

Agile PLM Integration Pack for Oracle E-Business Suite

Design to Release 2.4 - User Guide

v1.0



Part No. E14766-01

April 2009

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Oracle AIA for Agile PLM

Oracle Process Integration for Agile PLM and Oracle E-Business Suite

This preface discusses:

- Additional resources
- Oracle Application Integration Architecture Concepts and Technologies
- Oracle Application Integration Architecture Core Components
- Oracle Application Integration Architecture Developer's Guide
- Oracle Application Integration Architecture Process Integration Packs

Additional Resources

The following resources are available:

Resource	Location
Installation Guide	Metalink https://metalink.oracle.com https://metalink.oracle.com
User Guide	Oracle Technology Network http://www.oracle.com/technology http://www.oracle.com/technology/documentation/agile.html
Documentation updates	Metalink https://metalink.oracle.com https://metalink.oracle.com
Release Notes	Oracle Technology Network http://www.oracle.com/technology http://www.oracle.com/technology/documentation/agile.html
Known issues, workarounds, and most current list of patches	Metalink https://metalink.oracle.com https://metalink.oracle.com

Oracle Application Integration Architecture Concepts and Technologies

Oracle Application Integration Architecture Concepts and Technologies is a companion volume to Oracle Application Integration Architecture Core Components and Oracle Application Integration

Architecture Developer's Guide.

Oracle Application Integration Architecture Concepts and Technologies discusses:

- Enterprise business objects and enterprise business messages.
- Enterprise business services.
- Application business connector services.
- Interaction patterns.
- Extensibility.
- Versioning.
- Business processes.
- Batch processing.
- Infrastructure services.
- Security

Oracle Application Integration Architecture Concepts and Technologies contains a glossary of terms relevant to Oracle AIA.

Oracle Application Integration Architecture Core Components

Oracle Application Integration Architecture Core Components is a companion volume to Oracle Application Integration Architecture Concepts and Technologies and Oracle Application Integration Architecture Developer's Guide.

Oracle Application Integration Architecture Core Components discusses how to:

- Work with the Composite Application Validation System (CAVS).
- Work with the Business Service Repository (BSR).
- Set up and use error handling and logging.
- Work with the diagnostics framework.

Oracle Application Integration Architecture Developer's Guide

Oracle Application Integration Architecture Developer's Guide is a companion volume to Oracle Application Integration Architecture Concepts and Technologies and Oracle Application Integration Architecture Core Components.

The Oracle Application Integration Architecture Developer's Guide discusses how to:

- Create an integration scenario.

- Define business service patterns.
- Design and develop enterprise business flows.
- Design and construct application business connector services.
- Work with message transformation, enrichment, and configuration.
- Develop custom xpath functions.
- Design and construct JMS Adapter services.
- Work with enterprise message headers.
- Work with message routing.
- Work with transactions.
- Develop Oracle AIA services to work with the Composite Application Validation System (CAVS).
- Configure Oracle AIA processes to be eligible for error handling and logging.
- Extend enterprise business objects.

In addition, this book provides:

- Application Integration Architecture naming standards.
- Sample and template WSDLs for use with Oracle AIA

Oracle Application Integration Architecture Process Integration Packs

A process integration pack (PIP) is a pre-built set of integrated orchestration flows, application integration logic, and extensible enterprise business objects and services required to manage the state and execution of a defined set of activities or tasks between specific Oracle applications associated with a given process. A PIP provides everything you need to deploy a selected integrated business process area. The PIP product offering is suited to those customers seeking to rapidly implement a discreet business process.

Managing the Process Queues

This chapter includes the following:

▪ Queuing	1
▪ Change Order Process Flow	2
▪ The Process Queue Manager	3

The integration of Change Order Release process between Agile PLM and Oracle Enterprise Business Services system is driven by Process Queue Controller. In order to maintain integrity of data in the ERP system, it is essential that Change Orders be transferred to that system in the *order* in which they were released by the source system. In the absence of such *sequencing*, BOM data can go out of sync between the two systems.

Since ERP systems, like Oracle, make it mandatory for successive item revisions to follow an ASCII progression of characters, it is essential for this sequence to be maintained.

For example, if for the same revised item, two successive Change Orders are released, and the second one is created first in the ERP system, the revision number of the first one (if smaller in ASCII value than that of the latter, which is mostly the case in Agile) will subsequently be prohibited from being created in the ERP system. Worse problems can occur if the two ECOs make successive changes to the same BOM line, or if the subsequent ECO is dependent on the first one.

Queuing

When an aXML file containing Change Order information is received by the integration for processing through the Change Order Release process, the first step that needs to be carried out is to *queue* it for processing. aXML files are queued in the order in which they are received (FIFO). Agile application ensures that aXML files are pushed in the order that Change Orders are released.

The chronological order of receiving aXML files, (or, alternately, the ASCII sequence of aXML file names), is used to determine the sequence in which incoming XML will be processed by the integration. In some cases, aXML for multiple processes (such as NPR process, any other legacy process, etc) may be published to the same location, in which case the integration performs an extra step of determining what the contents of the aXML are, in order to determine what flow does it trigger – only the aXML files belonging to the Change Order Release flow are to be queued.

By default, the aXML is queued at the back of the queue with an initial status of “Pre-Processing”. At this time, the initial pre-processing is carried out, as described in #1 above, after which the integration changes the status of that aXML to “Pending Processing”.

At a given time, only one Change Order, i.e., the first one in the queue, undergoes ERP processing. At this stage, the status of that aXML file changes to “Processing”. When a Change Order errors out during ERP processing, it remains ahead of the queue in an errored status. All further change orders are not processed until the errored change is manually moved out of the queue by the Integration Administrator. When a Change Order completes ERP processing successfully, it

automatically moves out of the queue by the integration (for example, by changing the status to “Post Processing”), and the next Change Order in the queue begins ERP processing.

Note that the change that has completed ERP processing still needs to carry out postprocessing.

However, any errors encountered during post-processing cause the Change Order to complete with a “Warning” status, and not with an “Error”.

Manually moving the errored change out of the queue can be done in one of two ways:

1. The integration administrator can “De-queue” the Change Order. This operation moves the Change Order out of the queue and saves it in the repository of “Unprocessed Change Orders”. The next Change Order in queue is then picked up for processing through the Change Order process flow.
2. The integration administrator can “Reprocess” the Change Order. This operation immediately re-starts the integration process flow for that change order. Prior logs are wiped out, but the original aXML input provided by Agile is used. The pre-processing need not be repeated for such a change – the integration process resumes from the “Processing” stage.

Change Order Process Flow

The Change Order Release process flow can be broken down into two major stages:

1. Process ECO
 - ABM to EBM transformations
 - Invoke Provider
 - Receive Response
 - Send Response to the Queue
2. Post-Process ECO
 - Update transfer status in Agile

The total flow of Change Order Process, between ESB and BPEL, can be described as follows:

ESB	BPEL
1. ACS AXML JMS Consumer polls on JMS Queue and invokes CreateQueueServiceABCS by sending the binary compressed aXML file.	CreateQueueService passes the aXML to create the XML of Agile Data and inserts into Queue DB.
2. DB trigger is used for ECO Queue creation and giving them a sequence number	ECO Queue Control
3. Queue Processing Service polls on Queue Control table for pending rows and invokes QueueProcessorServiceImpl	QueueProcessorServiceImpl <ul style="list-style-type: none">▫ updates the status of ECO (processing)▫ carries out aXML to ABM transformations▫ invokes RequesterABCS (Process ECO) using ABM▫ receives the response from RequesterABCS

-
- updates the status of ECO (Completed or Errored)
-

4. CreateQueueService
 - polls completed ECO on Queue Control Table
 - deletes the completed ECO from Queue Control Table
 - copies the highest priority pending ECO from Queue to the Queue Control Table
-

It must be noted that a conflict can occur only when data is actually being transferred to the ERP system, and not when parsing aXML or after the processing in ERP has finished.

The Process Queue Manager

Note In case the pending ECOs are not getting picked up for processing, there could be a possibility that some other user may have Suspended the Queue. To check this out, Log-out and relogin. If the Suspend button is disabled, then you may Resume the queue.

Note By default, the Queue remains in Suspended state after PIP installation. You are required to 'initialize' it for the first time by clicking Resume button.

Functions

The Queue Monitor facilitates an administrator to perform the following on a Change Order:

1. View the Automated Transfer Objects (ATO)
2. View the Process States. These states are
 - Processing
 - Pending
 - Completed
 - Errored (failed)
3. View the Release Time and Processed Time of processed COs.
4. View the unprocessed COs.
5. View the deleted processes.
6. View the errored processes and their error details.
7. Suspend and resume the queuing operation.
8. Change the processing sequence in the queue, i.e., move the position of an object up and down the queue.
9. Remove the COs, selectively, from the processing queue.
10. Resubmit the removed COs for processing.

11. Filter the view on various criterion, such as, all COs that are pending.
12. Purge data from the list of change orders that have been processed successfully.

The User Interface

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, together with Log-in ID and Password. Upon log-in, you will see a screen similar to the one below.

ORACLE Application Integration Architecture [Logout](#)

Filter

Filters:

Criteria:

Change Order Queue

	Reference	Change Number	Release Time	Processed Time	Process Status
<input type="checkbox"/>	AT002555	ECO02499	26-Jun-2008 05:57:39 PDT	26-Jun-2008 05:58:13 PDT	Pending
<input checked="" type="checkbox"/>	AT002552	ECO02498	26-Jun-2008 05:13:43 PDT	26-Jun-2008 05:14:22 PDT	Completed
<input checked="" type="checkbox"/>	AT002551	ECO02496	26-Jun-2008 05:10:19 PDT	26-Jun-2008 05:11:00 PDT	Completed
<input checked="" type="checkbox"/>	AT002550	ECO02495	26-Jun-2008 04:56:40 PDT	26-Jun-2008 05:08:02 PDT	Completed
<input checked="" type="checkbox"/>	AT002547	ECO02492	26-Jun-2008 04:23:26 PDT	26-Jun-2008 04:24:07 PDT	Completed
<input checked="" type="checkbox"/>	AT002542	ECO02487	26-Jun-2008 03:52:13 PDT	26-Jun-2008 03:57:18 PDT	Completed
<input checked="" type="checkbox"/>	AT002531	EC2478	26-Jun-2008 01:59:30 PDT	26-Jun-2008 02:06:47 PDT	Completed
<input checked="" type="checkbox"/>	AT002529	ECO02475	26-Jun-2008 01:40:12 PDT	26-Jun-2008 01:40:54 PDT	Completed
<input checked="" type="checkbox"/>	AT002528	ECO02473	26-Jun-2008 01:21:00 PDT	26-Jun-2008 01:23:27 PDT	Completed
<input checked="" type="checkbox"/>	AT002526	ECO02471	26-Jun-2008 01:06:11 PDT	26-Jun-2008 01:10:26 PDT	Completed
<input checked="" type="checkbox"/>	AT002524	ECO02468	26-Jun-2008 00:53:40 PDT	26-Jun-2008 01:01:57 PDT	Completed
<input checked="" type="checkbox"/>	AT002523	EC2446	25-Jun-2008 23:35:18 PDT	26-Jun-2008 01:36:35 PDT	Completed
<input checked="" type="checkbox"/>	AT002521	ECO02466	25-Jun-2008 23:12:51 PDT	26-Jun-2008 01:36:35 PDT	Completed









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.

Fields and Attributes



Change Order Queue Monitor








The Change Order Queue is a tabular display of the released Orders that are lined up by Queue Manager for processing. Each row in this table is

Each row in this display table is a Change Order. The first row denotes the 'first-in-sequence' Change Order, when it is in Pending state of processing.

Columns	Description
Row Select	This column appears only when a (set of) Queue(s) can be selected for (a) re-ordering, (b) removal, (c) resubmission. In such cases, this column gets visible and contains a Checkbox. This column remains invisible for 'Completed' Process States.
Process Denoter	This column displays icon(s) for quick identification of a process state.
	Completed
	Pending
	Processing
	Errored
	Completed and Deleted
	Pending and Deleted
	Processing and Deleted
	Errored and Deleted
Reference	The Automated Transfer Object Number (hence the prefix 'ATO') assigned to a Change Order by Agile Content Server (ACS). It is unique and corresponds to a unique Change Order. The Number of the corresponding Changer Order is displayed under the 'Change Number' column.
Change Number	This is a unique number assigned to a Changer Order in Agile system at the time of its creation. Its prefix denotes the type of Change, such as, ECO for Engineering Change Order.
Release Time	The Date and Time when an Order is released by ACS to the Process Queue Manager. Internally, its the Date and Time when the Process Queue Controller picks up an Order and puts it in the Queue.
Processed Time	The Date and Time when an Order attains a particular Process Status (last column).
Process Status	The State of a process - Processing, Pending, Completed, Errored.

Queue Operators

Buttons/Links	Operations
	This button is used for resubmitting the Pending Processes that were removed from the Queue.
	This button is used for removing the Pending Processing from the Queue. The removed processes still exist in the database, and can be resubmitted for processing.

	<p>This button is used for 'suspending' the Queue, temporarily, for removing, resubmitting or reordering the Pending Processes.</p> <p>It remains disabled when the Queue is inactive, i.e., when the Queue is in Suspended mode and has not been resumed.</p> <p>By default, the Queue remains in Suspended state after PIP installation. You are required to 'initialize' it for the first time by clicking Resume button.</p>
	<p>This button is used for 'resuming' the suspended Queue.</p> <p>It remains disabled when the Queue is active, i.e., its not in suspended mode.</p>
	<p>This button is used for refreshing the Queue to get a list of freshly added processes and to see the change in process status.</p> <p>The process status is not automatically refreshed. Also, the new processes do not automatically appear in the Queue.</p>
Select All	<p>This appears when a (set of) Processes(s) is selectable, i.e., the row has a Checkbox. Click it to select all the Queues when you wish to operate on all of them.</p>
Select None	<p>This appears together with Select All, when a (set of) Processes(s) is selectable, i.e., the row has a Checkbox. Click it to deselect the selected (checked) Process(es).</p>
Queue Reordering	<p>These buttons are used for reordering a process in the Queue by moving it up or down the processing sequence. By default, it remains disabled/invisible. It appears when the Queue is in 'suspended' mode.</p>
	<p>This button is used for moving a process to the first position in the Queue.</p>
	
	<p>This button is used for moving a process up by one stage.</p>
	<p>This button is used for moving a process down by one stage.</p>
	<p>This button is used for moving a process to the bottom position in the Queue.</p>

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 COs on the basis of their 'processing state' and further criterion. The tables following the image below are the list of criterion and the corresponding applicable operators and values, for each Filter.

ORACLE Application Integration Architecture [Logout](#)

Filter

Filters:

Criteria:

Select attribute and condition.

	Reference	Change Number	Release Time	Processed Time	Process Status
Select All	Select None				
<input type="checkbox"/>	AT000809	C00825	25-Jun-2008 02:12:28 PDT	25-Jun-2008 02:13:29 PDT	Errored

- Important** A set of criteria form a particular Filter. Once you chose a Filter, the corresponding set of criterion open up. You may use a combination of other criterion to filter the Queues, which is given right before the table. However, for certain filters, some of these combinations may not be applicable and hence, will result into an error or wrong listing.
- Important** The Criteria drop-down list shows all possible filtering criterias. However, not all of them may be applicable to the corresponding Filter. The table below lists all the 'non-operational' criterion in Light-Gray filled.

Note The Dark-Gray cells denote the Operators and/or Value Fields that are Not Available corresponding to a particular Filter or Criteria.

Filter 1: All Change Orders

Filter

Filters:

Criteria:

Criteria	Operator	Value Field 1	Value Field 2
----------	----------	---------------	---------------

Criteria	Operator	Value Field 1	Value Field 2
Process Status	Not Equal to Equal to	Processing Errored Completed Pending	
Processed Time	Within Range	<Pick Date>	<Pick Date>
	Before	<Pick Date>	
	After	<Pick Date>	
Deleted		Any	
		Yes	
		No	
Object Reference	Not Null		
	Not Equal to	<enter value>	
	Equal to	<enter value>	
	Starts With	<enter value>	
	Contains	<enter value>	
	Null		
	Ends With	<enter value>	
Change Number	Not Null		
	Not Equal to	<enter value>	
	Equal to	<enter value>	
	Starts With	<enter value>	
	Contains	<enter value>	
	Null		
	Ends With	<enter value>	
Release Time	Within Range	<Pick Date>	<Pick Date>
	Before	<Pick Date>	
	After	<Pick Date>	

Filter 2: Errored Changes only

Filter

Filters:

Errored Changes Only

Criteria:

Process Status

Equal To

Errored

+

×

Deleted

Equal To

No

+

×

Apply

Clear

Criteria	Operator	Value Field 1	Value Field 2
Process Status	Not Equal to	Processing	
	Equal to	Errored	
		Completed	
		Pending	
Processed Time	Within Range	<Pick Date>	<Pick Date>
	Before	<Pick Date>	
	After	<Pick Date>	
Deleted		Any	
		Yes	
		No	
Object Reference	Not Null		
	Not Equal to	<enter value>	
	Equal to	<enter value>	
	Starts With	<enter value>	
	Contains	<enter value>	
	Null		
	Ends With	<enter value>	
Change Number	Not Null		
	Not Equal to	<enter value>	
	Equal to	<enter value>	
	Starts With	<enter value>	
	Contains	<enter value>	
	Null		

Criteria	Operator	Value Field 1	Value Field 2
	Ends With	<enter value>	
Release Time	Within Range	<Pick Date>	<Pick Date>
	Before	<Pick Date>	
	After	<Pick Date>	

Filter 3: Pending Changes only

Filter

Filters:

Pending Changes Only

Criteria:

Process Status

Equal To

Pending

+

-

Deleted

Equal To

No

+

-

Apply

Clear

Criteria	Operator	Value Field 1	Value Field 2
Process Status	Not Equal to	Processing	
	Equal to	Errored	
		Completed	
		Pending	
Processed Time	Within Range	<Pick Date>	<Pick Date>
	Before	<Pick Date>	
	After	<Pick Date>	
Deleted		Any	
		Yes	
		No	
Object Reference	Not Null		
	Not Equal to	<enter value>	
	Equal to	<enter value>	
	Starts With	<enter value>	
	Contains	<enter value>	
	Null		

Criteria	Operator	Value Field 1	Value Field 2
	Ends With	<enter value>	
Change Number	Not Null		
	Not Equal to	<enter value>	
	Equal to	<enter value>	
	Starts With	<enter value>	
	Contains	<enter value>	
	Null		
	Ends With	<enter value>	
Release Time	Within Range	<Pick Date>	<Pick Date>
	Before	<Pick Date>	
	After	<Pick Date>	

Filter 4: Completed Changes only

Filter

Filters:

Completed Changes Only

Criteria:

Process Status

Equal To

Completed

+

-

Deleted

Equal To

No

+

-

Apply

Clear

Criteria	Operator	Value Field 1	Value Field 2
Process Status	Not Equal to	Processing	
	Equal to	Errored	
		Completed	
		Pending	
Processed Time	Within Range	<Pick Date>	<Pick Date>
	Before	<Pick Date>	
	After	<Pick Date>	
Deleted		Any	
		Yes	
		No	

Criteria	Operator	Value Field 1	Value Field 2
Object Reference	Not Null		
	Not Equal to	<enter value>	
	Equal to	<enter value>	
	Starts With	<enter value>	
	Contains	<enter value>	
	Null		
	Ends With	<enter value>	
Change Number	Not Null		
	Not Equal to	<enter value>	
	Equal to	<enter value>	
	Starts With	<enter value>	
	Contains	<enter value>	
	Null		
	Ends With	<enter value>	
Release Time	Within Range	<Pick Date>	<Pick Date>
	Before	<Pick Date>	
	After	<Pick Date>	

Filter 5: Changes Errored within Last Week

Filter

Filters:

Changes Errored Within LastWeek

Criteria:

Process Status

Equal To

Errored

+

×

Processed Time

Within Range

08/04/2008

08/11/2008

+

×

Deleted

Equal To

No

+

×

Apply

Clear

Criteria	Operator	Value Field 1	Value Field 2
Process Status	Not Equal to	Processing	
	Equal to	Errored	

Criteria	Operator	Value Field 1	Value Field 2
		Completed Pending	
Processed Time	Within Range	<Pick Date>	<Pick Date>
	Before	<Pick Date>	
	After	<Pick Date>	
Deleted		Any	
		Yes	
		No	
Object Reference	Not Null		
	Not Equal to	<enter value>	
	Equal to	<enter value>	
	Starts With	<enter value>	
	Contains	<enter value>	
	Null		
	Ends With	<enter value>	
Change Number	Not Null		
	Not Equal to	<enter value>	
	Equal to	<enter value>	
	Starts With	<enter value>	
	Contains	<enter value>	
	Null		
	Ends With	<enter value>	
Release Time	Within Range	<Pick Date>	<Pick Date>
	Before	<Pick Date>	
	After	<Pick Date>	

Filter 6: Unprocessed Change Orders

Filter

Filters: Unprocessed Change Orders

Criteria: Process Status Not Equal To Completed + x

Apply Clear

Criteria	Operator	Value Field 1	Value Field 2
Process Status	Not Equal to Equal to	Processing	
		Errored	
		Completed	
		Pending	
Processed Time	Within Range	<Pick Date>	<Pick Date>
	Before	<Pick Date>	
	After	<Pick Date>	
Deleted		Any	
		Yes	
		No	
Object Reference	Not Null		
	Not Equal to	<enter value>	
	Equal to	<enter value>	
	Starts With	<enter value>	
	Contains	<enter value>	
	Null		
Change Number	Ends With	<enter value>	
	Not Null		
	Not Equal to	<enter value>	
	Equal to	<enter value>	
	Starts With	<enter value>	
	Contains	<enter value>	
	Null		

Criteria	Operator	Value Field 1	Value Field 2
	Ends With	<enter value>	
Release Time	Within Range	<Pick Date>	<Pick Date>
	Before	<Pick Date>	
	After	<Pick Date>	

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