Oracle® Application Integration Architecture

Oracle Design to Release Integration Pack for Agile PLM Product Lifecycle Management and JD Edwards EnterpriseOne Implementation Guide

Release 11.1

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The Oracle Design to Release Integration Pack for Agile PLM Product Lifecycle Management and JD Edwards EnterpriseOne implementation guide is a valuable resource for administrators and developers involved in the implementation, administration and deployment of Oracle's next-generation integrated enterprise PLM processes provided by Oracle Application Integration Architecture (AIA) Pre-Built Integrations Release 11.2.

The first part of this guide focuses on understanding the pre-built integration between Agile PLM and JD Edwards EnterpriseOne. It also lists the various assumptions and constrains, process flows, interfaces and integration services used by Agile PLM Pre-Built integrations.

The second part of this guide discusses the prerequisites, post installation configuration steps, cross-references and National language support (NLS) required for integrating Agile PLM with JD Edwards EnterpriseOne.

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Oracle Application Integration Architecture Oracle Design to Release Integration Pack for Agile PLM Product Lifecycle Management and JD Edwards EnterpriseOne Implementation Guide, Release 11.1

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Preface

Welcome to Oracle Design to Release Integration Pack for Agile PLM Product Lifecycle Management and JD Edwards EnterpriseOne 11.1 - Implementation guide.

What's New in this Guide

- The Oracle Application Integration Architecture Installation and Upgrade Guide for Pre-Built Integrations is restructured into a general installation chapter with an individual configuration and deployment chapter for each pre-built integration.
- The term *process integration pack* is replaced with the term *pre-built integrations*.
- The implementation guides are restructured into two parts: design and set up.

  Part I - Design: This part provides functional overviews, activity diagrams, assumptions and constraints, and technical sequence diagrams and steps.

  Part II - Set up: This part provides prerequisites, data requirements, and configuration steps.
- Starting with this release, these integrations are no longer available:
  - Oracle CRM On Demand Integration Pack for JD Edwards EnterpriseOne: Lead to Order
  - Oracle Workforce Administration Integration Pack for PeopleSoft Human Resources

Common Oracle AIA Pre-Built Integration Guides

Oracle Application Integration Architecture Pre-Built Integrations 11.1 includes the following guides shared by all products delivered with this release:

- Oracle Application Integration Architecture Installation and Upgrade Guide for Pre-Built Integrations Release 11.1

  This guide provides an overview of the installation process, including how to install, configure, and deploy your pre-built integrations. The steps required to upgrade your pre-built integrations to the latest release are also provided.
- Oracle Application Integration Architecture Pre-Built Integrations 11.1: Utilities Guide

  This guide describes:
  - How to work with and configure Session Pool Manager (SPM), which is a service in the Oracle SOA Suite web server whose primary function is to manage a pool of web server session tokens that can be reused by BPEL flows.

  - How to deploy and configure the AIACompositeScheduler. This is a utility component that is used by pre-built integrations to schedule a service-oriented architecture (SOA) composite to be invoked at the specified time interval.

- Oracle Application Integration Architecture Pre-Built Integrations 11.1: Product-to-Guide Index

  The Product-to-Guide index lists the guides that provide information for each product delivered in this release.

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`.

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Additional Resources

The following resources are also available:

- **Oracle Application Integration Architecture Foundation Pack:**

  Oracle AIA Pre-Built integrations require Foundation Pack 11.1.1.5.0 to be installed. Refer to the Foundation Pack documentation library on OTN to download the Foundation Pack guides at `http://download.oracle.com/docs/cd/E21764_01/aia.htm`.

- **Oracle Application Integration Architecture: Product-to-Guide Index:**

  Oracle Technology Network: `http://www.oracle.com/technetwork/index.html`

- **Known Issues and Workarounds:**

  My Oracle Support: `https://support.oracle.com/`

- **Release Notes:**

  Oracle Technology Network: `http://www.oracle.com/technetwork/index.html`

- **Documentation updates:**

  Oracle Technology Network: `http://www.oracle.com/technetwork/index.html`

Part I

Understanding the Delivered Integrations

Part I contains the following chapters:

1

Agile Product Lifecycle Management and JD Edwards EnterpriseOne

This chapter provides an overview of the Oracle Design to Release: Agile Product Lifecycle Management - JD Edwards EnterpriseOne integration and discusses:

- Solution assumptions and constraints
- Architecture of Agile Product Lifecycle Management (PLM) integration
- Business process task flows
- Components of Agile PLM pre-built integration

1.1 Overview

Agile PLM enables companies to manage individual product life cycles and to complete product portfolios and programs tied to product conception, design, launch, maturity, and phase-out. Primary users of Agile PLM are involved directly or indirectly in the product design. These users manage content in Agile PLM that often directly affects processes managed in other enterprise systems, such as JD Edwards EnterpriseOne, Manufacturing Execution Systems (MES), Customer Relationship Management (CRM), and so forth.

Companies must propagate timely and accurate product design information from the PLM system to the manufacturing system to ensure that products are built to the correct specifications, thereby enabling a low time to market and eliminating excess and obsolete inventory. Any failure in this crucial integration can lead to products being manufactured to incorrect designs, which can lead to these consequences:

- Delays in product launch (thereby compromising market share and profit margins)
- Compromised product quality, leading to higher service costs and further loss of market share
- Expensive inventory write-offs that directly affect the bottom line

The integration of Agile PLM and JD Edwards EnterpriseOne is designed to synchronize product content information between Agile Product Collaboration and JD Edwards EnterpriseOne.

This integration is a first new generation integration solution between Agile PLM and JD Edwards EnterpriseOne Manufacturing.

This integration consists of the following integration flows:

1. Initial load of items and Bills of Material (BOMs) from JD Edwards EnterpriseOne to Agile PLM
2. Synchronization of engineering change order release from Agile PLM to JD Edwards EnterpriseOne through the Engineering Change Order (ECO) process
3. Synchronization of ECO status from JD Edwards EnterpriseOne to Agile PLM
4. Synchronization of item attributes and cost updates from JD Edwards EnterpriseOne to Agile PLM
5. Synchronization of item balance updates from JD Edwards EnterpriseOne to Agile PLM

1.2 Solution Assumptions and Constraints

Design Assumptions:

1. Use Agile Content Server for events to trigger the payload from Agile PLM to the integration.
2. This design assumes that these statements are true:
   - Predefined blank templates are available for custom fields.
   - Transformation logic for classification elements are pre-coded in the delivered XSL, but you may need to modify it to suite your Agile PLM implementation.
3. This design leverages AIA error handling framework.
4. We do not integrate Approved List of Manufacturers (AML) information. We do not import any AML information passed to JD Edwards EnterpriseOne in this integration into JD Edwards EnterpriseOne.

Design Constraints:

1. In a few cases, configuration-driven XSLT may not reflect the changes immediately and may require a restart because the main XSL sheet is cached after a successful compilation.
2. Error handling capabilities of this integration are constrained by the capabilities of the AIA framework.

1.3 Architecture of Agile PLM Integration

1. Messages originating in Agile PLM exit Agile Content Service (ACS) in XML format.

   The messages are then queued and the Agile PLM requestor Application Business Connector Services (ABCS), AgileReqABCSImpl, is called. The Agile requestor (ProcessEngineeringChangeOrderAgileReqABCSImpl) invokes EngineeringChangeOrderEBS.

2. EngineeringChangeOrderEBS routes the EBM to the JD Edwards EnterpriseOne provider (CreateEngineeringChangeOrderListJDEE1ProvABCSImpl).

   The JD Edwards EnterpriseOne provider transforms the enterprise business message (EBM) to application business message (ABM) and then invokes a web service (PBSSV - Published Business Service) for creating items and ECOs in JD Edwards EnterpriseOne. The provider receives the response from the PBSSV and passes it to Agile PLM through EngineeringChangeOrderResponseEBS. The Agile requestor receives this response and relays this information to the queue.

For flows originating from JD Edwards EnterpriseOne, report programs in JD Edwards EnterpriseOne generate XML files, and the corresponding requestor ABCS consumes the XML file and passes it to Agile PLM through enterprise business service (EBS).

Figure 1–1 and Figure 1–2 illustrate the Agile PLM to JD Edwards EnterpriseOne integration architecture:

Figure 1–1 Agile PLM to JD Edwards EnterpriseOne integration architecture

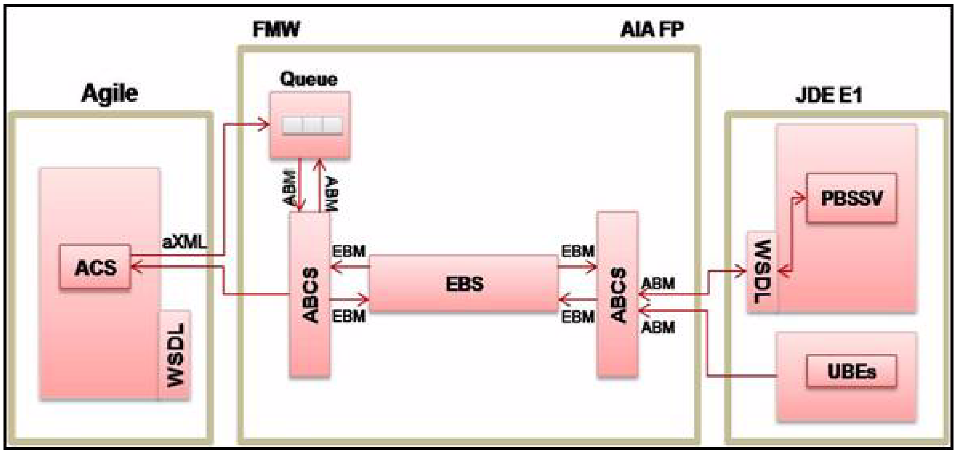
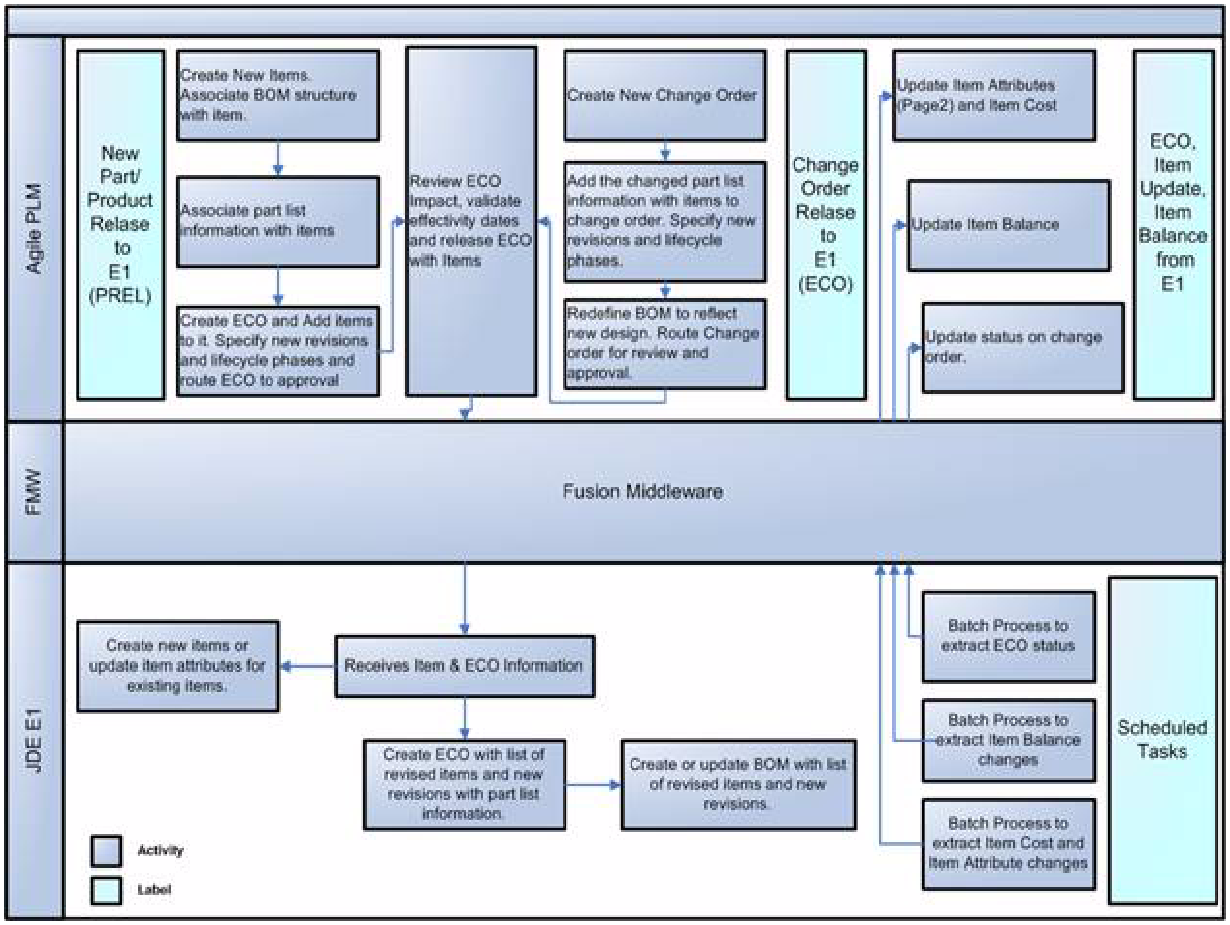


Figure 1–2 Agile PLM to JD Edwards EnterpriseOne integration architecture


Agile PLM
New Part/ Product Relase to E1 (PREL)
Create New Items. Associate BOM structure with item.
Associate part list information with items
Create ECO and Add items to it. Specify new revisions and lifecycle phases and route ECO to approval
Review ECO Impact, validate effectivity dates and release ECO with Items
Create New Change Order
Add the changed part list information with items to change order. Specify new revisions and lifecycle phases.
Redefine BOM to reflect new design. Route Change order for review and approval.
Change Order Release to E1 (ECO)
Update Item Attributes (Page2) and Item Cost
Update Item Balance
Update status on change order.
ECO, Item Update, Item Balance from E1
FMW
Fusion Middleware
JDE E1
Create new items or update item attributes for existing items.
Receives Item & ECO Information
Create ECO with list of revised items and new revisions with part list information.
Create or update BOM with list of revised items and new revisions.
Batch Process to extract ECO status
Batch Process to extract Item Balance changes
Batch Process to extract Item Cost and Item Attribute changes
Scheduled Tasks
Activity
Label

1.4 Business Process Flows

This section discusses:

- Agile PLM to JD Edwards EnterpriseOne process flow
- JD Edwards EnterpriseOne to Agile PLM process flow

1.4.1 Agile PLM to JD Edwards EnterpriseOne Process Flow

This integration covers the Agile PLM to JD Edwards EnterpriseOne process flows.

1.4.1.1 Agile PLM to JD Edwards EnterpriseOne Processes

Engineering Change Order Release:

During product design, developers introduce new products and parts, and modify the design of existing parts. When they complete the authoring of parts attributes and design information, and are ready to publish to the manufacturing system, the product design is released using the ECO process. The change order release process consists of new Part/Product Release (PREL) and Product Design Modification (PDM) flows of Agile PLM.

The release of a change order in Agile PLM acts as a trigger for the synchronization of product design within JD Edwards EnterpriseOne. Because, Agile PLM is a system of records for product design data, the synchronization process involves transferring the released revision of ECO from Agile PLM to the manufacturing system.

Both these processes use the same integration sequence.

For more information, see Chapter 5: Process Integration for Product Design Changes.

1.4.2 JD Edwards EnterpriseOne to Agile PLM Process Flow

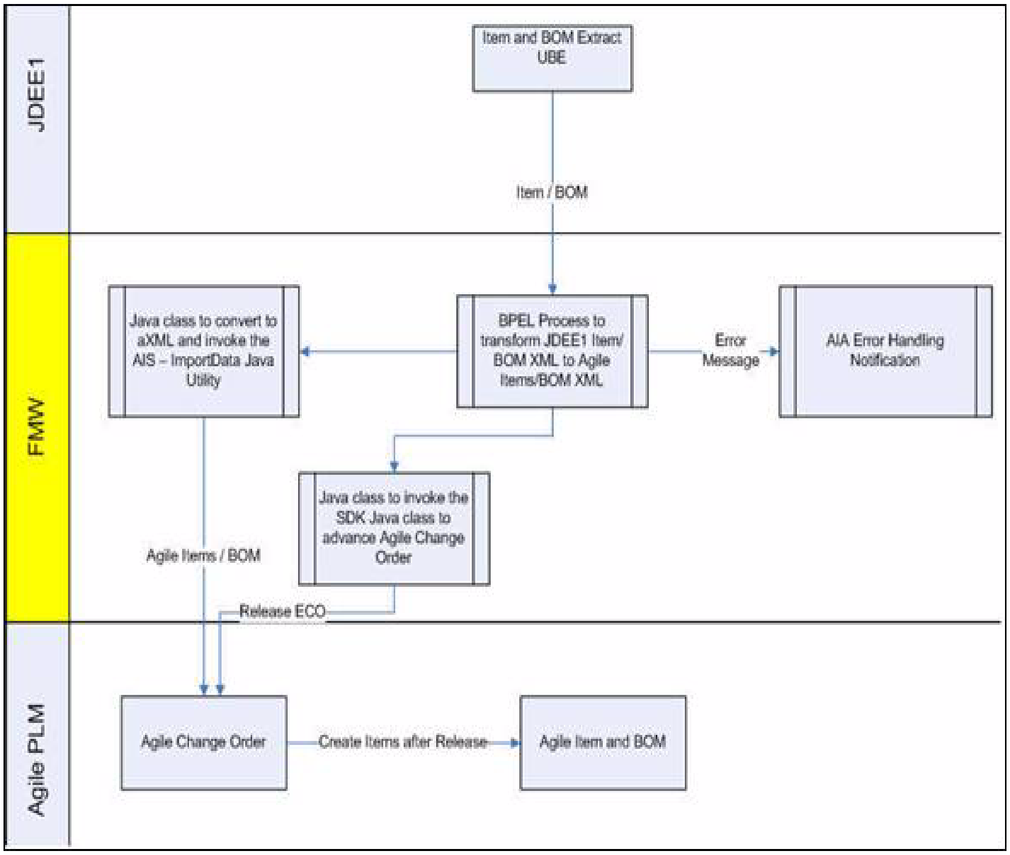
This integration covers the following business flows:

- JD Edwards EnterpriseOne to Agile PLM initial load
- JD Edwards EnterpriseOne to Agile PLM processes
- JD Edwards EnterpriseOne Item and Unit Cost Information to Agile PLM (Batch)
- JD Edwards EnterpriseOne Balance Information to Agile PLM (Batch)

1.4.2.1 JD Edwards EnterpriseOne to Agile PLM Initial Load

Initial load is a process to synchronize items and BOMs from JD Edwards EnterpriseOne to Agile PLM. This process synchronizes data from an existing JD Edwards EnterpriseOne install to a new Agile PLM install. The assumption is that no items or BOMs exist within Agile PLM at the time of the initial load. By following the initial load, items and BOMs are maintained in Agile PLM. When the items and BOMs are modified in Agile PLM, the system sends these changes to JD Edwards EnterpriseOne by using the engineering change order release integration flow:

Figure 1–3 Initial load of items and BOMs from JD Edwards EnterpriseOne


JDEE1
FMW
Agile PLM
Item and BOM Extract UBE
Item / BOM
Java class to convert to aXML and invoke the AIS – ImportData Java Utility
BPEL Process to transform JDEE1 Item/ BOM XML to Agile Items/BOM XML
Error Message
AIA Error Handling Notification
Java class to invoke the SDK Java class to advance Agile Change Order
Agile Items / BOM
Release ECO
Agile Change Order
Create Items after Release
Agile Item and BOM

To load the data from JD Edwards EnterpriseOne to Agile PLM, run the extract batch programs in JD Edwards EnterpriseOne. These programs generate XML files that contain the data that is uploaded into Agile PLM. After the files are written to the Enterprise Server, the appropriate consumer service retrieves and debatches the XML file. The routing service then routes each XML file to a BPEL service.

The BPEL service then transforms the list of items into an XML.xsd format and writes the file with the name agile<BPELInstance>.xml. The process then invokes a Java utility, which picks up the agile<BPELInstance>.xml file, zips it, and saves it as agile<BPELInstance>.axml. An ant script invokes the Agile Integration Service (AIS) Java utility to import the data stored in the agile<BPELInstance>.axml file in the form of change orders. These change orders are moved to the released state in Agile PLM by calling a Java utility built with Agile SDK.

1.4.2.2 JD Edwards EnterpriseOne to Agile PLM Processes

Engineering Change Order Update

The engineering change order update process from JD Edwards EnterpriseOne to Agile PLM describes the change in status of the ECO in JD Edwards EnterpriseOne, a part of the manufacturing update business flow. It constitutes a key requirement for keeping users in Agile PLM apprised of the life cycle of an ECO. This process involves communicating the ECO status in JD Edwards EnterpriseOne to a configurable field in the Change Order flex field in Agile PLM; and changing the status of the change order in Agile PLM.

After you synchronize an ECO to JD Edwards EnterpriseOne, certain changes to the ECO in JD Edwards EnterpriseOne must be updated to Agile PLM. For example, if the status of an ECO changes and moves to an implemented state in JD Edwards EnterpriseOne, then you should notify Agile PLM.

1.4.2.3 JD Edwards EnterpriseOne Item and Unit Cost Information to Agile PLM (Batch)

A user can make item and item cost changes in JDE that originate from Agile. When the items updates are done in JDE, the update flow runs from JDE back to Agile PLM. Item and cost universal batch engine (UBE) has a cost method processing option. To extract the unit cost of an item, enable the UBE by selecting the cost method processing option.

1.4.2.4 JD Edwards EnterpriseOne Item Balance Information to Agile PLM (Batch)

The item balance information in JD Edwards EnterpriseOne is stored in three fields: Reserved Quantity, Available Quantity, and On-hand Quantity. An item in JD Edwards EnterpriseOne can exist in multiple branch/plant.

A change to any of the three quantities may affect one or more branch/plants. You make these changes in Agile PLM. Similarly, changes made in the item information may affect one or more branch/plants. For example, changing the cost of an item in JD Edwards EnterpriseOne triggers a similar update in Agile PLM.

1.5 Components of Agile PLM Integration Pack for JD Edwards EnterpriseOne Integration

This integration includes the following components:

- Oracle AIA Foundation Pack
- Agile PLM

- JD Edwards EnterpriseOne

1.5.1 Oracle AIA Foundation Pack

Pre-built integrations connect participating applications using AIA Foundation Pack and Oracle Fusion Middleware (FMW) components according to the AIA Foundation Pack development methodology.

For more information about the AIA Foundation Pack development methodology, see

1.5.2 Agile PLM

Agile Content Service

Agile Content Service (ACS) is an event-driven XML-based publishing service that makes the product records available to a wide variety of business applications and users, both internally and across the global manufacturing network. In addition to allowing employees and supply chain partners to publish the product record on demand, you can configure ACS to publish automatically the Item Master, BOM, and AML changes during any phase of the product life cycle to multiple destinations, ensuring that everyone is working with up-to-the-minute information.

An ACS module generates output in an XML file or a PDX package.

Agile Integration Service

Agile Integration Services (AIS) is a collection of predefined web services in the Agile Integration Framework that enables communications between the Agile PLM server and disparate systems, including Enterprise Resource Planning (ERP) systems, CRM systems, and Business-to-Business Integration (B2Bi) systems, other Agile PLM systems, and supply chain partners. Using AIS to exchange content with other systems simplifies the process for aggregating raw product content, and makes critical product content available in realtime to other core systems.

AIS web services provide import and export capabilities, which you can use to:

- Make product content available to Enterprise Application Integration (EAI) systems.
- Share product content with product design, manufacturing planning, shop floor, ERP, and CRM applications.
- Make product content available to B2Bi systems that can transfer Agile Application Server data across corporate boundaries to a wide range of external applications.
- Provide content to custom applications.
- Import product content data from ERP and other supply chain applications.

Software Development Kit

Agile Software Development Kit (SDK) contains a collection of tools, application programming interfaces (APIs), sample applications, and documentation. You use it to build custom applications that access Agile Application Server functionality. By using the Agile SDK, you can create programs that perform tasks automatically against Agile PLM.

Agile SDK enables the following operations:

- Integrate Agile PLM with JD Edwards EnterpriseOne or other custom applications.

- Develop applications to process product data.
- Perform batch operations against the Agile Application Server.

Agile SDK has the following modules:

- Agile API: A Java API with interfaces that expose Agile PLM business objects. Use Agile API to create additional Agile PLM clients. You can also use it as part of an extension developed using web service extensions (WSX) or process extensions (PX).
- PX: A framework that allows Agile PLM customers to extend the functionality of Agile PLM clients by adding external reports, user-driven and workflow-driven customized actions, customized tools, and customized automatic number sources.
- WSX: A framework that allows Agile PLM customers to extend the functionality of the Agile PLM server and expose customer-specific solutions using a web service.

1.5.3 JD Edwards Enterprise One

JD Edwards EnterpriseOne provides interoperability with other Oracle applications and third-party systems by natively producing and consuming web services. Web services enable software applications written in various programming languages and running on various platforms to exchange information. JD Edwards EnterpriseOne exposes business services as web services. A web service is a standardized way of integrating web-based applications. JD Edwards EnterpriseOne refers to web services as published business services. Business services enable JD Edwards EnterpriseOne to expose transactions as a basic service that can expose an XML document-based interface.

Published Business Services

A published business service is a JD Edwards EnterpriseOne Object Management Workbench (OMW) object that represents one Java class that publishes multiple business services. When you create a web service, you identify the Java class. The published business service also contains value object classes that make the signature for the published business service.

Business Services

A business service is a JD Edwards EnterpriseOne OMW object that represents one or more classes that expose public methods. Each method performs a business process. A business service also contains internal value object classes that make the signature for the business service methods. These public methods can be called from other business service classes and from published business service classes.

UBEs

You use UBEs for data extraction, transformation, publication, and distribution. You can also use them to generate various outputs, such as operational document creation, customer-facing documentation, ad hoc reporting, financial reporting, and regulatory reporting and analytics.

2 Process Integration for Initial Load of Items and Bill of Materials

This chapter provides an overview of the integration flow for initial loads and discusses:

- Item and Bill of Materials (BOM) initial load integration flow
- Solution assumptions and constraints
- JD Edwards EnterpriseOne interfaces
- Core Application Integration Architecture (AIA) components

2.1 Overview

The initial load is a one-way process that loads data from JD Edwards EnterpriseOne into Agile PLM in bulk.

We assume that no items or BOMs exist within Agile PLM while the initial load is being performed. After the initial load, items and BOMs are maintained in Agile PLM. When the items and BOMs are modified in Agile PLM, the system moves these changes to JD Edwards EnterpriseOne by using the Engineering Change Order Release integration flow.

> **Note:** We strongly recommend that you perform the initial load process only one time. After the successful initial load from JD Edwards EnterpriseOne into Agile PLM, you should not perform this process over the same data. However, after you load the business data initially, you can run the initial load process to load new data that was not previously integrated.

To load data from JD Edwards EnterpriseOne to Agile PLM, run the extract programs in JD Edwards EnterpriseOne. These programs generate XML files that contain the data to be uploaded into Agile PLM. These files are written to the folders on the JD Edwards EnterpriseOne server. The location of these folders is specified in the processing options of the extract programs. The details of the individual extract programs and files are discussed later in this chapter.

After creating the XML files, you can use two methods to pass the data to Agile PLM:

- File Transfer Protocol (FTP)
- Weblogic Server

If you use the FTP method, the initial load process for item and BOMs data requires a configured FTP adapter to monitor the JDEE1In folder for newly created extract files. When the FTP adapter locates a new file, the appropriate Mediator process debatches the files into separate instances. Use debatching to split large XML files into several smaller XML files.

You can also use a Weblogic Server to move the XML files to JD Edwards EnterpriseOne in a folder on the Weblogic Server. If you use this method, the appropriate mediator process detects the file and debatches it into separate instances.

After the XML files are debatched, routing services route each XML file to the appropriate item and BOMs initial load from JD Edwards EnterpriseOne to Agile PLM BPEL Service. This BPEL service then invokes a Java utility to execute Agile Integration Services (AIS), which import the data through a change order. Then the InvokeSDK Java utility is executed using Agile Software Development Kit (SDK) to release the change order.

> **Note:** If you use the FTP method for the initial load, configure an FTP server on the JD Edwards EnterpriseOne Enterprise server. You should configure the FTP adapter to use the FTP connection set up on the JD Edwards EnterpriseOne server.

2.2 Item and Bill of Materials Initial Load Integration Flow

This section discusses:

- Item initial load
- BOM initial load
- Initial load orchestration

2.2.1 Item Initial Load Flow

Item data is stored in JD Edwards EnterpriseOne in the Item Master table (F4101) and Item Branch table (F4102). This piece of the process integration enables users to extract item and item branch information from JD Edwards EnterpriseOne and load it into Agile PLM.

Users can select items that are extracted from JD Edwards EnterpriseOne and loaded into Agile PLM using selection criteria that includes category codes.

To extract initial load item records from JD Edwards EnterpriseOne, run the Item Initial Load Extract batch program (R4101D3). This program creates an XML file and, if it completes successfully, it creates a PDF with a successful completion message and the number of items extracted. The XML file is stored in a folder on the JD Edwards EnterpriseOne Enterprise Server. Specify the location of the folder in the processing options of the R4101D3 program.

After the files are written to the JD Edwards EnterpriseOne server, one of these consumer services retrieves and debatches the XML files:

- ItemInitialLoadExtractJDEE1FTPConsumer_ep

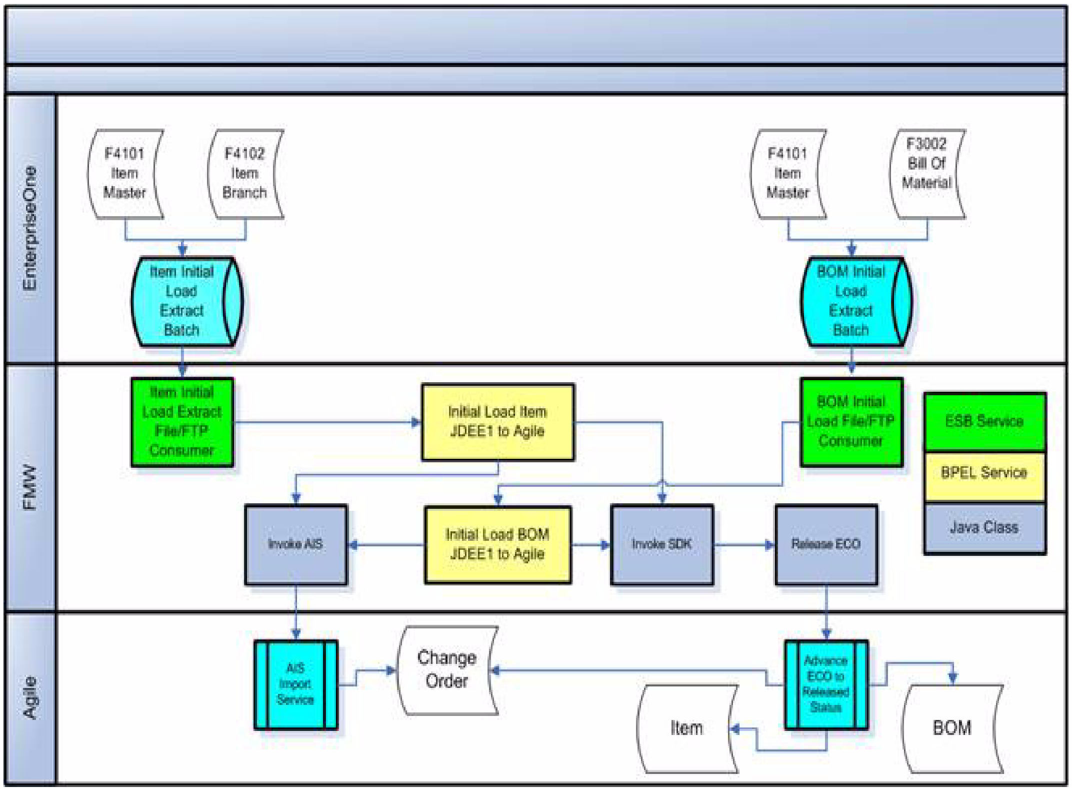
  Use this consumer service when you configure the FTP adapter to locate files.
- ItemInitialLoadExtractJDEE1FileConsumer_ep

- Use this consumer service to retrieve files from the JDEE1In folder in the Weblogic Server.

After a file is written to the JD Edwards EnterpriseOne server, the appropriate consumer service retrieves and debatches the XML file. XML debatching allows the large XML file created by the extract program to be split into several smaller XML files. The routing service then routes each individual XML file to InitialLoadItemListJDEE1toAgileImpl. This BPEL service transforms the list of items in R4101D3.xml into an XML.xsd format and writes the file with the name agile<BPELInstance>.xml. The BPEL then invokes a Java utility that picks up the agile<BPELInstance >.xml file, zips it, and saves it as agile<BPELInstance >.axml. Then the utility invokes an ant script to call an Agile Integration Service (AIS) Java utility to import the data stored in the agile< BPELInstance >.axml file as a change order. Another Java utility is then invoked to call an ant script to invoke an Agile SDK-built Java utility to release the change order.

Figure 2–1 illustrates the integration flow for initial load:

Figure 2–1 Integration flow for initial load


EnterpriseOne
F4101 Item Master
F4102 Item Branch
F4101 Item Master
F3002 Bill Of Material
Item Initial Load Extract Batch
BOM Initial Load Extract Batch
FMW
Item Initial Load Extract File/FTP Consumer
Initial Load Item JDEE1 to Agile
BOM Initial Load File/FTP Consumer
ESB Service
BPEL Service
Java Class
Invoke AIS
Initial Load BOM JDEE1 to Agile
Invoke SDK
Release ECO
Agile
AIS Import Service
Change Order
Advance ECO to Released Status
Item
BOM

2.2.2 BOM Initial Load Flow

BOM data is stored in JD Edwards EnterpriseOne in the Bill of Material table (F3002). Item information, such as Parent Item Rev Number and Component Stocking Type, is stored in the Item Master table (F4101). This part of the process integration enables users to extract BOM information from JD Edwards EnterpriseOne and load it into Agile PLM.

Users can select BOMs that are extracted from JD Edwards EnterpriseOne and loaded into Agile PLM using selection criteria within the extract UBE.

To extract initial load BOM records from JD Edwards EnterpriseOne, run the BOM Initial Load Extract batch program (R3002D). This program creates an XML file and, if it completes successfully, it creates a PDF with a successful completion message and the number of records extracted. The XML file is stored in a folder on the JD Edwards EnterpriseOne Enterprise server. Specify the location of the folder in the processing options of the R3002D program.

After a file is written to the JD Edwards EnterpriseOne server, the appropriate consumer service retrieves and debatches the XML file. XML debatching allows the large XML file created by the extract program to be split into several smaller XML files. The routing service then routes each individual XML file to InitialLoadBillOfMaterialsListJDEE1toAgileImpl. This BPEL service transforms the list of BOMs in R3002.xml into an XML.xsd format and writes the file with the name agile<BPELInstance>.xml. Then the BPEL invokes a Java utility that picks up the agile< BPELInstance >.xml file, zips it, and saves it as agile< BPELInstance >.axml. Then the utility invokes an ant script to call AIS to import the data stored in the agile<SEQ>.axml file. Another Java utility is then invoked to call an ant script to invoke an Agile SDK-built Java utility to release the change order.

The system uses one of these consumer services to retrieve and debatch the XML files:

- BillOfMaterialsInitialLoadExtractJDEE1FTPConsumer_ep

  Use this consumer service to configure the FTP adapter to locate files.

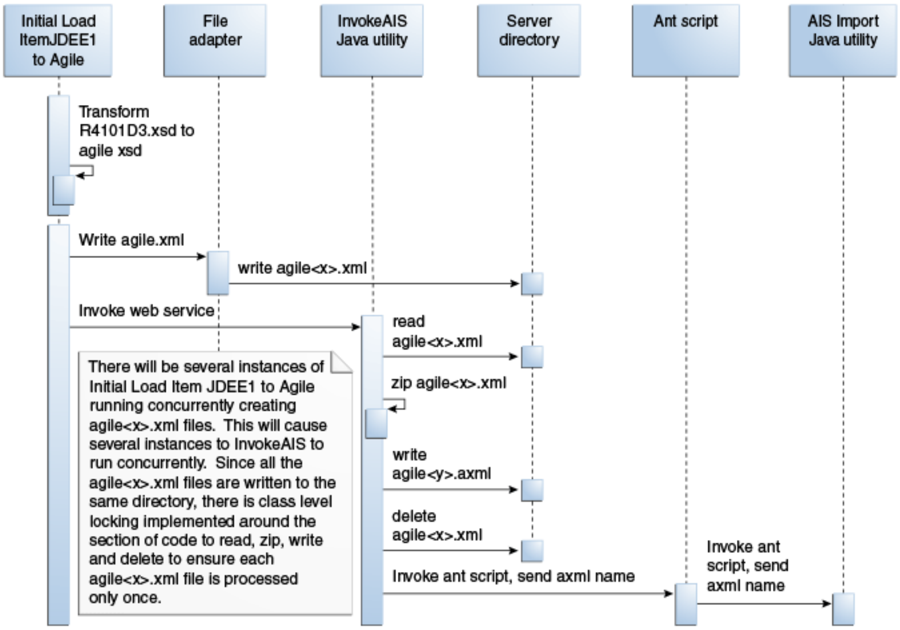
- BillOfMaterialsInitialLoadExtractJDEE1FileConsumer_ep

  Use this consumer service to retrieve files from the JDEE1In folder in the Weblogic Server.

2.2.3 Initial Load Orchestration

Figure 2–2 illustrates the orchestration of the initial load from JD Edwards EnterpriseOne to Agile PLM:

Figure 2–2 Orchestration of initial load from JD Edwards EnterpriseOne to Agile PLM



There will be several instances of Initial Load Item JDEE1 to Agile running concurrently creating agile<x>.xml files. This will cause several instances to InvokeAIS to run concurrently. Since all the agile<x>.xml files are written to the same directory, there is class level locking implemented around the section of code to read, zip, write and delete to ensure each agile<x>.xml file is processed only once.

Table 2–1 lists the results of each activity involved in an initial load:

Table 2–1 Activities in Initial Load

Step	Activity	Result
Initial Load	Run R4101D3 to export items	R4101D3_mmddyy_ hhmmss.xml file is placed in the location specified in the UBE processing option
1	ItemInitialLoadExtractJ DEE1FileConsumer or ItemInitialLoadExtractJ DEE1FtpConsumer reads and debatches the file	Batch size is determined from the BatchSize property in ItemInitialLoadExtractJDEE 1FileConsumer_ ep/ItemInitialLoadExtractJ DEE1FtpConsumer_ep
2	The system invokes the InitialLoadItemListJDEE 1toAgileImpl BPEL service	ItemList ABM is transformed into ItemListAXML, and agile<instanceid>.xml is written with the file adapter
3	The system invokes AIS Importer to create a change order	AIS adds affected items to an ECO and imports items in redline mode
4	The system retrieves the AIS Result.xml file for error handling	Result<InstanceId>.xml file is retrieved through file adapter and stops processing in case of any error
5	The system invokes SDK methods to release the change order	ReleaseECO SDK is invoked to advance the ECO to Released status
6	The system invokes SDK methods to release the change order	ReleaseECO SDK is invoked to advance the ECO to Released status
7	The system retrieves the SDK Result.xml file for error handling	Result<InstanceId>.xml file is retrieved through file adapter and stops processing in case of any errors
BOM Initial Load		
1	Run R3002D to export BOMs	R3002D _mmddyy_ hhmmss.xml file is placed in the location specified in the UBE processing options

Table 2–1 (Cont.) Activities in Initial Load

Step	Activity	Result
2	BillOfMaterialsInitialLoadExtractJDEE1FileConsumer or BillOfMaterialsInitialLoadExtractJDEE1FtpConsumer reads and debatches the file	The batch size is determined from the BatchSize Property in BillOfMaterialsInitialLoadExtractJDEE1FileConsumer_ep/ BillOfMaterialsInitialLoadExtractJDEE1FtpConsumer_ep
3	The system invokes the InitialLoadBillOfMateria lsListJDEE1toAgileImplBPEL service	ItemBOM application business message (ABM) is transformed into ItemBOMAXML, and agile<instanceid>.xml is written with the file adapter
4	The system invokes AIS Importer to create a change order	AIS adds Affected Items and BOM to an ECO and imports BOM in redline mode
5	The system retrieves the AIS Result.xml file for error handling	Result<InstanceId>.xml file is retrieved through file adapter and stops processing in case of any errors
6	The system invokes SDK methods to release the change order	ReleaseECO SDK is invoked to advance the ECO to Released status
7	The system retrieves the SDK Result.xml file for error handling	Result<InstanceId>.xml file is retrieved through file adapter and stops processing in case of any errors

2.3 Solution Assumptions and Constraints

This design assumes that the following statements are true:

1. While installing this integration, items and BOMs from JD Edwards EnterpriseOne does not exist in Agile PLM.
2. When multi site is enabled in Agile PLM, the system sets corresponding sites in Agile PLM, through the AGILE_TARGET_SITE_MAPPING domain value map (DVM), for all items with branch/plants.
3. When multi site is enabled in Agile PLM, the system does not load item initial load batches containing all nonstock items.

   JD Edwards EnterpriseOne users can add a data selection of STKT != 'N' in R4101D3 to filter out nonstock items if they choose not to send them.
4. You run the R3002D - BOM Initial Load Extract UBE with appropriate processing options set up to retrieve the Parent Item Revision Level; otherwise, the system

populates the PARENT_ITEM_REVISION_LEVEL Property in AIA configuration properties with the value to be used as a parent item revision level.

5. The system accepts only BOM types that match the "DEFAULT_BOM_TYPE" property in the AIA configuration properties.

   JD Edwards EnterpriseOne users can add a data selection in the TBM field to match the value defined in the 'DEFAULT_BOM_TYPE' property.

6. The system accepts only BOMs with a batch quantity of zero (0).

   JD Edwards EnterpriseOne users can add a data selection of BQTY = 0 to extract BOMs with a batch quantity equal to zero.

7. The system loads BOM components with the same branch/plant as the parent branch plant into Agile PLM; it filters out other components.

   JD Edwards EnterpriseOne users can filter these components by setting the R3002D processing option "Selection for Components" as blank.

8. The system does not accept nonstock BOM components when multi site is enabled in Agile PLM.

   JD Edwards EnterpriseOne users can choose to not send nonstock components in an Agile PLM No-Site configuration by adding a data selection for STKT != 'N' when running the R3002D UBE.

9. The system considers multiple BOMs for the same parent item as duplicates, and it does not accept them when multi site is not enabled in Agile PLM.

JD Edwards EnterpriseOne users can set appropriate data selections for Branch (MMCU), BOM Type (TBM), Batch Quantity (BQTY), and Batch UOM (UOM) such that only single BOM is selected for a parent Item.

2.4 JD Edwards EnterpriseOne Interfaces

Table 2–2 lists the JD Edwards EnterpriseOne XSD files:

Table 2–2 JD Edwards EnterpriseOne XSD files

Interface	Description
InitialLoadItemListJDEE1toAgileImpl	
R4101D3.xsd	Contains Item ABM
ImportAISResult.xsd	Contains Import Data AIS Execution Result ABM
ReleaseECOSDKResult.xsd	Contains Release ECO SDK Execution Result ABM
InitialLoadBillOfMaterialsListJDEE1toAgileImpl	
R3002D.xsd	Contains BOM ABM
ImportAISResult.xsd	Contains Import Data AIS Execution Result ABM
ReleaseECOSDKResult.xsd	Contains Release ECO SDK Execution Result ABM

2.5 Core AIA Components

Table 2–3 lists the industry components for process integration for initial load:

Table 2–3 Industry components for Initial Load

Services	BOM	Item
ABMs	R3002.xsd - JD Edwards EnterpriseOne BOM ABM axml_9226.xsd- Agile PLM BOM ABM axml_93.xsd - Agile PLM BOM ABM for Agile 9.3 aXML_931.xsd - Agile PLM BOM ABM for Agile 9.31 ImportAISResult.xsd - AIS Result ABM	R4101D3.xsd - JD Edwards EnterpriseOne Item ABM aXML_9226.xsd - Agile Item ABM axml_93.xsd - Agile Item ABM for Agile 9.3 aXML_931.xsd - Agile PLM BOM ABM for Agile 9.31 ReleaseECOSDKResult.xsd - SDK Result ABM
BPEL	InitialLoadBillOfMaterialsListJDEE1toAgileImpl	InitialLoadItemListJDEE1toAgileImpl
Mediator	BillOfMaterialsInitialLoadExtractJDEE1Consumer	ItemInitialLoadExtractJDEE1Consumer

Components Locations

Table 2–4 lists the locations of components:

Table 2–4 Location of Components

Components	Locations
Application Business Objects, ABM, and Common XSD files	$AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/JDEE1/V1/schemas/ $AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/Agile/V1/schemas/" $AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/JDEE1/V1/schemas/AgileInitialLoad/" http://<servername>:<portname>/AIAComponents/ApplicationObjectLibrary/JDEE1/V1/schemas/AgileInitialLoad

3

Process Integration for Item Attributes and Cost Updates

This chapter provides an overview of the process integration for item attributes and cost updates and discusses:

- Item attributes and cost updates process integration
- Solution assumptions and constraints
- Agile Product Lifecycle Management (PLM) interfaces
- JD Edwards EnterpriseOne interfaces
- Core Application Integration Architecture (AIA) components
- Integration services

3.1 Overview

You complete the update of item attribute and unit cost information from JD Edwards EnterpriseOne to Agile PLM as a batch process. You run a new Universal Batch Engine (UBE) program to extract a list of items (including obsolete items if not filtered in data selection) whose attribute values and unit cost must be updated in Agile PLM. Obsolete items shall be marked as obsolete in the item life cycle field of Agile PLM.

You schedule the execution of the Item data extract UBE R4102D program. This program generates an XML file that contains item data as well as values for all the attributes and unit cost information, which is updated to Agile PLM.

Because this is an update to Agile PLM, the items in the XML input file should already exist in Agile PLM; check the cross-reference record to verify this. If a cross-reference record exists for the item, then Agile PLM updates the corresponding item record with item attribute information from JD Edwards EnterpriseOne. If no cross-reference record exists for the item, then Agile PLM does not update the item record (it is skipped).

The extract includes basic and additional item information, units of measure (UOMs), sales, purchasing classifications, inventory processing information, and so forth, from Item Master (F4101), Item Branch (F4102), and Unit Cost information (F4105).

Item cost information flows one way, from JD Edwards EnterpriseOne to Agile PLM. Agile PLM uses this data strictly for informational purposes to help with product design. You should not change costs in Agile PLM, but if you do, then they are not sent back to JD Edwards EnterpriseOne. R4102D only retrieves items that changed since the last successful run (the last successful run date and time are stored in an

IntegrationTimeStamp table, F0095 for this UBE) or the As of Date specified in the processing option.

The system writes this file to a folder on the JD Edwards EnterpriseOne Enterprise server. You specify the location of this folder in the processing options of the extract program. Details about the extract programs and files are discussed in later sections of this chapter.

After creating the XML files, you can use one of two methods to pass that data to Agile PLM:

- File Transfer Protocol (FTP)
- Weblogic Server

If you use the FTP method, you must configure an FTP adapter for the Update Item Attributes and Unit Cost process to monitor the JDEE1 Enterprise Server folders for newly created extract files. When the FTP adapter locates a new file, the appropriate Mediator process debatches the files into separate instances. Debatching is used to split large XML files into several smaller XML files.

Alternatively, you can move the XML files to the JD Edwards EnterpriseOne JDEE1In folder on the Weblogic Server. If you use this method, the appropriate Mediator process detects the file and debatches it into separate instances.

After the system debatches the XML files, routing services route each XML file to UpdateItemListJDEE1ReqABCSImpl, which then performs the following actions:

- Transforms Item application business message (ABM) to Item enterprise business message (EBM)
- Invokes ItemEBSV2, which does the routing to the provider Application Business Connector Services (ABCS): UpdateItemListAgileProvABCSImpl
- The Agile ABCS provides a call back response to ItemResponseEBSV2. UpdateItemListJDEE1ReqABCSImpl receives this response and updates the IntegrationTimeStamp table with the last successful run date and time.

> **Note:** If you use the FTP method, you must configure an FTP server on the JD Edwards EnterpriseOne Enterprise server. Configure the FTP adapter to use the FTP connection that is set up on the Enterprise server.

3.2 Item Attributes and Cost Updates Process Integration

This section discusses:

- Update item attribute flow
- Update item attribute orchestration

3.2.1 Update Item Attribute Flow

To extract the updated item attribute and unit cost information in JD Edwards EnterpriseOne, users should run the Item and Cost Extract batch program (R4102D). R4102D retrieves items that have changed since the last successful run (the last successful run date and time is stored in an IntegrationTimeStamp table - F0095 for this UBE) or the As Of date specified in the processing options.

This program retrieves these items and creates an XML file. If it completes successfully, it also creates a PDF with a successful completion message and the number of items extracted. The system stores the XML file in a folder on the JD Edwards EnterpriseOne Enterprise server. Users should specify the location of the folder in the processing options of the R4102D program.

After the files are written to the JD Edwards EnterpriseOne server, one of these consumer services retrieves and debatches the XML files:

- ItemListExtractJDEE1FTPConsumer_ep

  Use this consumer service to configure the FTP adapter to locate files.

- ItemListExtractJDEE1FileConsumer_ep

  Use this consumer service to move your files to the JD EE1In file on the Weblogic Server.

XML debatching allows the large XML file that the extract program creates to be split into several smaller XML files. The routing service then routes each XML file to UpdateItemListJDEE1ReqABCSImpl. This BPEL service transforms UpdateItemListABM to UpdateItemListEBM. As part of this transformation, if the BPEL service finds any items that were created in JD Edwards EnterpriseOne, it checks them against the cross-reference table and drops them if found.

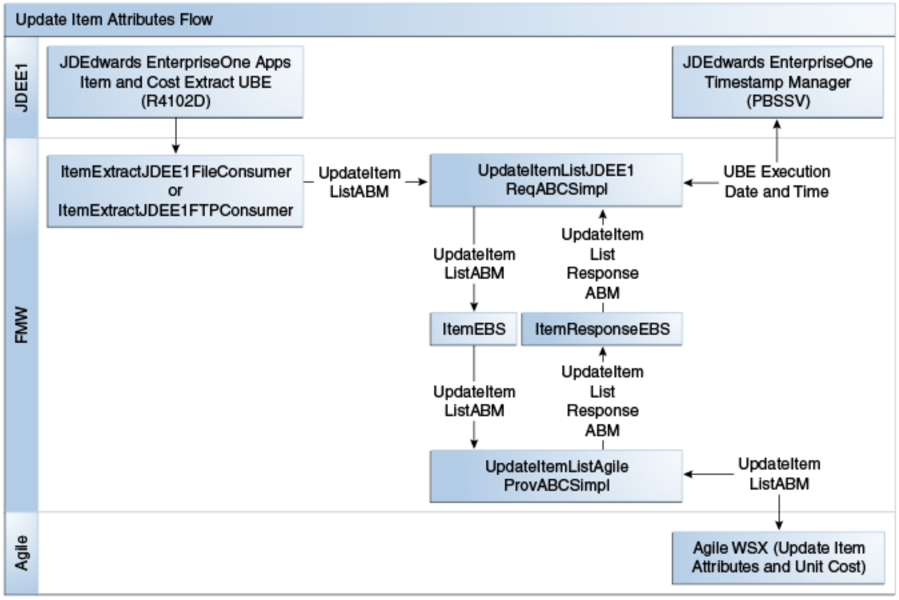
The BPEL service then makes an asynchronous request-delayed response call to ItemEBSV2 with UpdateItemListEBM. This call is routed to UpdateItemListAgileProvABCSImpl.

UpdateItemListAgileProvABCSImpl updates the item in Agile PLM and sends response UpdateItemListResponseEBM.

UpdateItemListJDEE1ReqABCSImpl receives the response, uses DynamicPartnerlink to determine TargetEndpointLocation, and invokes the IntegrationTimeStampManager web service. IntegrationTimeStampManager web service updates the last successful run date and time in the IntegrationTimeStamp table, F0095 for this batch program (R4102D).

Figure 3–1 illustrates the update item attribute process flow from JD Edwards EnterpriseOne to Agile PLM:

Figure 3–1 Update Item Attribute process flow


Update Item Attributes Flow
JDEE1
FMW
Agile
JDEdwards EnterpriseOne Apps Item and Cost Extract UBE (R4102D)
JDEdwards EnterpriseOne Timestamp Manager (PBSSV)
ItemExtractJDEE1FileConsumer or ItemExtractJDEE1FTPConsumer
UpdateItem ListABM
UpdateItemListJDEE1 ReqABCSImpl
UBE Execution Date and Time
UpdateItem ListABM
UpdateItem List Response ABM
ItemEBS
ItemResponseEBS
UpdateItem ListABM
UpdateItem List Response ABM
UpdateItemListAgile ProvABCSImpl
UpdateItem ListABM
Agile WSX (Update Item Attributes and Unit Cost)

3.2.2 Update Item Attribute Orchestration

Table 3–1 lists the activities involved in the update item attribute orchestration:

Table 3–1 Activities for Update Item Attribute Orchestration

Step	Activity	Remarks
1	Run R4102D to export items	This activity occurs when you update item-related information in JD Edwards EnterpriseOne
2	ItemListExtractJDEE1FTPConsumer or ItemListExtractJDEE1FIleConsumer reads and debatches the file	ItemListExtractJDEE1Consumer is triggered.
3	Activate JD Edwards EnterpriseOne Item Operational Attribute Update Action trigger	JD Edwards EnterpriseOne Item Operational Attribute Update Action trigger invokes the UpdateItemListJDEE1ReqABCSImpl
4	UpdateItemListJDEE1ReqABCSImpl invokes ItemEBSV2	An invoke activity in UpdateItemListJDEE1ReqABCSImpl invokes the UpdateItemList operation on ItemEBSV2 with UpdateItemListEBM as input
5	ItemEBSV2 routes the UpdateItemListEBM to UpdateItemListAgileProvABCSImpl	ItemEBSV2 routes UpdateItemListEBM as input to UpdateItemListAgileProvABCSImpl

Table 3–1 (Cont.) Activities for Update Item Attribute Orchestration

Step	Activity	Remarks
6	UpdateItemListAgileProvABCSImpl invokes the Agile PLM Item Operational Attribute Update web service	ItemEBSV2 routes UpdateItemListEBM as input to UpdateItemListAgileProvABCSImpl. UpdateItemListAgileProvABCSImpl transforms the UpdateItemListEBM to AgileUpdateItemListABM and invokes the UpdateItem service operation on Agile web service to update item cost-related attribute information from JD Edwards EnterpriseOne to Agile PLM. **Note:** The UpdateItemListAgileProvABCSImpl composite uses the oracle/wss_http_token_client_policy client security policy while calling ItemABS Service hosted on the Agile server. The security credentials for this are stored in the csf-key AgileWebServicesKey on Fusion Middleware (FMW). The Agile username and password must be setup correctly so that the Agile service is invoked successfully from the AIA composite in the FMW layer. The AgileUpdateItemListResponseABM is returned to UpdateItemListAgileProvABCSImpl
7	UpdateItemListAgileProvABCSImpl sends a response to ItemResponseEBSV2	UpdateItemListAgileProvABCSImpl transforms the AgileUpdateItemListResponseABM to UpdateItemListResponseEBM and sends a response to ItemResponseEBSV2
8	ItemResponseEBSV2 sends the UpdateItemListResponseEBM to UpdateItemListJDEE1ReqABCSImpl	ItemResponseEBSV2 sends the UpdateItemListResponseEBM to UpdateItemListJDEE1ReqABCSImpl

3.3 Solution Assumptions and Constraints

This design assumes that the following statements are true:

1. If item information needs to be retrieved from multiple branch/plants in JD Edwards EnterpriseOne, the following constraints should be met to support this process:
   - Configure Agile PLM multi-sites
   - Set up one-to-one mapping between Agile PLM sites and JD Edwards EnterpriseOne branch/plants. Use domain value maps (DVMs) to accomplish this mapping.

   Locate the attributes to be updated with JD Edwards EnterpriseOne data on the Sites tab of the item if multi-site is configured.
2. Agile PLM multi-sites are required when item information needs to be retrieved from multiple branch/plants in JD Edwards EnterpriseOne. You can update any Title Block or Page Two attribute with the JD Edwards EnterpriseOne data.

3. Multiple item cost records can be retrieved for any item when the item cost level is 3.

   In such a case, the UBE extracts the first record to XML and suppresses the processing of subsequent records.

4. If Currency processing is enabled in JD Edwards EnterpriseOne and if the unit cost is not zero, then the currency code is sent back to Agile PLM

5. If the cost is maintained at Item Level, then the Default Company Currency code is sent back to Agile PLM.

6. The JD Edwards EnterpriseOne IntegrationTimeStampManager business service updates the last batch extract date/time as the Enterprise Server Date/Time

> **Note:** If you use the FTP method, you must configure an FTP server on the JD Edwards EnterpriseOne Enterprise server. Configure the FTP adapter to use the FTP connection that is set up on the Enterprise server.

3.4 Agile PLM Interfaces

Table 3–2 lists the Agile PLM Web Services Definition Language (WSDL) files:

Table 3–2 Agile PLM Web Services Definition Language (WSDL) files

Interface	Description
UpdateItemListAgileProvABCSImpl	
ItemABS.wsdl	ItemABS.wsdl

Table 3–3 lists the Agile PLM XML Schema Definition (XSD) files:

Table 3–3 Agile PLM XML Schema Definition (XSD) files

Interface	Description
UpdateItemListAgileProvABCSImpl	
ItemABM.xsd	Contains the Update Item List Request and Response ABM
ItemABO.xsd	Contains the Update Item List Request and Response ABM

3.5 JD Edwards EnterpriseOne Interfaces

Table 3–4 lists the JD Edwards EnterpriseOne WSDL files:

Table 3–4 JD Edwards EnterpriseOne WSDL files

Interfaces	Description
UpdateItemListJDEE1ReqABCSImpl	
IntegrationTimeStampManager.wsdl	IntegrationTimeStampManager.wsdl

Table 3–5 lists the JD Edwards EnterpriseOne XSD files:

Table 3–5 JD Edwards EnterpriseOne XSD files

Interface	Description
UpdateItemListJDEE1ReqABCSImpl	
R4102D.xsd	Contains the Update Item List Request ABM

3.6 Core AIA Components

Table 3–6 lists the industry components of process integration for update item attributes:

Table 3–6 Industry Components for Update Item Attributes

Component	Name
EBO	ItemEBO
EBMs	UpdateItemListEBM UpdateItemListResponseEBM
EBS	ItemEBSV2 ItemResponseEBSV2

Table 3–7 lists the locations of components:

Table 3–7 Location of Components

Component	Location
EBO and EBM XSD files	$AIA_ HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/
WSDL files	$AIA_ HOME/AIAMetaData/AIAComponents/EnterpriseBusinessServiceLibrary/Core/EBO/

For detailed documentation of individual EBOs and EBMs, click the AIA Reference Doc link, EBO, and EBM detail pages in Oracle Enterprise Repository.

For more information about using the Oracle Enterprise Repository and configuring it to provide the AIA Reference Doc link, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*, "Configuring and Using Oracle Enterprise Repository as the Oracle AIA SOA Repository."

EBOs can be extended, for instance, to add new data elements. These extensions are protected, and remains intact after a patch or an upgrade.

For more information, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*.

3.7 Agile PLM and JD Edwards EnterpriseOne Components for Update Item Attributes

Table 3–8 lists the requester and provider for each service:

Table 3–8 Requester and Provider for each service

Service	JD Edwards EnterpriseOne (Requester)	Agile PLM (Provider)
ABM	R4102D	AgileUpdateItemListABM AgileUpdateItemListResponseABM
ABCS	UpdateItemListJDEE1ReqABCS	UpdateItemListAgileProvABCSImpl
EBS	ItemEBSV2	ItemResponseEBSV2

Table 3–9 lists the locations of components:

Table 3–9 Location of components

Component	Location
Application Business Objects, ABM, and Common XSD files	$AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/Agile/V1/schemas/
WSDL files	$AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/Agile/V1/wsdls/

3.8 Integration Services

The process integration for item attributes and cost updates from JD Edwards EnterpriseOne to Agile PLM uses these industry components:

- ItemEBSV2
- UpdateItemListJDEE1ReqABCSImpl
- UpdateItemListAgileProvABCSImpl

3.8.1 ItemEBSV2

ItemEBSV2 is the EBS that exposes the operations related to the item integration on the Item EBO.

The routing rules are:

- ItemEBSV2 Mediator service

  UpdateItemListJDEE1ReqABCSImpl :Route UpdateItemListEBM to UpdateItemListAgileProvABCSImpl

- ItemResponseEBSV2 Mediator service

  UpdateItemListAgileProvABCSImpl Route UpdateItemResponseEBM to UpdateItemJDEE1ReqABCSImpl

3.8.2 UpdateItemListJDEE1ReqABCSImpl

UpdateItemListJDEE1ReqABCSImpl transforms the JD Edwards EnterpriseOne message (UpdateItemListABM) into UpdateItemListEBM and calls the routing service to update item list attributes and item cost attributes. It then gets the UpdateItemListResponseEBM response from Agile PLM and invokes the Integration Time Stamp Manager service to update the Integration Time Stamp table with the last runtime and date.

Process flow:

1. Picks up the xml file based on the properties set in the file and ftp consumer.
2. Receives UpdateItemListABM from file and ftp consumer
3. Transforms JD Edwards EnterpriseOne-specific UpdateItemListABM into UpdateItemListEBM
4. Populates the EBM header
5. Calls the ItemEBSV2 service to send message UpdateItemListEBM to UpdateItemListAgileProvABCSImpl
6. Receives UpdateItemListResponseEBM from ItemResponseEBSV2
7. Calls the Integration Time Stamp Manager service to update the Integration Time Stamp table with the last runtime and date
8. Transforms UpdateItemListJDEE1ReqABCSImpl using this transformation:

Xform_ItemListABMReqMsg_To_ItemListEBMReqMsg

3.8.3 UpdateItemListAgileProvABCSImpl

You use UpdateItemListAgileProvABCSImpl to facilitate communications between ItemEBSV2 and Agile PLM web service used for updating the cost information for an item in batch mode in Agile PLM.

It performs the following actions:

1. Receives UpdateItemListReqMsg, which contains UpdateItemListEBM
2. Calls a transform operation to convert the UpdateItemListEBM into AgileUpdateItemListABM
3. Sends AgileUpdateItemListABM as input to the web service operation UpdateItems (coarse-grained application programming interfaces (APIs) on the Agile PLM side) to update items in Agile PLM
4. Receives AgileUpdateItemListResponseABM on successful execution of coarse-grained API
5. Calls a transform operation to convert the AgileUpdateItemListABM to UpdateItemListResponseEBM, which is returned as an output of this BPEL process

   If the UpdateItems service operation fails on the Agile PLM side, the system generates a new fault and sends it across with the appropriate error message.

4 Process Integration for Item Balance Updates

This chapter provides an overview of the process integration for item balance updates and discusses:

- Item balance updates process integration
- Solution assumptions and constraints
- Agile Product Lifecycle Management (PLM) interfaces
- JD Edwards EnterpriseOne interfaces
- Core Application Integration Architecture (AIA) components
- Integration services

4.1 Overview

You complete the update of item balance information from JD Edwards EnterpriseOne to Agile PLM as a batch process. A new Universal Batch Engine (UBE) program extracts the list of items whose quantity values must be updated in Agile PLM.

You schedule the execution of Item Balance Data Extract UBE R41021D. This program generates an XML file that contains records containing calculated quantity information for items summarized at the branch/plant level based on information from the item location file and user-defined availability constants that are updated into Agile PLM.

Because this is an update to Agile PLM, the items in the XML input file should already exist in Agile PLM, to verify this, check the cross-reference record. If a cross-reference record exists for the item, then Agile PLM updates the corresponding item record with item balance information from JD Edwards EnterpriseOne. If no cross-reference record exists for the item, then Agile PLM does not update the item record (it is skipped).

Item balance information flows one way, from JD Edwards EnterpriseOne to Agile PLM. Agile PLM uses this data strictly for informational purposes to help with product design. You should not change these values in Agile PLM. If you change these values, they will not be sent to JD Edwards EnterpriseOne.

Use R41021D to retrieve the list of Items for which availability information has changed after the last successful run (the last successful run date and time is stored in an IntegrationTimeStampTable, F0095 for this UBE) or the As of Date specified in the processing option for the purpose of updating item availability information from JD Edwards EnterpriseOne to Agile PLM.

The system writes this file to a folder on the JD Edwards EnterpriseOne Enterprise server. The location of this folder is specified in the processing options of the extract program.

After creating the XML files, you can use one of two methods to pass the data to Agile PLM:

- File Transfer Protocol (FTP)
- Weblogic Server

If you use the FTP method, you must configure an FTP adapter to monitor the JDEdwards EnterpriseOne Enterprise Server folders for newly created extract files. When the FTP adapter locates a new file, the appropriate Mediator process debatches the files into separate instances. You use debatching to split large XML files into several smaller XML files.

Alternatively, you can move the XML files to the JD Edwards EnterpriseOne JDEE1In folder on the Weblogic Server. If you use this method, the appropriate Enterprise Business Service (EBS) process detects the file and debatches it into separate instances.

After the XML files are debatched, routing services route each XML file to UpdateItemBalanceListJDEE1ReqABCSImpl.

For more information, see Setting Up Batch Processing Information.

The UpdateItemBalanceListJDEE1ReqABCSImpl performs the following actions:

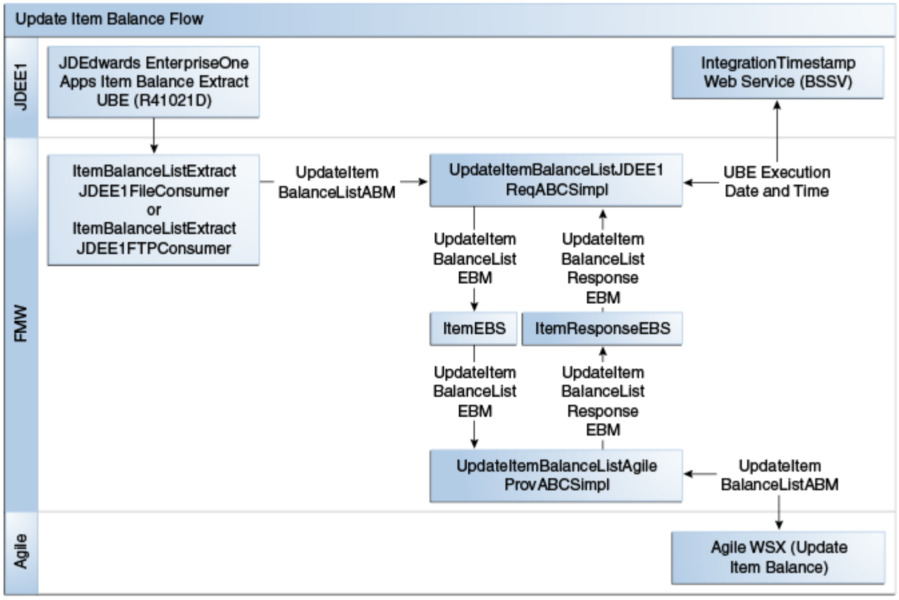
- Transforms item balance application business message (ABM) to item balance enterprise business message (EBM).
- Invokes ItemBalanceEBS, which routes to the provider Application Business Connector Services (ABCS): UpdateItemBalanceListAgileProvABCSImpl
- The Agile ABCS provides a call back response to ItemBalanceResponseEBS. UpdateItemBalanceListJDEE1ReqABCSImpl receives this response and updates the IntegrationTimeStamp table with the last successful run date and time.

Note: f you use the FTP method, you must configure an FTP server on the JD Edwards EnterpriseOne server. Configure the FTP adapter to use the FTP connection that is set up on the JD Edwards EnterpriseOne server.

4.2 Item Balance Updates Process Integration

Figure 4–1 illustrates the update item balance flow from JD Edwards EnterpriseOne to Agile PLM:

Figure 4–1 Update item balance integration flow


Update Item Balance Flow
JDEE1
FMW
Agile
JDEdwards EnterpriseOne Apps Item Balance Extract UBE (R41021D)
IntegrationTimestamp Web Service (BSSV)
ItemBalanceListExtract JDEE1FileConsumer or ItemBalanceListExtract JDEE1FTPConsumer
UpdateItem BalanceListABM
UpdateItemBalanceListJDEE1 ReqABCSImpl
UBE Execution Date and Time
UpdateItem BalanceList EBM
UpdateItem BalanceList Response EBM
ItemEBS
ItemResponseEBS
UpdateItem BalanceList EBM
UpdateItem BalanceList Response EBM
UpdateItemBalanceListAgile ProvABCSImpl
UpdateItem BalanceListABM
Agile WSX (Update Item Balance)

Update item balance process flow includes the following steps:

1. The requester ABCS, defined as an asynchronous process, receives a list of ABMs from the JD Edwards EnterpriseOne UBE batch extracts.

   The list contains ABMs that have update_date greater than the last_successful_run_date of the batch program.

2. The requester BPEL process filters the list of ABMs based on the ID to a list of ABMs those IDs are present in the cross-reference tables in the Fusion Middleware (FMW) layer

   This provides a list of items that were from Agile PLM. The original list of ABMs may also contain ABMs from non-Agile PLM sources as well.

3. The BPEL process then makes a Mediator call out for end-point virtualization.

4. A transformation converts the ABM to an EBM.

5. An asynchronous request-delayed response call is made to the ItemBalanceEBS with the UpdateItemBalanceListEBM.

6. The BPEL instance is invoked when the asynchronous call gets back from the provider and provides the status of the transaction back to the caller.

   Performance is not affected because it is a scheduled call and is invoked by server not by a user.

7. The concurrent program logs the status of this call.

4.2.1 Item Balance Update Orchestration

Table 4–1 lists the activities involved in item balance update orchestration:

Table 4–1 Activities Related to Item Balance Update Orchestration

Step	Activity	Remarks
1	Run R41021D to export items	This activity occurs when you update item balance-related information in JD Edwards EnterpriseOne
2	ItemBalanceListExtractJDEE1FTPConsumer or ItemBalanceListExtractJDEE1FileConsumer reads and debatches the file	The system triggers ItemBalanceListExtractJDEE1Consumer
3	The system triggers an Oracle item balance action	An Oracle item balance action invokes UpdateItemBalanceListJDEE1ReqABCSImpl
4	UpdateItemBalanceListJDEE1ReqABCSImpl invokes ItemBalanceEBS	An invoke activity in UpdateItemBalanceListJDEE1ReqABCSImpl invokes the UpdateItemBalanceList operation on ItemBalanceEBS with UpdateItemBalanceListEBM as input
5	ItemBalanceEBS invokes UpdateItemBalanceListAgileProvABCSImpl	ItemBalanceEBS sends UpdateItemBalanceListEBM as input to UpdateItemBalanceListAgileProvABCSImpl
6	UpdateItemBalanceListAgileProvABCSImpl invokes the Agile PLM item balance web service	UpdateItemBalanceListAgileProvABCSImpl transforms the UpdateItemBalanceListEBM to AgileUpdateItemListABM and invokes the UpdateItem service operation on the Agile web service to update item on-hand quantity information from Oracle to Agile PLM. **Note:** The UpdateItemBalanceListAgileProvABCSImpl composite uses the oracle/wss_http_token_client_policy client security policy while calling the ItemABS service hosted on the Agile server. The security credentials for this are stored in the csf-key AgileWebServicesKey on Fusion Middleware (FMW). The Agile username and password must be setup correctly so that the Agile service is invoked successfully from the AIA composite in the FMW layer. The system returns AgileUpdateItemListResponseABM to UpdateItemBalanceListAgileProvABCSImpl.

Table 4–1 (Cont.) Activities Related to Item Balance Update Orchestration

Step	Activity	Remarks
7	UpdateItemBalanceListAgileProvABCSImpl sends a response back to ItemBalanceResponseEBS	UpdateItemBalanceListAgileProvABCSImpl transforms AgileUpdateItemListResponseABM to UpdateItemBalanceListResponseEBM and returns it to ItemBalanceResponseEBS
8	ItemBalanceResponseEBS sends the UpdateItemBalanceListResponseEBM to UpdateItemBalanceListJDEE1ReqABCSImpl	ItemBalanceResponseEBS sends the UpdateItemBalanceListResponseEBM to UpdateItemBalanceListJDEE1ReqABCSImpl

4.3 Solution Assumptions and Constraints

If item balance information needs to be retrieved from multiple branches or plants in JD Edwards EnterpriseOne, the system must meet these constraints:

1. Configure Agile PLM Multi-Sites.
2. Establish one-to-one mapping between Agile PLM sites and JD Edwards EnterpriseOne branch/plants.
3. Locate the attributes to be updated with the JD Edwards EnterpriseOne data on the Sites tab of the item.

   Agile PLM Multi-Sites are not required. You can update any Title Block or Page Two attribute with the JD Edwards EnterpriseOne data.

The JD Edwards EnterpriseOne IntegrationTimeStampManager Business service updates the last batch extract date and time with the enterprise server date and time.

4.4 Agile PLM Interfaces

Table 4–2 lists the Agile PLM Web Services Definition Language (WSDL) files:

Table 4–2 Agile PLM Web Services Definition Language (WSDL) files

Interface	Description
UpdateItemBalanceListAgileProvABCSImpl	
ItemABS.wsdl	Used to update an item balance information in Agile PLM

Table 4–3 lists the Agile PLM XML Schema Definition (XSD) files:

Table 4–3 Agile PLM XML Schema Definition (XSD) files

Interface	Description
UpdateItemBalanceListAgileProvABCSImpl	
ItemABM.xsd ItemABO.xsd	Contains the update item balance information request and response ABO and ABM

4.5 JD Edwards EnterpriseOne Interfaces

Table 4–4 lists the JD Edwards EnterpriseOne WSDL files:

Table 4–4 JD Edwards EnterpriseOne WSDL files

Interface	Description
UpdateItemBalanceListJDEE1ReqABCSImpl	
IntegrationTimeStampManager.wsdl	Updates time stamp file F0095 in JD Edwards EnterpriseOne

Table 4–5 lists the JD Edwards EnterpriseOne XSD files:

Table 4–5 JD Edwards EnterpriseOne XSD files

Interface	Description
UpdateItemBalanceListJDEE1ReqABCSImpl	
R41021D.xsd	Contains Update Item Balance List Request ABM

4.6 Core AIA Components

Table 4–6 lists the components used in the process integration flow for update item balance:

Table 4–6 Components for update item balance process flow

Component	Name
EBO	ItemBalanceEBO
EBMs	UpdateItemBalanceListEBM UpdateItemBalanceListResponseEBM
EBS	ItemBalanceEBS ItemBalanceResponseEBS

Table 4–7 lists the locations of components:

Table 4–7 Location of Components

Component	Location
EBO and EBM XSD files	$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/
WSDL files	$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseBusinessServiceLibrary/Core/EBO/

For detailed documentation of individual EBOs and EBMs, click the AIA Reference Doc link on EBO and EBM detail pages in Oracle Enterprise Repository.

For more information about using the Oracle Enterprise Repository and configuring it to provide the AIA Reference Doc link, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*, "Configuring and Using Oracle Enterprise Repository as the Oracle AIA SOA Repository."

EBOs can be extended, for instance, to add new data elements. These extensions are protected, and remains intact after a patch or an upgrade.

For more information, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*.

4.6.1 Agile PLM and JD Edwards EnterpriseOne Components for Update Item Balance

Table 4–8 lists the Agile PLM and JD Edwards EnterpriseOne components for update item balance:

Table 4–8 Components for update item balance

Service	JD Edwards EnterpriseOne (Requester)	Agile PLM (Provider)
ABMs	R41021D	AgileUpdateItemListABM AgileUpdateItemListResponseABM
ABCS	UpdateItemBalanceListJDEE1ReqABCS	UpdateItemBalanceListAgileProvABCSImpl
EBS	ItemBalanceEBS	ItemBalanceResponseEBS

Table 4–9lists the locations of components:

Table 4–9 Location of Components

Component	Location
Application Business Objects, ABM, and Common XSD files	$AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/Agile/V1/schemas/
WSDL files	$AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/JDEE1/V1/wsdls/

4.7 Integration Services

The process integration flow for update item balance uses these integration services:

- ItemBalanceEBS
- UpdateItemBalanceListJDEE1ReqABCSImpl
- UpdateItemBalanceListAgileProvABCSImpl

4.7.1 ItemBalanceEBS

ItemBalanceEBS is the Enterprise EBS that exposes the operations related to the item integration on the item EBO. The routing rules are:

- ItemBalanceEBS

  UpdateItemBalanceListJDEE1ReqABCSImpl

  Routes UpdateItemBalanceListEBM to UpdateItemBalanceListAgileProvABCSImpl
- ItemBalanceResponseEBS

  UpdateItemBalanceListAgileProvABCSImpl

Routes UpdateItemBalanceListResponseEBM to UpdateItemBalanceListJDEE1ReqABCSImpl

4.7.2 UpdateItemBalanceListJDEE1ReqABCSImpl

UpdateItemBalanceListJDEE1ReqABCSImpl transforms the JD Edwards EnterpriseOne message (UpdateItemBalanceListABM) into UpdateItemBalanceListEBM and calls the routing service to update item balance list attributes. It then gets the UpdateItemBalanceListResponseEBM response from Agile PLM and invokes the Integration Time Stamp Manager service to update the integration time stamp table with the last runtime and date.

Process flow:

1. Picks up the xml file based on the properties set in the file/ftp consumer
2. Receives UpdateItemBalanceListABM from file/ftp consumer
3. Transforms JD Edwards EnterpriseOne specific UpdateItemBalanceListABM into UpdateItemBalanceListEBM and populates the EBM header
4. Calls the ItemBalanceEBS service to send message UpdateItemBalanceListEBM to UpdateItemBalanceListAgileProvABCSImpl
5. Receives UpdateItemBalanceListResponseEBM from ItemBalanceResponseEBS
6. Calls the Integration Time Stamp Manager service to update the integration time stamp table with the last runtime and date
7. UpdateItemBalanceListJDEE1ReqABCSImpl has the following transformation:

   Xform_ItemBalanceListABMReqMsg_To_ItemBalanceListEBMReqMsg

4.7.3 UpdateItemBalanceListAgileProvABCSImpl

Use UpdateItemBalanceListAgileProvABCSImpl to facilitate communications between ItemBalanceEBS and the Agile PLM web service used for updating quantity information of the items in batch mode in Agile PLM.

Process flow:

1. Receives UpdateItemBalanceListReqMsg that contains UpdateItemBalanceListEBM
2. Calls transform operation to convert UpdateItemBalanceListEBM into AgileUpdateItemListABM
3. Passes AgileUpdateItemListABM as input to the web service operation UpdateItems (coarse-grained application programming interfaces (APIs) on the Agile PLM side) to update items in Agile PLM
4. Receives AgileUpdateItemListResponseABM on successful execution of coarse-grained API
5. Transforms AgileUpdateItemListResponseABM to UpdateItemBalanceListResponseEBM, which is returned as output of this BPEL process
6. If the UpdateItems service operation fails on the Agile PLM side, generates a new fault and sends it across with an appropriate error message

5 Process Integration for Product Design Changes

This chapter provides an overview of the integration flow for product design changes and discusses:

- Product design changes process integration
- Solution assumptions and constraints
- Agile Product Lifecycle Management (PLM) interfaces
- JD Edwards EnterpriseOne interfaces
- Core Application Integration Architecture (AIA) components
- Integration services

5.1 Overview

The new part or product release and the product design modification process within Agile PLM results in the publication of an Engineering Change Order (ECO). The ECO that results from a new product contains lines with all of the new components used in a bill of material (BOM) followed by details about the BOM. Similarly, a product design modification results in an ECO containing all of the new or changed components used on the BOM followed by just the changes to the BOM.

Agile PLM can send all BOM information or only net changes to a BOM in an ECO. When Agile PLM releases a new product, it should include all BOM information. After an ECO is created and processed in JD Edwards EnterpriseOne, it should send only net changes in an ECO.

The Agile PLM requester ABCS (ProcessEngineeringChangeOrderAgileReqABCSImpl) sends the ECO enterprise business message (EBM) to EngineeringChangeOrderEBS. The EngineeringChangeOrderEBS does routes the JD Edwards EnterpriseOne Provider Application Business Connector Services (ABCS): CreateEngineeringChangeOrderListJDEE1ProvABCSImpl. The CreateEngineeringChangeOrderListJDEE1ProvABCSImpl performs the following actions:

- Transforms the ECO EBM to ECO application business message (ABM) for JD Edwards EnterpriseOne
- Invokes the JD Edwards EnterpriseOne ECO processor web services

The JD Edwards EnterpriseOne ECO processor provides a response to the requestor by invoking the EngineeringChangeOrderResponseEBS.

Note: The Create ECO flow is one way from Agile PLM to JD Edwards EnterpriseOne. The system does not send any ECOs created in JD Edwards EnterpriseOne to Agile PLM.

5.2 Process Flow for Product Design Changes

This section discusses:

- Creating ECO flow
- Orchestrating ECO flow

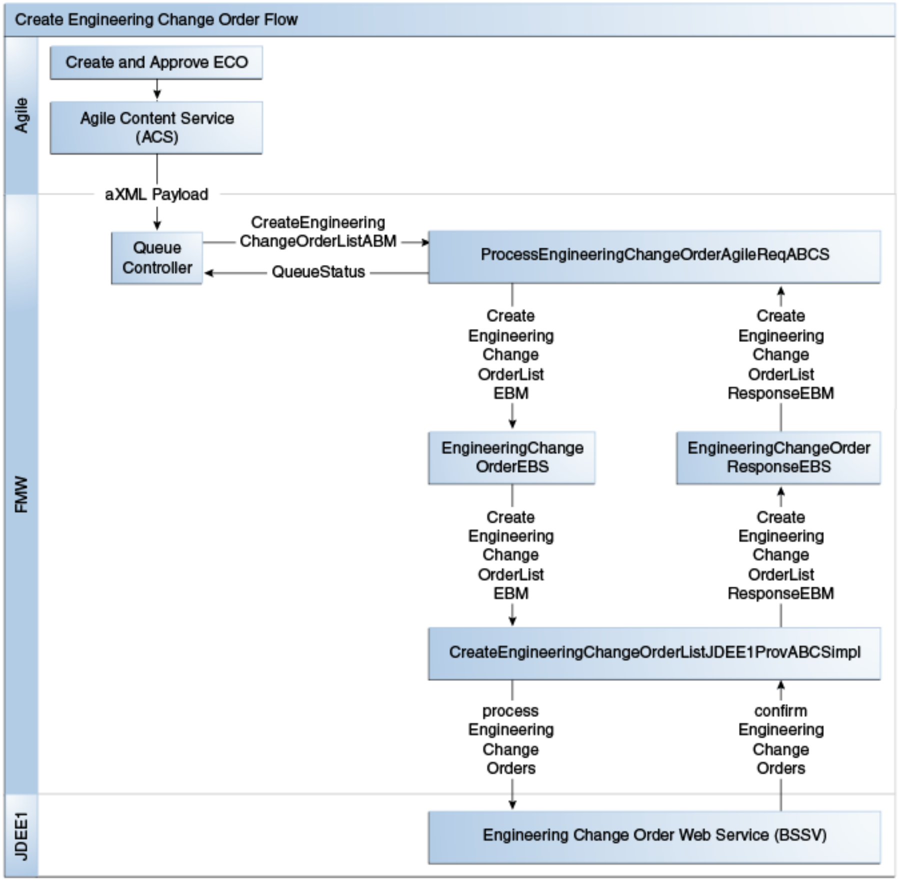
5.2.1 Creating ECO Flow

To create an ECO flow, complete these steps:

1. Submit the ECO for approval (workflow step).
2. After the ECO is approved, the system generates an Agile Content Service (ACS) workflow event to trigger the ECO process flow.
3. The queue framework captures the ACS payload (aXML), which is generated for the event, and adds it to the integration queue.
4. The queue framework identifies the highest priority queue message, processes it to create an ECO ABM, and triggers the requestor ABCS.
5. The requestor ABCS transforms the ECO ABM to ECO EBM and triggers an operation on the Enterprise Business Service (EBS) that routes the EBM to JD Edwards EnterpriseOne with ECO EBM as the input.
6. The EBS invokes the provider ABCS with EBM as input; the provider transforms EBM to JD Edwards EnterpriseOne ABM before invoking the EngineeringChangeOrderManager PBSSV (web service).
7. The ECO business flow completes these steps:
   - Creates and/or updates items in JD Edwards EnterpriseOne and links them to branches or plants.
   - Creates an ECO in JD Edwards EnterpriseOne.
   - Associates the list of revised items with new revisions and effectivity dates, and schedules the ECO for implementation.
8. The system updates the status of the queue message in the integration queue for monitoring.
9. In JD Edwards EnterpriseOne, execute the UBE R30510 for creating BOMs.

Figure 5–1 illustrates the Create ECO flow:

Figure 5–1 Create ECO sequence diagram


Create Engineering Change Order Flow
Agile
FMW
JDEE1
Create and Approve ECO
Agile Content Service (ACS)
aXML Payload
Queue Controller
CreateEngineering ChangeOrderListABM
QueueStatus
ProcessEngineeringChangeOrderAgileReqABCS
Create Engineering Change OrderList EBM
Create Engineering Change OrderList ResponseEBM
EngineeringChange OrderEBS
EngineeringChangeOrder ResponseEBS
Create Engineering Change OrderList EBM
Create Engineering Change OrderList ResponseEBM
CreateEngineeringChangeOrderListJDEE1ProvABCSImpl
process Engineering Change Orders
confirm Engineering Change Orders
Engineering Change Order Web Service (BSSV)

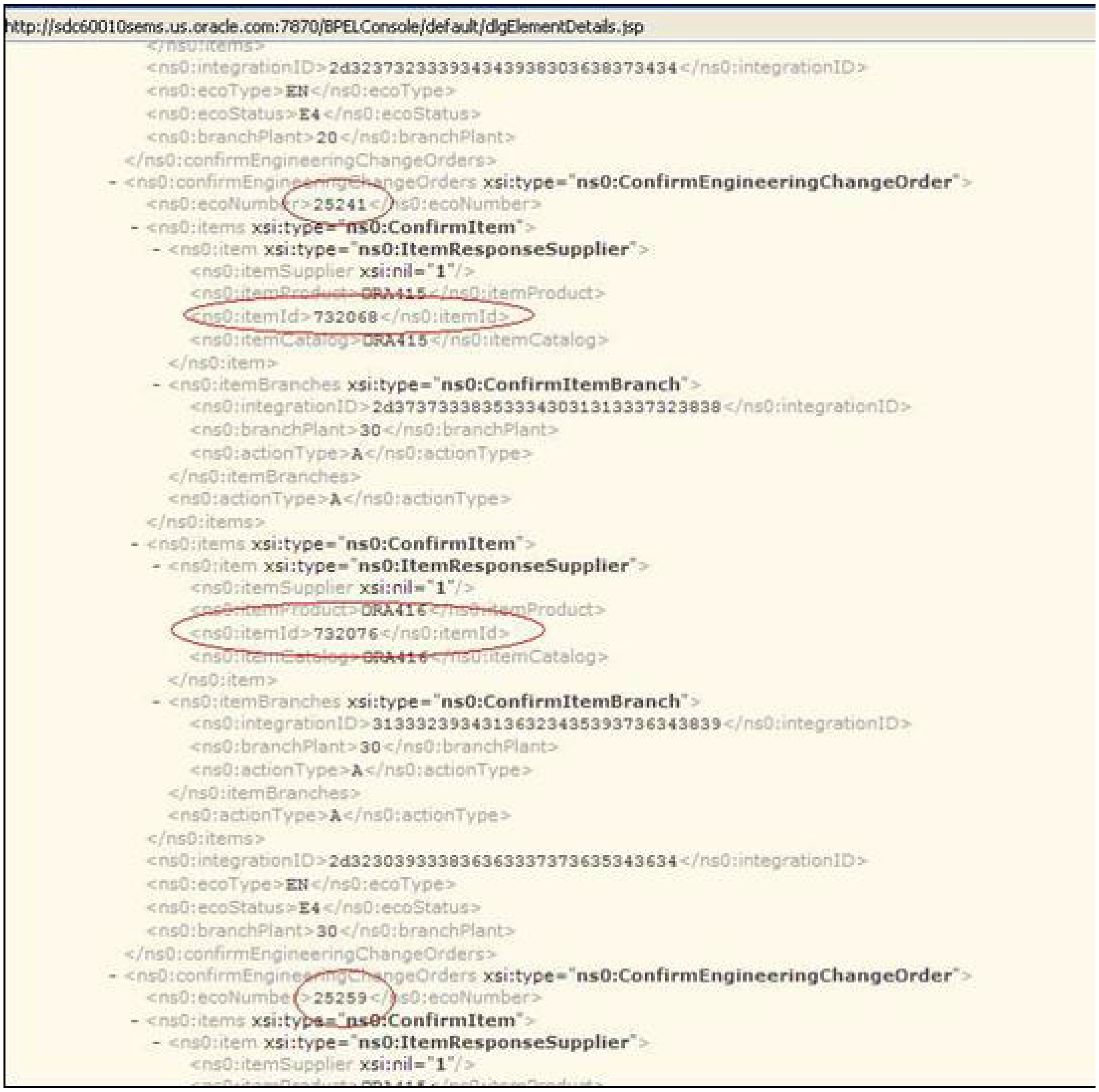
5.2.1.1 Monitoring ECO Processes

To monitor each ECO process:

1. Log in to the Oracle Enterprise Manager Console with user name and password.
2. Navigate to SOA > soa-infra > default > CreateEngineeringChangeOrderListJDEE1ProvABCSImpl.
3. Click the Instances tab to view the successful and unsuccessful runs.
4. Click the instance id to display the Flow trace window.
5. Select the CreateEngineeringChangeOrderListJDEE1ProvABCSImpl flow.
6. Select the Flow tab.
7. Scroll down and click InvokeEngineeringChangeOrderManager.

   The Activity Audit Trail page is displayed.
8. Scroll down to find the ECO number under the CreateEngineeringChangeOrderManagerAppRespMsg tag > ConfirmEngineeringChangeOrders.
9. If multiple ECOs are created in this flow, all such ECOs are displayed in a sequential order, Figure 5–2:

Figure 5–2 ECO created in a sequence



http://sdc60010sems.us.oracle.com:7870/BPELConsole/default/dlgElementDetails.jsp

```
        </ns0:items>
        <ns0:integrationID>2d32373233393434393830363837343434</ns0:integrationID>
        <ns0:ecoType>EN</ns0:ecoType>
        <ns0:ecoStatus>E4</ns0:ecoStatus>
        <ns0:branchPlant>20</ns0:branchPlant>
      </ns0:confirmEngineeringChangeOrders>
    - <ns0:confirmEngineeringChangeOrders xsi:type="ns0:ConfirmEngineeringChangeOrder">
        <ns0:ecoNumber>25241</ns0:ecoNumber>
      - <ns0:items xsi:type="ns0:ConfirmItem">
        - <ns0:item xsi:type="ns0:ItemResponseSupplier">
            <ns0:itemSupplier xsi:nil="1"/>
            <ns0:itemProduct>ORA415</ns0:itemProduct>
            <ns0:itemId>732068</ns0:itemId>
            <ns0:itemCatalog>ORA415</ns0:itemCatalog>
          </ns0:item>
        - <ns0:itemBranches xsi:type="ns0:ConfirmItemBranch">
            <ns0:integrationID>2d37373338353334303131333732383 8</ns0:integrationID>
            <ns0:branchPlant>30</ns0:branchPlant>
            <ns0:actionType>A</ns0:actionType>
          </ns0:itemBranches>
          <ns0:actionType>A</ns0:actionType>
        </ns0:items>
      - <ns0:items xsi:type="ns0:ConfirmItem">
        - <ns0:item xsi:type="ns0:ItemResponseSupplier">
            <ns0:itemSupplier xsi:nil="1"/>
            <ns0:itemProduct>ORA416</ns0:itemProduct>
            <ns0:itemId>732076</ns0:itemId>
            <ns0:itemCatalog>ORA416</ns0:itemCatalog>
          </ns0:item>
        - <ns0:itemBranches xsi:type="ns0:ConfirmItemBranch">
            <ns0:integrationID>3133323934313632343539373634383 9</ns0:integrationID>
            <ns0:branchPlant>30</ns0:branchPlant>
            <ns0:actionType>A</ns0:actionType>
          </ns0:itemBranches>
          <ns0:actionType>A</ns0:actionType>
        </ns0:items>
        <ns0:integrationID>2d32303933383636333737363535343634</ns0:integrationID>
        <ns0:ecoType>EN</ns0:ecoType>
        <ns0:ecoStatus>E4</ns0:ecoStatus>
        <ns0:branchPlant>30</ns0:branchPlant>
      </ns0:confirmEngineeringChangeOrders>
    - <ns0:confirmEngineeringChangeOrders xsi:type="ns0:ConfirmEngineeringChangeOrder">
        <ns0:ecoNumber>25259</ns0:ecoNumber>
      - <ns0:items xsi:type="ns0:ConfirmItem">
        - <ns0:item xsi:type="ns0:ItemResponseSupplier">
            <ns0:itemSupplier xsi:nil="1"/>
```

Item Product and Item Catalog hold the part number that comes in from Agile PLM. JD Edwards EnterpriseOne generates the Item ID. The user is given this number for reference.

5.2.2 Orchestrating ECO Flow

Table 5–1 lists the flow for orchestrating an ECO:

Table 5–1 Flow for Orchestrating an ECO

Step	Activity	Remarks
1	Agile ACS transmits Agile PLM ECO data in payload in the form of predefined XML format known as aXML. The system queues this file for further processing.	Agile ACS acts as a trigger for ECO use case.

Table 5–1 (Cont.) Flow for Orchestrating an ECO

Step	Activity	Remarks
2	The QueueController framework reads the highest priority queue message and transforms the payload (aXML) to AgileCreateEngineeringChangeOrderListABM.	QueueController processes the payload.
3	QueueController invokes the ProcessEngineeringChangeOrderAgileReqABCSImpl with AgileCreateEngineeringChangeOrderListABM as input.	NA
4	AgileCreateEngineeringChangeOrderListABM is transformed into CreateEngineeringChangeOrderListEBM.	ProcessEngineeringChangeOrderAgileReqABCSImpl makes call backs to Agile web services if needed.
5	ProcessEngineeringChangeOrderAgileReqABCSImpl invokes the CreateEngineeringChangeOrderList operation on EngineeringChangeOrderEBS with CreateEngineeringChangeOrderListEBM as input.	NA
6	EngineeringChangeOrderEBS routes CreateEngineeringChangeOrderListEBM to CreateEngineeringChangeOrderListJDEE1ProvABCSImpl.	NA
7	CreateEngineeringChangeOrderListJDEE1ProvABCSImpl transforms CreateEngineeringChangeOrderListEBM into EngineeringChangeOrderManagerABM and invokes the JD Edwards EnterpriseOne web service with this input payload.	Creates or updates items in JD Edwards EnterpriseOne and links them to the branch/plants, creates an ECO, associates revised items to it, and creates a BOM.
8	CreateEngineeringChangeOrderListJDEE1ProvABCSImpl invokes CreateEngineeringChangeOrderListResponse operation on EngineeringChangeOrderResponseEBS with CreateEngineeringChangeOrderListResponseEBM as input.	NA
9	EngineeringChangeOrderResponseEBS routes CreateEngineeringChangeOrderListResponseEBM to ProcessEngineeringChangeOrderAgileReqABCSImpl.	Routes a response message
10	ProcessEngineeringChangeOrderAgileReqABCSImpl sends the status back to the QueueController to update the queue.	QueueController updates this status against the queue message in the database.

Table 5–1 (Cont.) Flow for Orchestrating an ECO

Step	Activity	Remarks
11	ProcessEngineeringChangeOrderAgileReqABCSImpl transforms CreateEngineeringChangeOrderListResponseEBM into AgileUpdateEngineeringChangeOrderListABM. AgileUpdateEngineeringChangeOrderListABM is sent as input to the Agile Web service.	The Web service updates the status on the change order in Agile PLM, which is predefined P2 or P3 attributes on ECO object in Agile PLM. **Note:** The ProcessEngineeringChangeOrderAgileReqABCSImpl composite uses the oracle/wss_http_token_client_policy client security policy while calling the ChangeABS service hosted on the Agile server. The security credentials for this are stored in the csf-key AgileWebServicesKey on Fusion Middleware (FMW). The Agile username and password must be setup correctly so that the Agile service is invoked successfully from the AIA composite in the FMW layer.

5.3 Solution Assumptions and Constraints

This design assumes that the following statements are true:

1. Do not use JD Edwards EnterpriseOne to create any new item or BOM.
2. In Agile PLM, we use the term change order generically to describe an ECO, a Manufacturing Change Order (MCO), and a Site Change Order (SCO).
3. This integration does not support MCOs.

   This integration supports SCOs and ECOs only with BOM information.
4. The system does not import any AML data passed to JD Edwards EnterpriseOne in this integration into JD Edwards EnterpriseOne.
5. You should use ECO to transfer the new part and update part information from Agile PLM to JD Edwards EnterpriseOne.

   An Agile PLM user must ensure that new and updated items are available on the Affected Items tab before releasing the ECO to JD Edwards EnterpriseOne.
6. Use ECOs to redline BOMs for associating new revisions, effectivity date changes, and inclusion of new items on BOMs.

   When creating new items, an Agile PLM user must ensure that the new items are available on the Affected Items tab before releasing the ECO to JD Edwards EnterpriseOne.
7. Agile PLM user can redline a BOM and add a new site in one change order.
8. If multiple sites are associated in Agile PLM for a single ECO, then multiple ECOs are created for each branch plant (site) in JD Edwards EnterpriseOne.
9. You must approve ECOs in Agile PLM before initiating the integration flow.
10. ECOs are pre-approved in Agile PLM; therefore, an approval layer in JD Edwards EnterpriseOne is not required before implementing these ECOs through the scheduled Batch Process - R30510 for creating BOMs.

However, if the JD Edwards EnterpriseOne user decides to add an approval layer, the system does not support any rejection in this approval process.

11. If BOM creation through R30510 fails for any reason, the message is not sent back to Agile PLM automatically.
12. If the JD Edwards EnterpriseOne user decides to notify Agile PLM about an ECO rejection or failure to create a BOM, then the user must manually update the appropriate status code on the ECO.

    The subsequent run of the update ECO flow from JD Edwards EnterpriseOne to Agile PLM will send the status message to Agile PLM.
13. These processes are synchronous.
14. Because, Agile PLM maintains effectivity dates at the parent level, JD Edwards EnterpriseOne forwards the same date to all related component items.
15. The BOMs loaded from JD Edwards EnterpriseOne as part of an initial load might have a mixture of stock and nonstock component items.

    You can modify the stock items on the BOM and send them successfully to JD Edwards EnterpriseOne through ECO. However, you cannot change the nonstock components.
16. The maximum description length of ECOs and items in JD Edwards EnterpriseOne is 30.

    If an Agile PLM user sends a description that exceeds this length, the message is truncated and the first 30 characters are inserted or updated into JD Edwards EnterpriseOne.
17. The Stocking type DVM (ITEM_TYPE.dvm) must be in sync with the stocking types in JD Edwards EnterpriseOne.

5.4 Agile PLM Interfaces

Table 5–2 lists the Agile PLM Web Services Definition Language (WSDL) files:

Table 5–2 Agile LM Web Services Definition Language (WSDL) files:

Interfaces	Description
ProcessEngineeringChangeOrderAgileReqABCSImpl	
ChangeABS.wsdl	Sends the released ECO to be created as an EngineeringChangeOrder in JD Edwards EnterpriseOne

Table 5–3 lists the Agile PLM XML Schema Definition (XSD) files:

Table 5–3 Agile PLM XML Schema Definition (XSD) files

Interface	Description
CreateEngineeringChangeOrderAgileReqABCS	
EngineeringChangeOrderABM.xsd EngineeringChangeOrderABO.xsd	Contains CreateEngineeringChangeOrderListABM and CreateEngineeringChangeOrderListResponseABM, and corresponding ABOs

5.5 JD Edwards EnterpriseOne Interfaces

Table 5–4 lists the JD Edwards EnterpriseOne WSDL files:

Table 5–4 JD Edwards EnterpriseOne WSDL files

Interface	Description
CreateEngineeringChangeOrderListJDEE1ProvABCSImpl	
EngineeringChangeOrderManager.wsdl	Creates an ECO in JD Edwards EnterpriseOne

5.6 Core AIA Components

Table 5–5 lists the components used in the process integration for Create ECO flow:

Table 5–5 Components in ECO Flow

Service	Description
Enterprise Business Object (EBO)	EngineeringChangeOrderEBO
EBMs	CreateEngineeringChangeOrderListEBM CreateEngineeringChangeOrderListResponseEBM
EBSs	EngineeringChangeOrderEBS EngineeringChangeOrderResponseEBS

Table 5–6 lists the locations of components:

Table 5–6 Location of Components

Component	Location
EBO and EBM XSD files	$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/
WSDL files	$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseBusinessServiceLibrary /Core/EBO/

For detailed documentation of individual EBOs and EBMs, click the AIA Reference Doc link on EBO and EBM detail pages in Oracle Enterprise Repository.

For more information about using the Oracle Enterprise Repository and configuring it to provide the AIA Reference Doc link, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*, "Configuring and Using Oracle Enterprise Repository as the Oracle AIA SOA Repository."

You can extend EBOs, for instance, to add new data elements. These extensions are protected and remains intact after a patch or an upgrade.

For more information, see *Oracle Fusion Middleware Concepts and Technologies Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*, "Understanding Extensibility."

5.6.1 Agile PLM and JD Edwards EnterpriseOne Components for Creating ECO

Table 5–7 lists the Agile PLM and JD Edwards EnterpriseOne components for creating ECO flow:

Table 5–7 Agile PLM and JD Edwards EnterpriseOne components for creating ECO flow:

Services	Agile PLM (Requester)	JD Edwards EnterpriseOne (Provider)
ABMs	AgileCreateEngineeringChangeOrderListABM AgileUpdateEngineeringChangeOrderListABM	EngineeringChangeOrder
ABCS	ProcessEngineeringChangeOrder AgileReqABCSImpl	CreateEngineeringChangeOrderListJDEE1ProvABCSImpl
EBS	EngineeringChangeOrderEBS	EngineeringChangeOrderResponseEBS
Business Process Execution Language (BPEL)	CreateQueueService QueueProcessorServiceImpl	NA

Table 5–8 lists the locations of the components:

Table 5–8 Location of Components

Component	Location
Application Business Objects, ABM, and Common XSD files	$AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/Agile/V1/schemas $AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/JDEE1/V1/schemas
WSDL files	$AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/Agile/V1/wsdls $AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/JDEE1/V1/wsdls

5.7 Integration Services

These services are delivered with the process integration for product design changes from Agile PLM to JD Edwards EnterpriseOne:

- EngineeringChangeOrderEBS
- ProcessEngineeringChangeOrderAgileReqABCSImpl
- CreateEngineeringChangeOrderListJDEE1ProvABCSImpl

5.7.1 EngineeringChangeOrderEBS

EngineeringChangeOrderEBS is the EBS that exposes the operations related to the EngineeringChangeOrder Integration on the EngineeringChangeOrder EBO. The routing rules are:

- EngineeringChangeOrderEBS

  ProcessEngineeringChangeOrderAgileReqABCSImpl routes CreateEngineeringChangeOrderListEBM to CreateEngineeringChangeOrderListJDEE1ProvABCSImpl.

- EngineeringChangeOrderResponseEBS

CreateEngineeringChangeOrderListJDEE1ProvABCSImpl routes CreateEngineeringChangeOrderListResponseEBM to ProcessEngineeringChangeOrderAgileReqABCSImpl.

5.7.2 ProcessEngineeringChangeOrderAgileReqABCSImpl

ProcessEngineeringChangeOrderAgileReqABCSImpl transforms the Agile PLM message (AgileCreateEngineeringChangeOrderListABM) into CreateEngineeringChangeOrderListEBM and invokes the EBS service to Create ECOs in JD Edwards EnterpriseOne. JD Edwards EnterpriseOne processes these ECOs and sends a CreateEngineeringChangeOrderListResponseEBM response to Agile PLM. ProcessEngineeringChangeOrderAgileReqABCSImpl receives the CreateEngineeringChangeOrderListResponseEBM and transforms it to Agile ABM message (AgileUpdateEngineeringChangeOrderListABM) before invoking ACS.

The process flow:

- Receives AgileCreateEngineeringChangeOrderListABM from ProcessEngineeringChangeOrderAgileReqABCSImpl, which gets the same from ACS
- Transforms this message into the CreateEngineeringChangeOrderListEBM
- Populates the EBM header by determining the target system IDs and adding them to the EBM header to control routing
- Validates required fields
- Transforms ABM to EBM
- Calls target CreateEngineeringChangeOrderList service with operation CreateEngineeringChangeOrderList
- Receives CreateEngineeringChangeOrderListResponseEBM
- Transforms response EBM to AgileUpdateEngineeringChangeOrderListABM
- Invokes ACS for propagating the response to queue and Agile PLM

ProcessEngineeringChangeOrderAgileReqABCSImpl has the following transformation:

- AgileCreateEngineeringChangeOrderListABM_to_ CreateEngineeringChangeOrderListEBM
- CreateEngineeringChangeOrderListResponseEBM_to_ AgileUpdateEngineeringChangeOrderListABM

5.7.3 CreateEngineeringChangeOrderListJDEE1ProvABCSImpl

CreateEngineeringChangeOrderListJDEE1ProvABCSImpl receives the CreateEngineeringChangeOrderListEBM message from ECOEBS and transforms the EBM into the JD Edwards EnterpriseOne-specific CreateECOABM. It then invokes the JD Edwards EnterpriseOne EngineeringChangeOrderManager service for creating and updating items and creating ECOs. JDEE1EngineeringChangeOrderManager service returns the list of items and ECOs created for a success or throws the appropriate fault for a failure.

It then transforms the JD Edwards EnterpriseOne-specific response message CreateEngineeringChangeOrderResponseABM to CreateEngineeringChangeOrderListResponseEBM and invokes the routing service

EngineeringChangeOrderResponseEBS for sending the response message back to Agile PLM.

The process flow is:

- Receives CreateEngineeringChangeOrderListEBM from EngineeringChangeOrderEBS
- Transforms CreateEngineeringChangeOrderListEBM into JD Edwards EnterpriseOne-specific message CreateEngineeringChangeOrderABM

  Populates EBM header by determining Target System IDs and adds them to the EBM header to control routing

  Validates required fields
- Assigns implemented status if the payload only contains items

  If the payload contains BOM information, then the status does not change. BOM's will be created in "Approved" state.
- Uses DynamicPartnerlink to determine TargetEndpointLocation
- Invokes EngineeringChangeOrderManager web service
- Transforms the JD Edwards EnterpriseOne-specific message CreateEngineeringChangeOrderResponseABM into the CreateEngineeringChangeOrderListResponseEBM
- Invokes the EngineeringChangeOrderResponseEBS service to send the response message (CreateEngineeringChangeOrderListResponseEBM) to ProcessEngineeringChangeOrderAgileReqABCSImpl

ProcessEngineeringChangeOrderListJDEE1ProvABCSImpl has the following transformation:

- Xform_EngineeringChangeOrderListEBM_To_ EngineeringChangeOrderManagerReqMsgABM
- Xform_EngineeringChangeOrderManagerRespMsg_To_

  EngineeringChangeOrderEBSResponseRespMsg

6 Process Integration Flow for ECO Implementation

This chapter provides an overview of the process integration for Engineering Change Order (ECO) implementation and discusses:

- ECO implementation process integration
- Solution assumptions and constraints
- Agile Product Lifecycle Management (PLM) interfaces
- JD Edwards EnterpriseOne interfaces
- Core Application Integration Architecture (AIA) components
- Integration services

6.1 Overview

After synchronizing an ECO to JD Edwards EnterpriseOne, any changes you make to the ECO in JD Edwards EnterpriseOne must also be made in Agile PLM. If the status of an ECO changes and moves to an implemented state in JD Edwards EnterpriseOne, then you must notify Agile PLM. This case has restrictions in a multi-organization environment because the interface changes from centralized (Agile PLM) to decentralized (JD Edwards EnterpriseOne).

ECO is implemented completely in JD Edwards EnterpriseOne. You can complete this step manually or set the scheduler to update the ECO in Agile PLM. Because an ECO may be created in multiple branch/plants in JD Edwards EnterpriseOne and can have a different status in each branch/plant, carry out this operation only when the ECO is completely implemented in all the branch/plants for which it was created in JD Edwards EnterpriseOne.

To transfer change order status information from JD Edwards EnterpriseOne to Agile PLM, you run an extract program (R3013D) in JD Edwards EnterpriseOne. This program generates an XML file that contains the data to be uploaded into Agile PLM.

The R3013D program retrieves ECOs that have changed since the last successful run (the last successful run date and time are stored in an IntegrationTimeStamp table - F0095 for this Universal Batch Engine [UBE]) or the As of Date specified in the processing option.

The system writes this file to a folder on the JD Edwards EnterpriseOne Enterprise server. The location of this folder is specified in the processing options of the extract program. The details of the extract programs and files are discussed in later sections of this chapter.

After creating the XML files, you can use one of two methods to pass that data to Agile PLM:

- File Transfer Protocol (FTP)
- Weblogic Server

If you use the FTP method, you must configure an FTP adapter to monitor the JD Edwards EnterpriseOne Enterprise Server folders for newly created extract files. When the FTP adapter locates a new file, the appropriate Mediator process debatches the files into separate instances. You use debatching to split large XML files into several smaller XML files.

Alternatively, you can move the XML files to the JD Edwards EnterpriseOne JDEE1In folder on the Weblogic Server. If you use this method, the appropriate Mediator process detects the file and debatches it into separate instances.

After the XML files are debatched, routing services route each XML file to UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl.

The UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl performs the following actions:

- Transforms an ECO application business message (ABM) to an ECO enterprise business message (EBM)
- Invokes EngineeringChangeOrderEBS, which routs EBM to provider Application Business Connector Services (ABCS): UpdateEngineeringChangeOrderListAgileProvABCSImpl

The Agile ABCS provides a call back response to EngineeringChangeOrderResponseEBS. UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl receives this response, which updates the IntegrationTimeStamp table with the last successful run date and time.

Note: If you use the FTP method, you should configure an FTP server on the JD Edwards EnterpriseOne Enterprise server. Configure the FTP adapter to use the FTP connection that is set up on the JD Edwards EnterpriseOne server.

6.2 ECO Implementation Process Integration

This section discusses:

- Updating ECO flow
- Changing status operation
- Updating ECO orchestration

6.2.1 Updating ECO Flow

The Update ECO process flow includes these steps:

1. he requester ABCS, defined as an asynchronous process, receives a list of ABMs from the JD Edwards EnterpriseOne UBE batch extracts.

   The list of ABMs is those that have update_date greater than the last_successful_run_date of the batch program.

2. The requester BPEL process filters the list of ABMs based on the ID to a list of ABMs those IDs are present in the XREF tables in the Fusion Middleware (FMW) layer.

   This filtering provides a list of change orders that were actually from Agile PLM alone. The original list of ABMs may be from non-Agile PLM sources as well.

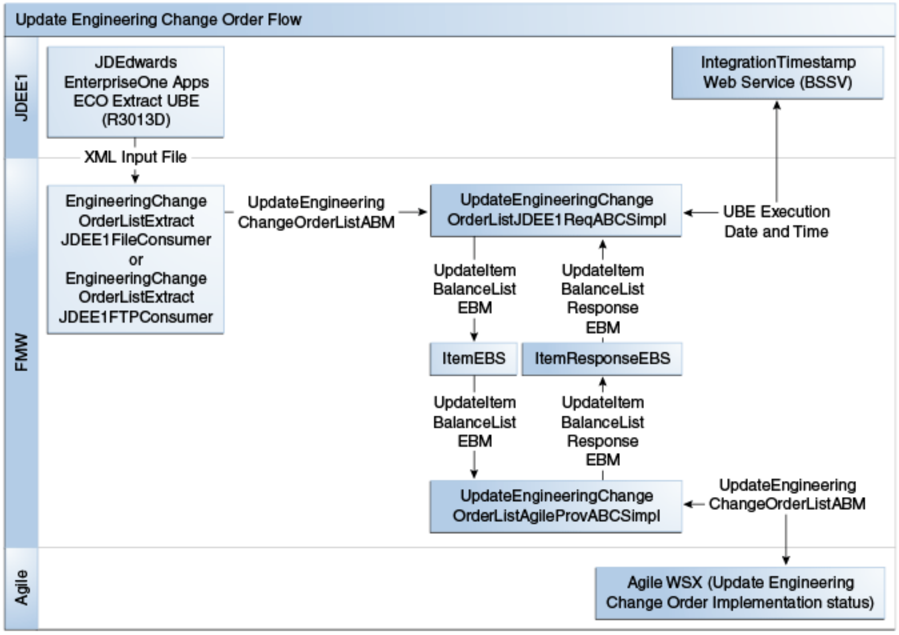
3. The BPEL process then makes a Mediator call out for endpoint virtualization.
4. The ABM is transformed to an EBM.
5. An asynchronous request-delayed response call is made to the EngineeringChangeOrderEBS with the EngineeringChangeOrderListEBM.
6. The BPEL instance is invoked when the asynchronous call gets back from the provider and provides the status of the transaction back to the caller.

   Performance is not affected because the call is scheduled and invoked by a server not by a user.

7. The concurrent program logs the status of this call.

Figure 6–1 illustrates the update ECO flow from JD Edwards EnterpriseOne to Agile PLM:

Figure 6–1 Update ECO flow from JD Edwards EnterpriseOne to Agile PLM


Update Engineering Change Order Flow
JDEE1
FMW
Agile
JDEdwards EnterpriseOne Apps ECO Extract UBE (R3013D)
XML Input File
IntegrationTimestamp Web Service (BSSV)
EngineeringChange OrderListExtract JDEE1FileConsumer or EngineeringChange OrderListExtract JDEE1FTPConsumer
UpdateEngineering ChangeOrderListABM
UpdateEngineeringChange OrderListJDEE1ReqABCSImpl
UBE Execution Date and Time
UpdateItem BalanceList EBM
UpdateItem BalanceList Response EBM
ItemEBS
ItemResponseEBS
UpdateItem BalanceList EBM
UpdateItem BalanceList Response EBM
UpdateEngineeringChange OrderListAgileProvABCSImpl
UpdateEngineering ChangeOrderListABM
Agile WSX (Update Engineering Change Order Implementation status)

6.2.2 Changing Status Operation

When there is a change of status in JD Edwards EnterpriseOne, the status of the workflow in Agile PLM is updated through the update ECO flow.

The update ECO provider service in Agile PLM does the following:

1. Whenever a change occurs to the status change of any ECO in JD Edwards EnterpriseOne, JD Edwards EnterpriseOne sends the ECO status to Agile PLM.
2. UpdateEngineeringChangeOrderListAgileProvABCSImpl service checks the status of the ECO sent by JD Edwards EnterpriseOne and updates the status field in the ECO in Agile PLM.

3. If the ECO that comes in from JD Edwards EnterpriseOne has the Implemented status, the system pushes the change in Agile PLM for the ECO to the Implemented status in addition to updating the status field in ECO in Agile PLM.

   For this, the entry in the CHANGE_STATUS table is used.

   If no entry corresponds to the event change implementation and the change type is the same as the change type of the ECO in Agile PLM, such as ECO or Site change Order (SCO), only then is the change moved to the next status; otherwise, the change is not moved forward to the next status at all.

4. The CHANGE_STATUS table is located in the AIA Schema created on the Service Oriented Architecture (SOA) server.

   The default user ID is plmpip. The password is the same password that the customer has setup for the FP AIA database. This value is the same as the property fp.db.aia.password, which can be found in the AIAInstallProperties.xml file. The DB details, such as URL, port, server ID, and so on can be found in the AIAInstallProperties.xml file at <AIA_INSTANCE>/config/AIAInstallProperties.xml.

CHANGE_STATUS Sample Data

Table 6–1 Change Status Sample Data

EVENT	OUTCOME	SUBCLASS	WORKFLOW	NEXT_STATUS
Change Implemented	SUCCESS	ECO	Default Change Orders	Implemented

- The EVENT column key is Change Implemented, and the OUTCOME column key is SUCCESS.
- In the SUBCLASS column, set up the change order subclass as ECO or SCO.
- In the WORKFLOW column, set up the workflows.

  For example, if you are using Default Change Order workflow for ECO, enter Default Change Order (the values can be picked up from Agile Java client).
- In the NEXT_STATUS column, enter the status of the workflow you want it to move to when the conditions are met.

Sample Use Case

1. Release an ECO, C0001, from Agile PLM to JD Edwards EnterpriseOne.
2. In JD Edwards EnterpriseOne, create this ECO in three branch/plants, BP10, BP20, and BP30, using the new part and product release process.
3. Change the status of this ECO in 10 to Implemented in JD Edwards EnterpriseOne.
4. JD Edwards EnterpriseOne sends this implemented ECO status to Agile PLM.
5. When it is received on the Agile PLM side, the ECO data is updated and workflow status of ECO is changed.

   The change of workflow status is based on the rule: When the status of ECO is implemented in any of the branch plants in JD Edwards EnterpriseOne, move the ECO in Agile PLM to the Implemented status.

   The status field in Agile PLM is also updated with the Implemented status.

6. If an entry in the CHANGE_STATUS table corresponds to the event Change Implemented and SubClass ECO, and to workflow mentioned on ECO C0001 in Agile PLM, read the next status and send it to the next status mentioned.
7. If the data mentioned has no entry in the table, the system does not attempt to send ECO C0001 to the next status.

6.2.3 Updating ECO Orchestration

Table 6–2 lists the activities involved in ECO Update orchestration:

Table 6–2 Activities involved in ECO update orchestration

Step	Activity	Remarks
1.	Run R3013D to export ECOs	This activity occurs when ECO-related information is updated in JD Edwards EnterpriseOne
2.	EngineeringChangeOrderListExtractJDEE1FTPConsumer or EngineeringChangeOrderListExtractJDEE1FileConsumer reads and debatches the file	EngineeringChangeOrderListExtractJDEE1Consumer is triggered
3.	Invoke the UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl process	UpdateEngineeringChangeOrderListEBM is created inside UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl
4.	UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl invokes the EngineeringChangeOrderEBS with UpdateEngineeringChangeOrderList operation	An invoke activity in UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl invokes the UpdateEngineeringChangeOrderList operation on EngineeringChangeOrderEBS with UpdateEngineeringChangeOrderListEBM as the input
5.	EngineeringChangeOrderEBS routes UpdateEngineeringChangeOrderListEBM to UpdateEngineeringChangeOrderListAgileProvABCSImpl	EngineeringChangeOrderEBS routes UpdateEngineeringChangeOrderListEBM to UpdateEngineeringChangeOrderListAgileProvABCSImpl
6.	UpdateEngineeringChangeOrderListAgileProvABCSImpl does the transformation	UpdateEngineeringChangeOrderListAgileProvABCSImpl transforms UpdateEngineeringChangeOrderListEBM into AgileUpdateEngineeringChangeOrderListABM

Table 6–2 (Cont.) Activities involved in ECO update orchestration

Step	Activity	Remarks
7.	UpdateEngineeringChangeOrderListAgileProvABCSImpl invokes Agile web services	Agile web services are invoked with AgileUpdateEngineeringChangeOrderListABM as input. The status of ECO is updated in Agile PLM. AgileUpdateEngineeringChangeOrderListResponseABM is sent back to UpdateEngineeringChangeOrderListAgileProvABCSImpl. **Note:** The UpdateEngineeringChangeOrderListAgileProvABCSImpl composite uses the oracle/wss_http_token_client_policy client security policy while calling ChangeABS and MergeABS services hosted on the Agile server. The security credentials for this are stored in the csf-key AgileWebServicesKey on Fusion Middleware (FMW). The Agile username and password must be setup correctly so that the Agile service is invoked successfully from the AIA composite in the FMW layer.

6.3 Solution Assumptions and Constraints

This design assumes that the following statements are true:

1. The ECO update flow is only from JD Edwards EnterpriseOne to Agile PLM.
2. This integration does not support updates to ECOs in Agile PLM.
3. This integration does not support sending ECO parts list and related items information from JD Edwards EnterpriseOne.
4. The JD Edwards EnterpriseOne IntegrationTimeStampManager business service updates the last batch extract date and time to the JD Edwards EnterpriseOne server date and time.
5. If you change an ECO status in JD Edwards EnterpriseOne, the system updates Agile PLM.
6. When Agile PLM is configured for multiple sites (and when multiple sites are attached to an ECO), a single ECO in Agile PLM creates multiple pre-approved ECOs in JD Edwards EnterpriseOne.

   In this integration, all the pre-approved ECOs go into an implemented state when the scheduled batch, R30510 (BOM Creation batch), is run. In case of any failures, such as if an ECO is not implemented, the user should ensure that the failed ECO is implemented before the update ECO flow is triggered; Agile PLM considers the ECO to be implemented if any one of the corresponding ECOs at the JD Edwards EnterpriseOne end goes to an implemented state. Alternatively, if users want to send the failure status to Agile PLM, they must manually configure the status on P48020 to reflect the failure. To do this, create a new status user-defined code item for the error and configure the ECO_STATUS_CODE DVM, and then you can send the changes during the subsequent run of the update ECO flow. The failure status appears only in the Page 2 Status Flex field (you must configure this), while the workflow status for the ECO may still appear as Implemented.
7. The system does not send any effectivity date changes in JD Edwards EnterpriseOne back to Agile PLM.

6.4 Agile PLM Interfaces

Table 6–3 lists the Agile PLM Web Services Definition Language (WSDL) files:

Table 6–3 WSDL files

Interface	Description
UpdateEngineeringChangeOrderListAgileProvABCSImpl	
ChangeABS.wsdl	Used to update change order information in Agile PLM.
ChangeMerge.wsdl	

Table 6–4 lists the Agile PLM XML Schema Definition (XSD) files:

Table 6–4 XSD files

Interface	Description
UpdateEngineeringChangeOrderListAgileProvABCSImpl	
EngineeringChangeOrderABM.xsd	Contains UpdateEngineeringChangeOrderListABM and UpdateEngineeringChangeOrderListResponseABM
EngineeringChangeOrderABO.xsd	

6.5 JD Edwards EnterpriseOne Interfaces

Table 6–5 lists the JD Edwards EnterpriseOne WSDL files:

Table 6–5 JD Edwards EnterpriseOne WSDL files

Interface	Description
UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl	
IntegrationTimeStampManager.wsdl	IntegrationTimeStampManager.wsdl

Table 6–6 lists the JD Edwards EnterpriseOne XSD files:

Table 6–6 JD Edwards EnterpriseOne XSD files

Interface	Description
UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl	
R3013D.xsd	Contains the Update ECO Request ABM

6.6 Core AIA Components

Table 6–7 lists the industry components for process integration for updating ECO flow:

Table 6–7 Industry Components for Updating ECO flow

Component	Name
EBO	EngineeringChangeOrderEBO
EBMs	UpdateEngineeringChangeOrderListEBM UpdateEngineeringChangeOrderListResponseEBM
EBS	EngineeringChangeOrderEBS

Table 6–8 lists the locations of components:

Table 6–8 Location of components

Component	Location
EBO and EBM XSD files	$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/
WSDL files	$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseBusinessServiceLibrary/Core/EBO/

For detailed documentation of individual EBOs and EBMs, click the AIA Reference Doc link on EBO and EBM detail pages in Oracle Enterprise Repository.

For more information about using the Oracle Enterprise Repository and configuring it to provide the AIA Reference Doc link, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*, "Configuring and Using Oracle Enterprise Repository as the Oracle AIA SOA Repository."

EBOs can be extended, for instance, to add new data elements. These extensions are protected, and remains intact after a patch or an upgrade.

For more information, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*.

6.7 Agile PLM and JD Edwards EnterpriseOne Components for Update ECO

Table 6–9 lists the Agile PLM and JD Edwards EnterpriseOne components for Update ECO:

Table 6–9 Agile PLM and JD Edwards EnterpriseOne components for Update ECO

Service	JD Edwards EnterpriseOne (Requester)	Agile PLM (Provider)
ABM	R3013D	AgileUpdateEngineeringChangeOrderListABM AgileUpdateEngineeringChangeOrderListResponseABM
ABCS	UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl	UpdateEngineeringChangeOrderListAgileProvABCSImpl
EBS	EngineeringChangeOrderEBS	EngineeringChangeOrderResponseEBS

Table 6–10 lists the locations of the core components:

Table 6–10 Location of components

Component	Location
WSDL files	$AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/Agile/V1/wsdls $AIA_HOME/AIAMetaData/AIAComponents/ApplicationObjectLibrary/JDEE1/V1/wsdls

Table 6–10 (Cont.) Location of components

Component	Location
Application Business Objects, ABM, and Common XSD files	$AIA_ HOME/AIAMetaData/AIAComponents/Application ObjectLibrary/Agile/V1/schemas/ $AIA_ HOME/AIAMetaData/AIAComponents/Application ObjectLibrary/JDEE1/V1/schemas/

6.8 Integration Services

The process integration for ECO implementation from JD Edwards EnterpriseOne to Agile PLM uses these industry components:

- EngineeringChangeOrderEBS
- UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl
- UpdateEngineeringChangeOrderListAgileProvABCSImpl

6.8.1 EngineeringChangeOrderEBS

EngineeringChangeOrderEBS is an EBS, which exposes the operations related to the EngineeringChangeOrder Integration on the EngineeringChangeOrder EBO. The routing rules are:

- EngineeringChangeOrderEBS

  UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl: Route UpdateEngineeringChangeOrderListEBM to UpdateEngineeringChangeOrderListAgileProvABCSImpl

- EngineeringChangeOrderResponseEBS

  UpdateEngineeringChangeOrderListAgileProvABCSImpl: Route UpdateEngineeringChangeOrderListResponseEBM to UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl

6.8.2 UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl

UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl transforms the JD Edwards EnterpriseOne message (UpdateEngineeringChangeOrderABM) into UpdateEngineeringChangeOrderListEBM, calls the routing service to update ECO, and gets the UpdateEngineeringChangeOrderListResponseEBM response from Agile PLM. It then invokes the integration time stamp manager service to update the integration time stamp table with the last runtime and date.

Process flow:

1. Picks up the xml file based on the properties set up in file/ftp consumer
2. Receives UpdateEngineeringChangeOrderABM from file/ftp consumer
3. Transforms JD Edwards EnterpriseOne-specific UpdateEngineeringChangeOrderABM into UpdateEngineeringChangeOrderListEBM
4. Populates the EBM header

5. Calls the EngineeringChangeOrderEBS service to send message UpdateEngineeringChangeOrderListEBM to UpdateEngineeringChangeOrderAgileProvABCSImpl
6. Receives UpdateEngineeringChangeOrderListResponseEBM from EngineeringChangeOrderResponseEBS
7. Calls the Integration Time Stamp Manager service to update the integration time stamp table with the last runtime and date
8. Transforms UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl as follows

   Xform_EngineeringChangeOrderListABMReqMsg_To_EngineeringChangeOrderListListEBMReqMsg

6.8.3 UpdateEngineeringChangeOrderListAgileProvABCSImpl

The UpdateEngineeringChangeOrderListAgileProvABCSImpl updates an ECO in Agile PLM. In this integration, UpdateEngineeringChangeOrderListAgileProvABCSImpl updates the status-related fields. It is implemented as an asynchronous process.

Process flow:

1. EngineeringChangeOrderEBS with UpdateEngineeringChangeOrderListReqMsg, which contains UpdateEngineeringChangeOrderListEBM as input, invokes UpdateEngineeringChangeOrderListAgileProvABCSImpl
2. The system calls the transform operation to convert the UpdateEngineeringChangeOrderListEBM into AgileUpdateEngineeringChangeOrderListABM
3. The system passes AgileUpdateEngineeringChangeOrderListABM as input to the web service operation, which carries out the following functions for this integration:

   Update Status-related attributes on ECO (for Agile PLM to JD Edwards EnterpriseOne flow)
4. After Coarse Grained API UpdateChange successfully executes, AgileUpdateEngineeringChangeOrderListResponseABM is received
5. If the UpdateChange service operation fails on the Agile PLM side, a new fault is generated and sent across with an appropriate error message

Part II

Implementing the Delivered Integrations

Part 2 contains the following chapters:

7

Configuring Design to Release: Agile PLM - JDE E1

This chapter discusses:

- Prerequisites
- Setting up participating applications
- Setting up batch processing information
- SQL Script for Loading Cross-Reference Records
- Identifying cross-references
- Populating cross-references
- Describing Domain Value Maps (DVMs)
- Setting configuration properties
- Handling error
- Viewing EBO Implementation Maps (EIMs)

7.1 Prerequisites

This section discusses the prerequisites for the following integration flows:

- Initial load of items and Bill of Materials (BOM)
- Product design Changes
- ECO implementation
- Item attributes and cost updates
- Item balance updates

7.1.1 Prerequisites for Initial Load of Items and BOM

Before running an initial load, complete the following actions:

- Set up versions of each extract program in JD Edwards EnterpriseOne.
- Set up batch processing information and invoke utilities for an initial load.
- Create a new workflow for initial load change orders and set privileges.

7.1.2 Prerequisites for Product Design Changes

Before running the Create ECO flow, complete the following actions:

- Set up user-defined codes (UDCs).
- Set up JD Edwards EnterpriseOne web services.
- Set up Oracle Web Services Manager (OWSM) security information.

7.1.3 Prerequisites for ECO Implementation

Before running the Update ECO flow, complete the following steps:

- Set up versions of each extract program in JD Edwards EnterpriseOne.
- Set up batch processing information.

7.1.4 Prerequisites for Item Attributes and Cost Updates

Before running the update item flow, you must complete these steps:

- Set up versions of each extract program in JD Edwards EnterpriseOne.
- Set up the batch processing information.

7.1.5 Prerequisites for Item Balance Updates

Before running the update item balance flow, complete the following actions:

- Set up versions of each extract program in JD Edwards EnterpriseOne.
- Set up batch processing information.

7.2 Setting Up Participating Applications

Before integration, you must set up Agile Product Lifecycle Management (PLM), JD Edwards EnterpriseOne, Oracle Web Services Manager Security Information (OWSM), and Application Integration Architecture (AIA).

7.2.1 Setting Up Agile Content Services

The following set ups are required using the Agile PLM Java client:

1. Create new destinations
2. Create new events for Engineering Change Order (ECO) and Site Change Order (SCO)
3. Define filters
4. Create new subscribers for ECO and SCO
5. Set ECO and SCO privileges
6. Set up Agile item quantity attributes
7. Create a new ECO workflow for initial load change orders
8. Set ECO workflow privileges
9. Set up Change_Status table for workflow
10. Setup Agile notifications

7.2.1.1 Create New Destinations

To create a new JMS destination:

If Agile PLM is deployed on Oracle Application Server (OAS)

1. Copy the wlthint3client.jar file (this file is located at FMW's $WLS_HOME/Middleware/wlserver_10.3/server/lib) put under the OAS j2ee\home\applib directory in the Agile PLM environment.
2. Bounce the Agile Oracle Application Server.
3. Restart the complete SOA server using the commands from the <SOA_HOME>/opmn/bin directory.

   For Linux (x86), Solaris SPARC (64-bit), IBM AIX Based Systems (64-bit), and HP-UX 11i (64 bit)

   - ./opmnctl.exe stopall
   - ./opmnctl.exe startall

   For Microsoft Windows (32-bit)

   - opmnctl.exe stopall
   - opmnctl.exe startall

If Agile PLM is deployed on the Weblogic server (WLS), no need to copy the wlthint3client.jar file, it should work fine as it is.

For more information on how to restart Agile PLM deployed on the Weblogic server (WLS), refer to the Agile Product Lifecycle Management Installing Agile PLM on WebLogic Server Guide.

1. On the Admin tab, navigate to System Settings > Agile Content Service > Destinations.
2. Select Protocol JMS.
3. Enter or set the essential values as illustrated in Table 7–1:

Table 7–1 Parameters to Define Default Filters

Field	Value/Setting
View Tabs	Add Sites, Title Block, Page Two, Page Three, BOM, Manufacturers
BOM Options	Tabs and Items
BOM Levels	Select the All Levels check box
AML Options	Tabs and Manufacturer Parts
Attachment Options	Tab only

4. Click **Test** to validate.

7.2.1.2 Create New Events for ECO and SCO

To create new events for ECO and SCO:

1. On the Admin tab, navigate to System Settings > Agile Content Service > Events.
2. Set the essential values as illustrated in Table 7–2:

Table 7–2 Values to create new events for ECO and SCO

Field	Value/Setting	
	For ECO	For SCO

Table 7–2 (Cont.) Values to create new events for ECO and SCO

Field	Value/Setting	
Name	Define your own	
Event Type	Workflow	
Workflow	Default Change Order	Default Site Change Orders
Workflow Status	Released	

7.2.1.3 Define Filters

To define filters:

1. On the Admin tab, navigate to System Settings > Agile Content Service > Filters.
2. Modify the default item filter to set the parameters as illustrated in Table 7–3:

Table 7–3 Parameters to Define Default Filters

Field	Value/Setting
View Tabs	Add Sites, Title Block, Page Two, Page Three, BOM, Manufacturers
BOM Options	Tabs and Items
BOM Levels	Select the All Levels check box
AML Options	Tabs and Manufacturer Parts
Attachment Options	Tab only

3. Modify the filters to set the given fields as illustrated in Table 7–4:

Table 7–4 Parameters to modify fields

Field	Value/Setting	
	For ECO	For SCO
Filter	Default Change Order Filter	Default Site Change Order Filter
Affected Items Options	Tab and Items	Tabs and Items
Redline Changes only	No	No

7.2.1.4 Create New Subscribers for ECO and SCO

To create new subscribers for ECO and SCO:

1. On the Admin tab, navigate to System Settings > Agile Content Service > Subscribers
2. Create new subscribers, one each for ECO and SCO, and set the parameters as illustrated in Table 7–5:

Table 7–5 Values for Creating New Subscribers

Field	Value/Setting	
	For ECO	For SCO

Table 7–5 (Cont.) Values for Creating New Subscribers

Name	Define your own	
Subclass	ATO	
Workflow	Default ATOs	
Criteria	All Site Change Orders	All Change Orders
AutoNumber	ATO Number	ATO Number
Event	Select the Name of the Event that you created in step 2 for ECO	Select the Name of the Event that you created in step 2 for SCO

3. Enter or set the subscriber details for each ECO and SCO by adding a new row.
4. Use the information listed in Table 7–6 for creating a new row:

Table 7–6 Values for Creating a New Row

Field	Value/Setting	
	For ECO	For SCO
Filter	Default Change Order Filter	Default Site Change Order Filter
	Default Item Filter	Default Item Filter
Roles	All	
Format	aXML	
Language	English	
Site	All	

5. Enable all the newly created subscribers

7.2.1.5 Set ECO and SCO Privileges

To set ECO and SCO privileges:

1. On the Admin tab, navigate to User Settings > Privileges > Modify
2. Create new Modify Privileges for ECO and SCO
3. Set privilege to Modify
4. Select the criteria that correspond to each ECO and SCO
5. Select all the attributes, including the invisible and disabled attributes in the Applied to field and save them
6. On the Where Used tab, add roles to all the privileges you created

   The default role is Admin user.

> **Note:** The user should have privileges to modify the Released items and the Released changes.

7.2.1.6 Set up Agile Item Quantity Attributes

To set up Agile item quantity attributes:

1. On the Admin tab, navigate to Data Settings > Classes
2. For both Parts and Document classes, enable the flex fields on Page2, Page3, or Site tab according to the MultiSite_Enabled property value in AIAConfigProperties.xml for Agile Product Lifecycle Management (PLM)
3. The field names, listed in Step 2, in Agile PLM reflect the following fields from JD Edwards EnterpriseOne:
   - Unit Cost
   - Available Quantity
   - On Hand Quantity
   - Reserved Quantity

     The flex fields should be the same as those entered as values for the following properties:
   - Item.UnitCostAttribute
   - Item.AvailableQuantityAttribute
   - Item.OnHandQuantityAttribute
   - Item.ReservedQuantityAttribute
4. Select Visible for the fields you created.

   > **Note:** Ensure that these attributes have Read and Modify privileges.

5. Click **OK**.

7.2.1.7 Create a New Workflow for Initial Load Change Orders

To create a new workflow for initial load change orders:

1. On the Admin tab, navigate to Workflow Settings > Workflows
2. Create new workflow for the initial load change orders and set the values as illustrated in Table 7–7:

Table 7–7 Values for creating new workflow

Field	Value/Setting
Name	Define your own
Workflow Criteria matching Type	All
Status Criteria Matching Type	Same
Object Type	Changes
Matching Criteria	All Change Orders

3. Go to the Status tab and add two new workflow statuses and set the values as illustrated in Table 7–8 and Table 7–9:

Table 7–8 Values for workflow status 1

Field	Value/Setting
Name	Define your own
Status Type	Pending
Status Stamp Color	Define your own

Table 7–9 Values for workflow status 2

Field	Value/Setting
Name	Define your own
Status Type	Released
Status Stamp Color	Define your own

4. Add workflow criteria for each of the statuses created earlier and set the select criteria as All Change Orders
5. Enable the newly created workflow

7.2.1.8 Set ECO Workflow Privileges

To set ECO workflow privileges:

1. On the Admin tab, navigate to User Settings > Privileges > Change Status
2. Create new change status privileges for initial load change orders workflow and set the values as illustrated in Table 7–10:

Table 7–10 Values for creating new workflow

Field	Value/Setting
Name	Define your own
Description	Define your own
Enabled	Yes
Privilege	Change Status
Criteria	All Change Orders
Workflow	New workflow created in Step 9
Status - From	Status defined in Step 9 with Status type of Pending
Status - To	Status defined in Step 9 with Status type of Released

3. On the Where Used tab, add roles to all the privileges you created.

   The default role is Admin user.

7.2.1.9 Setup Change_Status Table for Workflow

Because the change status name depends on the workflow being used, the CHANGE_STATUS configuration table is provided as part of the integration setup. The CHANGE_STATUS table is located in the AIA schema created on the Service-Oriented Architecture (SOA) server. The default user ID is plmpip. The password is the same password that the customer has setup for the FP AIA database. This value is the same as the property fp.db.aia.password, which can be found in the

AIAInstallProperties.xml file. The DB details, such as URL, port, server ID, and so on can be found in the AIAInstallProperties.xml file at <AIA_INSTANCE>/config/AIAInstallProperties.xml.

This table allows the administrators to specify the next status for each possible combination of change object type and the workflow being used for each event that qualifies for the change status operation. The administrators can add as many rows as required. The number of sub-classes of change objects and the number of workflows is unlimited in Agile PLM.

Table 7–11 illustrates how a partially configured table looks:

Table 7–11 A partially configured table

EVENT	OUTCOME	SUBCLASS	WORKFLOW	NEXT_STAUS
New Part Request	Success	ECR	Default Change Requests	Completed
New Part Request	Failure	ECR	Default Change Requests	Pending
Pre-release Audit	Failure	ECO	Default Change Orders	Submitted
Pre-release Audit	Failure	ECO	Fast-track Change Orders	Pending
Change Implementation	Success	ECO	Default Change Orders	Implemented
Change Implementation	Success	ECO	Fast-track Change Orders	Implemented

The EVENT column key is **Change Implemented**.

The OUTCOME column key is **SUCCESS**.

In the SUBCLASS column, set up the change order subclass as ECO, MCO, etc.

In the WORKFLOW column, set up the workflows. For example, if you are using Default Change Order workflow for ECO, then enter Default Change Order in this column. These values can be picked up from Agile PLM Java client.

In the NEXT_STATUS column, enter the status of the workflow you want it to move to when the conditions are met. For example, when a Change is implemented (identified by event - this is a key. do not change it) and the OUTCOME is SUCCESS (identified by outcome, gets checked while changing status here), and the WORKFLOW chosen is Default Change Orders, the set up requesting the Change to be moved to the Implemented status (NEXT_STATUS).

In a new installation, this table is empty. The integration administrator needs to add rows in this table if the change status process needs to be supported for any of the given processes.

- The value of the EVENT column must be limited to the values corresponding to the processes supported: New Part Request, Pre-release Audit, and Change Implementation. The change implementation process can also be associated with a status update back to a flexfield on the change order.
- The value of the OUTCOME column must be limited to Success and Failure.

- The value of the SUBCLASS column must be limited to the set of subclasses of the Change Requests Class, Change Orders Class, Manufacturing Orders Class, and Site Change Orders Class.
- The value of the WORKFLOW column must be limited to the set of workflows for the selected subclass. For example, if you are using the default change order workflow for ECO, then enter the default change order in this column. These values can be picked up from the Agile PLM Java client.
- In the NEXT_STATUS column, enter the status of the workflow to move to when the conditions are met. For example, when a change is implemented (identified by event; this is a key, so do not change it) and the OUTCOME is SUCCESS (identified by outcome; this is checked while changing status here) and the WORKFLOW chosen is Default Change Orders, the setup requesting the change to be moved to the implemented status (NEXT_STATUS).

7.2.1.10 Set Up Agile Notifications

Notifications can be setup in Agile PLM to send email when any error occurs during ACS processing in the change order release process integration flow.

To set up the notifications:

1. Log in to Agile Java Client.
2. In the Admin tab, navigate to System Settings > Agile Content Service > Destinations.
3. Open the destination that was configured for the change order release flow to send the data to the JMS queue.
4. In the Notification User field, add the users and user groups who must be notified on failure of ACS transfer.
5. Save the changes.

7.2.2 Setting Up JD Edwards EnterpriseOne

Before you can use the Design to Release Agile PLM - JD Edwards EnterpriseOne integration; you must set up several applications in JD Edwards EnterpriseOne that the integration uses. The integration processes and flows supported in this integration require that JD Edwards EnterpriseOne is set up correctly before any initial load or updates occur in Agile PLM.

This section discusses:

- Setting up batch programs
- Setting up integration user-defined codes (UDCs)
- Setting up JD Edwards EnterpriseOne web services
- Setting up business services (BSSVs)
- Configuration parameters for creating Engineering Change order (ECO) flow

7.2.2.1 Setting Up Batch Programs

Setting up batch programs includes:

- Setting up the item initial load extract to XML program (R4101D3)
- Setting up the Bill of Material (BOM) initial load extract to XML program (R3002D)
- Setting up ECO batch extract programs

- Setting up the ECO extract to XML program (R3013D)
- Setting up item list batch extract programs
- Setting up the item list extract to XML program (R4102D)
- Setting up item balance batch extract programs
- Setting up the item balance extract to XML program (R41021D)

For more information, see *JD Edwards EnterpriseOne Tools Development Tools: Batch Versions Guide*.

Setting Up Item Initial Load Extract to XML Program (R4101D3)

Use this program to extract the initial load item data from JD Edwards EnterpriseOne to Agile PLM. Before running this program, you must set the processing options to ensure that data is extracted correctly.

On the Processing Options tab, set up the path where the xml file is written.

Use this processing option to specify the file location that the system uses for storing the resulting XML file. The name of the resulting XML file is in the format of R4101D3_MMDDYY_hhmmss.xml. The file name is appended to the value entered in this processing option to determine the fully qualified path and name. All directories specified in the path should exist. Also, ensure that the value ends with '\' or '/' as required by the operating system. If you leave this processing option blank, the system writes the resulting XML file to the directory where this report is running.

Setting Up BOM Initial Load Extract to XML Program (R3002D)

Use this program to extract initial load BOM data from JD Edwards EnterpriseOne to Agile PLM. Before running this program, you must set the processing options to ensure that data is extracted correctly.

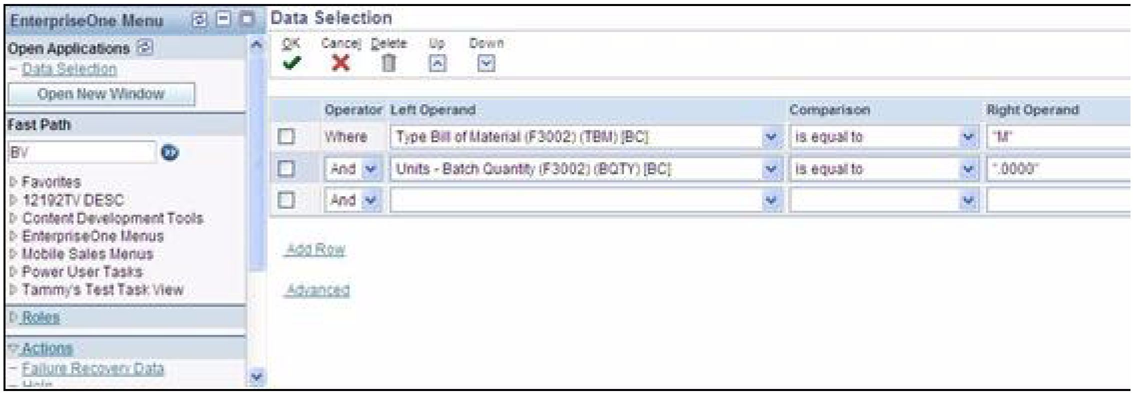
This program has two default versions:

- XJDE0001 - BOM Initial Load Extract to XML

  We recommend this version for Agile PLM with Multi-Site OFF.

  Figure 7–1 illustrates an example of the recommended data selection for the Universal Batch Engine (UBE) program:

Figure 7–1 Example of data selection for the batch program



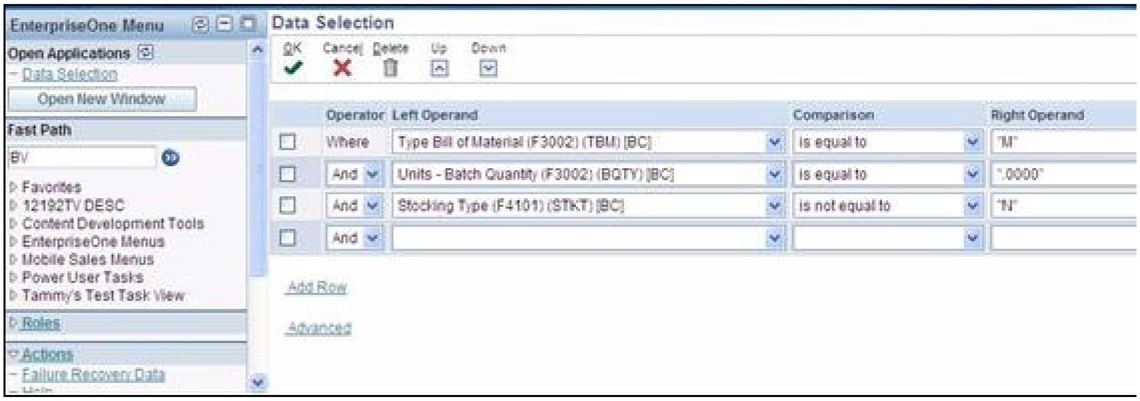
	Operator	Left Operand	Comparison	Right Operand
□	Where	Type Bill of Material (F3002) (TBM) [BC]	is equal to	"M"
□	And	Units - Batch Quantity (F3002) (BQTY) [BC]	is equal to	".0000"
□	And			

- XJDE0002 - BOM Initial Load - Exclude Non-Stock Components

  We recommend this version for Agile PLM 39 with Multi-Site ON.

Figure 7–2 illustrates the recommended data selection:

Figure 7–2 Example of data selection



	Operator	Left Operand	Comparison	Right Operand
□	Where	Type Bill of Material (F3002) (TBM) [BC]	is equal to	"M"
□	And	Units - Batch Quantity (F3002) (BQTY) [BC]	is equal to	".0000"
□	And	Stocking Type (F4101) (STKT) [BC]	is not equal to	"N"
□	And			

Set the following processing options on the Processing Options tab:

- Path where the XML file is written

  Use this processing option to specify the file location that the system uses for storing the resulting XML file.

  The name of the resulting XML file is in the format of R3002D_MMDDYY_hhmmss.xml.

  The system appends the file name to the value entered in this processing option to determine the fully qualified path and name. All directories specified in the path should already exist. If you leave this processing option blank, the system writes the resulting XML file to the directory where this report is running.

- As of Date

  This date is used for effectivity checking. Enter a specific date to display documents (orders, BOMs, and routings, as applicable) that are effective on or after that date. The current system date is the default, but you can enter any future or past date.

- Selection for Components

  Use this processing option to specify if the system selects all the components associated with a selected BOM. If you leave this processing option blank, the system only selects components with the same branch/plant as the parent. The system writes skipped components details to the report output. The system selects all associated components for the BOMs selected if set to the value 1.

- Extract Parent Item Revision Level

  Use this processing option to indicate whether the system extracts the BOM parent item revision level from the item master (F4101). If you leave this processing option blank, the system does not extract the parent item revision level. The system extracts the parent item revision level if the value is set to 1.

Setting Up ECO Batch Extract Programs

The ECO batch extract program extracts ECO changes from JD Edwards EnterpriseOne to Agile PLM. Before the ECOs are processed using batch programs, you must configure versions for each of them.

The Update ECO program includes the Update ECO Extract to XML program (R3013D).

For more information, see *JD Edwards EnterpriseOne Tools Development Tools: Batch Versions Guide*.

Setting Up ECO Extract to XML Program (R3013D)

Before running this program, set the processing options to ensure that data is extracted correctly.

This program has one default version: XJDE0001 - ECO Extract to XML

ECO Extract R3013D has no default data selection.

Set the following processing options on the Processing Options tab:

- Path where the XML File is written

  Use this processing option to specify the file location that the system uses for storing the resulting XML file. The name of the resulting XML file is in the format of R3013D_MMDDYY_hhmmss.xml. All directories specified in the path should already exist. If you leave this processing option blank, the system writes the resulting XML file to the default JD Edwards EnterpriseOne system directory.

- As of Date

  This date is used for effectivity checking. Enter a specific date to extract the updated ECOs from JD Edwards EnterpriseOne that are effective on or after that date. If you leave this processing option blank, the system uses the integration time stamp date.

- Integration Code

  Use this processing option to specify the integration code, which is a mandatory field in UDC (00/IE). If you leave this processing option blank, the system will not process any data or write the XML file.

Setting Up Item List Batch Extract Programs

The item list batch extract program extracts item attribute and cost changes from JD Edwards EnterpriseOne to Agile PLM.

Before the Item List can be processed using batch programs, you should configure versions for each program.

Item list programs include the Item List Extract to XML program (R4102D).

For more information, see *JD Edwards EnterpriseOne Tools Development Tools: Batch Versions Guide*.

Setting Up Item List Extract to XML Program (R4102D)

Use this program to extract item list data from JD Edwards EnterpriseOne to Agile PLM. Before running this program, set the processing options to ensure that data is extracted correctly.

This program has one default version: XJDE0001 - Item List Extract to XML.

This program has no default data selection.

Set the following processing options on the Processing Options tab:

- Path where the XML File is written

  Use this processing option to specify the file location that the system uses for storing the resulting XML file. The name of the resulting XML file is in the format of R4102D_MMDDYY_hhmmss.xml. All directories specified in the path should already exist. If you leave this processing option blank, the system will write the resulting XML file to the default JD Edwards EnterpriseOne system directory.

- As of Date

  This date is used for effectivity checking. Enter a specific date to extract the updated ECOs from JD Edwards EnterpriseOne that are effective on or after that date. If you leave this processing option blank, the system will use the integration time stamp date.

- Integration Code

  Use this processing option to specify the integration code, which is a mandatory field in UDC (00/IE). If you leave this processing option blank, the system will not process any data and it will not write an XML file.

- Ledger Type

  Use this processing option to specify the costing method. If you leave this processing option blank, the system will use the cost method from branch/plant constants. If you do not set the cost method in branch/plant constants, then the system will use the default value of data dictionary item CSMT.

Setting Up Item Balance Batch Extract Programs

The item balance list batch extract program extracts item availability changes from JD Edwards EnterpriseOne to Agile PLM.

Before the item balance can be processed using batch programs, you should configure versions for each program.

Item balance programs include the Item Balance Extract to XML program (R41021D).

For more information, see *JD Edwards EnterpriseOne Tools Development Tools: Batch Versions Guide*.

Setting Up Item Balance Extract to XML Program (R41021D)

Use this program to extract item balance data from JD Edwards EnterpriseOne to Agile PLM. Before running this program, set the processing options to ensure that data is extracted correctly.

This program has a default version:

- XJDE0001 - Item Balance Extract to XML

  Item Balance Extract R41021D has no default data selection.

Set the following processing options on the Processing Options tab:

- Path where the XML File is written

  Use this processing option to specify the file location that the system uses for storing the resulting XML file. The name of the resulting XML file is in the format of R41021D_MMDDYY_hhmmss.xml. All directories specified in the path should already exist. If you leave this processing option blank, the system will write the resulting XML file to the default JD Edwards EnterpriseOne system directory.

- As of Date

  This date is used for effectivity checking. Enter a specific date to extract the updated ECOs from JD Edwards EnterpriseOne that are effective on or after that date. If you leave this processing option blank, the system will use the integration time stamp date.

- Integration Code

  Use this processing option to specify the integration code, which is a mandatory field in UDC (00/IE). If you leave this processing option blank, the system will not process any data and it will not write the XML file.

7.2.2.2 Setting Up UDCs

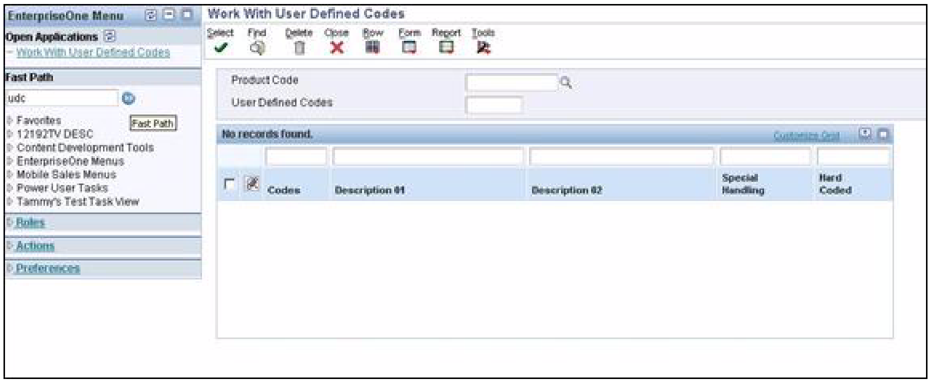
You set up UDCs to store the information about the types of integration codes used.

UDC: 00/IE - Integration Code

To set up a UDC, complete the following steps:

1. Navigate to the Work With User Defined Codes page using the Fast Path. See Figure 7–3

Figure 7–3 Work with User Defined Code Page



Fast Path: udc

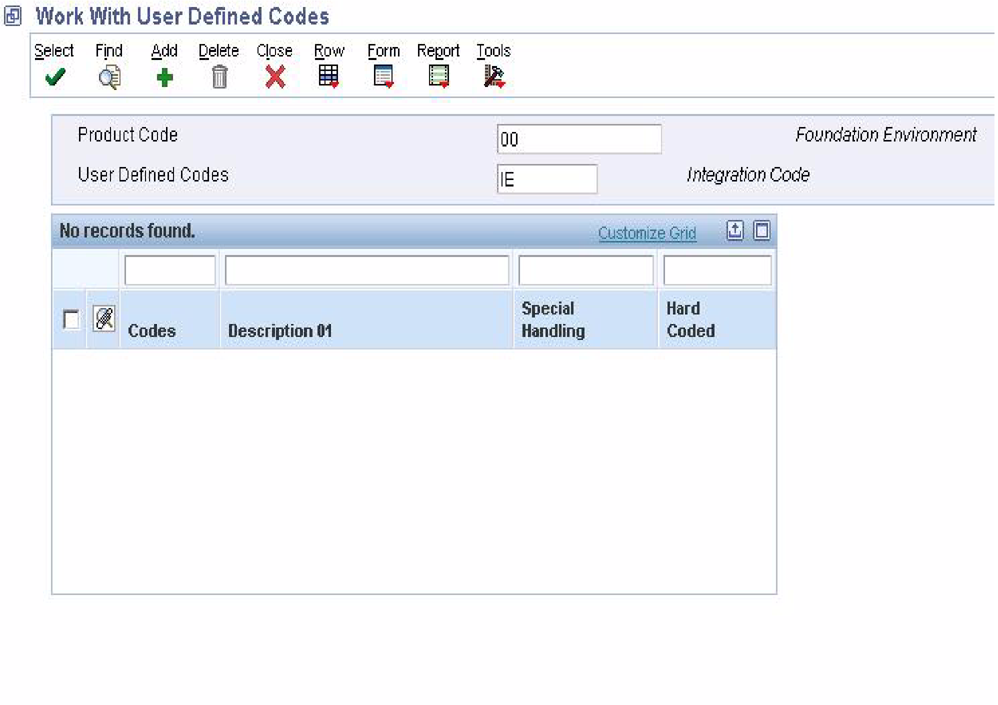
Product Code:

User Defined Codes:

No records found.

2. Enter Product Code as 00 and User Defined Codes as IE. See Figure 7–4

Figure 7–4 User Defined Codes



Work With User Defined Codes

Product Code: 00 — *Foundation Environment*

User Defined Codes: IE — *Integration Code*

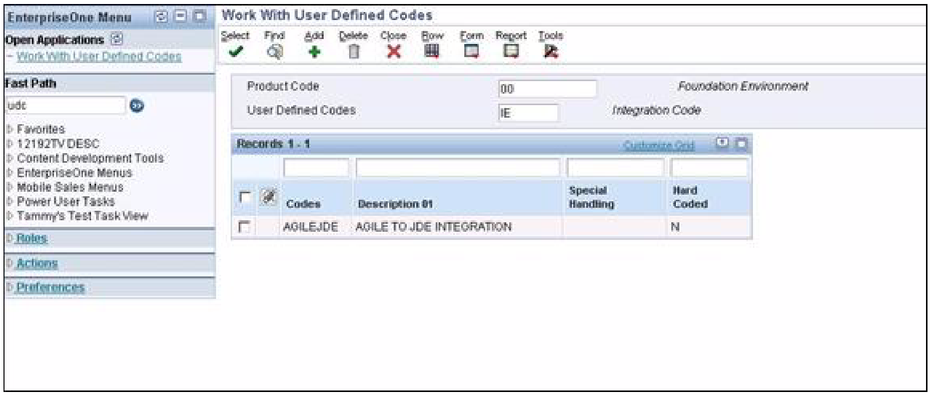
No records found.

□		Codes	Description 01	Special Handling	Hard Coded

3. Click **Add**.

   Enter the code and description as AGILEJDE and Agile to JDE Integration, respectively. See Figure 7–5

Figure 7–5 Entering Code for UDC



Work With User Defined Codes

Product Code: 00 — *Foundation Environment*

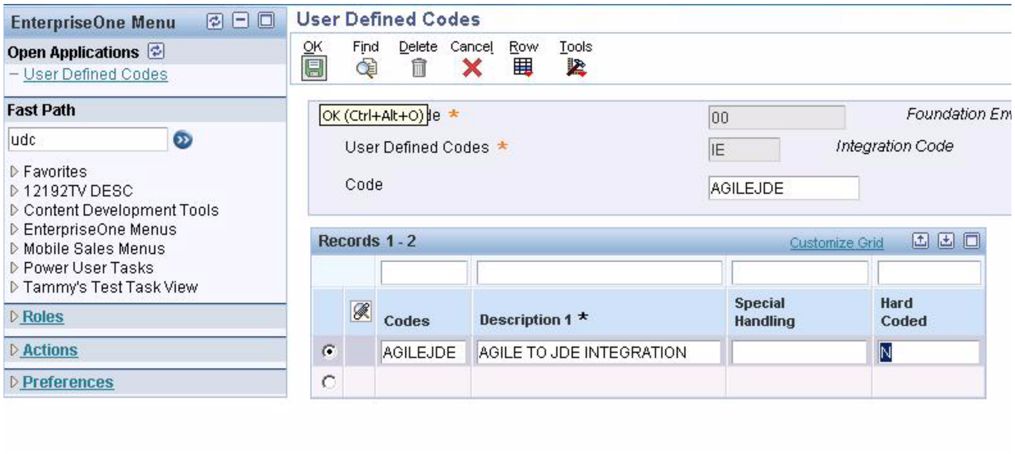
User Defined Codes: IE — *Integration Code*

Records 1 - 1

□		Codes	Description 01	Special Handling	Hard Coded
□		AGILEJDE	AGILE TO JDE INTEGRATION		N

4. Click **OK** to save the UDC values. See Figure 7–6

Figure 7–6 Saving the UDC values



udc

[OK (Ctrl+Alt+O)]de *	00 Foundation En
User Defined Codes *	IE Integration Code
Code	AGILEJDE

	Codes	Description 1 *	Special Handling	Hard Coded
●	AGILEJDE	AGILE TO JDE INTEGRATION		N
○				

7.2.2.3 Setting Up JD Edwards EnterpriseOne Web Services

You use these JD Edwards EnterpriseOne web services, also called business services, in the Design to Release integration:

- EngineeringChangeOrderManager (JP300000)
- IntegrationTimeStampManager (JP300010)
- EngineeringChangeOrdersProcessor (J3000010)
- EngineeringChangeOrderPartsListProcessor (J3000020)
- ProcessIntegrationTimeStamp (J3000030)
- InventoryItemsProcessor (J4100020)
- nventoryItemBranchProcessor (J4100030)

For more information about JD Edwards EnterpriseOne business services, see *JD Edwards EnterpriseOne Business Services Reference Guide.*

> **Note:** JD Edwards EnterpriseOne business services must be built with the option for migration from 10g to 11g turned on.

For more information about the migration option, see JD Edwards EnterpriseOne Release 8.98.3 Building Business Services Packages with Migration (My Oracle Support Document ID 1233332.1).

EngineeringChangeOrderManager (JP300000)

The EngineeringChangeOrderManager Published Business Service (PBSSV) manages the processing of the following:

Table 7–12 lists and describes the web service operations:

Table 7–12 Web service operations

Operation	Description
EngineeringChangeOrdersProcessor (J3000010)	Use this operation to call other processors internally to add records into Item, Item Branch, and ECO files.

Table 7–12 (Cont.) Web service operations

Operation	Description
EngineeringChangeOrderPartsListProcessor (J3000020)	Use this operation to add ECOs in the ECO file.
InventoryItemsProcessor (J4100020)	Use this operation to add or modify item records.
InventoryItemBranchProcessor (J4100030)	Use this operation to add or modify item branch records.

For more information about the web services, see *JD Edwards EnterpriseOne Business Services Reference Guide.*

IntegrationTimeStampManager (JP300010)

The IntegrationTimeStampManager PBSSV manages the processing of the following web service operation:

Table 7–13 lists and describes the web service operations:

Table 7–13 Web service operations

Operation	Description
ProcessIntegrationTimeStamp (J3000030)	Use this operation to add and modify the Integration Time Stamp table.

For more information, see *JD Edwards EnterpriseOne Business Services Reference Guide*, "IntegrationTimeStampManager."

EngineeringChangeOrdersProcessor (J3000010)

The EngineeringChangeOrderManager PBSSV calls the EngineeringChangeOrdersProcessor BSSV from the provider when a user creates an ECO. For the Design to Release integration, the external system is Agile PLM. The user creates an ECO in Agile PLM and releases the same to JD Edwards EnterpriseOne. This processor calls the create ECO (B3004100) business function to add a header record in F4801. This action generates an ECO number, which the system uses to create a BOM in JD Edwards EnterpriseOne.

The EngineeringChangeOrdersProcessor PBSSV manages the processing of the following web service operations:

Table 7–14 lists and describes the web service operations:

Table 7–14 Web service operations

Operation	Description
EngineeringChangeOrderPartsListProcessor (J3000020)	Use this operation to add ECOs.
InventoryItemsProcessor (J4100020)	Use this operation to add or modify item records.
InventoryItemBranchProcessor (J4100030)	Use this operation to add or modify item branch records.

For more information, see *JD Edwards EnterpriseOne Business Services Reference Guide*, "EngineeringChangeOrdersProcessor."

EngineeringChangeOrderPartsListProcessor (J3000020)

The EngineeringChangeOrdersProcessor calls the EngineeringChangeOrderPartsListProcessor web service. This processor calls the create ECO (B3004100) business function to add a parts list and related items in JD Edwards EnterpriseOne.

For more information, see *JD Edwards EnterpriseOne Business Services Reference Guide*, "EngineeringChangeOrderPartsListProcessor."

ProcessIntegrationTimeStamp (J3000030)

The IntegrationTimeStampManager PBSSV calls the ProcessIntegrationTimeStamp web service. This processor adds and modifies the Integration Time Stamp table (F0095) with the last successful runtime.

For more information, see *JD Edwards EnterpriseOne Business Services Reference Guide*, "ProcessIntegrationTimeStamp."

InventoryItemsProcessor (J4100020)

The EngineeringChangeOrdersProcessor calls the InventoryItemsProcessor web service This processor calls the F4101 ItemMasterAddition (B4101062) business function to add items in JD Edwards EnterpriseOne.

For more information, see *JD Edwards EnterpriseOne Business Services Reference Guide*, "InventoryItemsProcessor."

InventoryItemBranchProcessor (J4100030)

The EngineeringChangeOrdersProcessor calls the InventoryItemsProcessor web service is called. This processor calls the F4102 ItemBranchAddition (B4101072) business function to add item branch records in JD Edwards EnterpriseOne.

For more information, see *JD Edwards EnterpriseOne Business Services Reference Guide*, "InventoryItemsProcessor."

Table 7–15 lists and describes the operations:

Table 7–15 Web service operations

Operation	Description
EngineeringChangeOrdersProcessor (J3000010)	Use this operation to call other processors internally to add records into item, item branch, and ECO files.
EngineeringChangeOrderPartsListProcessor (J3000020)	Use this operation to add ECOs in the ECO file.
InventoryItemsProcessor (J4100020)	Use this operation to add or modify item records.
InventoryItemBranchProcessor (J4100030)	Use this operation to add or modify item branch records.

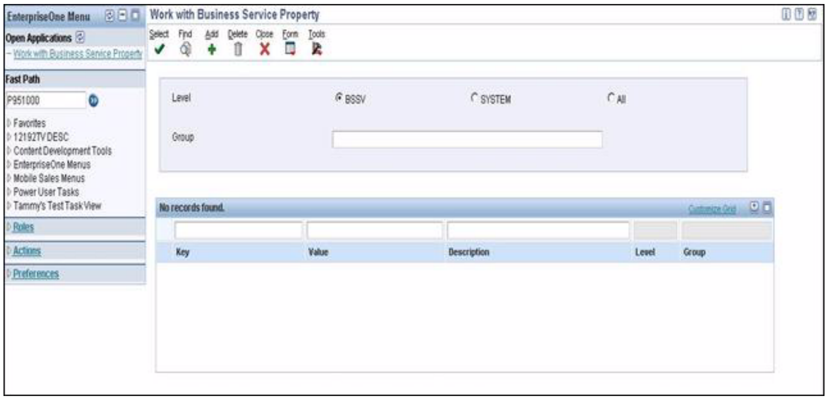
7.2.2.4 Setting Up BSSVs

Complete the following steps to set up BSSVs:

1. Enter P951000 in the Fast Path field.
2. Click **Add**.

   The Work with Business Service Property page appears, see Figure 7–7.

Figure 7–7 Work with Business Property Page



Work with Business Service Property

Fast Path: P951000

Level: ● BSSV ○ SYSTEM ○ All

Group:

No records found.

Key	Value	Description	Level	Group

3. Enter the values in the Key and Group fields as listed in Table 7–16

Table 7–16 Values for Key and Group fields

Key	Value
J4100003_ITEM_MBF_VERSION	ZJDE0001
J4100003_ITEM_STOCKING_ TYPE_CODE	S
J3000010_ECO_MBF_VERSION	ZJDE0001

4. Enter values in the Value and Description fields according to your requirements.

7.2.2.5 Configuration Parameters for Creating ECO Flow

The configuration parameters include:

- Enter the UDC value of the implemented state in JD Edwards EnterpriseOne into the ECO_Implemented status configuration property.

  This status is updated in the ECO, which is created for an ECO that does not hold any BOM information. Such ECOs carry only the items, which are created and updated from Agile PLM.

- Set the Default_ECO_Branch_Plant in the AIA configuration property to specify the branch plant under which the ECO should be created for facilitating the modification of nonstock items from Agile PLM.

- Ideally, nonstock items are not created in Agile PLM. However, because nonstock items flow in from JD Edwards EnterpriseOne to Agile PLM as part of initial loads, any changes made to these items are brought back as ECOs from Agile PLM, and they hold no branch plant information. Because the integration demands that ECOs be created with branch plant information, the system uses the default branch plant in this scenario.

7.2.3 Setting Up OWSM

You must set up the OWSM client agent to store the security credentials that are used by the JD Edwards EnterpriseOne web services.

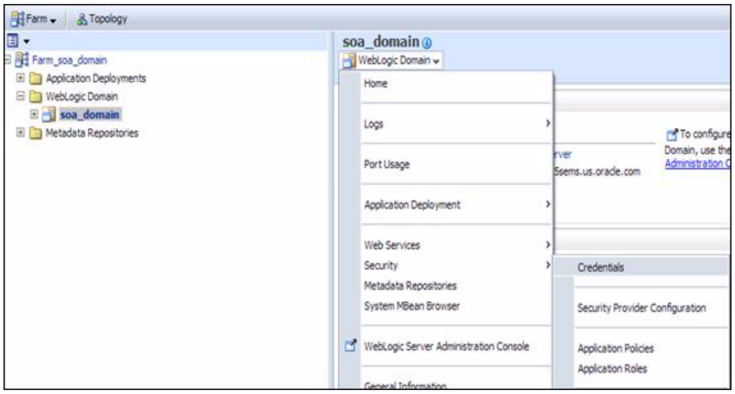
This section discusses how to create credential maps and credential keys

7.2.3.1 Creating Credential Maps and Credential Keys

WLS stores the user name and password for web service (BSSV) calls here.

1. In FMW Control, navigate to WebLogic Domain >soa_domains and select Security > Credentials from the available options. See Figure 7–8.

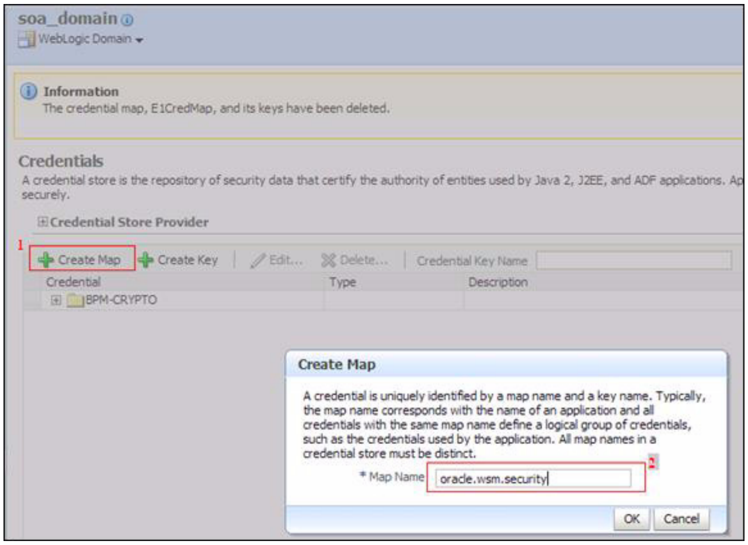
Figure 7–8 Selecting security credentials



2. If the oracle.wsm.security map does not exist, click **Create Map**.

3. Enter the map name as oracle.wsm.security. You must not change this name. See Figure 7–9.

Figure 7–9 Create map



Information
The credential map, E1CredMap, and its keys have been deleted.

Credentials
A credential store is the repository of security data that certify the authority of entities used by Java 2, J2EE, and ADF applications. Ap securely.

Create Map
A credential is uniquely identified by a map name and a key name. Typically, the map name corresponds with the name of an application and all credentials with the same map name define a logical group of credentials, such as the credentials used by the application. All map names in a credential store must be distinct.

* Map Name oracle.wsm.security

4. Highlight the new map.

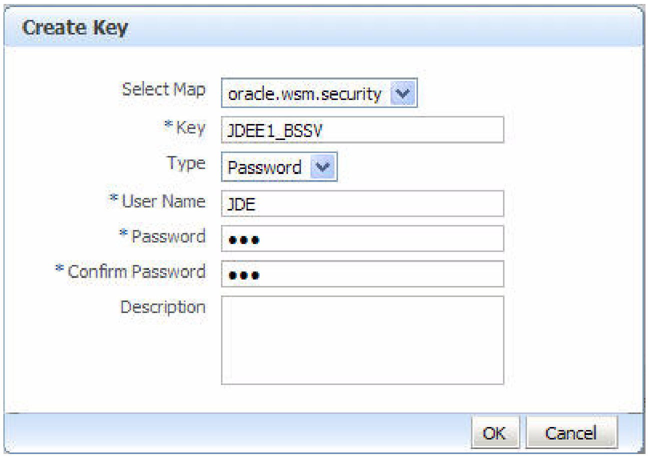
5. Click **Create Key**.

6. Enter the key as JDEE1_BSSV.

7. Enter the E1 user name and password

   You can also use the special E1 user name that includes environment and role as DN=JDE, ENV=DV900, ROLE=*ALL. See Figure 7–10.

Figure 7–10 Creating a key



Create Key

Select Map: oracle.wsm.security

*Key: JDEE1_BSSV

Type: Password

*User Name: JDE

*Password: •••

*Confirm Password: •••

Description:

7.2.4 Setting Up AIA

In the AIA config file, set a module-level property, DEFAULT_BOM_TYPE, which enables users to specify the BOM type that should be passed to JD Edwards EnterpriseOne. This information does not flow in from Agile PLM.

If you do not set this property for the forward flow from Agile PLM to JD Edwards EnterpriseOne, then JD Edwards EnterpriseOne will select the default BOM type from the Data Dictionary default value for the item.

> **Note:** his property is maintained at the module level because the BOM initial load uses the same property.

7.3 Setting Up Batch Processing Information

To use the Initial Load and Update flows from JD Edwards EnterpriseOne, you must first set up batch information. This section discusses how to:

- Set up FTP adapter information
- Set up batch consumer properties in the Enterprise Manager (EM) console
- Set up resequencer for batch processing
- Adjust timeout settings

7.3.1 Setting Up FTP Adapter Information

Setting up FTP adapter information includes configuring the JNDI name for the FTP adapter.

To set up FTP Adapter information, complete these steps:

1. Access the Weblogic console.

   Navigate to Deployments and look for FtpAdapter.

2. Click the FtpAdapter link.
3. Navigate to Configuration tab > Outbound Connection Pools and click **New**.
4. Select the javax.resource.cci.ConnectionFactory group.

5. Click **Next**.
6. Enter the JNDI name as eis/Ftp/JDEE1FtpAdapter.
7. Click **Finish**.
8. Make sure the JNDI name was created on the Outbound Connection Pools tab.
9. Click the JNDI name that you created.

   The Outbound Connection Properties page appears.
10. Edit the ftpAbsolutePathBegin, such as /slot/ems4309/appmgr, and press Enter.
11. Click **Next** to edit host, password, port, serverType, and username.
12. After you set the properties, click Save.
13. To update the deployment plan, navigate to the deployments page and select the FtpAdapter check box.
14. Click **Update**.
15. Click **Next**.
16. Click **Finish**.
17. Restart the soa_server to effect the FtpAdapter changes.

7.3.2 Setting Up Batch Consumer Properties

Complete the following steps to set up batch consumer properties:

1. For the initial load processes and other update processes to work correctly, set up properties from the Oracle Enterprise Manager console for these batch consumer services:

   - ItemInitialLoadExtractJDEE1Consumer
   - BillOfMaterialsInitialLoadExtractJDEE1Consumer

   To set these properties, access the Oracle Enterprise Manager console, locate the services, and select the Properties tab. The Properties tab becomes available when you click <Consumer>_ep.

   The PhysicalDirectory property for the ItemInitialLoadExtractJDEE1FTPConsumer_ep should match the path specified in the R4101D3 processing option relative to the FTP server default directory. If the files are written to D:\JDEdwards\E900\DDP\PrintQueue\ and the FTP server default directory is D:\JDEdwards, then the PhysicalDirectory property should be \E900\DDP\PrintQueue. The PhysicalDirectory property for the BillOfMaterialsInitialLoadExtractJDEE1FTPConsumer_ep should match the path specified in the processing options for R3002D relative to the FTP server default directory.

   The PhysicalDirectory property for the ItemInitialLoadExtractJDEE1FileConsumer_ep and BillOfMaterialsInitialLoadExtractJDEE1FileConsumer_ep should match the location of <ORACLE_HOME>/JDEE1In/. These services are delivered with an example path that should be updated to reflect the implementation. After the extract programs execute in JD Edwards EnterpriseOne, move the files to the JDEE1 In folder arranged in the order for these file consumer services to find and process the files.

All consumer services discussed in this section have the following two properties, which you can configure as listed in Table 7–17:

Table 7–17 Consumer services properties

Property	Description
BatchSize	This property determines how many records to include in each batch. The default value for this property is 50. If you use a value larger than 50, the consumer services will not function properly because Agile Integration Services (AIS) would consume more time and cause a middleware timeout. We recommend that you do not change this value.
PollingFrequency	This property specifies the time interval, in seconds, when the file consumers check the PhysicalDirectory property for new files to process. The default value for this property is 30. **Note:** We recommend that you do not change the pollingFrequency or batchSize properties for the FTP adapter.

2. For ECO, item list, item balance processes, and other update processes to work correctly, set up properties from the Oracle Enterprise Manager console for these batch consumer:

- EngineeringChangeOrderListExtractJDEE1Consumer
- ItemListExtractJDEE1Consumer
- ItemBalanceListExtractJDEE1Consumer

To set up these properties, access the Oracle Enterprise Manager console, locate the services, and select the Properties tab, which becomes available when you click <Consumer> _ep. The PhysicalDirectory property for the EngineeringChangeOrderListExtractJDEE1FTPConsumer_ep should match the path specified in the R3013D processing option. The physicalDirectory property for the ItemListExtractJDEE1FTPConsumer_ep should match the path specified in the processing options for R4102D. The physicalDirectory property for the ItemBalanceListExtractJDEE1FTPConsumer_ep should match the path specified in the processing options for R41021D. These paths should be relative to the FTP setup path on the EnterpriseOne Enterprise Server.

The PhysicalDirectory property for the EngineeringChangeOrderListExtractJDEE1FileConsumer_ep, ItemListExtractJDEE1FileConsumer_ep, and ItemBalanceListExtractJDEE1FileConsumer_ep should match the location of <ORACLE_HOME>/JDEE1In/. These services are delivered with an example path, which is /slot/ems2593/oracle/Middleware/Oracle_SOA1/JDEE1In. Update this path to reflect your implementation. After the extract programs execute in JD Edwards EnterpriseOne, move the files to the JDEE1 In folder so that these file consumer services can find and process the files.

All of these consumer services have the following two properties, which you can configure as listed in Table 7–18:

Table 7–18 Consumer service properties

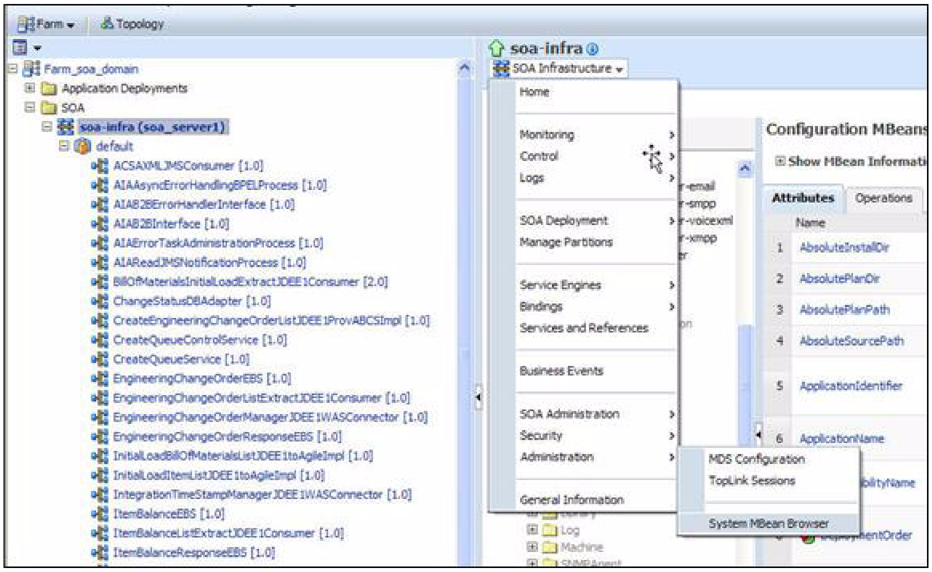
Property	Description
BatchSize	This property determines how many records to include in each batch. The default value for this property is 40.
PollingFrequency	This property specifies the time interval, in seconds, when the file consumers check the PhysicalDirectory property for new files to process. The default value for this property is 10. **Note:** We recommend that you do not change the pollingFrequency or batchSize properties for the FTP adapter.

For more information, see *Enterprise Service Bus Quick Start Guide*, "Creating, Configuring, and Managing an Oracle Enterprise Service Bus."

7.3.3 Setting Up Resequencer for Batch Processing

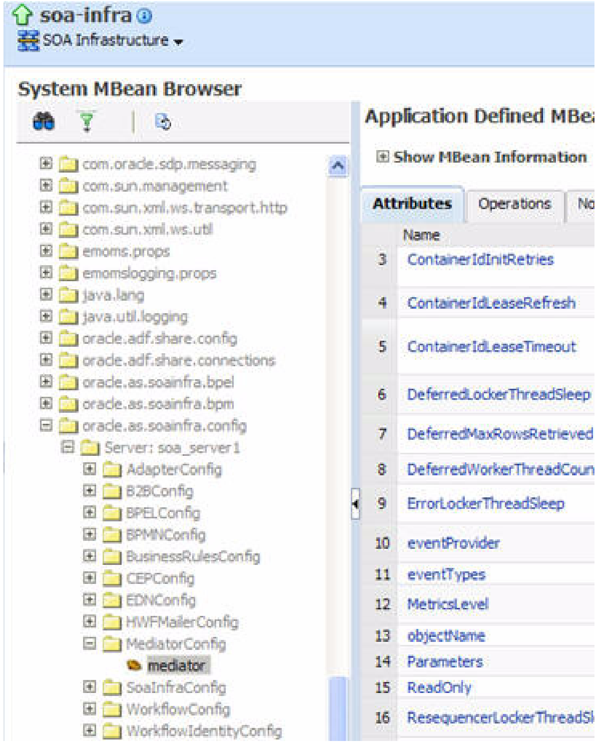
1. Log in to the Oracle Enterprise Manager console.
2. Select Soa Infrastructure and navigate to Administration > System MBean Browser. See Figure 7–11

Figure 7–11 System Mbean browser


Farm
Topology
Farm_soa_domain
Application Deployments
SOA
soa-infra (soa_server1)
default
ACSAXMLJMSConsumer [1.0]
AIAAsyncErrorHandlingBPELProcess [1.0]
AIAB2BErrorHandlerInterface [1.0]
AIAB2BInterface [1.0]
AIAErrorTaskAdministrationProcess [1.0]
AIAReadJMSNotificationProcess [1.0]
BillOfMaterialsInitialLoadExtractJDEE1Consumer [2.0]
ChangeStatusDBAdapter [1.0]
CreateEngineeringChangeOrderListJDEE1ProvABCSImpl [1.0]
CreateQueueControlService [1.0]
CreateQueueService [1.0]
EngineeringChangeOrderEBS [1.0]
EngineeringChangeOrderListExtractJDEE1Consumer [1.0]
EngineeringChangeOrderManagerJDEE1WASConnector [1.0]
EngineeringChangeOrderResponseEBS [1.0]
InitialLoadBillOfMaterialsListJDEE1toAgileImpl [1.0]
InitialLoadItemListJDEE1toAgileImpl [1.0]
IntegrationTimeStampManagerJDEE1WASConnector [1.0]
ItemBalanceEBS [1.0]
ItemBalanceListExtractJDEE1Consumer [1.0]
ItemBalanceResponseEBS [1.0]
soa-infra
SOA Infrastructure
Home
Monitoring
Control
Logs
SOA Deployment
Manage Partitions
Service Engines
Bindings
Services and References
Business Events
SOA Administration
Security
Administration
General Information
MDS Configuration
TopLink Sessions
System MBean Browser
Configuration MBeans
Show MBean Informati
Attributes
Operations
Name
1 AbsoluteInstallDir
2 AbsolutePlanDir
3 AbsolutePlanPath
4 AbsoluteSourcePath
5 ApplicationIdentifier
6 ApplicationName
Log
Machine

3. Navigate to oracle.as.soainfra.config > Server:soa_server1 > MediatorConfig > mediator
4. On the right side, set the value of the attribute ResequencerWorkerThreadCount to 6. See Figure 7–12

Figure 7–12 Resequencer attribute



	Name
3	ContainerIdInitRetries
4	ContainerIdLeaseRefresh
5	ContainerIdLeaseTimeout
6	DeferredLockerThreadSleep
7	DeferredMaxRowsRetrieved
8	DeferredWorkerThreadCoun
9	ErrorLockerThreadSleep
10	eventProvider
11	eventTypes
12	MetricsLevel
13	objectName
14	Parameters
15	ReadOnly
16	ResequencerLockerThreadSl

7.3.4 Adjusting Timeout Settings

You must set up the transaction timeout values using the Weblogic console and SyncMaxWaitTime using the Oracle Enterprise Manager console.

7.3.4.1 Setting SyncMaxWaitTime Value

1. Log in to the Oracle Enterprise Manager console.
2. Select Soa Infrastructure > navigate to Administration > System MBean Browser.
3. Navigate to oracle.as.soainfra.config > Server:soa_server1 > BPELConfig > bpel
4. On the right side, set the value of the SyncMaxWaitTime attribute to 360.

   By default, the value is 45 and you should increase it to at least 360 to accommodate batch processing.

7.3.4.2 Setting Transaction Timeout Values

1. Log in to the Weblogic console.
2. Navigate to Services > JTA.
3. On the configuration page set the Timeout Seconds to 420.
4. Save the setting and restart the server.

7.4 SQL Script for Loading Cross-Reference Records

There is no utility in 11g to load cross-reference (XRef) records similar to 10g. However, this can be accomplished with an SQL script.

The following is an example of a SQL script that loads cross-reference records for XRef table, ITEM_ITEMID with columns AGILE_01 and JDEE1_01. You can modify this SQL script to suit your specific requirements.

```
DECLARE

XrefTableName_vc2 VARCHAR2 (2000);

XrefColumnName1_vc2 VARCHAR2 (2000);

XrefColumnName2_vc2 VARCHAR2 (2000);

XrefColumnName3_vc2 VARCHAR2 (2000);

Value_vc2 VARCHAR2 (2000);

RowNumber_vc2 VARCHAR2 (48);

IsDeleted_vc2 VARCHAR2 (1);

LastModified_ts TIMESTAMP (6);

BEGIN

/* The following values need to be set just once per load*/

XrefTableName_vc2 := 'oramds:/apps/AIAMetaData/xref/ITEM_ITEMID.xref';

IsDeleted_vc2 := 'N';

XrefColumnName1_vc2 := 'COMMON';

XrefColumnName2_vc2 := 'AGILE_01';

XrefColumnName3_vc2 := 'JDEE1_01';

/* You'll just need to change the Value_vc2 variable for your specific edge app values */

/* Row Number is unique to a group of three inserts and ties them together. Its a system generated guid in all cases  */


/********************************************* Begin set of 3 inserts *****************************************/

RowNumber_vc2 := SYS_GUID;


/* Common row should have a guid for its value */

Value_vc2 := SYS_GUID;

LastModified_ts := SYSTIMESTAMP;

Insert into XREF_DATA (XREF_TABLE_NAME, XREF_COLUMN_NAME, ROW_NUMBER, VALUE, IS_DELETED, LAST_MODIFIED) values

(XrefTableName_vc2, XrefColumnName1_vc2, RowNumber_vc2, Value_vc2, IsDeleted_vc2, LastModified_ts);

/* Value specific to each application, for Agile value generation please check XREF_Instructions.doc */

Value_vc2 := 'AgileValue1';

LastModified_ts := SYSTIMESTAMP;
```

Insert into XREF_DATA (XREF_TABLE_NAME, XREF_COLUMN_NAME, ROW_NUMBER, VALUE, IS_DELETED, LAST_MODIFIED) values

(XrefTableName_vc2, XrefColumnName2_vc2, RowNumber_vc2, Value_vc2, IsDeleted_vc2, LastModified_ts);

/* Value specific to each application, for JDEE1 value generation please check XREF_Instructions.doc */

7.5 Identifying Cross-References

Cross-references map and connect records within the application network, and they enable these applications to communicate in the same language. The integration server stores the relationship in a persistent way so that others can refer to it.

The three virtual tables in the AIA XRef schema's XREF_DATA table that maintain this cross-reference information are as follows:

- CHANGE_CHANGEID: Includes change order information.
- ITEM_ITEMID: Includes item information with branch/plant.
- JDEE1_ITEMID: Includes item information without branch/plant.

Table 7–19 lists the cross-references:

Table 7–19 Cross reference

Name	Purpose	Columns
ITEM_ITEMID	Query/Create	JDEE1_01, COMMON, AGILE_01
CHANGE_CHANGEID	Query/Create	JDEE1_01, COMMON, AGILE_01
JDEE1_ITEMID	Query/Create	JDEE1_01, COMMON, AGILE_01

7.6 Populating Cross-References

If item and BOM initial loads are not used to synchronize item and BOM data between Agile and JDE, then you must manually populate the ITEM_ITEMID and JDEE1_ITEMID cross-reference (XRef) tables after installing and configuring the PIP.

You must manually add the cross-reference data into the ITEM_ITEMID and JDEE1_ITEMID XRef tables by using SQL insert statements. These tables hold item information for common value in edge applications.

For each JD Edwards EnterpriseOne item processed through initial loads, the following rows need to be created in the XRef data table:

- One row for Agile: AGILE_01
- One row for JD Edwards EnterpriseOne: JDEE1_01
- One row for Common: COMMON

The physical XREF table (XREF_DATA) can be located in the database configured for FMW/SOA and contains the following columns:

Table 7–20 XRef Table Format

Column Name	Description
XREF_TABLE_NAME	This column stores the XREF data types. For example: ■ oramds:/apps/AIAMetaData/xref/ITEM_ITEMID.xref ■ oramds:/apps/AIAMetaData/xref/JDEE1_ITEMID.xref
XREF_COLUMN_NAME	This column stores the values indicating the edge applications and COMMON value: ■ AGILE_01 ■ JDEE1_01 ■ COMMON
ROW_NUMBER	This column stores the GUID.
VALUE	This column stores the actual data that is cross-referenced.
IS_DELETED	This column indicates whether the column is deleted or not. For example, 'N'.
LAST_MODIFIED	This column stores last modified time.

Table 7–21 ITEM_ITEMID XRef Table Value Format

XRef_Column_Name	Value
COMMON	GUID
AGILE_01	Agile ItemID::Site For example, 60031::M30
EBIZ_01	JDE ItemID::Branch/ Plant For example, 60031::M30

Sample SQL Insert Statements for ITEM_ITEMID Table

For JDEE1_01

INSERT INTO XREF_DATA (XREF_TABLE_NAME, XREF_COLUMN_NAME, ROW_NUMBER, VALUE, IS_DELETED, LAST_MODIFIED) VALUES ('oramds:/apps/AIAMetaData/xref/ITEM_ITEMID.xref', 'JDEE1_01', 'ROWNUM_ITEM_1', '204::BP', 'N', SYSTIMESTAMP)

> **Note:** The value for branch/plant in the value field varies depending on the JDE item type and Agile multi-site setup. For example, branch/plant that has disabled multi-site and non-stock item will have a value, "NOT_FOUND".

For AGILE _01

INSERT INTO XREF_DATA (XREF_TABLE_NAME,XREF_COLUMN_NAME, ROW_NUMBER, VALUE, IS_DELETED, LAST_MODIFIED) VALUES ('oramds:/apps/AIAMetaData/xref/ITEM_ITEMID.xref', 'AGILE _01', 'ROWNUM_ITEM _1', '88-JKO29::BP', 'N', SYSTIMESTAMP)

Note: The value for branch/plant in the value field varies depending on the JDE item type and Agile multi-site setup. For example, branch/plant that has disabled multi-site and non-stock item will have a value, "NOT_FOUND".

For COMMON

INSERT INTO XREF_DATA (XREF_TABLE_NAME,XREF_COLUMN_NAME, ROW_NUMBER, VALUE, IS_DELETED, LAST_MODIFIED) VALUES ('oramds:/apps/AIAMetaData/xref/ITEM_ITEMID.xref','COMMON', 'ROWNUM_ITEM _1', '1001001', 'N', SYSTIMESTAMP)

Note: For the COMMON row, the value field will store a unique ID, for example, GUID. For each set, which includes JDEE1_01, AGILE _01, and COMMON, the row numbers must be identical to link these records to each other.

Table 7–22 Sample Data for XRef ITEM_ITEMID Table

XRef_ Table	XRef_ Column	Row_ Number	Value	IS_Deleted	Last_Modified
oramds:/apps/AIAMetaData/xref/ITEM_ITEMID.xref	JDEE1_01	B396F6CE586111E6E040F00A5B097CBF	60031::M30	N	08-DEC-11 08.14.34.028279000 AM
oramds:/apps/AIAMetaData/xref/ITEM_ITEMID.xref	AGILE_01	B396F6CE586111E6E040F00A5B097CBF	60031::M30	N	08-DEC-11 08.14.34.028279000 AM
oramds:/apps/AIAMetaData/xref/ITEM_ITEMID.xref	COMMON	B396F6CE586111E6E040F00A5B097CBF	B396F6CE586211E6E040F00A5B097CBF	N	08-DEC-11 08.14.34.028279000 AM

Table 7–23 JDEE1_ITEMID XRef Table Value Format

XRef_Column_Name	Value
COMMON	GUID
AGILE_01	Agile ItemID::Site For example, 60031
JDEE1_01	JDE ItemID For example, 60031

Sample SQL Insert statements for JDEE1_ITEMID Table

For JDEE1_01

INSERT INTO XREF_DATA (XREF_TABLE_NAME, XREF_COLUMN_NAME, ROW_NUMBER, VALUE, IS_DELETED, LAST_MODIFIED) VALUES ('oramds:/apps/AIAMetaData/xref/JDEE1_ITEMID.xref', 'JDEE1_01', 'ROWNUM_ITEM_1', '204', 'N', SYSTIMESTAMP)

For AGILE _01

INSERT INTO XREF_DATA (XREF_TABLE_NAME, XREF_COLUMN_NAME, ROW_NUMBER, VALUE, IS_DELETED, LAST_MODIFIED) VALUES ('oramds:/apps/AIAMetaData/xref/JDEE1_ITEMID.xref', 'AGILE _01', 'ROWNUM_ITEM _1', '88-JKO29', 'N', SYSTIMESTAMP)

For COMMON

INSERT INTO XREF_DATA (XREF_TABLE_NAME, XREF_COLUMN_NAME, ROW_NUMBER, VALUE, IS_DELETED, LAST_MODIFIED) VALUES ('oramds:/apps/AIAMetaData/xref/JDEE1_ITEMID.xref','COMMON', 'ROWNUM_ITEM _1', '1001001', 'N', SYSTIMESTAMP)

Note: For the COMMON row, the value field will store a unique ID, for example, GUID.

For more information about how to populate cross-references, see Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite, "Working with Cross References".

Table 7–24 Sample Data for XRef JDEE1 _ITEMID Table

XRef_Table	XRef_Column	Row_Number	Value	IS_Deleted	Last_Modified
oramds:/apps/AIAMetaData/xref/JDEE1_ITEMID.xref	JDEE1_01	9C2518503F8211E0BFC94F4D51304781	60031	N	09-DEC-11 08.14.34.028279000 AM
oramds:/apps/AIAMetaData/xref/JDEE1_ITEMID.xref	AGILE_01	9C2518503F8211E0BFC94F4D51304781	60031	N	09-DEC-11 08.14.34.028279000 AM
oramds:/apps/AIAMetaData/xref/JDEE1_ITEMID.xref	COMMON	9C2518503F8211E0BFC94F4D51304781	2d353536363933353835353533303931	N	09-DEC-11 08.14.34.028279000 AM

7.7 Describing DVMs

DVMs are a standard feature of the Oracle SOA Suite. They enable you to equate lookup codes and other static values across applications, for example, FOOT and FT or US and USA.

DVMs are static in nature, though administrators can add additional maps as needed. Transactional business processes never update DVMs; they only read from them. DVMs are stored in XML files and cached in memory at runtime.

DVM types are seeded for the Oracle Design to Release: Agile Product Lifecycle Management - JD Edwards EnterpriseOne flows and administrators can extend the list of mapped values by adding more maps. The DVM data should be synchronized with what the participating applications use. This synchronization should occur before any initial loads are run or any incremental transactional flows are initiated.

During installation, the DVMs used for the integration are imported with default data mappings. The values mapped by these DVMs must be changed as needed. Many DVMs are seeded and do not need to be changed. Because most of the Agile PLM attributes being mapped are list values, the Agile PLM data is not seeded and should be changed accordingly.

Table 7–25 lists DVMs used for this integration and their delivered values:

> **Note:** You can modify the values according to your requirements. You can add rows of value mappings, but you cannot change the DVM name, column name, or the number of columns.

Table 7–25 Domain Value Mapping

DVM	Delivered Value
ECO_CLASSIFICATION_CODE.xml	ECO_OBJ/ClassificationCode
ECO_ECOSPECIFICATIONGROUP_CATEGORYCODE1.xml	ECO_OBJ/EngineeringChangeOrderSpecificationGroup/SpecificationGroup/Specification
ECO_ECOSPECIFICATIONGROUP_CATEGORYCODE10.xml	ECO_OBJ/EngineeringChangeOrderSpecificationGroup/SpecificationGroup/Specification
ECO_ECOSPECIFICATIONGROUP_CATEGORYCODE2.xml	ECO_OBJ/EngineeringChangeOrderSpecificationGroup/SpecificationGroup/Specification
ECO_ECOSPECIFICATIONGROUP_CATEGORYCODE3.xml	ECO_OBJ/EngineeringChangeOrderSpecificationGroup/SpecificationGroup/Specification
ECO_ECOSPECIFICATIONGROUP_CATEGORYCODE4.xml	ECO_OBJ/EngineeringChangeOrderSpecificationGroup/SpecificationGroup/Specification
ECO_ECOSPECIFICATIONGROUP_CATEGORYCODE5.xml	ECO_OBJ/EngineeringChangeOrderSpecificationGroup/SpecificationGroup/Specification
ECO_ECOSPECIFICATIONGROUP_CATEGORYCODE6.xml	ECO_OBJ/EngineeringChangeOrderSpecificationGroup/SpecificationGroup/Specification

Table 7–25 (Cont.) Domain Value Mapping

DVM	Delivered Value
ECO_ ECOSPECIFICATIONGROUP_ CATEGORYCODE7.xml	ECO_ OBJ/EngineeringChangeOrderSpecificationGroup/ SpecificationGroup/Specification
ECO_ ECOSPECIFICATIONGROUP_ CATEGORYCODE8.xml	ECO_ OBJ/EngineeringChangeOrderSpecificationGroup/ SpecificationGroup/Specification
ECO_ ECOSPECIFICATIONGROUP_ CATEGORYCODE9.xml	ECO_ OBJ/EngineeringChangeOrderSpecificationGroup/ SpecificationGroup/Specification
ECO_PRIORITY_CODE.xml	ECO_OBJ/PriorityCode
ECO_REASON_CODE.xml	ECO_OBJ/ReasonCode
ECO_STATUS_CODE.xml	ECO_OBJ/Status/Code
ECO_TYPECODE.xml	ECO_OBJ/TypeCode
ITEM_DUAL_UOM_TRACKING_ INDICATOR.xml	ITEM_OBJ/DualUOMTrackingIndicator
ITEM_INDICATOR.xml	ITEM_ OBJ/ItemPurchasingCharacteristics/TaxableIndicator ITEM_ OBJ/ItemManufacturingCharacteristics/StructureAllowedIndicator
ITEM_INVENTORY_PLANNING_ CODE.xml	ITEM_ OBJ/ItemPlanningCharacteristics/InventoryPlanningCode
ITEM_ INVOICINGENABLEDINDICATOR.xml	ITEM_ OBJ/ItemOrderManagementCharacteristics/InvoicingEnabledIndicator
ITEM_ ITEMSPECIFICATIONGROUP_ CYCLECOUNTCATEGORY.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ PURCHASINGREPORTCODE1.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ PURCHASINGREPORTCODE10.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ PURCHASINGREPORTCODE2.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ PURCHASINGREPORTCODE3.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ PURCHASINGREPORTCODE4.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification

Table 7–25 (Cont.) Domain Value Mapping

DVM	Delivered Value
ITEM_ ITEMSPECIFICATIONGROUP_ PURCHASINGREPORTCODE5.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ PURCHASINGREPORTCODE6.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ PURCHASINGREPORTCODE7.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ PURCHASINGREPORTCODE8.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ PURCHASINGREPORTCODE9.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ SALESREPORTINGCODE1.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ SALESREPORTINGCODE10.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ SALESREPORTINGCODE2.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ SALESREPORTINGCODE3.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ SALESREPORTINGCODE4.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ SALESREPORTINGCODE5.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ SALESREPORTINGCODE6.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ SALESREPORTINGCODE7.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ SALESREPORTINGCODE8.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ SALESREPORTINGCODE9.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification

Table 7–25 (Cont.) Domain Value Mapping

DVM	Delivered Value
ITEM_ ITEMSPECIFICATIONGROUP_ SHIPPINGCOMMODITYCLASS.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_ ITEMSPECIFICATIONGROUP_ SHIPPINGCONDITIONSCODE.xml	ITEM_ OBJ/ItemSpecificationGroup/SpecificationGroup/Specification
ITEM_MAKEORBUY_CODE.xml	ITEM_ OBJ/ItemPlanningCharacteristics/MakeOrBuyCode
ITEM_ PURCHASINGALLOWEDINDICATOR.xml	ITEM_ OBJ/ItemPurchasingCharacteristics/PurchasingAllowedIndicator
ITEM_REPLENISHMENT_ SOURCE_CODE.xml	ITEM_ OBJ/ItemPlanningCharacteristics/ReplenishmentSourceCode
ITEM_SERIALIZATION_EVENT_ CODE.xml	ITEM_ OBJ/InventoryCharacteristics/SerializationEventCode
ITEM_STATUS_CODE	ITEM_OBJ/Status/Code
ITEM_ STOCKINGALLOWEDINDICATOR.xml	ITEM_ OBJ/InventoryCharacteristics/StockingAllowedIndicator
ITEM_TYPE.xml	ITEM_OBJ/TypeCode
ITEM_UOM_CODE.xml	ITEM_OBJ/BaseUOMCode ITEM_ OBJ/ShippingUOMCode ITEM_ OBJ/SecondaryUOMCode ITEM_ OBJ/ItemPhysicalCharacteristics/VolumeMeasure ITEM_ OBJ/ItemPurchasingCharacteristics/IssueUOMCode ITEM_ OBJ/ItemPhysicalCharacteristics/WeightMeasure
AGILE_SITE_TARGET_MAPPING	DEFAULT_MASTER_ORG in JD Edwards EnterpriseOne is used when the Multisite_Enabled property is set to False and no branch/plant is associated with the item in Agile.
AGILE_TARGET_SITE_MAPPING	The JD Edwards EnterpriseOne branch/plant to Agile PLM sites is mapped. A one-to-one mapping exists between the EnterpriseOne branch/plant to Agile PLM site.

7.8 Viewing EIMs

For more information about using XSL Mapping Analyzer (XMAN), see *Oracle Fusion Middleware Infrastructure Components and Utilities User's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*, Using the XSL Mapping Analyzer.

For more information about how services are mapped, see the My Oracle Support document: *EBO Implementation Maps (EIMs)* 1095494.1.

7.9 Setting Configuration Properties

This integration uses various configuration parameters that control the behavior of the flow. You use the Standard AIA XML configuration file and the AIAConfigurationProperties.xml file for capturing configuration parameters. AIA configuration file supports system-level configuration parameters, service-level parameters, and module configuration parameters. System-level parameters apply to all integrations running on the SOA suite. You can configure service-level parameters at the individual service level, such as ABCS.

Note: This section lists the configuration properties from the Agile PLM Module and the JD Edwards EnterpriseOne Module separately only for the purpose of identification. The actual AIAConfigurationProperties.xml file on the AIA Server is a merge of both.

Formoreinformation about updating SOA MDS with AIA metadata, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*, "How to Set Up AIA Workstation," Updating SOA MDS with AIA MetaData.

Configuration Parameters

This integration uses the following configuration parameters:

- PIP level configuration parameters: PIP Configuration parameters are implemented using AIA module configuration entry.

  The module configuration entry has a name and can contain any number of configuration parameters. A naming convention of PIPS.PIPName is used for naming modules. The parameters inside the module are named using with cascaded naming convention where individual words are separated with dots.

  For example, agile.replicate.item

- Service level configuration parameters: While most configuration requirements are satisfied by the PIP Level configuration parameters, sometimes the behavior of a flow needs to be controlled at the service level.

  These parameters can be captured using AIA service configuration parameters. Service configuration entry is identified by the service name such as CreateItemAgileReqABCSImpl. The parameter names themselves are named using cascaded naming convention as explained earlier.

For more information about requirements for working with AIAConfigurationProperties.xml, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*, "Building AIA Integration Flows," How to Set Up AIA Workstation.

For more information about updating SOA MDS with AIA metadata, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*, "How to Set Up AIA Workstation," Updating MDS.

Table 7–26 lists the Agile PLM configuration properties, value/setting default values, and descriptions:

Table 7–26 Agile PLM configuration properties

Property	Value/Setting (default)	Description
moduleName	Agile	

Table 7–26 (Cont.) Agile PLM configuration properties

Property	Value/Setting (default)	Description
MULTISITE_ENABLED	TRUE	When set to True, the sites specified on Sites tab of items are used to determine the Orgs in JD Edwards EnterpriseOne to which they are mapped. When set to False, Page2 Multilist01attribute is used to determine the Orgs in JD Edwards EnterpriseOne to which the Item is extended.
Item.UnitCostAttribute	Site.Numeric01	Determines the attribute to which the unit cost from JD Edwards EnterpriseOne is updated in Agile PLM.
Item.AvailableQuantityAttribute	Site.Numeric02	Determines the attribute to which the available quantity from JD Edwards EnterpriseOne is updated in Agile PLM.
Item.OnHandQuantityAttribute	Site.Numeric03	Determines the attribute to which the on-hand quantity from JD Edwards EnterpriseOne is updated in Agile PLM.
Item.ReservedQuantityAttribute	Site.Numeric04	Determines the attribute to which the reserved quantity from JD Edwards EnterpriseOne is updated in Agile PLM.
REPLICATE_BOM_ENABLED	FALSE	Used for sample replicate BOM customization.
COMMON_BOM_ENABLED	FALSE	Used for sample common BOM customization.

Note: Multisite_Enabled property is governed by Distributed Processing aspects covered in Release of Change Order in Agile PLM. When it is set to TRUE (default), the Item.UnitCostAttribute, Item.AvailableQuantityAttribute, Item.OnHandQuantityAttribute, and Item.ReservedQuantityAttribute are set to Site tab flex attributes.

You can use Numeric, Text, or Money flex fields of Site tab for these settings, and it is denoted by the first element, Site. For example, Site.Numeric01

When set to FALSE; all these attributes are set to Page2 or Page3 Flex Fields. Therefore, you must change the settings to PageTwo.Numeric01 or PageThree.Numeric01, accordingly. Derive the names of the attributes from the ItemABM Schema, which you can find in Agile PLM Interfaces.

Table 7–27 lists the setting for the CreateQueueService service property:

Table 7–27 Settings CreateQueueService service property

Property	Value/Setting (default)	Description
TRACE.LOG.ENABLED	False	Use tracelog for the flow.

Table 7–28 lists the setting for the QueueProcessorServiceImpl service property:

Table 7–28 Settings for QueueProcessorServiceImpl service property

Property	Value/Setting (default)	Description
TRACE.LOG.ENABLED	False	Use tracelog for the flow.

Table 7–29 lists the settings for the UpdateEngineeringChangeOrderListAgileProvABCSImpl service properties:

Table 7–29 Settings for UpdateEnginneringChangeOrder property

Property	Default Value/Setting	Description
ABCSExtension.PreProcessABM	false	User exit for the preprocess Application Business Message (ABM) should be called or not
ABCSExtension.PreProcessEBM	false	User exit for the preprocess Enterprise Business Message (EBM) should be called or not
ABCSExtension.PostProcessEBM	false	User exit for the post-process EBM should be called or not
ABCSExtension.PostProcessABM	false	User exit for the post-process ABM should be called or not
TRACE.LOG.ENABLED	true	Use tracelog for the flow
Default.SystemID	AGILE_01	System ID of Agile PLM application instance
Routing.EngineeringChangeOrderResponseEBS.UpdateEngineeringChangeOrderListResponse.RouteToCAVS	false	
Routing.EngineeringChangeOrderResponseEBS.UpdateEngineeringChangeOrderListResponse.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/asyncresponsesimulator	CAVS SOAP URL When the RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS. This invocation relates to the ECO response EBS
Routing.EngineeringChangeOrderResponseEBS.UpdateEngineeringChangeOrderListResponse.MessageProcessingInstruction.EnvironmentCode	PRODUCTION	Environment code such as 'PRODUCTION'/ 'CAVS'. Identifies the installation environment

Table 7–29 (Cont.) Settings for UpdateEnginneringChangeOrder property

Property	Default Value/Setting	Description
Routing.ChangeABSService.RouteToCAVS	false	If set to True route to CAVS; otherwise, route to the Agile PLM application. This invocation relates to the change ABS service
Routing.ChangeABSService.AGILE_01.EndpointURI	http://${agile.host}:${agile.port}/AgilePLM/integration/services/ChangeABS	ChangeABS URL: When the RouteToCAVS property is set to false, use the URL mentioned to connect to the Agile PLM ChangeABS Service for the ChangeABSService partnerlink.
Routing.ChangeABSService.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/syncresponsesimulator	CAVS SOAP URL When the RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS. This invocation relates to the change ABS service
Routing.MergeABSService.RouteToCAVS	false	If set to True, route to CAVS; otherwise, route to the Agile PLM application. This invocation relates to the change merge ABS service
Routing.MergeABSService.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/syncresponsesimulator	CAVS Simple Object Access Protocol (SOAP) URL When the RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS. This invocation relates to the change merge ABS service
Routing.MergeABSService.AGILE_01.EndpointURI	http://${agile.host}:${agile.port}/AgilePLM/integration/services/MergeABSService_Port	MergeABS URL: When the RouteToCAVS property is set to false, use the URL mentioned to connect to the Agile PLM MergeABS Service for the MergeABSService partnerlink.
Routing.ChangeStatusService.RouteToCAVS	false	If set to true, it is routed to CAVS; otherwise, routed to the Agile PLM application. This invocation relates to the change status ABS service
Routing.ChangeStatusService.CAVS.EndpointURI	http://${http.hostname}:${http.oort}/AIAValidationSystemServlet/syncresponsesimulator	CAVS URL When the RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS. This invocation relates to the change status ABS service
Routing.ChangeStatusService.AGILE_01.EndpointURI	http://${agile.host}:${agile.port}/AgilePLM/integration/services/ChangeABS	ChangeABS URL: When the RouteToCAVS property is set to False, use the URL mentioned to connect to the Agile PLM ChangeABS Service for the ChangeStatusService partnerlink.
Routing.ChangeStatusDBAdapter.RouteToCAVS	false	If set to true, it is routed to CAVS; otherwise, routed to the Agile PLM application. This invocation relates to the change status EDB Adapter
Routing.ChangeStatusDBAdapter.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/syncresponsesimulator	CAVS URL When the RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS. This invocation relates to the change status EDB Adapter

Table 7–29 (Cont.) Settings for UpdateEnginneringChangeOrder property

Property	Default Value/Setting	Description
Routing.ChangeStatusDBAdapter.AGILE_01.EndpointURI	http://${agile.host}:${agile.port}/soa-infra/services/default/ChangeStatusDBAdapter/AIASystem.Agile.ABCSImpl.ChangeStatusDBAdapter_RS_ep?WSDL	ChangeABS URL: When the RouteToCAVS property is set to False, use the URL mentioned to connect to the Agile PLM ChangeABS Service for the EDB Adapter partnerlink.

Table 7–30 lists the settings for the UpdateItemBalanceListAgileProvABCSImpl service properties:

Table 7–30 Settings for UpdateItemBalance property

Property	Value/Setting (default)	Description
Default.SystemID	AGILE_01	System ID of Agile PLM application instance
Routing.ItemABSService.RouteToCAVS	FALSE	If set to True, route to CAVS; otherwise, route to Agile PLM application. This invocation is for Item ABS
Routing.ItemABSService.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/syncresponsesimulator Routing.ItemBalanceResponseEBS.UpdateItemBalanceListResponse.RouteToCAVS	CAVS URL; When RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is for item ABS
Routing.ItemABSService.AGILE_01.EndpointURI	http://${agile.host}:${agile.port}/Agile/integration/services/ItemABS	ItemABS URL. When RouteToCAVS property is set to False, use the URL mentioned to connect to the Agile ItemABS service
Routing.ItemBalanceResponseEBS.UpdateItemBalanceListResponse.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/asyncresponsesimulator	CAVS URL; When RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is for Itembalance response EBS
Routing.ItemBalanceResponseEBS.UpdateItemBalanceListResponse.MessageProcessingInstruction.EnvironmentCode	Environment code such as 'PRODUCTION'/ 'CAVS' and so on. Identifies the installation environment	
ABCSExtension.PreProcessABM	FALSE	Decides whether user exit for the preprocess ABM should be called or not
ABCSExtension.PreProcessEBM	FALSE	Decides whether user exit for the preprocess EBM should be called or not

Table 7–30 (Cont.) Settings for UpdateItemBalance property

Property	Value/Setting (default)	Description
ABCSExtension.PostProcessEBM	FALSE	Decides whether user exit for the post-process EBM should be called or not
ABCSExtension.PostProcessABM	FALSE	Decides whether user exit for the post-process ABM should be called or not
TRACE.LOG.ENABLED	FALSE	Use tracelog for the flow
ROUTE_TO_CAVS	FALSE	Route to CAVS if set as True
DEFAULT_TARGET_ENDPOINT_URI	http://<host>:<port>/event/CoreAgile/ItemBalanceResponseEBS	ItemBalanceResponseEBS runtime target endpoint URI

Table 7–31 lists the settings for the UpdateItemListAgileProvABCSImpl service properties:

Table 7–31 Settings for UpdateItemListAgile Property

Property	Value/Setting (default)	Description
Default.SystemID	AGILE_01	System ID of Agile PLM application instance
Routing.ItemResponseEBSV2.UpdateItemListResponse.MessageProcessingInstruction.EnvironmentCode	Environment code such as 'PRODUCTION'/ 'CAVS' and so on. Identifies the installation environment	
Routing.ItemABSService.RouteToCAVS	FALSE	If set to True, route to CAVS; otherwise, route to Agile PLM application. This invocation is for Agile Item ABS service.
Routing.ItemABSService.AGILE_01.EndpointURI	http://${agile.host}:${agile.port}/${agiag.path}/integration/services/ItemABS	ItemABS URL. When RouteToCAVS property is set to False, use the URL mentioned to connect to the Agile ItemABS Service.
Routing.ItemABSService.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/syncresponsesimulator	Agile Item ABS service SOAP URL. When RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is for Agile Item ABS service
Routing.ItemResponseEBSV2.UpdateItemListResponse.RouteToCAVS	FALSE	If set to True, route to CAVS; otherwise, route to response item EBS. This invocation is for response item EBS
Routing.ItemResponseEBSV2.UpdateItemListResponse.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/asyncresponsesimulator	CAVS URL; When RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is for Item response EBS

Table 7–31 (Cont.) Settings for UpdateItemListAgile Property

Property	Value/Setting (default)	Description
ABCSExtension.PreProcessABM	FALSE	Decides whether user exit for the preprocess ABM should be called or not
ABCSExtension.PreProcessEBM	FALSE	Decides whether user exit for the preprocess EBM should be called or not
ABCSExtension.PostProcessEBM	FALSE	Decides whether user exit for the post-process EBM should be called or not
ABCSExtension.PostProcessABM	FALSE	Decides whether user exit for the post-process ABM should be called or not
TRACE.LOG.ENABLED	FALSE	Use tracelog for the flow
ROUTE_TO_CAVS	FALSE	Route to CAVS if set as True
DEFAULT_TARGET_ENDPOINT_URI	http://localhost:8888/event/CoreAgile/ItemResponseEBSV2	ItemResponseEBSV2 runtime target endpoint URI

Table 7–32 lists the settings for the ProcessEngineeringChangeOrderAgileReqABCSImpl service properties:

Table 7–32 Settings for ProcessEngineeringChangeOrder Property

Property	Value/Setting (default)	Description
Default.SystemID	AGILE_01	System ID of Agile PLM application instance
Routing.EngineeringChangeOrderEBS.CreateEngineeringChangeOrderList.RouteToCAVS	FALSE	If set to True, route to CAVS; otherwise, route to EngineeringChangeOrder EBS
Routing.EngineeringChangeOrderEBS.CreateEngineeringChangeOrderList.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/asyncresponsesimulator	CAVS URL When RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS
Routing.EngineeringChangeOrderEBS.CreateEngineeringChangeOrderList.MessageProcessingInstruction.EnvironmentCode	PRODUCTION	Environment code such as 'PRODUCTION'/ 'CAVS' and so on. Identifies the installation environment
ABCSExtension.PreProcessABM	FALSE	Decides whether user exit for the preprocess ABM should be called or not
ABCSExtension.PreProcessEBM	FALSE	Decides whether user exit for the preprocess EBM should be called or not
ABCSExtension.PostProcessEBM	FALSE	Decides whether user exit for the post-process EBM should be called or not
ABCSExtension.PostProcessABM	FALSE	Decides whether user exit for the post-process ABM should be called or not

Table 7–32 (Cont.) Settings for ProcessEngineeringChangeOrder Property

Property	Value/Setting (default)	Description
TRACE.LOG.ENABLED	FALSE	Use tracelog for the flow
ROUTE_TO_CAVS	FALSE	Route to CAVS, if set as True
DEFAULT_TARGET_ENDPOINT_URI	http://<host>:<port>/event/CoreAgile/EngineeringChangeOrderEBS	EngineeringChangeOrderEBS runtime target endpoint URI
Default.SystemID	AGILE_01	System ID of Agile PLM application instance
Routing.ItemEBSV2.CreateItem.RouteToCAVS	FALSE	If set to rue, route to CAVS; otherwise, route to Item EBS
Routing.ItemEBSV2.CreateItem.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/asyncresponsesimulator	CAVS SOAP URL; when RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS
Routing.ItemEBSV2.CreateItem.MessageProcessingInstruction.EnvironmentCode	PRODUCTION	Environment code such as 'PRODUCTION'/ 'CAVS' and so on. Identifies the installation environment
Routing.ChangeABSService.RouteToCAVS	False	If set to True, route to CAVS, otherwise, route to Agile application. This invocation is for Change ABS
Routing.ChangeABSService.AGILE_01.EndpointURI	http://${agile.host}:${agile.port}//Agile/integration/services/ChangeABS	ChangeABS URL When RouteToCAVS property is set to false, use the URL mentioned to connect to the Agile ChangeABS service
Routing.ChangeABSService.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/asyncresponsesimulator	CAVS URL When RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is for Change ABS

Table 7–33 lists the settings for the JD Edwards EnterpriseOne properties:

Table 7–33 Settings for JDEE1 Property

Property	Value/Setting (default)	Description
AGILE_NAMESPACE	AGILE_AXML_SCHEMA_NAMESPACE	This property is used in initial loads. The token AGILE_AXML_SCHEMA_NAMESPACE is replaced automatically with the Agile namespace corresponding to the versions of Agile PLM during PIP Installation.
DEFAULT_BOM_TYPE	M	Default BOM type
INITIALLOAD.DEFAULT.SOURCE	JDEE1_01	System ID of JD Edwards EnterpriseOne instance
INITIALLOAD.DEFAULT.TARGET	AGILE_01	System ID of Agile PLM application instance

Table 7–33 (Cont.) Settings for JDEE1 Property

Property	Value/Setting (default)	Description
AGILE_USERNAME	admin	Username used for invoking an Agile Integration Service (AIS) operation or creating a session for Agile PLM Server Instance while using Agile PLM Agile Software Development Kit (SDK)
AGILE.PASSWORD	participatingapplications.agile.password	Encrypted password used for invoking an AIS operation or creating a session for Agile PLM Server Instance while using Agile SDK **Note:** Because this is an encrypted password, it is automatically populated during PIP Installation. If required, populate with the ${participatingapplications.agile.password} value from the AIAInstall.properties file in AIA_HOME/aia_instances/<aiainstance name>/config
AGILE_CHANGE_TYPE	ECO	The ChangeType option used by AIS when importing items/BOM in the redline mode This is the subclass name of the change order for the ECO.
AGILE_CHANGE_WORKFLOW	JD Edwards EnterpriseOne Initial Load Change Orders	The name of the change order workflow used to advance the change order directly from Pending to Released status **Note:** This workflow name should match the workflow created in Chapter 7 - Setting Up Agile PLM Applications, Create New Workflow for Initial Load Change Orders section.

Table 7–34 lists the settings for the CreateEngineeringChangeOrderListJDEE1ProvABCSImpl service properties:

Table 7–34 Settings for CreateEngineeringChangeOrder property

Property	Value/Setting (default)	Description
Default.SystemID	JDEE1_01	System ID of JD Edwards EnterpriseOne instance
Routing.EngineeringChangeOrderManager.RouteToCAVS	False	If set to True, route to CAVS otherwise, route to JD Edwards EnterpriseOne. This invocation is for the EngineeringChangeOrderManager ABS service
Routing.EngineeringChangeOrderResponseEBS.RouteToCAVS	False	If set to True, route to CAVS; otherwise, route to ECO Response EBS. This invocation is for ECO response EBS

Table 7–34 (Cont.) Settings for CreateEngineeringChangeOrder property

Property	Value/Setting (default)	Description
Routing.EngineeringChangeOrderManager.CAVS.EndpointURI	http://${http.hostname}:${http.port}//AIAValidationSystemServlet/syncresponsesimulator	CAVS SOAP URL When RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is for the EngineeringChangeOrderManager ABS service
Routing.EngineeringChangeOrderResponseEBS.CAVS.EndpointURI	http://${http.hostname}:${http.port}//AIAValidationSystemServlet/asyncresponsesimulator	CAVS SOAP URL When RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is for ECO response EBS
Routing.EngineeringChangeOrderManager.JDEE1_01.EndpointURI	${participatingapplications.jdee1.ws.url}/EngineeringChangeOrderManager	JD Edwards EnterpriseOne EngineeringChangeOrderManager ABS service URL. When RouteToCAVS property is set to False, use the URL mentioned to connect to JD Edwards EnterpriseOne This invocation is for the EngineeringChangeOrderManager ABS service
ABCSExtension.PreProcessABM	False	Decides whether user exit for the preprocess ABM should be called or not
ABCSExtension.PostProcessABM	False	Decides whether user exit for the preprocess EBM should be called or not
ABCSExtension.PreProcessEBM	False	Decides whether user exit for the post-process EBM should be called or not
ABCSExtension.PostProcessEBM	False	Decides whether user exit for the post-process ABM should be called or not
Trace.Log.Enabled	False	Use tracelog for the flow
Routing.EngineeringChangeOrderResponseEBS.MessageProcessingInstruction.EnvironmentCode	PRODUCTION	Environment code such as 'PRODUCTION'/ 'CAVS' and so on. Identifies the installation environment
ECO_Implemented_Status	E5	
Default_ECO_Branch_Plant		

Table 7–35 lists the settings for the UpdateEngineeringChangeOrderListJDEE1ReqABCSImpl service properties:

Table 7–35 Settings for UpdateEngineeringChangeOrder property

Property	Value/Setting (default)	Description
Default.SystemID	JDEE1_01	System ID of JD Edwards EnterpriseOne instance
ABCSExtension.PreXformABMtoEBM	False	Decides whether user exit for the preprocess ABM should be called or not
ABCSExtension.PostXformABMtoEBM	False	Decides whether user exit for the preprocess EBM should be called or not
ABCSExtension.PreInvokeEBS	False	Decides whether user exit for the post-process EBM should be called or not
ABCSExtension.PostInvokeEBS	false	Decides whether user exit for the post-process ABM should be called or not
Routing.TimeStampManager.RouteToCAVS	false	If set to true route to CAVS else route to JD Edwards EnterpriseOne. This invocation is for IntegrationTimeStampManager ABS service
Routing.TimeStampManager.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/syncresponsesimulator	CAVS SOAP URL When RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is for IntegrationTimeStampManager ABS service
Routing.EngineeringChangeOrderEBS.UpdateEngineeringChangeOrderList.RouteToCAVS	false	If set to True, route to CAVS; otherwise, route to ECO EBS. This invocation is for ECO EBS
Routing.EngineeringChangeOrderEBS.UpdateEngineeringChangeOrderList.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/asyncresponsesimulator	CAVS SOAP URL When RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS. This invocation is for ECO EBS
Routing.EngineeringChangeOrderEBS.UpdateEngineeringChangeOrderList.MessageProcessingInstruction.EnvironmentCode	PRODUCTION	Environment code such as 'PRODUCTION'/ 'CAVS' and so on. Identifies the installation environment
Routing.TimeStampManager.JDEE1_01.EndpointURI	${participatingapplications.jdee1.ws.url}/IntegrationTimeStampManager	JD Edwards EnterpriseOne IntegrationTimeStampManager ABS service URL. When RouteToCAVS property is set to False, use the URL mentioned to connect to JD Edwards EnterpriseOne. This invocation is for IntegrationTimeStampManager ABS service
TRACE.LOG.ENABLED	false	Use tracelog for the flow

Table 7–36 lists the settings for the UpdateItemBalanceListJDEE1ReqABCSImpl service properties:

Table 7–36 Settings for UpdateItemBalance property

Property	Value/Setting (default)	Description
Default.SystemID	JDEE1_01	System ID of JD Edwards EnterpriseOne instance
ABCSExtension.PreXformABMtoEBM	False	Decides whether user exit for the preprocess ABM should be called or not
ABCSExtension.PostXformABMtoEBM	False	Decides whether user exit for the preprocess EBM should be called or not
ABCSExtension.PreInvokeEBS	False	Decides whether user exit for the post-process EBM should be called or not
ABCSExtension.PostInvokeEBS	False	Decides whether user exit for the post-process ABM should be called or not
Routing.TimeStampManager.RouteToCAVS	False	If set to True, route to CAVS; otherwise, route to JD Edwards EnterpriseOne. This invocation is for IntegrationTimeStampManager ABS service
Routing.TimeStampManager.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/syncresponsesimulator	CAVS SOAP URL: when RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is for IntegrationTimeStampManager ABS service
Routing.ItemBalanceEBS.UpdateItemBalanceList.RouteToCAVS	FALSE	If set to True, route to CAVS; otherwise, route to ItemBalance EBS. This invocation is for ItemBalance EBS
Routing.ItemBalanceEBS.UpdateItemBalanceList.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/asyncresponsesimulator	CAVS SOAP URL When RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is for ItemBalance EBS.
Routing.ItemBalanceEBS.UpdateItemBalanceList.MessageProcessingInstruction.EnvironmentCode	PRODUCTION	Environment code such as 'PRODUCTION'/ 'CAVS' and so on. Identifies the installation environment
Routing.TimeStampManager.JDEE1_01.EndpointURI	${participatingapplications.jdee1.ws.url}/IntegrationTimeStampManager	JD Edwards EnterpriseOne IntegrationTimeStampManager ABS service URL. When RouteToCAVS property is set to False, use the URL mentioned to connect to JD Edwards EnterpriseOne. This invocation is for IntegrationTimeStampManager ABS service
TRACE.LOG.ENABLED	false	Use tracelog for the flow

Table 7–37 lists the settings for the UpdateItemListJDEE1ReqABCSImpl service properties:

Table 7–37 Settings for UpdateItemlist property

Property	Value/Setting (default)	Description
Default.SystemID	JDEE1_01	System ID of JD Edwards EnterpriseOne instance
ABCSExtension.PreXformABMtoEBM	False	Decides whether user exit for the preprocess ABM should be called or not
ABCSExtension.PostXformABMtoEBM	false	Decides whether user exit for the preprocess EBM should be called or not
ABCSExtension.PreInvokeEBS	False	Decides whether user exit for the post-process EBM should be called or not
ABCSExtension.PostInvokeEBS	False	Decides whether user exit for the post-process ABM should be called or not
Routing.TimeStampManager.RouteToCAVS	False	If set to True, route to CAVS; otherwise, route to JD Edwards EnterpriseOne. This invocation is for IntegrationTimeStampManager ABS service
Routing.TimeStampManager.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/syncresponsesimulator	CAVS SOAP URL When RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is for IntegrationTimeStampManager ABS service
Routing.ItemEBSV2.UpdateItemList.RouteToCAVS	FALSE	If set to True, route to CAVS; otherwise, route to ItemBalance EBS. This invocation is for ItemBalance EBS
Routing.ItemEBSV2.UpdateItemList.CAVS.EndpointURI	http://${http.hostname}:${http.port}/AIAValidationSystemServlet/asyncresponsesimulator	CAVS SOAP URL When RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is for ItemBalance EBS
Routing.ItemEBSV2.UpdateItemList.MessageProcessingInstruction.EnvironmentCode	PRODUCTION	Environment code such as 'PRODUCTION'/ 'CAVS' and so on. Identifies the installation environment
Routing.TimeStampManager.JDEE1_01.EndpointURI	${participatingapplications.jdee1.ws.url}/IntegrationTimeStampManager	JD Edwards EnterpriseOne IntegrationTimeStampManager ABS service URL. When RouteToCAVS property is set to False, use the URL mentioned to connect to JD Edwards EnterpriseOne. This invocation is for IntegrationTimeStampManager ABS service
TRACE.LOG.ENABLED	false	Use tracelog for the flow

Table 7–38 lists the settings for the InitialLoadBillOfMaterialsListJDEE1toAgileImpl service properties:

Table 7–38 Settings for InitialLoadBillofMaterial property

Property	Value/Setting (default)	Description
Default.SystemID	JDEE1_01	System ID of JD Edwards EnterpriseOne instance
TRACE.LOG.ENABLED	False	Use tracelog for the flow
ABCSExtension.PreXformABMtoAXML	False	Decides whether user exit for the preprocess ABM should be called or not
ABCSExtension.PreInvokeAIS	False	Decides whether user exit for the preprocess Agile aXML should be called or not
PARENT_ITEM_REVISION_LEVEL	B01	The item revision that is used in Agile PLM for the parent items updated **Note:** If the BOM Extract UBE is not set up to retrieve the BOM Parent Item Revision level, then this needs to be populated with the non-blank value; otherwise, the BOM initial load will not function correctly.
RELEASE_CHANGE_ORDER_REASON	JD Edwards EnterpriseOne to Agile PLM BOM Initial Load	The Change Order Reason to add to the Change Order created in Agile PLM
RELEASE_CHANGE_ORDER_DESCRIPTION	JDEE1 to Agile PLM BOM Initial Load	The Change Order Description to add to the Change Order created in Agile PLM

Table 7–39 lists the settings for the InitialLoadItemListJDEE1toAgileImpl service properties:

Table 7–39 Settings for InitialLoadItemList property

Property	Value/Setting (default)	Description
Default.SystemID	JDEE1_01	System ID of JD Edwards EnterpriseOne instance
TRACE.LOG.ENABLED	False	Use tracelog for the flow
ABCSExtension.PreXformABMtoAXML	False	Decides whether user exit for the preprocess ABM should be called or not
ABCSExtension.PreInvokeAIS	False	Decides whether user exit for the preprocess Agile aXML should be called or not.
PRIMARY_ITEM_ID	2ndItemNumber	Property that determines which JD Edwards EnterpriseOne Item Number to use in Agile PLM

Table 7–39 (Cont.) Settings for InitialLoadItemList property

Property	Value/Setting (default)	Description
ITEM_REVISION_ LEVEL	A01	The item revision that is used in Agile PLM for all items imported **Note:** This field needs to be populated with the non-blank value; otherwise, the item initial load will not be processed.
RELEASE_ CHANGE_ORDER_ REASON	JD Edwards EnterpriseOne to Agile PLM Item Initial Load	The Change Order Reason to add to the Change Order created in Agile PLM
RELEASE_ CHANGE_ORDER_ DESCRIPTION	JD Edwards EnterpriseOne to Agile PLM Item Initial Load	The Change Order Description to add to the Change Order created in Agile PLM

Multisite_Enabled property is governed by distributed processing aspects.

When it is set to TRUE (default), the Item.UnitCostAttribute, Item.AvailableQuantityAttribute, Item.OnHandQuantityAttribute, and Item.ReservedQuantityAttribute are set to the Site tab flex attributes.

You can use the Numeric, Text, or Money flex fields of the Site tab for these settings, and it is denoted by the first element, Site. For example, Site.Numeric01

When set to FALSE, these attributes are set to Page2 or Page3 flex fields, requiring you to change the setting to PageTwo.Numeric01 or PageThree.Numeric01, accordingly. Derive the names of the attributes from the ItemABM schema, which you can find in the Agile PLM Interfaces section.

For more information, see Release of Change Order in Agile PLM and Agile PLM Interfaces sections of this document.

7.10 Handling Errors

The Design to Release integration uses the Mediator resequencer to manage errors and failures during web service processing. No PIP-specific errors are issued by the Design to Release services within the AIA system.

For more information about the errors caused by Agile PLM or JD Edwards EnterpriseOne, see the product-specific documentation.

For more information about AIA error handling, see *Oracle Fusion Middleware Infrastructure Components and Utilities User's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1,* "Setting Up and Using Error Handling and Logging."

7.10.1 Resequencing and Error Handling

The initial load flow in the Design to Release Agile PLM - JD Edwards EnterpriseOne integration uses the Mediator resequencer feature to manage errors and failures. The resequencer introduces a data store that stores failed messages until the system successfully processes them. If the message fails, it remains in the resequencer store and blocks any other messages that belong to the same group.

These services have resequencing enabled:

- ItemInitialLoadExtractJDEE1FileConsumer_RS
- ItemInitialLoadExtractJDEE1FTPConsumer_RS
- BillOfMaterialsInitialLoadExtractJDEE1FileConsumer_RS
- BillOfMaterialsInitialLoadExtractJDEE1FTPConsumer_RS

ItemInitialLoadExtractJDEE1FileConsumer_RS/ItemInitialLoadExtractJDEE1FTPConsumer_RS and BillOfMaterialsInitialLoadExtractJDEE1FileConsumer_RS/BillOfMaterialsInitialLoadExtractJDEE1FTPConsumer_RS are initiated before the initial load item and BillOfMaterials JDEE1toAgile PLM services in their respective flows, and they protect the item and BOMs flows from JD Edwards EnterpriseOne to Agile PLM. If an error occurs in either of these flows, the message remains in the resequencer store that is associated with Mediator, and the system locks the group.

For item processing, the group is defined by the first short item number in the batch. For BOM processing, the group is defined by a first parent short item number in the batch. For example, if an item message for short item 61021 fails and the system then attempts to process item message for item 61021, then the second message will not be processed. It remains in the resequencer store along with the first message until the system successfully processes the first message.

The main purpose of the resequencer during initial load processing is to regulate the initial load processing so that all messages are split into a number of threads defined in the Mediator resequencing configuration. By default, the system creates four groups, which are called 1, 2, 3, and 4.

After unlocking the group, the message that contained the failed record is reprocessed. Therefore, the error should be identified and corrected before unlocking the group. After the failed message is successfully processed, the system processes any messages that follow it in the same group.

You can unlock a group by connecting to the WLS database with the appropriate user name and password and running the following script:

```
pdate mediator_group_status set status = '0'
where status!=0 and group_id='844334' and component_dn =
'default/ItemInitialLoadExtractJDEE1Consumer!1.0/ItemInitialLoadExtractJDEE1FileCo
nsumer_RS'
commit;
```

Note: Obtain the user name and password from your SOA administrator.

Note: The values associated with group_id and name should be changed to the appropriate values, where group_id is the name of the group to unlock, and name is the name of the mediator routing service with the resequencer. Then, the message that failed is reprocessed. If it passes, any other messages in that group is processed one at a time until the system encounters another failure or all messages are processed successfully.

7.10.1.1 Logic Used to Determine Notification Roles for an Error

The Error Handling Framework uses runtime values and the data you enter on this page to execute the following hierarchical logic to determine the appropriate notification roles for an error:

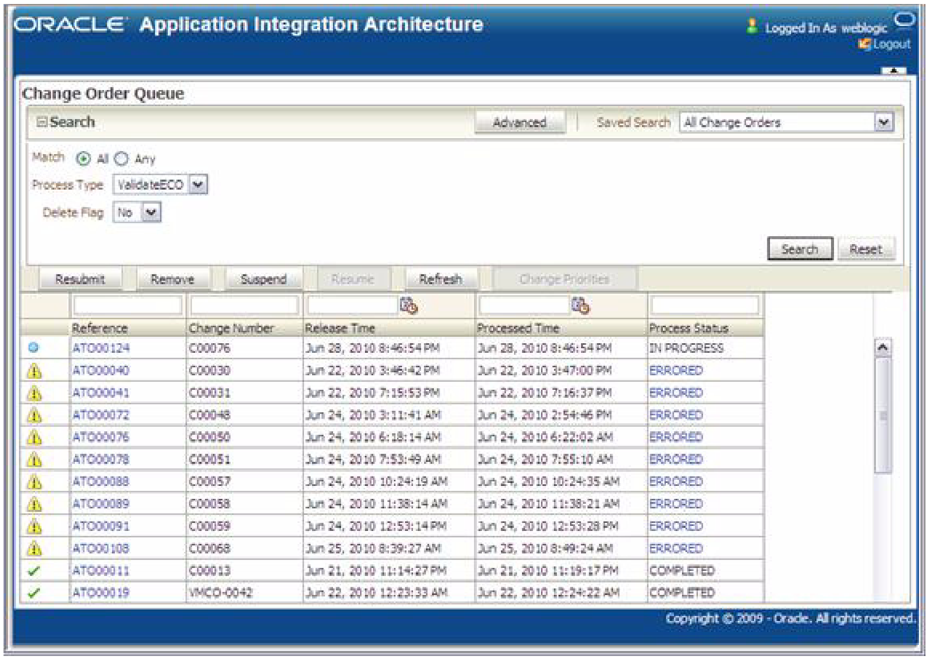
- If all four runtime values (SYSTEM_CODE, ERROR_CODE, SERVICE_NAME, and PROCESS_NAME) are available and they map to an error notification entry in this table, use the specified notification roles.
- If the ERROR_CODE, SERVICE_NAME, and PROCESS_NAME are available and map to an error notification entry in this table, use the specified notification roles.
- If the SERVICE_NAME and PROCESS_NAME are available and map to an error notification entry in this table, use the specified notification roles.
- If the SERVICE_NAME is available and maps to an error notification entry in this table, use the specified notification roles.
- If none of these values is available, the system fetches default values from the AIAConfigurationProperties.xml file.

7.10.2 Error Handling in PIP Queue Manager

You can review processes that fail during the change order flow using the Queue Manager. To see why a process failed, click the Errored link for detailed information.

Figure 7–13illustrates how errors appear on the Change Order Queue page:

Figure 7–13 Change Order Queue



Match ● All ○ Any

Process Type: ValidateECO

Delete Flag: No

	Reference	Change Number	Release Time	Processed Time	Process Status
●	ATO00124	C00076	Jun 28, 2010 8:46:54 PM	Jun 28, 2010 8:46:54 PM	IN PROGRESS
⚠	ATO00040	C00030	Jun 22, 2010 3:46:42 PM	Jun 22, 2010 3:47:00 PM	ERRORED
⚠	ATO00041	C00031	Jun 22, 2010 7:15:53 PM	Jun 22, 2010 7:16:37 PM	ERRORED
⚠	ATO00072	C00048	Jun 24, 2010 3:11:41 AM	Jun 24, 2010 2:54:46 PM	ERRORED
⚠	ATO00076	C00050	Jun 24, 2010 6:18:14 AM	Jun 24, 2010 6:22:02 AM	ERRORED
⚠	ATO00078	C00051	Jun 24, 2010 7:53:49 AM	Jun 24, 2010 7:55:10 AM	ERRORED
⚠	ATO00088	C00057	Jun 24, 2010 10:24:19 AM	Jun 24, 2010 10:24:35 AM	ERRORED
⚠	ATO00089	C00058	Jun 24, 2010 11:38:14 AM	Jun 24, 2010 11:38:21 AM	ERRORED
⚠	ATO00091	C00059	Jun 24, 2010 12:53:14 PM	Jun 24, 2010 12:53:28 PM	ERRORED
⚠	ATO00108	C00068	Jun 25, 2010 8:39:27 AM	Jun 25, 2010 8:49:24 AM	ERRORED
✓	ATO00011	C00013	Jun 21, 2010 11:14:27 PM	Jun 21, 2010 11:19:17 PM	COMPLETED
✓	ATO00019	VMCO-0042	Jun 22, 2010 12:23:33 AM	Jun 22, 2010 12:24:22 AM	COMPLETED

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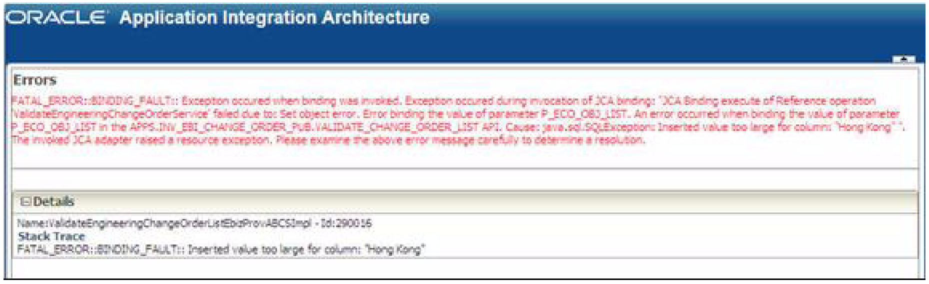
Figure 7–14 illustrates a sample error message:

Figure 7–14 Example of sample error message



Errors

```
FATAL_ERROR::BINDING_FAULT:: Exception occured when binding was invoked. Exception occured during invocation of JCA binding: "JCA Binding execute of Reference operation 'ValidateEngineeringChangeOrderService' failed due to: Set object error. Error binding the value of parameter P_ECO_OBJ_LIST. An error occurred when binding the value of parameter P_ECO_OBJ_LIST in the APPS.INV_EBI_CHANGE_ORDER_PUB.VALIDATE_CHANGE_ORDER_LIST API. Cause: java.sql.SQLException: Inserted value too large for column: "Hong Kong" ".
The invoked JCA adapter raised a resource exception. Please examine the above error message carefully to determine a resolution.
```

⊟ Details

```
Name:ValidateEngineeringChangeOrderListEbizProvABCSImpl - Id:290016
Stack Trace
FATAL_ERROR::BINDING_FAULT:: Inserted value too large for column: "Hong Kong"
```

The sample error message has two parts:

- Error Text: Text of error source, which can be from any participating ABCS that may have faulted.
- Details: Error Details consist of:

  Service Name: The name of the service where an instance failed to process

  Instance ID: The identification number of the instance that failed

Multiple faults generated by the service are captured and appeared in this error message. In addition, any failures in the flows are captured in the AIA error logs. You can see these from the Oracle Enterprise Manager console logs section.

If a service is down and the error is not related to the payload, then users can resubmit the change in the Queue Manager.

Table 7–40 lists the errors generated by the PIP services and the message text of each:

Table 7–40 Errors generated by PIP services

Error Code	Message Text
AIA_ERR_AIAAGILEJDEE1_0003	No error message has been specified for the input key
AIA_ERR_AIAAGILEJDEE1_0004	None of the ECOs selected have been integrated

Table 7–41 lists the errors generated by initial load and the message text for each:

Table 7–41 Errors generated by initial load

Error Code	Message Text
Invoke AIS Design	
AIA_ERR_AIAAGILEJDEE1_0013	File does not exist:
Release ECO Design	
AIA_ERR_AIAAGILEJDEE1_0010	Failed
AIA_ERR_AIAAGILEJDEE1_0011	Release ECO SDK Execution Failed:
AIA_ERR_AIAAGILEJDEE1_0012	Could not find Change Order workflow:
AIA_ERR_AIAAGILEJDEE1_0015	The Change Order Not found -
Initial Load BOM JD Edwards EnterpriseOne to Agile PLM design	

Table 7–41 (Cont.) Errors generated by initial load

Error Code	Message Text
AIA_ERR_AIAAGILEJDEE1_0001	For additional information navigate to <SOA_HOME>/agile/ais/fileResult and review the following file:
AIA_ERR_AIAAGILEJDEE1_0006	All Bill Of Materials Batch Quantity should be equal to Zero.
AIA_ERR_AIAAGILEJDEE1_0007	All Bill Of Materials Type should be equal to 'DEFAULT_BOM_TYPE' AIA Configuration Property value.
AIA_ERR_AIAAGILEJDEE1_0008	Multiple Bill Of Materials for the same Parent Item is not allowed when 'MULTISITE_ENABLED' property is set to 'FALSE'
AIA_ERR_AIAAGILEJDEE1_0009	Bill Of Materials Components with 'Non-Stock' Stocking Type is not allowed when 'MULTISITE_ENABLED' property is set to 'TRUE'.
Initial Load Item JD Edwards EnterpriseOne to Agile PLM Design	
AIA_ERR_AIAAGILEJDEE1_0001	For additional information navigate to <SOA_HOME>/agile/ais/fileResult and review the following file:
AIA_ERR_AIAAGILEJDEE1_0002	The Branch Plants in the input message do not have a mapped value in the AGILE_TARGET_SITE_MAPPING DVM
AIA_ERR_AIAAGILEJDEE1_0014	None of the Items selected have associated Branch Plants
AIA_ERR_AIAAGILEJDEE1_0016	Invalid Item Revision Level: Make sure 'ITEM_REVISION_LEVEL' Property in AIA Configuration Properties is not Blank

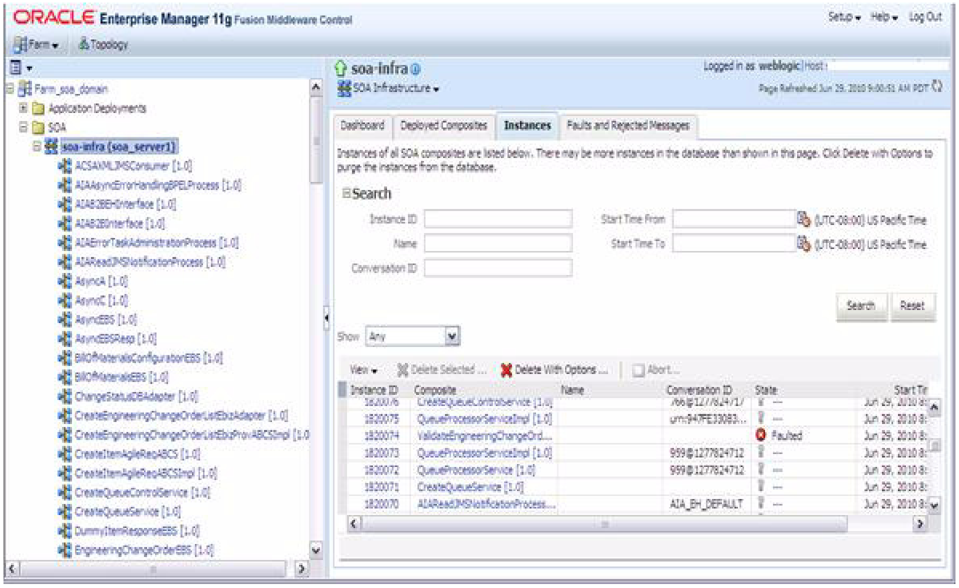
For more information about the errors generated by Agile PLM or JD Edwards Enterprise Business Service (EBS), see the product-specific documentation.

For more information about AIA error handling, see *Oracle Fusion Middleware Infrastructure Components and Utilities User's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*, "Setting Up and Using Error Handling and Logging."

7.10.2.1 Mechanism for Error Handling and Reporting

1. Log in to the Oracle Enterprise Manager console.
2. Click Farm_soa_domain > SOA > soa_infra (<server instance>).
3. Select the Instances tab. See Figure 7–15

Figure 7–15 Path to navigate to faulted instance



Instances of all SOA composites are listed below. There may be more instances in the database than shown in this page. Click Delete with Options to purge the instances from the database.

⊟Search

Instance ID
Name
Conversation ID
Start Time From (UTC-08:00) US Pacific Time
Start Time To (UTC-08:00) US Pacific Time

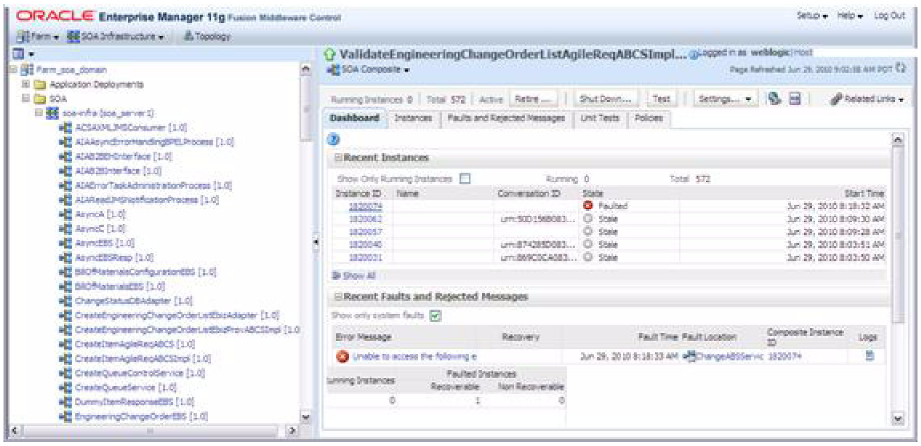
Show: Any

Instance ID	Composite	Name	Conversation ID	State	Start Tir
1820076	CreateQueueControlService [1.0]		766@1277824717	---	Jun 29, 2010 8:
1820075	QueueProcessorServiceImpl [1.0]		urn:947FE33083...	---	Jun 29, 2010 8:
1820074	ValidateEngineeringChangeOrd...			Faulted	Jun 29, 2010 8:
1820073	QueueProcessorServiceImpl [1.0]		959@1277824712	---	Jun 29, 2010 8:
1820072	QueueProcessorService [1.0]		959@1277824712	---	Jun 29, 2010 8:
1820071	CreateQueueService [1.0]			---	Jun 29, 2010 8:
1820070	AIAReadJMSNotificationProcess...		AIA_EH_DEFAULT	---	Jun 29, 2010 8:

4. Click the faulted instance (each faulted instance has the symbol in the State field).

5. Click the faulted instance again in the next window. See Figure 7–16

Figure 7–16 Fault Instance



ORACLE Enterprise Manager 11g Fusion Middleware Control
Setup ▾ Help ▾ Log Out
Farm ▾ SOA Infrastructure ▾ Topology
ValidateEngineeringChangeOrderListAgileReqABCSImpl...
SOA Composite ▾
Logged in as weblogic | Host
Page Refreshed Jun 29, 2010 9:02:18 AM PDT
Retire ...
Shut Down...
Test
Settings... ▾
Related Links ▾
Dashboard
Instances
Faults and Rejected Messages
Unit Tests
Policies
Show All

Running Instances 0 | Total 572 | Active

⊟Recent Instances

Show Only Running Instances □ Running 0 Total 572

Instance ID	Name	Conversation ID	State	Start Time
1820074			Faulted	Jun 29, 2010 8:18:32 AM
1820062		urn:50D1568083...	Stale	Jun 29, 2010 8:09:30 AM
1820057			Stale	Jun 29, 2010 8:09:28 AM
1820040		urn:874285D083...	Stale	Jun 29, 2010 8:03:51 AM
1820031		urn:869C0CA083...	Stale	Jun 29, 2010 8:03:50 AM

⊟Recent Faults and Rejected Messages

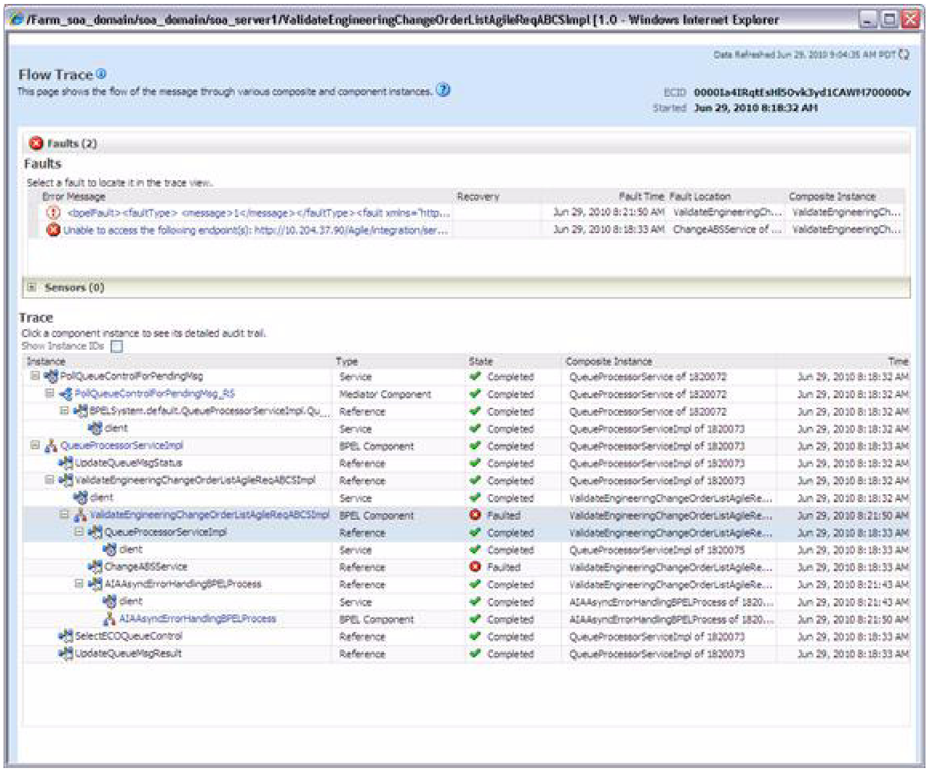
Show only system faults ☑

Error Message	Recovery	Fault Time	Fault Location	Composite Instance ID	Logs
Unable to access the following e		Jun 29, 2010 8:18:33 AM	ChangeABSServic	1820074	

Running Instances	Faulted Instances	
	Recoverable	Non Recoverable
0	1	0

6. The next window displays the details of the flow trace; click the component that faulted. See Figure 7–17

Figure 7–17 Flow Trace



/Farm_soa_domain/soa_domain/soa_server1/ValidateEngineeringChangeOrderListAgileReqABCSImpl [1.0 - Windows Internet Explorer

Data Refreshed Jun 29, 2010 9:04:35 AM PDT

Flow Trace

This page shows the flow of the message through various composite and component instances.

ECID 0001a4IRqtEsHl5Ovk3yd1CAWM70000Dv

Started Jun 29, 2010 8:18:32 AM

Faults (2)

Faults

Select a fault to locate it in the trace view.

Error Message	Recovery	Fault Time	Fault Location	Composite Instance
<bpelFault><faultType> <message>1</message></faultType><fault xmlns="http...		Jun 29, 2010 8:21:50 AM	ValidateEngineeringCh...	ValidateEngineeringCh...
Unable to access the following endpoint(s): http://10.204.37.90/Agile/integration/ser...		Jun 29, 2010 8:18:33 AM	ChangeABSService of ...	ValidateEngineeringCh...

Sensors (0)

Trace

Click a component instance to see its detailed audit trail.

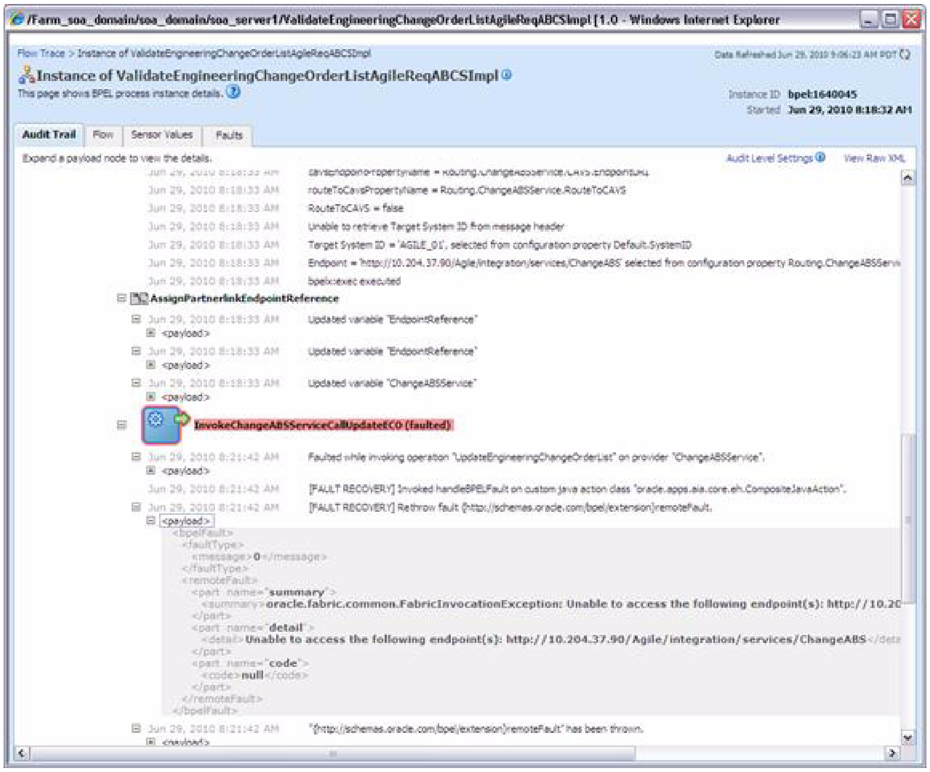
Show Instance IDs □

Instance	Type	State	Composite Instance	Time
PollQueueControlForPendingMsg	Service	✓ Completed	QueueProcessorService of 1820072	Jun 29, 2010 8:18:32 AM
PollQueueControlForPendingMsg_RS	Mediator Component	✓ Completed	QueueProcessorService of 1820072	Jun 29, 2010 8:18:32 AM
BPELSystem.default.QueueProcessorServiceImpl.Qu...	Reference	✓ Completed	QueueProcessorService of 1820072	Jun 29, 2010 8:18:32 AM
client	Service	✓ Completed	QueueProcessorServiceImpl of 1820073	Jun 29, 2010 8:18:32 AM
QueueProcessorServiceImpl	BPEL Component	✓ Completed	QueueProcessorServiceImpl of 1820073	Jun 29, 2010 8:18:33 AM
UpdateQueueMsgStatus	Reference	✓ Completed	QueueProcessorServiceImpl of 1820073	Jun 29, 2010 8:18:32 AM
ValidateEngineeringChangeOrderListAgileReqABCSImpl	Reference	✓ Completed	QueueProcessorServiceImpl of 1820073	Jun 29, 2010 8:18:32 AM
client	Service	✓ Completed	ValidateEngineeringChangeOrderListAgileRe...	Jun 29, 2010 8:18:32 AM
ValidateEngineeringChangeOrderListAgileReqABCSImpl	BPEL Component	☒ Faulted	ValidateEngineeringChangeOrderListAgileRe...	Jun 29, 2010 8:21:50 AM
QueueProcessorServiceImpl	Reference	✓ Completed	ValidateEngineeringChangeOrderListAgileRe...	Jun 29, 2010 8:18:33 AM
client	Service	✓ Completed	QueueProcessorServiceImpl of 1820075	Jun 29, 2010 8:18:33 AM
ChangeABSService	Reference	☒ Faulted	ValidateEngineeringChangeOrderListAgileRe...	Jun 29, 2010 8:18:33 AM
AIAAsyncErrorHandlingBPELProcess	Reference	✓ Completed	ValidateEngineeringChangeOrderListAgileRe...	Jun 29, 2010 8:21:43 AM
client	Service	✓ Completed	AIAAsyncErrorHandlingBPELProcess of 1820...	Jun 29, 2010 8:21:43 AM
AIAAsyncErrorHandlingBPELProcess	BPEL Component	✓ Completed	AIAAsyncErrorHandlingBPELProcess of 1820...	Jun 29, 2010 8:21:50 AM
SelectECOQueueControl	Reference	✓ Completed	QueueProcessorServiceImpl of 1820073	Jun 29, 2010 8:18:33 AM
UpdateQueueMsgResult	Reference	✓ Completed	QueueProcessorServiceImpl of 1820073	Jun 29, 2010 8:18:33 AM

7. The next window displays details of the flow; select either the Audit Trail or the Flow tab from this window.

   Figure 7–18 illustrates the example of the Audit Trail window:

Figure 7–18 Audit Trial



/Farm_soa_domain/soa_domain/soa_server1/ValidateEngineeringChangeOrderListAgileReqABCSImpl [1.0 - Windows Internet Explorer

Flow Trace > Instance of ValidateEngineeringChangeOrderListAgileReqABCSImpl

Data Refreshed Jun 29, 2010 9:06:23 AM PDT

Instance of ValidateEngineeringChangeOrderListAgileReqABCSImpl

This page shows BPEL process instance details.

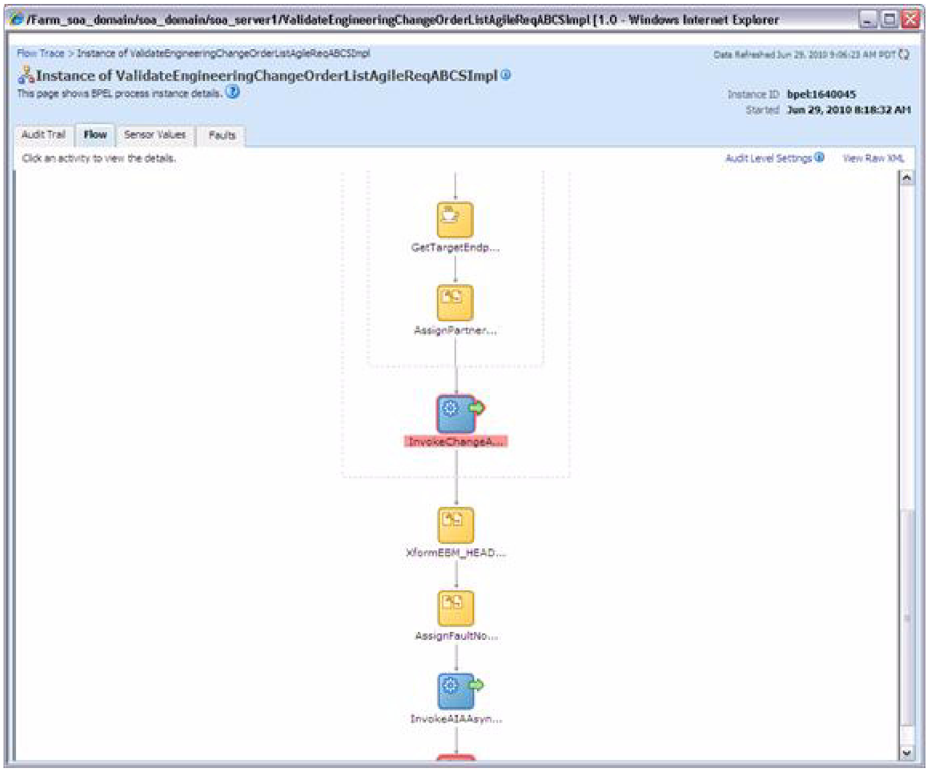
Instance ID **bpel:1640045**
Started **Jun 29, 2010 8:18:32 AM**

Expand a payload node to view the details.

```
Jun 29, 2010 8:18:33 AM     cavsEndpointPropertyName = Routing.ChangeABSService.CAVS.EndpointURI
Jun 29, 2010 8:18:33 AM     routeToCavsPropertyName = Routing.ChangeABSService.RouteToCAVS
Jun 29, 2010 8:18:33 AM     RouteToCAVS = false
Jun 29, 2010 8:18:33 AM     Unable to retrieve Target System ID from message header
Jun 29, 2010 8:18:33 AM     Target System ID = 'AGILE_01', selected from configuration property Default.SystemID
Jun 29, 2010 8:18:33 AM     Endpoint = 'http://10.204.37.90/Agile/integration/services/ChangeABS' selected from configuration property Routing.ChangeABSServi
Jun 29, 2010 8:18:33 AM     bpelx:exec executed
AssignPartnerlinkEndpointReference
  Jun 29, 2010 8:18:33 AM     Updated variable "EndpointReference"
    <payload>
  Jun 29, 2010 8:18:33 AM     Updated variable "EndpointReference"
    <payload>
  Jun 29, 2010 8:18:33 AM     Updated variable "ChangeABSService"
    <payload>
InvokeChangeABSServiceCallUpdateECO (faulted)
  Jun 29, 2010 8:21:42 AM     Faulted while invoking operation "UpdateEngineeringChangeOrderList" on provider "ChangeABSService".
    <payload>
  Jun 29, 2010 8:21:42 AM     [FAULT RECOVERY] Invoked handleBPELFault on custom java action class "oracle.apps.aia.core.eh.CompositeJavaAction".
  Jun 29, 2010 8:21:42 AM     [FAULT RECOVERY] Rethrow fault {http://schemas.oracle.com/bpel/extension}remoteFault.
    <payload>
      <bpelFault>
        <faultType>
          <message>0</message>
        </faultType>
        <remoteFault>
          <part name="summary">
            <summary>oracle.fabric.common.FabricInvocationException: Unable to access the following endpoint(s): http://10.20
          </part>
          <part name="detail">
            <detail>Unable to access the following endpoint(s): http://10.204.37.90/Agile/integration/services/ChangeABS</deta
          </part>
          <part name="code">
            <code>null</code>
          </part>
        </remoteFault>
      </bpelFault>
  Jun 29, 2010 8:21:42 AM     "{http://schemas.oracle.com/bpel/extension}remoteFault" has been thrown.
    <payload>
```

Figure 7–19 illustrates the example of Flow window:

Figure 7–19 Flow Tab



/Farm_soa_domain/soa_domain/soa_server1/ValidateEngineeringChangeOrderListAgileReqABCSImpl [1.0 - Windows Internet Explorer

Flow Trace > Instance of ValidateEngineeringChangeOrderListAgileReqABCSImpl

Data Refreshed Jun 29, 2010 9:06:23 AM PDT

Instance of ValidateEngineeringChangeOrderListAgileReqABCSImpl

This page shows BPEL process instance details.

Instance ID bpel:1640045

Started Jun 29, 2010 8:18:32 AM

Click an activity to view the details.

7.11 Viewing EIMs

For more information about using XSL Mapping Analyzer (XMAN), see *Oracle Fusion Middleware Infrastructure Components and Utilities User's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1*, Using the XSL Mapping Analyzer.

For more information about how services are mapped, see the My Oracle Support document: *EBO Implementation Maps (EIMs)* 881022.1.

A

Queue Management

The Queue Management feature in the pre-built integration requires:

- An event to produce filtered payload to a file destination to a JMS destination
- That the payload be defined using a standard XSD
- That the files or JMS messages produced by events be sequenced in the order in which the objects are released

> **Note:** These requirements are leveraged using Agile Content Service (ACS). ACS can to produce payload to a File or JMS destination. The payload is based on filters configured for the ACS Event defined by Agile PLM provided AXML schema definition. In addition, the ACS transmits the messages in the order in which the ATOs are released.

- A queue to manage the order of messages
- A queue monitoring the user interface to enable reordering and resubmitting of unprocessed messages
- A queue that manages the payloads based on the business process for which the message is produced by the event
- A queue controlling mechanism to:
  - Trigger the business flow based on the business process of the message
  - Process the messages sequentially depending on the order specified in the message (the highest order message is picked first for processing).

    A message is not picked for processing unless the processing of the previous message is complete.

    You can reorder the order of the messages not picked for processing.

For more information about the features and functionalities of Queue Manager, and how to use it, see *Agile PLM Integration Pack for Oracle E-Business Suite, Design to Release - User Guide*. You can find this document at http://www.oracle.com/technology/documentation/agile.html.

A.1 Queue Management Solution

The Queue Management Solution has the following components:

- Queue DB (database): Persists the data related to a queue messages

- Queue Controller: Polls for new event payloads and adds them to the queue DB. The highest priority message for each business process is picked and processed sequentially to trigger its business flow
- Queue Monitoring: The user interface that monitors the queue message status supports reordering of the priorities of the queue messages. It also provides the ability to resubmit unprocessed messages

A.1.1 Queue Controller

A polling strategy on the queue DB addresses the queue management business requirements. The queue controller provides an ECO system to ensure that this polling strategy works in tandem to ensure that:

- All event transmitted files and JMS messages are added to the queue.
- At any time, only one pending message is in the control table.
- After the processing of a message in the control table is complete, it inserts the highest priority queue message from the queue table to the control table.
- In case the integration flow errors out, the queue manager waits until the message is resubmitted or removed.

A.1.2 Queue Schema

To support the queue controller solution flow, the queue manager uses a polling strategy similar to PollingControlTableStrategy. Two tables manage the sequential processing and reordering of messages.

The first table, QUEUE_TABLE, has all the queue messages that are being provided by the event trigger. The QUEUE_CONTROL_TABLE table stores the relevant information of the message from the QUEUE_TABLE, which has not yet been processed.

The queue manager must ensure that the control table has only one message that is not yet processed. When the processing of a message is complete, a pending message from the queue table is inserted into this table to facilitate the sequential processing of the message. Because all pending messages are stored in the queue table, you can reorder them.

A.1.3 Queue Monitor

When a change order is released by ACS, the queue controller picks it up. The queue monitor displays a list of all the change orders that are waiting to be processed. It also enables you to reorder their processing sequence.

For more information about the Queue Monitor, see *Agile PLM Integration Pack for Oracle E-Business Suite Design to Release - User Guide*.

A.2 User Interface

The following user interface components are available when working with queues:

- Accessing the Process Queue Monitor
- Fields and Attributes
- Filters

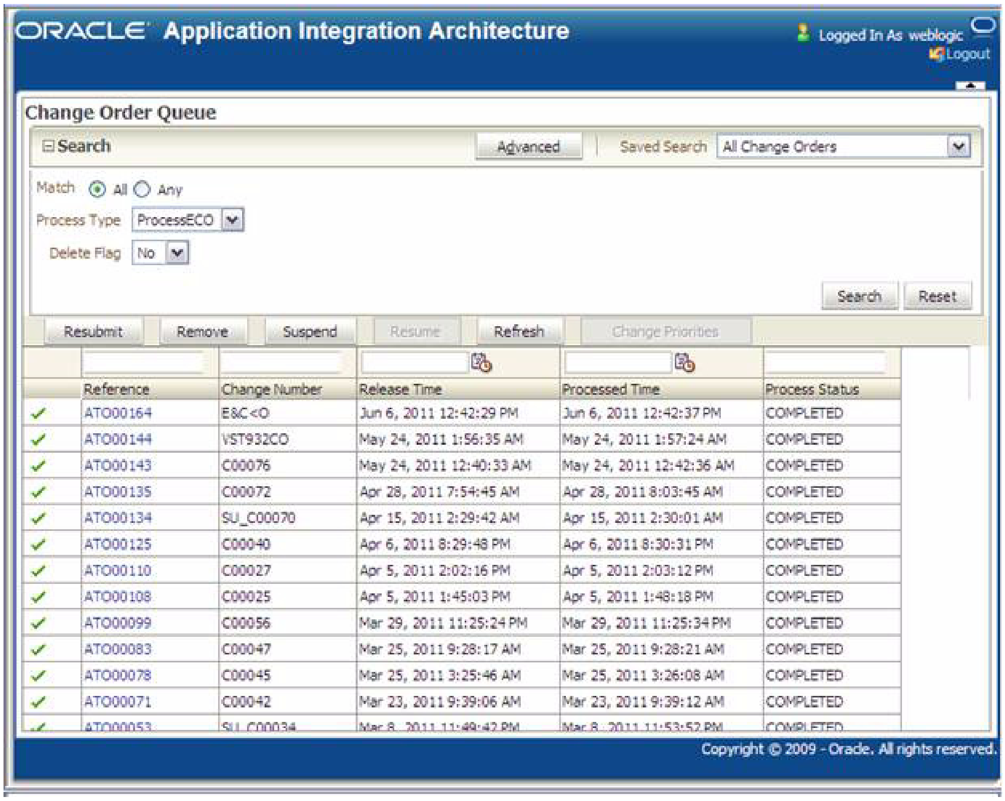
A.2.1 Accessing the Process Queue Monitor

The Process Queue Monitor (User Interface) is deployed at your Integration Server and can be accessed through web browser.

The Integration Administrator is provided with its URL, with login ID and password. After you login, you can see a page similar to the one below:

When a Change Order is released, it is picked up by the Queue Controller, which assigns it an Automated Transfer Object (ATO) Number before passing it on for processing. The Queue Monitor displays this ATO number as Reference Number.

Figure A–1 Process Queue Monitor



Change Order Queue

Saved Search: All Change Orders

Match ● All ○ Any

Process Type: ProcessECO

Delete Flag: No

	Reference	Change Number	Release Time	Processed Time	Process Status
✓	ATO00164	E&C<O	Jun 6, 2011 12:42:29 PM	Jun 6, 2011 12:42:37 PM	COMPLETED
✓	ATO00144	VST932CO	May 24, 2011 1:56:35 AM	May 24, 2011 1:57:24 AM	COMPLETED
✓	ATO00143	C00076	May 24, 2011 12:40:33 AM	May 24, 2011 12:42:36 AM	COMPLETED
✓	ATO00135	C00072	Apr 28, 2011 7:54:45 AM	Apr 28, 2011 8:03:45 AM	COMPLETED
✓	ATO00134	SU_C00070	Apr 15, 2011 2:29:42 AM	Apr 15, 2011 2:30:01 AM	COMPLETED
✓	ATO00125	C00040	Apr 6, 2011 8:29:48 PM	Apr 6, 2011 8:30:31 PM	COMPLETED
✓	ATO00110	C00027	Apr 5, 2011 2:02:16 PM	Apr 5, 2011 2:03:12 PM	COMPLETED
✓	ATO00108	C00025	Apr 5, 2011 1:45:03 PM	Apr 5, 2011 1:48:18 PM	COMPLETED
✓	ATO00099	C00056	Mar 29, 2011 11:25:24 PM	Mar 29, 2011 11:25:34 PM	COMPLETED
✓	ATO00083	C00047	Mar 25, 2011 9:28:17 AM	Mar 25, 2011 9:28:21 AM	COMPLETED
✓	ATO00078	C00045	Mar 25, 2011 3:25:46 AM	Mar 25, 2011 3:26:08 AM	COMPLETED
✓	ATO00071	C00042	Mar 23, 2011 9:39:06 AM	Mar 23, 2011 9:39:12 AM	COMPLETED
✓	ATO00053	SU_C00034	Mar 8, 2011 11:49:42 PM	Mar 8, 2011 11:53:52 PM	COMPLETED

A.2.2 Fields and Attributes

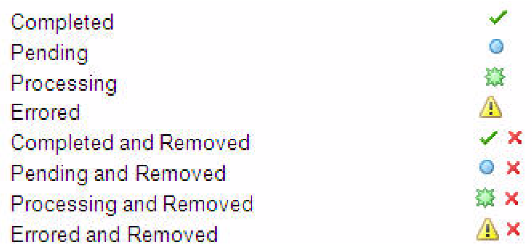
The Fields and Attributes component includes the Change Order Queue Monitor description.

A.2.2.1 Change Order Queue Monitor

The Changer Order Queue is a tabular display of the released orders lined up by Queue Manager for processing. Each row in this table is a Change Order. The first row denotes the 'first-in-sequence' Change Order, when it is in *Pending* state of processing.

Figure A–2 shows the process denoters and their functions:

Figure A–2 Process Denoters



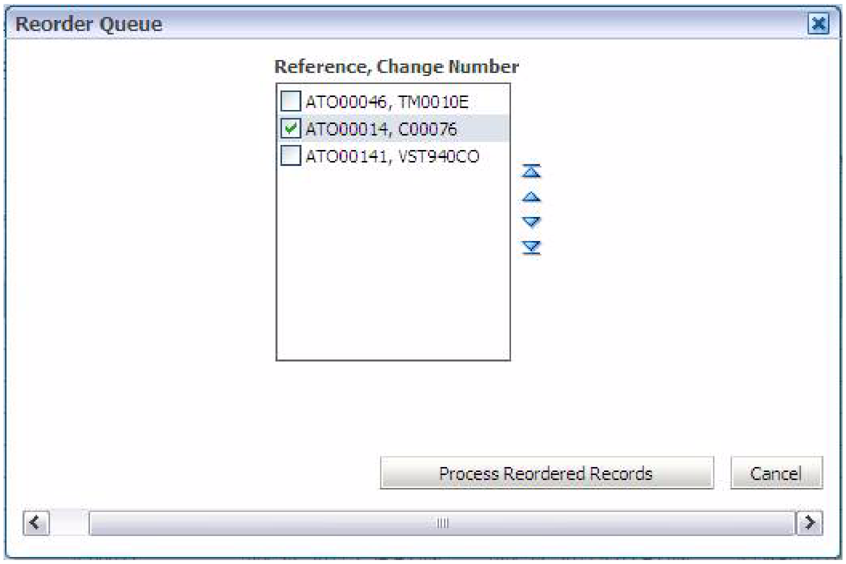
Completed	✓
Pending	●
Processing	✹
Errored	⚠
Completed and Removed	✓ ✗
Pending and Removed	● ✗
Processing and Removed	✹ ✗
Errored and Removed	⚠ ✗

A.2.2.2 Queue Operators

This section provides a list of queue operators and their operations.

Figure A–3 shows the Change Priorities page

Figure A–3 Change Priorities



Reorder Queue

Reference, Change Number

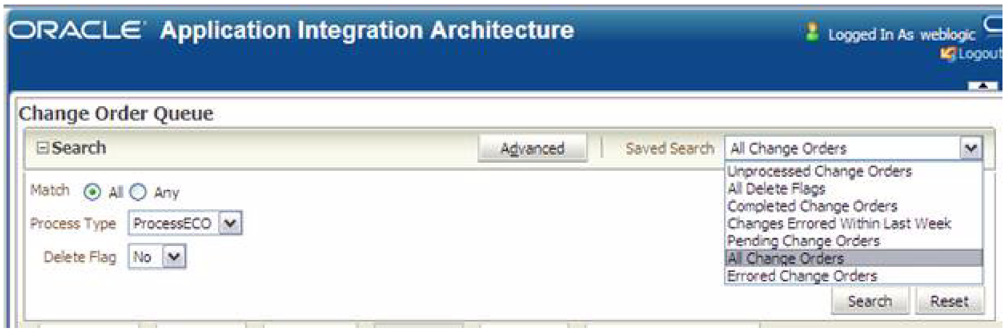
☐ ATO00046, TM0010E
☑ ATO00014, C00076
☐ ATO00141, VST940CO

A.2.3 Filters

At any given time, a queue may have hundreds of COs under processing, depending on the size of the organization. Although, the Queue Monitor displays all of them, it gets difficult to find the specific ones that you may require to see quickly.

Queue filters facilitate display of the change orders on the basis of their processing state and further criterion. The tables below list the search criterion of the predefined Saved Search criteria. The bold text indicates the default value or operator.

Figure A–4 Filter All Change Orders



Saved Search: All Change Orders

Match ● All ○ Any

Process Type: ProcessECO

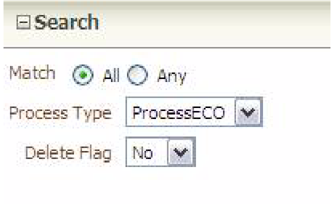
Delete Flag: No

A.2.3.1 Filter 1: All Change Orders

This filter displays the complete list of all change orders in the queue.

Figure A–5 shows the search parameters to be selected to view all change orders.

Figure A–5 All Change Orders



Match ● All ○ Any

Process Type: ProcessECO

Delete Flag: No

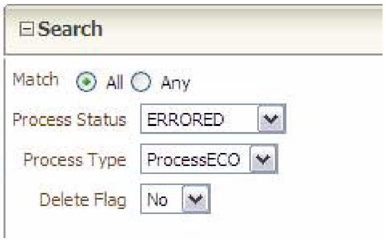
This table shows how to set up a filter to view all change orders:

A.2.3.2 Filter 2: Errored Change Orders Only

This filter displays the change orders with errors.

Figure A–6 shows the search parameters to find change order with errors.

Figure A–6 Change Orders with Errors



Match ● All ○ Any

Process Status: ERRORED

Process Type: ProcessECO

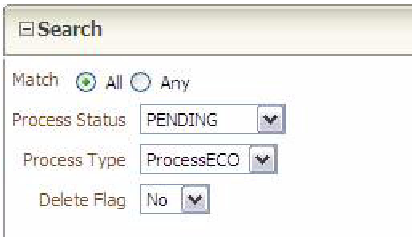
Delete Flag: No

A.2.3.3 Filter 3: Pending Changes Only

This filter displays the pending change orders.

Figure A–7 shows the search parameters to view pending change orders.

Figure A–7 Pending Change Orders



⊟ Search

Match ● All ○ Any

Process Status: PENDING

Process Type: ProcessECO

Delete Flag: No

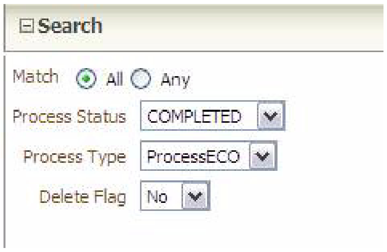
This table shows how to set up a filter to view pending change orders:

A.2.3.4 Filter 4: Completed Change Orders Only

This filter displays the completed change orders.

Figure A–8 shows the search parameters to view completed change orders.

Figure A–8 Completed Change Orders



⊟ Search

Match ● All ○ Any

Process Status: COMPLETED

Process Type: ProcessECO

Delete Flag: No

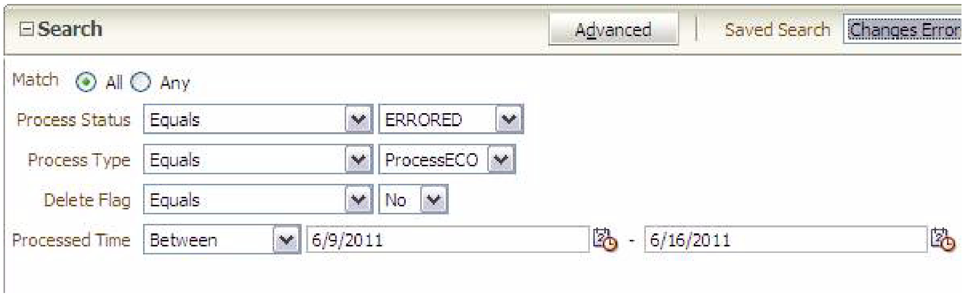
This table shows how to set up a filter to view completed change orders:

A.2.3.5 Filter 5: Changes Errored Within Last Week

This filter displays the changes errored within last week.

Figure A–9 shows changes which errored within last week.

Figure A–9 Changes Errored within Last Week



⊟ Search

Saved Search: Changes Error

Match ● All ○ Any

Process Status: Equals ERRORED

Process Type: Equals ProcessECO

Delete Flag: Equals No

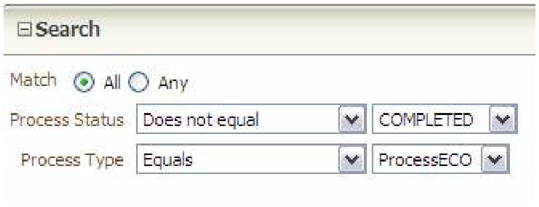
Processed Time: Between 6/9/2011 - 6/16/2011

This table shows how to set up a filter to view change orders that errored within last week:

A.2.3.6 Filter 6: Unprocessed Change Orders

This table shows how to set up a filter to view unprocessed change orders:

Figure A–10 Unprocessed Change Orders



⊟ Search

Match ● All ○ Any

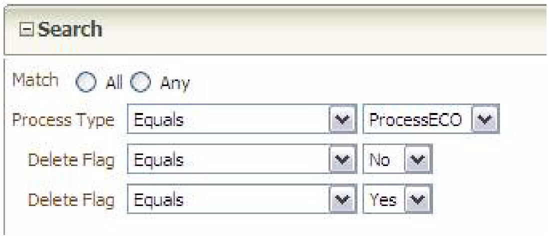
Process Status: Does not equal — COMPLETED

Process Type: Equals — ProcessECO

A.2.3.7 Filter 7: All Delete Flags

This table shows how to set up a filter to view all delete flags:

Figure A–11 All Delete Flags



⊟ Search

Match ○ All ○ Any

Process Type: Equals — ProcessECO

Delete Flag: Equals — No

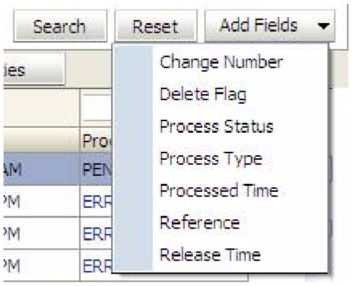
Delete Flag: Equals — Yes

A.2.3.8 Advance Query Abilities

The Advance Query Abilities feature allows you search for queries using advanced search parameters. You can use the advanced query abilities by clicking the **Advance Query Abilities** button. This button can be used when advanced searching is required and if the pre-defined saved searches do not meet your needs. When this button is pressed, the **Add Fields** button is added next to the **Reset** button. Additional fields can be added to your current search criteria.

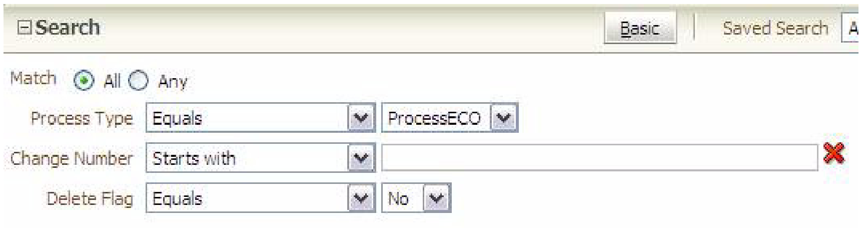
Example: If the All Change Orders default search criteria was being used, you could also select Change Number from the list below:

Figure A–12 Advance Query Abilities



Then the Change Number is added to your search criteria. The operator and value can then be entered and a search can be performed. The **X** button can then be used to delete that additional field. Or the reset button can use to reset your criteria back to the Saved Search criteria.

Figure A–13 Search Parameters



Match ● All ○ Any

Process Type Equals ProcessECO

Change Number Starts with

Delete Flag Equals No

In addition to the header search criteria, each column in the table (Reference, Change Number, Release Time, Processed Time, Process Status) has a QBE Line that can also be used as a filter.

A.3 Queue Manager Services

The Queue Manager deploys these services:

- CreateQueueService
- CreateQueueControlService
- QueueProcessorService
- QueueProcessorServiceImpl
- CreateQueueService

  CreateQueueService is implemented as a Mediator Routing service. An adapter service (File/JMS Adapter) polls the destinations for any event payloads. The payload is in the form of aXML files. This service receives message as a binary element (aXML file). For each payload received, the service inserts a new row in the QUEUE table. An adapter service (DB adapter) is used for the same. The Toplink solution generates the required schema from the table for this DB adapter.
- The service uses transformation services to populate any NOT NULL columns in the table.
- OBJECT_REFERENCE is inserted with the file name of the aXML file using the Mediator header transformation extension functions.
- PROCESS_STATUS is pending for the newly inserted row.
- PROCESS_PRIORITY is captured from the file name. (ACS can be configured to append an default order for the file name)
- CreateQueueControlService

  CreateQueueControlService is implemented as a Mediator Routing service. A DB adapter polls on the QUEUE_CONTROL_TABLE table. If no rows are at the pending status, then the CreateQueueControlService invokes a DB adapter service that executes a custom SQL. This SQL identifies the highest priority pending queue message from QUEUE_TABLE table and inserts the same in QUEUE_CONTROL_TABLE table.

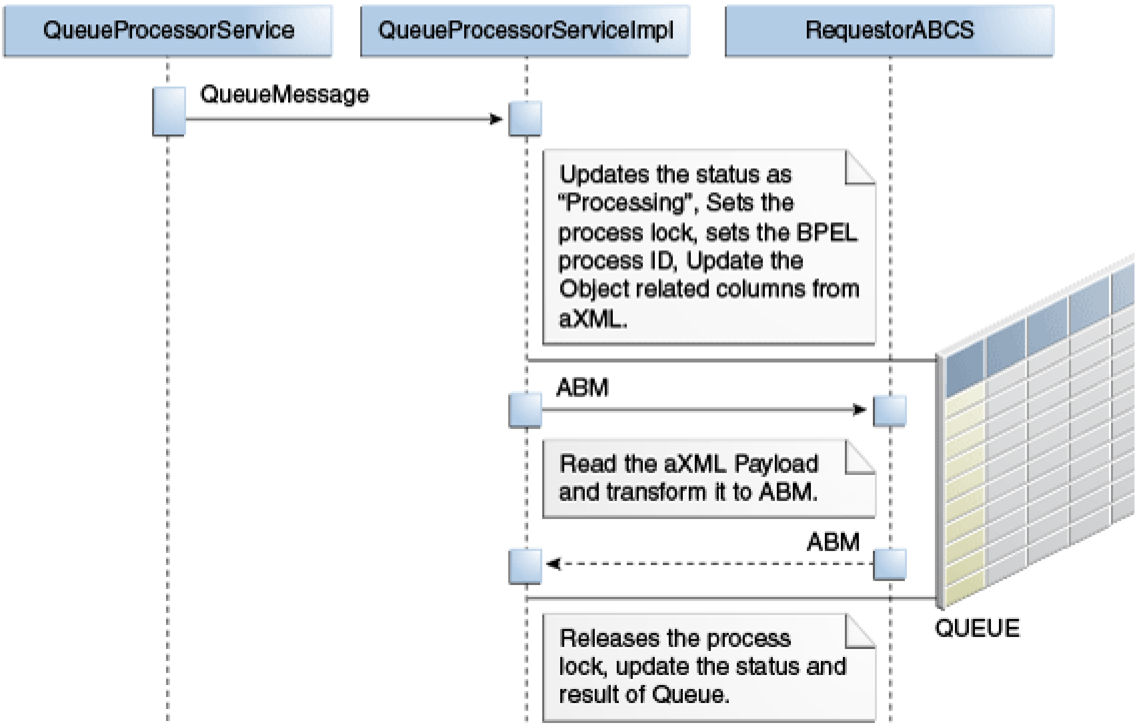
  This polling strategy ensures that at any time only one pending message is in the QUEUE_CONTROL_TABLE table. After the pending message is processed and its status is completed, the QUEUE_TABLE table inserts a new pending message in the QUEUE_CONTROL_TABLE table. When the status for a message is completed in the QUEUE_CONTROL_TABLE, the system deletes that row from the table.

- QueueProcessorService

  QueueProcessorService is implemented as a Mediator service that acts as an interface and provides a façade for the QueueProcessorServiceImpl service. A DB adapter polls on the QUEUE_CONTROL table for any pending messages. A pending message in the table is routed to the QueueProcessorServiceImpl service that processes the message. Based on the result from the implementation service, the message status is updated in the control table.

- QueueProcessorServiceImpl

Figure A–14 QueueProcessorServiceImpl


QueueProcessorService
QueueProcessorServiceImpl
RequestorABCS
QueueMessage
Updates the status as "Processing", Sets the process lock, sets the BPEL process ID, Update the Object related columns from aXML.
ABM
Read the aXML Payload and transform it to ABM.
ABM
QUEUE
Releases the process lock, update the status and result of Queue.

The primary task of this service is to invoke the RequestorABCS. The response from RequestorABCS is processed, and the queue is updated with the processing status.

Input: The QueueMessage generated by the Toplink solution in the QueueProcessorService is used as the input for this service.

Output: QueueStatusMessage containing the status and result of processed queue message

This table lists and describes the steps for this process:

A.3.1 Transformations

The aXML payload is transformed to the ABM, which is input for the RequestorABCS. Because the ABM schema is defined on the lines of the aXML schema, this transformation is simpler to do in the JDeveloper XSL Mapper.

A.3.2 Implementation Details

The QueueProcessorServiceImpl is implemented as an asynchronous BPEL process. Calls to the RequestorABCS, DB adapters update queue status and invoke the RequestorABCS. These calls involve some logic (parsing the aXML payload) that cannot be achieved using Mediator.

Note: The QueueID is used for correlation set between QueueProcessorServiceImpl and RequestorABCS.

A.3.3 Error Management

All errors in the integration flow are handled in the RequestorABCS. Any errors leading to failure of the queue processing is handled in this process. Because of such an error, the queue status and result with failure status is updated in the Queue DB.

B

Mapping Page 2 and Page 3 Attributes

You must insert a specific code to map Page 2 and Page 3 attributes.

B.1 Inserting Code to Map Page 2 and Page 3 Attributes

To map the Page 2 and Page 3 attributes, insert the following code into the AgileCreateEngineeringChangeOrderListABM_to_CreateEngineeringChangeOrderListEBM_Impl.xsl file:

```
<xsl:if
test="./changeABO:AffectedItem/changeABO:TitleBlock/itemABO:Size
">

<xsl:variable name="VarUOMCODE">

<xsl:value-of
select="./changeABO:AffectedItem/changeABO:TitleBlock/itemABO:Si
ze" />

</xsl:variable> <corecomEBO:BaseUOMCode>

<xsl:call-template name="lookupDVM">

xsl:with-param name="varDVMName" select="'ITEM_UOM_CODE'" />

< <xsl:with-param name="varSourceValueColumnName"
select="'AGILE_01'" />

<xsl:with-param name="varSourceValue" select="$VarUOMCODE" />

<xsl:with-param name="varTargetValueColumnName"
select="'COMMON'" />

</xsl:call-template> </corecomEBO:BaseUOMCode>

</xsl:if>
```

Note: This sample code is applicable for the Unit of Measure. The variables names may be different from what is listed here. Use appropriate variable names.

C Troubleshooting

This appendix lists a number of common issues and their solutions.

C.1 Resolving Common Issues

When creating an ECO, if the system displays the message, "The SQL Exception is: "javax.resource.ResourceException: RollbackException: Transaction has been marked for rollback: Timed out", perform the following steps to resolve the issue:

Solution: Increase the JTA timeout values from the FMW console.

To increase JTA timeout:

1. Log in to the FMW admin console.
2. Navigate to soa_domain > Services > JTA.
3. Set the timeout value.

To increase syncMaxWaitTime:

1. Log in to the FMW Oracle Enterprise Manager console.
2. Expand SOA and right-click soa-infra.
3. Select SOA Administration > BPEL Properties.
4. Click the More BPEL Configuration Properties link and find syncMaxWaitTime.
5. Change it to some higher value and save.

Issue: In ECO forward flow, after the ECO is processed successfully the transfer status attribute (flex) in the ECO in Agile PLM is not being updated.

Solution: Check that which flexfield attribute has been enabled corresponding to the change. Then, ensure that the same attribute has been configured in the AIAConfigurationProperties.xml for that property.

Issue: For the Item Cost update and Item Balance update flows, the attributes in Agile PLM are not getting updated.

Solution: First, check that whether the Multisite_Enabled property is set to True or False. Based on this given value, ensure that the Cost and Quantity attributes in AIAConfigurationProperties.xml are correctly set.

Issue: In Agile PLM ACS, the test for Destination fails with some error.

Solution: If the Agile PLM server and the FMW server are in different domains, then for the ACS to work, an entry should be made in the host file of the two servers.

For Example:

10.176.138.126 aia06.agile.agilesoft.com aia06 - this would go in the FMW server's host file. 64.181.168.191 sdc78623svqe.corp.siebel.com - this would go in the Agile PLM server's host file.