ORACLE
Commerce Cloud

CPQ Cloud – Commerce Cloud Integration Best Practices

ORACLE

WHITE PAPER / AUGUST 12, 2019

PURPOSE STATEMENT

This document provides an overview and best practices for the integration of Oracle CPQ Cloud release 19A and Oracle Commerce Cloud 19A. It is intended solely to help you assess the business benefits of integrating the two products and to plan your I.T. projects.

DISCLAIMER

This document in any form, software or printed matter, contains proprietary information that is the exclusive property of Oracle. Your access to and use of this confidential material is subject to the terms and conditions of your Oracle software license and service agreement, which has been executed and with which you agree to comply. This document and information contained herein may not be disclosed, copied, reproduced or distributed to anyone outside Oracle without prior written consent of Oracle. This document is not part of your license agreement nor can it be incorporated into any contractual agreement with Oracle or its subsidiaries or affiliates.

This document is for informational purposes only and is intended solely to assist you in planning for the implementation and upgrade of the product features described. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described in this document remains at the sole discretion of Oracle.

Due to the nature of the product architecture, it may not be possible to safely include all features described in this document without risking significant destabilization of the code.

TABLE OF CONTENTS

INTRODUCTION

The Oracle CPQ Cloud and Oracle Commerce Cloud Product Management team has written this document to offer guidance and recommended best practices for leveraging the two products when used together. The contents of the document should answer the most frequently asked questions and provide a foundation for discussions about the value of integrating CPQ Cloud and Commerce Cloud and how best to leverage the technologies that comprise the integrated solution.

The integration of Commerce Cloud and CPQ Cloud currently provides support for the following shopper commerce activity:

- **Product configuration**: The shopper or agent can configure and price any product that has been identified as configurable in the product catalog.
- **Shopper quote request**: The shopper can request a CPQ Cloud quote for an order, thereby initiating a CPQ Cloud transaction that a sales specialist using CPQ Cloud can modify, reconfigure, or discount. Once finalized in CPQ Cloud, the quote returns to Commerce Cloud for acceptance and ordering by the self-service user.
- **Agent quote request**: An agent dealing with a shopper contact can request a quote for a discount on behalf of the shopper.
- **Asset Based Ordering**: Asset based ordering (ABO) allows you to sell and manage (modify, cancel, etc.) tangible assets or subscription services delivered over a period of time; for example mobile phone call and data plans, television and broadband packages, cloud storage service, music streaming service, etc. Note that it is focused on order capture and it is expected that other systems (non-CPQ Cloud and Commerce Cloud) perform functions such as being the subscription master, managing recurring billing, etc.

Self-service users in Commerce Cloud can configure complex products for purchase in Commerce Cloud using the CPQ Cloud configurator. They can also request a CPQ Cloud quote, thereby initiating a CPQ Cloud Transaction that a sales specialist using CPQ Cloud can modify, reconfigure, or discount. Once finalized in CPQ Cloud, the quote returns to Commerce Cloud for acceptance and ordering by the self-service user. For additional information, refer to Appendix A: Configurator Flow and Appendix B: Request for Quote Flow.

Integrating these solutions brings together the capabilities of Oracle Commerce Cloud and Oracle CPQ Cloud to provide a unified solution that enables businesses to offer shoppers a method of interacting meaningfully with the business during the purchasing process, and to provide agents with the means to be flexible with shoppers, improving their contact experience and maximizing shopper satisfaction.

Oracle has made significant investment in best of breed technologies focused on delivering

differentiated customer experiences. In addition to continued investment in the Commerce Cloud and CPQ Cloud product platforms, Oracle will continue to further integrate the capabilities of the products to provide a seamless business user experience and simplified operation environment.

As evidenced by this best practices document, Oracle is also committed to providing customers with guidance on how to best leverage Oracle products in a manner which is consistent with the product strategy and roadmap. Given the strength and flexibility of both the Commerce Cloud and CPQ Cloud solutions, customers can choose to leverage the products in many different ways and in different environments. The approach defined in this document is focused on providing guidance when customers are engaged in commerce and driving compelling customer experiences via digital channels. As enhancements to the integration between the two products are delivered, this best practices document will be updated.

EXECUTIVE SUMMARY

The strategy for Oracle Commerce Cloud and Oracle CPQ Cloud is a solution that includes integration between the two products.

- Customers should be making plans to use both technologies in their commerce operations. These guidelines are based on roadmap and product knowledge about how customers should think about this process.
- In general, there are clean lines that define what each of the technologies should be used for. Where there is overlap, we outline considerations and offer guidance for how to decide which technology to use.
- CPQ Cloud should always be used in conjunction with Commerce Cloud in the following cases:
- Quoting is required.
- Product configuration and pricing is required.
- All communications (e.g., telco) implementations, as selling flows into these enterprises typically require supporting bundled offers, which need to support Asset-Based Ordering (ABO) and eligibility check flows, and generally require the configuration and pricing experience for selling bundled offers.
- All but simple subscription use cases.

Summary of Recommendations

The following chart is a summary of how each technology should be used. Where there is overlap, we provide guidance and outline the cases in which you would choose one product component over the other to perform those functions.

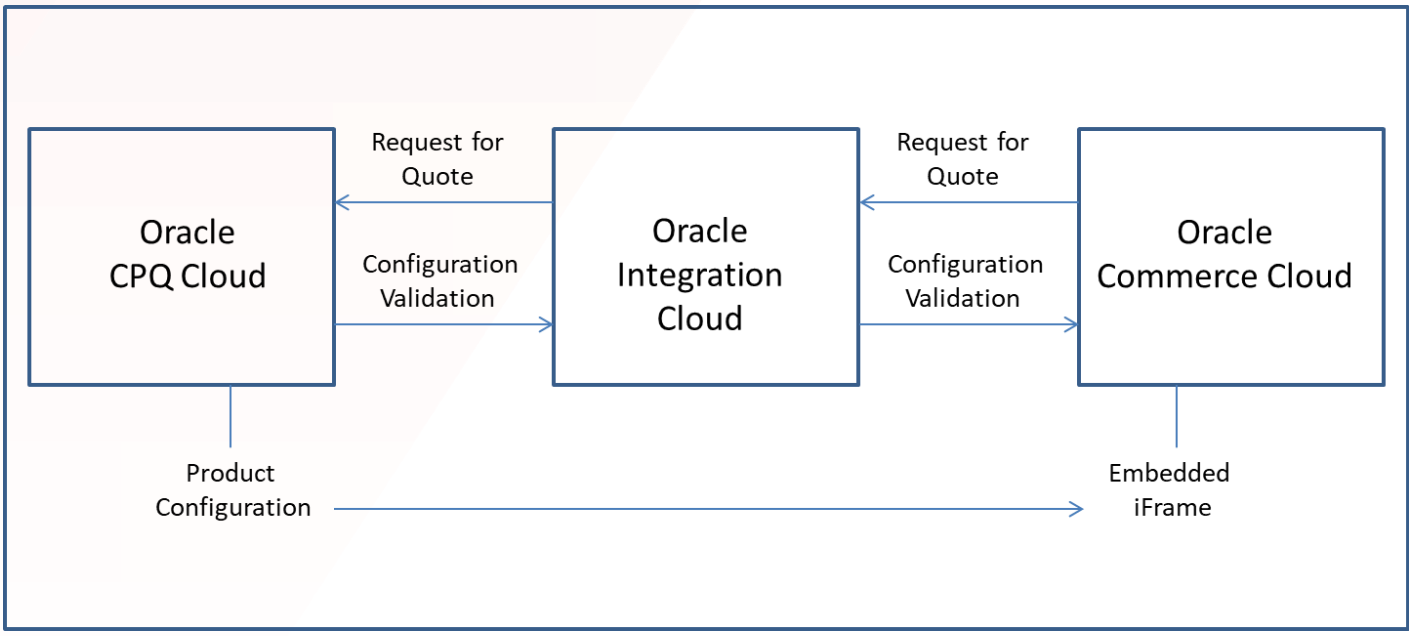
FUNCTIONAL AREA	COMMERCE CLOUD	CPQ CLOUD
Product Configuration		√
Quoting		√
Asset-Based Ordering		√
Catalog	√	√
Pricing and Discounting	√	√
Orders	√	√
Buyer Self-Service	√	
Assisted Sales / Resellers / Distributors		√

ASSUMPTIONS

Readers of this document should have experience with Oracle Commerce Cloud, Oracle CPQ Cloud and Oracle Integration Cloud administration. This document does not provide a comprehensive technical discussion and does not replace the official product documentation for any of the products.

HIGH-LEVEL ARCHITECTURE

The following diagram depicts the integration components at a high level.



GENERAL

As noted earlier, CPQ Cloud should always be used in conjunction with Commerce Cloud in the following cases:

- Quoting is required.
- Product configuration and pricing is required.
- All communications (e.g., telco) implementations, as selling flows into these enterprises typically require supporting bundled offers, which need to support Asset-Based Ordering (ABO) and eligibility check flows, and generally require the configuration and pricing experience for selling bundled offers.
- All but simple subscription use cases.

CHANNELS

Commerce Cloud manages the self-service web and mobile and contact center (agent) channel experience. CPQ Cloud manages the direct sales (sales reps, inside sales) and indirect (distributor, VAR, reseller) channel experience. Note: CPQ Cloud should be augmented by Oracle Engagement Cloud for the direct and indirect sales channels when feature-rich assisted selling capabilities are needed, e.g., opportunity management, sales rep territory management, etc.

When Commerce Cloud and CPQ Cloud exist in the same user flow (i.e. self-service and contact center agent), Commerce Cloud should be the application that the customer is interacting with, while CPQ Cloud provides UI and non-UI based services to support

those interactions. The CPQ Cloud UI will be accessed via an embedded experience within Commerce Cloud, and to the end user will appear as part of the Commerce Cloud application itself.

CATALOG

Currently both Commerce Cloud and CPQ Cloud have their own catalogs, and both are used by the individual applications. Neither is typically the master catalog – the list of products is expected to come from a Product Information (PIM) system or similar (e.g., ERP). The product imports from the PIM into both Commerce Cloud and CPQ Cloud happen in parallel. After that, both Commerce Cloud and CPQ Cloud do their own independent enrichment of the product data. For example, Commerce Cloud manages the product catalog, collections (categories), images, copy, shopper journey, search indexing, etc. CPQ Cloud builds the configuration models, bundle pricing rules, configuration UI flows, etc.

In the integration, products and SKU's in Commerce Cloud are mapped to models and parts in CPQ Cloud. Products that are to be configurable products are identified as such in Commerce Cloud, including mapping the products and its SKU's to a model and its parts in CPQ Cloud. From the catalog perspective, the only time any synchronization is needed between the two catalogs is when a model in CPQ Cloud is ready for production. At that point, the administrator links the relevant root product in Commerce Cloud to the model in CPQ Cloud, and it is made available for sale. After that, the only changes that need to be synched between the products are those that actually affect product configuration: both products may add application-specific data that does not need to appear in the other.

CPQ Cloud also has a feature called "eligibility rules", which allows administrators to define the parts available to specific customers or customer segments. CPQ Cloud includes a Search Parts REST API, which filters the parts that are returned to Commerce Cloud based on eligibility rules. The results of this filtering are used in Commerce Cloud to determine which products to display to a given customer.

PRODUCT CONFIGURATION

At a high level, Commerce Cloud handles simple, non-configurable products, and CPQ Cloud handles configurable products and products with recurring pricing (subscriptions). However, some questions may arise in relation to 1) where these products need to be stored in the catalog; and 2) what exactly is a configurable product.

Addressing the catalog question first: sometimes the question arises as to whether configurable products only need to be stored in the CPQ Cloud catalog? The answer is no, since Commerce Cloud needs to be able to offer them to shoppers on the storefront. Another question is, when a product isn't available for individual re-sale to shoppers on the storefront, and is only available as an option within a bundle configuration, then in such cases, does it need to be in the Commerce Cloud catalog at all? The answer is yes, because Commerce Cloud validates every product in the cart against the catalog: if a configurable product's component is not present in Commerce Cloud, then it will generate errors.

Next, what is a configurable product? Commerce Cloud on its own handles two main types of products: simple products; and simple products with attributes. It is the simple products with attributes that can cause confusion. Basically, a simple product with attributes in Commerce Cloud does not require any business rules: everything to do with selection of the attribute values is contained within the corresponding picker. An example of a simple product with attributes is a shirt that is available in various colors (blue, red, white, etc.) and sizes (small, medium, large, etc.). Simple products can also contain user-entered attributes e.g., text for the monogramming of personalized items. However, typically the only "business rules" that affect attribute selections for simple products are driven by inventory levels.

However, when you need other business rules to govern attribute value selection, then that is no longer a simple product with attributes, but a complex product, i.e. a configurable product. In that case, it is handled by CPQ Cloud, i.e., configured. As an example, another simple product with attributes might be a bicycle which can be purchased in a range of colors, wheel sizes, gear mechanisms etc. However, if the customization of the bicycle becomes more complex, e.g., where only certain types of wheels can be used with each frame; or where depending on the brand of gear, only a limited number of brakes can be used; etc., then it becomes a configurable product to be managed by CPQ Cloud.

Another question that can arise is that for configurable products, it might seem that the SKU variant properties are not needed in

Commerce Cloud, since they are selected in CPQ Cloud. However, they must always be present in Commerce Cloud. One reason is that not all customers use a configurable bundle as the starting point of their shopping journey in Commerce Cloud for a configurable product. Here is an example to explain this:

Let's say that you have a mobile communications bundle in Commerce Cloud, for which CPQ Cloud contains a device and plan, and where the structure for that bundle is contained in a CPQ model. That could be a "top level" item in Commerce Cloud, and would be indexed in Commerce Cloud in the standard way and could be found and selected via normal means (e.g., keyword search, faceted search, browsing, etc.). The attribute values of its constituent components (i.e., device and plan) likely don't play a part in the indexing and search process, but rather just the bundle itself.

However, some customers don't use bundles in Commerce Cloud. They instead use the device or plan as the starting point for their shopper journey and the bundle only comes together in the CPQ Cloud model. In this case, the bundle doesn't really exist in Commerce Cloud, but rather just in the model within CPQ Cloud. That means that the indexing would be done on the device **and** plan, and in that scenario the attribute values will play an important part in faceted search.

As an example: a shopper uses faceted search to locate an Android phone with at least 64GB of storage. Once the shopper selects what he or she is looking for, they are presented with a button to customize and select a plan. When the shopper clicks the customize button, what happens next takes place within the CPQ Cloud configuration session: CPQ Cloud returns the full hierarchy of products for the device and plan, which is what one would generally consider to be a bundle in Commerce Cloud. However, in this case it is not actually a bundle in Commerce Cloud, but rather a set of items that were configured and priced in CPQ Cloud.

Finally, it should be noted that multiple configurable products in Commerce Cloud can point to the same model in CPQ Cloud. It is highly recommended that customers try to leverage this design pattern to avoid creating unnecessary models in CPQ Cloud that map to each configurable product. In this case, additional configuration parameters need to be passed from Commerce Cloud to CPQ Cloud during the configuration's launch. This enables merchants to define a single model for all variants of a configurable product, and at purchase time to pre-load the configuration model at the appropriate starting point based on the shopper's selection in Commerce Cloud.

PRICING AND DISCOUNTING

This is another are where questions may arise, since both Commerce Cloud and CPQ Cloud each have their own pricing and discounting engines.

The recommendations here can be straightforward if just considering the self-service channel: you price non-configurable products in Commerce Cloud, and you price configurable products in CPQ Cloud. You discount the product in whichever application prices it. However, if the merchant also sells direct, then since all direct selling is done via CPQ Cloud, prices will need to be present in both applications. The other case where prices must exist in both products is when CPQ's quoting functionality is used.

As far as discounts (promotions): in Commerce Cloud, when prices are retrieved from CPQ Cloud for configurable products, they are identified as "external" in the Commerce Cloud shopping cart, and the Commerce Cloud item pricing engine leaves the prices as they are. However, merchants are technically able in the system able to set up item promotions that could apply to the top level item of a configurable product (i.e., to discount it). However, it is not recommended, due to the following:

Say you have a bundle for a mobile device and plan. The top level bundle item is named "Mobile Bundle". When that bundle is configured in CPQ Cloud, Commerce Cloud gets back a bill of materials (BOM) which is converted into a commerce item hierarchy in the cart. The top level item is going to be the Mobile Bundle, and the next level down is going to be Device, then Plan, and so on.

Commerce Cloud item promotions can currently only apply to the top-level item. Therefore a merchandiser can set up an item-level promotion that will apply to the Mobile Bundle. The problem with this is that the entire Mobile Bundle has likely already been discounted in CPQ Cloud. Applying discounts in both applications in that manner can complicate the solution, especially within a cross-channel scenario, e.g., going from self-service to a sales-rep driven process. It could also potentially cause issues with financial reconciliation downstream, as there would not be a proper price/discount audit trail in the Commerce Cloud order.

Merchants, can, however, use the pricing for a configurable product to play a part in qualifying for an order-level or shipping promotion. Say you have an order-level promotion for free shipping over $200. You then order a telco bundle consisting of a device

and a plan and which costs $500. This should qualify for free shipping for the order.

To summarize the recommendations concerning pricing and discounting: for the self-service channel, price simple products in Commerce Cloud, and configurable products in CPQ Cloud; and discount simple products in Commerce Cloud, and configurable products in CPQ Cloud. For the assisted sales channel (CPQ Cloud), as well as when quoting is used, all prices – including configurable and non-configurable products – will also need to be maintained in CPQ Cloud. The recommendation is that all list prices be synchronized with both applications. Configurable product pricing (coming from CPQ Cloud) can be used as a qualifier for an order-level or shipping promotion in Commerce Cloud.

ORDERS

This is another area where questions may arise, since both Commerce Cloud and CPQ Cloud manage orders. The recommendation is that Commerce Cloud handles the orders for the self-service and contact center agent channels, and that CPQ Cloud handles the orders for the sales-driven channels. This means that for self-service channels, Commerce Cloud will submit the order to the order management system (OMS), and for sales-driven channels, CPQ Cloud will submit the order to the OMS.

Questions may also arise related to order history, and more importantly, order modifications, returns and cancellations. If a merchant supports both self-service and sales-driven channels, then they clearly need their customers to be able to see orders from both applications in their order history, and to execute order actions from there. The recommendation is that the merchant pull orders from both Commerce Cloud and CPQ Cloud, or from the OMS, into a combined order history, and both products have API's that enable this today. (Note that this would require custom integration). However, order operations executed from the combined order history should be handled by the application where the order originally initiated. This is necessary since the order structures and order processes within Commerce Cloud and CPQ Cloud are currently very different.

ASSETS AND ASSETS-BASED ORDERING

As noted earlier, asset based ordering allows you to sell and manage tangible assets or subscription services delivered over a period of time; for example mobile phone call and data plans, television and broadband packages. Again, it is focused on order capture and it is expected that other systems (non-CPQ Cloud and Commerce Cloud) perform functions such as being the subscription master, managing recurring billing, etc. Assets and asset-based ordering operations are provided by CPQ Cloud. When these orders are subsequently fulfilled, the fulfillment system notifies CPQ Cloud via an asset API, and CPQ Cloud then creates an asset in the CPQ Cloud asset repository.

Once created, assets can subsequently be reviewed by shoppers in the "My Services" management area within the shopper's account. The shopper can then administer an asset by creating and placing new commerce orders to perform a number of actions on the asset, including modify, renew, etc. CPQ Cloud acts as the "asset master", and Commerce Cloud queries it for a list of assets. Modifications to those assets are handled by launching a configuration session in CPQ that presents modification options.

PCI

Commerce Cloud currently handles credit card payments OOTB, whereas CPQ Cloud does not. Some merchants have done customization to CPQ Cloud in order to be able to handle credit card payments in the assisted-sales channels. If an SI or customer has use cases to capture credit card info when using CPQ Cloud, they should reach out to CPQ Cloud Product management at: cpq_cloud_pm_ww_grp@oracle.com

SHOPPER/BUYER USER EXPERIENCE

Currently, the configuration UI for the self-service channel is built and delivered by CPQ Cloud to Commerce Cloud via an iFrame that is presented to the shopper in Commerce Cloud, whilst the remainder of the shopper UI is built in Commerce Cloud. Although the CPQ Cloud UI is accessed via this iFrame that is embedded within Commerce Cloud, to the end user it will appear as part of the Commerce Cloud application itself. The UI flow structure in CPQ Cloud dictates the sequence of configurable attributes and whether they are presented in lists, tables etc.

QUOTING

Quoting is managed by CPQ Cloud. If quoting is enabled, a shopper or contact center agent is able to request a quote by clicking on the appropriate selection (e.g., “Request a Quote” button) on the checkout page in Commerce Cloud. Once the user has submitted the quote request, all relevant information is passed to CPQ Cloud. There, a user can approve or reject the quote. This is then passed back to Commerce Cloud, where the shopper can review and take action on the quote, e.g., accept the quote, reject the quote, or request a requote.

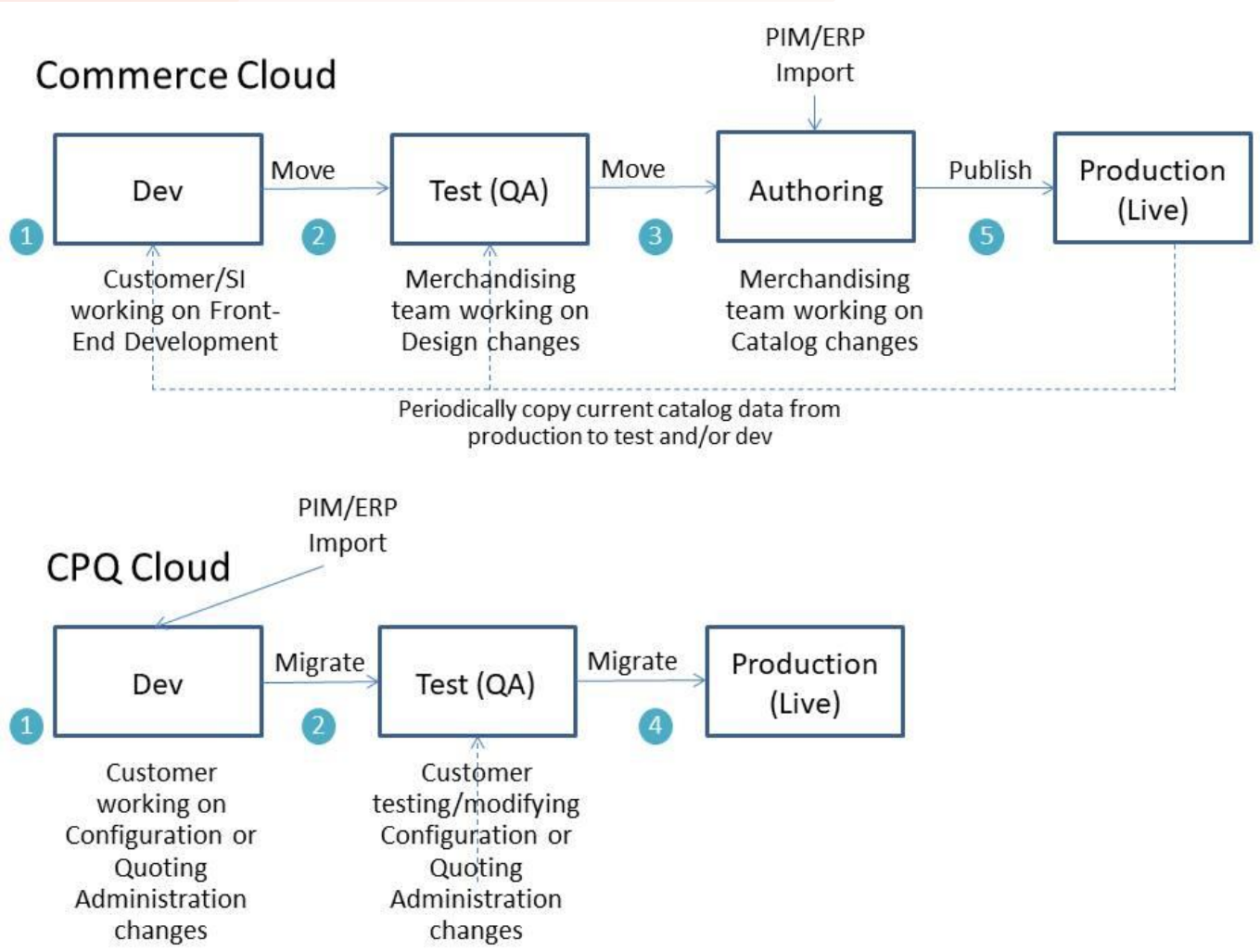
APPLYING A CONSISTENT DESIGN BETWEEN THE TWO APPLICATIONS

Commerce Cloud’s Design Studio features UIs to easily create experiences with a full drag-and-drop interface. A layout and widget framework delivers dynamic experiences based on unique needs. Widgets are modular pieces of functionality with business rules that fit into layouts. Commerce Cloud ships with 20+ out-of-the-box page layouts, and 70+ prebuilt widgets and elements. Merchants can also create their own templates, layouts and reusable widgets, layouts (20+), and themes. Widget configuration includes the ability to edit HTML, JavaScript and CSS.

CPQ Cloud uses Oracle JavaScript Extension Toolkit (JET), which is a modular open source toolkit based on modern JavaScript, CSS3 and HTML5 design and development principles. JET provides a collection of open source JavaScript libraries along with a set of Oracle contributed JavaScript libraries that make it as simple and efficient as possible to build and extend cloud-based, client-side applications. Oracle CPQ Cloud has a JET Transaction UI - a modernized and fully responsive user experience for viewing and editing quotes and sales orders on any device and in any language.

RECOMMENDED WORKFLOW MODELS

The following diagram depicts the deployment models for the two products, including systems for development, test, and live production (i.e., the shopper-facing site):



- For Commerce Cloud, front-end development should happen on development instances. Design changes, e.g., custom widget creation or modification, typically happen on a test/QA instance. These are then moved to the authoring environment.
- For CPQ Cloud, all Configuration or Quoting administration changes can happen in parallel on development or QA/test instances.
- Catalog changes are made in the authoring environment of the Commerce Cloud production instance.
- Once tested, the CPQ Cloud modifications on the QA/test instance are migrated to production.
- The Commerce Cloud changes in the authoring environment are then published to production.

FOR MORE INFORMATION

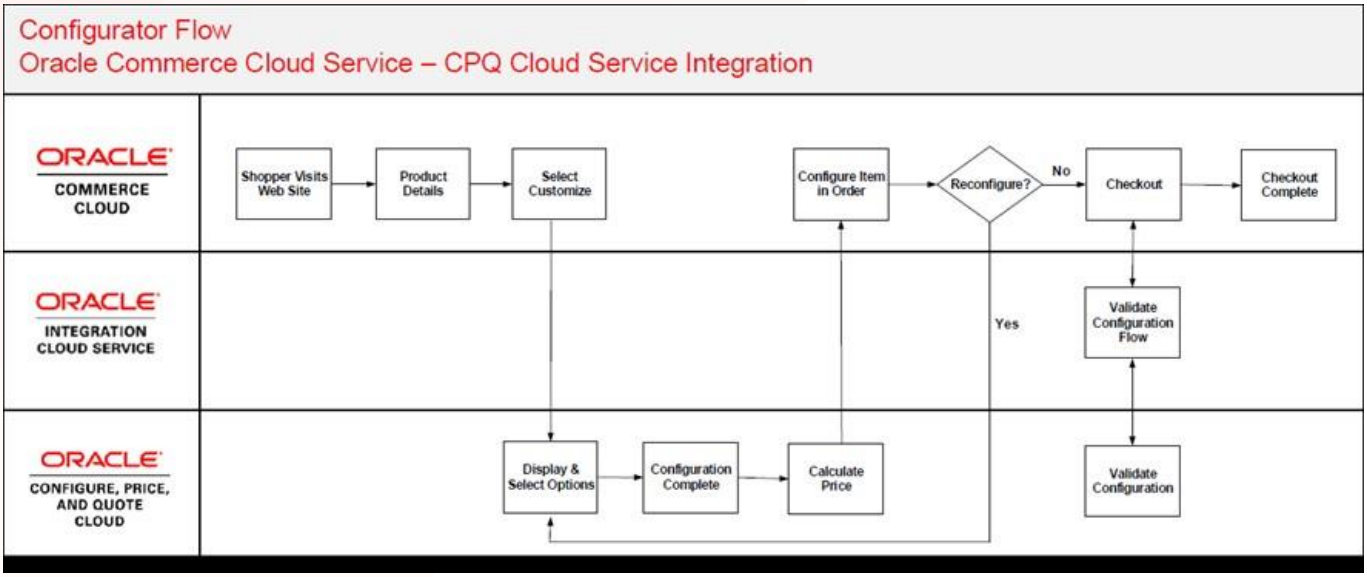
See the integration documentation:

Integrating Oracle Commerce Cloud and Oracle CPQ Cloud

https://docs.oracle.com/cd/E97801_04/Cloud.19B/Integcpq/html/index.html

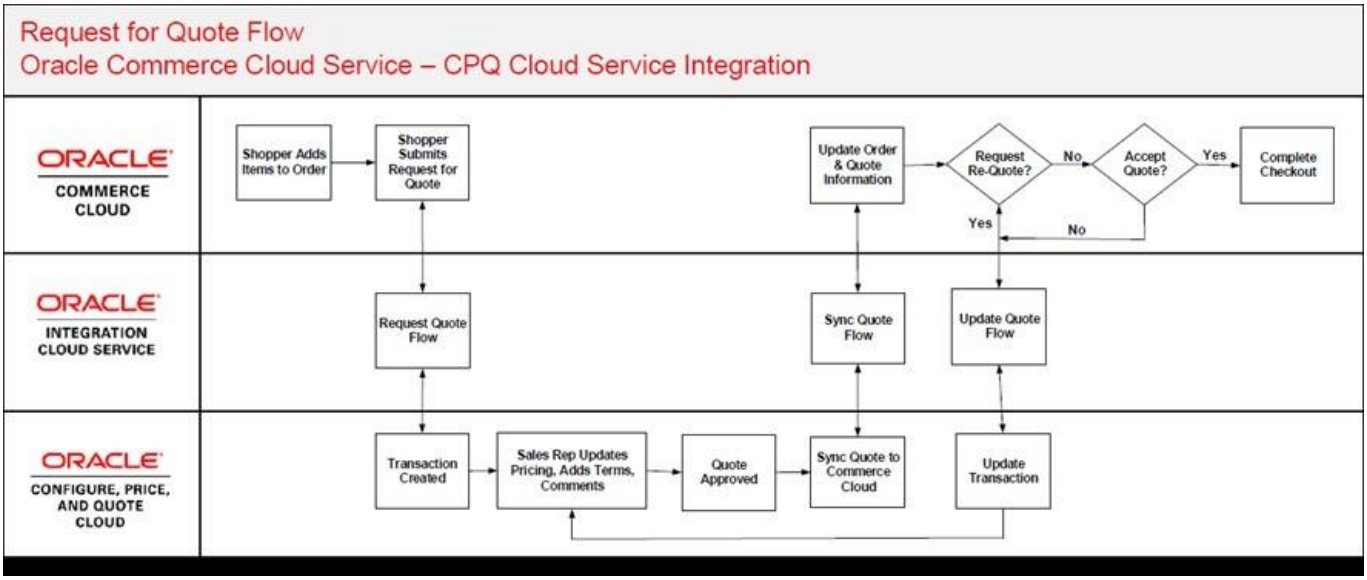
APPENDIX A: CONFIGURATOR FLOW

This appendix illustrates the flow between Commerce Cloud, OIC, and CPQ Cloud when using the Commerce Cloud-CPQ Configurator integration.



APPENDIX B: REQUEST FOR QUOTE FLOW

This appendix illustrates the flow between Commerce Cloud, OIC, and CPQ Cloud when using the Commerce Cloud-CPQ Quote integration.



APPENDIX C: GLOSSARY

Glossary

TERM	ALSO KNOWS AS	DEFINITION	EXAMPLES
Asset-Based Ordering		Asset based ordering (ABO) allows you to sell tangible assets or subscription services delivered over a period of time.	Mobile phone call and data plans, television and broadband packages, cloud storage service, music streaming service, etc.
Bill of Materials (BOM)	Order Line Item Hierarchy (Commerce Cloud)	A collection of components or items that are needed to sell or manufacture a product.	Sku50001: Laptop Sku40002: Intel Pentium i3 Sku40007: 8GB Kingston Sodimm 1600 MHz Sku40008: Hard disk 500GB Sku40011: Intel HD Graphics Accelerator 4600
Catalog		A grouping of products organized in categories for the purpose of allowing the products to be easily found.	Master Commerce Catalog Womens Shoes Sandals
Category	Collection (Commerce Cloud)	A grouping of products and other categories that exist in a catalog.	Womens Shoes Sandals
Configurable Product/SKU		A product in Commerce Cloud which is configured via punchout to CPQ Cloud.	For Product: Laptop Processor type RAM Hard Disk Graphics Card
Configuration Attributes		Configuration attributes define the characteristics of Product Families in CPQ Cloud that can be specified by the user. Much of the functionality of the Configurator requires the use of these attributes.	For Product Family: Laptops Processor type RAM Hard Disk Graphics Card
Part	SKU	The individual granular items that can be put together into a configurable model.	For Product Model: Toshiba Parts: Intel HD Graphics Media Accelerator 4600 Intel HD Graphics Media Accelerator 5600 etc.
Product	Item (CPQ Cloud)	• An item or service which may or may not have variant attributes. When the product has no variant attributes, the product and the SKU are the same. • When a product has variant attributes, the product represents a	• For Product Polo Shirt ○ SKU ABC: Variant attributes: Color=Red, Size=Large ○ SKU XYZ: Variant attributes: Color=Blue, Size=Large • For Product 25oz Dawn Detergent: ○ SKU LMN: has no Variant attributes

		model of a product in which the customer would need to give values to the variant attributes in order to arrive at a SKU.	
Product Family	Configurable SKU property (Commerce Cloud)	Products in CPQ Cloud are structured in a hierarchy, the first of which is Product Families. Product Families are broad classifications of products, typically based on industry standards, rather than a single company standard. Product Family classifications could take into consideration how you want to merchandise your products, or how you want users to navigate through the catalog.	Desktops; Laptops; Accessories
Product Group		Product Groups enable you to organize product attributes and how they appear in the Product Line Administration page. This is especially helpful when a Product Family contains a lot of attributes. You can also specify the order that groups appear on a page.	
Product Line	Configurable SKU property (Commerce Cloud)	Product Line attributes and Model attributes capture the general characteristics of the product.	Laptops
Product Model	Configurable SKU property (Commerce Cloud)	Model attributes characterize general product traits	Product Line: Laptops Product Models: Toshiba
Property		Commerce properties are the foundation for input fields for Commerce documents. They apply to a transaction as a whole, or its specific line items	A text field attribute or a menu attribute
SKU	Part (CPQ Cloud)	A product and service identification code for an item which can be ordered AND shipped, delivered, or provisioned	sku40001: Intel Pentium Dual Core

ORACLE CORPORATION

Worldwide Headquarters
500 Oracle Parkway, Redwood Shores, CA 94065 USA

Worldwide Inquiries
TELE + 1.650.506.7000 + 1.800.ORACLE1
FAX + 1.650.506.7200
oracle.com

CONNECT WITH US

Call +1.800.ORACLE1 or visit oracle.com. Outside North America, find your local office at oracle.com/contact.

 blogs.oracle.com/oracle  facebook.com/oracle  twitter.com/oracle

Integrated Cloud Applications & Platform Services

White Paper **CPQ Cloud – Commerce Cloud Integration Best Practices**
August 2019
Author: James Aucoin, Fazal Gutpa
Contributing Authors: Patrick Mc Erlean

 Oracle is committed to developing practices and products that help protect the environment