Oracle® Financial Services Cloud
Communication Service

ORACLE®

Oracle Financial Services Cloud Communication Service,

G29431-02

Contents

5   Configuring Layouts

6   Configuring a Document

7   Assembly Template Reference

8   Communication Distribution

9   Transaction Type Reference

10   Accessibility Overview

11 Best Practices

12 Release Log

13 Frequently Asked Questions

14 Financial Services Cloud Support

1

Introduction to Oracle Financial Services Communication Cloud Service

Constant change in the communications; from regulatory changes to environmental and market conditions, come at a significant cost. The Communication Cloud Service reduces the complexity, overhead and cost of making changes to ensure accurate, consistent and timely communication with your customers.

In the digital economy, customer demands personalized communication over their preferred channel and the financial institutes are transforming their ways to deliver services. Oracle Financial Services Communication Cloud Service is a communication management service, which streamlines the customer communication process by automating the communication definition, creation and delivery.

Leading collaboration tools enables to deliver clear outbound communication for better understanding. Oracle Financial Services Communication Cloud Service ensures that the proper content is delivered to appropriate recipients along their preferred delivery channel in the correct format.

Oracle Financial Services Communication Cloud Service

Oracle Financial Services Communication Cloud Service is a SaaS solution. Communications are designed online in the browser-based interface by configuring the reusable components that make up the outgoing communications and the conditional logic that determines which components are included in each outbound communication.

Benefits of Customer Communication Management Service
Following are some of the benefits of using Communication Service offered by Oracle Financial Services Cloud:

- Provides a secure and consistent environment for deployment and operation of SaaS applications.

- Provides unified security feature to all the services that are deployed on the platform.

- Provides user identity management and management of access entitlements provisioning for the users.

Accessibility
There are two aspects for accessibility considerations in Oracle Financial Services Communication Cloud Service:

- The ability to use the user interface to configure the document publishing process to produce accessible output

- The ability for the user interface to operate with accessibility features in mind

Oracle Financial Services Communication Cloud Service provides a design system, that has declarative attributes and helps in defining important properties such as alternate text.

It provides the underlying technology by being coded to meet accessibility standards. This in turn allows these products to support the use of assistive technologies, such as screen readers and screen magnifiers. The generated output can be made to meet the needs of users with different abilities.

Features

Some of the highlights of Oracle Financial Services Communication Cloud Service accessibility features include:

- Alternative text for graphics

- Background and foreground color contrasting

- PDF/UA-1 compliant output

Oracle's goal is to ensure that specially challenged users can perform the same tasks and access the same functionality as other users.

For more information about accessibility laws, standards, and regulations, refer to Oracle's Accessibility Program website.

Accessing the Financial Services Cloud

1. Open the Welcome e-mail that you have received after you subscribe the Financial Services Cloud.

2. Click the URLs provided in the Welcome-email and access the Financial Services Cloud.

   The URLs are accessible only through secure hypertext protocols (HTTPS) which uses (TLS) v1.2 transport layer security.

3. Use the credentials specified in the Welcome e-mail to log in to the Oracle Financial Services Cloud.

Configuring Communication Cloud Service

Configuration defines the structural components that are assembled into a final output. Configuration is done in the platform independent user interface using a browser or through REST API calls from an external client. This topic focuses on configuration through the user interface. Refer to the service's swagger document for information on using the REST API.

Configuration access is controlled by authentication and fine-grained authorization control as outlined in the Security Management and Entitlements Management sections.

Overview

The Financial Services Communication Cloud Service configuration is a hierarchy of structures composed of Package, Document, Layout and Content which are further controlled by Style and Font configuration.

Table 1-1   Structures

Structure	Description
Package	Package is the top most structure in the hierarchy and contains the potential deliverable in the form of Documents. Packages also contain the business logic to determine what should be produced and the data mappings to externally sourced data that is used in business logic and to populate content.
Document	Document is a deliverable item that contains one or more Layouts that define the structure of the Document.
Layout	Layout is a structural component that contains one or more Content configurations to support positioning of the output within the Document.
Content	Content is the visible content that appears in the output. Content can contain strings of text and numbers as well as graphics and variable data.

Table 1-1 (Cont.) Structures

Structure	Description
Styles	Styles are collections of attributes that define the appearance of the output. Style attributes include font family, font style, font size, color, and background color as well as others. Styles can be created for global use an associated to a Document, Layout or Content.
Fonts	Fonts are references to font files which define appearance of characters that are displayed.

Communication Cloud Service Configuration
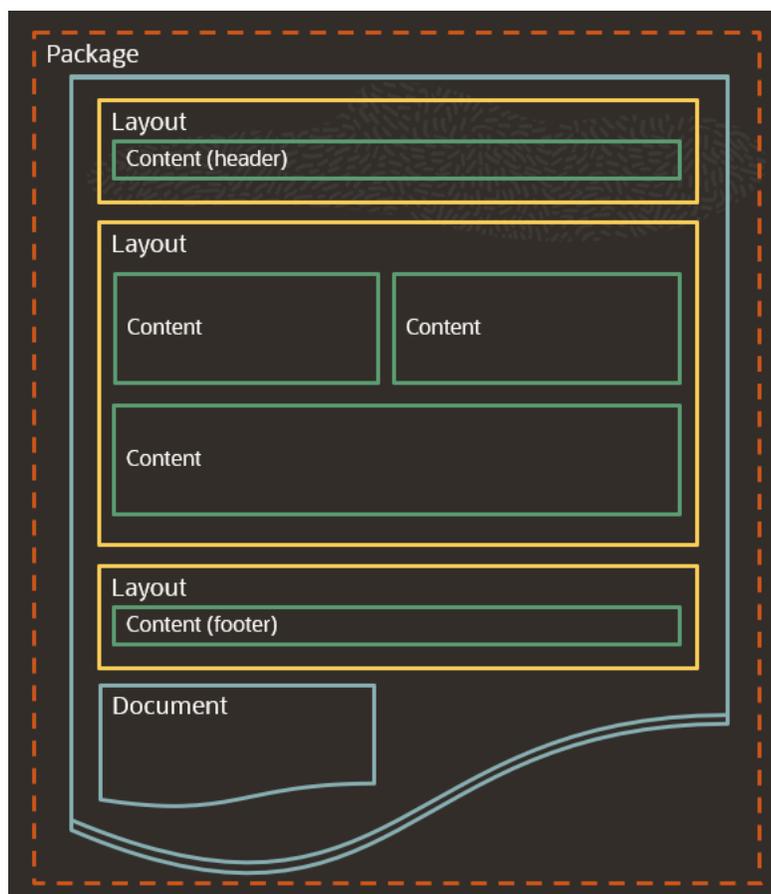
Versioning

Packages, Documents and Content can all be configured with one to many versions. Versions support an Active and Inactive date to control when a version will be used in assembly.

Association

The relationships depicted and discussed in the section above are created though Association.

Assembly

Assembly is the process of combining data with configuration to produce output in the form of PDF, HTML, CSV etc. It can be initiated by making a REST API call to the `CommunicationRec`

which can be called from any client following authentication and authorization. Refer to the service's swagger for information on using the REST API.

Assembly access is controlled by authentication and fine-grained authorization control as outlined in the Security Management and Entitlements Management sections.

Assembly can also be initiated through the Preview option on a Package Version in the user interface.

The data passed to Assembly can be any JSON structure. The data structure is mapped to customer defined field names and rules governing what is assembled in the Assembly Template attached to the Package Version. Refer to the Assembly Template Reference for additional information.

Figure 1-1   Assembly Process
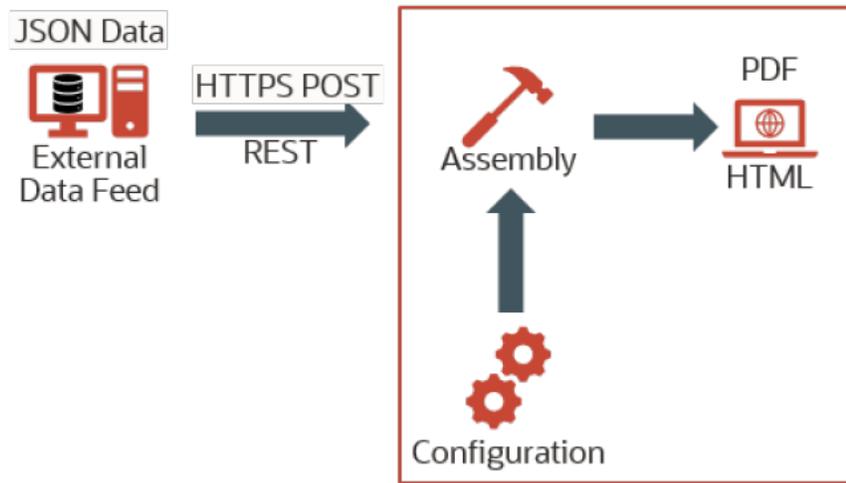
2
Configuring Styles

Styles are collections of attributes that define the appearance of the output. Style attributes include font family, font style, font size, color, and background color as well as others. Styles can be created for global use and associated to a Document, Layout or Content.

> **✎ Note:**
>
> Not all output formats support all style specifications. If a style specification is not supported by the output type the default value will be applied.

Style Attributes in Communication Cloud Service

Communication Cloud Service provides a wide range of style attributes for designing contents, layouts and documents that you want to create.

The following table lists the style categories and the attributes that you can configure:

Table 2-1   Style Attributes in Communication Cloud Service

Category	Style Attribute
Accessibility	**Ignore Content** lets you configure to ignore content such as barcode, images etc. by reader tools.
Additional	Set the Collapse space property to define collapsing extra space either **Horizontally** or **Vertically** or **None**.
Background	**Background Color** property specifies the background color of the window. Color is specified by its RGB value and can be selected in the user interface with a color wheel. You can associate a Background image with the style.

Table 2-1   (Cont.) Style Attributes in Communication Cloud Service

Category	Style Attribute

Border	• **Border**
	Border sets the style, color and width of all the four borders of the document.
	• **Border-style**
	Border style property sets the style of the border (Dashed, Dotted, Double, Groove, Hidden, Inset, None, Outset, Ridge, Solid).
	• **Border-color**
	Border color property sets the color of the border.
	• **Border-bottom**
	Border bottom property sets the bottom border style.
	• **Border-bottom-color**
	Border-bottom-color property sets the color for bottom border.
	• **Border-bottom-style**
	Border-bottom-style property sets the style of the bottom border.
	• **Border-bottom-width**
	Border-bottom-width attribute sets the width of the bottom border.
	• **Border-top**
	Border-top property sets the style of the top border.
	• **Border-top-color**
	Border-top-color style property sets the color of the top border.
	• **Border-top-style**
	Border-top-style property sets the style of the top border.
	• **Border-top-width**
	Border-top sets the style, color and width of the top border.
	• **Border-right**
	Border-right property sets the style of the right-side border.
	• **Border-right-color**
	Border-right-color property sets the color of the right-side border.
	• **Border-right-style**
	Border-right-style property sets the style of the right-side border.
	• **Border-right-width**
	Border-right-width sets the width of the right border.
	• **Border-left**
	Border-left property sets the style of the left-side border.
	• **Border-left-color**
	Border-left-color property sets the color of the left-side border.
	• **Border-left-style**
	Border-left-style property sets the style of the left-side border.
	• **Border-left-width**
	Border-left-width sets the width of the left border.
	• **Border-radius**
	Border Radius can be implemented on Content, Layout and Document. The Border Radius attribute is dependent on the Border Style attribute. After you specify the radius, it is applied to all the corners. You can configure the following types of border styles:
	  – Solid
	  – Dashed
	  – Dotted
	  – Double
	  – Ridge
	  – Groove
	  – Inset
	  – Outset
	  – Hidden
	  – None

Table 2-1   (Cont.) Style Attributes in Communication Cloud Service

Category	Style Attribute
	To know more about the behavior of border radius across different border styles in HTML and PDF outputs, refer to the Border Radius table. • **Border-top-left-radius** The Border-top-left-radius property rounds the top-left corner by the specified radius. • **Border-top-right-radius** The Border-top-right-radius property rounds the top-right corner by the specified radius. • **Border-bottom-right-radius** The Border-bottom-right-radius property rounds the bottom-right corner by the specified radius. • **Border-bottom-left-radius** The Border-bottom-left-radius property rounds the bottom-left corner by the specified radius. Read more about Border radius in the following table: Border
Grid	**Grid-template-areas** defines the rows of named areas that define the grid pattern. Using the named grid items, you can define and preview the grid area structure by specifying how to display the rows and columns. If you repeat the name of a grid area, it results in spanning of content in those cells. The **Column-gap** attribute sets the space between columns. The **Row-gap** attribute sets the space between rows.
List	• **List-level** The List-level property sets the level of the list element. • **List-style-type** The List-style-type property sets the style type for the list element. • **List-style-position** The List-style-position property sets the position for the list element. • **List-text-prefix** The List-text-prefix sets the string to place before the marker (circle, square, etc.) of a list item. **✎ Note:** The default indent for a list is set to 40px.
Margin	• **Margin** Margin attribute lets you set the margin size and unit around the document. • **Margin-bottom** The Margin-bottom sets the margin area on the bottom. Margin is the space around an item outside of its border. • **Margin-left** The Margin-left sets the margin area on the left. Margin is the space around an item outside of its border. • **Margin-right** The Margin-right sets the margin area on the left. Margin is the space around an item outside of its border. • **Margin-top** The Margin-top sets the margin area on the top. Margin is the space around an item outside of its border.

Table 2-1   (Cont.) Style Attributes in Communication Cloud Service

Category	Style Attribute
Padding	• **Padding** Padding sets the Padding area of the specified size and unit around the document. • **Padding-bottom** The Padding-bottom sets the Padding area on the bottom. Padding is the space around an item inside its border. • **Padding-left** The Padding-left sets the Padding area on the left. Padding is the space around an item inside its border. • **Padding-right** The Padding-right sets the Padding area on the left. Padding is the space around an item inside its border. • **Padding-top** The Padding-top sets the Padding area on the top. Padding is the space around an item inside its border. **Note:** Default Table cell padding is set to 12px (left side and right side).
Page	The **Page-size** sets the size and orientation of the box which is used to represent a page. This size corresponds to the target size of the printed page if applicable.
Text	• **Font-family** Font Family is a set of fonts that have a common design. This property is used to specify the Font Family. Available Font Families are based on the fonts imported as Font Configuration • **Font-size** Font Size property sets the size of the text. • **Font-style** Font Style property specifies the style for text (Regular, Italic, Bold or Bold Italic). Available Font Styles are based on the fonts imported as Font Configuration. • **Font-weight** Font weight property sets how thick or thin characters in text should be displayed. **Note:** The default font size is set to 10pt. See Managing a Font.

Table 2-1   (Cont.) Style Attributes in Communication Cloud Service

Category	Style Attribute

Transform	**Scale**
	Lets you resize the image, and barcode content.
	Size
	• **Width**
	  Sets the object width. If no Width is specified, the Width is set to the original.
	• **Height**
	  Sets the object height.
	• **Min-width**
	  Sets the minimum width of the object.
	• **Min-height**
	  Sets the minimum height of the object.
	• **Max-width**
	  Sets the maximum width of the object.
	• **Max-height**
	  Sets the maximum height of the object.

Elements	**Paragraph**
	You can either select (All, First, Last, Odd or Even) and/or enter paragraph number and/or paragraphs range with hyphen as a delimiter.
	For example: 3-10
	Table
	You can select how you want to implement styling for a table. This can include styling table header, row header, a cell, table rows, or table columns.
	• Table
	  Select All if you want to apply styling to all the table.
	• Table Row
	  You can either select (All, First, Last, Odd or Even) or can specify table row number(s) and/or range(s). For example: 3-10.
	• Table Column
	  You can either select (All, First, Last, Odd or Even) or can specify table column number(s) and/or range(s). For example: 3-10.
	• Table Cell
	  Enter a cell number or a range of cells with comma as a delimiter. For example: 2,4 or 3-10,2-5 or 3-9,2 or 3,5-12.
	• Table Header Row
	  Select All if you want to apply styling to all the table header rows.
	• Table Header Column
	  Select All if you want to apply styling to all the table header columns.

> **Note:**
>
> For email distribution, do consider the best practices and workarounds mentioned in the Email Configuration Matrix topic.

The following table lists the behavior of border radius across different border styles in HTML and PDF output:

Table 2-2   Border Radius across different border styles in HTML and PDF output

Border Style	HTML	PDF
Solid	Border is displayed with radius.	Border is displayed with radius.
Dashed	Border is displayed with radius.	Border is displayed with radius.
Dotted	Border is displayed with radius.	Border is displayed with radius.
Double	Border is displayed with radius.	Border is displayed leaving an empty space in the place of radius.
Groove	Border is displayed with radius.	Border is displayed leaving an empty space in the place of radius.
Inset	Border is displayed with radius.	Border is displayed leaving an empty space in the place of radius.
Outset	Border is displayed with radius.	Border is displayed leaving an empty space in the place of radius.
Ridge	Border is displayed with radius.	Border is displayed leaving an empty space in the place of radius.
Hidden	Border is not displayed.	Border is not displayed.
None	Border is not displayed.	Border is not displayed.

Creating a Style

The **Styles** attribute lets you define a style for contents, layouts, and documents that you want to create.

To create a Style:

1. In **Oracle Financial Services Cloud** application dashboard, select a **Config ID**.

2. On the **Dashboard**, select **Application Navigation**.

3. On the navigation pane, select **Configuration** and then select **Communication**.

4. From **Communication** , select **Styles**.

5. On the **Styles** page, select **Create**.

6. Add the following information:

Field	Description
Name	Enter a name for the **Style**.
Long Name	Enter **Style** name.
Description	Enter **Style** description.

7. In **Style Attributes**, you can configure the following attributes. For the complete list of attributes, refer Table 2-1

8. In the **Elements** select the following:

Table 2-3   Elements

Element	Description
Paragraph	The paragraph element lets you style a paragraph element in your text content.

Table 2-3   (Cont.) Elements

Element	Description
Table	You can apply style to a table using combination and define at a granular level of cells, rows and columns.

9. After setting the **Style** configuration, select **Finish**.

Editing a Style

You can edit a **Style** that you have already configured.

To edit a style

1. Log in to **Oracle Financial Services Cloud** application with administrator credentials.

2. Select a **Config ID** for which you want to edit a **Style** configuration.

3. From the **Dashboard**, select **Application Navigation**.

4. From the **Navigation** pane, select **Configuration** and then select **Communication**.

5. From the **Attributes** list, select **Styles**.

6. Search and select a **Style** that you want to edit in either of the following ways:

    •   Enter at least three characters of the **Style** name and select **Search**.

    •   Select **View All** to list all the existing styles.

7. Select **More options** and then select **Go to Details**.

8. From the **Style** details page, expand **Identification** or **Style Attributes** and select **Edit Identification** or **Edit Style Attributes**.

9. Edit the details and select **Update**.

Styling Tables

Table Element styling provides you greater control on styling tables for your content. It provides you with the flexibility to style columns, rows, individual cells, cell range, header rows, and header columns. The following topic lists some of the examples to showcase how you can style tables:

Styling the even rows of a table with a background color

Create a Layout by associating a Content having table with 4 rows and 3 columns. Define a style with "Background" styling attribute as Blue Color and "Table Row" Elements as "Even". Associate a Style to a Layout by defining a Style Class Name and then apply the Style Class Name to a Content record.

Styling a Table row header and last row with same background color

Create a Layout by associating a Content having a table with 5 rows and 3 columns and mark the first row as a table row header. Define a style with "Background" styling attribute as Grey Color and "Table Row" Elements as "Last" and "Table Header Row" Elements as "All". Associate a Style to a Layout by defining a Style Class Name and then apply the Style Class Name to a Content record.

Styling individual cells of a table with background color

Create a Layout by associating a Content having table with 7 rows and 4 columns and mark the first row as a table row header. Define a style having "Background" styling attribute as Green Color and "Table Cell" Elements as "2,2" and "2,4". Define another style having "Background" styling attribute as Blue Color and "Table Cell" Elements as "5,1" and "5,3". Associate the Styles to a Layout by defining a Style Class Name and then apply the Style Class Names to a Content record.

Styling range of cells in a table with background colors

Create a Layout by associating a Content having table with 7 rows and 4 columns and mark the first row as a table row header. Define a style having "Background" styling attribute as Red Color and "Table Cell" Elements as "2,2-4" (the style applies to the cells range from row-2 column-2 to row-2 column4). Define another style having "Background" styling attribute as Blue

Color and "Table Cell" Elements as "6,2-4" (the style applies to the cells range from row-6 column-2 to row-6 column4). Associate the Styles to a Layout by defining a Style Class Name and then apply the Style Class Names to a Content record.

Adding Style Classes

Style Class is a collection of style attributes that you can create and implement on a Document, Content or Layout. You can combine style classes and style attributes to customize the output.

In case more than one style classes are associated to a Document, Content or Layout they are implemented in alphabetical order. Not all output formats (PDF/HTML/CSV/JSON) support all style specifications. If a style specification is not supported by the output type, then the default value will be applied.

For more information on default values refer to: Style Attributes in Communication Cloud Service topic.

Adding Style Classes

1. Log in to Oracle Financial Services Cloud application with your credentials and select an active **Config ID**.

2. From the Dashboard, select Application Navigation.

3. From the left Navigation pane, select **Configuration** and then select **Communication**.

4. From the Navigation pane, you can select either Content, Layout, or Document and select **Add**.

5. While adding new Content, Layout, or Document on the **Manage Associations** page, select **Add** from the Style **Optional** section.

6. In the **Adding Style** page, you can select any of the following:

    Table 2-4   Add Style

Field	Description
Create New Style	Select this to create new style.
Use Existing Style(s)	Select this to use an existing new style.

7. Select **Create New Style** and select **Continue**.

8. On the Add Identification page, enter the following details and select **Continue**:

Table 2-5   Add Identification

Field	Description
Name	Enter a Name for new Style that you want to create.

> **Note:**
>
> It is recommended to create Style Classes with unique names.

Field	Description
Long Name	Enter Long Name for new style.
Description	Enter description for the style.

> **Note:**
>
> Ensure that you configure unique Style Class Name for every Style. If multiple Styles records share the same Style Class Name, it will impact the desired outcome.

9. On the **Style Attributes** page, you can add the **Style Class** name and select **Add** against **Add Attribute**.

10. From the **Attributes** page, select the attributes that you want to add to the **Style Class** and select **Continue**.

> **Note:**
>
> You can add the Style Class name and manage the order of the style attributes if you add more than one style attribute.

The newly created Style Class is added to Content, Layout or Document that you are creating. For future use, you can find the newly added Style Class in the Style Class list.

3

Configuring a Font

Introduction

Font is a set of characters (such as, letters, numbers, symbols) defined by the features such as size, weight, style, and spacing, that share a specific style, size or consistent design. Fonts are a fundamental component of content development in Communication Cloud Service. They define how characters of the content are displayed in communication output.

Communication Cloud Service lets you import font files, and associate them with specific style configurations to manage communication across various output formats such as, PDF, CSV, and HTML.

Communication Cloud Service supports the following types of fonts:

- TrueType font (`.ttf` format) - This font is commonly used in print and digital applications.
- OpenType font (`.otf` format)- This font includes advanced typographic features, such as ligatures and alternate characters.

Fonts in Communication Cloud Service can be used in the following ways:

- Configuring a default font
- Configuring a font and applying it using the Style configuration

The default font in Communication Cloud Service is applied when no specific style (font family, weight and style) is applied to the Document, Content and Layout configurations. If you choose to configure styles and apply them to the Document, Content and Layout configurations, then those styles takes the precedence and overrides the default font settings.

It is recommended to configure at least four default fonts (Regular, Bold, Italic, Bold-italic) for generating the communication output. This ensures that all texts are styled and displayed properly.

The recommended naming convention of the default fonts is as follows:

- *Default Regular*
- *Default Bold*
- *Default Italic*
- *Default Bold Italic*

Configuration Movement

Configuring Font follows the configuration movement process; that is, if you are importing a font in one environment (Non-Production), you can move the configuration to different environments (Pre-Production and Production).

See Understanding Configuration Movement for more information.

Managing a Font

Introduction

You can import fonts in Communication Cloud Service. Fonts in Communication Cloud Service can be used either to configure a default font, or to configure a font and apply styles to it. When generating communication outputs, the default font is applied, only if the style (font family, weight and style) is not applied to the Document, Content and Layout configurations. The applied styles take the precedence and override the default font settings.

Prerequisites

> **Note:**
>
> Ensure that you complete the prerequisites before importing a font in Communication Cloud Service.

Prerequisites	Details
Set the Config ID	'Active' Config ID is set and logged in user has the requisite entitlements. Ensure that all the dependent configurations and associations must be part of same open Config ID. See Creating Config ID
Availability of fonts	Ensure that your fonts are available to import in the application.

> **Note:**
>
> Ensure that you review and comply with End User License Agreement (EULA) for the fonts that you plan to use with Communication Cloud Service.
> The default font name must start with *Default*. The recommended naming convention is as follows: *Default <Font Style>*. For example: *Default Regular*.

Importing a Font

To import a font, follow these steps:

1. Access and log in to the Oracle Financial Services Cloud application.

2. Select a **Config ID** for which you want to import a font.

3. From **Menu**, select **Communication** and then select **Font**.

4. On the **Communication Font** landing page, select **Create**.

5. In **Font Upload** section, you can either browse and select the required font, or drag and drop the font that you want to import.
   You can import either TrueType font (`.ttf` format) or OpenType font (`.otf` format) in Communication Cloud Service.

> **Note:**
>
> The file size limit is 30MB.

6. From the **Upload Successful** dialog box, you can select either one of the following and complete rest of the actions:

   • **Save&Exit**: This uploads and save the font, and return to the landing page.

   • **Save&Continue**: This uploads the font, and displays the **Name** and **Long Name** in **Basic Information** section. If required, you can modify the basic information. The **Active Date** is set to the current date when the font is imported. After modification, select **Save** to save the details, or **Save&Exit** to save and return to the landing page.

Editing a Font

After importing the font, you can modify the basic information of the font. You can edit the basic information of the font in two ways:

From Communication Font Landing Page:

1. In the **Action** column, select **Edit** from **More Menu** corresponding to the font name that you want to edit.

From Communication Font Summary Page:

1. On the **Communication Font** landing page, hover over the name of the font and select it.

2. From the Font's **Summary** page, select **Edit**.

In the **Update Communication Font** page, you can replace the existing font or modify the details of existing font. It is recommended to replace an existing font with another font family only if no style configuration has been created using the existing font.

Select **Save** to save the changes, or **Save&Exit** to save the details and return to the landing page.

Deleting a Font

You can delete a font in two ways:

From Communication Font Landing Page:

1. In the **Action** column, select **Delete** from **More Menu** corresponding to the font name that you want to delete.

2. In the dialog box, select **Delete** to confirm.

From Communication Font Summary Page:

1. On the **Communication Font** landing page, hover over the name of the font and select it.

2. From the Font's **Summary** page, select **Edit**.

3. In **Update Communication Font** page, from **Actions**, select **Delete**.

4. In the dialog box, select **Delete** to confirm.

Related Topics

• Creating a Style

4

Content Configuration

Content is the visible content that appears in the output. Content Configuration can be graphic or text:

- String of text and numbers
- Graphics
- Variable data

Every Content configuration comprises of a base content and its version. You can create new versions of a Content from existing Content versions. Each Content version must have a unique name for identification which is used for packaging the communication output. You can also control when a content version will be used in a Package Assembly by setting the Active and Inactive dates.

In case of graphics, Communication Cloud Service supports PNG and SVG (Scalable Vector Graphics) format which you can upload using the user interface. While choosing between PNG and SVG images, you should consider following criteria:

- PNG images are pixel based whereas, SVG images are vector images.
- You can use PNG images if image has lot of colors.
- SVG images are made up of lines and shapes that can be scaled to any size without losing quality. These images have high quality and this file format is useful when you want to re-size images such as logos and icons.

For text type content, syntax can be used to reference variable data and support conditional inclusion logic. The data identifiers used in the referenced tags are defined in the Package Version Configuration's Assembly Template as Fields.

Additional details on defining the identifiers (Fields) and mapping them to the client's JSON data file is available in the Assembly Template Reference section. The Content author does not need to be familiar with the data structure or the data mapping in order to use the Fields. The author will need to know the Field's purpose.

Predefined Fields

The Service provides a collection of predefined fields that provide access to data provided by the Service in addition to any field definitions defined in the Assembly Template. These fields are used in the same manner as user defined fields.

Data Syntax

Content Configuration can be graphic, barcode, number, date, or text. Syntax can be used to reference a variable data and also support conditional inclusion logic.

The variable data identifiers used in the referenced tags are defined in the Package Version Configuration's Assembly Template as Fields. In order to use Fields, as a Content author you must be familiar with the purpose of the Fields.

Assembly Template Reference

Data in the source file may not be formatted in the desired presentation format. The data "markers" may contain an optional "format" attribute which will adjust the incoming data to match the desired presentation format.

Example:

```
<comms-data>$Data{"Id":"Premium","Type":"Decimal","Format":"($#,##0.00)"}</comms-data>
<comms-data>$Data {"Id":"PolicyExpiry","Type":"Date","Format":"MM-dd-yyyy"}</comms-data>
```

The content may contain "markers" that indicate places where data will be substituted for the markers. The marker is expressed as an HTML custom tag: <comms-data/> that contains a JSON object named "$Data". The JSON $Data object has an Id attribute. The Id attribute is the name of the Field defined in the Assembly Template.

Example:

```
<comms-data>$Data{"Id":"OwnerName"}</comms-data>
<comms-data>$Data{"Id":"CancelledCheque", "Type":"Image"}</comms-data>
 <comms-data>$Data{"Id":"PaymentInfo", "Barcode":"QR"}</comms-data>
```

Related Topics

• [Assembly Template Reference](#)

Formatting Numbers

Data Syntax

Content may contain "markers" that indicate places where data will be substituted for the markers. The marker is expressed as an HTML custom tag: <comms-data/> that contains a JSON object named "$Data". The JSON $Data object has an Id attribute.

The Id attribute is the name of the Field defined in the Assembly Template.

Example: <comms-data>$Data{"Id":"PolicyHolder"}</comms-data>

Presentation Formatting

Data in the source file may not be formatted in the desired presentation format. The data "markers" may contain an optional "format" attribute which will adjust the incoming data to match the desired presentation format.

Example:

```
<comms-data>$Data{"Id":"Premium","Type":"Decimal","Format":"($#,##0.00)"}</comms-data>
```

Structure

A "format" attribute can have up to four sections of masking characters, separated by semicolons. The sections define the format for positive numbers, negative numbers, zero values, and text, in that order.

POSITIVE;NEGATIVE;ZERO;TEXT

Each section is a valid selection of masking characters that is applied to the data based on the data's value being a positive number, negative number, zero or a non-numeric.

Example:

(#,##0.00);(#,##0.00);0.00;'sales '@

Example:

<comms-data>$Data{"Id":"Premium", "Format":"(#,##0.00);(#,##0.00);0.00;'sales '@"}</comms-data>

> **Note:**
>
> All sections are not required.

- One section: The format will apply to all numbers

- Two sections: The first section will apply to non-negative numbers (>=0) and the second will apply to negative numbers (<0).

- Three sections: The first will apply to positive numbers (>0), the second to negative numbers (<0) and the third to zero (=0).

- Four sections: The first will apply to positive numbers (>0), the second to negative numbers (<0), the third to zero (=0) and the fourth to non-numerics.

Blank sections may be included and will result in no output for data that meets the blank sections criteria. Blank sections must be identified using the semicolon (;) delimiter.

Example:

POSITIVE;;;TEXT would result in the POSITIVE section being applied to positive numbers (>0), no output for zero (-0) or negative (<0) numbers and the TEXT section applied to non-numerics.

If the data value is non-numeric (alpha) and there is no TEXT section no data will be displayed in the output. E.g. Given a pattern of #,##0.00 and data of "hello" the output would be empty.

In the absence of a NEGATIVE section the negative sign (-) is displayed for negative numbers. E.g. Given a pattern of #,##0.00 and data of -23456 the output would be -23,456.00.

In the presence of a NEGATIVE section the negative sign (-) is NOT displayed for negative numbers. E.g. Given a pattern of #,##0.00;#,##0.00 and data of -23456 the output would be 23,456.00.

Numeric Formatting

Numeric formatting can be applied to any incoming string or numeric data.

Data

Table 4-1   Masking Characters

Mask	Purpose	Special Conditions and Notes
0	Displays a zero if there is no digit; otherwise displays the digit.	A 0 will display a zero digit so numbers less than 1 and greater than -1 will display a leading zero if there is a 0-place holder to the left of the decimal.

Table 4-1   (Cont.) Masking Characters

Mask	Purpose	Special Conditions and Notes
#	Displays the digit in the position or nothing if there is no digit.	A # will not display a zero digit so numbers less than one and greater than -1 will display without a leading zero before the decimal if there are only # place holders to the left of the decimal.
.	Displays the decimal point of the number within the pattern.	The number will be rounded to the number of placeholders (# or 0) using the default Java round() rle that follows the "Round half away from zero" methodology. If the fraction of x is exactly 0.5, then y = x + 0.5 if x is positive, and y = x – 0.5 if x is negative. For example, 23.5 gets rounded to 24, and –23.5 gets rounded to –24.
		Extra digits to the left of the decimal are always displayed.
		A # will not display a zero digit so numbers less than one and greater than -1 will display without a leading zero before the decimal if there are only # place holders to the left of the decimal.
		A 0 will display a zero digit so numbers less than 1 and greater than -1 will display a leading zero if there is a 0-place holder to the left of the decimal.
		If there is no dot (.) in the mask numbers will be rounded to a whole number following the same rounding methodology as noted above.
,	Displays the thousands separator in a number when enclosed in a combination of 0 and/or # markers.	The comma (,) will be ignored if not placed in the thousands position within the mask set.
'text'	Any alphanumeric strings between two single quotes will be displayed verbatim.	Single quote marks (') must be used. Double quote marks (") are not valid. The variation is adopted to facilitate JSON and HTML syntax that is being used.
%	Will display the percent symbol and will convert the data to a percentage of 100.	Converts the incoming data to a percentage of 1 so .04 will display as 4% and 4 will display as 400%.
$	Will display the currency symbol based on the locale.	If no locale is specified, the U.S. dollar sign will be displayed.
+	Will display the plus sign	
=	Will display the equal sign	
-	Will display the minus sign	
(	Will display the left parenthesis	
)	Will display the right parenthesis	
	Will display a single space	
@	Will display the text value of the incoming data.	

Examples

The following table illustrates the impact of different numeric format strings on incoming data.

Table 4-2   Numeric format strings and incoming data

Data/Format Structure	#,###.##	#,###.##0	#,###.#	#,###
123456.78	123,456.78	123,456.78	123,456.80	123,457

Table 4-2   (Cont.) Numeric format strings and incoming data

Data/Format Structure	#,###.##	#,###.##0	#,###.#	#,###
123456	123,456	123,456.00	123,456	123,456
-123456.78	-123,456.78	-123,456.78	-123,456.80	-123,457
-123456	-123,456	-123,456.00	-123,456	-123,456
Hello				
0	0	0	0	0
Data/Format Structure	**#**	**#,###.00;(#,###.00)**	**#,###.00;(####.00)**	**$###0;$(###0)**
123456.78	123457	123,456.78	123,456.78	$123,457
123456	123456	123,456.00	123,456.00	$123,456
-123456.78	-123457	-123,456.78	-123456.78	($123,457)
-123456	-123456	-123,456.00	-123456	($123,456)
Hello				
0	0	0	0	0
Data/Format Structure	**'Good';'Bad'**	**'Pos: '#;'Neg: '#;'Zero'**	**'Pos: '#.0;'Neg: '#.0;'Zero';'Other'**	**#;#;#;@**
123456.78	Good	Pos: 123457	Pos: 123456.8	123457
123456	Good	Pos: 123456	Pos: 123456.0	123456
-123456.78	Bad	Neg: 123457	Neg: 123456.8	123457
-123456	Bad	Neg: 123456	Neg: 123456.0	123456
Hello			Other	Hello
0	Good	Zero	Zero	0
Data/Format Structure	**+#;-#;'x';'t: '@**	**+#**	**-#**	
123456.78	123457	123457	-123457	
123456	123456	123456	-123456	
-123456.78	-123457	-123457	123457	
-123456	-123456	-123456	123456	
Hello	t: Hello			
0	x	+		

Formatting Date and Time

Data Syntax

Content may contain "markers" that indicate places where data will be substituted for the markers. The marker is expressed as an HTML custom tag: <comms-data/> that contains a JSON object named "$Data". The JSON $Data object has an Id attribute.

The Id attribute is the name of the Field defined in the Assembly Template.

Example: <comms-data>$Data{"Id":"PolicyHolder"}</comms-data>

Presentation Formatting

Data in the source file may not be formatted in the desired presentation format. The data "markers" may contain an optional "format" attribute which will adjust the incoming data to match the desired presentation format.

Example:

```
<comms-data>$Data {"Id":"PolicyExpiry","Type":"Date","Format":"MM-dd-yyyy"}</
comms-data>
```

Date Formatting

- **Data**
  JSON does not support a date type. Data must be provided as a string value. It must be in the format of yyyy-MM-dd following the ISO standard where the first four characters are year followed by a dash followed by 2-digit month followed by a dash followed by 2-digit day. If the incoming 'date' is not in this pattern the subsequent 'format' attribute will be ignored and the data will be displayed as provided.

- **Masking Characters**

Mask	Purpose	Special Conditions & Notes
M	Displays the month as a number without a leading zero.	
MM	Displays the month as a number with a leading zero when appropriate.	
MMM	Displays the month as an abbreviation (Jan to Dec).	First letter capitalized.
MMMM	Displays the month as a full name (January to December).	First letter capitalized.
MMMMM	Displays the month as a single letter (J to D).	First letter capitalized.
d	Displays the day as a number without a leading zero.	
dd	Displays the day as a number with a leading zero when appropriate.	
E	Displays the day of week as an abbreviation (Sun to Sat).	First letter capitalized.
EEEE	Displays the day of week as a full name (Sunday to Saturday).	First letter capitalized.
EEEEE	Displays the day of week as a single letter (S to S).	First letter capitalized.
yy	Displays the year as a two-digit number.	
yyyy	Displays the year as a four-digit number.	

> **Note:**
>
> Any other non-numeric character within the mask will be treated as a string literal unless listed below.

The following existing numeric masks will also apply in the same manner as previously described when mingled with date masks.

Mask	Purpose	Special Conditions & Notes
'*text*'	Any alphanumeric strings between two single quotes will be displayed verbatim	This is a variation from similar patterns which requires double quotes. The variation is adopted to facilitate JSON and HTML syntax that is being used.

> **Note:**
>
> Any non-numeric character within the mask will be treated as a string literal unless listed as a "special character" in this list.

> **Note:**
>
> Additional masking characters defined at in the Numeric section do not apply to date mask strings (e.g. #, ?, 0 have no special meaning).

Examples

If date value in incoming data is 2021-01-23 the output for each format example is as follows:

Format Structure	Output
MM dd yyyy	01 23 2021
MMMM	January
MMMM dd	January 23

DateTime Format

DateTime

Communication Cloud Service supports "DateTime" type field. The input date timestamp feed must follow the ISO standard data format as shown in below table so that the Communication Cloud Service can apply the time formatting.

Following is the syntax to define time formatting functionality within a <comms-data> tag:

Syntax

```
<comms-data>$Data{"Id":"RequestDateTimeStamp", "Type":"DateTime", "Format":"yyyy-
MM-dd-'T'-HH-mm-ss-SSS z"}</comms-data>
```

String Input Structure	Parsed as	Notes
####-##-##T##:##:##.####	yyyy-MM-ddTHH:mm:ss.SSSZ	Communication Cloud Service supports only ISO standard data format.

Masking Characters

DateTime format

Mask	Purpose	Special Conditions & Notes
H	Displays the hour as a number (1-24) without a leading zero	
HH	Displays the hour as a number with a leading zero when appropriate (01-24)	
h	Displays the hour as twelve hour clock (1-12) without leading zero as a number	
hh	Displays twelve hour clock (01-12) with a leading zero when appropriate	
m	Displays the minute as a number without a leading zero	
mm	Displays the minute as a number with a leading zero when appropriate	
s	Displays the second as a number without a leading zero	
ss	Displays the second as a number with a leading zero when appropriate	
S	Displays the millisecond as a number without a leading zero	
SSS	Displays the millisecond as a number with a leading zero when appropriate	
z	Displays the abbreviated time zone	*Example: UTC*
zzzz	Displays the time zone name	*Example: Coordinated Universal Time*
Z	Displays the zone-offset	*Example: +HH:mm or - HH:mm +HH or -HH*
a	Displays the abbreviated 12 hour time format	*Example: AM or PM*
O	Displays the localized zone-offset	*Example: GMT+8*
OOOO	Displays the localized zone-offset	*Example: GMT+08:00*

Mask	Purpose	Special Conditions & Notes
VV	Displays the time zone location information	*Example: America/New_York* *Note: Currently since only UTC ISO 8601 format is supported as a valid input so configuration of this mask must be in conjunction with "TimeZone" attribute only otherwise Communication Cloud Service will show up the offset information.* Time Zone IDs

> **Note:**
>
> Any other non-numeric character within the mask will be treated as a string literal.

Examples

Following are some of the examples to illustrate how Communication Cloud Service formats the time data according to the defined configuration and the way how input is passed to the service:

Examples of DateTime

Input	Format	Output
2022-01-31T02:35:22:234Z	yyyy-MM-dd'T'-H-mm-ss-SSS z	2022-01-31T-2-35-22-234 UTC
2022-01-31T02:35:22:234Z	yyyy-MM-dd'T'-HH-mm-ss-SSS z	2022-01-31T-02-35-22-234 UTC
2022-01-31T22:05:22:234Z	yyyy-MM-dd'T'-HH-m-ss-SSS z	2022-01-31T-22-5-22-234 UTC
2022-01-31T22:05:22:234Z	yyyy-MM-dd'T'-HH-mm-ss-SSS z	2022-01-31T-22 -05-22-234 UTC
2022-01-31T22:35:02:234Z	yyyy-MM-dd'T'-HH-mm-s-SSS z	2022-01-31T-23-35-2-234 UTC
2022-01-31T22:35:02:234Z	yyyy-MM-dd'T'-HH-mm-ss-SSS z	2022-01-31T-23-35-02-234 UTC
2022-01-31T22:35:22:004Z	yyyy-MM-dd'T'-HH-mm-ss-Sz	2022-01-31T-23-35-02-4UTC
2022-01-31T22:35:22:004Z	yyyy-MM-dd'T'HH:mm';'ss:SSSz	2022-01-31T23:35:02:004UTC
2022-01-31T22:35:22:234Z	yyyy-MM-dd'T':HH-mm	2022-01-31T:22-35
2022-01-31T22:35:22:234Z	yyyy-MM-dd'T'-HH-mm:SSS z	2022-01-31T-23-35:234 UTC
2022-01-31T02:05:22:234Z	yyyy-MM-dd'T':H:m:s:SSS z	2022-01-31T:2:5:2:234 UTC
2022-01-31T22:35:22:004Z	yyyy-MM-dd-'T'-HH-mm-ss-S	2022-01-31-T-22-35-22-4
2022-01-31T22:35:22:004Z	yyyy-MM-dd-'T'-HH-mm-ss-SSS	2022-01-31-T-22-35-22-004
2022-01-31T22:35:22:444Z	yyyy-MM-dd-'T'-H-m-s-S	2022-01-31-T-22-35-22-444
2022-01-31T22:35:22:234Z	MMddyyyyHHmmSS	01312022223522
2022/01/31T22:35:22:234Z	MMddyyyyHHmmSS	CCS throws an error since the input contains "/" symbol which is not an accepted one for parsing
2023-01-31T11:35:26:234PST	yyyy-MM-dd'T'-HH-mm-ss-SSS z	CCS throws an error since the input contains PST wording which is not expected for parsing
2022-01-31T22:05:22:234Z	yyyy-MM-dd'T'-HH-m-ss-SSS zzzz	2022-01-31T-02-35-22-234 Universal Time Coordinated
2022-01-31T22:35:22:234Z	yyyy-MM-dd'T'-H-m-s-SSS z	2022-01-31T-22-35-22-234 UTC

Input	Format	Output
2022-01-31T22:35:22:234Z	yyyy-MM-dd HH:mm a	2022-01-31 10:35 PM
2022-01-31T22:35:22:234Z	yyyy-MM-dd HH:mm a Z	2022-01-31T-02-35-22-234 +0000

Sample Configuration: Package Assembly Template

```
{
    "$$Id": "SamplePackage",
    "Fields": [{
            "Name": "InputTimeStamp",
            "Path": "$.InputTimeStamp"
        }]
}
```

Sample Configuration 1:

```
Content: <comms-data>$Data{"Id":"InputTimeStamp", "Type":"DateTime",
"Format":"MMM dd yyy HH' hrs 'mm' mins 'ss' seconds'"}</comms-data>
Preview Data: { "InputTimeStamp":"2024-04-17T04:22:58.175Z" }
Output: Apr 17 2024 04 hrs 22 mins 58 seconds
```

Sample Configuration 2:

```
Content: <comms-data>$Data{"Id":"InputTimeStamp", "Type":"DateTime",
"Format":"MMM dd yyyy'T'HH:mm VV", "TimeZone":"Libya"}
Preview Data: { "InputTimeStamp":"2024-04-17T04:22:58.175Z" }
Output: Apr 17 2024T06:22 Libya
```

Sample Configuration 3:

```
Content: <comms-data>$Data{"Id":"InputTimeStamp", "Type":"DateTime",
"Format":"yyyy-MM-dd'T'HH:mm:ss.SSSz"}</comms-data>
Preview Data: { "InputTimeStamp":"2024-04-17T04:22:58Z" }
Output: 2024-04-17T04:22:58.000Z
```

Time Zone IDs

Following is the list of supported Time Zone IDs:

Time Zone	Time Zone	Time Zone	Time Zone	Time Zone	Time Zone
Africa/Abidjan	America/Denver	America/ Tegucigalpa	Asia/Tashkent	Etc/Greenwich	Pacific/ Bougainville
Africa/Accra	America/Detroit	America/Thule	Asia/Tbilisi	Etc/UCT	Pacific/ Chatham
Africa/ Addis_Ababa	America/ Dominica	America/ Thunder_Bay	Asia/Tehran	Etc/UTC	Pacific/Chuuk
Africa/Algiers	America/ Edmonton	America/ Tijuana	Asia/Tel_Aviv	Etc/Universal	Pacific/Easter

Time Zone	Time Zone	Time Zone	Time Zone	Time Zone	Time Zone
Africa/Asmara	America/Eirunepe	America/Toronto	Asia/Thimbu	Etc/Zulu	Pacific/Efate
Africa/Asmera	America/El_Salvador	America/Tortola	Asia/Thimphu	Europe/Amsterdam	Pacific/Enderbury
Africa/Bamako	America/Ensenada	America/Vancouver	Asia/Tokyo	Europe/Andorra	Pacific/Fakaofo
Africa/Bangui	America/Fort_Nelson	America/Virgin	Asia/Tomsk	Europe/Astrakhan	Pacific/Fiji
Africa/Banjul	America/Fort_Wayne	America/Whitehorse	Asia/Ujung_Pandang	Europe/Athens	Pacific/Funafuti
Africa/Bissau	America/Fortaleza	America/Winnipeg	Asia/Ulaanbaatar	Europe/Belfast	Pacific/Galapagos
Africa/Blantyre	America/Glace_Bay	America/Yakutat	Asia/Ulan_Bator	Europe/Belgrade	Pacific/Gambier
Africa/Brazzaville	America/Godthab	America/Yellowknife	Asia/Urumqi	Europe/Berlin	Pacific/Guadalcanal
Africa/Bujumbura	America/Goose_Bay	Antarctica/Casey	Asia/Ust-Nera	Europe/Bratislava	Pacific/Guam
Africa/Cairo	America/Grand_Turk	Antarctica/Davis	Asia/Vientiane	Europe/Brussels	Pacific/Honolulu
Africa/Casablanca	America/Grenada	Antarctica/DumontDUrville	Asia/Vladivostok	Europe/Bucharest	Pacific/Johnston
Africa/Ceuta	America/Guadeloupe	Antarctica/Macquarie	Asia/Yakutsk	Europe/Budapest	Pacific/Kanton
Africa/Conakry	America/Guatemala	Antarctica/Mawson	Asia/Yangon	Europe/Busingen	Pacific/Kiritimati
Africa/Dakar	America/Guayaquil	Antarctica/McMurdo	Asia/Yekaterinburg	Europe/Chisinau	Pacific/Kosrae
Africa/Dar_es_Salaam	America/Guyana	Antarctica/Palmer	Asia/Yerevan	Europe/Copenhagen	Pacific/Kwajalein
Africa/Djibouti	America/Halifax	Antarctica/Rothera	Atlantic/Azores	Europe/Dublin	Pacific/Majuro
Africa/Douala	America/Havana	Antarctica/South_Pole	Atlantic/Bermuda	Europe/Gibraltar	Pacific/Marquesas
Africa/El_Aaiun	America/Hermosillo	Antarctica/Syowa	Atlantic/Canary	Europe/Guernsey	Pacific/Midway
Africa/Freetown	America/Indiana/Indianapolis	Antarctica/Troll	Atlantic/Cape_Verde	Europe/Helsinki	Pacific/Nauru
Africa/Gaborone	America/Indiana/Knox	Antarctica/Vostok	Atlantic/Faeroe	Europe/Isle_of_Man	Pacific/Niue
Africa/Harare	America/Indiana/Marengo	Arctic/Longyearbyen	Atlantic/Faroe	Europe/Istanbul	Pacific/Norfolk
Africa/Johannesburg	America/Indiana/Petersburg	Asia/Aden	Atlantic/Jan_Mayen	Europe/Jersey	Pacific/Noumea
Africa/Juba	America/Indiana/Tell_City	Asia/Almaty	Atlantic/Madeira	Europe/Kaliningrad	Pacific/Pago_Pago
Africa/Kampala	America/Indiana/Vevay	Asia/Amman	Atlantic/Reykjavik	Europe/Kiev	Pacific/Palau

Time Zone	Time Zone	Time Zone	Time Zone	Time Zone	Time Zone
Africa/Khartoum	America/ Indiana/ Vincennes	Asia/Anadyr	Atlantic/ South_Georgia	Europe/Kirov	Pacific/Pitcairn
Africa/Kigali	America/ Indiana/ Winamac	Asia/Aqtau	Atlantic/ St_Helena	Europe/Kyiv	Pacific/Pohnpei
Africa/Kinshasa	America/ Indianapolis	Asia/Aqtobe	Atlantic/Stanley	Europe/Lisbon	Pacific/Ponape
Africa/Lagos	America/Inuvik	Asia/Ashgabat	Australia/ACT	Europe/ Ljubljana	Pacific/ Port_Moresby
Africa/Libreville	America/Iqaluit	Asia/Ashkhabad	Australia/ Adelaide	Europe/London	Pacific/ Rarotonga
Africa/Lome	America/ Jamaica	Asia/Atyrau	Australia/ Brisbane	Europe/ Luxembourg	Pacific/Saipan
Africa/Luanda	America/Jujuy	Asia/Baghdad	Australia/ Broken_Hill	Europe/Madrid	Pacific/Samoa
Africa/ Lubumbashi	America/Juneau	Asia/Bahrain	Australia/ Canberra	Europe/Malta	Pacific/Tahiti
Africa/Lusaka	America/ Kentucky/ Louisville	Asia/Baku	Australia/Currie	Europe/ Mariehamn	Pacific/Tarawa
Africa/Malabo	America/ Kentucky/ Monticello	Asia/Bangkok	Australia/ Darwin	Europe/Minsk	Pacific/ Tongatapu
Africa/Maputo	America/ Knox_IN	Asia/Barnaul	Australia/Eucla	Europe/Monaco	Pacific/Truk
Africa/Maseru	America/ Kralendijk	Asia/Beirut	Australia/Hobart	Europe/Moscow	Pacific/Wake
Africa/Mbabane	America/ La_Paz	Asia/Bishkek	Australia/LHI	Europe/Nicosia	Pacific/Wallis
Africa/ Mogadishu	America/Lima	Asia/Brunei	Australia/ Lindeman	Europe/Oslo	Pacific/Yap
Africa/Monrovia	America/ Los_Angeles	Asia/Calcutta	Australia/ Lord_Howe	Europe/Paris	Poland
Africa/Nairobi	America/ Louisville	Asia/Chita	Australia/ Melbourne	Europe/ Podgorica	Portugal
Africa/ Ndjamena	America/ Lower_Princes	Asia/Choibalsan	Australia/NSW	Europe/Prague	ROK
Africa/Niamey	America/Maceio	Asia/Chongqing	Australia/North	Europe/Riga	Singapore
Africa/ Nouakchott	America/ Managua	Asia/Chungking	Australia/Perth	Europe/Rome	SystemV/AST4
Africa/ Ouagadougou	America/ Manaus	Asia/Colombo	Australia/ Queensland	Europe/Samara	SystemV/ AST4ADT
Africa/Porto-Novo	America/ Marigot	Asia/Dacca	Australia/South	Europe/ San_Marino	SystemV/CST6
Africa/ Sao_Tome	America/ Martinique	Asia/Damascus	Australia/ Sydney	Europe/ Sarajevo	SystemV/ CST6CDT
Africa/Timbuktu	America/ Matamoros	Asia/Dhaka	Australia/ Tasmania	Europe/Saratov	SystemV/EST5
Africa/Tripoli	America/ Mazatlan	Asia/Dili	Australia/ Victoria	Europe/ Simferopol	SystemV/ EST5EDT

Time Zone	Time Zone	Time Zone	Time Zone	Time Zone	Time Zone
Africa/Tunis	America/ Mendoza	Asia/Dubai	Australia/West	Europe/Skopje	SystemV/ HST10
Africa/ Windhoek	America/ Menominee	Asia/Dushanbe	Australia/ Yancowinna	Europe/Sofia	SystemV/MST7
America/Adak	America/Merida	Asia/Famagusta	Brazil/Acre	Europe/ Stockholm	SystemV/ MST7MDT
America/ Anchorage	America/ Metlakatla	Asia/Gaza	Brazil/ DeNoronha	Europe/Tallinn	SystemV/PST8
America/ Anguilla	America/ Mexico_City	Asia/Harbin	Brazil/East	Europe/Tirane	SystemV/ PST8PDT
America/ Antigua	America/ Miquelon	Asia/Hebron	Brazil/West	Europe/Tiraspol	SystemV/YST9
America/ Araguaina	America/ Moncton	Asia/ Ho_Chi_Minh	CET	Europe/ Ulyanovsk	SystemV/ YST9YDT
America/ Argentina/ Buenos_Aires	America/ Monterrey	Asia/ Hong_Kong	CST6CDT	Europe/ Uzhgorod	Turkey
America/ Argentina/ Catamarca	America/ Montevideo	Asia/Hovd	Canada/Atlantic	Europe/Vaduz	UCT
America/ Argentina/ ComodRivadavi a	America/ Montreal	Asia/Irkutsk	Canada/Central	Europe/Vatican	US/Alaska
America/ Argentina/ Cordoba	America/ Montserrat	Asia/Istanbul	Canada/ Eastern	Europe/Vienna	US/Aleutian
America/ Argentina/Jujuy	America/ Nassau	Asia/Jakarta	Canada/ Mountain	Europe/Vilnius	US/Arizona
America/ Argentina/ La_Rioja	America/ New_York	Asia/Jayapura	Canada/ Newfoundland	Europe/ Volgograd	US/Central
America/ Argentina/ Mendoza	America/ Nipigon	Asia/Jerusalem	Canada/Pacific	Europe/Warsaw	US/East- Indiana
America/ Argentina/ Rio_Gallegos	America/Nome	Asia/Kabul	Canada/ Saskatchewan	Europe/Zagreb	US/Eastern
America/ Argentina/Salta	America/ Noronha	Asia/Kamchatka	Canada/Yukon	Europe/ Zaporozhye	US/Hawaii
America/ Argentina/ San_Juan	America/ North_Dakota/ Beulah	Asia/Karachi	Chile/ Continental	Europe/Zurich	US/Indiana- Starke
America/ Argentina/ San_Luis	America/ North_Dakota/ Center	Asia/Kashgar	Chile/ EasterIsland	GB	US/Michigan
America/ Argentina/ Tucuman	America/ North_Dakota/ New_Salem	Asia/ Kathmandu	Cuba	GB-Eire	US/Mountain
America/ Argentina/ Ushuaia	America/Nuuk	Asia/Katmandu	EET	GMT	US/Pacific

Time Zone	Time Zone	Time Zone	Time Zone	Time Zone	Time Zone
America/Aruba	America/Ojinaga	Asia/Khandyga	EST5EDT	GMT0	US/Samoa
America/Asuncion	America/Panama	Asia/Kolkata	Egypt	Greenwich	UTC
America/Atikokan	America/Pangnirtung	Asia/Krasnoyarsk	Eire	Hongkong	Universal
America/Atka	America/Paramaribo	Asia/Kuala_Lumpur	Etc/GMT	Iceland	W-SU
America/Bahia	America/Phoenix	Asia/Kuching	Etc/GMT+0	Indian/Antananarivo	WET
America/Bahia_Banderas	America/Port-au-Prince	Asia/Kuwait	Etc/GMT+1	Indian/Chagos	Zulu
America/Barbados	America/Port_of_Spain	Asia/Macao	Etc/GMT+10	Indian/Christmas	EST
America/Belem	America/Porto_Acre	Asia/Macau	Etc/GMT+11	Indian/Cocos	HST
America/Belize	America/Porto_Velho	Asia/Magadan	Etc/GMT+12	Indian/Comoro	MST
America/Blanc-Sablon	America/Puerto_Rico	Asia/Makassar	Etc/GMT+2	Indian/Kerguelen	ACT
America/Boa_Vista	America/Punta_Arenas	Asia/Manila	Etc/GMT+3	Indian/Mahe	AET
America/Bogota	America/Rainy_River	Asia/Muscat	Etc/GMT+4	Indian/Maldives	AGT
America/Boise	America/Rankin_Inlet	Asia/Nicosia	Etc/GMT+5	Indian/Mauritius	ART
America/Buenos_Aires	America/Recife	Asia/Novokuznetsk	Etc/GMT+6	Indian/Mayotte	AST
America/Cambridge_Bay	America/Regina	Asia/Novosibirsk	Etc/GMT+7	Indian/Reunion	BET
America/Campo_Grande	America/Resolute	Asia/Omsk	Etc/GMT+8	Iran	BST
America/Cancun	America/Rio_Branco	Asia/Oral	Etc/GMT+9	Israel	CAT
America/Caracas	America/Rosario	Asia/Phnom_Penh	Etc/GMT-0	Jamaica	CNT
America/Catamarca	America/Santa_Isabel	Asia/Pontianak	Etc/GMT-1	Japan	CST
America/Cayenne	America/Santarem	Asia/Pyongyang	Etc/GMT-10	Kwajalein	CTT
America/Cayman	America/Santiago	Asia/Qatar	Etc/GMT-11	Libya	EAT
America/Chicago	America/Santo_Domingo	Asia/Qostanay	Etc/GMT-12	MET	ECT
America/Chihuahua	America/Sao_Paulo	Asia/Qyzylorda	Etc/GMT-13	MST7MDT	IET
America/Ciudad_Juarez	America/Scoresbysund	Asia/Rangoon	Etc/GMT-14	Mexico/BajaNorte	IST
America/Coral_Harbour	America/Shiprock	Asia/Riyadh	Etc/GMT-2	Mexico/BajaSur	JST

Time Zone	Time Zone	Time Zone	Time Zone	Time Zone	Time Zone
America/Cordoba	America/Sitka	Asia/Saigon	Etc/GMT-3	Mexico/General	MIT
America/Costa_Rica	America/St_Barthelemy	Asia/Sakhalin	Etc/GMT-4	NZ	NET
America/Creston	America/St_Johns	Asia/Samarkand	Etc/GMT-5	NZ-CHAT	NST
America/Cuiaba	America/St_Kitts	Asia/Seoul	Etc/GMT-6	Navajo	PLT
America/Curacao	America/St_Lucia	Asia/Shanghai	Etc/GMT-7	PRC	PNT
America/Danmarkshavn	America/St_Thomas	Asia/Singapore	Etc/GMT-8	PST8PDT	PRT
America/Dawson	America/St_Vincent	Asia/Srednekolymsk	Etc/GMT-9	Pacific/Apia	PST
America/Dawson_Creek	America/Swift_Current	Asia/Taipei	Etc/GMT0	Pacific/Auckland	SST
VST					

Date Manipulation

Communication Cloud Service lets you configure manipulation of date type data using transform feature. For example, Policy Maturity date can be derived based on the Policy Start Date and the Policy period.

You can derive the new date by adding years, months, days. For addition and subtraction operations use different <comms-data> configuration.

> **Note:**
>
> The order of manipulation is Year, Month, and Day.

Syntax

For Add function:

```
<comms-data>$Data{"Id":" UPDATED_DATE","Type":"Date"}<comms-transform
type="datesum" year="true" month="true" day="true"><comms-
data>$Data{"Id":"MORE_YEARS","Type":"Number"}</comms-data><comms-
data>$Data{"Id":"MORE_MONTHS","Type":"Number"}</comms-data><comms-
data>$Data{"Id":"MORE_DAYS","Type":"Number"}</comms-data></comms-transform></
comms-data>
```

For Subtract function:

```
<comms-data>$Data{"Id":"UPDATED_DATE","Type":"Date"}<comms-transform
type="datesubtraction" year="true" month="false" day="false"><comms-
data>$Data{"Id":"MORE_YEARS","Type":"Number"}</comms-data></comms-transform></
comms-data>
```

Condition Syntax

Text Content may have text strings or other content that should only be displayed under certain conditions. The conditional content may be static text, data represented by `comms-data` or a Content of type Text or Graphic. Conditions are expressed as an HTML custom tag: `<comms-cond/>` that contains a JSON object named "$Cond" which has two values.

- Condition is a statement composed of an Id followed an operator (=, <, >, !=, <=, >=) and a string literal surrounded by single quotes. The Id is the name of a Field defined in the Assembly Template.
  Assembly Template Reference

- The content to display which can be another Content or a Text literal or comms-data tag.

  - Content is used when another Content should be included inline within the existing Content. The Content to include is referenced by its Short Name. It can be a Text or Graphic type Content.

  - Text is used when a string literal should be displayed or data from a `comms-data` tag should be displayed.
    Data Syntax

Syntax

```
<comms-cond>$Cond{"Condition": "Id Operator Literal", "Content || Text":
"Content Short
     Name || Text String" }</comms-cond>
```

Examples

- ```
  <comms-cond>$Cond{"Condition": "Premium > 30","Content": "C4998-
  PremiumDue"}</comms-cond>
  ```

- ```
  <comms-cond>$Cond{"Condition": "Address == 'Home'","Text": "Your renewal
  will be mailed to your home address on file."}</comms-cond>
  ```

- ```
  <comms-cond>$Cond{"Condition": "Address == 'Home'", "Text": "<comms-
  data>$Data

  {"Id":"AddressLine1", "Type":"String"}
  </comms-data>"}</comms-cond>

  "Type":"String" is not mandatory in $Data so this can be written as below
  as well.

  <comms-cond>$Cond{"Condition": "Address == 'Home'", "Text": "<comms-
  data>$Data

  {"Id":"AddressLine1"}
  </comms-data>"}</comms-cond>
  ```

- ```
  <comms-cond>$Cond{"Condition": "Address == 'Home'",
            "Text": "The first line of address is <comms-data>$Data
  {"Id":"AddressLine1"}</comms-data>"}</comms-cond>
  ```

Creating Barcodes

Communication Cloud Service supports barcode generation through the <comms-data/> element configuration with the Barcode Type attribute. This element accepts a field from the assembly template as data source for barcode generation. It supports static and dynamic data, and their combinations along with multiple dynamic data points. For barcodes, a comm-transform tag is required when multiple data elements are needed to populate the data for the barcode. Concatenation type of Comms-transform tag supports data concatenation and maps the result as the value for comms-data tag that contains them.

Following is the list of supported Barcode:

- Code39
- Code128
- Codabar
- DataMatrix
- DPID
- EAN
- Inter25
- Intelligent Mail Barcode (IMB)
- Intelligent Mail Package Barcode (IMpb)
- MSI
- Postnet
- Planet
- PDF417
- QR

To create a barcode reference, use the comms-data syntax similar to mapping any other data. You can format the data before it is placed into the barcode.

Syntax:

```
<comms-data>$Data{"Id":"Data","BarcodeType":"Type"}</comms-data>
```

Add the BarcodeType value from the list of supported barcode types.

Example:

```
<comms-data>$Data{"Id":"Data","BarcodeType":"QR"}</comms-data>
```

For static data, the example syntax for the barcode data looks as follows:

Example:

```
<comms-data>$Data{"Id":"Data","BarcodeType":"Code39","Value":"20078"}</comms-
data>
```

For human readable text, a configuration support is provided to control the display.

Example:

```
<comms-data>$Data{"Id":"Data","BarcodeType":"Code39","TextInd":false}</comms-
data>
```

The color, font, background color of the generated barcode is determined similar to any text in the content editor. The Font affects only the text output of the barcode. It does not affect the barcode types which do not include any output text.

The HTML renders bitmaps for each barcode. Currently, text under barcode is not supported.

Table 4-3   Barcode Examples

Name	Example	Syntax	Output
Code39	20078	`<comms-data>$Data{"Id":"Premium","BarcodeType":"Code39"}</comms-data>`	‖‖‖ *20078*
Code39	20078	`<comms-data>$Data{"Id":"Premium","BarcodeType":"Code39", "TextInd":false }</comms-data>`	‖‖‖
Code39		`<comms-data>$Data{"Id":"Premium","BarcodeType":"Code39", "Value": "20078"}</comms-data>`	‖‖‖ *20078*
Code128	Oracle	`<comms-data>$Data{"Id":"Address","BarcodeType":"Code128"}</comms-data>`	‖‖‖ Oracle India Pvt Ltd
Codabar	A310622554A	`<comms-data>$Data{"Id":"Codavalue","BarcodeType":"Codabar"}</comms-data>`	‖‖‖ 310622554
DataMatrix	Oracle	`<comms-data>$Data{"Id":"Address","BarcodeType":"DataMatrix"}</comms-data>`	▨
EAN	1234567890123	`<comms-data>$Data{"Id":"EANValue","BarcodeType":"EAN"}</comms-data>`	‖‖‖ 1 234567 890123
Inter25	Oracle	`<comms-data>$Data{"Id":"Address","BarcodeType":"Inter25"}</comms-data>`	‖‖ Oracle India Pvt Ltd

Table 4-3   (Cont.) Barcode Examples

Name	Example	Syntax	Output
Intelligent Mail Barcode (IMb)	01234567094 98765432101 234567891	`<comms-data>$Data{"Id":"IMBValue","BarcodeType":"IMb"}</comms-data>`	
Intelligent Mail Package Barcode (IMpb)	IMpbValue = [420]89765[92]76598765432 11789098765 41	`<comms-data>$Data{"Id":"IMPBValue","BarcodeType":"IMPB"}</comms-data>`	
Intelligent Mail Package Barcode (IMpb)	List of data values: • RoutingApplicationNumber = 420 • ZipCode = 89765 • ChannelApplicationIdentifier = 92 • ServiceTypeCode 76 • MailerID = 59876543 21178909 • SerialDigit = 7654 • Mod10checkDigitValue = 1	`<comms-data>$Data{"Id":"IMPBValue","BarcodeType":"IMPB"}</comms-data><comms-data>$Data{"Id":"IMPBBarcodeFeed","BarcodeType":"IMPB"}<comms-transform Type="Concatenation"><comms-data>$Data{"Id":"OpeningBracket","Value":"["}</comms-data><comms-data>$Data{"Id":"RoutingApplicationNumber","Value":"021"}</comms-data><comms-data>$Data{"Id":"ClosingBracket","Value":"]"}</comms-data><comms-data>$Data{"Id":"ZipCode"}</comms-data><comms-data>$Data{"Id":"OpeningBracket","Value":"["}</comms-data><comms-data>$Data{"Id":"ChannelApplicationIdentifier"}</comms-data><comms-data>$Data{"Id":"ClosingBracket","Value":"]"}</comms-data><comms-data>$Data{"Id":"ServiceTypeCode"}</comms-data><comms-data>$Data{"Id":"MailerID"}</comms-data><comms-data>$Data{"Id":"SerialDigit"}</comms-data><comms-data>$Data{"Id":"Mod10checkDigitValue"}</comms-data></comms-transform></comms-data>`	
MSI	20078	`<comms-data>$Data{"Id":"Premium","BarcodeType":"MSI"}</comms-data>`	
Postnet	20078	`<comms-data>$Data{"Id":"Zipcode","BarcodeType":"Postnet"}</comms-data>`	
Planet	20078	`<comms-data>$Data{"Id":"Zipcode","BarcodeType":"Planet"}</comms-data>`	
PDF417	Oracle	`<comms-data>$Data{"Id":"Address","BarcodeType":"PDF417"}</comms-data>`	
QR	Oracle	`<comms-data>$Data{"Id":"Address","BarcodeType":"QR"}</comms-data>`	

ORACLE®

The following table lists the supported DPID Australia Postal.

Table 4-4   DPID barcode

Name	Example	Syntax	Output
Standard Customer Barcode ("Customer Barcode 1")	11399875	`<comms-data>$Data{"Id": "CustomerBarcode1", "BarcodeType": "AUSPOST"}</comms-data>`	CustomerBarcode1
Reply Paid Barcode	11676714	`<comms-data>$Data{"Id": "ReplyBarcode", "BarcodeType": "AUSREPLY"}</comms-data>`	ReplyBarcode
Routing Barcode	59676714	`<comms-data>$Data{"Id":"RoutingBarcode", "BarcodeType": "AUSROUTE"}</comms-data>`	RoutingBarcode
Redirection Barcode	62676714	`<comms-data>$Data{"Id":"RedirectionBarcode", "BarcodeType": "AUSREDIRECT"}</comms-data>`	RedirectionBarcode
Customer Barcode 2	6242894210Num	`<comms-data>$Data{"Id":"CustomerBarcode2", "BarcodeType": "AUSPOST"}</comms-data>`	CustomerBarcode2
Customer Barcode 3	6243289421Num200wf	`<comms-data>$Data{"Id":"CustomerBarcode3", "BarcodeType": "AUSPOST"}</comms-data>`	CustomerBarcode3

System Date Fields

Table 4-5   System Date Fields

Field	Purpose	Usage
SystemDate	This field will populate same value of date at multiple places in the rendered document.	`<comms-data>$Data{"Id":"SystemDate"}</comms-data>`

Table 4-5   (Cont.) System Date Fields

Field	Purpose	Usage
SystemDateTime	This field will populate same value of date and time at multiple places in the rendered document.	`<comms-data>$Data{"Id":"SystemDateTime"}</comms-data>`

Page Number Fields

The value of total number of pages for a Document or Package is calculated after the text formatting and pagination is complete. When using these fields leave ample space in your design for the number to be displayed. When populated the field will not move the existing text or cause additional re-paginatation.

The page number and number of pages will always be calculated as 1 when HTML output is produced. The RenderType of these fields is set to HTMLF and will not create input tags that can be modified by user.

Table 4-6   Page Number Fields

Field	Purpose	Usage
DocumentPageNum	This field will be populated with the page number of the current page of the current Document.	`<comms-data>$Data{"Id":"DocumentPageNum"}</comms-data>`
PackagePageNum	This field will be populated with the page number of the current page in the Package of Documents. This is a running page number across all Documents within the Package.	`<comms-data>$Data{"Id":"PackagePageNum"}</comms-data>`
PackagePageCount	This field will be populated with the count of the total number of pages in the Package.	`<comms-data>$Data{"Id":"PackagePageCount"}</comms-data>`
DocumentPageCount	This field will be populated with total number of pages in the Document.	`<comms-data>$Data{"Id":"DocumentPageCount"}</comms-data>`

System Fields

System field tags are added to deal with short names, names, and descriptions for Content, Layout, Document, Package, and Assembly.

> **Note:**
>
> These tag names are not case sensitive.

Table 4-7   Tags for communication entities

Tag	Data Type	Description	Usage
Assembly_Description		Displays Assembly description	`<comms-data>$Data{"Id":"Assembly_Description"}</comms-data>`
Assembly_ID	String	Displays Assembly ID	`<comms-data>$Data{"Id":"Assembly_ID"}</comms-data>`
Content_Description	String	Diplays Content Description	`<comms-data>$Data{"Id":"Content_Description"}</comms-data>`
Content_Name	String	Displays Content name	`<comms-data>$Data{"Id":"Content_Name"}</comms-data>`
Content_ShortName	String	Displays short name of the Content	`<comms-data>$Data{"Id":"Content_ShortName"}</comms-data>`
ContentVersion_Description	String	Displays Content Version description	`<comms-data>$Data{"Id":"ContentVersion_Description"}</comms-data>`
ContentVersion_ShortName	String	Displays Content Version short name	`<comms-data>$Data{"Id":"ContentVersion_ShortName"}</comms-data>`
Document_Description	String	Displays Document description	`<comms-data>$Data{"Id":"Document_Description"}</comms-data>`
Document_Name	String	Displays Document name	`<comms-data>$Data{"Id":"Document_Name"}</comms-data>`
Document_ShortName	String	Displays Document short name	`<comms-data>$Data{"Id":"Document_ShortName"}</comms-data>`
DocumentVersion_Description	String	Displays Document Version description	`<comms-data>$Data{"Id":"DocumentVersion_Description"}</comms-data>`
DocumentVersion_ShortName	String	Displays Document Version short name	`<comms-data>$Data{"Id":"DocumentVersion_ShortName"}</comms-data>`
Environment_tenantID	String	Tenancy name from the URL used to access the environment	`<comms-data>$Data{"Id":"Environment_tenantID"}</comms-data>`

Table 4-7   (Cont.) Tags for communication entities

Tag	Data Type	Description	Usage
Environment_tenantService	String	Tenancy service from the URL used (NonProd/PreProd/Prod) to access the environment	`<comms-data>$Data{"Id":"Environment_tenantService"}</comms-data>`
ExecutionID	String	ExecutionID of the transaction that is running	`<comms-data>$Data{"Id":"ExecutionID"}</comms-data>`
Layout_Description	String	Displays Layout description	`<comms-data>$Data{"Id":"Layout_Description"}</comms-data>`
Layout_Name	String	Displays Layout name	`<comms-data>$Data{"Id":"Layout_Name"}</comms-data>`
Layout_ShortName	String	Displays Layout short name	`<comms-data>$Data{"Id":"Layout_ShortName"}</comms-data>`
Package_Description	String	Displays Package description	`<comms-data>$Data{"Id":"Package_Description"}</comms-data>`
Package_Name	String	Displays Package name	`<comms-data>$Data{"Id":"Package_Name"}</comms-data>`
Package_ShortName	String	Displays Package short name	`<comms-data>$Data{"Id":"Package_ShortName"}</comms-data>`
PackageVersion_Description	String	Displays Package Version description	`<comms-data>$Data{"Id":"PackageVersion_Description"}</comms-data>`
PackageVersion_ShortName	String	Displays Package Version short name	`<comms-data>$Data{"Id":"PackageVersion_ShortName"}</comms-data>`

Adding Text Content In Communication Cloud Service

Adding Text Content in Communication Cloud Service

1. Log in to Oracle Financial Services Cloud application with your credentials and select an active **Config ID**.

2. From the Dashboard, select Application Navigation.

3. From the left Navigation pane, select **Configuration** and then select **Communication**.

4. From the Navigation pane, select **Content**.

5. To create new Content, select **Create**.

6. In the **Select Content Type**, select **Text** and then select **Continue**.

7. On the **Create Communication Content** page, enter the following details for **Identification** and select **Continue**:

Table 4-8   Identification

Field	Description
Name	Enter a name for new content that you want to create.
Long Name	Enter a long name for the new content that you want to create.
Description	Enter description.

8. In the **Content Version**, enter the following details and then select **Continue**:

Table 4-9   Content Version

Field	Description
Name	Enter a name for Content Version.
Description	Enter description.
Style Class Name	From the **Select Style Classes** page, select the Style class that you want to use for the content.
Status	Set the Active date for the content.

9. In the **Content Editor** page, use the Content Designer to format your text content and select **Continue**. To add a page break, add **<comms-page-break></comms-page-break>** to your content in the Content Designer.

> **Note:**
>
> You can apply a **Style Class** to the entire content. Additionally, you can also apply style class to selected text from the content to generate customized document output that you plan to generate.

10. In the **Manage Associations** page, add the styles that you want to associate and select **Done**.

11. On the **Manage Order** page, set the order of the styles and select **Continue**.

Uploading Image Content In Communication Cloud Service

Uploading Image Content in Communication Cloud Service

1. Log in to Oracle Financial Services Cloud application with your credentials and select an active **Config ID**.

2. From the Dashboard, select **Menu** from the left corner of the page.

3. From the Menu, select **Communication** and then select **Content**.

4. From the **Content** page, select **Create**.

5. From the **Select Content Type**, select **Image**. Select **Continue**.

6. On the **Create Communication Content** wizard, enter the following details and select **Continue**:

Table 4-10   Identification-Create Base Content

Field	Description
Name	Enter a name for new content that you want to create.
Long Name	Enter a long name for the new content that you want to create.
Description	Enter description.

7. Enter the following details for the Content version and select **Continue**:

Table 4-11   Content Version-Create Content Version

Field	Description
Name	Enter a name for Content Version.
Description	Enter description.
Style Class Name	Select all the Style Classes that you want to apply.
Set Status Date	You can set the period for which the content should be active and available.

8. On the **Image Configuration** page, upload your image and select **Continue**. The Image details section displays the following information about the image: Image Format, Height, Width, Color Depth Bits, Resolution, and Alternate Text (if available). You can add **Alternate Text** for the uploaded image if it is not previously specified. Select **Continue**.

> **Note:**
>
> The file size limit is 30MB.

9. On the **Manage Associations** page, select **+Add** and select appropriate option from the **Setup Style**:
   Select your option from

   - **Create New Style**

   - **Use Existing Style(s)**

   Creating a New Style

   a. On the **Style** page, enter the following details and select **Save**:

   Table 4-12   Identification

Field	Description
Name	Enter name for the style
Long Name	Enter the long name for the style
Description	Enter description for the style

    b. From the **Style Attributes** list, select the attributes that you want to add and select **Save**.

    c. From the **Elements**, set the paragraph and table settings.

Using Existing Style

    a. On the **Setup Style**, select **Use Existing Style(s)** and select **Continue**.

    b. On the **Associate Styles** page, select the styles that you want to add and select **Continue**.

> **Note:**
>
> You can select multiple styles from the list of existing styles.

    c. On the **Add Style Attributes**, add the Style Class Name and then select **Done**.

10. On the **Manage Order** page, you can you can review the order and select **Continue**.

Data Manipulation

Using MOD Function

Communication Cloud Service lets you use the MOD function using the Data tag. The MOD function allows you calculate the remainder of dividend divided by a divisor. You can use this function for integers and decimal numbers.

Example: Package Assembly Template

```
{
        "$$Id": "ModCalculation",
        "Fields": [
    {   "Name": "TransactionsLimit",
        "Path": "$.TransactionsLimit"
    },
    {   "Name": "NumberofTransactions",
        "Path": "$.NumberofTransactions"
    },
    {   "Name": "IncrementedTransactionsLimit",
        "Path": "$.IncrementedTransactionsLimit"
    }
    ]}
```

Example: Content Configuration

The additional charge of $100 will be collected since the transactions limit is increased by

```
<comms-data>$Data{"Id":"IncrementedTransactionsLimit"}<comms-transform
        type="mod"><comms-data>$Data{"Id":"NumberofTransactions"}</comms-
data><comms-data>$Data{"Id":" TransactionsLimit
        "}</comms-data></comms-transform></comms-data>.
```

Example: Sample Input

```
{"TransactionsLimit": 100,
        "NumberofTransactions": 125,
        "IncrementedTransactionsLimit": 0}
```

Example: Package Output

The additional charge of $100 will be collected since the transactions limit is increased by 25.

> **Note:**
>
> If you use 0 for divisor, or if you use the function for any number type other than integer and decimal an error will be displayed.

Using Concatenation

The concatenate function lets you string together multiple data inputs. For example, you might want to generate account holder's first name and last name on a single line. You can use the concatenate function to string together, the fields to generate the required output. You can also use the concatenate function to generate barcode from the multiple input data fields.

Comms-transform tags are used to transform or support data manipulation and map the result as the value for <comms-data> tag that contains them. For barcodes, <comms-transform> is required when multiple data elements are needed to populate the data for the barcode.

Comms-transform concatenate

Comms-transform tag should be used as a child of <comms-data> and can contain one or more <comms-data> tags as children. Comms- transform creates new data by using the values from the <comms-data> children.

The <comms-transform> tag with type concatenation combines its <comms-data> children sequentially into a new string. Each child is treated as a string value. The comms-transform of type concatenation can include an optional separator attribute that is placed between each of the children's values when creating the final string output if provided.

Concatenate function supports static, dynamic, and combination of static and dynamic input data feed to generate the output.

Examples

Multi data feed with Separator

```
<comms-
data>$Data{"Id":"Barcode39","BarcodeType":"Code39"}
        <comms-transform Type="Concatenation"
Separator="-">
        <comms-data>$Data{"Id":"AccountCode" }</comms-
data>
        <comms-data>$Data{"Id":"AccountNumber"}</comms-
data>
        <comms-data>$Data{"Id":" PaymentType"}</comms-
data>
        <comms-data>$Data{"Id":" PaymentAmount" }</comms-
```

```
data>
      </comms-transform></comms-data>Sample Data:{    "AccountCode":
    "02",    "AccountNumber":
     "123456",    "PaymentType":
    "05",
     "PaymentAmount": 400}
     Output:Value of Barcode39 = 02-123456-05-400
```

Static data with Multi data feed

```
<comms-data>$Data{"Id":"Barcode39","BarcodeType":"Code39"}
      <comms-transform type="Concatenation">
      <comms-data>$Data{"Id":" AccountCode","Value":"165789" }</comms-
data>
      <comms-data>$Data{"Id":"AccountNumber"}</comms-data>
      <comms-data>$Data{"Id":"PaymentType"}</comms-data>
      </comms-transform></comms-data>Sample Data:
{    "AccountNumber":"53688",    "PaymentType":
     "05",}
        Output:Value of Barcode39 = 1657895368805
```

Performing Arithmetic Operations

Communication Cloud Service lets you perform arithmetic operations on integers and decimal values. The <comms-tranform> tag with `type` attribute lets you specify the arithmetic operation to perform on the input data.

The following table lists the arithmetic operations:

Arithmetic Operation	Output
Sum	Returns the summation of two input values.
Difference	Returns the difference between two numbers.
Multiply	Returns the numerical product of the two numbers by multiplying them.
Division	Returns the numerical quotient of two numbers.

Syntax

```
<comms-transform type="sum"> <comms-data>$Data{"Id":"Field1"}</comms-data>
<comms-data>$Data{"Id":"Field2"}</comms-data></comms-transform>
```

Assembly Template

```
{
    "$$Id": "ArithmeticEvent",
    "Fields": [
        {
            "Name": "NumberField1",
            "Path": "$.NumberField1"
        },
        {
```

```
            "Name": "NumberField2",
            "Path": "$.NumberField2"
        }
    ]
}
```

Example

```
<comms-data>$Data{"Id":" ArithmeticOutput "} <comms-transform type="sum">
<comms-data>$Data{"Id":"NumberField1"}</comms-data> <comms-
data>$Data{"Id":"NumberField2"}</comms-data> </comms-transform></comms-data>
```

Sample Data

```
{ "NumberField1":100, "NumberField2":2,}
```

Output

```
ArithmeticOutput = 102
```

Extracting Sub String

You can use the <comms-transform> tag to extract a sub string from a specific position in a data string. You can specify the length of the string that you want to extract. For example, in case you want to remove special characters from organization names such as trademark symbol, or in case of currency, you might want to extract only the amount without the currency symbol. You can use the Sub String function to extract the exact length of characters from a specific position.

Syntax

```
 <comms-transform type="substring" start="n" length="n"></comms-transform>
```

Replace the `n` in start to specify the start position to extract the sub string from.

Replace the `n` in length to specify the number of characters including the start of the sub string.

Example

```
<comms-data>$Data{"Id":"FirstName"}<comms-transform type="substring"
start="14" length="9"></comms-transform></comms-data>
```

Assembly Template

```
{
    "$$Id": "SubSTringEvent",
    "Fields": [
        {
            "Name": "FirstName",
            "Path": "$.FirstName"
        }
```

```
        ]
    }
```

Sample Data

```
{"FirstName":"CommunicationCloudUser"}
```

Output

```
FirstName = CloudUser
```

Using Trim Function

The Trim function in Communication Cloud Service lets you to eliminate selected choice of characters from any leading or trailing spaces and fillers based on a specified position. It uses the <comms-data> tag to return the output.

Parameters	Details
left	Trims the specified characters available in the leading position of the data
right	Trims the specified characters available in the trailing position of the data

Syntax

```
<comms-data>$Data {"Id":"TotalDepositAmount", "Format":"$#,###.00"}
        <comms-transform type="trim" left="n" right="n"
        char="n"></comms-transform></comms-data>
```

Replace the n in left to specify true or false.

Replace the n in right to specify true or false.

Replace the n in char to specify the character(s) you want to trim, multiple characters are separated by comma separator. For example, char="$", char="$,-", char="TM".

Example: Package Assembly Template

```
{
        "$$Id": "TrimEvent",
        "Fields": [
         {
          "Name": "TotalDepositAmount",
          "Path": "$.TotalDepositAmount"
         },
         {
          "Name": "FundName",
          "Path": "$. FundName "
         }
         ]
        }
```

Example: Content Configuration

The total deposited amount for

```
<comms-data>$Data {"Id":"FundName"}<comms-transform type="trim" left="true"
right="true" char="*,$"></comms-transform></comms-data> is <comms-data>$Data
{"Id":"TotalDepositAmount", "Format":"#,###.00"}<comms-transform type="trim"
left="true" right="false" char="$"></comms-transform></comms-data>.
```

Example: Sample Input

```
{" TotalDepositAmount ": "$125.45"," FundName ": "**Debt Fund A$$"}
```

Example: Package Output

The total deposited amount for Debt Fund A is 125.45

Communication Iteration

As content designer for your financial institution, you may be required to generate statements where you need to include data of iterative nature. In Communication Cloud Service, you can use the <coms_loop> in content data to generate iterative type of rendered output in PDF format.

> **✏️ Note:**
>
> You can use the `<comms-loop>` to create iterative content to be used in tables and outside tables.

Following is the syntax that you can use:

```
<comms-loop><comms-data>{loop variable}</comms-data><comms-data>{Output
variable}</comms-data></comms-loop>
```

You can create iterative content in any of the following ways:

- **Iterator type**
  Iterator type iteration denotes iterating only the content information per occurrence of the dynamic data collection. For example, repeating the rows of a table and list items available within the Content.

- **Spliterator type**
  Spliterator type iteration denotes iterating and splitting the Content or Layout or Document itself for every occurrence of the dynamic data collection.

Following are some examples:

Example 1 - Nested Iteration

The following illustration displays one of the nested iteration permutations wherein the SPLITERATOR setup is configured to Content and Layout and Document.

```
Fixed Deposit Number: FD2021Jan056701   FixedDepositAmount:$1,000.00
InterestDate:May 31, 2021   InterestAmount:$100.00
Fixed Deposit Number: FD2021Jan056701   FixedDepositAmount:$1,000.00
InterestDate:Dec 31, 2021   InterestAmount:$100.00
```

Package Structure

```
PackageName
        DocumentName
                LayoutName
                        ContentName1
                        ContentName2
```

Assembly Template

```json
{
        "$$Id": "PackageName1",
        "Fields": [],
        "Documents": [
        {
        "$$Id": "DocumentName",
        "Fields": [],
        "Iteration":{
                "$$Id":"DocumentName",
                "Type":"Spliterator",
                "Path":"$.FinancialYear[*]",
        "Fields": [
                {
                 "Name": "Year",
                 "Path": "$.Year"
                },
                {
                  "Name": "FixedDepositNumber",
                  "Path": "$.FixedDepositNumber"
                },
                {
                  "Name": "FixedDepositAmount",
                  "Path":"$.FixedDepositAmount"
                }
                ]
            },
        "Layouts": [
            {
             "$$Id": "LayoutName",
             "Iteration": {
             "$$Id": "LayoutName",
             "Type": "Spliterator",
             "Path":
"$.FixedDeposits[*].Interests[*]",
        "Fields": [
            {
             "Name":"InterestDate",
             "Path": "$.InterestDate"
```

```
                  },
                  {
                   "Name":"InterestAmount",
                   "Path": "$.InterestAmount"
                  }
                ]
              }
            }
          ]
        }
      ]
    }
```

Content(s)Configuration

```
Below is the configuration to be added for 'ContentName1' content record:
Fixed Deposit Number: <comms-data>$Data {"Id":"FixedDepositNumber",
"Type":"String"}</comms-data>    FixedDepositAmount:<comms-
data>$Data{"Id":"FixedDepositAmount", "Type":"Decimal",
"Format":"$#,###.00"}</comms-data>
Below is the configuration to be added for 'ContentName2' content record:
InterestDate:<comms-data>$Data {"Id":"InterestDate",
"Type":"Date","Format":"MMM dd, yyyy"}</comms-data>    InterestAmount:<comms-
data>$Data{"Id":"InterestAmount", "Type":"Decimal", "Format":"$#,###.00"}</
comms-data>
```

Preview Data

```
{
        "FinancialYear": [
        {
         "Year": "2021",
         "FixedDepositNumber":
    "FD2021Jan056701",
      "FixedDepositAmount": 1000,
      "FixedDeposits": [
        {
         "Interests": [
                {
                 "InterestDate": "2021-05-31",
                 "InterestAmount": 100
                },
                {
                 "InterestDate": "2021-12-31",
                 "InterestAmount": 100
          }
        ]
      }
    ]
  }
]
}
```

Example 2 - Independent Iteration

The following illustrations displays the iterated contents next to each other:

Case 1

Fixed Deposit Years: 20212022

Case 2

ContentName1:

2021

2022

Case 3

ContentName1:
2021
2022

Package Structure

```
PackageName1
          DocumentName1
                LayoutName1
                     ContentName1
```

Assembly Template

```
{
          "$$Id": "PackageName1",
          "Fields": [],
          "Documents": [{
              "$$Id": "DocumentName1",
              "Layouts": [{
                  "$$Id": "LayoutName1",
                  "Contents": [{
                  "$$Id": "ContentName1",
                  "Iteration": {
                  "$$Id": "ContentLoop1",
                  "Type": "Iterator",
                  "Path": "$.FinancialYear.[*]",
                  "Fields": [{
                     "Name": "Year",
                     "Path": "$.Year"
                }
            ]
        }
    }]
}]
}]
}
```

Preview Data

```
{
        "FinancialYear": [{
          "Year": "2021"
        },
        {
          "Year": "2022"
        }
      ]
    }
```

> **Note:**
>
> Iterated Content will be displayed sequentially in the same line.

Content Configuration - Case1 Iterated Content will be displayed sequentially in the same line

```
ContentName1:
        Fixed Deposit Periods: <comms-loop><comms-data>$Data
{"Id":"ContentLoop1"}</comms-data><comms-data>$Data {"Id":"Year",
"Type":"String"}</comms-data></comms-loop>
```

Content Configuration - Case 2 Iterated Content will be displayed sequentially on a separate line

```
ContentName1:
        <comms-loop><comms-data>$Data {"Id":"ContentLoop1"}</comms-data>
        <comms-data>$Data {"Id":"Year", "Type":"String"}</comms-data></comms-
loop>
```

Content Configuration - Case 3 Iterated Content will be displayed in a table

Add a 2X2 table with the following configuration:

For first row, ContentName1

```
<comms-loop><comms-data>$Data{"Id":"ContentLoop1"}</comms-data></comms-loop>
        <comms-data>$Data {"Id":"Year","Type":"String"}</comms-data>
```

In second row,

```
<comms-loop><comms-data>$Data {"Id":"ContentLoop1"}
</comms-data></comms-loop>
<comms-data>$Data{ID":"Year"'"Type":"String"}</comms-data>
```

5

Configuring Layouts

You can configure Document and Content by applying one or more combination of layouts.

Communication Cloud Service supports following types of Layout configurations:

- **Block**
  In case of Block layout, content flows vertically in the document.

  Configuring Block Layout

- **List**
  Displays ordered or unordered list.

  Configuring List Layout

- **Grid**
  Displays named areas of content.

  Configuring Grid Layout

- **Table**
  Displays content in rows and columns.

  Configuring Table Layout

Layouts can be reused and associated across various Documents as per the Package Assembly output requirement for Communication. You can associate multiple styles to Layouts.

While defining a Layout, you can select and apply a style class from a predefined list of Style Classes or you can also choose to add a new style class. By applying a style class to a layout you can define appearance of the final assembled output.

> ✏ **Note:**
>
> Styles applied to Layout using Style Class can be overridden by direct Style associations.

You can also arrange the sequence of associated layouts to define the order in which the Layouts are arranged in the Package Assembly output.

Configuring Block Layout

Configuring Block Layout

1. Log in to Oracle Financial Services Cloud with your credentials and select an active **Config ID**.

2. From the Dashboard, select Application Navigation.

3. From the left Navigation pane, select **Communication**.

4. From the Navigation pane, select **Layout** and then, select **Create**.

5. Select **Block** on the **Select Layout Type**, and then select **Continue**.

6. Now, enter the details in the following sections:

Table 5-1   Identification

Field	Description
Name	Enter name for the Layout
Long Name	Enter the long name for the Layout
Description	Enter description for the Layout
Style Class Name	Select the **+ Style Class** and select the style class names from the list of styles and select **Done**.

7. Select **Continue** to move to the next section.

8. You can associate Styles and Content in the **Manage Associations** page.
   To associate a Style to a Layout

   To begin associating a Style to a Layout select, + **Add.**

   You can associate a style to a layout, using any of the following options in the Setup Style. After you select your preference, select **Continue**:

   • **Create New Style**

   • **Use Existing Style(s)**

   Creating a New Style

   a. On the **Style** page, enter the following details and select **Save**:

Table 5-2   Identification

Field	Description
Name	Enter name for the style
Long Name	Enter the long name for the style
Description	Enter description for the style

   b. From the **Style Attributes** list, select the attributes that you want to add and select **Save**.

   c. From the **Elements**, set the paragraph and table settings.

   Using Existing Style

   a. On the **Setup Style**, select **Use Existing Style(s)** and select **Continue**.

   b. On the **Associate Styles** page, select the styles that you want to add and select **Continue**.

   > **Note:**
   >
   > You can add multiple styles to a Layout from the list of existing styles.

   c. On the **Add Style Attributes**, add the Style Class Name and then select **Done**.

   Adding Content to Layout

   a. On the **Manage Association** page, select **+ Add** against Contents.

    b. From the **Setup Content**, select if you want to create new content or use existing content.
Creating New Content

Adding Text Content In Communication Cloud ServiceUpload Image Content In Communication Cloud Service

> ✏️ **Note:**
>
> You can apply a Style Class to the entire content. Additionally, you can also apply style class to selected text from the content to generate customized document output that you plan to generate

Using Existing Content

To add content, select**+ Add** against the Contents section.

    i. From **Select Content**, select **Use Existing Content(s)** and select **Continue**.

    ii. From the **Associate Content**, select the content that you want to add and select **Done**.

> ✏️ **Note:**
>
> You can add multiple content to a Layout from the list of existing content.

    iii. On the **Add Content Attributes**, select True or False for **Content Always Triggered** and select **Done**.

9. On the **Manage Associations** page, select **Continue** to move to the next section.

10. On the **Manage Order** page, you can set the order of content. Once you are sure about the order of the layout, select **Continue**.

Configuring Grid Layout

Grid Layout lets you manage large chunks of content. It offers you the flexibility to associate more layouts within the grid layout thus letting you structure your documents and content as per business requirements. Due to its unique capabilities, you must define name areas of the grid. You can add more styles and layouts to the name areas.

Configuring Grid Layout

1. Log in to Oracle Financial Services Cloud application with your credentials and select an active **Config ID**.

2. From the Dashboard, select Application Navigation.

3. From the left Navigation pane, select **Configuration** and then select **Communication**.

4. From the Navigation pane, select **Layout**.

5. To add new grid layout, select **Add**.

6. On the **Creating Layout** wizard, select **Grid** and select **Continue**.

> **Note:**
>
> In case of grid layout, you can also associate other layouts with the grid layout.

Table 5-3   Add Identification

Field	Description
Name	Enter name for the layout.
Long Name	Enter long name for the layout.
Description	Enter description for the layout.
Style Class Name	Select the style class that you want to associate with the layout. > **Note:** > > You can associate more than one style to the layout.

7. On the **Manage Associations** page, expand **Optional** and start with adding style with grid layout attribute which will help you in defining the name areas.
   To add a Style to a Layout

   To add a style, you can use any of the following options and select **Continue**:

   • **Create New Style**

   • **Use Existing Style(s)**

   Creating a New Style

   > **Note:**
   >
   > For grid layout, start by defining the grid area in the style.

   a. On the **Create Style Add Identification** page, enter the following details and select **Continue**:

   Table 5-4   Add Identification

Field	Description
Name	Enter name for the style.
Long Name	Enter the long name for the style.
Description	Enter description for the style.

   b. On the **Creating Style Add Style Attributes** page, enter name for the **Style Class** and select **+** against **Add Attribute**.

   c. Select **Grid-template-areas** attribute and select **+** against **Add RowContinue**.

   d. On the **Grid-template-areas** page, select **+** against **Add Area Name** to the rows.

e. Enter the **Area Name** and select **Continue**. Repeat this as per your requrement for the number of areas and rows and then select **Done**.

f. On the **Creating Style Add Style Attribute** page, add more attributes if required and select **Continue**.

Using Existing Style

a. On the **Adding Style to Layout Setup Style** page, select **Use Existing Style(s)** and select **Continue**.

b. On the **Select Style(s)** page, select a grid-template-areas style that you want to add and select **Continue**.

> **Note:**
>
> You can add multiple styles to a layout from the list of existing styles.

c. On the **Adding Associations Attributes Add Style Attributes** page, select **Continue**.
Adding Layout

You can either create new layouts or map existing layouts to the named areas of the grid template.

Adding new layout to map to named areas

i. On the **Creating Layout Manage Associations** page, select **+Add** against **Layout**.

ii. Select the type of layout that you want to create from the list and select **Continue**.

iii. In the **Creating Layout Add Identification** page, enter the following details and select **Continue**.

Table 5-5   Add Identification

Fields	Description
Name	Enter name for the layout.
Long Name	Enter long name for the layout.
Description	Enter description for the layout.
Style Class Name	Select the Style Class Name to apply.

iv. On the **Creating Layout Attributes Add Layout Attributes** page, specify the following and select **Continue**:

Table 5-6   Add Layout Attributes

Field	Description
Layout Always Triggered	Select if you want to apply the layout everytime. By default, it is set to **True**.
Style Area Name	Enter and select the area name which you want to associate with the layout.

i. On the **Creating Layout Manage Association** page, select **Suggested** and expand **Optional**.

ii. On the **Manage Associations**, expand **Contents**.

    iii. Select **+Add**.

    iv. From the **Adding content to Layout - Setup Content**, select if you want to create new content or use an existing content.
Creating New Content

To create new content, follow the steps mentioned in the following topics:

Adding Text Content In Communication Cloud Service

Uploading Image Content In Communication Cloud Service

> **Note:**
>
> On the **Add Content attributes Content Attributes**, specify if you always want to trigger content. By default, it is set to **True**.

Using Existing Content

    i. On the **Adding Content to Layout Setup Layout** page, select **Use Existing Content(s)** and select **Continue**.

    ii. On the **Select Content(s)** page, select the content that you want to add and select **Continue**.

> **Note:**
>
> You can associate multiple content to a layout from the list of existing content.

    iii. On the **Add Content attributes Content Attributes**, set if the content is always triggered. By default, it is set to **True**.

8. On the **Manage Associations** page, select **Continue**.

9. On the **Creating Layout Manage Order** page, set the order of the associated layouts and styles and select **Continue**.

10. On the **Success** page, you can view the details of the newly added layout. Select **Finish** to complete the process.

Configuring List Layout

Configuring List Layout

1. Log in to Oracle Financial Services Cloud application with your credentials and select an active **Config ID**.

2. From the **Dashboard**, select **Application Navigation**.

3. From the left navigation pane, select **Configuration** and then select **Communication**.

4. From the navigation pane, select **Layout** and select **Add**.

5. On **Creating Layout Setup** page, select **List** layout and then, select **Continue**.

6. In the **Add Identification** step, enter the following details and select **Continue**:

Table 5-7   Add Identification

Field	Description
Name	Enter a name for new layout that you want to create.
Long Name	Enter a long name for the new layout that you want to create.
Description	Enter description.
Style Class Name	Select the **Style Class** that you want to apply to the layout.

> **Note:**
>
> You can select more than one style.

7. In the **Manage Associations** page, from **Optional** select Styles or Content.

8. In **Adding Style to Layout**, select if you want to add a new style or use an existing style.
   To Create a New Style

   a. On the **Create Style Add Identification** page, enter the following details and select **Continue**:

   Table 5-8   Add Identification

Field	Description
Name	Enter name for the style
Long Name	Enter the long name for the style
Description	Enter description for the style

   b. In the **Creating Style Add Style Attributes** page, enter name for **Style Class** and select **+** against **Add Attribute**.

   c. Select **Attribute** that you want to add and select **Continue**.

   > **Note:**
   >
   > You can also manage the order of the attributes added in the Style Class.

   To Use an Existing Style

   a. On the **Adding Style to Layout Setup Style** page, select **Use Existing Style(s)** and select **Continue**.

   b. On the Select Style(s) page, select the styles that you want to add and select **Continue**.

   > **Note:**
   >
   > You can add multiple styles to a Layout from the list of existing styles.

     c. On the **Adding Associations Attributes Add Style Attributes** page, select **Continue**

9. On the **Manage Associations Work In Progress** page, select **Continue**.

10. On the **Manage Order Order Styles** page, set the order of the styles that you have added and select Continue

11. On the **Success** page, you can view the details of the newly added layout. Select **Finish** to complete the process.

Configuring Table Layout

Configuring Table Layout

1. Log in to Oracle Financial Services Cloud with your credentials and select an active **Config ID**.

2. From the Dashboard, select Application Navigation.

3. From the left Navigation pane, select **Configuration** and then select **Communication**.

4. From the Navigation pane, select **Layout** and then, select **Add**.

5. On the **Creating Layout**, select **Table** and then select **Continue**:

6. On the **Creating Layout**, enter the following details and select **Continue**:

Table 5-9   Add Identification

Field	Description
Name	Enter name for the Layout
Long Name	Enter the long name for the Layout
Description	Enter description for the Layout
Style Class Name	Select the Style class name from the list of styles.

7. From the **Manage Associations** page, expand **Optional**. You can decide if you want to associate Style and Contents.

8. If you decide to associate style, select **+Add** against Style.
   To add a Style to a Layout

   On the **Adding Style to Layout Setup Style** page, you can use any of the following options and select **Continue**:

   • **Create New Style**

   • **Use Existing Style(s)**

   Creating a New Style

   a. On the **Create Style Add Identification** page, enter the following details and select **Continue**:

   Table 5-10   Add Identification

Field	Description
Name	Enter name for the style
Long Name	Enter the long name for the style
Description	Enter description for the style

b. On the **Creating Style Add Style Attributes** page, enter name for the **Style Class Name** and select **+** against **Add Attribute**.

c. Select attributes that you want to add and select **Continue**.

> **Note:**
>
> You can also manage the order of the attributes added in the Style Class.

Using Existing Style

a. On the **Adding Style to Layout Setup Style** page, select **Use Existing Style(s)** and select **Continue**.

b. On the **Select Style(s)** page, select the styles that you want to add and select **Continue**.

> **Note:**
>
> You can add multiple styles to a Layout from the list of existing styles.

c. On the **Adding Associations Attributes Add Style Attributes** page, select **Continue**.

Adding Content to Layout

a. On the **Manage Association** page, expand **Optional** and then expand **Contents**.

b. Select **+Add**.

c. From the **Adding Content to Layout - Setup Content**, select if you want to create new content or use and existing content.
   Creating New Content

   Adding Text Content In Communication Cloud ServiceUpload Image Content In Communication Cloud Service
   Using Existing Content

   i. On the **Adding Content to Layout Setup Content** page, select **Use Existing Content(s)** and select **Continue**.

   ii. On the **Select Content(s)** page, select the content that you want to add and select **Continue**.

   > **Note:**
   >
   > You can add multiple contents to a Layout from the list of existing content.

9. On the **Manage Order** page, you can select the order of content. Select **Continue**.

10. On the **Success** page, you can view the details of the newly added layout. Select **Finish** to complete the process

ORACLE

6

Configuring a Document

Document consists of one or more Layouts that define the structure of the Document. A document could be a printed letter, email, SMS message etc.

Document in Communication Cloud Service holds information in the form of text and graphics. Communication Cloud Service supports following formats including, but not limited to PDF, HTML, Print and other physical or electronic formats exclusive of Email.

In Communication Cloud Service, Document is a deliverable that contains relevant content comprising of text and or graphics using appropriate font and style. A Document is structured with one or more layouts such as list, grid, block, table.

To configure a Document

1. Log in to Oracle Financial Services Cloud with your credentials and select an active **Config ID**.

2. From the Dashboard, select Application Navigation.

3. From the left Navigation pane, select **Configuration** and then select **Communication**.

4. From the Navigation pane, select **Document**.

5. To add new Content, select **Add**.

6. On the **Creating Document Add Identification** page, enter the following details and select **Next**:

   Table 6-1   Add Identification: Base Document

Field	Description
Name	Enter a name for new document that you want to create.
Long Name	Enter a long name for the new document that you want to create.
Description	Enter description.
Marketing Company	Select the relevant Marketing Company for the Document.
Operations Company	Select the relevant Operation Company for the Document.

7. On the **Add Identification Create Document Version** page, enter the following details and select **Continue**:

   Table 6-2   Add Identification: Create Document Version

Field	Description
Name	Enter Name for document version.
Description	Enter Description for document version

Table 6-2   (Cont.) Add Identification: Create Document Version

Field	Description
Set Status Dates	Set the Active and Inactive dates for the Document configuration.

8. On the **Creating Document Version Manage Associations** page, expand **Options** and select **Layouts** or **Styles** that you want to associate.

9. To add new Layout, refer to the topic Configuring Layouts. Alternatively, you can also select a layout from the list of existing layouts.

10. To add new Styles, refer to the topic Creating a Style. Alternatively, you can also select an existing style from the list of existing styles.

11. On the **Success** page, select **Finish**.

7

Assembly Template Reference

The Assembly Template is a JSON file that is attached to the Package Version Configuration. It supports the mapping of external data, inclusion conditions and iterations.

Minimum viable Assembly Template is an empty object - {}; one open bracket ({) and one close bracket (}).

The Assembly Template enhances the configuration by supporting:

- Data mapping through the definition of Fields which can be referenced during Content configuration creation to include variable data in the Content. Fields can be defined globally or at the Document, Layout or Content level for variable scope control.

- Conditions on Documents, Layout and Content which control when optional components are included in the assembled output.

- Iterations on Documents, Layouts and Content which further control the number of times a component may be included in the assembled output according to a data collection.

Schema Reference Table

The Schema Reference Table defines the allowable object structures and the examples provide further illustration. The Documents, Layouts and Content referenced in the Assembly Template must be defined by Configuration and be Associated to the Assembly Template's Package Version.

> **Note:**
>
> Property values in the following table are case-sensitive.

Object	Property	Type	Description	Required
Assembly Template		Object	The top-level object representing the Assembly Template	
	$$Id	String	The name of the Package configuration	Y
	Documents	Array	An array of Document objects	N
	Fields	Array	An array of Field objects. Fields identify how values from instance data will be merged into the output.	N
Document		Object	An object representing a Document	

Object	Property	Type	Description	Required
	$$Id	String	The name of the Document configuration	Y
	Condition	String	A Json Path expression that identifies an object or objects in the instance data. If no such object or objects are found, the Document will not be included in the output. Default is "true".	N
	Iteration	Object	Used when multiple instances of the Document are possible based on occurrences of instance data.	N
	Fields	Array	An array of Field objects. Fields identify how values from instance data will be merged into the output.	N
	Layouts	Array	An array of Layout objects. Layouts describe the sections of the Document and their relative positioning. Every Document must have at least one Layout.	N
Field		Object	An object representing data values to be substituted into Content	
	Name	String	The name of the Field as it is known to its container. It becomes the property name in the output.	Y
	Path	String	The Json path used to identify the instance data which will become a property value in the output.	Y
	Mandatory	Boolean	Indicates if the field is mandatory. By default, it is set to true.	N
Layout		Object	Describes a Layout	Y
	$$Id	String	The name of the Layout configuration	Y
	Condition	String	A Json Path expression that identifies an object or objects in the instance data. If no such object or objects are found, the Layout will not be included in the output. Default is "true".	N
	Contents	Array	An array of Content objects.	N
	Iteration	Object	Used when multiple instances of the Layout are possible based on occurrences of instance data	N

Object	Property	Type	Description	Required
Iteration		Object	Describes the containing object (Document, Layout, Content) may be repeated based on multiple occurrences of some object/property in the instance data.	
	$$Id	String	The name of the Iteration	Y
	Type	String	The type of the iteration can be the following: • Iterator Denotes collection data lopping within a content item. • Spliterator Creates a content item for every data instance available in the collection.	Y
	Path	String	The Json path value that will potentially return multiple values, each of which is used to substitute values into an instance of the Iteration's container.	Y
	Fields		An array of Field objects. Fields identify how values from instance data will be merged into the output.	N
Content		Object	An object representing a block of Content (text, image, video, etc)	
	$$Id	Object	An object representing a block of Content (text, image, video, etc)	
	Condition	String	The name of the Content Configuration	Y
	Iteration	String	A Json Path expression that identifies an object or objects in the instance data. If no such object or objects are found, the Content will not be included in the output. Default is "true".	N
		Object	Used when multiple instances of the Content may be produced for multiple occurrences of some specified instance data	N

Examples of Assembly Template

Basic

Beyond the empty object ({}) any Assembly Template will have to have a "$$Id" object whose value matches the Package's name.

```
{"$$Id":"My Package"}
```

The presence of any child object array is optional such that a Document, Layout, Content does not have to contain any children. If any child objects of Document, Layout or Content are added to any parent object the child object must have an "$$Id" object whose value matches the name of that child.

```
{"$$Id":"My Package", "Documents":[{"$$Id":"My First Document"},
{"$$Id":"My 2nd Document"}]}
```

Condition and Iteration as well as a collection of Fields is also optional on each object type supporting them. A child object can be included without a Condition or Iteration and without a collection of Field; however, such a structure provides no value.

Field

A Field collection defines the mapping between the incoming JSON data and the referenceable Field names used in Content configuration to display the data. In order to reference incoming data in a Content configuration (e.g. Hello) a Field for that data must be defined in the Assembly Template.

Fields defined in one object can be referenced during configuration by any Content within the configuration hierarchy defined through association. Fields can be over written by redefining the Field in a child object in which case the Content under the child's hierarchy will use the over written value.

```
{"$$Id" : "My Package", "Fields" :
[{"Name":"FullName","Path":"$.beneficiary.name"}]}
```

The Assembly Template above would provide a Field with the Name of "FullName" that could be referenced in any Content within the My Package hierarchy through any Document->Layout association. If the JSON data submitted in the Assembly request is `{"beneficiary": {"name": "Jim Smith"},"spouse":{"name": "Jane Smith"}},`"spouse":{"name": "Jane Smith"}}` the value of FullName in all areas would be Jim Smith.

Given the same data and the following Assembly Template`{"$$Id" : "My Package", "Fields" : [{"Name":"FullName","Path":"$.beneficiary.name","Mandatory": false}], "Documents":[{"$$Id": "Right of Ownership", "Fields": [{"Name":"FullName","Path":"$.beneficiary.spouse"}]}]}`

The value of FullName in any Content included in the "Right of Ownership" Document would be "Jane Smith" while all other Document Content would get a value of "Jim Smith".

The value for the field Mandatory indicates if the field is required. By default, it is set to True. When it is set to false, no error message is displayed about missing JSON path and if you do map to it, the value will be empty in output. If the Mandatory attribute is set to true or is missing, an error is displayed and no output is rendered from the assembly.

Condition

A Condition on any object will determine if that object is included in the assembled output. If an object is not included in the Assembly Template or does not have a Condition, it will always be included in the output. Iteration can also impact the inclusion of an object in the output as discussed elsewhere.

Example:

Given the following Assembly Template `{"$$Id":"My Package","Documents": [{"$$Id":"Auto Renewal","Condition":"$[?(@.account.auto == 'True')]"}]}`

If the data is `{"account": {"auto": " True"}` the Auto Renewal document will be included in the output, but if the data is `{"account":{"auto": "annual"}` the Auto Renewal document will not be included in the output.

Given the following Assembly Template `{ "$$Id": "My Package", "Documents": [ { "$$Id": "Auto Renewal", "Condition": "$[?(@.account.auto == 'annual' || @.account.auto == 'True')]" } ] }`

If the data is `{"account": {"auto": " True"}` or `{"account":{"auto": "annual"}` the Auto Renewal document will be included in the output.

> **Note:**
>
> You can use the "&&" operator when 2 conditions are to be satisfied.

Iteration

An Iteration on an object will determine if that object is included multiple times in the assembled output. The object, and its child objects if any, will be include one for each instance of the referenced JSON path in the data. The Fields array, if any, within the Iteration will utilize the Path defined in the Iteration as their root within their JSON path.

Given the following Assembly Template `{"$$Id":"name of package object","Documents":[{"$$Id":"name of document object that repeats","Fields":[],"Iteration":{"$$Id":"name given to repeating node","Path":"$.account[*]","Type":"Spliterator","Fields": [{"Name":"acct_number","Path":"$.number"}]}}]}` the Account Details document will be included twice in the output. Within the Account Details document Content that references act_number within the first copy of the document will get the value `XK12T-11` tand the second copy will get the value `YR15T-01`.

Assembly Template JSON Schema

```
{
 "$schema": "http://json-schema.org/draft-07/schema#",
 "definitions": {
 "Field": {
 "type": "object",
 "properties": {
```

```
"Name": {
"type": "string"
},
"Path": {
"type": "string"
}
},
"required": [
"Name",
"Path"
],
"additionalProperties": false
},
"Fields": {
"type": "array",
"items": {
"$ref": "#/definitions/Field"
}
},
"Layout": {
"type": "object",
"properties": {
"$$Id": {
"type": "string"
},
"Fields": {
"$ref": "#/definitions/Fields"
},
"Condition": {
"type": "string"
},
"Iteration": {
"$ref": "#/definitions/Iteration"
},
"Contents": {
"$ref": "#/definitions/Contents"
}
},
"required": [
"$$Id"
],
"additionalProperties": false
},
"Layouts": {
"type": "array",
"items": {
"$ref": "#/definitions/Layout"
}
},
"Iteration": {
"type": "object",
"properties": {
"Path": {
"type": "string"
},
"Fields": {
```

```
"$ref": "#/definitions/Fields"
}
},
"required": [
"Path"
],
"additionalProperties": false
},
"Content": {
"type": "object",
"properties": {
"$$Id": {
"type": "string"
},
"Iteration": {
"$ref": "#/definitions/Iteration"
},
"Fields": {
"$ref": "#/definitions/Fields"
}
},
"required": [
"$$Id"
],
"additionalProperties": false
},
"Contents": {
"type": "array",
"items": {
"$ref": "#/definitions/Content"
}
},
"Document": {
"type": "object",
"properties": {
"$$Id": {
"type": "string"
},
"Condition": {
"type": "string"
},
"Fields": {
"$ref": "#/definitions/Fields"
},
"Iteration": {
"$ref": "#/definitions/Iteration"
},
"Layouts": {
"$ref": "#/definitions/Layouts"
}
},
"required": [
"$$Id"
],
"additionalProperties": false
},
```

```
"Documents": {
"type": "array",
"items": {
"$ref": "#/definitions/Document"
}
}
},
"type": "object",
"properties": {
"$$Id": {
"type": "string"
},
"Fields": {
"$ref": "#/definitions/Fields"
},
"Documents": {
"$ref": "#/definitions/Documents"
}
},
"required": [
"$$Id"
],
"additionalProperties": false
}
```

8
Communication Distribution

The end result of Communication Cloud Service is to create communication. This is achieved using the CommunicationDistribution REST API.

Assembly uses the data provided by the source system to drive the Package Assembly Template and the configuration of the Documents, Layouts, Content, Style and Fonts that contribute to the Package. The CommunicationDistribution Post method is used to create HTML, HTML email, PDF, and CSV.

Communication Cloud Service Distribution enables you to distribute configured communications through channels such as email and lets you store it using documentation repositories.

You can use the Communication REST API method from source systems to request a communication process. Communication Cloud Service distribution uses data provided by the source system to drive the Package Assembly Templates and distribution services. HTML, and PDF can be distributed to repositories such as Oracle Content Manager or through email using Oracle's OCI Email Service.

Distribution supported by Communication Cloud Service:

- Email distribution using OCI Email Service (OCI)
- Storage of communication using Oracle Content Manager (OCM)

Communication Distribution process includes 3 major configurations.

- Composing communications for distribution (Email, PDF or HTML)
- Configuring the Communication Email Distribution Service and Communication Distribution Storage Service
- Configuring the supplier service (OCI or OCM)

Table 8-1   Communication components for distribution to document repository

Component	Description
Document	Communication that is to be sent to the document repository.
Metadata	The JSON that will be sent along with the communication that enables the document repository to properly consume the communication. For example, put it into the right location for the end user to view or download.
Assembly	Creation of the communication and the JSON metadata that will be sent to the document repository.
Communication Distribution	Instructions on where the document and metadata will be sent to.

Table 8-2   Communication components for email distribution

Component	Description
Email body	Body component of the email that will be sent to the email distribution channel.
Email subject	The subject line of the email that will be sent.
Email address(es)	The address(es) that the email will be sent to including From, To, CC and BCC.
Assembly	The creation of the email along with the subject and address(es) the email will be sent to.
Email Distribution	The instructions where the email will be sent to.

- **Part 1: Composing communication for distribution**
  The first part of configuration includes composing the communication that you want to distribute. You must compose email or create PDF or HTML that you want to distribute.

- **Part 2: Configuring the Communication Email Distribution Service and Communication Distribution Storage Service**
  Configure the Communication Email distribution service and Communication Storage distribution service to carry out tasks defined in the process table and ensure that all the tasks are performed in a sequential manner. This configuration ensures that the packages created are distributed via right channel.

- **Part 3: Configuring the Supplier Service**

- Communication Cloud Service supports suppliers to distribute communications. For the email service, you can use OCI Email and for communication storage, you can use Oracle Content Manager (OCM).

When the communication distribution API receives a request from the source system to distribute email PDF/HTML to storage, it triggers a sequence of processes which are defined for a business function. For each process, communication distribution triggers the assembly configuration to first generate the desired communication output and then distribute it as required.

Each package configuration consists of the Document, Layout, Content, and Content version details.

After successful completion of the distribution flow, the process table is updated with status to start with the next activity.

Following table lists the most common terms used in Communication Distribution:

Table 8-3   Commonly used terms in Communication Distribution

Term	Description
Process Table	Communication runs a series of processes that can be configured within a Process Table to control the flow of Communication based on key factors and the outcome of each process.
Processes	A Process executes one or more Services that perform some function. Services within a process are run asynchronously. All communication processes have a 1:1 relationship with a single service that implements the process.
Services	Services perform some function within a process. A service can be called by an external client or by internal process. Services are always run by a process. Services can invoke processes or perform any other action necessary to complete their function. Services can be simple or complex (having their own process tables and processes).

Table 8-3   (Cont.) Commonly used terms in Communication Distribution

Term	Description
Suppliers	Suppliers refers to service providers that are not available within Communication Cloud Service. Any service that is offered through a cloud offering external to Financial Services Cloud, is referred as a supplier.

Email Distribution

Communication Cloud Service Distribution supports creation and distribution of email via SMTP using OCI email. Email distribution includes the following activities:

- Part1: Composing Communication Email Content
- Part 2: Configuring the Communication Email Distribution process
- Part 3: Email Distribution Supplier configuration (OCI Email)

Part 1: Composing Communication Email Content

The communication email distribution begins with composing the email for distribution. To construct an email for distribution, create a package with a subject, body, and addresses for email distribution. You can define versions for each communication package to facilitate efficient management of email content.

> **Note:**
>
> You can also attach PDF documents to emails.

Part 2: Configuring the Communication Email Distribution process

The email distribution configuration begins with associating the Communication Service to a Marketing Company. You can associate one communication service endpoint to one Marketing Company. The Communication email service includes Communication Detail which is associated to the process table. Communication Detail is based on transaction type that you define for your business process. A process table holds the sequence in which tasks should be run. Based on the sequence of tasks, the Communication detail calls Communication Creation service or Communication Distribution service. Following are the two types of processes for email distribution:

- Communication Process Create Email
- Communication Process Distribute Email
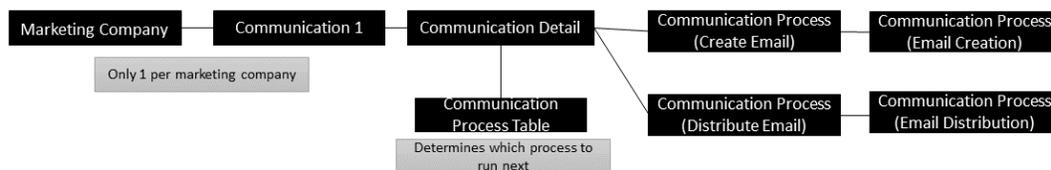
Part 3: Email Distribution Supplier configuration (OCI Email)

Currently, Communication Cloud Service supports OCI Email service for email distribution. To distributed emails, you must have the Communication Distribution Email Oracle OCI Email service configured.

The Communication Distribution Email Oracle OCI Email service should be associated with the Operations Company Supplier service. This holds the credentials required to connect to the OCI email supplier service.

The Communication Distribution Email Oracle OCI Email service is then associated with the Communication Distribution Email service which is part of the Communication Distribution Email process.
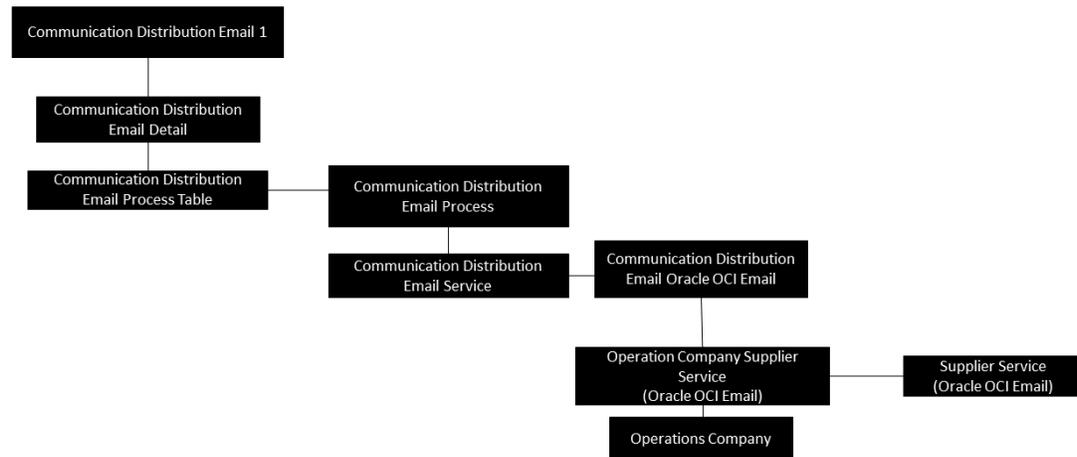
Storage Distribution

Communication Cloud Service Distribution supports storage and distribution of PDF using Oracle Content Management (OCM). Storage distribution includes the following activities:

- Part1: Composing Communication PDF and Metadata
- Part 2: Configuring the Communication Storage Distribution process
- Part 3: Storage Distribution Supplier configuration (OCM)

Part 1: Composing Communication PDF and Metadata

The communication storage distribution begins with composing the PDF for distribution. To construct a PDF for distribution, create a PDF package and metadata JSON. You can define versions for each communication package to facilitate efficient management of PDF content.

Part 2: Configuring the Communication Storage Distribution process

The PDF distribution configuration begins with associating the Communication Service to a Marketing Company. You can associate one communication service endpoint to one Marketing Company. The Communication storage service includes Communication Detail which is associated to the process table. Communication Detail is based on transaction type that you define for your business process. A process table holds the sequence in which tasks should be run. Based on the sequence of tasks, the Communication detail calls Communication Creation

service or Communication Distribution service. Following are the two types of processes for Storage Distribution:

*   Communication Process Create PDF
*   Communication Process Distribute PDF
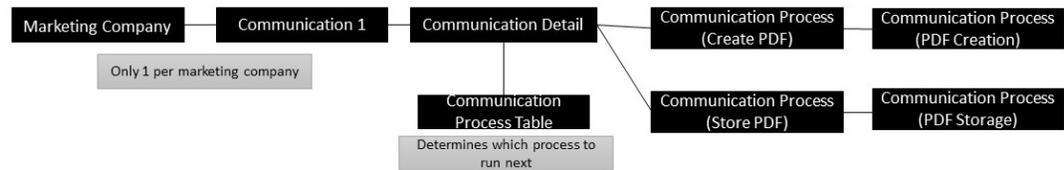
Part3: Storage Distribution Supplier configuration (OCM)

Currently, Communication Cloud Service supports OCM service for PDF storage. To distributed PDF, you must have the Oracle Content Management Storage service configured.

The Communication Distribution Storage OCM service should be associated with the Operations Company Supplier service. This holds the credentials required to connect to the OCM supplier service.

The Communication Distribution Storage Oracle OCM service is then associated with the Communication Distribution Storage service which is part of the Communication Distribution Storage process.
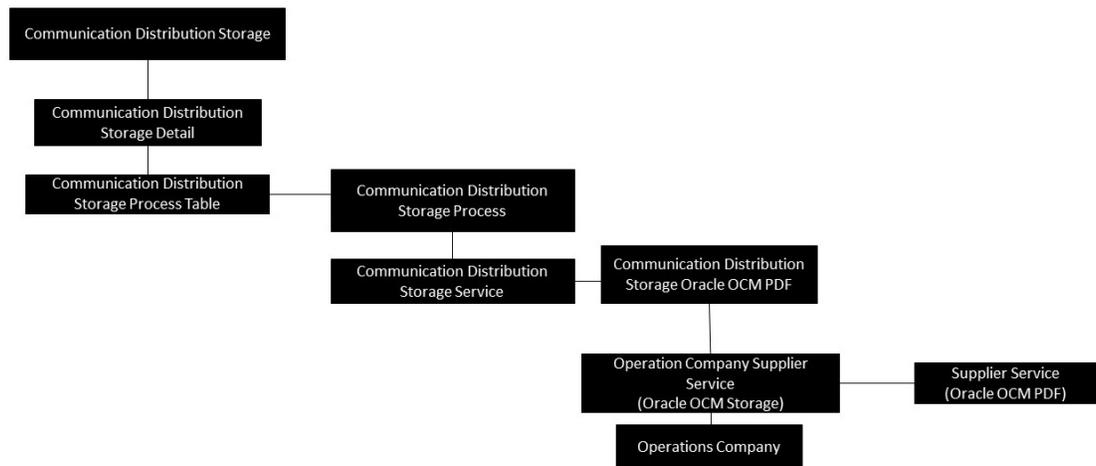
Communication

Request

The Post method should be used when a Communication is requested. The Get method can be used to query a previously requested Communication.

> **Note:**
>
> The Delete and Put methods are not supported at this time.

The API endpoint is as follows:

"https://environmentname/tenancy/api/Communication/v1/CommunicationRec".

Replace the *environmentname* with your specific URL information specific to your Service endpoint.

Replace tenancy with the target tenancy (non-prod, pre-prod or prod) within the environment.

Example: https://futurabank/non-prod/api/Communication/v1/CommunicationRec

For additional information on the environment and three tenancies provided by the Service, Refer to Financial Services Cloud Documentation.

> **Note:**
>
> For complete syntax please refer to the Swagger which can be obtained by calling "https://environmentname/tenancy/api/Communication/v1/CommunicationRec/swagger.json"

Headers

There are several headers that may be required by the methodology utilized to call the Post method on the API. The intention here is to identify those that have special consideration or maybe considered optional for other API calls.

The standard "Content-Type" header should be set to "application/json".

The standard "Authorization" header must be set to "Bearer token" where Token is the authentication token provided by a call to the OAuth access API.

For more information, refer to the Authorization topic.

Post Request

Body

The body of the post is JSON and must identify the configuration and the data to be used to create and distribute the Communication. The body may also contain optional elements as described below.

```
{
        "CommunicationRec": {
        "CommunicationId": "String (Max: 1024)",
        "CommunicationInfo": {
            "CommunicationConfigUuid": "UUID String (36)",
            "MarketingCompanyConfigUuid": "UUID String (36)",
            "MarketingCompanyShortName": "String (Max: 30)",
            "CommunicationData": "{Escaped JSON}",
            "Language": "en_US",
            "CommunicationConfigEffDt": " yyyy-MM-dd ",
            "CommunicationTransactionEffDt": " yyyy-MM-dd ",
            "CommunicationTransactionType": "Enum",
            "CommunicationUserDefinedTransactionType": "String (Max: 255)"
            }
          }
        }
```

Elements

CommunicationId: Optional. A client specified unique identifier for the Communication. If not provided nothing is stored and an empty value is returned for the matching element in the response. This can be used for the calling application for its own purposes. The value is stored and returned in the response.

> ✎ **Note:**
>
> At least one of CommunicationConfigUuid or MarketingCompanyShortName or MarketingCompanyConfigUuid is required (see the note on Short Name or UUID below).

MarketingCompanyShortName: The Marketing Company Short Name is the name of the Marketing Company whose Communication Configuration should be used. The value is not stored and not returned in the response.

CommunicationConfigUuid: The UUID of the Communication Configuration to use with this execution. A UUID is a unique identifier the Service attaches to every configuration when created and is often returned in other API responses. The Configuration holds the settings that control what processes the execution will perform. The value is stored and returned in the response.

MarketingCompanyConfigUuid: The Marketing Company Config UUID is the specific UUID of the Marketing Company whose Communication Configuration should be used. The value is not stored and not returned in the response.

> ✎ **Note:**
>
> The decision to use a Short Name or UUID will depend on the use case being implemented. Both should be unique within the system. If the client is implementing a standard communication pattern it most likely should use the Short Name of the Marketing Company. If the client is implementing a complex flow where in it creates, searches, or otherwise calls another API to determine which Marketing Company to use the UUID is more likely to be used.

CommunicationData: Required. Escaped JSON data used by the Package Assembly Template logic to include documents and map data into output, metadata and/or addresses. The minimal JSON that is required "{}"; however, it is also dependent on the data required based on the Assembly Template (see the Assembly Template Reference). The value is stored but is not returned in the response.

Language: Optional.

CommunicationTransactionEffDt: Optional. Reserved for future implementation. It is stored and is returned in the response. If not provided the current system date and time will be used. Format is yyyy- MM-dd (e.g. 2022-05-17).

CommunicationConfigEffDt: Optional. Used to find configuration that is active on the specified date and time. The date and time provided is compared against the Active Status Date on the Configuration entity Versions and their children (Email, Storage, Package, Document Version, Layout, etc.) to identify the correct assets to use. This allows the client to produce output based on future or past dated configuration. If not provided the current system date and time is used. Format is yyyy-MM- dd (e.g. 2022-05-17).

CommunicationTransactionType: Required. Used to identify the specific Communication Detail Configuration for the Communication. Allowed values are "Origination" and "User Defined". The value is not stored and not returned in the response.

CommunicationUserTransactionType: Is required only when Communication Transaction Type = "User Defined". It is used to identify the specific Communication Detail Configuration for the Communication. The value is not stored and not returned in the response.

Response

The response will return an appropriate status code (201, 404, etc.) but will also include a body that contains additional information that may be useful to the client.

4xx Error Response

Error responses will differ depending on the nature of the error. Generally, errors can be associated with one of several categories:

- Authorization
- Invalid Post
- Invalid Data
- Invalid Configuration
- System

Invalid Post

If the Post does not include a required element.

```
{
    "executionId": "aac9cb4c-f643-447b-a75d-02c7b9e96a27",
    "responsePayload": null,
    "message": "Please provide CommunicationTransactionType in the request",
    "statusCode": 400,
    "failureReason": null,
    "messageCode": "Communication_DT_E_CR_1018",
    "success": false,
    "exceptionOnFail": null
        }
```

Invalid Data

If the CommunicationData is not valid a typical response may appear as follows.

```
{
        "executionId": "3e91b7cc-3611-4793-92a0-155c218aaf6d",
        "responsePayload": null,
        "message": "AssemblyData is empty",
        "statusCode": "500",
        "execptionOnFail": null,
        "failureReason": null,
        "messageCode": "ERR_BAD_DATA",
        "success": false,
        "Messages": [
         {
            "Message": "ExecutionId:
3e91b7cc-3611-4793-92a0-155c218aaf6d"
```

```
          },
          {
            "Message": "Assembly version: 2.0.74"
          },
          {
            "Message": "Error code 500. AssemblyData is empty"
          }
        ]
    }
```

Elements

- executionId is the unique id of this request's execution and can be used by Oracle Support to review logs not accessible by users. The message is the general description of the overall issue.

- statusCode is the standard HTTP error code and will be in the 400 or 500 series for most failures.

- Messages is an array of one or more detailed messages that provide more insight into the issue.

- The number and value of the messages will vary depending on the error(s) found that led to the failure and are typically only provided when there is an Assembly related issue.

- messageCode is an internal code that maybe useful to support.

2xx Success Response

```
{

        "CommunicationRec":{
           "CommunicationUuid": "CDA5FF69B32D4E87A9A3635433806FE5",
        "CommunicationInfo": {
           "CommunicationConfigUuid": "9628DE6255864B4CB421416BB11682D9"
           }
        }, "CommunicationDetailRec": {
           "CommunicationDetailUuid": "9B7AD84F8F5B4AA4A9E0079B949C59B7",
           "CommunicationDetailInfo": {
           "CommunicationDetailConfigUuid":
"13D530C4B70B49AE95D5C7F200A032C6",
           "CommunicationUuid": "CDA5FF69B32D4E87A9A3635433806FE5",
           "ConsolidatedStandardResponse": {
           "ConsolidatedManualReviewRequiredInd": false,
           "ConsolidatedResponseStatus": "Complete"
           }
        }
    }
```

Elements

The response elements that mirror the request body elements are as described above in the Request Body section. Additional response items are as follows:

CommunicationUuid: The unique internal identifier of this Communication.

CommunicationDetailConfigUuid: The unique internal identifier of the Communication Configuration Detail that was used to produce the result.

ConsolidatedManualReviewRequiredInd: Boolean indicating if a Manual Review of the Communication is recommended based on the configuration and result. Generally this is true only when ConsolidatedResponseStatus is not Complete.

ConsolidatedResponseStatus: Indicates whether all the expected processes configured for the communication were completed or not. Possible values:

- Complete: All processes that were called responded with a 'Complete' status.

- Complete With Error: One or more of the processes that were called returned an 'Error' or Complete With Error' and one or more returned a 'Complete' status.

- Error: All the processes returned an 'Error' status.

- Incomplete: One or more processes returned an 'Incomplete' status. This occurs when an asynchronous call is still processing.

Get Request

The Get request can be used with several inline parameters or can be called with no parameters to return a list of all Communications. Calling without any qualifiers should be used with caution as the list of records could be extensive.

Options

CommunicationRec/

CommunicationRec/Id where the Id is the CommunicationId provided in the original Post request.

CommunicationRec/Uuid where the UUID is the CommunicationUuid returned from the original Post request.

Parameters

The following inline parameters can be added to the Get request.

depth: A Boolean value that when set to true will provide a more verbose response when used with an Id or UUID.

totalResults: A Boolean value that when set to true will provide a more verbose response when used with an Id or UUID.

whr: Can be used when Get is called without a UUID or Id to filter the results. Any attribute of a Communication can be used in the whr clause.

limit: A numeric that can be used to limit the number of results returned.

offset: A numeric that can be used with limit to affect paging of the results with multiple calls.

4xx Error Response

If no record is found with the UUID or the Id the response will be similar to the following. Other error responses will look like those from the Post.

```
{
        "executionId": "f4e32efb-2f43-44ee-b0d0-550e9c7f2a4d",
        "responsePayload": null,
        "message": "No Records Match Selection Criteria -
        No records match the selection criteria of the request.",
        "statusCode": 404,
        "failureReason": null,
        "messageCode": null,
```

```
     "success": false,
     "exceptionOnFail": null
    }
```

Authorization for API

All Rest API requests require a valid Token be provided in the Authorization header. The ouath2 access method provides a convenient way to obtain a valid Token. This topic is not intended to be instructive on security best practices or serve as a reference for best practices regarding the retention of the token or credentials used in the method provided. It is intended only to provide information on the available API.

Request
The Post method should be used to obtain a token. The Get, Delete and Push methods are not supported. The API end point is `https://ENVIRONMENTNAME/TENANCY/api/oauth2/v1/access`.

ENVIRONMENTNAME should be replaced with your specific URL information that is specific to your Service endpoint.

TENANCY should be replaced with the target tenancy within the environment. This will be non-prod, pre-prod or prod.

Example: https://*futurabank*/*non-prod*/api/oauth2/v1/access

Headers
There are several headers that may be required by the methodology utilized to call the Post method on the API. The intention here is to identify those that have special consideration or maybe considered optional for other API calls.

The standard "Content-Type" header should be set to "application/json"

Payload
The body of the post is JSON and must include the required credentials. The User specified must have the Assembly related Entitlements enabled; see the 'Entitlements Guide' and the 'Transaction Type Reference' for more information.

```
{
        "User" : "string",
        "Password" : "string"
        }
```

Response
The success response body is JSON and will contain the token that can be passed into the Authorization header for subsequent API calls such as CommunicationAssembly. The structure of the body is {"AccessToken":"Token"} where Token represents the token itself. Example: {"AccessToken": "eyJ4NXQjUzI1NiI6Ikhzc…"} The token can be very long and is abbreviated in this example.

The failure response will be "Unauthorized" if the user and password cannot be authenticated.

9

Transaction Type Reference

Operator Entitlements provide customers on the Financial Services Cloud platform with options to control fine-grained access to service capabilities (end-points) exposed from the Service. This includes access through the user interface by which users can manage the Communication Cloud Service Configuration items such as Package, Document, Style, etc.

The Financial Services Cloud Entitlements section explains how Entitlements are created in the system by associating Transaction Groups to User Groups. It also provides details of Transaction Types that pertain to the Communication Cloud Service and offer guidance on grouping them with logical user groups to create effective Entitlements within the organization.

Note that the information on user groups and the approach to manage access is for guidance only. Each organization's structure, staffing, and needs decide the final approach. Oracle Consulting and Oracle Partners can be engaged to provide additional direction as well as to manage Entitlements.

Create, Read, Update, and Delete Transaction Types

Transaction Types are independent from one another. However, there is a pattern that aligns with the API method endpoints (operations) associated with each one. There will be a create, read, update, and delete Transaction Type for each API that aligns with the associated ability to perform that action on the target of the API. Some APIs may not expose all endpoints, in which case there may not be a Create, Read, Update, and Delete Transaction Type exposed for that API.

Transaction Types with 'Create' in the name or description are aligned with the ability to create the entity referenced by the Transaction Type description, using the underlying API. Likewise, Read, Update, and Delete align with the ability to Read, Update, or Delete items using the underlying API.

This allows fine grained control across the create, read, update and delete functions performed by Users and external systems through user interfaces or REST calls.

Logical Categorization

Transaction Types allow a very fine-grained control of system endpoint access and can be used to ensure that the appropriate groups of users have the appropriate access based on their role in the organization.

The Transaction Types within Communication Cloud Service can be logically grouped into two overlapping categories: **Configuration** and **Assembly**. These categories may not exist as specific items within the Service, but can be used to help build Create logical assignments.

Configuration

Transaction Types related to managing the configuration of items within the service such as Packages and Content.

These would also include Transaction Types related to the relationship between two different Configuration items such as the Document Configuration to Layout Configuration relationships.

Users responsible for defining the reusable Packages, Documents, Styles, etc. as well as the graphical and textual Content used in outgoing communication will be aligned to this category.

Assembly

Transaction Types related to the creation of unique instances of a Configuration item in order to assemble an output.

Users responsible for creating instances of outgoing communication using the configuration will be aligned to this category. These users may include other systems or services as well as QA or other reviewers.

Grouping and Entitlement Approach

The alignment of staff to one or more segments of control is not a cookie cutter process. Within Communication Management; however, there are some broad grouping and entitlement approaches that can be used as a starting point to consider how to align Entitlements to enable Users with the appropriate rights.

The Financial Services Cloud Entitlements provides the necessary details on how Transaction Groups associated to User Groups create Entitlements. One way of looking at this is to consider a Transaction Group to define the capabilities that can be assigned to one or more User Groups.

Users who are responsible for creating or editing Content are entitled to create, edit, read, and potentially delete Content Configuration items. Only a limited number of Users should be entitled to perform deletes. The Content creators can apply styling to the content, but they are entitled to use only existing Styles created by brand designers to ensure compliance. Brand designers may only be allowed to create, read, update, and delete Styles, but they would have no access to Content Configuration. Brand designers are granted Assembly entitlements that allow them to create an assembly of content built by others, to view and confirm the final output.

An approach that provides flexibility is to align Transaction Groups to Configuration items and Assembly. These groups can then be associated to the User Groups as needed, based on the distribution of responsibility. Separating the Delete Transaction Types gives a higher level of control.

Group all Package-related, Document-related, Layout-related transactions to enable proper level of control across User groups.

Example Grouping

Each of these groups would be assigned to a Transaction Group containing transactions that enable them to do the required activities. See Transaction Type Listing topic to identify the appropriate Transaction Types.

User Groups:

- **Content Contributors**: Legal, compliance, graphic artists, and other subject matter experts who contribute text or graphics for use in output
- **Content Creators**: Staff responsible for the creation and management of text and graphic content
- **Layout Designers**: Staff responsible for the way content should be laid out within document containers for presentation in HTML.
- **Stylists**: Staff responsible for defining styling that meets corporate branding requirements and ensures output readability

- **Document Owners**: Product managers, marketers and other staff responsible for defining the communications

- **Package Designers**: Product managers and other staff who are responsible for grouping communications documents into logical packages that can be assembled based on client system needs

- **Assemblers**: Testers, external systems and other entities that need to create instances of outgoing communication

Environment

Each Financial Services Cloud customer receives a non-production, pre-production and production tenancy. The Transaction Groups and users listed above may be used in the non-production environment where Configuration is built.

The number and variety of User and Transaction Groups and subsequent Entitlements is different in pre-production and production.

- In Pre-production, Configuration creation, deletion, or updating does not occur and the environment is primarily used for Assembly by QA testers and test systems.

- In Production, only authorized Users and authorized Client Systems are allowed access and only to Assembly functions.

Automation

Transaction Type, Transaction Group, User Group and Entitlement configuration can be done using the user interface. These configurations can also be done in bulk through automation using APIs. Oracle Consulting and trained Partners can assist organizations by automating configuration through spreadsheets or other methods.

Transaction Type Listing

This listing may not include all possible Transaction Types, but the ones commonly used to control user and system access while creating Entitlements for accessing the Communication Cloud Service' operational functionality.

For more information on the structure and hierarchy of configuration items within the Communication Cloud Service, see Financial Services Cloud Entitlements topic.

Table Column Definitions

- **Name**: Name that appears in the page for the Transaction Type

- **Description**: A general description of the Transaction Type

- **Required For**: User activity that requires an Entitlement to the Transaction Type for the User to perform the activity

Notes

- Transaction Types with **Master** in the description are those that can be used to create an entire hierarchy of Configurations, starting at the entry point including any number of associated configuration items.
For example, **Crt Com Pkg Ver Cf** allows creation of a Package Version to which Documents, Styles, etc. could then be associated whereas **Crt Com Pkg Ver Master Cf** allows creation of a Package Version and associated Documents, Styles, etc. to be created in a single step.

- The hierarchical structure of the Configuration elements and their definition as well as related terms such as Version are covered in the Financial Services Communication Cloud Service Guide.

Configuration

Configurations holds set of configurations that you want to move across the environment.

Table 9-1   Configuration

Name	Description
Crt Cf	Create Configuration
Rd Cf	Read Configuration
Upd Cf	Update Configuration
Del Cf	Delete Configuration

Package Configuration

Packages are containers of data mapping, logic and Documents that define potential output

Table 9-2   Package Configuration

Name	Description	Required For
Rd Com Pkg Cf	Read a Communication Package Configuration	Viewing and managing base Packages and for creating or deleting Versions of the Package.
Upd Com Pkg Cf	Update a Communication Package Configuration	Managing base Packages and for creating or deleting Versions of the Package.
Rd Com Pkg Master Cf	Read a Communication Package Master Configuration	Viewing, creating, deleting and managing base Packages and for creating or deleting Versions of the Package.
Del Com Pkg Master Cf	Delete a Communication Package Master Configuration	Removing base Packages that are no longer needed.
Crt Com Pkg Ver Cf	Create a Communication Package Version Configuration	Creating new Versions of a Package.
Rd Com Pkg Ver Cf	Read a Communication Package Version Configuration	Viewing and managing Package Versions.
Upd Com Pkg Ver Cf	Update a Communication Package Version Configuration	Managing existing Package Versions.
Crt Com Pkg Ver Master Cf	Create a Communication Package Version Master Configuration	Creating new Versions of a Package.
Rd Com Pkg Ver Master Cf	Read a Communication Package Version Master Configuration	Viewing and managing Package Versions.
Upd Com Pkg Ver Master Cf	Update a Communication Package Version Master Configuration	Managing existing Package Versions.
Del Com Pkg Ver Master Cf	Delete a Communication Package Version Master Configuration	Removing Versions of Packages that are no longer needed.
Crt Com Pkg	Create a Communication Package	Create a Communication Package

ORACLE

Table 9-2   (Cont.) Package Configuration

Name	Description	Required For
Rd Com Pkg	Read a Communication Package	Read a Communication Package
Upd Com Pkg	Update a Communication Package	Update a Communication Package
Del Com Pkg	Delete a Communication Package	Delete a Communication Package
Rd Co Com Pkg Cf Rl	Read a Company to Communication Package Configuration Relationship	Read a Company to Communication Package Configuration Relationship
Crt Co Com Pkg Cf Rl	Create a Company to Communication Package Configuration Relationship	Create a Company to Communication Package Configuration Relationship
Upd Co Com Pkg Cf Rl	Update a Company to Communication Package Configuration Relationship	Update a Company to Communication Package Configuration Relationship
Del Co Com Pkg Cf Rl	Delete a Company to Communication Package Configuration Relationship	Delete a Company to Communication Package Configuration Relationship
Rd Co Com Doc Cf Rl	Read a Company to Communication Document Configuration Relationship	Read a Company to Communication Document Configuration Relationship
Upd Com Pkg Mst Cf	Update a Communication Package Master Configuration	Update a Communication Package Master Configuration
Crt Com Pkg Cf	Create a Communication Package Configuration	Create a Communication Package Configuration
Del Com Pkg Cf	Delete a Communication Package Configuration	Delete a Communication Package Configuration
Del Com Pkg Ver Cf	Delete a Communication Package Version Configuration	Delete a Communication Package Version Configuration
Crt Com Pkg Ver Cf Doc Cf Rl	Create a Communication Package to Communication Package Version Configuration to Document Configuration Relationship	Create a Communication Package to Communication Package Version Configuration to Document Configuration Relationship
Rd Com Pkg Ver Cf Doc Cf Rl	Read a Communication Package to Communication Package Version Configuration to Document Configuration Relationship	Read a Communication Package to Communication Package Version Configuration to Document Configuration Relationship
Upd Com Pkg Ver Cf Doc Cf Rl	Update a Communication Package to Communication Package Version Configuration to Document Configuration Relationship	Update a Communication Package to Communication Package Version Configuration to Document Configuration Relationship
Del Com Pkg Ver Cf Doc Cf Rl	Delete a Communication Package to Communication Package Version Configuration to Document Configuration Relationship	Delete a Communication Package to Communication Package Version Configuration to Document Configuration Relationship

ORACLE

Document Configuration

Table 9-3   Document Configuration

Name	Description	Required For
Rd Com Doc Cf	Read a Communication Document Configuration	Viewing and managing base Documents and for creating or deleting Versions of the Documents.
Upd Com Doc Cf	Update a Communication Document Configuration	Managing base Documents and for creating or deleting Versions of the Documents.
Rd Com Doc Master Cf	Read a Communication Document Master Configuration	Viewing, creating, deleting and managing base Packages and for creating or deleting Versions of the Package.
Del Com Doc Master Cf	Delete a Communication Document Master Configuration	Removing base Documents that are no longer needed.
Upd Com Doc Ver Cf	Update a Communication Document Version Configuration	Managing existing Document Versions.
Crt Com Doc Ver Master Cf	Create a Communication Document Version Master Configuration	Creating new Versions of a Documents.
Rd Com Doc Ver Master Cf	Read a Communication Document Version Master Configuration	Viewing and managing Document Versions.
Upd Com Doc Ver Master Cf	Update a Communication Document Version Master Configuration	Managing existing Document Versions.
Del Com Doc Ver Master Cf	Delete a Communication Document Version Master Configuration	Removing Versions of Documents that are no longer needed.
Crt Com Doc	Create a Communication Document	Create a Communication Document
Rd Com Doc	Read a Communication Document	Read a Communication Document
Upd Com Doc	Update a Communication Document	Update a Communication Document
Del Com Doc	Delete a Communication Document	Delete a Communication Document
Rd Co Com Doc Cf Rl	Read a Company to Communication Document Configuration Relationship	Read a Company to Communication Document Configuration Relationship
Crt Co Com Doc Cf Rl	Create a Company to Communication Document Configuration Relationship	Create a Company to Communication Document Configuration Relationship
Upd Co Com Doc Cf Rl	Update a Company to Communication Document Configuration Relationship	Update a Company to Communication Document Configuration Relationship
Del Co Com Doc Cf Rl	Delete a Company to Communication Document Configuration Relationship	Delete a Company to Communication Document Configuration Relationship
Upd Com Doc Mst Cf	Update a Communication Document Master Configuration	Update a Communication Document Master Configuration

Table 9-3   (Cont.) Document Configuration

Name	Description	Required For
Crt Com Doc Cf	Create a Communication Document Configuration	Create a Communication Document Configuration
Del Com Doc Cf	Delete a Communication Document Configuration	Delete a Communication Document Configuration
Crt Com Doc Ver Cf	Create a Communication Document Version Configuration	Create a Communication Document Version Configuration
Rd Com Doc Ver Cf	Read a Communication Document Version Configuration	Read a Communication Document Version Configuration
Del Com Doc Ver Cf	Delete a Communication Document Version Configuration	Delete a Communication Document Version Configuration
Crt Com Doc Ver Cf Lyt Cf Rl	Create a Communication Document Version Configuration to Communication Document to Version Configuration Layout Configuration Relationship	Create a Communication Document Version Configuration to Communication Document to Version Configuration Layout Configuration Relationship
Rd Com Doc Ver Cf Lyt Cf Rl	Read a Communication Document Version Configuration to Communication Document to Version Configuration Layout Configuration Relationship	Read a Communication Document Version Configuration to Communication Document to Version Configuration Layout Configuration Relationship
Upd Com Doc Ver Cf Lyt Cf Rl	Update a Communication Document Version Configuration to Communication Document to Version Configuration Layout Configuration Relationship	Update a Communication Document Version Configuration to Communication Document to Version Configuration Layout Configuration Relationship
Del Com Doc Ver Cf Lyt Cf Rl	Delete a Communication Document Version Configuration to Communication Document to Version Configuration Layout Configuration Relationship	Delete a Communication Document Version Configuration to Communication Document to Version Configuration Layout Configuration Relationship
Crt Com Doc Ver Cf Stl Cf Rl	Create a Communication Document Version Configuration to Communication Document to Version Configuration Style Configuration Relationship	Create a Communication Document Version Configuration to Communication Document to Version Configuration Style Configuration Relationship
Upd Com Doc Ver Cf Stl Cf Rl	Update a Communication Document Version Configuration to Communication Document to Version Configuration Style Configuration Relationship	Update a Communication Document Version Configuration to Communication Document to Version Configuration Style Configuration Relationship

ORACLE

Table 9-3　(Cont.) Document Configuration

Name	Description	Required For
Del Com Doc Ver Cf Stl Cf Rl	Delete a Communication Document Version Configuration to Communication Document to Version Configuration Style Configuration Relationship	Delete a Communication Document Version Configuration to Communication Document to Version Configuration Style Configuration Relationship

Table 9-4　Document To Style Association

Name	Description	Required For
Rd Com Doc Ver Cf Stl Cf Rl	Read a Communication Document Version Configuration to Communication Document to Version Configuration Style Configuration Relationship	Viewing and managing Document Versions.

Table 9-5　Layout Configuration

Name	Description	Required For
Rd Com Lyt Cf	Read a Communication Layout Configuration	Viewing and managing Layouts and for associating Layouts to Documents.
Upd Com Lyt Cf	Update a Communication Layout Configuration	Managing existing Layouts
Crt Com Lyt Master Cf	Create a Communication Layout Master Configuration	Creating new Layouts
Rd Com Lyt Master Cf	Read a Communication Layout Master Configuration	Viewing and managing Layouts and for associating Layouts to Documents.
Upd Com Lyt Master Cf	Update a Communication Layout Master Configuration	Managing existing Layouts
Del Com Lyt Master Cf	Delete a Communication Layout Master Configuration	Removing Layouts that are no longer needed and are not referenced by any Documents.
Crt Com Lyt Cf	Create a Communication Layout Configuration	Create a Communication Layout Configuration
Del Com Lyt Cf	Delete a Communication Layout Configuration	Delete a Communication Layout Configuration
Crt Lyts Hierarchy	Create a Layouts Hierarchy	Create a Layouts Hierarchy
Rd Lyts Hierarchy	Read a Layouts Hierarchy	Read a Layouts Hierarchy
Upd Lyts Hierarchy	Update a Layouts Hierarchy	Update a Layouts Hierarchy
Del Lyts Hierarchy	Delete a Layouts Hierarchy	Delete a Layouts Hierarchy
Crt Com Lyt Cf Lyt Cf Rl	Create a Communication Layout Configuration to Layout Configuration Relationship	Create a Communication Layout Configuration to Layout Configuration Relationship

Table 9-5   (Cont.) Layout Configuration

Name	Description	Required For
Rd Com Lyt Cf Lyt Cf Rl	Read a Communication Layout Configuration to Layout Configuration Relationship	Read a Communication Layout Configuration to Layout Configuration Relationship
Upd Com Lyt Cf Lyt Cf Rl	Update a Communication Layout Configuration to Layout Configuration Relationship	Update a Communication Layout Configuration to Layout Configuration Relationship
Del Com Lyt Cf Lyt Cf Rl	Delete a Communication Layout Configuration to Layout Configuration Relationship	Delete a Communication Layout Configuration to Layout Configuration Relationship
Crt Com Lyt Cf Ctnt Cf Rl	Create a Communication Layout Configuration to Content Configuration Relationship	Create a Communication Layout Configuration to Content Configuration Relationship
Rd Com Lyt Cf Ctnt Cf Rl	Read a Communication Layout Configuration to Content Configuration Relationship	Read a Communication Layout Configuration to Content Configuration Relationship
Upd Com Lyt Cf Ctnt Cf Rl	Update a Communication Layout Configuration to Content Configuration Relationship	Update a Communication Layout Configuration to Content Configuration Relationship
Del Com Lyt Cf Ctnt Cf Rl	Delete a Communication Layout Configuration to Content Configuration Relationship	Delete a Communication Layout Configuration to Content Configuration Relationship
Crt Com Ctnt Ver Cf Lyt Cf Rl	Create a Communication Content Version Configuration to Layout Configuration Relationship	Create a Communication Content Version Configuration to Layout Configuration Relationship
Rd Com Ctnt Ver Cf Lyt Cf Rl	Read a Communication Content Version Configuration to Layout Configuration Relationship	Read a Communication Content Version Configuration to Layout Configuration Relationship
Upd Com Ctnt Ver Cf Lyt Cf Rl	Update a Communication Content Version Configuration to Layout Configuration Relationship	Update a Communication Content Version Configuration to Layout Configuration Relationship
Del Com Ctnt Ver Cf Lyt Cf Rl	Delete a Communication Content Version Configuration to Layout Configuration Relationship	Delete a Communication Content Version Configuration to Layout Configuration Relationship
Crt Com Lyt Cf Stl Cf Rl	Create a Communication Layout Configuration to Style Configuration Relationship	Create a Communication Layout Configuration to Style Configuration Relationship
Upd Com Lyt Cf Stl Cf Rl	Update a Communication Layout Configuration to Style Configuration Relationship	Update a Communication Layout Configuration to Style Configuration Relationship

Table 9-5 (Cont.) Layout Configuration

Name	Description	Required For
Del Com Lyt Cf Stl Cf Rl	Delete a Communication Layout Configuration to Style Configuration Relationship	Delete a Communication Layout Configuration to Style Configuration Relationship

Table 9-6 Layout to Style Association

Name	Description	Required For
Rd Com Lyt Cf Stl Cf Rl	Read a Communication Layout Configuration to Style Configuration Relationship	Viewing and managing Layouts.

Content Configuration

Contents are text strings, data references and graphics that appear in the output.

Table 9-7 Content Configuration

Name	Description	Required For
Rd Com Ctnt Cf	Read a Communication Content Configuration	Viewing and managing base Contents and for creating or deleting Versions of the Content.
Upd Com Ctnt Cf	Update a Communication Content Configuration	Managing base Contents and for creating or deleting Versions of the Content
Rd Com Ctnt Master Cf	Read a Communication Content Master Configuration	Viewing and managing base Contents and for creating or deleting Versions of the Content.
Del Com Ctnt Master Cf	Delete a Communication Content Master Configuration	Removing base Contents that are no longer needed.
Crt Com Ctnt Ver Cf	Create a Communication Content Version Configuration	Creating new Versions of a base Content.
Rd Com Ctnt Ver Cf	Read a Communication Content Version Configuration	Viewing and managing Content Versions.
Upd Com Ctnt Ver Cf	Update a Communication Content Version Configuration	Managing existing Content Versions.
Del Com Ctnt Ver Cf	Delete a Communication Content Version Configuration	Removing Versions of a Content that are no longer needed.
Crt Com Ctnt Ver Master Cf	Create a Communication Content Version Master Configuration	Creating new Versions of a base Content
Rd Com Ctnt Ver Master Cf	Read a Communication Content Version Master Configuration	Viewing and managing Content Versions.
Upd Com Ctnt Ver Master Cf	Update a Communication Content Version Master Configuration	Managing existing Content Versions.
Del Com Ctnt Ver Master Cf	Delete a Communication Content Version Master Configuration	Removing Versions of a Content that are no longer needed.

Table 9-7   (Cont.) Content Configuration

Name	Description	Required For
Rd Com Ctnt Cf Rls	Read a Communication Content Configuration Relationship	Read Communication Content Configuration Relationships.
Rd Com Ctnt Ver Cf Rls	Read a Communication Content Version Configuration Relationship	Read Communication Content Version Configuration Relationships.
Crt Com Ctnt Master Cf	Create a Communication Content Master Configuration	Create a Communication Content Master Configuration
Upd Com Ctnt Master Cf	Update a Communication Content Master Configuration	Update a Communication Content Master Configuration
Crt Com Ctnt Cf	Create a Communication Content Configuration	Create a Communication Content Configuration
Del Com Ctnt Cf	Delete a Communication Content Configuration	Delete a Communication Content Configuration
Crt Com Ctnt Ver Cf Ctnt Cf Rl	Create a Communication Content Version Configuration to Content Configuration Relationship	Create a Communication Content Version Configuration to Content Configuration Relationship
Rd Com Ctnt Ver Cf Ctnt Cf Rl	Read a Communication Content Version Configuration to Content Configuration Relationship	Read a Communication Content Version Configuration to Content Configuration Relationship
Upd Com Ctnt Ver Cf Ctnt Cf Rl	Update a Communication Content Version Configuration to Content Configuration Relationship	Update a Communication Content Version Configuration to Content Configuration Relationship
Del Com Ctnt Ver Cf Ctnt Cf Rl	Delete a Communication Content Version Configuration to Content Configuration Relationship	Delete a Communication Content Version Configuration to Content Configuration Relationship
Crt Com Stl Cf Ctnt Ver Cf Rl	Create a Communication Style Configuration to Content Version Configuration Relationship	Create a Communication Style Configuration to Content Version Configuration Relationship
Upd Com Stl Cf Ctnt Ver Cf Rl	Update a Communication Style Configuration to Content Version Configuration Relationship	Update a Communication Style Configuration to Content Version Configuration Relationship
Del Com Stl Cf Ctnt Ver Cf Rl	Delete a Communication Style Configuration to Content Version Configuration Relationship	Delete a Communication Style Configuration to Content Version Configuration Relationship

Table 9-8   Content to Style Association

Name	Description	Required For
Rd Com Stl Cf Ctnt Ver Cf Rl	Read a Communication Style Configuration to Content Version Configuration Relationship	Viewing and managing Content Versions.

Style Configuration

Styles define the font, size, color, bullets, etc. that define the appearance of the potential output.

Table 9-9   Style Configuration

Name	Description	Required For
Crt Com Stl Cf	Create a Style Configuration	Creating new Styles
Rd Com Stl Cf	Read a Style Configuration	Viewing and managing Styles and for associating Styles to Content, Documents or Packages
Upd Com Stl Cf	Update a Style Configuration	Managing existing Styles.
Del Com Stl Cf	Delete a Style Configuration	Removing Styles that are no longer needed and are not referenced by any Contents, Documents or Packages
Rd Com Stl Mst Cf	Read a Communication Style Master Configuration	Read a Communication Style Master Configuration
Crt Com Stl Mst Cf	Create a Communication Style Master Configuration	Create a Communication Style Master Configuration
Upd Com Stl Mst Cf	Update a Communication Style Master Configuration	Update a Communication Style Master Configuration
Del Com Stl Mst Cf	Delete a Communication Style Master Configuration	Delete a Communication Style Master Configuration

Table 9-10   Style to Style Class

Name	Description	Required For
Rd Com Stl Class Name Mst Cf	Read a Communication Style Class Name Master Configuration	Read a Communication Style Class Name Master Configuration

Font Configuration

Fonts are necessary to define how the letters of text appear.

Table 9-11   Font Configuration

Name	Description	Required For
Crt Com Font Cf	Create a Font Configuration	Uploading font files to create new Fonts.
Rd Com Font Cf	Read a Font Configuration	Viewing and managing Fonts and for associating Fonts to Styles.
Upd Com Font Cf	Update a Font Configuration	Managing existing Fonts.
Del Com Font Cf	Delete a Font Configuration	Removing Fonts that are no longer needed and are not referenced by any Styles.

Assembly Execution

Assembly is the processes of combining data with a Package to produce a unique set of output.

Table 9-12   Assembly Execution

Name	Description	Required For
Crt Com Asmbly	Create an Assembly	Creating an outgoing communication or for previewing a Package.
Rd Com Asmbly	Read an Assembly	Reading an outgoing communication.

Transaction Types for User Defined Data

Name	Description
Rd User Defined Data Cf	Read User Defined Data Configuration
Rd User Defined Data Field Cf	Read User Defined Data Field Configuration
Rd User Defined Data Structure Cf	Read User Defined Data Structure Configuration
Rd User Defined Data Format Cf	Read User Defined Data Format Configuration
Crt User Defined Data Format Cf	Create User Defined Data Format Configuration
Upd User Defined Data Format Cf	Update User Defined Data Format Configuration
Del User Defined Data Format Cf	Delete User Defined Data Format Configuration
Rd User Defined Data Mst Cf	Read User Defined Data Master Configuration
Crt User Defined Data Mst Cf	Create User Defined Data Master Configuration
Upd User Defined Data Mst Cf	Update User Defined Data Master Configuration
Del User Defined Data Mst Cf	Delete User Defined Data Master Configuration
Rd User Defined Data Field Mst Cf	Read User Defined Data Field Master Configuration
Crt User Defined Data Field Mst Cf	Create User Defined Data Field Master Configuration
Upd User Defined Data Field Mst Cf	Update User Defined Data Field Master Configuration
Del User Defined Data Field Mst Cf	Delete User Defined Data Field Master Configuration
Rd User Defined Data Structure Mst Cf	Read User Defined Data Structure Master Configuration
Upd User Defined Data Structure Mst Cf	Update User Defined Data Structure Master Configuration
Del User Defined Data Structure Mst Cf	Delete User Defined Data Structure Master Configuration
Rd User Defined Data Structure Ver Cf	Read User Defined Data Structure Version Configuration
Rd User Defined Data Structure Ver Mst Cf	Read User Defined Data Structure Version Master Configuration
Crt User Defined Data Structure Ver Mst Cf	Create User Defined Data Structure Version Master Configuration
Upd User Defined Data Structure Ver Mst Cf	Update User Defined Data Structure Version Master Configuration

Name	Description
Del User Defined Data Structure Ver Mst Cf	Delete User Defined Data Structure Version Master Configuration
Rd User Defined Data Field Mst	Read User Defined Data Field Master
Crt User Defined Data Field Mst	Create User Defined Data Field Master
Rd User Defined Data Structure Mst	Read User Defined Data Structure Master
Crt User Defined Data Structure Mst	Create User Defined Data Structure Master
Crt User Defined Data Format	Create User Defined Data Format
Rd User Defined Data Field Iteration Mst	Read User Defined Data Field Iteration Master
Crt User Defined Data Field Iteration Mst	Create User Defined Data Field Iteration Master
Rd User Defined Data Field Grp Cf	Read User Defined Data Field Group Configuration

Transaction Type for Digital Asset

Name	Description
Rd Dgtl Asset Cat Mst Cf	Read Digital Asset Category Master Configuration
Crt Dgtl Asset Cat Mst Cf	Create Digital Asset Category Master Configuration
Upd Dgtl Asset Cat Mst Cf	Update Digital Asset Category Master Configuration
Del Dgtl Asset Cat Mst Cf	Delete Digital Asset Category Master Configuration
Rd Dgtl Asset Cat Cf	Read Digital Asset Category Configuration
Rd Dgtl Asset Mst Cf	Read Digital Asset Master Configuration
Upd Dgtl Asset Mst Cf	Update Digital Asset Master Configuration
Del Dgtl Asset Mst Cf	Delete Digital Asset Master Configuration
Rd Dgtl Asset Ver Mst Cf	Read Digital Asset Version Master Configuration
Crt Dgtl Asset Ver Mst Cf	Create Digital Asset Version Master Configuration
Upd Dgtl Asset Ver Mst Cf	Update Digital Asset Version Master Configuration
Del Dgtl Asset Ver Mst Cf	Delete Digital Asset Version Master Configuration
Rd Dgtl Asset Mst	Read Digital Asset Master
Crt Dgtl Asset Mst	Create Digital Asset Master
Rd Dgtl Asset Dt Cf	Read Digital Asset Detail Configuration
Rd Dgtl Asset Cf	Read Digital Asset Configuration

Transaction Types for Rule

Name	Description
Rd Rule Cat Cf	Read a Rule Category Configuration
Rd Rule Cf	Read a Rule Configuration
Rd Rule Cat Mst Cf	Read a Rule Category Master Configuration
Crt Rule Cat Mst Cf	Create a Rule Category Master Configuration
Upd Rule Cat Mst Cf	Update a Rule Category Master Configuration
Del Rule Cat Mst Cf	Delete a Rule Category Master Configuration
Rd Rule Mst Cf	Read a Rule Master Configuration
Crt Rule Mst Cf	Create a Rule Master Configuration
Upd Rule Mst Cf	Update a Rule Master Configuration
Del Rule Mst Cf	Delete a Rule Master Configuration

Transaction Types for Brand

9-15

Name	Description
Rd Brand Color Cf	Read a Brand Color Configuration
Crt Brand Color Cf	Create a Brand Color Configuration
Upd Brand Color Cf	Update a Brand Color Configuration
Del Brand Color Cf	Delete a Brand Color Configuration
Rd Brand Color Series Mst Cf	Read a Brand Color Series Master Configuration
Upd Brand Color Series Mst Cf	Update a Brand Color Series Master Configuration
Del Brand Color Series Mst Cf	Delete a Brand Color Series Master Configuration
Rd Brand Color Series Ver Mst Cf	Read a Brand Color Series Version Master Configuration
Crt Brand Color Series Ver Mst Cf	Create a Brand Color Series Version Master Configuration
Upd Brand Color Series Ver Mst Cf	Update a Brand Color Series Version Master Configuration
Del Brand Color Series Ver Mst Cf	Delete a Brand Color Series Version Master Configuration
Rd Brand Color Series Cf	Read a Brand Color Series Configuration
Rd Brand Color Space Cf	Read a Brand Color Space Configuration
Rd Brand Color Space Mst Cf	Read a Brand Color Space Master Configuration
Upd Brand Color Space Mst Cf	Update a Brand Color Space Master Configuration
Del Brand Color Space Mst Cf	Delete a Brand Color Space Master Configuration
Rd Brand Color Space Ver Mst Cf	Read a Brand Color Space Version Master Configuration
Crt Brand Color Space Ver Mst Cf	Create a Brand Color Space Version Master Configuration
Upd Brand Color Space Ver Mst Cf	Update a Brand Color Space Version Master Configuration
Del Brand Color Space Ver Mst Cf	Delete a Brand Color Space Version Master Configuration
Rd Brand Dt Mst Cf	Read a Brand Detail Master Configuration
Upd Brand Dt Mst Cf	Update a Brand Detail Master Configuration
Del Brand Dt Mst Cf	Delete a Brand Detail Master Configuration
Rd Brand Dt Ver Mst Cf	Read a Brand Detail Version Master Configuration
Crt Brand Dt Ver Mst Cf	Create a Brand Detail Version Master Configuration
Upd Brand Dt Ver Mst Cf	Update a Brand Detail Version Master Configuration
Del Brand Dt Ver Mst Cf	Delete a Brand Detail Version Master Configuration
Rd Brand Dt Cf	Read a Brand Detail Configuration
Rd Brand Mst Cf	Read a Brand Master Configuration
Crt Brand Mst Cf	Create a Brand Master Configuration
Upd Brand Mst Cf	Update a Brand Master Configuration
Del Brand Mst Cf	Delete a Brand Master Configuration
Rd Brand Cf	Read a Brand Configuration

Transaction Type Listing for Communication Distribution

This topic lists the Transaction Types that you need for Communication Distribution.

Table Column Definitions

* **Name**: Name that appears in the page for the Transaction Type

* **Description**: A general description of the Transaction Type

Notes

- Transaction Types with **Master** in the description are those that can be used to create an entire hierarchy of Configurations, starting at the entry point including any number of associated configuration items.
  For example, **Crt Com Pkg Ver Cf** allows creation of a Package Version to which Documents, Styles, etc. could then be associated whereas **Crt Com Pkg Ver Master Cf** allows creation of a Package Version and associated Documents, Styles, etc. to be created in a single step.

- The hierarchical structure of the Configuration elements and their definition as well as related terms such as Version are covered in the Financial Services Communication Cloud Service Guide.

Supplier

Name	Description
Rd Sp Hierarchy	Read Supplier Hierarchy
Upd Sp Hierarchy	Update Supplier Hierarchy
Del Sp Hierarchy	Delete Supplier Hierarchy
Crt Sp Hierarchy	Create a Supplier Hierarchy
Crt Sp	Create Supplier
Rd Sp	Read Supplier
Upd Sp	Update Supplier
Del Sp	Delete Supplier
Rd Sp Rls	Read Supplier Relationships

Supplier With Representative Association

Name	Description
Crt Sp Sp Rep Rl	Create a Supplier to Supplier Representative Relationship
Rd Sp Sp Rep Rl	Read Supplier Supplier Representative Relationship
Upd Sp Sp Rep Rl	Update Supplier Supplier Representative Relationship
Del Sp Sp Rep Rl	Delete Supplier Supplier Representative Relationship
Rd Sp Rep Rls	Read Supplier Representative Relationships
Crt Sp Sp Sr Rl	Create Supplier Supplier Service Relationship
Rd Sp Sp Sr Rl	Read Supplier Supplier Service Relationship
Upd Sp Sp Sr Rl	Update Supplier Supplier Service Relationship
Del Sp Sp Sr Rl	Delete Supplier Supplier Service Relationship

Supplier Representative

Name	Description
Crt Sp Rep	Create Supplier Representative
Rd Sp Rep	Read Supplier Representative
Upd Sp Rep	Update Supplier Representative
Del Sp Rep	Delete Supplier Representative
Crt Sp Sr	Create Supplier Service
Rd Sp Sr	Read Supplier Service
Upd Sp Sr	Update Supplier Service
Del Sp Sr	Delete Supplier Service
Rd Sp Sr Rls	Read Supplier Service Relationships

Supplier Service With Operations Company Supplier Service

Name	Description
Crt Oprtns Cmp Sp Sr Sp Sr Rl	Create Operations Company Supplier Service Supplier Service Relationship
Rd Op Cmp Sp Sr Sp Sr Rl	Read Operations Company Supplier Service Supplier Service Relationship
Upd Op Cmp Sp Sr Sp Sr Rl	Update Operations Company Supplier Service Supplier Service Relationship
Del Op Cmp Sp Sr Sp Sr Rl	Delete Operations Company Supplier Service Supplier Service Relationship
Del Sp Sr Cp Oprtns Cmp Sp Sr Cp Rl	Delete Supplier Service Component Operations Company Supplier Service Component Relationship

Supplier Service With Supplier Service Component

Name	Description
Crt Sp Sr Sp Sr Cp Rl	Create Supplier Service Supplier Service Component Relationship
Rd Sp Sr Sp Sr Cp Rl	Read Supplier Service Supplier Service Component Relationship
Upd Sp Sr Sp Sr Cp Rl	Update Supplier Service Supplier Service Component Relationship
Del Sp Sr Sp Sr Cp Rl	Delete Supplier Service Supplier Service Component Relationship

Operations Company Supplier Service

Name	Description
Crt Oprtns Cmp Sp Sr	Create Operations Company Supplier Service
Rd Oprtns Cmp Sp Sr	Read Operations Company Supplier Service
Upd Oprtns Cmp Sp Sr	Update Operations Company Supplier Service
Del Oprtns Cmp Sp Sr	Delete Operations Company Supplier Service
Rd Oprtns Cmp Sp Sr Rls	Read Operations Company Supplier Service Relationships

Operations Company Supplier Service With Company

Name	Description
Crt Cmp Oprtns Cmp Sp Sr Rl	Create Company Operations Company Supplier Service Relationship
Rd Cmp Oprtns Cmp Sp Sr Rl	Read Company Operations Company Supplier Service Relationship
Upd Cmp Oprtns Cmp Sp Sr Rl	Update Company Operations Company Supplier Service Relationship
Del Cmp Oprtns Cmp Sp Sr Rl	Delete Company Operations Company Supplier Service Relationship

ORACLE

Supplier Service Component

Name	Description
Crt Sp Sr Cp Hierarchy	Create Supplier Service Component Hierarchy
Rd Sp Sr Cp Hierarchy	Read Supplier Service Component Hierarchy
Upd Sp Sr Cp Hierarchy	Update Supplier Service Component Hierarchy
Del Sp Sr Cp Hierarchy	Delete Supplier Service Component Hierarchy
Rd Sp Sr Cp Rls	Read Supplier Service Component Relationships
Crt Sp Sr Cp	Create Supplier Service Component
Rd Sp Sr Cp	Read Supplier Service Component
Upd Sp Sr Cp	Update Supplier Service Component
Del Sp Sr Cp	Delete Supplier Service Component

Supplier Service Component With Operations Company Supplier Service Component association

Name	Description
Crt Sp Sr Cp Oprtns Cmp Sp Sr Cp Rl	Create Supplier Service Component Operations Company Supplier Service Component Relationship
Rd Sp Sr Cp Oprtns Cmp Sp Sr Cp Rl	Read Supplier Service Component Operations Company Supplier Service Component Relationship
Upd Sp Sr Cp Oprtns Cmp Sp Sr Cp Rl	Update Supplier Service Component Operations Company Supplier Service Component Relationship

Operations Company Supplier Service Component

Name	Description
Crt Ops Co Sp Sr Cp	Create an Operations Company Supplier Service Component
Rd Ops Co Sp Sr Cp	Read an Operations Company Supplier Service Component
Upd Ops Co Sp Sr Cp	Update an Operations Company Supplier Service Component
Del Ops Co Sp Sr Cp	Delete an Operations Company Supplier Service Component
Rd Ops Co Sp Sr Cp Rls	Read Operations Company Supplier Service Component Relationships
Crt Ops Co Sp Sr Cp Scr Str	Create an Operations Company Supplier Service Component Secure Store
Rd Ops Co Sp Sr Cp Scr Str	Read an Operations Company Supplier Service Component Secure Store
Upd Ops Co Sp Sr Cp Scr Str	Update an Operations Company Supplier Service Component Secure Store
Del Ops Co Sp Sr Cp Scr Str	Delete an Operations Company Supplier Service Component Secure Store

Name	Description
Rd Ops Co Sp Sr Cp Scr Str Rls	Read Operations Company Supplier Service Component Secure Store Relationships

Operations Company Supplier Service Component With Company association

Name	Description
Crt Co Ops Co Sp Sr Cp Rl	Create a Company to Operations Company Supplier Service Component Relationship
Rd Co Ops Co Sp Sr Cp Rl	Read a Company to Operations Company Supplier Service Component Relationship
Upd Co Ops Co Sp Sr Cp Rl	Update a Company to Operations Company Supplier Service Component Relationship
Del Co Ops Co Sp Sr Cp Rl	Delete a Company to Operations Company Supplier Service Component Relationship

Operations Company Supplier Service Component With Communication Distribution Email Oracle OCI Email Configuration association

Name	Description
Crt Ops Co Sp Sr Cp Com Dist Eml OCI Cf Rl	Create an Operations Company Supplier Service Component to Communication Distribution Email Oracle OCI Email Configuration Relationship
Rd Ops Co Sp Sr Cp Com Dist Eml OCI Cf Rl	Read an Operations Company Supplier Service Component to Communication Distribution Email Oracle OCI Email Configuration Relationship
Upd Ops Co Sp Sr Cp Com Dist Eml OCI Cf Rl	Update an Operations Company Supplier Service Component to Communication Distribution Email Oracle OCI Email Configuration Relationship
Del Ops Co Sp Sr Cp Com Dist Eml OCI Cf Rl	Delete an Operations Company Supplier Service Component to Communication Distribution Email Oracle OCI Email Configuration Relationship
Rd Ops Co Sp Sr Cp Com Dist Strg OCM Cf Rl	Read an Operations Company Supplier Service Component to Communication Distribution Storage Oracle OCM Configuration Relationship
Crt Ops Co Sp Sr Cp Com Dist Strg OCM Cf Rl	Create an Operations Company Supplier Service Component to Communication Distribution Storage Oracle OCM Configuration Relationship
Upd Ops Co Sp Sr Cp Com Dist Strg OCM Cf Rl	Update an Operations Company Supplier Service Component to Communication Distribution Storage Oracle OCM Configuration Relationship
Del Ops Co Sp Sr Cp Com Dist Strg OCM Cf Rl	Delete an Operations Company Supplier Service Component to Communication Distribution Storage Oracle OCM Configuration Relationship

Table

Name	Description
Crt Table	Create a Table
Rd Table	Read a Table
Upd Table	Update a Table

ORACLE

Name	Description
Del Table	Delete a Table
Crt Table Data	Create a Table Data
Rd Table Data	Read a Table Data
Upd Table Data	Update a Table Data
Del Table Data	Delete a Table Data
Crt Table Data Cf	Create a Table Data Configuration
Rd Table Data Cf	Read a Table Data Configuration
Upd Table Data Cf	Update a Table Data Configuration
Del Table Data Cf	Delete a Table Data Configuration
Rd Table Fact Values	Read Table Fact Values

Communication Email

Name	Description
Crt Com Email Mst	Create Communication Email Master
Rd Com Email Mst	Read Communication Email Master
Crt Com Email Ver Mst Cf	Create Communication Email Version Master Configuration
Rd Com Email Ver Mst Cf	Read Communication Email Version Master Configuration
Upd Com Email Ver Mst Cf	Update Communication Email Version Master Configuration
Del Com Email Ver Mst Cf	Delete Communication Email Version Master Configuration
Rd Com Email Cf	Read Communication Email Configuration
Rd Com Email Mst Cf	Read Communication Email Master Configuration
Del Com Email Mst Cf	Delete Communication Email Master Configuration
Upd Com Email Mst Cf	Update Communication Email Master Configuration

Communication Distribution Email

Name	Description
Crt Com Dist Email Mst	Create Communication Distribution Email Master
Rd Com Dist Email Mst	Read Communication Distribution Email Master
Crt Com Dist Email Mst Cf	Create Communication Distribution Email Master Configuration
Rd Com Dist Email Mst Cf	Read Communication Distribution Email Master Configuration
Upd Com Dist Email Mst Cf	Update Communication Distribution Email Master Configuration
Del Com Dist Email Mst Cf	Delete Communication Distribution Email Master Configuration

Name	Description
Crt Com Dist Email OCI Email Mst	Create Communication Distribution Email Oracle OCI Email Master
Rd Com Dist Email OCI Email Mst	Read Communication Distribution Email Oracle OCI Email Master
Crt Com Dist Email OCI Email Mst Cf	Create Communication Distribution Email Oracle OCI Email Master Configuration
Rd Com Dist Email OCI Email Mst Cf	Read Communication Distribution Email Oracle OCI Email Master Configuration
Upd Com Dist Email OCI Email Mst Cf	Update Communication Distribution Email Oracle OCI Email Master Configuration
Del Com Dist Email OCI Email Mst Cf	Delete Communication Distribution Email Oracle OCI Email Master Configuration
Rd Com Dist Email Cf	Read Communication Distribution Email Configuration
Rd Com Dist Email OCI Email Cf	Read Communication Distribution Email Oracle OCI Email Configuration

Communication Storage

Name	Description
Crt Com Storage Mst	Create Communication Storage Master
Rd Com Storage Mst	Read Communication Storage Master
Crt Com Storage Ver Mst Cf	Create Communication Storage Version Master Configuration
Rd Com Storage Ver Mst Cf	Read Communication Storage Version Master Configuration
Upd Com Storage Ver Mst Cf	Update Communication Storage Version Master Configuration
Del Com Storage Ver Mst Cf	Delete Communication Storage Version Master Configuration
Rd Com Strg Cf	Read Communication Storage Configuration
Rd Com Storage Mst Cf	Read Communication Storage Master Configuration
Del Com Storage Mst Cf	Delete Communication Storage Master Configuration
Upd Com Strg Mst Cf	Update Communication Storage Master Configuration

Transaction Types for Communication Distribution Storage

Name	Description
Crt Com Dist Strg Mst	Create Communication Distribution Storage Master
Rd Com Dist Strg Mst	Read Communication Distribution Storage Master
Crt Com Dist Strg Mst Cf	Create Communication Distribution Storage Master Configuration
Rd Com Dist Strg Mst Cf	Read Communication Distribution Storage Master Configuration

Name	Description
Upd Com Dist Strg Mst Cf	Update Communication Distribution Storage Master Configuration
Del Com Dist Strg Mst Cf	Delete Communication Distribution Storage Master Configuration
Crt Com Dist Strg OCM Mst	Create Communication Distribution Storage Oracle OCM Master
Rd Com Dist Strg OCM Mst	Read Communication Distribution Storage Oracle OCM Master
Crt Com Dist Strg OCM Mst Cf	Create Communication Distribution Storage Oracle OCM Master Configuration
Rd Com Dist Strg OCM Mst Cf	Read Communication Distribution Storage Oracle OCM Master Configuration
Upd Com Dist Strg OCM Mst Cf	Update Communication Distribution Storage Oracle OCM Master Configuration
Del Com Dist Strg OCM Mst Cf	Delete Communication Distribution Storage Oracle OCM Master Configuration
Rd Com Dist Strg Cf	Read Communication Distribution Storage Configuration
Rd Com Dist Strg OCM Cf	Read Communication Distribution Storage Oracle OCM Configuration

Transaction Types for Communication

Name	Description
Crt Com	Create Communication
Rd Com	Read Communication
Crt Com Mst	Create Communication Master
Rd Com Mst	Read Communication Master
Crt Com Mst Cf	Create Communication Master Configuration
Rd Com Mst Cf	Read Communication Master Configuration
Upd Com Mst Cf	Update Communication Master Configuration
Del Com Mst Cf	Delete Communication Master Configuration
Rd Com Cf	Read Communication Configuration

Transaction Types for Communication Rendition

Name	Description
Rd Com Rndtn Mst Cf	Read Communication Rendition Master Configuration
Upd Com Rndtn Mst Cf	Update Communication Rendition Master Configuration
Del Com Rndtn Mst Cf	Delete Communication Rendition Master Configuration
Rd Com Rndtn Ver Mst Cf	Read Communication Rendition Version Master Configuration
Crt Com Rndtn Ver Mst Cf	Create Communication Rendition Version Master Configuration
Upd Com Rndtn Ver Mst Cf	Update Communication Rendition Version Master Configuration

ORACLE

Name	Description
Del Com Rndtn Ver Mst Cf	Delete Communication Rendition Version Master Configuration
Rd Com Rndtn Cf	Read Communication Rendition Configuration
Rd Com Rndtn Mst	Read Communication Rendition Master
Crt Com Rndtn Mst	Create Communication Rendition Master

Transaction Types for Communication Distribution Direct

Name	Description
Crt Com Dist Drct Mst	Create Communication Distribution Direct Master

Transaction Types for SFTP Communication Distribution Storage

Name	Description
Rd External SFTP	Read External Oracle SFTP
Crt External SFTP	Create External Oracle SFTP
Upd External SFTP	Update External Oracle SFTP
Del External SFTP	Delete External Oracle SFTP
Rd Com Dist Strg SFTP Mst Cf	Read Communication Distribution Storage Oracle SFTP Master Configuration
Crt Com Dist Strg SFTP Mst Cf	Create Communication Distribution Storage Oracle SFTP Master Configuration
Upd Com Dist Strg SFTP Mst Cf	Update Communication Distribution Storage Oracle SFTP Master Configuration
Del Com Dist Strg SFTP Mst Cf	Delete Communication Distribution Storage Oracle SFTP Master Configuration
Rd Com Dist Strg SFTP Mst	Read Communication Distribution Storage Oracle SFTP Master
Crt Com Dist Strg SFTP Mst	Create Communication Distribution Storage Oracle SFTP Master
Rd Com Dist Strg SFTP Cf	Read Communication Distribution Storage Oracle SFTP Configuration

Transaction Types for Communication Batch

Name	Description
Crt Com Btch	Create Communication Batch
Crt Com Btch Job	Create Communication Batch Job
Crt Counter Btch	Create Counter Batch
Crt Btch Timer	Create Batch Timer
Rd Btch Schdr	Read Batch Scheduler
Rd Btch Cf	Read Batch Configuration
Crt Btch Cf	Create Batch Configuration
Upd Btch Cf	Update Batch Configuration
Del Btch Cf	Delete Batch Configuration
Crt Btch File Upload	Create Batch File Upload

Name	Description
Upd Btch File Upload	Update Batch File Upload
Rd Btch	Read Batch
Upd Btch	Update Batch
Rd Schd Cf	Read Schedule Configuration
Crt Schd Cf	Create Schedule Configuration
Upd Schd Cf	Update Schedule Configuration
Del Schd Cf	Delete Schedule Configuration
Crt Btch	Create Batch

Transaction Types for Communication Message

Name	Description
Upd Com Message Mst Cf	Update Communication Message Master Configuration
Crt Com Message Mst	Create a Communication Message Master
Crt Com Message Ver Mst Cf	Create a Communication Message Version Master Configuration
Del Com Message Mst Cf	Delete a Communication Message Master Configuration
Del Com Message Ver Mst Cf	Delete a Communication Message Version Master Configuration
Rd Com Message Cf	Read a Communication Message Configuration
Rd Com Message Mst	Read a Communication Message Master
Rd Com Message Mst Cf	Read a Communication Message Master Configuration
Rd Com Message Ver Mst Cf	Read a Communication Message Version Master Configuration
Upd Com Message Ver Mst Cf	Update a Communication Message Version Master Configuration

Transaction Types for Communication Distribution Message Telesign SMS

Name	Description
Crt Com Dist Message Telesign SMS Mst	Create a Communication Distribution Message Telesign SMS Master
Crt Com Dist Message Telesign SMS Mst Cf	Create a Communication Distribution Message Telesign SMS Master Configuration
Rd Com Dist Message Telesign SMS Cf	Read a Communication Distribution Message Telesign SMS Configuration
Rd Com Dist Message Telesign SMS Mst	Read a Communication Distribution Message Telesign SMS Master

Name	Description
Rd Com Dist Message Telesign SMS Mst Cf	Read a Communication Distribution Message Telesign SMS Master Configuration
Upd Com Dist Message Telesign SMS Mst Cf	Update a Communication Distribution Message Telesign SMS Master Configuration
Del Com Dist Message Telesign SMS Mst Cf	Delete a Communication Distribution Message Telesign SMS Master Configuration
Crt External Telesign SMS	Create an External Telesign SMS
Rd External Telesign SMS	Read an External Telesign SMS
Rd Mock Telesign SMS	Read a Mock Telesign SMS
Crt Mock Telesign SMS	Create a Mock Telesign SMS
Upd Mock Telesign SMS	Update a Mock Telesign SMS
Del Mock Telesign SMS	Delete a Mock Telesign SMS
Rd Mock Telesign SMS Request	Read a Mock Telesign SMS Request

Operations Company Supplier Service Component Master Configuration

Name	Description
Rd Oprtns Cmp Sp Sr Cp Mst Cf	Read an Operations Company Supplier Service Component Master Configuration
Crt Oprtns Cmp Sp Sr Cp Mst Cf	Create an Operations Company Supplier Service Component Master Configuration
Upd Oprtns Cmp Sp Sr Cp Mst Cf	Update an Operations Company Supplier Service Component Master Configuration
Del Oprtns Cmp Sp Sr Cp Mst Cf	Delete an Operations Company Supplier Service Component Master Configuration

Transaction Types for Communication Distribution ESignature

Name	Description
Crt Com Dist ESignature Mst	Create a Communication Distribution ESignature Master
Crt Com Dist ESignature Mst Cf	Create a Communication Distribution ESignature Master Configuration
Del Com Dist ESignature Mst Cf	Delete a Communication Distribution ESignature Master Configuration
Rd Com Dist ESignature Cf	Read a Communication Distribution ESignature Configuration
Rd Com Dist ESignature Mst	Read a Communication Distribution ESignature Master
Rd Com Dist ESignature Mst Cf	Read a Communication Distribution ESignature Master Configuration

Transaction Types for Communication Distribution DocuSign

Name	Description
Crt Com Dist ESignature DocuSign ESign Mst	Create a Communication Distribution DocuSign Master
Crt Com Dist ESignature DocuSign ESign Mst Cf	Create a Communication Distribution DocuSign Master Configuration
Del Com Dist ESignature DocuSign ESign Mst Cf	Delete a Communication Distribution DocuSign Master Configuration
Rd Com Dist ESignature DocuSign ESign Cf	Read a Communication Distribution DocuSign Configuration
Rd Com Dist ESignature DocuSign ESign Mst	Read a Communication Distribution DocuSign Master
Rd Com Dist ESignature DocuSign ESign Mst Cf	Read a Communication Distribution DocuSign Master Configuration

Transaction Types for Communication Distribution Message Master Configuration

Name	Description
Crt Com Dist Message Mst	Create a Communication Distribution Message Master
Crt Com Dist Message Mst Cf	Create a Communication Distribution Message Master Configuration
Del Com Dist Message Mst Cf	Delete a Communication Distribution Message Master Configuration
Rd Com Dist Message Cf	Read a Communication Distribution Message Configuration
Rd Com Dist Message Mst	Read a Communication Distribution Message Master
Rd Com Dist Message Mst Cf	Read a Communication Distribution Message Master Configuration
Upd Com Dist Message Mst Cf	Update a Communication Distribution Message Master Configuration

Transaction Types for Communication Distribution Twilio Messaging

Name	Description
Rd Com Dist Message Twilio Messaging Cf	Read Communication Distribution Message Twilio Messaging Configuration
Rd Com Dist Message Twilio Messaging Mst	Read Communication Distribution Message Twilio Messaging Master
Crt Com Dist Message Twilio Messaging Mst	Create Communication Distribution Message Twilio Messaging Master

ORACLE

Name	Description
Rd Com Dist Message Twilio Messaging Mst Cf	Read Communication Distribution Message Twilio Messaging Master Configuration
Crt Com Dist Message Twilio Messaging Mst Cf	Create Communication Distribution Message Twilio Messaging Master Configuration
Upd Com Dist Message Twilio Messaging Mst Cf	Update Communication Distribution Message Twilio Messaging Master Configuration
Del Com Dist Message Twilio Messaging Mst Cf	Delete Communication Distribution Message Twilio Messaging Master Configuration
Rd External Twilio Messaging	Read External Twilio Messaging
Crt External Twilio Messaging	Create External Twilio Messaging

Transaction Types for Communication Distribution Twilio Email

Name	Description
Rd Com Dist Email, Eml Twilio Send Grid Mst	Read Communication Distribution Email Twilio Send Grid Master
Crt Com Dist Email, Eml Twilio Send Grid Mst	Create Communication Distribution Email Twilio Send Grid Master
Rd Com Dist Email, Eml Twilio Send Grid Mst Cf	Read Communication Distribution Email Twilio Send Grid Master Configuration
Crt Com Dist Email, Eml Twilio Send Grid Mst Cf	Create Communication Distribution Email Twilio Send Grid Master Configuration
Upd Com Dist Email, Eml Twilio Send Grid Mst Cf	Update Communication Distribution Email Twilio Send Grid Master Configuration
Del Com Dist Email, Eml Twilio Send Grid Mst Cf	Delete Communication Distribution Email Twilio Send Grid Master Configuration
Rd Com Dist Email, Eml Twilio Send Grid Cf	Read Communication Distribution Email Twilio Send Grid Configuration

Transaction Types for Search

Name	Description
Rd Search Cat Mst Cf	Read a Search Category Master Configuration
Crt Search Cat Mst Cf	Create a Search Category Master Configuration
Upd Search Cat Mst Cf	Update a Search Category Master Configuration
Del Search Cat Mst Cf	Delete a Search Category Master Configuration
Rd Search Cat Cf	Read a Search Category Configuration
Rd Search Stmt Cf	Read a Search Statement Configuration
Rd Search Stmt Mst Cf	Read a Search Statement Master Configuration
Upd Search Stmt Mst Cf	Update a Search Statement Master Configuration
Del Search Stmt Mst Cf	Delete a Search Statement Master Configuration
Rd Search Stmt Ver Mst Cf	Read a Search Statement Version Master Configuration
Crt Search Stmt Ver Mst Cf	Create a Search Statement Version Master Configuration
Upd Search Stmt Ver Mst Cf	Update a Search Statement Version Master Configuration
Del Search Stmt Ver Mst Cf	Delete a Search Statement Version Master Configuration

Name	Description
Rd Search Stmt Grp Cf	Read a Search Statement Group Configuration
Rd Search Stmt Grp Mst Cf	Read a Search Statement Group Master Configuration
Upd Search Stmt Grp Mst Cf	Update a Search Statement Group Master Configuration
Del Search Stmt Grp Mst Cf	Delete a Search Statement Group Master Configuration
Rd Search Stmt Grp Ver Mst Cf	Read a Search Statement Group Version Master Configuration
Crt Search Stmt Grp Ver Mst Cf	Create a Search Statement Group Version Master Configuration
Upd Search Stmt Grp Ver Mst Cf	Update a Search Statement Group Version Master Configuration
Del Search Stmt Grp Ver Mst Cf	Delete a Search Statement Group Version Master Configuration
Rd Search Cf	Read a Search Configuration
Rd Search Mst Cf	Read a Search Master Configuration
Upd Search Mst Cf	Update a Search Master Configuration
Del Search Mst Cf	Delete a Search Master Configuration
Rd Search Ver Mst Cf	Read a Search Version Master Configuration
Crt Search Ver Mst Cf	Create a Search Version Master Configuration
Upd Search Ver Mst Cf	Update a Search Version Master Configuration
Del Search Ver Mst Cf	Delete a Search Version Master Configuration

ORACLE

10
Accessibility Overview

Creating accessible communication is a key part of the full life cycle of development and business operations. From how your company engages a new prospect to customer retention – accessible communication is critically important.

Why Accessibility is Important

According to a World Bank statistic, up to 15% of the population is disabled; either by birth, critical illness, result of accident or aging. Accessibility means to provide equal access to differently abled users. It also removes the obstacles between a company and its potential customers.

See The World Bank website for more information.

Oracle Policies on Accessibility

Oracle is committed to creating accessible technologies and products that enhance the overall workplace environment and contribute to the productivity of its employees, customers, and customers' customers. The process of building accessible applications at Oracle affects all stages of the development cycle and involves considerable investment in time and resources. The accessibility status of each Oracle product is reported in a Voluntary Product Accessibility Template (VPAT). The VPAT is not just a checklist, it acts as a product's statement of conformance to accessibility criteria such as Web Content Accessibility Guideline (WCAG) 2.0, or Section 508 of the US Federal Rehabilitation Act.

To know more about Oracle's Policy with respect to accessibility, see Oracle Accessibility Policies and Standards Interpretation page.

Objective

This document contains accessibility best practices and tips for administrators, designers, and others using Oracle Financial Services Communication Cloud Service to create documents. It also includes accessibility considerations for the use of Oracle Financial Services Communication Cloud Service.

Audience

This document is intended for those who need to:

- Configure the Oracle Financial Services Communication Cloud Service to generate accessible output.
- Operate the Oracle Financial Services Communication Cloud Service tools with accessibility features enabled.

Documentation Accessibility

This documentation may contain links to Websites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these websites.

Customer Support

If you have any questions about the installation or use of our products, please call +1.800.223.1711 or visit the My Oracle Support website.

Go to My Oracle Support to find answers in the Oracle Support Knowledge Base, submit, update or review your Service Requests, engage the My Oracle Support Community, download software updates, and tap into Oracle proactive support tools and best practices.

Hearing impaired customers in the U.S. who need to speak with an Oracle Support representative may use a Telecommunications Relay Service (TRS). Information about TRS is available at Federal Communications Commission website.

A list of phone numbers is available at Telecommunications Relay Services Directory. International hearing impaired customers should use the TRS at 1.605.224.1837

Terms

The following terms are used in this document:

Table 10-1   Terms used in this document

Term	Description
Card	A container that displays content and/or actions for a single object or topic
Checkbox	A small box on a form into which a check or other mark is entered as the response to a question or selection of the associated item. A checkbox group may allow the option to select multiple responses or items. Checkboxes can be selected and deselected.
Chip	A Chip is an iconic representation of a currently applied search criteria, filter or selected value.
Global Navigation Bar	The top row of the screen where buttons, links, menus or elements afford navigation from one set of content to another. This bar appears identically across all pages to provide a consistent means of navigation
Hierarchy	Hierarchical relationships are a structure of superordinate/subordinate or parent/child relationships. Oracle Financial Services Cloud hierarchies are created when an entity instance of a particular type is associated to another entity instance of the same type (e.g., Company-to-Company)
Jump Menu	A menu with the option to "Go To" the selected item
List	A group of like or similar items displayed on the page/screen. Often includes various methods from which one or more items from the list can be used; e.g., users may have options like • View a "Snapshot" • View an "Action Menu" • Select" for use (such as creating an association)
More menu	A menu through which the user interacts with the application. Typically a contextual menu that allows the user to select "more" options. Limited to a small set of contextual "Action" options.
Plus icon	An contextual iconic representation of the option to expand a list or create a new item • Left Side o Line item expand group/list. (Minus represents collapse) • Right Side • Create a new item from a card – Create a new item from a select item list view when an item of 'this type' does not currently exist

Table 10-1   (Cont.) Terms used in this document

Term	Description
Radio button	A small circle or "button" on a form into which a mark is entered as the response to a question or selection of the associated item. A radio button group allows the selection of only one option. Selecting an option automatically deselects any other selected radio button in the same group.
Search Bar	A text field with related options (e.g., Clear, Search) that allows a user to attempt to locate one or more items using unbounded parameters.
Snapshot	A snapshot is read-only view of a specific item
Tab bar	A tab bar allows navigation between different content sections.
Tree view	A tree view displays hierarchical relationships between items.

Using Communication Cloud Service to Create Accessible Documents

This section provides information on document design considerations (package, content, etc.) that may impact the accessibility of documents produced by the Oracle Financial Services Communication Cloud Service.

Document Accessibility Considerations

Here are some points to consider for document accessibility:

- People with low vision can view the screen with the help of technologies such as large screens, screen magnifiers, zoom text, optical enlargers, etc.

- For low vision or blind users, the document should be able to be read aloud by assistive technology such as a screen reader, which speaks content using a Text-To-Speech (TTS) engine.

- For users who are unable to use a mouse, including the screen reader users, the document should be able to be accessed by keyboard-only.

- For people with low or color vision deficiencies, the proper color contrast ratio should be maintained to make the document accessible.

Alternative Text

Screen readers may read alternative text, if present, to provide information about non-text content such as graphics. Communication Cloud Service enables users to specify alternate text on objects such as graphics. This alternate text is then embedded in the HTML output.

Alternative text attributes are automatically applied to graphics using the graphic Description supplied by the user during configuration.

Figure 10-1   Alternative Text
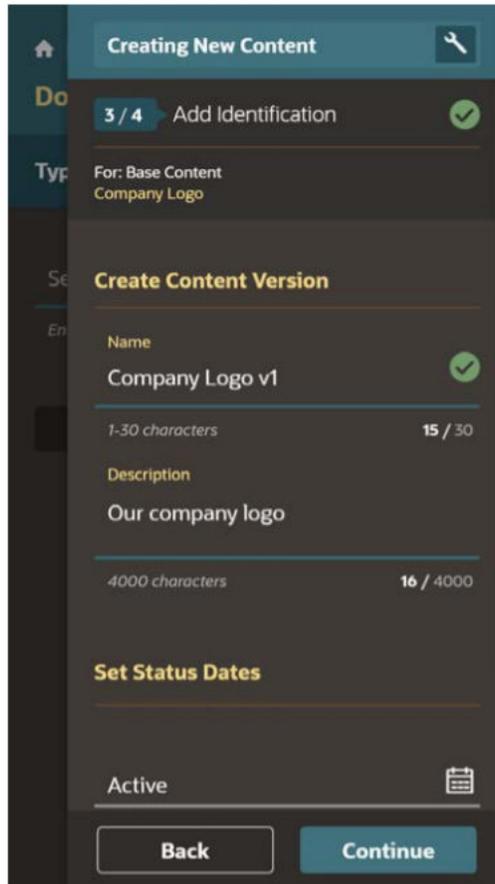
Color Contrast

Color should not be used as the only way to convey meaning. For example, users with color vision deficiencies may not able to distinguish warning text that is in red from non-warning text that is not red. The best option is to use meaningful text along with color. In a warning text, for example, the word Warning could be included to identify warning text from non warning text. Also, there must be contrast between foreground and background colors to display the text correctly when rendered on a background with a different color.

Style configuration in Communication Cloud Service can be used to control color contrast by setting a font color and a background color:

• Font Color is the color of the text (letters).

• Background Color is the color of the space around the letters.

Black and White. Black and white creates the highest contrast possible.

Figure 10-2   Color Contrast
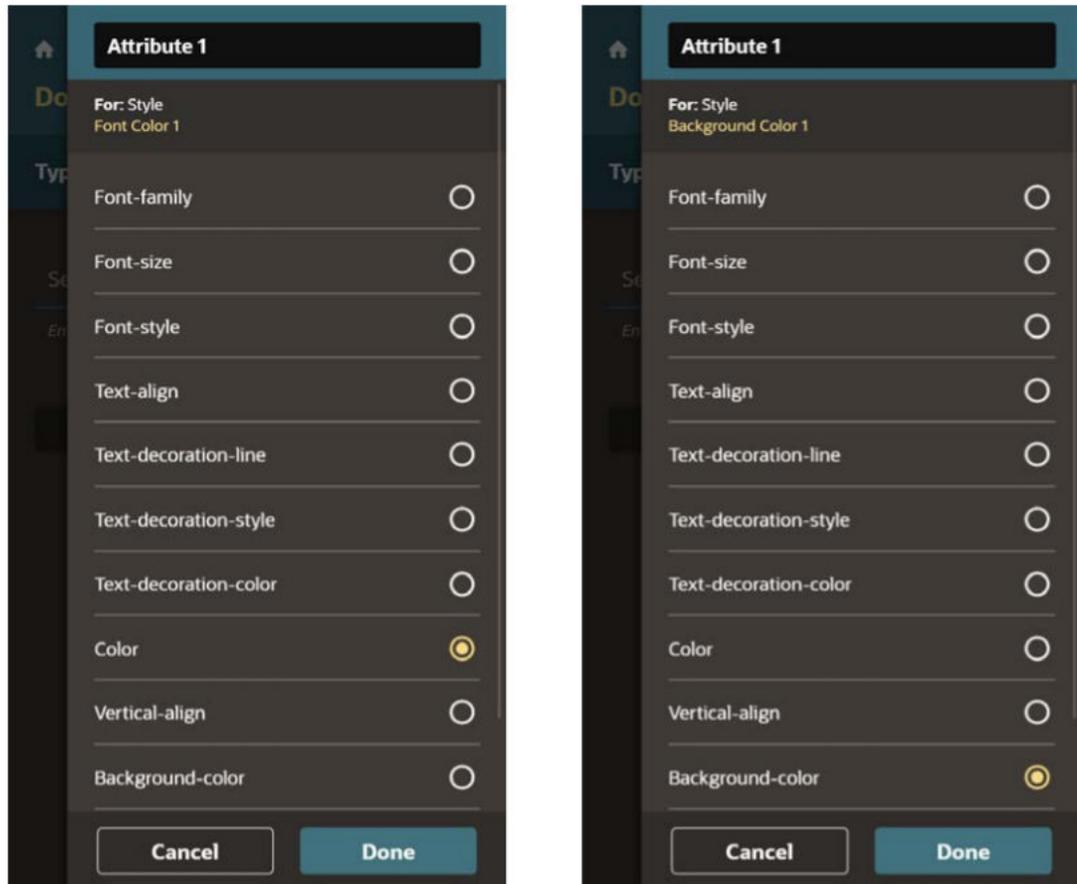
Embedded Font

Consider the fonts used to generate the output. Select clear, readable fonts in an appropriate size for readability.

When a font has high readability, embedding fonts ensures that all recipients will be able to display in the HTML as intended. Avoid embedding fonts with poor readability.

The Communication Cloud Service always embeds fonts in the HTML output.

Additional Tips for Accessibility

In addition to the configuration, settings presented herein there are also various layout and design considerations that can impact the accessibility of documents produced by Oracle Financial Services Communication Cloud Service.

Tips:

- Do not use ASCII characters to render drawings or figures such as ":-)" or "-->" or a series of characters such as "---- ----------". Screen Readers may read these without interpretation. So the user may hear "dash dash greater than" rather than the arrow (-->) that was intended.

- Ensure hyperlinks are underlined so that a user who can't distinguish the color knows they are links.

- Avoid abbreviations and acronyms unless so common, they're considered as part of the language. Define or explain an abbreviation on the first time you use it.

- Avoid making explicit reference to mnemonics.

- Descriptions for alternate text should be concise. The World Wide Web Consortium (W3C) recommends 100 or fewer characters for alternate text.

- It is a good idea to end the alternate text with a punctuation mark so that voice synthesizers pause for short time and therefore help comprehension.

Using Accessibility Features Within the Oracle Financial Services Communication Cloud Services

This section discusses accessibility features within the Oracle Financial Services Communication Cloud Service.

Navigation While Editing

Oracle Financial Services Communication Cloud Service provides the following keyboard interactions to navigate within the application.

Global Navigation Bar

Figure 10-3   Global Navigation Bar

Sr.No	Target	Key/Action
1	Home Icon	Tap **Tab** to focus on the Home icon. Tap **Enter** to navigate to the Dashboard page
2	Config ID	Tap **Tab** to focus on Config ID. Tap **Enter** to open the Config ID Quick Access panel.
3	Menu	Tap **Tab** to focus on the Hamburger menu icon. Tap **Enter** to open the main navigation menu.

Jump Menu

Figure 10-4   Jump Menu
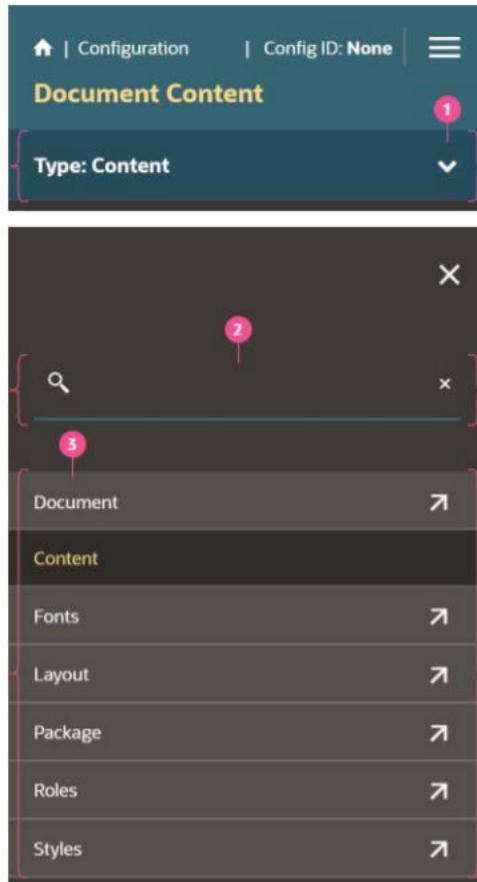
Sr.No	Target	Key/Action
1	Jump menu	Tap **Tab** to focus on the dropdown text. Tap down arrow key **DownArrow** to open the options list.
2	Search bar	Tap **Tab** to focus on the search textbox. Type a keyword and then **Tab** to search from the set of available options.
3	Option list	Tap **Tab** to focus on the first option list item. Tap **DownArrow** to move to the next option or **UpArrow** to move to the previous option. Tap **Enter** to select the option.

More Menu

Figure 10-5   More Menu
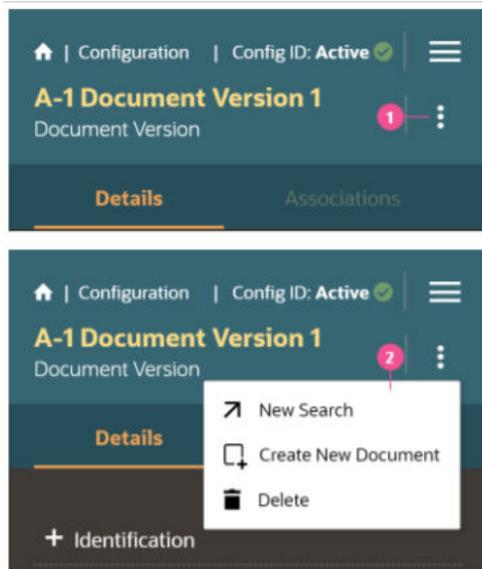
Sr.No	Target	Key/Action
1	More menu icon	Tap **Tab** to focus on the More menu icon. Tap **DownArrow** arrow key to open the dropdown options list
2	Option list	Tap **DownArrow** to move to the next option. Tap Enter to select the option.

Search Bar

Figure 10-6   Search Bar
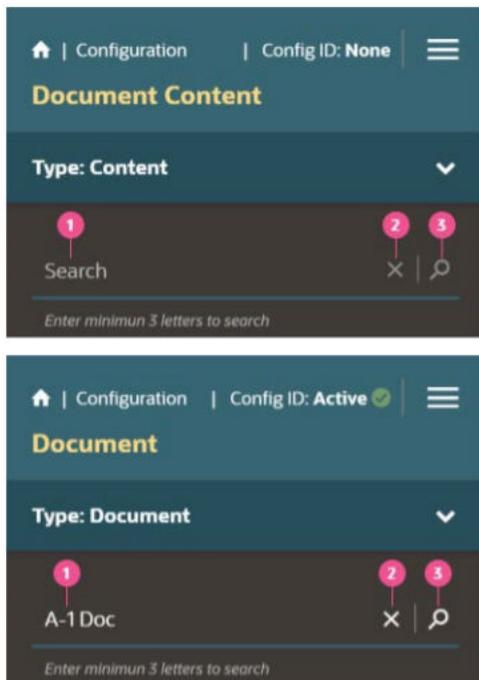
Sr.No	Target	Key/Action
1	Search bar	Tap **Tab** to focus on the textbox. Enter the search text. The clear (x) and search (magnifying glass) icons are enabled after typing 3 or more letters.
2	Clear icon	When the clear icon (x) is disabled there is no focus. When clear icon is enabled Tap **Tab** to focus on the clear icon. Tap **Enter** to clear the text
3	Search icon	When the search icon (magnifying glass) is disabled there is no focus. When search icon is enabled Tap **Tab** to focus on the search icon. Tap **Enter** to initiate the text search.

Chip

Figure 10-7   Chip
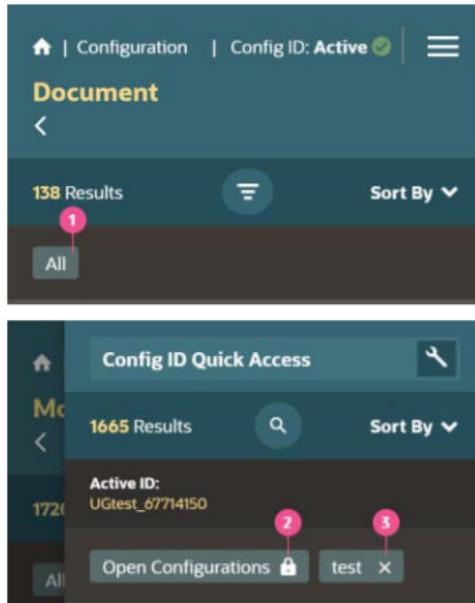
Sr.No	Target	Key/Action
1	Chips with no icon	Chips with no icon are not actionable and will not have focus.
2	Chips with a lock icon	Chips with a lock icon are not actionable and will not have focus
3	Chips with a clear (x) icon	Chips with the clear icon (x) are actionable. Tap **Tab** to focus on the icon. Tap **Enter** to clear this chip filter from the search criteria.

List with Snapshot and More menu

Figure 10-8   List with Snapshot and More menu

Sr.No	Target	Key/Action
1	List items	Tap **Tab** to focus on the list item. Tap **DownArrow** to move to the next list item or **UpArrow** to move to the previous list item.
2	Snapshot icon	Tap **F2** to access the Snapshot icon. Tap **Enter** to open the snapshot dialog.
3	More menu	Tap **Tab** to focus on the More menu. Tap **DownArrow** to open the options list for the More menu. Tap **DownArrow** to move to the next menu option or **UpArrow** to move to the previous menu option. Tap **Enter** to select the menu option. Tap Esc to navigate back to the list item / parent list

List with Expand/Collapse, Snapshot and More menu

Figure 10-9   List with Expand/Collapse, Snapshot and More menu

Sr.No	Target	Key/Action
1	List items	Tap **Tab** to focus on the list item. Tap **DownArrow** to move to the next list item or **UpArrow** to move to the previous list item.
2	Expand/ Collapse icon	Tap **F2** to access the plus icon. Then Tap **Enter** to navigate to next screen.
3	Snapshot icon	Tap **F2** to access the Snapshot icon. Tap **Enter** to open the snapshot dialog.
4	More menu	Tap **Tab** to focus on the More menu. Tap **DownArrow** to open the options list for the More menu. Tap **DownArrow** to move to the next menu option or **UpArrow** to move to the previous menu option. Tap **Enter** to select the menu option. Tap Esc to navigate back to the list item / parent list

List with Snapshot and Radio button

Figure 10-10   List with Snapshot and Radio button

Sr.No	Target	Key/Action
1	List items	Tap **Tab** to focus on the list item. Tap **DownArrow** to move to the next list item or **UpArrow** to move to the previous list item.
2	Snapshot icon	Tap **F2** to access the Snapshot icon. Tap **Enter** to open the snapshot dialog.
3	Radio button	Tap Tab to focus on the radio button. Tap **Shift + Space** to select the radio button. Tap **Esc** to navigate back to the list item / parent list

List with Snapshot and Radio button

Figure 10-11   List with Snapshot and Radio button

Sr.No	Target	Key/Action
1	List items	Tap **Tab** to focus on the list item. Tap **DownArrow** to move to the next list item or **UpArrow** to move to the previous list item.
2	Snapshot icon	Tap **F2** to access the Snapshot icon. Tap **Enter** to open the snapshot dialog.
3	Checkbox	Tap **Tab** to focus on the checkbox. **Shift+Space** to select the checkbox. Tap **Esc** to navigate back to the list item / parent list

List with Radio button

Figure 10-12   List with Radio button
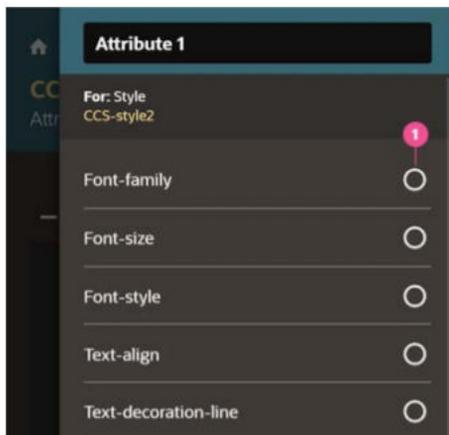
Sr.No	Target	Key/Action
1	Radio button	Tap **Tab** to focus on the list item. Tap **DownArrow** or **UpArrow** to select one radio option.

List with Checkbox

Figure 10-13   List with Checkbox
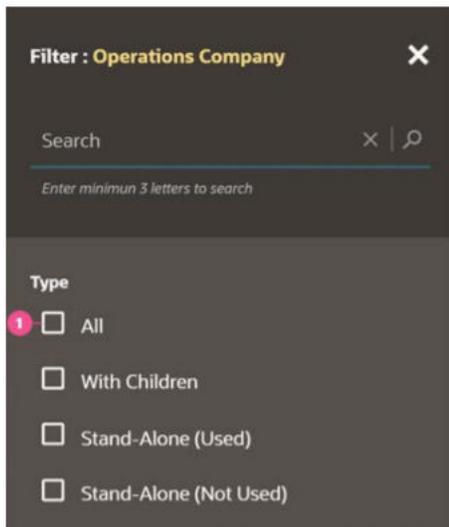
Sr.No	Target	Key/Action
1	Checkbox	Tap **Tab** to set focus on the list item. Tap **Tab** to navigate to the next list or **Shift+Tab** to navigate to the previous list item. Tap **Space** to select the checkbox option.

ORACLE

Hierarchy with a List view and Tree view

Figure 10-14   Hierarchy with a List view and Tree view
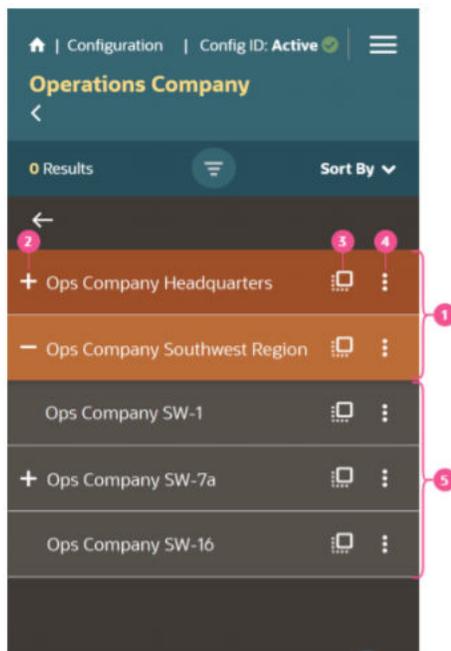
Sr.No	Target	Key/Action
		Rows with an orange background are in a 'list view'. Rows with a gray background (below the list section) are in a 'tree view'.
1	List items	Tap **Tab** to focus on the list item. Tap **DownArrow** to move to the next list item or **UpArrow** to move to the previous list item.
2	Expand/ Collapse row	To expand or collapse a row, Tap **F2** to access the plus icon (+). Then Tap **Enter** to expand/collapse the selected item's hierarchy.
3	Snapshot icon	Tap **F2** to access the Snapshot icon. Tap **Enter** to open the snapshot dialog.
4	More menu	Tap **Tab** to focus on the More menu. Tap **DownArrow** to open the options list for the More menu. Tap **DownArrow** to move to the next menu option or **UpArrow** to move to the previous menu option. Tap **Enter** to select the menu option.
5	Tree view	Tap **Tab** to focus on the list item. Tap **RightArrow** to expand the tree view. Tap **Tab** to navigation to the Snapshot icon and More menu. Tap **Esc** to navigate back to the list item / parent list

Cards - Associations

Figure 10-15   Cards - Associations

Figure 10-16   Cards - Associations
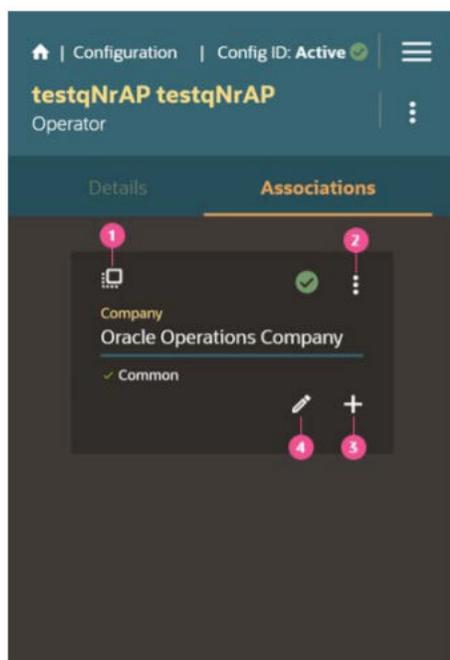
Sr.No	Target	Key/Action
1	Snapshot	Tap **F2** to access the Snapshot icon. Tap **Enter** to open the snapshot dialog
2	More menu	Tap **Tab** to focus on the More menu. Tap **DownArrow** to open the options list for the More menu. Tap **DownArrow** to move to the next menu option or **UpArrow** to move to the previous menu option. Tap **Enter** to select the menu option.
3	Add	Tap **Tab** to access the Add icon (+). Then Tap **Enter** to open the manage associations dialog.
4	Edit	Tap **Tab** to access the Edit icon (pencil). Then Tap **Enter** to open the capture info dialog.
5	Expand/ Collapse icon	Tap **Tab** to access the Expand/Collapse icon (chevron), Tap **Tab**. Then Tap **Enter** to expand the card stack.

Tab Bar

Figure 10-17   Tab Bar
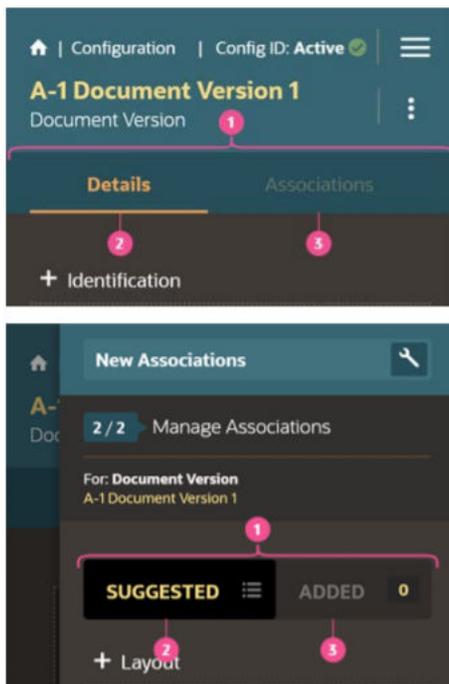
Sr.No	Target	Key/Action
1	Tab bar	Tap the **Tab** key to focus on the active tab.
2	Active Tab	Tap **RightArrow** arrow to move the focus to inactive tab.
3	Inactive Tab	Tap **Enter** to activate the tab.

Menu Element

Table 10-2   Menu Item

Key	Action
Enter or Space	Invoke the focused menu item's action.
UpArrow	Move focus to the previous menu item, wrapping around at the top.
DownArrow	Move focus to the next menu item, wrapping around at the bottom.
Home	Move focus to the first menu item.
End	Move focus to the last menu item.
Shift + F10	Open the context menu.

Table 10-3   Menu Item in Top-level Menu

Key	Action
Esc	Close the menu and move focus to the launcher.

List View element

Table 10-4   Menu Item

Key(s)	Action
F2	Enters Actionable mode. This enables keyboard action on elements inside the item, including navigate between focusable elements inside the item.
Esc	Exits Actionable mode
Tab	When in Actionable Mode, navigates to next focusable element within the item. If the last focusable element is reached, shift focus back to the first focusable element. When not in Actionable Mode, navigates to next focusable element on page (outside ListView).
Shift+Tab	When in Actionable Mode, navigates to previous focusable element within the item. If the first focusable element is reached, shift focus back to the last focusable element. When not in Actionable Mode, navigates to previous focusable element on page (outside ListView).
DownArrow	Move focus to the item below.
UpArrow	Move focus to the item above.
LeftArrow	When display in card layout, move focus to the item on the left
RightArrow	When display in card layout, move focus to the item on the right.
Shift+DownArrow	Extend the selection to the item below
Shift+UpArrow	Extend the selection to the item above.
Shift+LeftArrow	When display in card layout, extend the selection to the item on the left.

Table 10-4   (Cont.) Menu Item

Key(s)	Action
Shift+RightArrow	When display in card layout, extend the selection to the item on the right.
Shift+F10	Launch the context menu if there is one associated with the current item.
Enter	Selects the current item. No op if the item is already selected.
Space	Toggles to select and deselect the current item. If previous items have been selected, deselects them and selects the current item.
Shift+Space	Selects contiguous items from the last selected item to the current item.
Ctrl+Space	Toggles to select and deselect the current item while maintaining previous selected items.
Ctrl+X	Marks the selected items to move if reorder is enabled.
Ctrl+C	Marks the selected items to copy if reorder is enabled.
Ctrl+V	Paste the items that are marked to directly before the current item (or as the last item if the current item is a folder).

Table 10-5   Group Item

Key(s)	Action
LeftArrow	Collapse the current item if it is expanded and is collapsible. For non-hierarchical data, do nothing
RightArrow	Expand the current item if it has children and is expandable. For non-hierarchical data, do nothing.

Tab Bar element

Table 10-6   List Item

Key(s)	Action
Enter or Space	Selects list item.
UpArrow	Moves focus to the previous visible list item.
DownArrow	Moves focus to the next visible list item
RightArrow (LeftArrow in RTL)	For horizontal tab bar, focus will be moved to next visible item.
LeftArrow (RightArrow in RTL)	For horizontal tab bar, focus will be moved to previous visible item.
Home	Moves focus to the first visible list item.
End	Moves focus to the last visible list item.
F2	If focus is on a list item, Taping F2 will make its contents accessible using TAB.
Esc	When F2 mode is enabled, Tap Esc to exit F2 mode

Table 10-6   (Cont.) List Item

Key(s)	Action
Ctrl+X	Marks the current item to move if reorderable is enabled.
Ctrl+V	Paste the item that are marked to directly before the current item
DELETE	Delete the current item.
Enter or Space	Open menu. Refer menu button touch documentation. **Note:** This is applicable only for Horizontal Tab Bar when overflow is set to popup.

Table 10-7   Overflow Menu button

Key(s)	Action
Enter or Space	Collapse the current item if it is expanded and is collapsible. For non-hierarchical data, do nothing.

You can access more details at Oracle JavaScript Extension Toolkit (JET) Keyboard and Touch Reference, which lists the keyboard and touch gestures for all Oracle JET components.

Additional Reference

Oracle JavaScript Extension Toolkit (JET) is a toolkit for developing user interfaces. Based on industry standards and popular open-source frameworks, Oracle JET adds advanced functionality and services to help developers build better applications faster. Oracle JET components have built-in accessibility support that conforms with the Web Content Accessibility Guidelines version 2.1 at the AA level (WCAG 2.1 AA)

Oracle Financial Services Communication Cloud Service uses JET elements, which provide keyboard options to perform various actions. Some example actions are:

Menu element

Table 10-8   Menu Element

Key	Action
Enter or Space	Invoke the focused menu item's action.
UpArrow	Move focus to the previous menu item, wrapping around at the top
DownArrow	Move focus to the next menu item, wrapping around at the bottom.
Home	Move focus to the first menu item.
End	Move focus to the last menu item.
Shift + F10	Open the context menu.

Table 10-9   Menu Item in Top-level Menu

Key	Action
Esc	Close the menu and move focus to the launcher

Table 10-10   List View Element

Key	Action
F2	Enters Actionable mode. This enables keyboard action on elements inside the item, including navigate between focusable elements inside the item.
Esc	Exits Actionable mod
Tab	When in Actionable Mode, navigates to next focusable element within the item. If the last focusable element is reached, shift focus back to the first focusable element. When not in Actionable Mode, navigates to next focusable element on page (outside ListView).
Shift+Tab	When in Actionable Mode, navigates to previous focusable element within the item. If the first focusable element is reached, shift focus back to the last focusable element. When not in Actionable Mode, navigates to previous focusable element on page (outside ListView).
DownArrow	Move focus to the item below.
UpArrow	Move focus to the item above.
LeftArrow	When display in card layout, move focus to the item on the left.
RightArrow	When display in card layout, move focus to the item on the right
Shift+DownArrow	Extend the selection to the item below.
Shift+UpArrow	Extend the selection to the item above.
Shift+LeftArrow	When display in card layout, extend the selection to the item on the left.
Shift+RightArrow	When display in card layout, extend the selection to the item on the right.
Shift+F10	Launch the context menu if there is one associated with the current item.
Enter	Selects the current item. No op if the item is already selected.
Space	Toggles to select and deselect the current item. If previous items have been selected, deselects them and selects the current item.
Shift+Space	Selects contiguous items from the last selected item to the current item.
Ctrl+Space	Toggles to select and deselect the current item while maintaining previous selected items.
Ctrl+X	Marks the selected items to move if reorder is enabled.
Ctrl+C	Marks the selected items to copy if reorder is enabled.
Ctrl+V	Paste the items that are marked to directly before the current item (or as the last item if the current item is a folder).

Table 10-11   Group Item

Key(s)	Action
LeftArrow	Collapse the current item if it is expanded and is collapsible. For non-hierarchical data, do nothing.
RightArrow	Expand the current item if it has children and is expandable. For non-hierarchical data, do nothing.

Table 10-12   Tab Bar element

Key(s)	Action
Enter or Space	Selects list item
UpArrow	Moves focus to the previous visible list item.
DownArrow	Moves focus to the next visible list item

ORACLE®

Table 10-12   (Cont.) Tab Bar element

Key(s)	Action
RightArrow (LeftArrow in RTL)	For horizontal tab bar, focus will be moved to next visible item.
LeftArrow (RightArrow in RTL)	For horizontal tab bar, focus will be moved to previous visible item
Home	Moves focus to the first visible list item.
End	Moves focus to the last visible list item.
F2	If focus is on a list item, pressing F2 will make its contents accessible using TAB.
Esc	When F2 mode is enabled, press Esc to exit F2 mode.
Ctrl+X	Marks the current item to move if reorderable is enabled.
Ctrl+V	Paste the item that are marked to directly before the current item
DELETE	Delete the current item.
Enter or Space	Open menu. Refer menu button touch documentation. Note: This is applicable only for Horizontal Tab Bar when overflow is set to popup.

Table 10-13   Overflow Menu button

Key(s)	Action
Enter or Space	Collapse the current item if it is expanded and is collapsible. For non-hierarchical data, do nothing

You can access more details at Oracle JavaScript Extension Toolkit (JET) Keyboard and Touch Reference, which lists the keyboard and touch gestures for all Oracle JET components.

11

Best Practices

The following topics list the best practices that you can keep in mind while working in Communication Cloud Service.

- Email Configuration
- Best Practices for Conditions
- Best Practices for Content
- Fetching size or specific value of an object array using JSON path syntax
- Converting a JSON list result returned by the JSONPath query from the Assembly Template to a String

Communication Email Configuration Matrix

Each email client can render email differently based on a number of supported or unsupported features. The table below is a guide to help understand what HTML elements are supported in what type of client.

Following are some best practices for creating emails that work across email clients:

- Email width should generally be kept to 600-800 pixels.
- Use Tables for basic email structure
- Use basic cross-platform fonts such as Arial or Times New Roman

Table 11-1   Email Configuration Matrix

Configuration	Desktop Clients			Web-based Clients		Workaround/best practice
	Microsoft Outlook Office(365) Windows 10	Apple Mail 15(macOS 12.0)	Outlook Office (365) (macOS 12.6.1)	Microsoft Outlook Webmail	Gmail	
Grid Layout	Not Supported	Supported	Supported	Not Supported	Not Supported	You can use Content Designer table instead of grid layout which is supported by Outlook Office in Windows 10.

Table 11-1   (Cont.) Email Configuration Matrix

Configuration	Desktop Clients			Web-based Clients		Workaround/best practice
	Microsoft Outlook Office(365) Windows 10	Apple Mail 15(macOS 12.0)	Outlook Office (365) (macOS 12.6.1)	Microsoft Outlook Webmail	Gmail	
Background Color	Not Supported	Supported	Supported	Supported	Supported	You can use Background Color for • Outlook Web Email instead of Outlook Desktop App • For Content Designer table, Outlook Desktop and Web Email
Border Radius	Not Supported	Supported	Supported	Supported	Supported	You can use Border Radius in Outlook Web Email.
Background Image	Not Supported	Supported	Supported	Not Supported	Not Supported	You can use image content reference within a table and configure table with background color but you can only use the available background color palette within Content Designer tool.
Text decoration color	Not Supported	Supported	Supported	Supported	Supported	You can use Text decoration color in Outlook Web Email
Text decoration style	Not Supported	Supported	Supported	Supported	Supported	You can use Text decoration style in Outlook Web Email
Text decoration line	Not Supported	Supported	Supported	Supported	Supported	You can use Text decoration line in Outlook Web Email
Text-Align	Not Supported	Supported	Supported	Supported	Supported	Text-Align supported in Outlook Web Email
Margin	Not Supported	Supported	Supported	Supported	Supported	You can use Margin in Outlook Web Email
Padding	Not Supported	Supported	Supported	Supported	Supported	You can use Padding in Outlook Web Email
Font-Family	Supported	Supported	Supported	Supported	Supported	
Font-Size	Supported	Supported	Supported	Supported	Supported	

Table 11-1   (Cont.) Email Configuration Matrix

Configuration	Desktop Clients			Web-based Clients		Workaround/best practice
	Microsoft Outlook Office(365) Windows 10	Apple Mail 15(macOS 12.0)	Outlook Office (365) (macOS 12.6.1)	Microsoft Outlook Webmail	Gmail	
Font-Style	Supported	Supported	Supported	Supported	Supported	
Color	Supported	Supported	Supported	Supported	Supported	
SVG Images	Not Supported	Supported	Supported	Not Supported		You can use PNG image format instead of SVG.

Best Practices for Conditions

Creating complex conditional evaluation in the JSON path syntax when used within an Assembly Template Condition

You can use logical operators **&&** (logical AND) and **||** (logical OR) when you want to evaluate multiple conditions within the same Assembly Template Condition. Additionally, you can use **( )** (parentheses) to group or order multiple conditions or evaluations, while aiding the evaluation's overall readability. When evaluating, any conditions the condition within parenthesis are evaluated first, then expanding outwards to other conditions. You can manage order of operations by defining by encapsulating the sub-conditions within parentheses.

```
"Condition": "$[?(@.CustomerDetails.StatementDetails.DocumentType ==
        'Enhanced' && (@.CustomerDetails.StatementDetails.Frequency
    ==
    'Monthly' || @.CustomerDetails.StatementDetails.Frequency
    == 'Quarterly'))]",
```

Adding multiple comms-data and text into a condition

A condition can wrap text and comms-data all in one.

```
<comms-cond>$Cond{"Condition": "Person == 'Individual'", "Text":"Person Name:
    <comms-data>$Data{"Id":"Firstname"}</comms-data>
   <comms-data>$Data{"Id":"LastName"}</comms-data>"}</comms-cond>
```

Best Practices for Content

Editing a Content record if the Configuration Id that you used for Content creation is Closed

To edit a Content record if the Configuration Id that you used for Content creation is Closed, create a new Content version by using an another Configration ID.

> **Note:**
>
> You cannot edit Content record if the Configuration ID used to create that content is closed.

How to set the font size or line height of a single line break
Content Designer places the <br> tag outside the tags and this will inherit the font-size style from its parent object. In case there is no style present for a parent object, it will be set to default value of 10 points.

<div style="font-size:20px"> Some text
 </div>

In order to avoid the inheritance, create a Style containing the desired font-size and/or line-height attribute and apply it to a particular text through StyleClass.

Setting Padding zero to all table cells in a Content Designer Table
There are 2 ways in which you can set the Padding to 0 in a Content Designer Table:

- Setting table cell padding using Table Cell properties.
  The default padding for each table cell in Content Designer Table. To set the table cell padding to 0, select a table cell and set padding 0.

- Setting table cell padding at Table Column and Table Row level.
  The default padding for columns in table is set to 12 px. To set the cell padding to 0, select the entire column and set padding 0 in the Table Cell Properties. You can follow similar process for a Table Row.

Fetching size or specific value of an object array using JSON path syntax

Following is an example to fetch size or specific value of an object array using JSON path syntax:

Assembly Template

```
{
        "$$Id": "PackageA",
        "Fields": [
    {              "Name": "CountOfPhones",
"Path":"$.length($.phones[*].type.length())"          }
     ,
    {              "Name": "CountOfTypeAPhones",
"Path":"$.length($.phones[?(@.type== 'TypeA')].length())"          }
    ]
    }
```

Preview

```
{
        "phones": [
    {              "type": "TypeA"          },
    {              "type": "TypeB"          },
    {              "type": "TypeC"          }
```

```
                    ]
                }
```

Path with a filter criterion

```
$.length($.phones[?(@.type== 'TypeA')].length())
```

Path without a filter criterion

```
$.length($.phones[*].type.length())
```

Converting a JSON list result returned by the JSONPath query from the Assembly Template to a String

The following JSONPath query returns result as a list within square brackets.

Reference: https://github.com/json-path/JsonPath#what-is-returned-when

Query:

```
$.documentSet.document.formData.medicalEvents[?(@.medicalEvent ==
\"Provider's Office\")].medicalEventServices[?(@.medicalEventService ==
\"Primary
Care\")].I_copay
Result: ["$25"]
```

By updating the query to include the concatenation function, and concatenating empty text at the end of the query result, the resulting format is converted to a string.

Updated Query:

```
$.concat($.documentSet.document.formData.medicalEvents[?(@.medicalEvent==
\"Provider's Office\")].medicalEventServices[0,1].I_copay,\"\")
Updated Result: $25
```

12
Release Log

The following tables include Communication Cloud Service enhancements:

2025

Release Number	Details
R25.3	• Addition of User Defined Data configuration for creation of Field global list. This feature combines transformation, iteration, and formatting abilities, offering complete data manipulation replacing the assembly template. • Addition of Rule configuration using User Defined Data which enables the replacement of current condition business logic of Assembly Template to determine outcomes. • Addition of Brand configuration to create Color Series for charts. • Addition of Digital Asset configuration for internal storage of generated communications which facilitates access and retrieval of communications for operations support. • Addition of Search configuration for creation of search business logic to retrieve Digital Assets. • Deprecated the Role feature.
R25.2	• Communication Cloud Service now supports preview across the package hierarchy. • Enhanced Search with new filter capabilities. • Communication Cloud Service now supports SMS delivery through Twilio supplier service.

Previous releases:

Ye ar	List of enhancements
202 4	- Added ability to submit graphics as part of the data payload for inclusion in the output. - Added support to add page numbers in CSV output. - Added support for additional styling for Height and Width to control barcode and graphic sizing. - Added support for two new Transforms on data within a Content. - Substring returns the portion of a string based on a starting point and number of characters. - Trim removes leading or trailing characters from a string. - IMB barcode data no longer requires a dash to delineate characters. - Added the following to support Communication Distribution to support OCI Email, OCM Storage, Telesign SMS, and DocuSign ESignature: - Communication - Email - Storage - Rendition - Message - ESignature - Support for additional styling: Absolute positioning of Text within a Content - Added support for new data transform to calculate MOD of two numbers and other simple arithmetic operations for integers and decimal numbers. - Added support for: - Defining static or dynamic Alternative Text to an image to convey an image's purpose. - Ability to set the PDF Title to convey the purpose of the communication. - Arithmetic operations on data values. - The default font in Communication Cloud Service has been changed to Google Noto. - Added support for usage metrics are now shown in your OCI Cloud Console. - Added support for: - Language tag for screen readers. 'Ignore' tag for content that should not be read. - Advanced arithmetic operations involving expressions. - Enhanced the data transformation capability to support nesting of the Transform tags. - Improved Height and Size behavior for the Content items. - Added support for: - Concatenation Transform enables a string value between data elements. - Barcode generation based on user defined configuration using static data. - Display of summary details of records on the landing page. "Alt text" tag on images for screen readers. - Discontinued preconfigured default font. As part of Day1 configurations, you must now select and configure a default font with a maximum size of 30 MB. - Added support for PDF documents encoded in base64 format as part of the payload. This feature enables seamless integration of PDF content into document designs. - Added support for email delivery with Twilio service. - Added support for storing documents in SFTP Server using the Oracle SFTP service. - Added support for adding hyperlink with Image and text in a Content configuration. - Enhanced user experience for the following configurations: - Content - Document - Font - Layout - Package - Style

Year	List of enhancements

2023	• Improved performance of Content items with multiple associated styles.
	• Simplified use of Email and Storage set up configuration which allows you to reuse a single configuration across multiple Communication flows.
	• Support added for relationships to Marketing and Operations Companies:
	  – Packages
	  – Documents
	This enhancement added support for search, access, and departmental cost allocations. Communication Rendition and Direct Distribution supports external fulfillment systems or programs to directly display distribution output.
	• Added support to create email attachments, additional table styling and twenty new system level variables that can be used to enhance document output.
	• Added support for producing CSV formatted output files for distribution and storage in Oracle Content Management as well as updates related to Document and Layout image background, border collapse and border spacing styling support for tables in PDF and HTML output.
	• Added support for the ability to configure ESignature fields within documents and routing those documents for ESignature capture through an integration with DocuSign eSignature.
	• Expanded distribution capabilities in Communication Cloud Service now include SMS delivery.
	• Added support for additional styling:
	  – Grid Template Columns styling provides more control over template column widths and positioning.
	  – Border Collapse and Spacing style attributes give more options for Tables of data.
	  – Page Break style attributes allow finite control over manual and dynamic page breaking in PDF output.

13

Frequently Asked Questions

General Notes

- The Communication Configuration hierarchy is **Package**, and then **Documents**, and then **Layouts**, and then **Content**

- Package, Document and Content must have at least one Version. It is the Version where associations and editing are done.

- Before creating, editing or deleting any configuration items you must first select a Config ID.

- Once an item is created or edited under a certain Config ID, it cannot be edited under a different Config ID until that Config ID is closed.

- When creating a Package Version Configuration, an Assembly Template is required. Use {} for the Assembly Template if you do not require any variable data, conditions or iterations.

- Preview of PDF output is available from the Package Version details window.

- Package preview does not display properly when using emulators (iPhone, iPad, etc.) in Chrome.

Question and Answers

Config ID

- Can a Config ID be shared across users?

  – Yes

- If users share a Config ID, what happens if they both try to edit the same bit of Content (or other Configuration) at the same time?

  – The last person to save their changes would update the configuration over top of whatever was already stored. Two users may work on two different Versions of a Content Configuration without this issue; they would not see each other's changes in their version.

- When trying to update a configuration (Package, Layout, etc.) I get a big red error message at the top of the screen that says something like "Existing transaction is still in Open status". What's up with that?

  – That error is shown when a user attempts to edit the configuration item (Package, etc.) in a different Config ID then the one in which it is already being edited. All updates must happen within the scope of the original Config ID until that Config ID is closed.

Styling

- I added a Style to a layout. I thought then I could update the Content in that layout to use the new Style but the 'Styles' option under Content is disabled. Must be missing something?

  – That drop down is referring to Style Class which can be given to a Style associated to a Document or a Layout. Associate the Style to the Layout and the Content will inherit that Style.

14
Financial Services Cloud Support

Raise a service request on https://support.oracle.com if you have any queries related to services on the Financial Services Cloud platform.

Send us your comments

Oracle welcomes your comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information used for revision.

- Did you find any errors?
- Is the information clearly presented?
- Do you need more information? If so, where?
- Are the examples correct? Do you need more examples?
- What features did you like most about this manual?

If you find any errors or have any other suggestions for improvement, indicate the title and part number of the documentation along with the chapter/section/page number (if available) and contact the Oracle Support.

Before sending us your comments, you might like to ensure that you have the latest version of the document wherein any of your concerns have already been addressed. You can access My Oracle Support site that has all the revised/recently released documents.