URL	The URL to create the cross-reference schema. The cross-reference schema will be created in the database specified in the JDBC URL. Oracle recommends that you create the cross-reference schema in the same database as the SOA database. The JDBC URL can be provided as per the SOA database configuration. If a different database is selected, specify the corresponding JDBC URL. For SID, specify the URL in the following format: **jdbc**:**oracle**:**thin**:@**//***host*:*port*:*sid* For Service Name, specify the URL in the following format: **jdbc**:**oracle**:**thin**:@//*host*:*port*/*service_name* For TNS_ADMIN, specify the URL in the following format: **jdbc**:**oracle**:**thin**:@*database_name*?**TNS_ADMIN**=*tns_admin_location* **Note**: Ensure that the TNS_ADMIN folder contains database configuration files. It may also contain SSL configuration files if SSL is enabled.	-

3
Oracle AIA Pre-Installation Tasks

This chapter describes the tasks that you must complete before installing Oracle Application Integration Architecture (Oracle AIA) pre-built integrations.

Pre-Installation Tasks

Before installing Oracle AIA, perform the following tasks:

- Perform the procedure in "Enabling Unicode Support on UNIX" for all pre-built integration options in UNIX environments.
- Perform the procedure in "Deploying JCA Resource Adapter" for the following pre-built integration options:
  - Agent Assisted Billing Care
  - Order to Cash for Oracle Communications Billing and Revenue Management (BRM)
- Perform the procedure in "Configuring the Timeout Values" for the Order to Cash for BRM pre-built integration option.
- Perform the procedure in "Creating Oracle Data Integrator Repositories" for the Agent-Assisted Billing Care pre-built integration option.
- Perform the procedures in "Cluster Pre-Installation Tasks" for Oracle AIA in clustered environments.
- For SOA suite 12.2.1.4, before creating the SOA domain, ensure that patch 30499299 is applied.
- Ensure that all SOA managed servers, such as **`soa_server1`**, are grouped with the **`SOA-MGD-SVRS`** server group.

Enabling Unicode Support on UNIX

On UNIX operating systems, Oracle recommends enabling Unicode support for Oracle Service Oriented Architecture (SOA).

To enable Unicode support, in the command line for the system where Oracle Fusion Middleware is installed, run the following commands:

```
setenv LANG en_US.UTF-8
setenv LC_ALL en_US.UTF-8
```

where *en_US* is your locale.

These environment variables set the installation default locale and override the value of any other environment variables that begin with **LC**_.

Deploying JCA Resource Adapter

For the Agent Assisted Billing Care pre-built integration option and the Order to Cash for BRM pre-built integration option, you must deploy and configure JCA Resource Adapter.

See *Oracle Communications Billing and Revenue Management JCA Resource Adapter* for information about JCA Resource Adapter, including installation, configuration, and deployment instructions.

Configuring the Timeout Values

For the Order to Cash for BRM pre-built integration option, you must modify the JTA Transaction value, the Enterprise JavaBeans (EJB) BPELDeliveryBean value, and the SyncMaxWaitTime value.

To modify JTA Transaction value and EJB BPELDeliveryBean value:

1. Log in to the WebLogic Server console for the domain to which you will deploy Oracle AIA.
2. In the Change Center of the Administration Console, click **Lock & Edit**.
3. In the **Domain Structure** tree, select the domain name at the top of the tree.
4. Click the **Configuration>JTA** tab.
5. Set the value of the **Timeout Seconds** property to **3600**.
6. Click **Save**.
7. In the Domain Structure tree, click **Deployments**.
8. In the Deployments table, expand **soa-infra**, then expand **EJBs**, and then select **BPELDeliveryBean**.
9. Click the **Configuration** tab.
10. In the **Transaction Timeout** field, enter **3000**.
11. Click **Save**.
12. In the Change Center of the Administration Console, click **Activate Changes**.

To modify SyncMaxWaitTime values:

1. Log in to Oracle Enterprise Manager Fusion Middleware Control.
2. Expand the SOA folder and right-click **soa-infra**.
3. Select **SOA Administration>BPEL Properties**.
4. Click **More BPEL Configuration Properties**.
5. Set the value of **syncMaxWaitTime** property to **120**.
6. Click **Apply**.

> **Note:**
>
> These are the recommended minimum timeout values. Your environment may require different values.

Creating Oracle Data Integrator Repositories

The Agent Assisted Billing Care pre-built integration requires an Oracle Data Integrator master repository and work repository. Although Oracle Data Integrator must be installed on the same machine as Oracle AIA, the Oracle Data Integrator repositories can be on different machines.

When setting up your SOA domain, you must connect to repositories created using Oracle Fusion Middleware Repository Creation Utility (RCU). You can use these repositories with your pre-built integrations, or you can use RCU to create new repositories.

Oracle recommends backing up the master and work repositories before configuring Oracle AIA.

For information about Oracle Data Integrator Master and Work repositories, see the following:

- The discussion of administering repositories in *Oracle Fusion Middleware Administering Oracle Data Integrator*
- The discussion of creating the master and work repository schema in *Oracle Fusion Middleware Installing and Configuring Oracle Data Integrator*

Cluster Pre-Installation Tasks

Perform the tasks described in this section if you are installing Oracle AIA in a clustered environment.

Configuring Node Manager Startup

In a clustered environment, Oracle recommends using Node Manager to start managed servers. Before starting servers, configure the Node Manager startup properties.

To configure the Node Manager startup properties:

1. Open the **nodemanager.properties** file, typically located in the following directory:

   MW_home/**user_projects/domains**/*domain_name*/**nodemanager**

2. Search for the following property:

   ```
   StartScriptEnabled
   ```

3. Confirm that the value of the property is **true**. If it is not, change the value to **true**. For example:

   ```
   StartScriptEnabled=true
   ```

4. Save and close the file.
5. In a web browser, log in to the WebLogic Server Administration Console.
6. In the Domain Structure panel, expand **Environment** and click **Machines**.

7. For each machine in the Machines table, do the following:
   a. Select the machine name.
   b. Select the **Node Manager** tab.
   c. Check that the **Listen Address** field contains the fully qualified name of the system. For example:

      ```
      system1.example.com
      ```

      If the field contains **localhost**, replace it with the fully qualified name of the system.
   d. Check that **Listen Port** contains a port number. For example:

      ```
      5556
      ```
   e. Click **Save**.
8. In the command line, navigate to the following directory:

   domain_home/**bin**
9. Restart Node Manager using one of the following commands:
   - On UNIX systems:

     ```
     sh startNodeManager.sh
     ```
   - On Windows systems:

     ```
     startNodeManager.cmd
     ```

For more information about configuring and using Node Manager, see *Oracle Fusion Middleware Administering Node Manager for Oracle WebLogic Server*.

Restarting Servers With Pending Configuration Changes

To restart servers that have pending configuration changes:

1. Log in to the WebLogic Server Administration Console.
2. In the Change Center panel, click **View changes and restarts**.
3. Select the **Restart Checklist** tab.
4. Select any servers in the cluster that appear in the table, including the administration server and managed servers, and click **Restart**.

Adding Servers to the Oracle HTTP Server Configuration File

If you are installing Oracle AIA on a cluster and are using Oracle HTTP Server, add the servers to the **mod_wol_ohs.conf** file.

To add the servers to the **mod_wol_ohs.conf** file:

1. Navigate to the following directory:

   domain_home/config/fmwconfig/components/OHS/instances/*componentName*
2. Open the **mod_wl_ohs.conf** file.
3. Add the following code:

   ```
   # WSM-PM
   <Location /wsm-pm>
   ```

```
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
# SOA soa-infra app
<Location /soa-infra>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
# SOA inspection.wsil
<Location /inspection.wsil>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
# Worklist
<Location /integration/>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
# B2B
<Location /b2b>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
<Location /b2bconsole>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
# UMS
<Location /sdpmessaging/ >
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
# UMS WS
<Location /ucs/messaging/webservice >
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
# Default to-do taskflow
<Location /DefaultToDoTaskFlow/>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
# Workflow
<Location /workflow>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
#Required if attachments are added for workflow tasks
<Location /ADFAttachmentHelper>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
# SOA composer application
<Location /soa/composer>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
# BPM composer (ONLY FOR BPM Systems)
<Location /bpm/composer >
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
```

```
</Location>
# BPM workspace (ONLY FOR BPM Systems)
<Location /bpm/workspace >
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
<Location /StoreFrontServiceHooks>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
WLLogFile /tmp/web_log.log
</Location>
<Location /StoreFrontService>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
WLLogFile /tmp/web_log.log
</Location>
<Location /StoreFrontModule>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
WLLogFile /tmp/web_log.log
</Location>
<Location /sce >
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
<Location /AIAValidationSystemServlet>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
<Location /CustomerHub-matchfetch-context-root>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
WLLogFile /tmp/web_log.log
</Location>
<Location /bea_wls_internal>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
WLLogFile /tmp/web_log.log
</Location>
<Location  /MirrorServlet>
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
<Location /ws_utc >
SetHandler weblogic-handler
WebLogicCluster host1:port1,host2:port2
</Location>
```

where *host1:port1* and *host2:port2* are the managed servers in your Oracle Service Oriented Architecture (SOA) cluster and the ports on which they listen. Include all the managed servers in your SOA cluster in a comma-separated list.

4. Save and close the file.

Disabling Web Services Endpoint Failover

To disable the WebLogic Server Web Services Endpoint Failover feature:

1. Log in to Oracle Enterprise Manager Fusion Middleware Control.
2. In the Target Navigation pane, expand the **SOA** folder, then right-click **soa-infra**.

3. Select **SOA Administration**, and then select **Common Properties**.
4. At the bottom of the page, click **More SOA Infra Advanced Configuration Properties**.
5. On the **Attributes** tab, select **WebservicesEndpointFailoverEnabled**.
6. From the **Value** menu, select **false**.
7. Click **Apply**.

Configuring the WebLogic Servers

To configure your WebLogic servers for Oracle AIA in a clustered environment:

1. Log in to the WebLogic Server Administration Console.
2. In the Domain Structure pane, expand **Environment** and click **Servers**.
3. Do the following for the administration server and each managed server in the domain:
   a. In the Servers table, select the server name.
   b. Select the **Protocols** tab.
   c. Select the **HTTP** tab.
   d. Select the **Enable Tunneling** option.
   e. Click **Save**.
4. Restart the administration server and all managed servers.
5. For pre-built integration options that include OSM, if your OSM Customer Order Management system is clustered, do the following:
   a. In the Domain Structure pane, expand **Services**, then **Messaging**.
   b. Select **JMS Modules**.
   c. In the JMS Modules table, select **AIAJMSModule**.
   d. In the Summary of Resources table, select the **OSM** link with the SAF Remote Context type.
   e. In the URL field, add all OSM clustered nodes.

      For example:

      ```
      t3://osm1.example.com:7070,osm2.example.com:8070
      ```

   f. Click **Save**.
6. For pre-built integration options that include OSM, if your OSM Service Order Management system is clustered, do the following:
   a. In the Domain Structure pane, expand **Services**, then **Messaging**.
   b. Select **JMS Modules**.
   c. In the JMS Modules table, select **AIAJMSModule**.
   d. In the Summary of Resources table, select the **SOM** link with the SAF Remote Context type.
   e. In the URL field, add all OSM clustered nodes.

      For example:

      ```
      t3://osm1.example.com:7070,osm2.example.com:8070
      ```

f. Click **Save**.

7. Restart the cluster.

Checking the Node Manager and SOA Server Status

Before installing Oracle AIA, check that Node Manager and your SOA server are configured and running.

To check that Node Manager is running:

1. Log in to the WebLogic Server Administration Console.
2. In the Domain Structure panel, expand **Environment** and click **Machines**.
3. For each machine in the Machines table, do the following:
   a. Select the machine name.
   b. Select the **Monitoring** tab.
   c. Check that the Status row says **Reachable**.

If Node Manager is not reachable, check that it is properly configured and start it as described in *Oracle Fusion Middleware Administering Node Manager for Oracle WebLogic Server*.

To check that your SOA server is running,

1. Log in to the WebLogic Server Administration Console.
2. In the Domain Structure panel, select the name of your domain.
3. Select the **Monitoring** tab.
4. In the Health Information table, confirm that the state of your SOA server is **RUNNING**.

If the SOA server is not running, start it as described in the discussion of using Node Manager to start a managed server in Oracle Fusion Middleware Administering Node Manager for Oracle WebLogic Server. Always start your SOA server using Node Manager.

4
Installing Oracle AIA

This chapter describes how to install Oracle Communications Application Integration Architecture (Oracle AIA) pre-built integrations.

About Installing Oracle AIA

You can install Oracle AIA in two ways:

- Active install: Install Oracle AIA by using the Oracle AIA Installer. See "Installing Oracle AIA by Using Interactive Install".
- Silent install: Install Oracle AIA based on a response file generated by an active install. See "Installing Oracle AIA by Using Silent Install".

Installation Assumptions

The instructions in this chapter assume the following:

- That you have installed and configured all prerequisite software. See "Oracle AIA System Requirements".
- That you have gathered all required information. See "Information Requirements".
- That you have performed all required pre-installation tasks. See "Oracle AIA Pre-Installation Tasks ".

Installing Oracle AIA by Using Interactive Install

To install Oracle AIA:

1. Download the Oracle AIA software media pack from the Oracle software delivery website, located at:

   `http://edelivery.oracle.com`

2. Unzip the software media pack to a temporary directory and navigate to that directory.
3. Ensure that your JAVA_HOME environment variable is set to the location where you installed the Java Development Kit and added to the PATH variable.
4. Enter one of the following commands:
   - To run the Installer and save a response file for future silent installations:

     ```
     java -jar comms_home_installer_generic.jar -record -destinationFile
     response_file
     ```

     where *response_file* is the name of the response file, including the complete path to the directory where you want to store the response file.

> **Note:**
>
> The response file is saved only after you click **Install** or **Cancel** on the Installation Summary screen. If you cancel the installation earlier, none of the information entered is saved.

- To run the Installer without saving a response file:

```
java -jar comms_home_installer_generic.jar
```

The Welcome screen of the Oracle AIA Installer appears.

5. Review the components that will be installed and click **Next**.

   The Installation Inventory screen appears.

6. Click **Next**.

   The Java Home Location screen appears.

7. In the **Java Home** field, enter or browse to the directory where the Oracle Java Development Kit (JDK) is installed and click **Next**.

   The Installation Summary screen appears.

8. Review the installation summary.

9. (Optional) To change any of the information shown on the summary screen:

   a. Select any screen from the navigation panel.

   b. Edit the information.

   c. Select the Installation Summary screen from the navigation panel.

10. Do one of the following:

    - To cancel the active installation, click **Cancel**.

      The Installer closes.

    - To complete the active installation:

      a. Click **Install**.

         The Installation Progress screen appears.

      b. Wait for the progress bar to reach 100% and click **Next**.

         The Installation Complete screen appears.

      c. Review the information.

      d. Click **Finish**.

         The Installer closes and the installation is complete.

      e. Review the installation log file and resolve any errors that appear. The log file is located in the *temp_folder*/ OraInstall*YYYY-MM-DD_HH-MM-SSAMPM* directory.

      f. Verify that the following directories were created in the installation home directory:

         comms_home

         custom

inventory

OPatch

oracle_common

oraInst.loc

oui

g. Prepare the SOA domain as described in "Preparing the SOA Domain".

h. Configure and deploy the pre-built integrations that you will use as described in "Configuring and Deploying Pre-Built Integrations ".

If you used the **-record** option when running the Installer, the values you entered are saved in the response file whether you click **Cancel** or **Install** on the Installation Summary screen. See "Installing Oracle AIA by Using Silent Install" for information about using this response file for silent installation.

Installing Oracle AIA by Using Silent Install

You can perform a silent installation using a response file with values recorded by the Oracle AIA Installer.

To perform a silent installation:

1. Generate the response file by performing an interactive installation and using the **-record** option as described in "Installing Oracle AIA by Using Interactive Install".
2. In the command line, navigate to the directory where you unzipped the software media pack.
3. Enter the following command:

   ```
   java -jar comms_home_installer_generic.jar -silent -responseFile response_file
   ```

   A message showing installation progress appears. A success message is displayed when installation is complete.
4. Review the installation log file and resolve any errors that appear. The log is located in the *Install_home***/comms_home/logs** directory.
5. Verify that the following directories were created in the installation home directory:
   - **comms_home**
   - **custom**
   - **inventory**
   - **OPatch**
   - **oracle_common**
   - **oraInst.loc**
   - **oui**
6. Prepare the SOA domain as described in "Preparing the SOA Domain".
7. Configure and deploy the pre-built integrations that you will use as described in "Configuring and Deploying Pre-Built Integrations ".

Preparing the SOA Domain

After installing Oracle AIA, you must prepare the SOA domain by copying domain configuration files and by updating the domain.

Copying Domain Configuration Files

To copy the domain configuration files:

1. On the system where you installed Oracle AIA, navigate to the following directory:

   *Comms_home***/comms_home/src/SCEApp**

2. Do one of the following:

   - On UNIX, in the command line, run the following command:

     ```
     SCEApp.sh
     ```

     When prompted, enter the path to the Oracle Fusion Middleware home directory.

     The script copies the domain configuration files to the appropriate directories.

   - On Windows:

     a. Copy the files in Table 4-1 from *Comms_home***/comms_home/src/SCEApp** to the directories specified in the table.

     Table 4-1 Domain Configuration Files and Their Destination Directories

File	Destination Directory
aiafp.zip	*Oracle_home***/soa**
classes.zip	*Oracle_home***/soa/soa/modules/oracle.soa.ext_11.1.1**
oracle.soa.fp_template.jar	*Oracle_home***/soa/common/templates/wls**

     In a clustered environment, copy the files from their directories on the administration server to the corresponding directories on each managed server.

     b. Unzip **aiafp.zip** and **classes.zip**.

     In a clustered environment, unzip the files on the administration server and each managed server.

Updating the Domain

To update the domain:

1. Update the domain as described in *Oracle Fusion Middleware Creating WebLogic Domains Using the Configuration Wizard*. On the Templates screen:

   a. Select the **Update Domain Using Custom Template** option.

   b. Browse to the following directory:

Oracle_home/**soa/common/templates/wls**

c. Select the oracle.soa.fp_template.jar custom template.

d. Click **Next**.

e. Complete the domain update as described in the Fusion Middleware documentation.

2. Verify that the domain was updated successfully:

a. Start all servers in the SOA domain.

b. Log in to Oracle Enterprise Manager Fusion Middleware Control.

c. From the **Target Navigation** tree, expand SOA, then the SOA infrastructure element, then the SOA partition element.

A list of composites deployed on the SOA partition appears.

d. Verify that the following composites appear:

- AIAAsyncErrorHandlingBPELProcess
- Reload Process

5

Configuring and Deploying Pre-Built Integrations

This chapter discusses how to configure and deploy the Oracle Application Integration Architecture (Oracle AIA) pre-built integrations.
Before performing the procedures in this chapter, ensure that you have completed the procedures in "Oracle AIA Pre-Installation Tasks " and "Installing Oracle AIA ".

About Configuring Pre-Built Integrations

You can use either of the following configuration types to configure pre-built integrations:

- Active configuration: Configure pre-built integration options by using in the Oracle AIA Configuration Wizard.
- Passive configuration: Configure pre-built integration options by using a response file generated by an active configuration.

You can configure the following Oracle Communications pre-built integration options:

- Order to Cash
- Agent-Assisted Billing Care

Using an active configuration, you can configure multiple pre-built integration options at the same time or you can run the Configuration Wizard multiple times to configure one pre-built integration option at a time. If you configure multiple options at the same time, the Configuration Wizard prompts for information that is common among the options only once.

For example, if you configure the Agent-Assisted Billing Care option and the Order to Cash option for Siebel CRM, the Configuration Wizard prompts for Siebel CRM information only once.

See "Information Requirements" for details about the information required by the Configuration Wizard.

If you are configuring a new option on a system that already has another option deployed and the new option has information in common with the existing option, the Configuration Wizard automatically populates the existing information in the screens for the existing option. You can optionally change this information and the Configuration Wizard updates the configuration properties file with the new information.

For example, if you have already configured the Agent-Assisted Billing Care option and are now configuring the Order to Cash option for Siebel CRM, the Configuration Wizard automatically populates the existing information about Siebel CRM.

Configuring Pre-Built Integrations by Using Active Configuration

This procedure describes the screens displayed for all of the pre-built integration options. You can choose to configure one or more of the options. Depending on which options you choose to configure, you may not see all of the screens described in this procedure.

To configure pre-built integrations by using an active configuration:

1. In the command line, navigate to the following directory:

   domain_home/**soa/aia/bin**

2. Run one of the following commands:

   - On UNIX:

     ```
     source aiaenv.sh
     ```

   - On Windows:

     ```
     source aiaenv.bat
     ```

3. Navigate to the following directory:

   Comms_home/**config**

   The *Comms_home* directory and its contents were created when you ran the Oracle AIA Installer.

4. As a non-root user, do one of the following:

   - To run the Configuration Wizard and save a response file for silent configurations, enter one of the following commands:

     – On UNIX:

       ```
       sh run_config.sh -record -responseFile=response_file
       ```

     – On Windows:

       ```
       run_config.bat -record -responseFile=response_file
       ```

       > **Note:**
       >
       > You can use the `-novalidation` flag to skip validations of application configuration. This skips the validation of the configuration values. However, you should validate them manually to make sure they are appropriate.

     where *response_file* is the name of the response file, including the complete path to the directory where you want to store the response file.

     For example:

     Comms_home/**config/ConfigSilentResponse.rsp**

     > **Note:**
     >
     > The response file is saved only after you click **Configure** or **Cancel** on the Configuration Summary screen. If you cancel the configuration earlier, none of the information entered is saved.

   - To run the Configuration Wizard without saving a response file, enter one of the following commands:

     – On UNIX:

       ```
       sh run_config.sh
       ```

- On Windows:

  ```
  run_config.bat
  ```

The Welcome screen of the Configuration Wizard appears.

5. Review the components that can be configured and click **Next**.

   The PIPs Selection screen appears.

6. Select the pre-built integration options that you want to configure and click **Next**.

   The WebLogic Details screen appears.

7. Verify the automatically-populated values, enter the missing details, and click **Next**.

   The SOA Database Details screen appears.

8. Enter the SOA Database connection information and click **Next**.

9. Do one of the following:

   - If you did not select the Order to Cash for Siebel CRM, or Agent Assisted Billing Care pre-built integration option, skip this step.
   - If you selected the Order to Cash for Siebel CRM or Agent Assisted Billing Care pre-built integration option, the Siebel Server Details screen appears. Do the following:

     a. Enter the details for your Siebel CRM server and click **Next**.

        The Siebel Database Details screen appears.

     b. Enter the details for your Siebel CRM database and click **Next**.

        The SPM Details screen appears.

     c. (Optional) Enter the Session Pool Manager details.

     d. Click **Next**.

10. Do one of the following:

    - If you did not select the Order to Cash for OSM pre-built integration option, skip this step.
    - If you selected the Order to Cash for OSM pre-built integration option, the OSM Details screen appears.

      Enter the OSM details and click **Next**.

11. Do one of the following:

    - If you did not select the Order to Cash for BRM, or Agent Assisted Billing Care pre-built integration option, skip this step.
    - If you selected the Order to Cash for BRM, or Agent Assisted Billing Care pre-built integration option, the BRM Details screen appears.

      a. Enter the BRM details.

      b. Click **Next**.

12. Do one of the following:

    - If you did not select the Agent Assisted Billing Care pre-built integration option, skip this step.
    - If you selected the Agent Assisted Billing Care pre-built integration option, the ODI Access Details screen appears. Do the following:

      a. Enter the ODI details and click **Next**.

The ODI Master Repository Details screen appears.

b. Enter the ODI master repository details and click **Next**.

The ODI Work Repository Details screen appears.

c. Enter the ODI work repository details and click **Next**.

13. For a first-time configuration, on the Xref Schema Creation Details screen, enter the cross-reference schema details.

14. (Optional) Select **Enable XREF split utility**. By default, this option is selected. You can clear this option if you do not wish to split the cross-reference tables into multiple tables.

    To maintain performance levels when looking up values in large cross-reference tables, Oracle recommends selecting this option to split the cross-reference tables into multiple tables, with one table for each cross-reference object.

15. Click **Next**.

    The Configuration Summary screen appears.

16. Review the log file location and do one of the following:

    - To cancel the active configuration, click **Cancel**.

      The Configuration Wizard closes.

    - To complete the active configuration:

      a. Click **Configure**.

      The Configuration Progress screen appears, showing the progress and any warnings or errors.

      If the configuration fails, the Configuration Progress screen shows the errors. Correct the errors and retry the configuration.

      b. Configuration succeeds when the progress bar reaches 100% without any errors. Click **Next**.

      The Configuration Complete screen appears.

      c. Review the log file location and click **Finish**.

      The Configuration Wizard closes. Configuration is complete.

      d. Review the configuration log files and resolve any errors that appear. The logs are located in the *Comms_home***/logs** directory.

      e. Deploy the pre-built integrations that you have configured, as described in "Deploying Pre-Built Integrations".

    If you used the **-record** option when running the Configuration Wizard, the values you entered are saved in the response file whether you click **Cancel** or **Configure** on the Configuration Summary screen. See "Configuring Pre-Built Integrations by Using Silent Configuration" for information about using this response file for silent configuration.

Configuring Pre-Built Integrations by Using Silent Configuration

You can perform a silent configuration to configure pre-built integration instances using the response file with values recorded from an active configuration.

To perform a silent configuration:

1. Generate the response file by performing an interactive configuration and using the **-record** option as described in "Configuring Pre-Built Integrations by Using Active Configuration".
2. Open the response file in a text editor.

   The location of the response file was specified when the Configuration Wizard was run.
3. Check that each property has a corresponding value. Provide a value for any blank properties.
4. Search for password fields with the value **<SECURE>**.
5. Replace **<SECURE>** with the actual value of the passwords.
6. Save and close the file.
7. In the command line, navigate to the following directory:

   *domain_home***/soa/aia/bin**
8. Run one of the following commands:
   - On UNIX:

     ```
     source aiaenv.sh
     ```
   - On Windows:

     ```
     source aiaenv.bat
     ```
9. Navigate to the following directory:

   *Comms_home***/config**
10. Run one of the following commands:
    - On UNIX:

      ```
      sh run_config.sh -mode=silent -responseFile=response_file
      ```
    - On Windows:

      ```
      run_config.bat -mode=silent -responseFile=response_file
      ```

    A message showing configuration progress appears. A success message is displayed when configuration is complete.
11. Review the configuration log files and resolve any errors that appear. The logs are located in the *Comms_home***/logs** directory.
12. Verify that the following file exists:
    - On UNIX:

      *Install_home***/comms_home/bin/commsenv.sh**
    - On Windows:

      *Install_home***\comms_home\bin\commsenv.bat**

13. Deploy the pre-built integrations that you have configured, as described in "Deploying Pre-Built Integrations".

Deploying Pre-Built Integrations

After configuring the pre-built integrations, you must deploy them to the SOA server by using deployment scripts.

For the Order to Cash pre-built integration, the Configuration Wizard generates a master deployment script based on the options that you selected. The master script deploys all required options for a first-time deployment. To add a new option in a subsequent deployment, you run the individual deployment script for the new option.

For the other pre-built integrations, you must run the individual deployment script for all options that you want to deploy.

When you run the deployment scripts, the deployment plans and the **AIAInstallProperties.xml** file are passed as parameters to the Oracle AIA Install Driver. The driver retrieves required values from **AIAInstallProperties.xml** and deploys the pre-built integration to the server.

Pre-Deployment Tasks

Before deploying the Agent Assisted Billing Care pre-built integration, if your Oracle Data Integrator work repository is in Execution mode, you must edit the deployment plan.

To edit the deployment plan:

1. Open the following file:

   *Install_home***/comms_home/pips/Communications/AABC/DeploymentPlans/AABCDP.xml**

2. Search for the following text:

   ```
   <OdiImportObject
   ```

3. Comment out any development-related work repository Oracle Data Integrator artifacts from this section.

   For example, in the following code, only the second path element is an execution time artifact. The first path element is a design-time artifact and has been commented out by including **!--** after the opening tag and **--** before the closing tag:

   ```
   <OdiImportObject workrepname="${pips.AABC.odi.workrep.name}"
   importmode="SYNONYM_INSERT_UPDATE" > <path id="${COMMS_HOME}/services/
   industry/Communications/BulkDataProcess/BRMToSiebel/Collections/ODI/
   Oracle/V1/ODI_Work_Repository" >

   <!--pathelement location="${COMMS_HOME}/services/industry/Communications/
   BulkDataProcess/BRMToSiebel/Collections/ODI/Oracle/V1/ODI_Work_Repository/
   MFOL_CollectionsModelFolder.xml" /-->

   <pathelement location="${COMMS_HOME}/services/industry/Communications/
   BulkDataProcess/BRMToSiebel/Collections/ODI/Oracle/V1/ODI_Work_Repository/
   SCEN_SYNCCOLLECTIONACTION_Version_001.xml" />
   </path>
   </OdiImportObject>
   ```

4. Save and close the file.

Deploying Pre-Built Integrations

To deploy the pre-built integration options:

1. Navigate to the following directory:

   *Install_home***/comms_home/bin**

2. Run one of the following commands:

   - On UNIX:

     ```
     source commsenv.sh
     ```

   - On Windows:

     ```
     source commsenv.bat
     ```

   This command sources the **aiaenv** script and sets the COMMS_HOME environment variable to *Install_home***/comms_home**.

3. Navigate to the following directory:

   *Install_home***/comms_home/pips/Communications**

4. For a first-time Order to Cash deployment, run one of the following commands:

   - On UNIX:

     ```
     setupO2C.sh
     ```

   - On Windows:

     ```
     setupO2C.bat
     ```

5. For all other pre-built integrations, or to add a new option to an existing Order to Cash deployment, run one of the commands listed in Table 5-1.

Table 5-1 Pre-Built Integration Deployment Commands

Pre-Built Integration	Platform	Command

Order to Cash	UNIX	Order to Cash base:
		`sh $COMMS_HOME/pips/Communications/O2CBase/DeploymentPlans/deployO2CBase.sh`
		Order to Cash for Siebel CRM:
		`sh $COMMS_HOME/pips/Communications/O2CSiebel/DeploymentPlans/deployO2CSiebel.sh`
		Order to Cash for BRM:
		`sh $COMMS_HOME/pips/Communications/O2CBRM/DeploymentPlans/deployO2CBRM.sh`
		Order to Cash for OSM:
		`sh $COMMS_HOME/pips/Communications/O2COSM/DeploymentPlans/deployO2COSM.sh`

Table 5-1 (Cont.) Pre-Built Integration Deployment Commands

Pre-Built Integration	Platform	Command
Agent Assisted Billing Care	UNIX	`sh $COMMS_HOME/pips/Communications/AABC/DeploymentPlans/deployAABC.sh`

A message showing deployment progress appears. When prompted, provide the WebLogic Server administrator user name and password.

A success message is displayed when deployment is complete.

6. Review the deployment log files and resolve any errors that appear.

   The deployment log files are located in one of the following locations:

   - The log file specific to the pre-built integration option that you deployed:

     `Install_home`**`/comms_home/logs`**

   - The default location:

     `domain_home``/soa/aia/logs`

Troubleshooting Configuration and Deployment

This section describes errors you might encounter during pre-built integration deployment.

Unique Constraint Violation for Agent Assisted Billing Care

The following error message appears in the deployment log file if the ODI data source already exists in the ODI master repository:

```
[echo] - Importing CONN_zzzzz.xml
[exec] OracleDI: Starting Command: OdiImportObject -FILE_NAME=<AIA_HOME>/PIPS/
Industry/Communications/DIS/Collections/src/master/CONN_zzzzz.xml -
IMPORT_MODE=SYNONYM_INSERT_UPDATE ...
[exec] java.sql.SQLException: ORA-00001: unique constraint (SNPM.PK_MTXT)
violated
```

where *zzzzz* is the name provided for the Oracle Data Integrator data source.

This error occurs when pre-built integrations are reinstalled.

This error does not stop configuration. The Configuration Wizard imports the remaining ODI integration artifacts.

After configuration is complete, verify that the data source connections and associated logical schemas in the ODI topology are accurate.

Deployment Error for Metadata Service Tablespace

The Oracle AIA deployment scripts load data to the Oracle Metadata Service (MDS) repository. When you deploy multiple Oracle AIA instances on the same server, the default tablespace may not be sufficient, and you may see the following error:

```
Unable to extend tablespace
```

To resolve this error, increase the size of the tablespace. See *Oracle Database Administrator's Guide* for information about increasing the size of a tablespace.

If you have cleared a large amount of data from a data object but still see this error, run the following command:

```
ALTER TABLE table_name SHRINK SPACE
```

where *table_name* is the name of the MDS repository table. See *Oracle Database Administrator's Guide* for more information about the **ALTER TABLE** command.

See *Oracle Fusion Middleware Administrator's Guide* for more information about managing the MDS repository.

6
Oracle AIA Post-Installation Tasks

This chapter describes tasks to perform after installing, configuring, and deploying Oracle Application Integration Architecture (Oracle AIA) pre-built integrations.

Overview of Oracle AIA Post-Installation Tasks

After installing Oracle AIA and configuring and deploying the pre-built integrations, you must perform different post-installation tasks depending on the pre-built integrations that you deployed.

Some tasks are required for more than one pre-built integration. Table 6-1 lists the tasks required for each pre-built integration.

Table 6-1 Post-Installation Tasks for Pre-Built Integrations

Pre-Built Integration	Post-Installation Tasks
Order to Cash	Post-Installation Tasks for All Pre-Built Integrations If you are using Siebel CRM: • Configuring Siebel CRM • Enabling UTC Date Format in Siebel CRM • Configuring Session Pool Manager Order to Cash Post-Installation Tasks
Agent Assisted Billing Care	Post-Installation Tasks for All Pre-Built Integrations Configuring Siebel CRM Enabling UTC Date Format in Siebel CRM Configuring Session Pool Manager Agent Assisted Billing Care Post-Installation Tasks If Agent Assisted Billing Care is co-deployed with Order to Cash: • Configuring Routing Rules for Co-Deployed Pre-Built Integrations

The tasks described in "Development Post-Installation Tasks" are not required immediately after installation, but you may need to perform them while customizing your deployment and environment.

Post-Installation Tasks for All Pre-Built Integrations

The post-installation tasks described in this section are required for all pre-built integrations.

Suppressing Auto-Retry and Preventing Multiple Error Notifications and Trouble Tickets

To suppress auto-retry and prevent multiple error notifications and trouble tickets:

1. Log in to the Oracle Enterprise Manager Fusion Middleware Control.

2. In the Target Navigation pane, expand the SOA folder.
3. Right-click **soa_infra**.
4. Select **SOA Administration**, then select **Common Properties**.
5. Click **More SOA Infra Advanced Configuration Properties**.
6. Search for the **GlobalTxMaxRetry** property and set the value to **0** (zero).
7. Click **Apply**.
8. In the Target Navigation pane, right-click **soa_infra**.
9. Select **Administration**, then select **System Mbean Browser**.
10. Expand **oracle.as.soainfra.config**, then expand the SOA managed server, then expand **AdapterConfig**.
11. Select **Adapter**.
12. Search for the **GlobalInboundJcaRetryCount** property and set the value to **0** (zero).
13. Click **Apply**.
14. In the Target Navigation pane, right-click **soa_infra**.
15. Select **SOA Administration**, then select **Common Properties**.
16. From the Audit Level list, select **Production**.
17. Click **Apply**.
18. Stop and Start the SOA server and the administration server as described in the discussion of controlling server state in *Oracle Fusion Middleware Administering Oracle WebLogic Server with Fusion Middleware Control*.

Reapplying Backed Up Customizations

If you are reinstalling Oracle AIA, applying patches, or adding new pre-built integration options to an existing Oracle AIA deployment, you must reapply any backed up customizations with the new ready-to-use Oracle AIA objects.

Reapply any of the following customizations that you have backed up:

- Extensible style sheet language transformations (XSLTs): Reapply any XSLTs that you have developed for custom integrations.
- Enterprise Business Services (EBS) Web Service Definition Language (WSDL): Merge any EBS WSDL changes with the new ready-to-use EBS WSDLs.
- Routing rules: Merge any EBS to which you added new routing rules with the new ready-to-use EBS.
- The **AIAConfigurationProperties.xml** file: Add any custom additions and change any properties in the new ready-to-use file to match the backed up file and upload it to the MDS repository.

  AIAConfigurationProperties.xml is located in the following directory:

  *Comms_home***/source/soainfra/apps/config**

Post-Installation Tasks for Multiple Pre-Built Integrations

The post-installation tasks described in this section are required for some pre-built integrations. See Table 6-1 for information about which tasks are required for which pre-built integrations.

Configuring Siebel CRM

You must configure Siebel CRM for the following pre-built integrations:

- Order to Cash for Siebel CRM
- Agent Assisted Billing Care

Configure Siebel CRM as described in the topic about configuring communications, Order to Cash, and Master Data Management integration in *Siebel Communications Guide*.

This includes:

- Setting system preferences
- Setting up integration users
- Enabling component groups
- Activating workflows
- Configuring Oracle Advanced Queuing
- Configuring Oracle Fusion Middleware URLs
- Configuring Session Pool Manager
- Specific tasks for Order to Cash

Enabling UTC Date Format in Siebel CRM

You must enable UTC date format in Siebel CRM for the following pre-built integrations:

- Order to Cash for Siebel CRM
- Agent Assisted Billing Care

You enable UTC date format by changing the value of the UTCCanonical process property to **Y** for workflows related to Oracle AIA. See the discussion of activating workflows for order to cash in *Siebel Communications Guide* for more information about changing this property, including the list of workflows for which it must be changed.

Configuring Session Pool Manager

You must configure the Session Pool Manager utility for all pre-built integrations that involve Siebel CRM.

For information about configuring Session Pool Manager, see *Oracle Communications Application Integration Architecture Utilities Guide*.

Configuring Routing Rules for Co-Deployed Pre-Built Integrations

Each pre-built integration is installed with its own set of routing rules for its enterprise business services.

The enterprise business services and their default routing rules are deployed when you deploy a single option or the Agent-Assisted Billing Care option with any of the Order to Cash options.

When you deploy multiple other options, such as any of the Order to Cash options, the enterprise business services and routing rules used by only one option are deployed, but the enterprise business services and routing rules used by more than one option are not deployed. You must manually configure the routing rules as appropriate for your combination of options.

The installation log provides information about any enterprise business services for which you must manually configure routing rules. For example, the log includes:

```
EBM_name is already deployed. The routing rules for PIP option_name have not
been added. COMMS_HOME/pips/option_name/EBS contains Oracle Delivered EBS with
routing rules for this PIP.
```

In the example, *EBM_name* is the name of the enterprise business message, *option_name* is the name of the pre-built integration option, and PIP is a pre-built integration option.

For more information about using routing rules, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Core Extension* and *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

Agent Assisted Billing Care Post-Installation Tasks

If you enabled multiple or split cross-reference tables when configuring the Agent Assisted Billing Care pre-built integration, you must create a view for the collections integration flow.

To create the view:

1. Navigate to the following directory:

   *Install_home***/comms_home/bin**

2. Run one of the following commands:

   - On UNIX:

     ```
     source commsenv.sh
     ```

   - On Windows:

     ```
     source commsenv.bat
     ```

   This command sources the **aiaenv** script and sets the COMMS_HOME environment variable to *Install_home***/comms_home**.

3. Navigate to the following directory:

   *Install_home***/comms_home/pips/Communications/AABC/DeploymentPlans**

4. Run one of the following commands:

- On UNIX:

  ```
  createMultiTableXREFViewForCollections.sh
  ```

- On Windows:

  ```
  ant -f %COMMS_HOME%\pips\Communications\AABC\DeploymentPlans\AABCDeploy.xml
  MultiTableXREFViewForCollections
  ```

5. Verify that the view was created in the log file. The following is the default log file:

   domain_home`/soa/aia/logs/AABC-MultiTableXREFViewForCollections_Deployments_`*timestamp*`.log`

   where *timestamp* is the date and time that the log was created.

Order to Cash Post-Installation Tasks

This section describes the post-installation tasks for the Order to Cash pre-built integration.

Disabling Product Attribute Validation in OSM Order to Activate Cartridges

If you are using the Order to Cash for Siebel CRM pre-built integration option, you must disabled the ENABLE_PRODUCT_ATTRIBUTE_VALIDATION model variable in the OSM Order to Activate cartridges.

See the discussion of enabling or disabling product attribute validation in *Oracle Communications Order and Service Management Cartridge Guide for Oracle Application Integration Architecture* for information about disabling this model variable.

Adding the Singleton Property

For the Order to Cash for Siebel CRM, OSM, and BRM pre-built integration options, you must add the singleton property to the ProcessFulfillmentOrderBillingAccountListOSMCFSCommsJMSConsumer service.

To add the singleton property:

1. Log in to Oracle Enterprise Manager Fusion Middleware Control.
2. In the Target Navigation pane, expand the **SOA** folder, then **soa-infra**, then **default**.
3. Select the **ProcessFulfillmentOrderBillingAccountListOSMCFSCommsJMSConsumer** link.
4. From the SOA Composite menu, select **Services/Reference Properties**, then select the **Consume_PFOBAL** service.
5. Select the **Properties** tab.
6. Click **Add**.
7. Click **Search**.

   The Property Names dialog appears.
8. Select **singleton**.
9. In the **Value** column, enter **true**.
10. Click **Apply**.

Supporting Message Priority

For all Order to Cash pre-built integration options, you must configure the Oracle AIA queues to support prioritizing messages based on JMS Priority.

To configure the Oracle AIA queues to support JMS Priority:

1. Log in to the Oracle WebLogic Server Administration Control.
2. In the domain structure panel, expand **Services**, then **Messaging**, then **JMS Modules**.
3. Select **AIAJMSModule.**
4. In the Summary of Resources table, click **New**.

   The Create New JMS System Module Resource page appears.
5. From the list of JMS resources, select **Destination Sort Key**.
6. Click **Next**.

   The Destination Key Properties page appears.
7. In the **Name** field, enter **AIA_SALESORDERJMSPRIORITY_KEY**.
8. Click **OK**.
9. Click **AIA_SALESORDERJMSPRIORITY_KEY** link.
10. From the **Sort Key** list, select **JMSPriority**.
11. From the **Key Type** list, select **Int**.
12. From the **Direction** list, select **Descending**.
13. Click **Save**.
14. In the domain structure panel, click **AIAJMSModule**.
15. For each of the following queues:
    - AIA_CRTBO_OUT_JMSQ
    - AIA_CRTCUST_OUT_JMSQ
    - AIA_CRTFO_OUT_JMSQ
    - AIA_FOPROV_OUT_JMSQ

    Do the following:

    a. Click the queue name.

    b. From **Destination Keys** section, select **AIA_SALESORDERJMSPRIORITY_KEY**.

    c. Click **Save.**

Updating the BRM Internal ID in the Oracle AIA Application Registry

For the Order to Cash for BRM pre-built integration option, update the BRM internal ID in the Oracle AIA Application Registry.

To update the BRM internal ID:

1. On the system where BRM is installed, navigate to the following folder:

   ```
   ./portal/7.4/sys/eai_js
   ```

2. Open the **payloadconfig_crm_sync.xml** file in a text editor.
3. Under the ProductInfoChange element, search for the following text:

   ```
   Attribute Tag="InstanceId" Value=
   ```

4. Make note of the InstanceID value. For example:

   ```
   Attribute Tag="InstanceId" Value="Portal"
   ```

5. In a web browser, navigate to the following page:

   ```
   http://host:port/sce/faces/sceHomeLogin.jpsx
   ```

   where *host* and *port* are the WebLogic Server host and port on which you deployed Oracle AIA.
6. In the Setup area, click **Go**.
7. Select the **Systems** tab.
8. In the **Internal Id** field, enter **BRM_01**.
9. Click **Search**.
10. In the table, change the value in the **Internal Id** column from BRM_01 to the value that you noted for InstanceId in the **payloadconfig_crm_sync.xml** file.
11. Click **Save**.

Adding the No Authentication Security Policy to the Product Class Service

For the Order to Cash for OSM pre-built integration option, add the No Authentication security policy to either the QueryProductClassAndAttributesSCECommsReqABCSImpl or QueryProductClassAndAttributesSCECommsReqABCSImplV2 service, depending on your version of OSM.

To add the security policy:

1. Log in to the Oracle Enterprise Manager Fusion Middleware Control.
2. In the Target Navigation pane, expand the **SOA** folder, then **soa-infra**, then **default**.
3. Do one of the following:
   - If you are using OSM 7.3 or later, select the **QueryProductClassAndAttributesSCECommsReqABCSImplV2** link.
   - If you are using an earlier version of OSM than 7.3, select the **QueryProductClassAndAttributesSCECommsReqABCSImpl** link.
4. In the **Services and References** region, do one of the following:
   - If you are using OSM 7.3 or later, select the **QueryProductClassAndAttributesSCECommsReqABCSImplV2** link.
   - If you are using an earlier version of OSM than 7.3, select the **QueryProductClassAndAttributesSCECommsReqABCSImpl** link.
5. Click the **Policies** tab.
6. In the **Directly Attached Policies** region, click **Attach/Detach**.

7. In the Available Policies table, select **oracle/no_authentication_service_policy**.
8. Click **Attach**.
9. Click **OK**.

   The **oracle/no_authentication_service_policy** appears in the Directly Attached Policies table.
10. Restart the administration server and all managed servers.

Specifying Valid Phone Number Format in BRM

By default, Siebel CRM allows unformatted phone numbers. To allow unformatted phone numbers in BRM, add the following phone number validation format by using the Field Validation Editor application in BRM Configuration Center:

```
###-###-####
```

See *Oracle Communications Billing and Revenue Management Managing Customers* and the Field Validation Editor Help for more information about validating phone number formats.

Development Post-Installation Tasks

The tasks described in this section are not required immediately after installation, but you may need to perform them while customizing your deployment and environment.

Changing Oracle AIA Deployment Passwords

You can optionally change the passwords that you specified in the Installer after completing installation using the **UpdateStore** utility.

This utility assumes that the **AIAInstallProperties.xml** file exists in the *domain_home***/soa/aia/bin** directory and that the password being changed exists in the file.

> **Note:**
>
> This utility only changes encrypted passwords in the Oracle AIA installation. It does not change passwords of the SOA server or the database schemas.

To change passwords:

1. Navigate to the following directory:

   *Comms_home***/bin**
2. Run the following command:

   ```
   source commsenv.sh
   ```
3. Navigate to the following directory:

   *MW_home***/soa/aiafp/util**
4. Run the following command:

```
ant -f updateStore.xml updateStore -DAdminUsername=weblogicadminuser -
DAdminPassword=weblogicadminpassword
```

where *weblogicadminuser* and *weblogicadminpassword* are the user name and password for the WebLogic Server administration user.

The Update AIA Keystore screen appears.

5. Enter information in the following fields:
   - **Existing Username**: The user name for which you want to change credentials.
   - **Existing Password**: The password corresponding to the user name entered in the **Existing Username** field.
   - **New Username**: The new user name that you want to use. Use the same value as in Existing Username if you want to change the password only.
   - **New Password**: The new password that you want to use. Use the same value as in Existing Password if you want to change the user name only.
   - **XPath**: The XPath from the **AIAInstallProperties.xml** file to the password you want to change.

     For example:

     ```
     /properties/pips/o2c/password
     ```
6. Click **OK**.

   A success message is displayed.
7. Upload the changed file to the MDS repository as described in "Uploading Changed Files to the MDS Repository".

Adding Oracle AIA to a New Node of an Existing SOA Cluster

To add Oracle AIA to a new node of an existing SOA cluster:

1. Add a new node to the SOA cluster as described in *Oracle Fusion Middleware Enterprise Deployment Guide for Oracle SOA Suite*.
2. Download the **AIAConfigurationProperties.xml** file from the MDS repository as described in "Downloading Files from the MDS Repository" and open it in an XML editor.
3. Search for the following text:

   ```
   <jndiurl>t3://
   ```
4. After the list of SOA server details, add a comma and the host and port of the new node. Ensure that all the cluster nodes and ports are added to this property. In the following example, **newnode.example.com:8001** has been added:

   ```
   <jndiurl>t3://
   node1.example.com:8001,node2.example.com:8001,newnode.example.com:8001</jndiurl>
   ```
5. Save and close the file.
6. Upload the changed file to the MDS repository as described in "Uploading Changed Files to the MDS Repository".
7. Open the *domain_home*/**soa/aia/bin/AIAInstallProperties.xml** file.
8. Search for the following element:

```
<properties>
  <fp>
    <server>
      <jndiurl>
```

9. After the list of SOA server details, add a comma and the host and port of the new node. In the following example, **newnode.example.com:8001** has been added:

```
<jndiurl>t3://
node1.example.com:8001,node2.example.com:8001,newnode.example.com:8001</
jndiurl>
```

10. Save and close the file.
11. Restart the domain.
12. Log in to WebLogic Administration Console.
13. Navigate to **JMS Servers** in the **Domain Structure** pane.
14. Verify the following:
    - **AIAJMSServer_auto_*x*** and **SOAJMSServer_auto_*x*** JMS servers are created and their targets are set to the corresponding SOA nodes by the domain extension automatically.
    - The corresponding **AIADataStore_auto_*x*** and **SOAJMSFileStore_auto_*x*** persistent stores are created and linked to the JMS servers automatically.

    If you do not find these JMS servers and persistent stores, create them manually.
15. Click **Lock & Edit**.
16. Navigate to **JMS Modules** in the **Domain Structure** pane, in the **Summary of JMS Modules** pane, click **AIAJMSModule**.
17. Navigate to the settings for **AIAJMS Module** and then click **Subdeployments**.
18. Verify that **AIAJMSServer_auto_*x*** appears against the targets of the **AIASubdeployment** and **AIASubdeployment_auto_1** subdeployments. If you do not see the JMS server, click the corresponding subdeployments and add **AIAJMSServer_auto_*x*** to the subdeployment target.
19. Click **Activate Changes**.
20. Restart the domain.

Making Upgrade-Safe Composite Customizations

This section is for developers who customize installed composites. This is not a required post-installation task, but the you perform the procedure while customizing Oracle AIA composite services.

As part of your pre-built integrations implementation you may need to customize installed composites. For example, you may need to call different BRM opcodes than those specified in ready-to-use composites.

Customizations you make within customizable scopes in JDeveloper can be retained when upgrading Oracle AIA. The upgrade process overwrites any customizations you make outside of customizable scopes.

After upgrading, you can merge your customizations with the newly upgraded composites as described in "Migrating Custom Data".

To make upgrade-safe customizations to a deployed composite:

1. Open JDeveloper.

   The Select Role dialog box appears.
2. Select **Default Role** and click **OK**.
3. From the **Application** menu, select **New**.
4. From the Application Template list, select **SOA Application**.
5. In the **Application Name** field, enter a name for the customized application.
6. Click **Next**.
7. In the **Project Name** field, enter the name of the BRM provider ABCS that you want to customize. For example, **QueryInvoiceListBRMCommsProvABCSImpl**.
8. On the **Project Technologies** tab, ensure that **SOA** appears in the Selected list.
9. Click **Next**.
10. From the **Composite Template** list, select **Empty Composite**.
11. Select the **Customizable** option.
12. Click **Finish**.

    The project appears in the Projects section.
13. Expand the **Application Resources** section, then expand the **Descriptors** folder, and then the **ADF META-INF** folder.
14. Double-click the **adf-config.xml** element.
15. Click the **MDS Configuration** tab.
16. Next to **Customization Configuration: Match Path = "/"**, click the plus sign.

    The Edit Customization Class dialog box appears.
17. In the **Match Class or Package Name** field, enter the beginning of the name of the customization class that you want to use.

    A list of matching customization classes appears.
18. Select the customization class that you want to use and click **OK**.
19. Select the newly-added class and click the **Configure Design Time Customization Layer Values** link.

    The **CustomizationLayerValues.xml** file opens.
20. Add layer values for this customization layer. For example:

    ```
    <cust-layer name="industry">  <cust-layer-value value="communications" display-name="Communications"/></cust-layer>
    ```
21. Click the **Save All** icon.
22. In the Projects section, select the top-level element. For example, **QueryInvoiceListBRMCommsProvABCSImpl**.
23. From the **File** menu, select **Import**.
24. Select **SOA Archive Into SOA Project** and click **OK**.
25. Click **Browse**.

26. Browse to the deploy directory under the directory where the BRM provider ABCS is copied from the Oracle AIA server. For example:

    C:*DeployedFromServer*\QueryInvoiceListBRMCommsProvABCSImpl\deploy

27. Select the JAR file associated with the provider ABCS and click **Open**.
28. Select the **Import for Customization** option and click **Finish**.
29. Click the **Save All** icon.
30. From the **Tools** menu, select **Preferences**.
31. In the navigation tree, select **Roles**.
32. Under Roles, select **Customization Developer**.

    JDeveloper reopens in the new role.

33. In the Customization Context section, select the customization context that matches the layer values for the customization class you added earlier.
34. In the Project section, expand the top-level element.
35. Double-click the BPEL file for your composite.

    The composite opens in Design mode.

36. Locate and expand the customizable scope where you want to make a customization.
37. Perform the customizations you require inside the customizable scope.

    For example, to invoke a custom opcode, do the following:

    a. Open the **AIAConfigurationProperties.xml** file, located in the *Comms_home*/source/soainfra/apps/config directory.

    b. Under the entry for the service that you have customized, add a new property for invoking the custom opcode and set it to **true**. For example:

    ```
    <Property name="Routing.BRMARServices.RouteToCustOp">true</Property>
    ```

    c. In JDeveloper, in the BPEL file for the composite that you are customizing, create a partner link to represent the custom opcode.

    d. In the switch that invokes the default BRM opcode or CAVS, add a new case with an expression linking it to the property for invoking the custom opcode.

    For example, if you stored the property from **AIAConfigurationProperties.xml** in a variable in the composite's BPEL file, the expression might be as follows:

    ```
    bpws:getVariableData('BRMARRouteToCustOp')
    ```

    e. Within the new case, add a transform activity to transform the incoming message to the input field list (flist) of the custom opcode.

    f. After the transform activity, add an invoke activity to invoke the partner link representing the custom opcode.

    g. After the invoke activity, add a transform activity to transform the output flist of the custom opcode into the expected EBM that would be generated by the default opcode.

    h. If the custom opcode output flist includes any attributes that are not present in the default opcode, extend the default EBM to include the attributes, and

customize the PostXformEBMtoABM extension point with a transform or an assign activity to map the attribute values.

38. Click the **Save All** icon.
39. Redeploy the custom composite using JDeveloper or a deployment plan.

For more information about customizing and developing Oracle AIA composites, see the following documents:

- For information about customizing BPEL processes, including customization classes, layer values, transform and invoke activities, scopes, switches, and partner links, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.
- For information about designing and constructing Oracle AIA artifacts, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Core Extension*.
- For information about deploying applications using JDeveloper, see *Oracle Fusion Middleware User's Guide for Oracle JDeveloper*.

Managing Oracle AIA Files in the MDS Repository

When you modify a file stored in the MDS repository, you must upload the new version to the MDS repository for the modifications to take effect.

Additionally, before you modify the **AIAConfigurationProperties.xml** file, you must download the latest version from the MDS repository.

Downloading Files from the MDS Repository

To download a file from the MDS repository:

1. Navigate to the following directory:

   *Install_home***/comms_home/bin**
2. Run the following command:

   ```
   source commsenv.sh
   ```
3. Navigate to the following directory:

   *domain_home***/soa/aia/MDSUtils**
4. Open the **DownloadMetaDataFileDP.xml** file.
5. In the DownloadMetadataFile element, specify the following:
   - **downloadLocation**: The directory on your system where you want to temporarily store the file.
   - **fileToDownload**: The the path in the MDS repository to the file you want to download.
   - **wlserver**: The name of the WebLogic server where Oracle AIA is deployed.

   For example:

   ```
   <DownloadMetadataFile downloadLocation="/private/myhome" fileToDownload ="/soa/
   configuration/default/AIAConfigurationProperties.xml" wlserver="fp" />
   ```
6. Save and close the file.
7. Run the following command:

```
ant -f MW_home/soa/aiafp/Install/AID/UpdateMetaData.xml -
DdeploymentPlan=domain_home/soa/aia/MDSUtils/DownloadMetadataFileDP.xml -
DPropertiesFile=domain_home/soa/aia/bin/AIAInstallProperties.xml
```

The file is downloaded to the local directory.

Uploading Changed Files to the MDS Repository

To upload changed files to the MDS repository:

1. Navigate to the following directory:

   *Install_home***/comms_home/bin**

2. Run the following command:

   ```
   source commsenv.sh
   ```

3. Navigate to the following directory:

   *domain_home***/soa/aia/MDSUtils**

4. Do one of the following:

   - To upload a file from a local directory, open the **UpdateMetaDataFileDP.xml** file and, in the UpdateMetaDataFile element, specify the following:
     - **wlserver**: The name of the WebLogic server where Oracle AIA is deployed.
     - **mdslocation**: The location in MDS where the file should be uploaded.
     - **fileset dir**: The directory on your system where the changed file is stored.
     - **include name**: The name of the file to include, relative to the value of **fileset dir**. To upload all files in a directory, finish the file path with **/****.
   - To upload a file from an MDS-related path, open the **UpdateMetaDataDP.xml** file and, in the UpdateMetaData element, specify the following:
     - **wlserver**: The name of the WebLogic server where Oracle AIA is deployed.
     - **fileset dir**: The MDS-related directory where the changed file is stored.
     - **include name**: The name of the file to include, relative to the value of **fileset dir**. To upload all files in a directory, finish the file path with **/****.
   - To upload an archive file, open the **UploadMarDP.xml** file and, in the UploadMAR element, specify the following:
     - **marlocation**: The directory where the archive file is stored.
     - **wlserver**: The name of the WebLogic server where Oracle AIA is deployed.

   For example, to include the **AIAConfigurationProperties.xml** file stored in a local directory:

   ```
   <UpdateMetadata wlserver="fp" mdslocation="soa/configuration/default/">
     <fileset dir="/private/myhome">
       <include name="AIAConfigurationProperties.xml" />
     </fileset>
   </UpdateMetadata>
   ```

   Or to upload all files in the **/private/myhome** directory:

```
<UpdateMetadata wlserver="fp">
  <fileset dir="/private/myhome">
    <include name="/**" />
  </fileset>
</UpdateMetadata>
```

5. Save and close the file.
6. Run the following command:

   ```
   ant -f MW_home/soa/aiafp/Install/AID/UpdateMetaData.xml -
   DdeploymentPlan=domain_home/soa/aia/MDSUtils/deployment_plan.xml -
   DPropertiesFile=domain_home/soa/aia/bin/AIAInstallProperties.xml
   ```

   where *deployment_plan* is **UpdateMetaDataFileDP**, **UpdateMetaDataDP**, or **UpdateMarDP**, depending on the location and type of file you are uploading.

   The changed files are uploaded to the MDS repository.

Splitting Cross-reference Tables

If you did not select the **Enable XREF split utility** option while configuring Oracle AIA, you can split your cross-reference tables after installation.

To maintain performance levels when looking up values in large cross-reference tables, Oracle recommends splitting cross-reference tables into multiple tables, with one table for each cross-reference object.

For details about splitting cross-reference tables, see the "AIA XRef Migration for Oracle Communications Pre-built Integrations (Doc ID 2730428.1)" knowledge article on My Oracle Support.

7

Verifying Oracle AIA Installation

This chapter describes how to verify that the Oracle Application Integration Architecture (Oracle AIA) pre-built integrations installation and configuration was successful.

Verifying File Creation

The Configuration Wizard copies DVM files and directories from Oracle Data Integrator to a folder in *Comms_home* for the Agent Assisted Billing Care pre-built integration. Verify that these files were created.

To verify file creation:

1. Navigate to directory that you specified for exported DVMs on the Oracle Data Integrator Access Information Details Screen of the Configuration Wizard.

   The default path is:

   *Comms_home***/source/soainfra/apps/AIAMetaData/dvm**

2. Confirm that the following files exist:
   - CURRENCY_CODE.dvm
   - COLLECTION_STATUS.dvm
   - COLLECTION_ACTIONNAME.dvm
   - COLLECTION_PRIORITY.dvm
   - COLLECTION_SUBSTATUS.dvm

Verifying Logs

The installation and deployment logs for all pre-built integrations are located in the *domain_home***/soa/aia/logs** directory.

The deployment logs are named in the following format:

`PBIDP_Deployments_timestamp.log`

where:

- *PBI* is the abbreviation representing the pre-built integration. For example, for Agent Assisted Billing Care, the abbreviation is **AABC**.
- *timestamp* is the time that the pre-built integration was deployed in YYYY-MM-DD_HH-MI-SS format.

To verify installation and deployment logs:

1. Navigate to the *domain_home***/soa/aia/logs** directory.
2. Open the log file for your pre-built integration and verify that there are no errors or warnings.

3. For pre-built integrations that use Oracle Data Integrator, such as Agent Assisted Billing Care, do the following:
   a. In the log file, search for the statements starting with the following text:

      ```
      [exec] OracleDI: Starting Command: OdiImportObject -FILE_NAME=
      ```

   b. Confirm that none of these statements are followed by error messages.

      "Troubleshooting Configuration and Deployment" describes some common error messages and how to resolve them.

Verifying Composite Deployment

To verify composite deployment:

1. Log in to Oracle Enterprise Manager Fusion Middleware Control.
2. In the Target Navigation pane, expand the **SOA** folder, then **soa-infra**, then **default**.
3. Verify that the following composites appear:
   - Table 7-1 lists the composites deployed for Order to Cash pre-built integration options.

Table 7-1 Composites Deployed for Order to Cash Options

Option	Deployed Composites
Order to Cash Base	AIACOMOrderFalloutNotificationJMSConsumer AIAOrderFalloutJMSBridgeService Comms2CoreCustomerPartyBridge CommsProcessBillingAccountListEBF CommsProcessFulfillmentOrderBillingAccountListEBF CommunicationsClassificationEBSV1 CommunicationsCustomerPartyEBSV2 CommunicationsCustomerPartyEBSV2Resequencer CommunicationsCustomerPartyResponseEBSV2 CommunicationsItemCompositionEBSV1 CommunicationsPriceListEBSV2 CommunicationsSpecificationValueSetEBSV1 Core2CommsCustomerPartyBridge CreateTroubleTicketAIACommsReqImpl CreateTroubleTicketCommsJMSProducer CustomerPartyEBSV2 ProcessFulfillmentOrderBillingAccountListGenericCommsJMSConsumer QueryCustomerPartyListCommsJMSProducer

Table 7-1 (Cont.) Composites Deployed for Order to Cash Options

Option	Deployed Composites
Order to Cash for Siebel CRM	CreateTroubleTicketSiebelCommsProvABCSImpl ProcessAccountHierarchyListSiebelCommsProvABCSImpl ProcessFulfillmentOrderBillingAccountListSiebelCommsJMSConsumer ProcessInstalledProductSpecialRatingSetListSiebelCommsJMSConsumer ProcessInstalledProductSpecialRatingSetListSiebelCommsReqABCSImpl ProcessSalesOrderFulfillmentSiebelCommsJMSConsumer ProcessSalesOrderFulfillmentSiebelCommsReqABCSImpl ProductOptimizedSyncPriceListListSiebelCommsJMSConsumer ProductOptimizedSyncPriceListListSiebelCommsProvABCSImpl QueryClassificationListSiebelCommsProvABCSImpl QueryCustomerPartyListSiebelProvABCSImplV2 QueryReceivedPaymentListSiebelCommsProvABCSImpl QuerySpecificationListSiebelCommsProvABCSImpl QuerySpecificationValueSetListSiebelCommsProvABCSImpl SyncAccountSiebelAggregatorAdapter SyncAccountSiebelReqABCSImpl SyncAcctSiebelAggrEventConsumer SyncAddressSiebelAggregatorAdapter SyncBPSiebelAggregatorAdapter SyncContactSiebelAggregatorAdapter SyncCustomerSiebelEventAggregator SyncItemCompositionListSiebelCommsJMSConsumer SyncItemCompositionListSiebelCommsProvABCSImpl TransformAppContextSiebelService UpdateSalesOrderSiebelCommsJMSConsumer UpdateSalesOrderSiebelCommsProvABCSImpl UpdateTroubleTicketSiebelCommsProvABCSImpl

Table 7-1 (Cont.) Composites Deployed for Order to Cash Options

Option	Deployed Composites
Order to Cash for BRM	CreateReceivedPaymentListBRMCommsProvABCSImpl ProcessCollectionSharingBRMCommsProvABCSImpl - AABC optional ProcessFulfillmentOrderBillingBRMCommsAddSubProcess ProcessFulfillmentOrderBillingBRMCommsDeleteSubProcess ProcessFulfillmentOrderBillingBRMCommsMoveAddSubProcess ProcessFulfillmentOrderBillingBRMCommsProvABCSImpl ProcessFulfillmentOrderBillingBRMCommsProvABCSImplMaster ProcessFulfillmentOrderBillingBRMCommsProvABCSImplProxy ProcessFulfillmentOrderBillingBRMCommsSharingGroupSubProcess ProcessFulfillmentOrderBillingBRMCommsSuspendResumeSubProcess ProcessFulfillmentOrderBillingBRMCommsUpdateSubProcess ProcessInstalledProductSpecialRatingSetListBRMCommsProvABCSImpl SyncCustomerPartyListBRM_01CommsJMSConsumer SyncCustomerPartyListBRMCommsJMSProducer SyncCustomerPartyListBRMCommsProvABCSImpl SyncDiscountBRMCommsReqABCSImpl SyncDiscountInfoChangeBRMAQ - AABC optional SyncMultiSchemaChangeBRMRequesterImpl - AABC optional SyncMultiSchemaChangeInfoBRMAQ - AABC optional SyncProductBRMCommsReqABCSImpl SyncProductInfoChangeBRMAQ SyncSponsorshipBRMCommsReqABCSImpl - AABC optional SyncSponsorshipInfoChangeBRMAQ - AABC optional

Table 7-1 (Cont.) Composites Deployed for Order to Cash Options

Option	Deployed Composites
Order to Cash for OSM	CreateFaultNotificationLFCommsJMSConsumer - optional CreateOrderFalloutNotificationOSMCFSCommsJMSConsumer CreateOrderFalloutNotificationOSMCFSCommsJMSProducer CreateOrderFalloutNotificationOSMCFSCommsProvImpl CreateTroubleTicketOSMCFSCommsJMSConsumer CreateTroubleTicketRespOSMCFSCommsJMSProducer ProcessFOBillingAccountListRespOSMCFSCommsJMSProducer ProcessFulfillmentOrderBillingAccountListOSMCFSCommsJMSConsumer ProcessFulfillmentOrderBillingOSMCFSCommsJMSConsumer ProcessFulfillmentOrderBillingResponseOSMCFSCommsJMSProducer ProcessFulfillmentOrderUpdateOSMCFSCommsJMSProducer ProcessFulfillmentOrderUpdateOSMPROVCommsJMSConsumer ProcessProvisioningOrderOSMCFSCommsJMSConsumer ProcessProvisioningOrderOSMPROVCommsJMSProducer ProcessSalesOrderFulfillmentOSMCFSCommsJMSProducer QueryProductClassAndAttributesSCECommsReqABCSImplV2 - optional UpdateSalesOrderOSMCFSCommsJMSConsumer UpdateTroubleTicketOSMCFSCommsJMSConsumer

- The following composites are deployed for the Agent Assisted Billing Care pre-built integration:
  - AccountBalanceSiebelCommsReqABCS
  - AdjustmentSiebelCommsReqABCS
  - CommunicationsCustomerPartyEBSV2
  - CommunicationsCustomerPartyResponseEBSV2
  - Core2CommsCustomerPartyBridge
  - CreateAccountBalanceAdjustmentBRMCommsProvABCSImpl
  - CreateAccountBalanceAdjustmentListResponseBRMCommsJMSConsumer
  - CreateAccountBalanceAdjustmentListResponseBRMCommsJMSProducer
  - CreateAccountBalanceAdjustmentSiebelCommsJMSConsumer
  - CreateAccountBalanceAdjustmentSiebelCommsReqABCSImpl
  - CreateInvoicePaymentSiebelCommsReqABCSImpl
  - CreatePaymentSiebelCommsReqABCSImpl
  - CreateReceivedPaymentBRMCommsProvABCSImpl
  - CustomerPartyEBSV2
  - InvoiceSiebelCommsReqABCS
  - PaymentSiebelCommsReqABCS
  - QueryAccountBalanceAdjustmentBRMCommsProvABCSImpl

- QueryAccountBalanceAdjustmentSiebelCommsReqABCSImpl
- QueryBalanceDetailsSiebelCommsReqABCSImpl
- QueryBalanceGroupListSiebelCommsReqABCSImpl
- QueryBalanceGroupServicesSiebelCommsReqABCSImpl
- QueryBalanceSummarySiebelCommsReqABCSImpl
- QueryCustomerPartyListBRMCommsProvABCSImpl
- QueryInstalledProductListBRMCommsProvABCSImpl
- QueryInvoiceBalanceDetailsSiebelCommsReqABCSImpl
- QueryInvoiceEventDetailsSiebelCommsReqABCSImpl
- QueryInvoiceListBRMCommsProvABCSImpl
- QueryInvoiceListSiebelCommsReqABCSImpl
- QueryInvoicePaymentSiebelCommsReqABCSImpl
- QueryInvoiceSiebelCommsReqABCSImpl
- QueryPaymentSiebelCommsReqABCSImpl
- QueryReceivedPaymentListBRMCommsProvABCSImpl
- QueryServiceUsageBRMCommsProvABCSImpl
- QueryUnbilledBalanceDetailsSiebelCommsReqABCSImpl
- QueryUnbilledEventDetailsSiebelCommsReqABCSImpl
- QueryUnbilledUsageSiebelCommsReqABCSImpl
- SearchInvoiceEventDetailsSiebelCommsReqABCSImpl
- SearchPaymentSiebelCommsReqABCSImpl
- SearchUnbilledEventDetailsSiebelCommsReqABCSImpl
- SyncAccountSiebelAggregatorAdapter
- SyncAccountSiebelReqABCSImpl
- SyncAcctSiebelAggrEventConsumer
- SyncAddressSiebelAggregatorAdapter
- SyncBPSiebelAggregatorAdapter
- SyncContactSiebelAggregatorAdapter
- SyncCustomerPartyListBRM_01CommsJMSConsumer
- SyncCustomerPartyListBRMCommsJMSProducer
- SyncCustomerPartyListBRMCommsProvABCSImpl
- SyncCustomerSiebelEventAggregator
- SyncCollectionsInfoChangeBRMAQ
- SyncCollectionHeaderInfoBRMCommsReqImpl
- TransformAppContextSiebelService
- UnbilledUsageSiebelCommsReqABCS
- UpdateAccountBalanceAdjustmentRespSiebelCommsProvABCSImpl

- UpdateCreditAlertBRMCommsProvABCSImpl
- UpdateCreditAlertSiebelCommsReqABCSImpl

Verifying Session Pool Manager Connection

For any pre-built integration that uses Siebel CRM, do the following:

1. Log in to Oracle Enterprise Manager Fusion Middleware Control.
2. In the Target Navigation pane, expand the **SOA** folder, then **soa-infra**, then **default** and select **AIASessionPoolManager**.
3. Click **Test**.
4. From the **Operation** menu, select **Start**.
5. On the **Request** tab, in the Security section, select **OWSM Security Policies** and then **Username Token**.
6. In the **Security** section, under Configuration Properties, in **Username** and **Password** fields, enter the user name and password for the WebLogic Server administrator.
7. In the Input Arguments section, expand ***payload**.
8. In the Value column of the HostId row, enter **SEBL_01**.
9. Click **Test Web Service**.

   A successful initialization response message appears.

For more information about Session Pool Manager, including troubleshooting steps if the test is unsuccessful, see *Oracle Application Integration Architecture Utilities Guide*.

Verifying Security Policy Attachment

All SOA composites are protected by global security policies. Some composites included in the pre-built integrations have locally attached security policies as well. You can verify that the locally-attached security policies were correctly attached.

To verify locally attached security policies:

1. Log in to Oracle Enterprise Manager Fusion Middleware Control.
2. Expand **WebLogic Domain**.
3. Right-click the node for your SOA domain.
4. Select **Web Services** then select **WSM Policies**.
5. In the WSM Policies table, find the row for the policy you are verifying.
6. Click the number in the **Attachment** column.

   The Usage Analysis screen appears.
7. From the **Subject Type** list, select the subject type for the policy you are verifying.
8. Confirm that the composites listed in Table 7-2 appear.

Table 7-2 Security Policies and Attached Composites

Policy	Subject Type	Composite
oracle/aia_wss_saml_or_username_or_http_token_service_policy_OPT_ON	SOA SOAP Service	Any pre-built integration: • AIAAsyncErrorHandlingBPELProcess with service of client
oracle/aia_wss10_saml_token_client_policy_OPT_ON	SOA SOAP Reference	For all pre-built integrations: • AIAReadJMSNotificationProcess with reference of AIAErrorTaskAdministrationProcess
oracle/no_authentication_service_policy	SOA SOAP Service	Order to Cash: • SyncCustomerSiebelEventAggregator Agent Assisted Billing Care: • AccountBalanceSiebelCommsReqABCS • UpdateCreditAlertSiebelCommsReqABCSImpl • SyncCustomerSiebelEventAggregator • UnbilledUsageSiebelCommsReqABCS • PaymentSiebelCommsReqABCS • AdjustmentSiebelCommsReqABCS • InvoiceSiebelCommsReqABCS
oracle/no_authentication_client_policy	SOA SOAP Reference	Order to Cash (all): • SyncAccountSiebelReqABCSImpl • QuerySpecificationListSiebelCommsProvABCSImpl • ProductOptimizedSyncPriceListListSiebelCommsProvABCSImpl (once with SWIPriceListItem port and once with SWIProductImport port) • QuerySpecificationValueSetListSiebelCommsProvABCSImpl • UpdateTroubleTicketSiebelCommsProvABCSImpl • SyncItemCompositionListSiebelCommsProvABCSImpl • UpdateSalesOrderSiebelCommsProvABCSImpl • CreateTroubleTicketSiebelCommsProvABCSImpl • QueryCustomerPartyListSiebelProvABCSImplV2 • QueryClassificationListSiebelCommsProvABCSImpl Order to Cash (including BRM): • ProcessAccountHierarchyListSiebelCommsProvABCSImpl • ProcessFulfillmentOrderBillingBRMCommsSharingGroupSubProcess Agent Assisted Billing Care: • SyncAccountSiebelReqABCSImpl • UpdateAccountBalanceAdjustmentRespSiebelCommsProvABCSImpl
oracle/aia_wss_saml_or_username_token_service_policy_OPT_ON	SOA SOAP Service	All pre-built integrations: • AIAB2BInterface with service of ProcessB2BDocument_ep • AIAErrorTaskAdministrationProcess with service of aiaerrortaskadministrationprocess_ep • ReloadProcess with service of reloadconfigurationprocess_client_ep

For more information about Oracle AIA security in the SOA suite, see the discussion of working with security in *Oracle Fusion Middleware Developer's Guide for Oracle SOA Core Extension*.

8
Upgrading to Oracle AIA 12.3

This chapter describes how to upgrade Oracle Application Integration Architecture (Oracle AIA).

About Upgrading to Oracle AIA 12.3

This chapter describes the upgrade procedure for Oracle AIA pre-built integrations and Oracle AIA Foundation Pack to Oracle AIA 12.3. It applies to upgrades from Oracle AIA versions 11.6+ and 12.2 deployed on Oracle Fusion Middleware 11.1.1.7+ and 12.2.1.2+, referred to as the **source** versions.

Oracle AIA 12.3 includes significant structural changes, including compatibility with Oracle Service Oriented Architecture (SOA) 12.2.1.4. Because of these changes, you cannot perform a traditional upgrade, and instead must perform a new installation of SOA 12.2.1.4 and migrate any relevant data. SOA 12.2.1.4 does not support in-place migration if the domains include SOA Core Extension. Hence, perform a side-by-side migration. For more information about SOA domain upgrade restrictions, see *Oracle Fusion Middleware Upgrading SOA Suite and Business Process Management* for release 12c (12.2.1.4.0).

Pre-Upgrade Tasks

Before upgrading to this release of Oracle AIA, perform the following pre-upgrade tasks:

1. Back up your source version of Oracle AIA, including the Oracle AIA home directory and any customized Oracle AIA artifacts in the enterprise object library. This includes customizations to:
   - Enterprise Business Objects (EBOs), including custom XSD files in the following directories:
     - *Install_home*/**comms_home/source/soainfra/apps/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/Custom/EBO/**
     - *Install_home*/**comms_home/source/soainfra/apps/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Industry/***Industry_Name***/Custom/EBO**
   - Extensible style sheet language transformations (XSLTs)
   - Enterprise Business Services (EBS) Web Service Definition Language (WSDL)
   - Any EBS with custom routing rules
   - The **AIAConfigurationProperties.xml** file.
2. Install or upgrade to compatible versions of the foundational software, as described in "Software Requirements".

> **Note:**
>
> You must install SOA Suite 12.2.1.4 and create a new domain. Because Oracle AIA 12.3 requires a custom domain extension, you cannot just upgrade an existing SOA domain.
>
> For information about installing SOA Suite, see *Oracle Fusion Middleware Upgrading SOA Suite and Business Process Management*.
>
> For information about version compatibility, search for Oracle AIA on the My Oracle Support **Certifications** tab.

Upgrading to Oracle AIA 12.3

To upgrade to Oracle AIA 12.3, install and configure Oracle AIA 12.3 as described in this guide. Because of the structural changes between source versions and Oracle AIA 12.3, you must perform a new installation of Oracle AIA.

See "Oracle AIA Installation Overview" for more information about the installation process.

Do not deploy the pre-built integrations until after you have performed the other post-upgrade tasks described in "Post-Upgrade Tasks".

Post-Upgrade Tasks

After upgrading to Oracle AIA 12.3, perform the following tasks:

1. Set JVM parameters for Siebel CRM. See "Setting JVM Parameters for Siebel CRM" for more information.
2. Manually migrate any customizations or extensions that you made in source files and composites to 12.3 versions. See "Migrating Custom Data" for more information.
3. Migrate Oracle AIA database tables, including error tables and cross-reference tables to the 12.3 database schema. See "Migrating Database Tables" for more information.
4. Deploy the 12.3 pre-built integrations as described in "Deploying Pre-Built Integrations".
5. Perform post-installation tasks as described in "Oracle AIA Post-Installation Tasks ".

Setting JVM Parameters for Siebel CRM

After upgrading to Oracle AIA 12.3, the Siebel CRM administrator must perform the following tasks for Siebel CRM:

1. Set up the Oracle WebLogic Server thin client for Siebel CRM:
   a. On the SOA 12.2.1.4 host, navigate to the following directory:

      MW_home/**wlserver/server/lib**

b. Copy the **wlthint3client.jar** file to the JMS directory on the Siebel CRM host. This is the directory containing the JNDI properties, **siebel.jar**, and **siebelUI_enu.jar** files.

c. If the **wlfullclient.jar** file also appears in the JMS directory on the Siebel CRM host, back the file up to another location and remove it from the JMS directory.

2. In Siebel CRM, from the site map, select **Administration - Server Configuration** and then select **Profile Configuration**.
3. In the Enterprise Profiles list, select the row with **JAVA** in the **Alias** column.
4. In the Profile Parameters list, select the **JVM DLL Name** row.
5. In the value column, update the value to the path to the JVM library file for Java Development Kit (JDK) version 1.8.

   For example:

   Oracle_home`/Java/jdk1.8.0_102/jre/lib/i386/client/libjvm.so`
6. Select the **JVM Classpath** row.
7. In the value column, add the path to the newly-copied **wlthint3client.jar** file.

   On UNIX, separate files in this field with a colon (**:**). On Windows, separate files in this field with a semicolon (**;**).

   For example, on UNIX:

   Oracle_home`/jms/Siebel.jar:`*Oracle_home*`/jms/wlthint3client.jar`
8. Restart the Siebel CRM services.

Migrating Custom Data

After installing Oracle AIA 12.3, you must manually migrate any customizations you made to the source data. There are no automated scripts or tools to assist in this task.

To migrate custom data:

1. For any of the Oracle AIA artifacts listed in Table 8-1, merge any customizations to ready-to-use artifacts and copy custom-created artifacts into the 12.3 directory. The artifacts listed in the **12.3 Directory and Modified Artifacts** column have been updated for 12.3. When merging customizations to these artifacts, be careful not to overwrite the updated functionality.

Table 8-1 Customized Oracle AIA Artifacts to Migrate

Artifact	12.3 Directory and Modified Artifacts
Enterprise Business Objects Enterprise Business Services WSDL schemas	Directory: The appropriate subdirectory under *Comms_home*/**source/soainfra/apps/AIAMetaData/AIAComponents** No modified artifacts.

Table 8-1 (Cont.) Customized Oracle AIA Artifacts to Migrate

Artifact	12.3 Directory and Modified Artifacts
Cross-reference files	Directory: *Comms_home*/**source/soainfra/apps/AIAMetaData/xref** Modified artifacts: • CUSTOMERPARTY_PARTYLOCATIONID • CUSTOMERPARTY_PAYPROFILEID • CUSTOMERPARTY_LOCATIONREFID • CUSTOMERPARTY_PARTYCONTACTID • CUSTOMERPARTY_BILLPROFILEID • SALESORDER_LINEID • CUSTOMERPARTY_ACCOUNTID • ITEM_ITEMID • CUSTOMERPARTY_CONTACTID • CUSTOMERPARTY_CONTACT_PHONECOMMID • CUSTOMERPARTY_ADDRESSID • CUSTOMERPARTY_HIERARCHYBILLINFO • CUSTOMERPARTY_PARTYID • INSTALLEDPRODUCT_ID • CUSTOMERPARTY_DEFAULTBALANCEGROUPID • SALESORDER_ID • CUSTOMERPARTY_CONTACT_EMAILCOMMID
Domain value maps	Directory: *Comms_home*/**source/soainfra/apps/AIAMetaData/dvm** Modified artifacts: • SALESORDER_STATUS • ADDRESS_COUNTRYID • PRICE_OVERRIDETYPECODE • CUSTOMERPARTY_ACCOUNTTYPECODE • APPLIES_TO • PRICECHARGETYPE • SALESORDER_LINESTATUS • CUSTOMERPARTY_PAYPROFILE_PAYMETHODCODE • ITEM_BILLINGTYPECODE • CURRENCY_CODE • STATE
XSLT files	Directory: *Comms_home*/**source/soainfra/apps/services/…/***service_name*/**SOA/Transformations** No modified artifacts.

2. Upload any new or changed files to the Oracle Metadata Services repository as described in "Managing Oracle AIA Files in the MDS Repository".
3. For any custom-created source services:
   a. In Oracle JDeveloper version 12.2.1.4, open the **.jpr** file for the service.

      JDeveloper updates the composite.
   b. Save the project and files under the appropriate directories. For example, save **.wsdl** files in the WSDL directory.

c. Deploy the custom services from the JDeveloper context menu. Use the **composite.xml** file in the service's SOA directory as the deployment descriptor file.

   For information about deploying applications using JDeveloper, see *Oracle Fusion Middleware Developing Applications with Oracle JDeveloper*.

4. For any ready-to-use source services that you have customized within customizable scopes:
   a. Copy the required composite from the AIA server *COMMS_Home*/comms_home/source/soainfra/apps or *COMMS_Home*/comms_home/pips to your local JDeveloper.
   b. Open the project in JDeveloper 12.2.1.4.
   c. Customize the customizable scopes.
   d. Copy the composite and files back to the AIA server location from where they were copied.
   e. Deploy the customized composite from the AIA server using PIP depolyment scripts.
5. For the Agent Assisted Billing Care pre-built integration, manually migrate any customizations made in the source Oracle Data Integrator integration projects to 12.3. See *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator* for information about customizing Oracle Data Integrator integration projects.

Migrating Database Tables

After migrating customizations, you must migrate the data in the following Oracle AIA database tables:

- Migrate the data in the source *domainName*_AIA schema to the 12.3 SOAINFRA schema for the following tables:
  - AIA_ERROR_MONITOR
  - AIA_ERROR_FLEX_FIELD

> **Note:**
>
> Because AIA_ERROR_FLEX_FIELD depends on AIA_ERROR_MONITOR, you must migrate the data in AIA_ERROR_MONITOR first.

- Migrate your Oracle AIA cross-reference data from the source *AIAInstanceName*_XREF schema to the 12.3 *domainName*_COMMS_XREF schema created by the Oracle AIA Configuration Wizard (where *AIAInstanceName* is the name of the source Oracle AIA instance and *domainName* is the name of the 12.2.1.4 SOA domain). You must migrate one cross-reference table at a time.

You can use Oracle SQL Developer to migrate the data as follows:

1. On the source environment in SQL Developer, in the Connections navigator, expand your source database connection, then expand **Tables**.
2. Right-click the table you want to export and select **Export**.
3. Select the **Export Data** option, specify the SQL format, and complete the export.
4. Move the exported SQL file from the source environment to the AIA 12.3 environment and open it in a text editor.

5. Remove the schema name and keep the file open.
6. On the 12.3 environment in SQL Developer, open the SQL Worksheet for your 12.3 database connection.
7. From the exported SQL file, copy all SQL statements and paste them into the SQL Worksheet.
8. Click the **Run Script** icon.

   The data is imported.

> **Note:**
>
> If you see an error about large data size in the stack trace column, edit the SQL file to make one insert statement in a single line and try the import again.

Consult your database administrator for help migrating database data and see *Oracle SQL Developer User's Guide* for more details about using SQL Developer.

9
Uninstalling Oracle AIA

This chapter discusses how to uninstall the Oracle Application Integration Architecture (Oracle AIA) pre-built integrations.

About Uninstalling Pre-Built Integrations

Uninstalling Oracle AIA involves the following tasks:

1. Back up the Oracle AIA home directory and any customized Oracle AIA artifacts in the enterprise object library. This includes customizations to:
   - Enterprise Business Objects (EBOs), including custom XSD files in the following directories:
     - *Install_home***/comms_home/source/soainfra/apps/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/Custom/EBO/**
     - *Install_home***/comms_home/source/soainfra/apps/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Industry/***Industry_Name***/Custom/EBO**
   - Extensible style sheet language transformations (XSLTs)
   - Enterprise Business Services (EBS) Web Service Definition Language (WSDL)
   - Any EBS with custom routing rules
   - The **AIAConfigurationProperties.xml** file.
2. Undeploying pre-built integrations using scripted undeployment plans. See "Undeploying Pre-Built Integrations".
3. Uninstalling Oracle AIA.

   Uninstalling Oracle AIA removes everything in the Oracle AIA home directory. Although you can undeploy an individual pre-built integration from the server, you cannot uninstall an individual pre-built integration option. You uninstall all pre-built integration options together.
4. Cleaning the environment. See "Cleaning the Environment".
5. Verifying the uninstallation. See "Verifying Uninstallation".

Undeploying Pre-Built Integrations

To undeploy a pre-built integration from the server:

1. Navigate to the following directory:

   *Install_home***/comms_home/bin**
2. Run one of the following commands:
   - On UNIX:

     ```
     source commsenv.sh
     ```

- On Windows:

  ```
  source commsenv.bat
  ```

  This command sources the **aiaenv** script and sets the COMMS_HOME environment variable to *Install_home***/comms_home**.

3. Navigate to the following directory:

   *Install_home***/comms_home/pips/Communications**

4. Run one of the commands listed in Table 9-1, depending on your platform and the pre-built integration you are undeploying.

Table 9-1 Pre-Built Integration Undeployment Commands

Pre-Built Integration	Platform	Command

Order to Cash	UNIX	Order to Cash for Siebel CRM:
		`sh $COMMS_HOME/pips/Communications/Deployments/O2CSiebel/undeployO2CSiebel.sh`
		Order to Cash for BRM:
		`sh $COMMS_HOME/pips/Communications/O2CBRM/Deployments/undeployO2CBRM.sh`
		Order to Cash for OSM:
		`sh $COMMS_HOME/pips/Communications/O2COSM/Deployments/undeployO2COSM.sh`
		Order to Cash base:
		`sh $COMMS_HOME/pips/Communications/O2CBase/Deployments/undeployO2CBase.sh`

Order to Cash	Windows	Order to Cash for Siebel CRM:
		`%COMMS_HOME%\pips\Communications\O2CSiebel\Deployments\undeployO2CSiebel.bat`
		Order to Cash for BRM:
		`%COMMS_HOME%\pips\Communications\O2CBRM\Deployments\undeployO2CBRM.bat`
		Order to Cash for OSM:
		`%COMMS_HOME%\pips\Communications\O2COSM\Deployments\undeployO2COSM.bat`
		Order to Cash base:
		`%COMMS_HOME%\pips\Communications\O2CBase\Deployments\undeployO2CBase.bat`

Agent Assisted Billing Care	UNIX	`sh $COMMS_HOME/pips/Communications/AABC/DeploymentPlans/undeployAABC.sh`

Table 9-1 (Cont.) Pre-Built Integration Undeployment Commands

Pre-Built Integration	Platform	Command
Agent Assisted Billing Care	Windows	`%COMMS_HOME% \pips\Communications\AABC\DeploymentPlans\undeployAABC.bat`

A message showing uninstallation progress appears. A success message is displayed when uninstallation is complete.

5. Restart the server.
6. Uninstall Oracle AIA following the instructions in the "Uninstalling Oracle AIA".

Uninstalling Oracle AIA

To uninstall Oracle AIA:

1. Navigate to the following directory:

   *Install_home***/oui/bin**

2. On UNIX, run the following command:

   ```
   sh deinstall.sh
   ```

   The Welcome screen of the Oracle AIA Uninstaller appears.

3. Review list of components to be uninstalled and click **Next**.

   The Uninstallation Summary screen appears.

4. Review the home directory that will be cleared and the log file location and click **Uninstall**.

   The Uninstallation Progress screen appears.

5. Wait for the progress bar to reach 100% and click **Next**.

   The Uninstallation Complete screen appears.

6. Review the information and click **Finish**.
7. Clean the environment as described in "Cleaning the Environment".

> **Note:**
>
> The Uninstaller does not list which pre-built integration options are uninstalled on the Uninstallation Summary or Uninstallation Complete screens.
>
> All options are uninstalled.

Cleaning the Environment

Cleaning the environment involves the following tasks:

1. Removing Oracle AIA Artifacts from the WebLogic Server

2. Deleting Oracle AIA Files
3. Deleting Oracle AIA Metadata
4. Deleting Oracle AIA Security Policies

> **Note:**
>
> If you plan to reinstall Oracle AIA, you must use a newly-created domain. Do not reuse a domain from which Oracle AIA was uninstalled.

Removing Oracle AIA Artifacts from the WebLogic Server

To remove Oracle AIA artifacts from the WebLogic server:

1. Log in to the Oracle WebLogic Server Administration Console.
2. From the Domain Structure panel, select **Deployments**.

   The Summary of Deployments page appears.
3. If any Oracle AIA deployments appear, such as AIAHomeApp, select the check box beside the deployment and click **Delete**.
4. From the Domain Structure panel, expand **Services** and select **Data Sources**.
5. If any Oracle AIA data sources appear, such as AIADataSourceDS, select the check box beside the data source and click **Delete**.
6. From the Domain Structure panel, expand **Services**, expand **Messaging**, and select **JMS Modules**.
7. If any Oracle AIA JMS modules appear, such as AIAJMSModule, select the check box beside the module and click **Delete**.
8. From the Domain Structure panel, select **Security Realms**.
9. From the list of security realms, select **myrealm**.
10. Select the **Users and Groups** tab.
11. Select the check box beside any Oracle AIA users, such as AIAIntegrationAdmin, and click **Delete**.
12. Select the **Groups** tab.
13. Select the check box beside any Oracle AIA groups and click **Delete**. The default Oracle AIA groups to delete include the following:
    - AIAApplicationUser
    - AIAMappingCustomizer
    - AIAResubmissionAdmin
14. Shut down the managed server on which Oracle AIA is deployed.
15. Shut down the administration server for the cluster.

    After shutting down the administration server, the Administration Console is no longer available.
16. Start the administration server for the cluster.

See *Oracle Fusion Middleware Administering Server Startup and Shutdown for Oracle WebLogic Server* for information about how to start the administration server using a script, a Java command, or WebLogic Scripting Tool.

17. Log in to the WebLogic Server Administration Console.
18. From the Change Center panel, select **View changes and restarts**.
19. Select any changes in the table and click **Activate Changes**.
20. Restart the managed server.

Deleting Oracle AIA Files

To delete any remaining Oracle AIA files:

1. On the system where you uninstalled Oracle AIA, navigate to the *domain_home* directory.
2. Delete the **edit.lok** file.
3. Navigate to the *domain_home***/pending** directory.
4. Delete all files in this directory.
5. Restart the managed server from which you undeployed the prebuilt integrations.
6. Navigate to the Oracle AIA home directory and delete any remaining files.

Deleting Oracle AIA Metadata

To delete the Oracle AIA metadata:

1. Navigate to the *SOA_home***/common/bin** directory.
2. From the command line, run one of the following commands:
   - On Linux:

     ```
     wlst.sh
     ```

   - On Windows:

     ```
     wlst.cmd
     ```

   The WebLogic Scripting Tool (WLST) starts.
3. Run the following command:

   ```
   connect('username', 'password', 'server:port')
   ```

   where:

   - *username* and *password* are the user name and password for the WebLogic Server administration user
   - *server* and *port* are the address and port of the managed server to which Oracle AIA was deployed

   WSLT connects to the managed server.
4. Run the following command:

   ```
   domainConfig()
   ```

   WLST navigates to the domainConfig directory of the domain.

5. Run the following command:

```
deleteMetadata(application='soa-infra', server='server', docs='/apps/
AIAMetaData/**')
```

   where *server* is the SOA server or managed server to which Oracle AIA was deployed.

   WSLT deletes the Oracle AIA metadata from the server.

For more information about WLST commands, see *Oracle Fusion Middleware WebLogic Scripting Tool Command Reference*.

Deleting Oracle AIA Security Policies

To delete Oracle AIA security policies:

1. Log in to Oracle Enterprise Manager Fusion Middleware Control.
2. Expand **WebLogic Domain**.
3. Right-click the node for your SOA domain.
4. Select **Web Services** then select **WSM Policies**.
5. Select the following policies and click **Delete**.
   - oracle/aia_wss_saml_or_username_token_service_policy_OPT_ON
   - oracle/aia_wss_saml_or_username_or_http_token_serivce_policy_OPT_ON
   - oracle/aia_wss10_saml_token_client_policy_OPT_ON

Verifying Uninstallation

To verify uninstallation:

1. Log in to Oracle Enterprise Manager Fusion Middleware Control.
2. In the Target Navigation pane, expand the **SOA** folder, then **soa-infra**, then **default**.
3. Verify that no Oracle AIA composites appear.