Fusion Order Management elegantly replaces the good old order cycle in Oracle EBS allowing implementation of complex supply chain fulfillment scenarios with ease. The new features in Fusion Order Management R11 allows clients to implement complex supply chain scenarios in the Fusion Cloud using externalised task feature. This allows collaboration between internal order management teams and third parties automatically via a workflow initiated and governed from Fusion Public Cloud. This collaboration is bi-directional, wherein the Fusion Public Cloud sends messages to your third party systems to reserve or ship or invoice etc. And also the third party systems can update the status back into Fusion Public cloud after the task has been completed. Not only that, third party systems can subscribe to changes made to the orders so that the impacted dependent processes are managed swiftly with automation.

In order to visualise what this complex supply chain really means, think of [amazon.com](http://www.amazon.com). You place an order, for which quantity may be reserved in warehouse of the associated seller. Order may be shipped by a 3rd party, but order status on Amazon shows where the order is in its lifecycle.

In Fusion, you can virtualise any step in the order cycle to a web service. Completion of an order consists of a sequence of tasks such as placement of order, reserving the good, shipping the goods, invoicing for the goods etc. Fusion Order management allows you to externalise any of these tasks by making a call to web service. These tasks that get externalised are called Task Layers. You can configure the web service to be invoked to execute external tasks using EIL (External Integration Layer) in Fusion Public cloud.

Task layer is a concept in Fusion Order Management in which a specific business task is accomplished by communicating with external applications or systems. There are multiple Task Layers in Order Management like Reservation Task layer, and Shipping Task Layer which performs functions like Reservation and Shipping correspondingly. The EIL (External Integration Layer) plays a vital role while talking to third party systems or Non Fusion systems.

The connector URL is specified in the EIL using Manage Web Service Details UI. A connector is a web service that receives a message from OM, transforms the message into a format which the Fulfillment system understands and then calls the Fulfillment system. Similarly, the transformation of web service response to a OM specific message is performed by the Connector. Error handling should also be made part of the connector so that errors can be reported and recovered.

You do not have to use Oracle SOA necessarily to build the connector. You may have SOA from IBM or TIBCO or Microsoft or any other vendor, and those can be equally used with Fusion Public cloud to build task layer APIs for Fusion Order Management.

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Important Points

1) Although you will register a web service to be called from EIL, within the webservice, you may use any other adaptor to send the information to third party. For example, you may wish to call a database stored procedure of third party system that will do shipping or billing or reservation etc.

2) It is very common that the web service called by Fusion’s EIL i.e. Task Layer will have to undergo a transformation so that third party system can understand the message from Fusion Applications.

4) Fulfillment systems and the connectors must use security certificates published by Certification Authorities.

5) Oracle’s SOA integration cloud can be equally used to build such integration.

When Fusion Order Management communicates with third party Fulfillment systems, connector service is required to carry the communication process back and forth. This bi-directional integration takes place via web service layer. As a technical SOA developer you will create a mapping between Order Management Service Data Object and Fulfillment system. Multiple business events can be raised automatically to communicate the changes in the order status to third party. In the SOA layer, you can subscribe to these fusion business events and get the alerts as per your business needs.

Connectors

Connectors have multiple objectives including

1) Connector interacts with Fulfillment system.
2) Connector contains and conforms to the format of the message as defined by OM
3) Connector transforms the OM message into a format which the Fulfillment system understands
4) Connector sends messages to and receives from the Fulfillment system
5) Connector transforms the Fulfillment system’s message into a format which OM understands for response

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The outbound (OM to external system) connector URL is registered in EIL setup step. IT defines the outbound endpoint WSDL. The EIL Connector needs to be deployed on the Third Party Application Servers.

When outbound request from OM reaches Fulfillment system through connector, the Fulfillment system sends back the acknowledgement to inform it has accepted the message through connector.

**Time delayed updates back to Fusion Order Management Public Cloud**

In some cases, the Fulfillment system may not respond immediately, but would come back later and convey a message regarding fulfillment or status update. In addition to Message Acknowledgement the Fulfillment system may also communicate multiple staggered fulfillment system status updates. A different connector may be built to process these delayed responses (this can also be achieved by adding one more entry point service in the first connector itself. The connector that receives message from Fulfillment system and sends delayed response to OM does not have to be defined in OM-EIL. In this document we have same connector send the delayed response back to OM.

The OM standard Inbound interface is published and can be called by Fulfillment system to send a response whenever the Fulfillment system decides to do so. OM has a single OM service that can accept fulfillment response for any Task Layer. Please refer to Appendix A for the wsdl location.

The steps involved to have a successful integration with downstream Fulfillment system are as follows.

1. Building a connector
2. Configure the security policy on the connector.
3. Deploying the Connector on the third party Fulfillment System Tech stack (Your web container).
4. Defining the EIL Web service details in OM with details of deployed connector.
5. Defining the EIL Rules in OM to select the deployed connector for given business scenarios.
6. Optionally, test the connector service by executing a sample order in Fusion OM.

At the time of writing this document, you can not deploy the connector SOA processes to your public cloud, but in future Oracle may allow you to do so.

**Prerequisites for implementing connectors**

The following information is required before building and deploying a connector

1. WSDL location of the Fusion fulfillment task layer.
2. WSDL of the Fulfillment system which has payload format, operations of web service.
3. Host and port of the Oracle Fusion Cloud Application
4. Admin access to the Middleware (Web server) on which the connector can be deployed.
5. Source system from TCA, to link connectors in web service details to source/target systems.
6. Reader of this document is expected to be familiar with SOA principles.
7. Oracle JDEV tools are used in this document as an example. Reader has to adapt this document to other tools.

**Registering the external web service into Fusion public cloud for task layer**

You can use the screen as shown below to register to connecting web service of the third party. Chances are high that you will host this web service into your own SOA layer because 3rd party systems will not

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understand the payload generated by Fusion Apps. You will have to write your transformation process to covert the payload to format that will be understood by the third party system.

The EIL routing rules have to be written in such a way that it would determine the business conditions in which Fusion Order Management this connector would be used. EIL routing rules can be written specific to attributes on the Fulfillment line. Care should be taken that these rules are mutually exclusive. For any given order condition, only one EIL routing rule should qualify. If Multiple EIL rules pass the connector selection criteria this may result in OM randomly choosing any one of the Connectors. Since Release 11 a new parameter (InterfaceType) for EIL routing rules has been introduced. Please set it to value "SDO", as depicted in the screen shot below.

The example in the below figure uses TaskTypeCode and PO number for the rule definition. Any other attributes in the Fusion Order Management data model can be used including the descriptive flex fields and extensible flexfields.

Business event integration

Order Management provides the capability for your channel and fulfillment systems to receive notifications when a situation of interest occurs via the mechanism of business events. It allows you to choose which of these business events are of interest to a specific external system. Following is the list of configurable business event triggering points in Order Management:

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• Change Order Compensation Complete: Informs that a change order has been absorbed into the running version of the sales order. This is helpful for a channel system to know whether Order Management will accept a change on a sales order. If there is a pending change, Order Management will not accept another change till the previous change has been compensated.

• Fulfillment Line Closed: Informs that a fulfillment line has been closed.

• Fulfillment Line Status Update: Notifies that the status of a fulfillment line is updated to one of the declared set of values.

• Hold: Informs when a hold is applied.

• Jeopardy: Notifies that the jeopardy priority of a fulfillment line has been updated to one of the declared values.

• Order Attribute Update: When any of the declared attributes of an order fulfillment line or line detail has been updated.

• Order Header Status Update: Informs that the status of the Sales Order header has been updated to one of the declared values.

• Split: Notifies that a fulfillment line has been split.

You can associate one or more connectors you defined in the previous task to the appropriate set of event triggering points in Fusion Order Management.
### Edit Status Rule Set

**Code:** Copy 1 of Copy 1 of DOO_Ship_Order_Status_Rule_Set-Version 2

**Conditions**

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Status Value</th>
<th>Expression</th>
<th>Notify External Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Scheduled</td>
<td>“Schedule” = “SCHEDULED”</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Reserved</td>
<td>“Reserve” = “RESERVED”</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Awaiting Ship</td>
<td>“Ship” = “AWAIT_SHIP” OR “Ship” = “VARIOUS”</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Backordered</td>
<td>“Ship” = “BACKORDERED”</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Picked</td>
<td>“Ship” = “PICKED”</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Shipped</td>
<td>“Ship” = “SHIPPED”</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Awaiting Billing</td>
<td>“Invoice” = “AWAIT_BILLING”</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Billed</td>
<td>“Invoice” = “BILLED”</td>
<td><strong>✓</strong></td>
</tr>
<tr>
<td>9</td>
<td>Partially Picked</td>
<td>“Ship” = “PARTIAL_PICK”</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** You can control which statuses on the order line will trigger integration to 3rd party external systems.

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