

CPQ Cloud & E-Business Suite Integration

Implementation Overview

Oracle CPQ Cloud Product Management
February 2015

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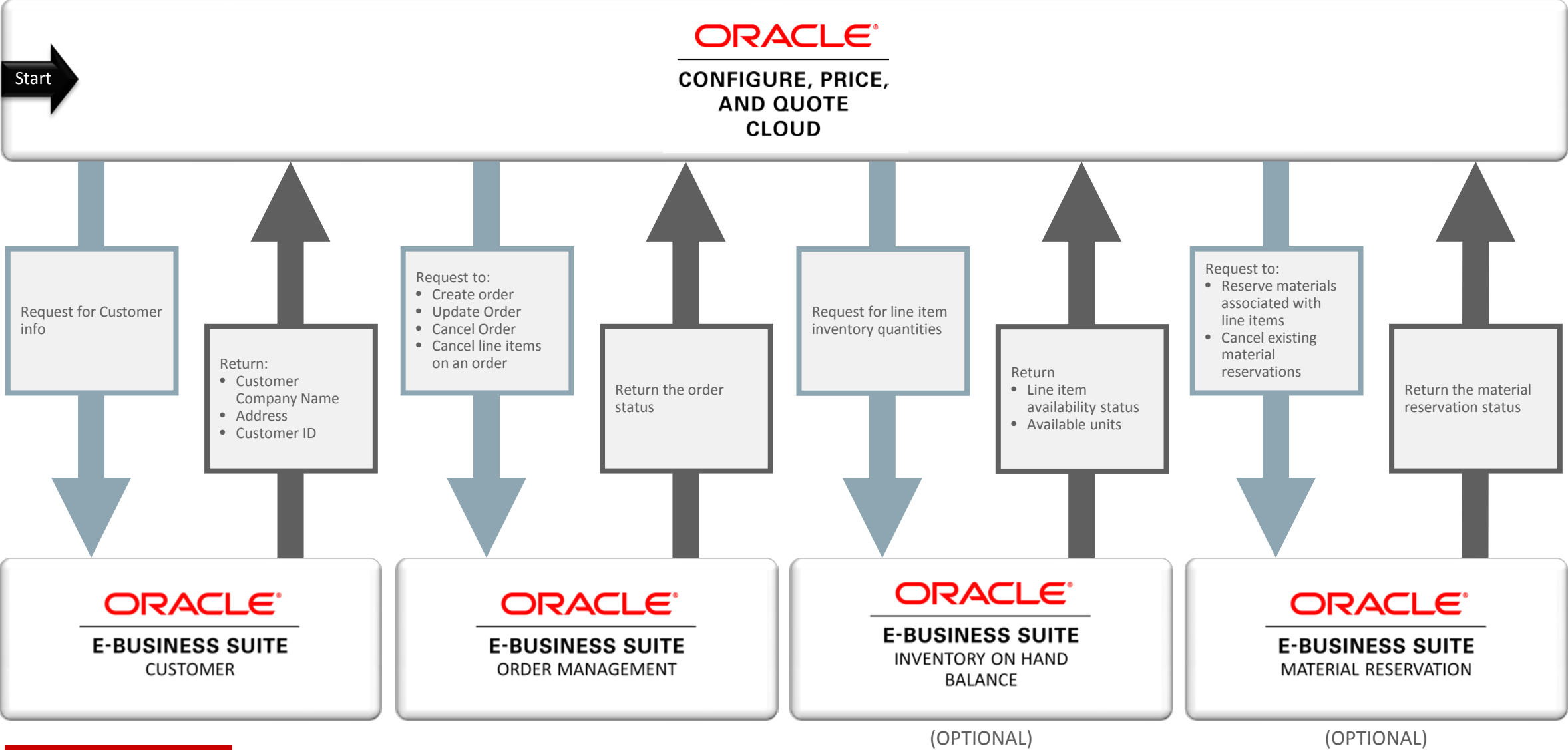
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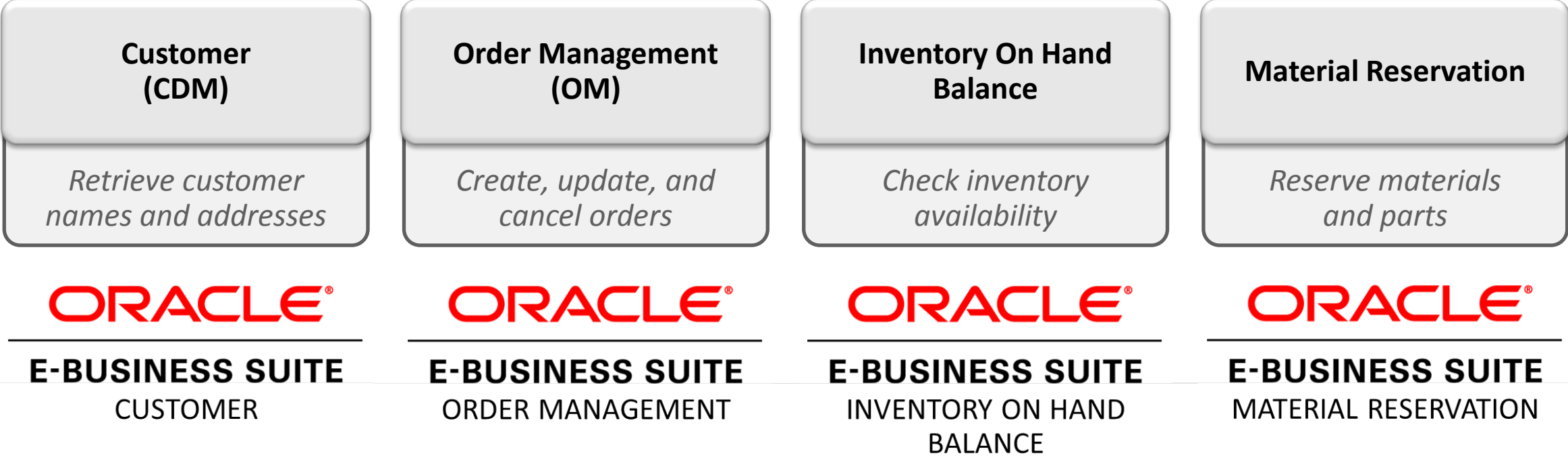
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CPQ Cloud-EBS Integration Flow



Integration Overview

CPQ Cloud Integrations with EBS Applications



Integration Overview

CPQ Cloud-CDM Integration

**Customer
(CDM)**

*Retrieve customer
names and addresses*

**Order Management
(OM)**

*Create, update, and
cancel orders*

**Inventory On Hand
Balance**

*Check inventory
availability*

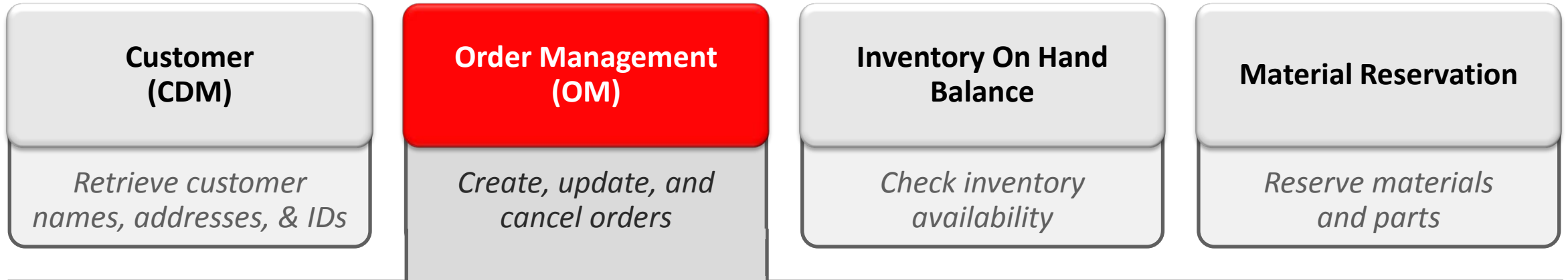
Material Reservation

*Reserve materials
and parts*

Integration with CDM allows CPQ Cloud sales users to invoke actions to retrieve customer data from CDM and add it to a transaction, eliminating manual entry and ensuring accuracy. Error messages can be displayed when a sales user enters a company name that does not exist in CDM.

Integration Overview

CPQ Cloud-OM Integration

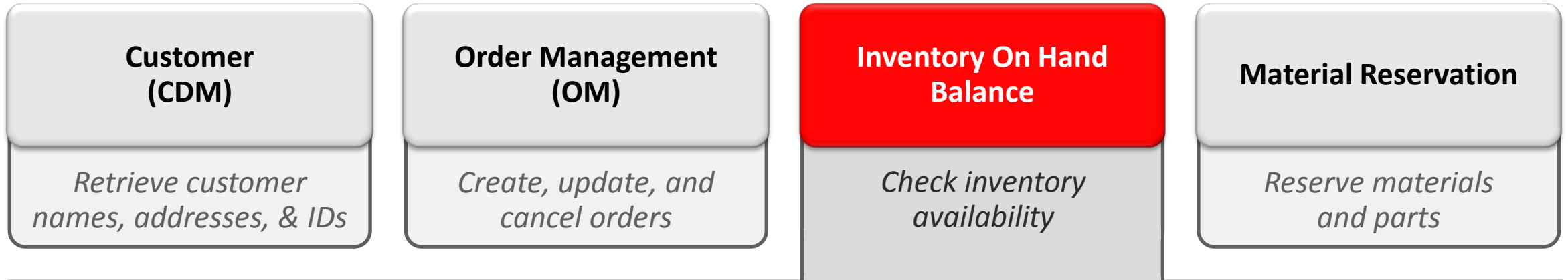


Integration with OM allows CPQ Cloud sales users to create, update, and cancel orders in EBS-OM through the CPQ Cloud user interface. After relevant products have been added to a Transaction and approvals have been obtained, the CPQ Cloud sales user can:

- Create Order – creates an order in OM using the CPQ Cloud Transaction data
- Update Order – updates an existing OM order if Transaction details have changed
- Cancel Order – cancels an existing OM order
- Cancel Line – cancels any line that is selected from an existing OM order

Integration Overview

CPQ Cloud-Inventory On Hand Balance Integration



Integration with Inventory On Hand Balance allows CPQ Cloud sales users to check the availability of line items before an order is created. The “Query Quantity” action is used to check the inventory/availability of line items as stored in Inventory On Hand Balance. Validation rules can be created to prevent order creation based on inventory.

Integration Overview

CPQ Cloud-Material Reservation Integration

**Customer
(CDM)**

*Retrieve customer
names, addresses, & IDs*

**Order Management
(OM)**

*Create, update, and
cancel orders*

**Inventory On Hand
Balance**

*Check inventory
availability*

Material Reservation

*Reserve materials
and parts*

Integration with Material Reservation allows CPQ Cloud sales users to perform the material reservation functionality of EBS. Once an order is created, line items can be reserved using the Reserve action. Upon Cancellation of an entire order or of one or more line items, the Relieve or Relieve Line actions can be performed to relieve the reservation done against the order or line items, respectively.

Preparing CPQ Cloud for Integration

Prerequisites for all EBS Integrations

- CPQ Cloud version 2014 R2 or later
- Base Reference Application is deployed on the environment
 - Customers with QuickStart sites can still perform the integration, but many integration files will need to be manually modified.

Important Note: This document gives a high-level overview of what must be created in CPQ Cloud to enable integration with each of the four EBS applications for which a standard point-to-point integration exists, but it does not include detailed instructions for how to create each component.

Some components are duplicated between EBS integrations, and do not need to be recreated (although they may need to be updated with additional data) for each individual implementation.

Refer to each Integration White Paper (linked to at the end of this document) for detailed administration instructions.

CPQ Cloud and EBS Customer (CDM) Integration

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Preparing for Integration

CDM Requirements

- EBS Release 12 or later
- EBS web services that must be running:
 - “DQMPartySearch” operation “Get Customer”
 - View By > Interface Type > Business Service Object > Financials > Receivables > DQM Search Service
 - “GetOrganization” operation “Get Address”
 - View By > Interface Type > Business Service Object > Financials > Receivables > Organization Business Object Services
 - “OrganizationCustomer” operation “Get CustAcctId”
 - View By > Interface Type > Business Service Object > Financials > Receivables > Organization Customer Business Object Services

CPQ Cloud Components to Create for CDM Integration

- 25 Attributes
- 3 Actions
- 4 Library Functions
- 3 Step Transitions (Document Views)
- 2 Data Tables

Preparing CPQ Cloud for Integration

Attributes

In order for CPQ Cloud to retrieve all necessary customer data from CDM, 25 new attributes must be created in the Oracle Quote to Order Commerce Process:

- 10 customer company attributes (Company Name, Address, Email, etc.)
- 10 invoice company attributes (Company Name, Address, Email, etc.)
- 5 additional attributes populated by CDM
 - Select Your Party Name (HTML)
 - Select Your Address (HTML)
 - Party ID
 - Party Site ID
 - Customer ID

Preparing CPQ Cloud for Integration

Actions

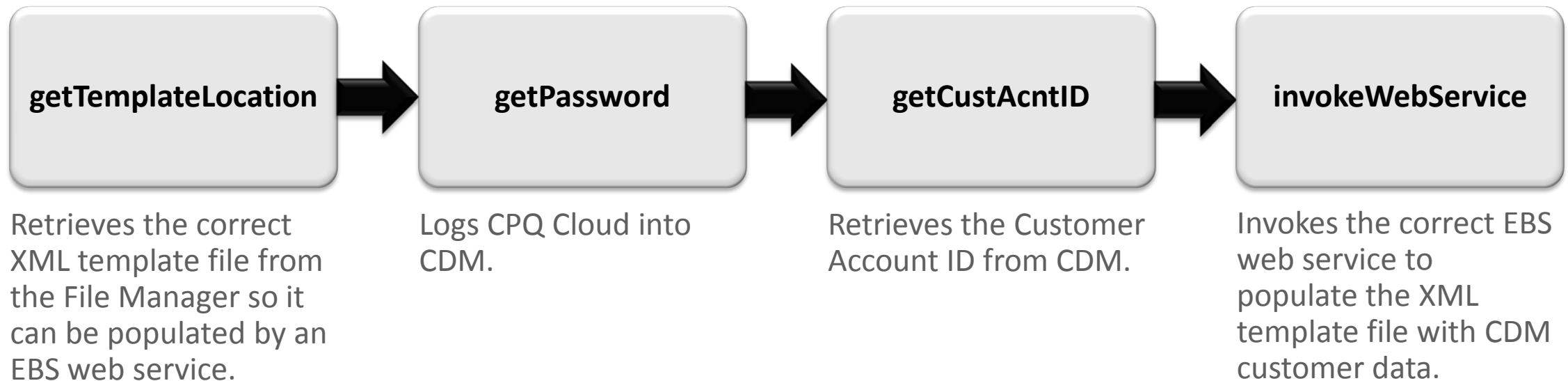
Three new actions must be created to trigger integration tasks:

Action	Description	Visible on the CPQ Cloud Layout
Get Customer	After the CPQ Cloud sales user has entered a Customer Company Name and clicked Get Customer, possible customer company name and Customer ID matches from CDM will be displayed in a drop-down list.	Yes
Get Address	After the CPQ Cloud sales user has selected a Customer ID and clicked Get Address, possible customer address matches from CDM will be displayed in a drop-down list.	Yes
GetCustomerAccountID	After Party ID has been populated by CDM, the CPQ Cloud sales user can click GetCustomerAccountID to see the Customer ID displayed.	Yes

Preparing CPQ Cloud for Integration

Library Functions

Four new Library Functions must be created and will run when the **Get Customer**, **Get Address**, and **GetCustomerAccountID** actions are fired.



Preparing CPQ Cloud for Integration

Step Transitions (Document Views)

Add the 3 new Document Views to the "Sales Rep" or "Default" Participant Profile unless advised otherwise. These views will hide the three new CPQ Cloud actions after the CPQ Cloud sales user clicks Submit and the Transaction moves to the Approved step.

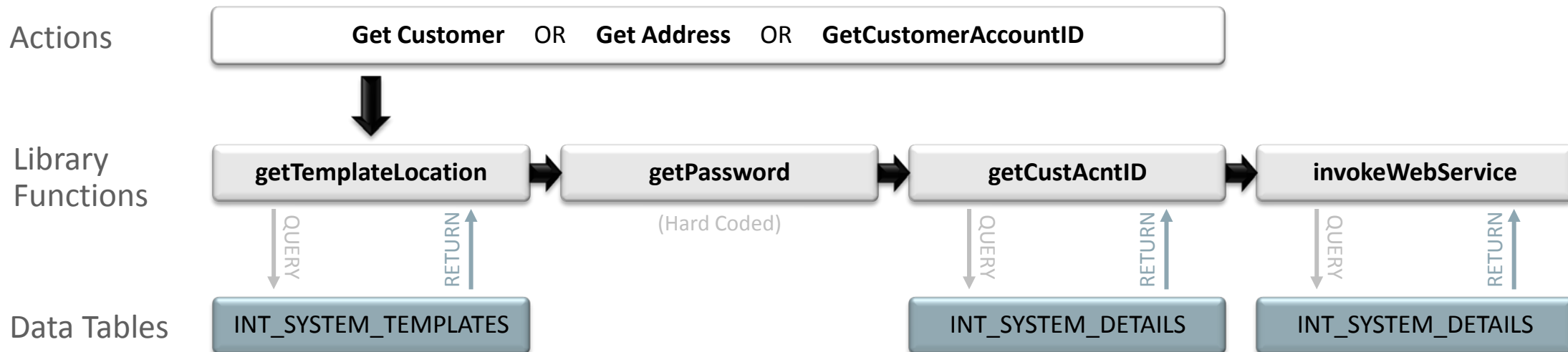
Action	Steps Action is Shown	Steps Action is Hidden	Description
Get Customer	Start, In Progress	Approved	The Get Customer action will be available for the CPQ Cloud sales users to invoke until the Transaction reaches the Approved step.
Get Address	Start, In Progress	Approved	The Get Address action will be available for the CPQ Cloud sales users to invoke until the Transaction reaches the Approved step.
GetCustomerAccountID	Start, In Progress	Approved	The GetCustomerAccountID action will be available for the CPQ Cloud sales users to invoke until the Transaction reaches the Approved step.

Preparing CPQ Cloud for Integration

Data Tables

A new **INT_SYSTEM_TEMPLATES** data table will contain links to the CustomerSyncDetails (Get Customer), GetOrganizationDetails (Get Address), and GetCustomerAcctPayload (GetCustomerAccountID) XML template files in the File Manager. This data table will be queried by the new getTemplateLocation Library Function to retrieve the template files so they can be populated with CDM customer data.

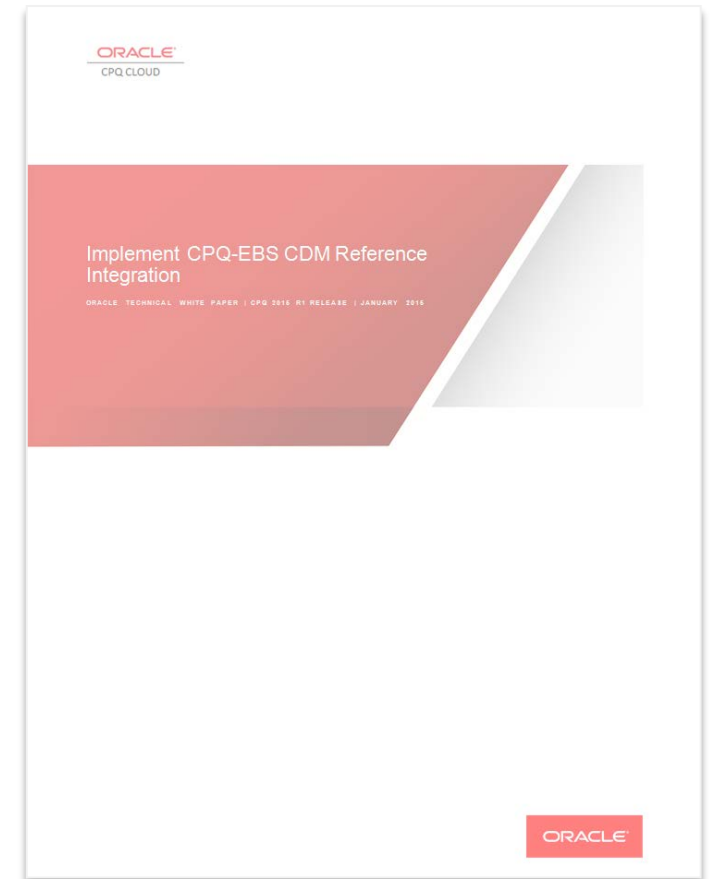
A new **INT_SYSTEM_DETAILS** data table will contain EBS web service names, usernames, and end points. This data table will be queried by the new CPQ Cloud Library Functions getCustAcntID and invokeWebService to populate the XML template files using table data and EBS web services.



Next Steps

Implement CPQ-EBS CDM Reference Integration

For detailed instructions on creating the components in CPQ Cloud necessary to enable integration with EBS Customer (CDM), as well as access to additional sample files and resources, see the [Implement CPQ-EBS CDM Reference Integration white paper](#).



CPQ Cloud and EBS Order Management (OM) Integration

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ORDER MANAGEMENT**

Preparing for Integration

OM Requirements

- EBS Release 12 or later
- EBS web service that must be running:
 - “OE_INBOUND_INT_Service” operation “processOrder”
 - Order Management Suite > Order Management > Sales Order > OE_INBOUND_INT

CPQ Cloud Components to Create/Tasks to Complete for OM Integration

- Parts Sync
- 11 Attributes
- 4 Actions
- 7 Library Functions
- 6 Step Transitions (2 Transition Rules and 4 Document Views)
- 1 Formula
- 2 Rules
- 2 Data Tables

Preparing CPQ Cloud for Integration

Parts Sync

EBS-OM Product Items (parts) must be synced to CPQ Cloud using the following method:

1. Query all Product Item details from the EBS environment using SQL.
2. Export the query to a CSV file, modify the header so it can be uploaded to CPQ Cloud, and compress the file into a ZIP folder.
3. Bulk upload the ZIP folder to CPQ Cloud as Parts.
4. Verify that new parts have been added to CPQ Cloud.

Note: This method of syncing parts must be done each time Product Items are updated in Order Management. This includes each time Product Items (parts) are added, removed, or modified so that the two systems have the same parts list and data.

Preparing CPQ Cloud for Integration

Attributes

In order for CPQ Cloud to satisfy the needs of OM when creating an order, 11 new attributes must be created in the Oracle Quote to Order Commerce Process:

- 2 order-related attributes
- 1 Org ID attribute
- 1 HTML Integration Status attribute
- 5 line item-related attributes
- 2 SOAP request and response attributes for debugging purposes

Preparing CPQ Cloud for Integration

Actions

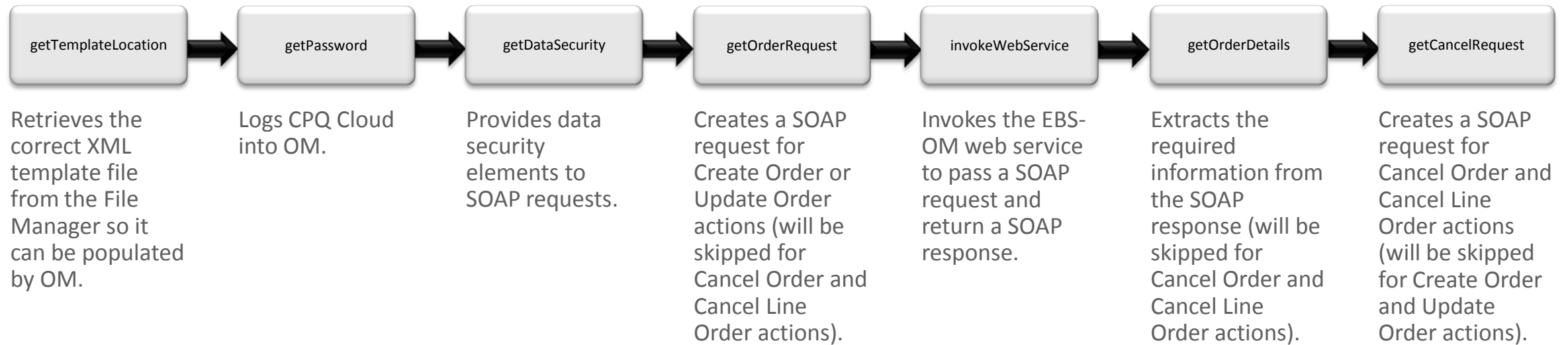
Four new actions must be created to accomplish order-related tasks in CDM through CPQ Cloud:

Action	Description	Visible on the CPQ Cloud Layout
Create Order	Creates an order.	Yes
Update Order	Updates an existing order.	Yes
Cancel Order	Cancels an existing order.	Yes
Cancel Line Order	Cancels the selected line item(s) from an order that has been created.	Yes (line-level)

Preparing CPQ Cloud for Integration

Library Functions

Seven new Library Functions must be created and will run when the **Create Order**, **Update Order**, **Cancel Order**, and **Cancel Line Order** actions are fired.



Preparing CPQ Cloud for Integration

Step Transitions (Document Views)

Add the 6 new Step Transitions to the "Sales Rep" or "Default" Participant Profile unless advised otherwise. The Transition Rules will move the Transaction to a new step based on the outcome of the Create Order Action. The Document Views will hide the four new CPQ Cloud actions depending on the current step.

Transition Rules

Step	Action	Transition to Step	Description
Approved	Create Order	Ordered	Transaction moves from the "Approved" step to the "Ordered" step.
Approved	Create Order	Failed Order	Transaction moves from the "Approved" step to the "Failed Order" step.

Document Views

Action	Step(s) Action is Shown	Description
Create Order	Approved, Failed Order	The Create Order action will be available for the CPQ Cloud sales users to invoke when the Transaction is in the Approved or Failed Order steps.
Update Order	Ordered	The Update Order action will be available for the CPQ Cloud sales users to invoke when the Transaction is in the Ordered step.
Cancel Order	Ordered	The Cancel Order action will be available for the CPQ Cloud sales users to invoke when the Transaction is in the Ordered step.
Cancel Line Order	Ordered	The Cancel Line Order action will be available for the CPQ Cloud sales users to invoke when the Transaction is in the Ordered step.

Preparing CPQ Cloud for Integration

Formula

One formula must be created in Formula Management:

```
Cancelled Quantity = if( ( Status_I NOT= "CANCELED" ), Quantity, Cancelled Quantity)
```

The formula will run when either the Create Order or Update Order actions are fired, and means that if:

- The Status of the line item is anything other than Canceled, the Cancelled Quantity attribute takes the value of the Quantity attribute.
- The Status of the line item is Canceled, the Cancelled Quantity attribute retains its current value.

Preparing CPQ Cloud for Integration

Rules

Two hiding rules must be created in the Oracle Quote to Order Commerce Process:

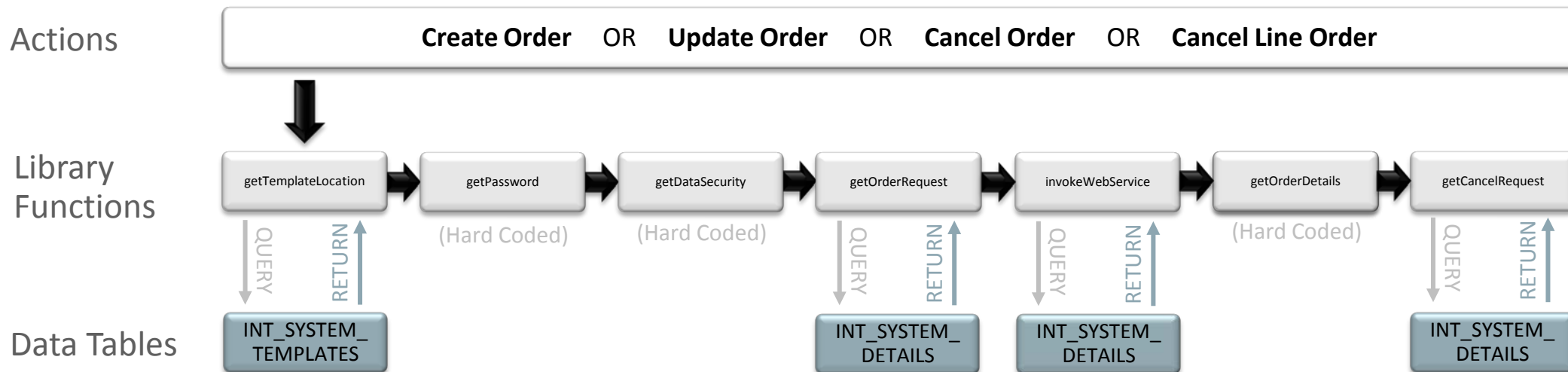
Hiding Rule Name	Attribute Hidden	Condition	Description
HideQuantity	Quantity	Status equals Canceled	The line-level Quantity attribute will be hidden when the Status of the Transaction is Canceled.
HideCancelledQuantity	Cancelled Quantity	Status does not equal Canceled	The line-level Cancelled Quantity attribute will be hidden when the Status of the Transaction is anything other than Canceled.

Preparing CPQ Cloud for Integration

Data Tables

A new **INT_SYSTEM_TEMPLATES** data table will contain links to the OrderSoap, lineTemplate, and cancel XML template files in the File Manager. This data table will be queried by the new getTemplateLocation Library Function to retrieve the template files so they can be populated with OM order data.

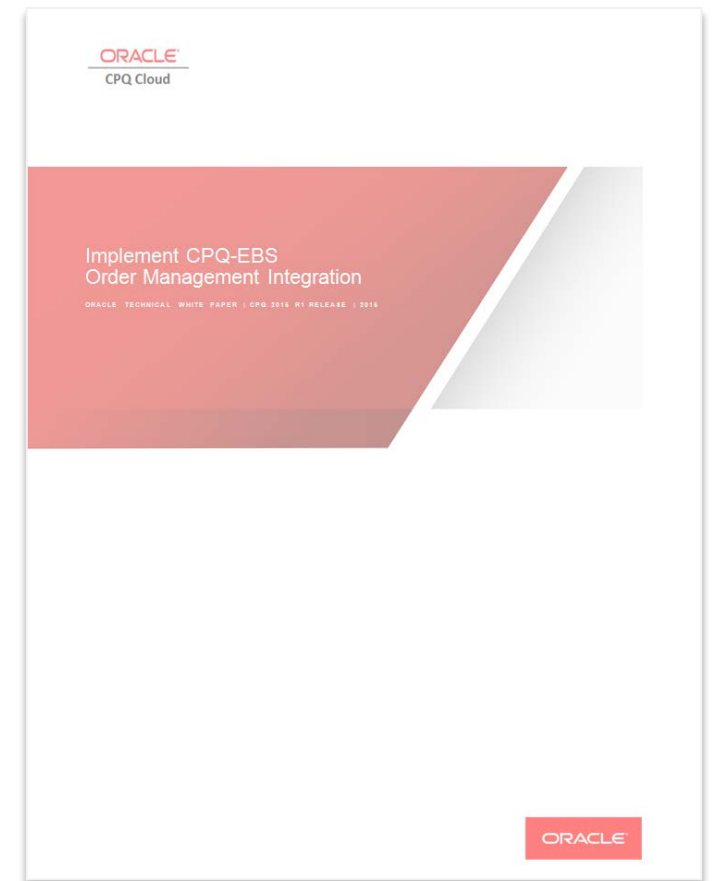
A new **INT_SYSTEM_DETAILS** data table will contain EBS web service names, usernames, and end points. This data table will be queried by the new CPQ Cloud Library Functions invokeWebService, getOrderRequest, and getCancelRequest to populate the XML template files using table data and EBS web services.



Next Steps

Implement CPQ-EBS Order Management Integration

For detailed instructions on creating the components in CPQ Cloud necessary to enable integration with EBS Order Management, as well as access to additional sample files and resources, see the [Implement CPQ-EBS Order Management Integration white paper](#).



CPQ Cloud and EBS Inventory On Hand Balance Integration

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**E-BUSINESS SUITE
INVENTORY ON HAND
BALANCE**

Preparing for Integration

Inventory On Hand Balance Requirements

- EBS Release 12 or later
- EBS web service that must be running:
 - “INV_QUANTITY_TREE_PUB_Port” operation “UPDATE_QUANTITIES”
 - Supply Chain Management > Inventory Management > Inventory On Hand Balance > Quantity tree Application Program Interface

New CPQ Cloud Components Needed for Inventory On Hand Balance Integration

- 4 Attributes
- 1 Action
- 3 Library Functions
- 1 Step Transition (Document View)
- 2 Data Tables

Preparing CPQ Cloud for Integration

Attributes

Four new text attributes must be created in the Oracle Quote to Order Commerce Process:

Attribute	Document	Description
Availability Status	Line	Shows the availability of a line item as either "Available," "Not Available," or "Not Checked."
Available Units	Line	Shows the number of available units for the line item.
Integration Status	Transaction	Shows the status of the integration process with Inventory On Hand Balance.
Warehouse Organization ID	Transaction	Used to set the value of the Warehouse Organization ID so Inventory On Hand Balance knows which warehouse to check.

Preparing CPQ Cloud for Integration

Action

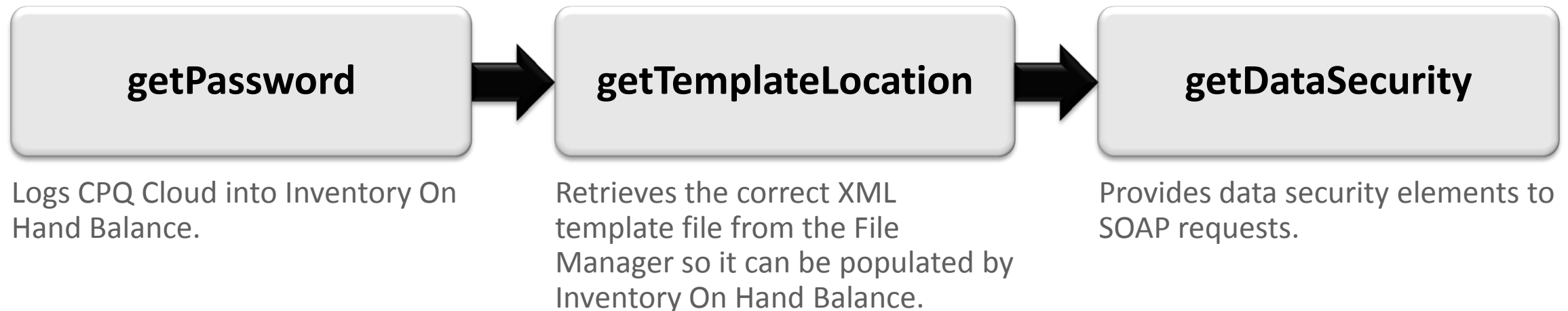
One action must be created to enable CPQ Cloud-Inventory on Hand Balance integration:

Action	Description	Visible on the CPQ Cloud Layout
Query Quantity	Checks Inventory on Hand Balance for each line item and returns the Availability Status and the Available Units for each line item.	Yes

Preparing CPQ Cloud for Integration

Library Functions

Three new Library Functions must be created and will run when the **Query Quantity** action is are fired.



Preparing CPQ Cloud for Integration

Step Transition (Document View)

One new Document View must be configured for CPQ Cloud-Inventory on Hand Balance integration. The new Document View should be added to the "Sales Rep" or "Default" Participant Profile unless advised otherwise.

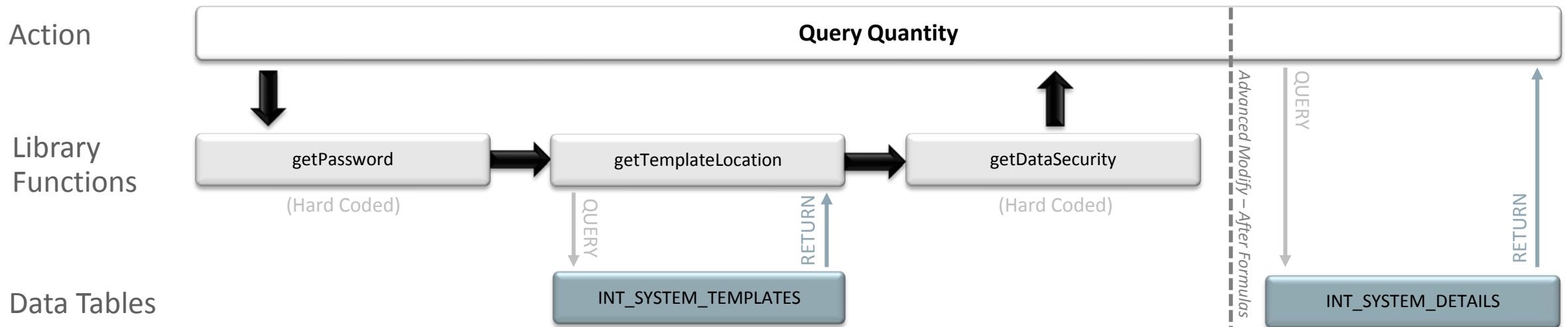
Action	Step Action is Shown	Description
Query Quantity	Approved	The Query Quantity action will be available for the CPQ Cloud sales users to invoke when the Transaction is in the Approved step.

Preparing CPQ Cloud for Integration

Data Tables

A new **INT_SYSTEM_TEMPLATES** data table will contain a link to the queryOnHandSoap XML template file in the File Manager. This data table will be queried by the new getTemplateLocation Library Function to retrieve the template file so it can be populated with Inventory On Hand Balance data.

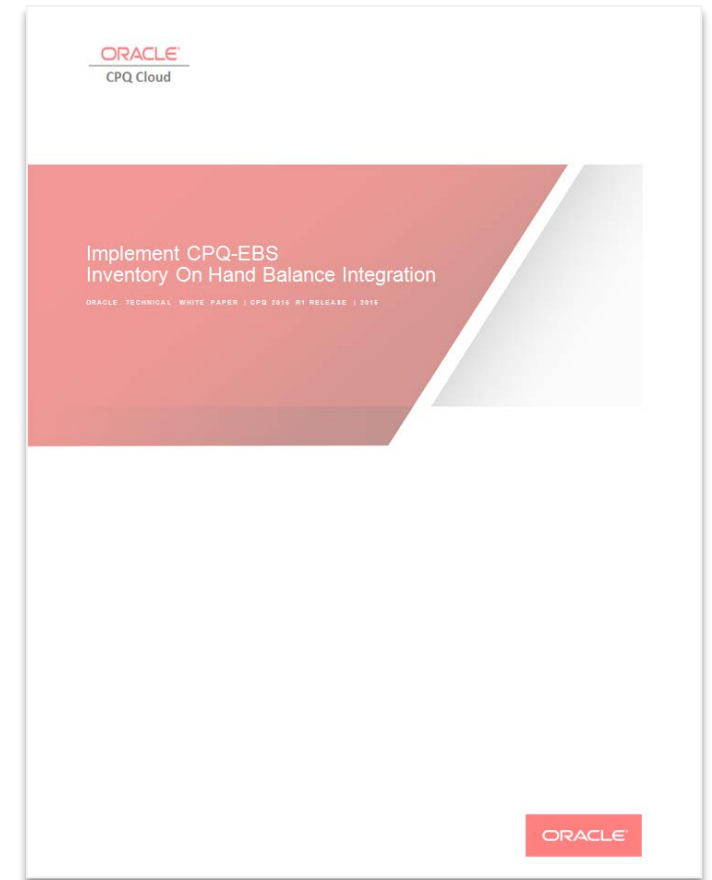
A new **INT_SYSTEM_DETAILS** data table will contain the system key, EBS web service name, username, and end points. This data table will be queried by the new Query Quantity action to populate the XML template file using table data and the EBS web service.



Next Steps

Implement CPQ-EBS Inventory On Hand Balance Integration

For detailed instructions on creating the components in CPQ Cloud necessary to enable integration with EBS Inventory On Hand Balance, as well as access to additional sample files and resources, see the [Implement CPQ-EBS Inventory On Hand Balance Integration white paper](#).



CPQ Cloud and EBS Material Reservation Integration

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MATERIAL RESERVATION**

Preparing for Integration

Material Reservation Requirements

- EBS Release 12 or later
- EBS web services that must be running:
 - “INV_RESERVATION_PUB_Service” operation
“CREATE_RESERVATION”
 - Supply Chain Management > Inventory Management > Material Reservation > Material Reservation Interface
 - “INV_RESERVATION_PUB_Service” operation
“RELIEVE_RESERVATION”
 - Supply Chain Management > Inventory Management > Material Reservation > Material Reservation Interface
 - “INV_QUANTITY_TREE_PUB_Service” operation
“CLEAR_QUANTITY_CACHE”
 - Supply Chain Management > Inventory Management > Material Reservation > Material Reservation Interface

New CPQ Cloud Components Needed for Material Reservation Integration

- 13 Attributes
- 3 Actions
- 6 Library Functions
- 3 Step Transitions (Document Views)
- 3 Rules
- 2 Data Tables

Preparing CPQ Cloud for Integration

Attributes

To enable CPQ Cloud-Material Reservation integration, 13 new attributes must be created in the Oracle Quote to Order Commerce Process:

- 3 order-related attributes
- 1 Org ID attribute
- 7 line item-related attributes
- 2 SOAP request and response attributes for debugging purposes

Preparing CPQ Cloud for Integration

Actions

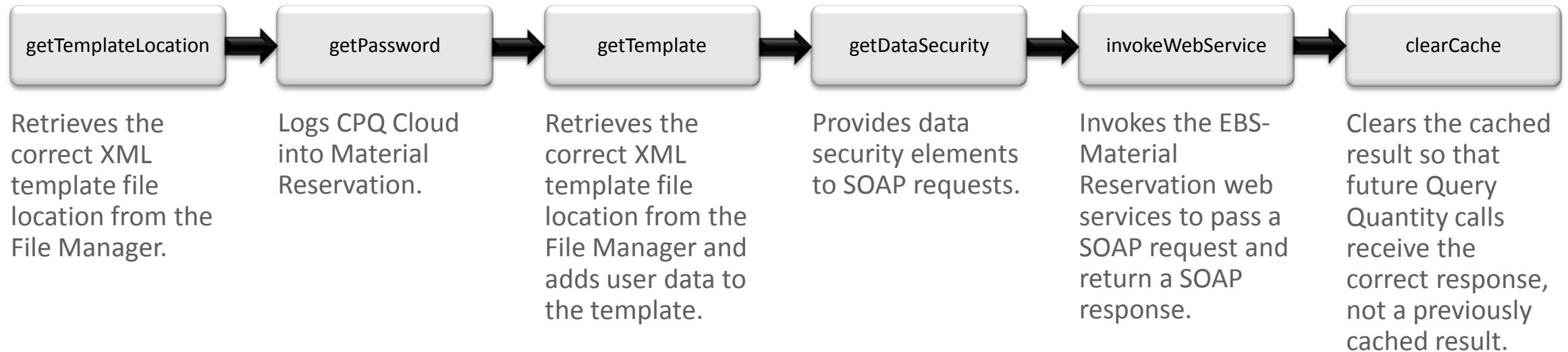
Two new actions must be created to accomplish the reservation of line items and the relieving of line item reservations:

Action	Description	Visible on the CPQ Cloud Layout
Reserve	Reserves the materials associated with the selected line item(s) in Material Reservation.	Yes
Relieve	Cancels the reservation of all previously-reserved line items.	Yes
Relieve Line	Cancels the reservation of the selected, previously-reserved line item.	Yes (line-level)

Preparing CPQ Cloud for Integration

Library Functions

Six new Library Functions must be created and will run when the **Reserve**, **Relieve**, or **Relieve Line** actions are fired:



Preparing CPQ Cloud for Integration

Step Transitions (Document Views)

Add the 3 new Document Views to the "Sales Rep" or "Default" Participant Profile unless advised otherwise. The Document Views will hide the three new CPQ Cloud actions depending on the current step.

Action	Step(s) Action is Shown	Description
Reserve	Ordered	The Reserve action will be available for the CPQ Cloud sales users to invoke when the Transaction is in the Ordered step.
Relieve	Canceled	The Relieve action will be available for the CPQ Cloud sales users to invoke when the Transaction is in the Canceled step.
Relieve Line	Ordered, Canceled	The Relieve Line action will be available for the CPQ Cloud sales users to invoke when the Transaction is in the Ordered or Canceled steps.

Preparing CPQ Cloud for Integration

Rules

Three validation rules must be created in the Oracle Quote to Order Commerce Process:

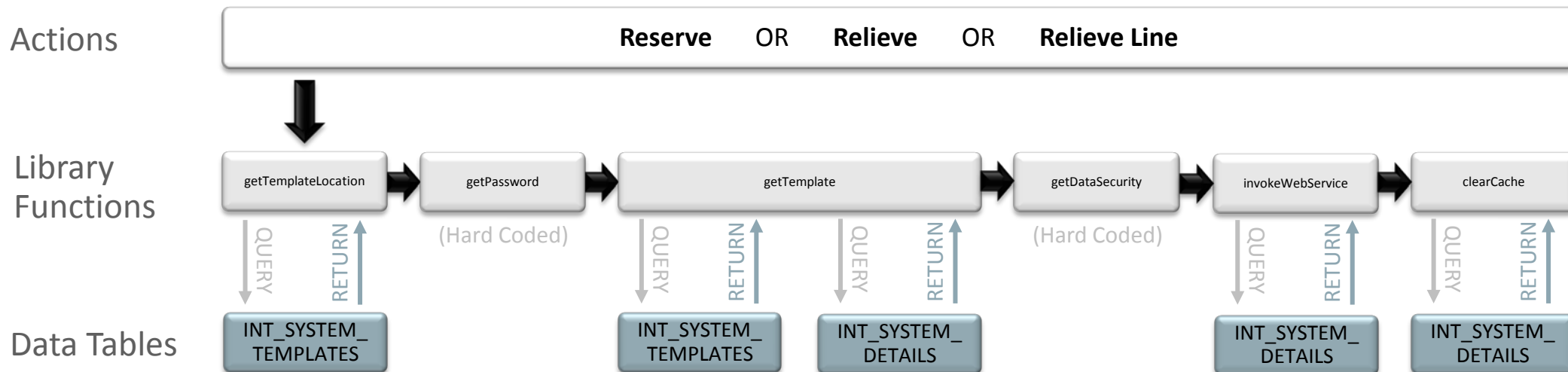
Validation Rule Name	Document	Condition	Action(s) Hidden	Description
ValidateRelieveOrder	Transaction	Reservation Status is less than or equal to 0	Relieve	If no line items have been reserved, the Relieve action is hidden.
ValidateRelieveLine	Line	Reservation Id is blank <i>or</i> Reservation Id equals 0	Relieve Line	When a line item has not be reserved or cannot be reserved, the Relieve Line action is hidden.
ValidateStatusRelieveLine	Line	Status equals any status other than Canceled	Relieve Line	When a line item's status is anything other than Canceled, the Relieve Line action is hidden.

Preparing CPQ Cloud for Integration

Data Tables

A new **INT_SYSTEM_TEMPLATES** data table will contain links to the eight XML template files in the File Manager. This data table will be queried by the new `getTemplateLocation` and `getTemplate` Library Functions to retrieve the correct template file so it can be populated with Material Reservation data.

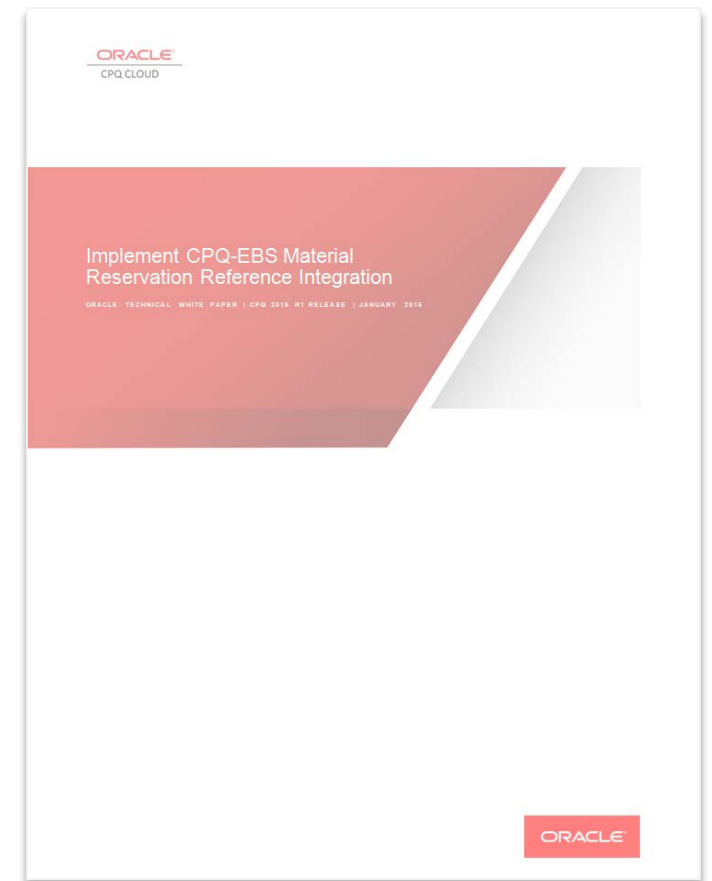
A new **INT_SYSTEM_DETAILS** data table will contain web service usernames, end points, and system keys. This data table will be queried by the new CPQ Cloud Library Functions `getTemplate`, `invokeWebService`, and `clearCache` to populate the XML template files using table data and EBS web services.



Next Steps

Implement CPQ-EBS Material Reservation Reference Integration

For detailed instructions on creating the components in CPQ Cloud necessary to enable integration with EBS Material Reservation, as well as access to additional sample files and resources, see the [Implement CPQ-EBS Material Reservation Reference Integration white paper](#).



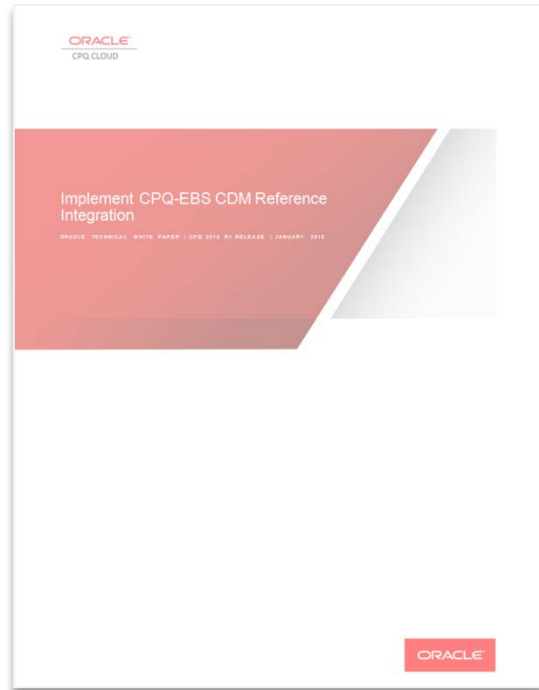
CPQ Cloud-EBS Integration White Papers



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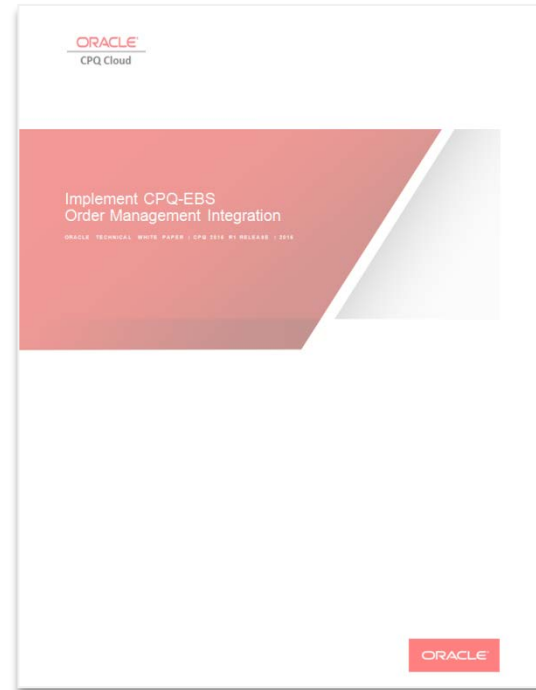
CUSTOMER



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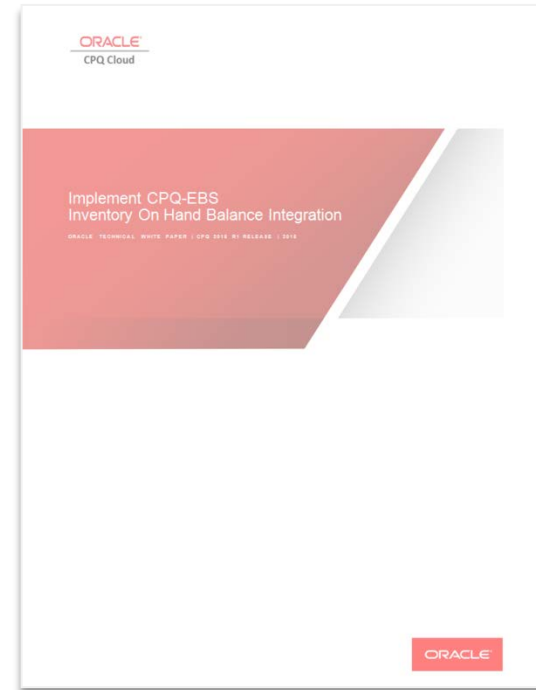
ORDER MANAGEMENT



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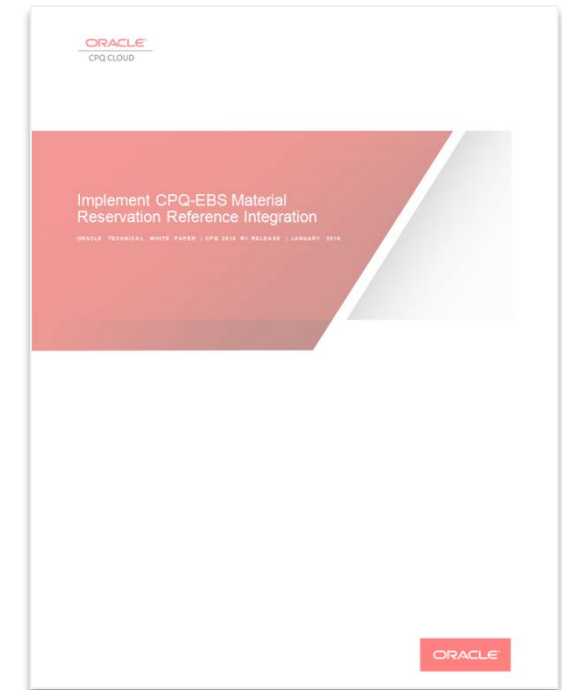
INVENTORY ON HAND
BALANCE



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E-BUSINESS SUITE

MATERIAL RESERVATION



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